Appendices

A. Notice of Preparation and Scoping Summary
B. Air Quality and Greenhouse Gas Emissions Technical Data
C. Special-status Species and Biology Supporting Information
D. Cultural Resources Supporting Information
E. Transportation and Traffic Technical Reports
F. 2014 Water Supply Assessment for the Richmond South Shoreline Specific Plan (Richmond Bay Specific Plan) and Related Supporting Information

ESA

Appendix A

Notice of Preparation and Scoping Summary

ESA

NOTICE OF PREPARATION
OF AN ENVIRONMENTAL IMPACT REPORT (EIR) FOR
THE RICHMOND SOUTH SHORELINE SPECIFIC PLAN

DATE: September 30, 2014

TO: State Clearinghouse and Affected Agencies (via Certified Mail); Property Owners within the Plan Area and within 100 feet of the Plan Area (via US Mail); Interested Organizations and Persons (via US Mail)

FROM: City of Richmond

LEAD AGENCY: City of Richmond
Planning and Building Services Department
450 Civic Center Plaza
P.O. Box 4046
Richmond, CA 94804-1630

CONTACT: Hector Rojas, Senior Planner
(510) 620-6662
Hector_Rojas@ci.richmond.ca.us

SUBJECT: Notice of Preparation of an Environmental Impact Report (EIR) in accordance with State California Environmental Quality Act (CEQA) Guidelines Section 15082(a)

A. NOTICE OF PREPARATION

Notice is hereby given that the City of Richmond (Lead Agency) will prepare an Environmental Impact Report (EIR) for the proposed South Shoreline Specific Plan ("Specific Plan" or

"Project"). The EIR will address the potential physical and environmental effects of the Specific Plan for each of the environmental topics outlined in the California Environmental Quality Act (CEQA). The City will use the EIR when considering approval of the proposed Specific Plan as well as to facilitate approval of projects consistent with the Specific Plan. Responsible Agencies, which are public agencies, other than the City of Richmond, that have a role in approving or implementing the Specific Plan, will also need to consider the EIR prepared by the City of Richmond when issuing approvals for the implementation of the Specific Plan and projects within the Plan Area. The City has prepared this Notice of Preparation (NOP) to provide Responsible Agencies, Trustee Agencies, and other Interested Parties with a description of the proposed Specific Plan, identify potential environmental effects pursuant to State CEQA requirements, and facilitate the approval of future high quality projects in the Plan Area that are consistent with the Specific Plan.

The NOP and the file for the Specific Plan are available for review between the hours of 8:30 a.m. and 4:00 p.m., Monday through Friday, at the City of Richmond Planning and Building Services Office, Second Floor, 450 Civic Center Plaza, Richmond, CA 94804. Public documents related to the Specific Plan may also be viewed or downloaded from the City's website: http://www.ci.richmond.ca.us/SSSP. The City has not prepared an Initial Study; under CEQA, a Lead Agency (in this case, the City of Richmond) may proceed directly with preparation of the EIR without preparation of an Initial Study if it is clear that an EIR will be required. The City has made such a determination for this Project.

B. PUBLIC REVIEW AND COMMENT PERIOD

Further notice is hereby given that the City invites comments on the scope and content of the EIR in response to this NOP. Pursuant to Section 15082 of the State CEQA Guidelines, this NOP will be circulated for a 30-day review period. At a minimum, responses to this NOP should focus on the potentially significant environmental effects that the proposed Project may have on the physical environment that should be addressed in the EIR, ways in which those effects might be minimized and potential alternatives to the proposed Project that should be addressed in the EIR. In your response, include your name, the name of your agency or organization (if applicable), and contact information.

Comments on the NOP may be received in writing at the above City of Richmond mailing address to the attention of **Hector Rojas**, **Senior Planner**, or via e-mail to

Hector_Rojas@ci.richmond.ca.us, by 4:00 p.m. on **Thursday, October 30, 2014.** In addition, comments may be provided at the Public Scoping Meeting, noticed below.

C. PUBLIC SCOPING MEETING

Further notice is hereby given that the City has scheduled a Public Scoping Meeting at the time and location indicated below. The purposes of the Public Scoping Meeting are to describe the proposed Specific Plan, the environmental review process, and to receive verbal input, per the parameters regarding verbal comments, as outlined above. The City will consider all comments, written and oral, in determining the final scope of the evaluation to be included in the EIR.

Public Scoping Meeting:

Thursday, October 16, 2014 , 6:00 p.m.
City of Richmond Council Chambers
440 Civic Center Plaza
Richmond, CA 94804

D. PROJECT DESCRIPTION

The Project is the preparation and adoption of a Specific Plan for Richmond's South Shoreline area (Plan Area). The Specific Plan will establish planning policies, land use controls, development standards, and urban design guidelines that will guide the Plan Area's transformation into a sustainable waterfront community anchored by the planned Berkeley Global Campus at Richmond Bay (formally referred to as the UC Berkeley at Richmond Bay Campus). The Specific Plan will also establish approval processes for future development projects in the Plan Area and identify infrastructure improvements and funding mechanisms to facilitate implementation of the Plan. Under the Specific Plan, the Plan Area would be developed into several compact, walkable neighborhoods characterized by mixed-use commercial and medium-density residential development near public transit, jobs, schools, shopping, parks, recreation, and other amenities, consistent with the goals and policies in Richmond's General Plan 2030. The Specific Plan would provide extensive opportunities for office/commercial and light-industrial/research and development land uses adjacent to the

planned Berkeley Global Campus. The Specific Plan is being developed using Priority Development Area (PDA) Planning Grant funding from the Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG).

Project Location

The Plan Area consists of approximately 220 acres of land surrounding the proposed Berkeley Global Campus site (see **Figure 1** attached to this NOP). This site includes properties at 1301 South 46th Street and 3300 Regatta Boulevard (the Richmond Field Station and Regatta Properties) that are owned by the University of California, Berkeley (UC Berkeley) and total approximately 134 acres (see **Figure 2** attached to this NOP). The Specific Plan Area's general boundaries are Marina Way South to the west, the San Francisco Bay to the south, and Interstate 580 (I-580) to the north and east.

Proposed Land Use Map and Program

The proposed Land Use Map and Program (see **Figure 3** attached to this NOP) shows the anticipated physical layout for the Plan Area. It defines four sub-areas where potential land uses are envisioned to develop over time, pursuant to specific planning policies, land use controls, development regulations, and urban design guidelines. The proposed Land Use Map also illustrates an open space and circulation network that would improve connectivity across the Plan Area, interface with the Berkeley Global Campus, and reflect future infrastructure improvements.

As depicted in the proposed Land Use Map, it is envisioned that a single railroad line could be maintained through the Plan Area and that existing railroad switching yards, generally located along the southern border of Sub-Area 3, could be relocated to enable a better connected street grid and open space network.[1] The proposed Land Use Map also contemplates reconstruction of major freeway interchanges over the life of the project to improve access to the Plan Area and increase development potential on neighboring parcels. Parking would be developed as a mix of surface and structured parking with structured parking being used in large residential buildings, mixed-use buildings or nodes.

[1] Relocation would depend on availability of suitable alternative sites, willingness of owners, long-term freight traffic projections, and financial resources to cover costs.

Table 1 summarizes the proposed Land Use Program by sub-area of the Richmond South Shoreline Specific Plan proposed Land Use Map, shown in **Figure 3**.

TABLE 1: PROPOSED LAND USE PROGRAM BY PLAN SUB-AREA

Proposed Land Use	Sub-Area 1	Sub-Area 2	Sub-Area 3	Sub-Area 4	Total
R&D/Business/Service[1]	1,170,000 sf	840,000 sf	1,560,000 sf	2,120,000 sf	5,690,000 sf
Retail/Commercial (Ground Floor)	270,000 sf	130,000 sf		320,000 sf	720,000 sf
Residential	2160 units	330 units		1,590 units	4,070 units
Open Space	12.8 acres	12.4 acres	1.4 acres	5.9 acres	144.8 acres[2]

[1] Land uses permitted under this designation, as provided in the Richmond General Plan 2030, include commercial and institutional uses such as large-scale research and development campus, light industrial, and industrially-related storage and distribution, and office uses.

[2] Total Open Space includes areas of the Meeker Slough Wetlands, Stege and Hoffman Marsh within the Plan Area (112.3 acres)

Table 2 summarizes the proposed maximum floor area ratio (FAR) and building stories contemplated for each of the land use designations proposed in the Plan Area.

TABLE 2: PROPOSED MAXIMUM FLOOR AREA RATIO (FAR) AND BUILDING STORIES BY LAND USE DESIGNATION

Proposed Land Use	FAR	Stories
Light Industrial /R&D	0.75	1 to 2
R&D/Business/Service	1.0	1 to 3
Mixed Use: Employment	1.5	2 to 3
Mixed Use: Residential	2.5	3 to 5
Residential	2.5	3 to 5

Required Approvals

- Amendments to City of Richmond General Plan 2030
- Amendments to the Richmond Zoning Ordinance and Map

- Adoption of the Richmond South Shoreline Specific Plan and associated policies, regulations, and urban design guidelines as an amendment to the Richmond Municipal Code
- Certification of the EIR

E. RELATED PLANNING EFFORTS

Berkeley Global Campus Long-Range Development Plan

UC Berkeley and the Lawrence Berkeley National Laboratory (LBNL) have jointly prepared a Long Range Development Plan (LRDP) to guide the development of a 5.4 million square-foot, world-class research campus (Berkeley Global Campus at Richmond Bay) at the Richmond Field Station and Regatta Properties over the next 40 years. Research at the Berkeley Global Campus will focus in the areas of energy, the environment, health, and the global economy. According to the Land Use Plan and Illustrative Development Scenario included in the Draft LRDP (see **Figures 5 and 6** attached to this NOP), the Berkeley Global Campus will be divided into a 'Research, Education, and Support' zone (107.6 acres) and an 'Open Space' zone (25 acres). The 'Research, Education, and Support' zone would consist of five neighborhoods with an estimated daytime population of 10,270 at full build-out. Bicycling and walking would be emphasized to promote an open campus-like environment and minimize the potential for pedestrian and vehicle conflicts.

The LRDP and its Environmental Impact Report were adopted and certified by the University of California Regents in May 2014. Initial phases of development will be planned as funding is secured. UC Berkeley, LBNL, and City of Richmond staff have met on a regular basis to coordinate planning efforts related to the LRDP, Specific Plan, and South Richmond Transportation Connectivity Plan. The LRDP, as well as community priorities and opportunities, are the primary bases for the recommended land uses and circulation network that have been developed for the Specific Plan Area.

South Richmond Transportation Connectivity Plan

In January 2013, the City of Richmond was awarded a Community-Based Transportation Planning Grant from Caltrans to develop the South Richmond Transportation Connectivity Plan (Connectivity Plan). The purpose of the Connectivity Plan is to address key deficiencies in the

local and regional transportation network by identifying specific recommendations to improve public transit, bicycle, pedestrian, and automobile connectivity between the proposed Berkeley Global Campus site, the Specific Plan Area, the Richmond and El Cerrito Del Norte BART Stations, neighborhoods in Central Richmond, and nearby communities including El Cerrito, Albany, and Berkeley. Two community workshops have been held to date and preliminary recommendations have been developed for primary corridors including Cutting Boulevard, Harbour Way South, 23rd Street, Marina Way South, Marina Bay Parkway, and Carlson Boulevard. The preliminary corridor recommendations are available on the Connectivity Plan website: http://www.ci.richmond.ca.us/SRTCP. The preliminary corridor recommendations are informed by the recommended land uses and circulation network in the Specific Plan Area as well as the City's General Plan, Pedestrian Plan, and Bicycle Master Plan. A public draft of the Connectivity Plan is anticipated in November 2014.

Plan Bay Area

In 2008, the State of California passed "The California Sustainable Communities and Climate Protection Act" (California Senate Bill 375, Steinberg). Senate Bill 375 requires each of the state's metropolitan areas, including the Bay Area, to address climate change by reducing greenhouse gas (GHG) emissions from cars and light trucks. To meet the Bay Area's GHG reduction targets (7% per capita by 2020 and 15% per capita by 2035), MTC and ABAG adopted 'Plan Bay Area', the Bay Area's Regional Transportation Plan and first Sustainable Communities Strategy, in July 2013. The intent of Plan Bay Area is to direct the majority of regional growth projected between now and 2040 into 'Priority Development Areas' (PDAs) that are or will be more walkable and bikable and close to public transit, jobs, schools, shopping, parks, recreation, and other amenities.

The Specific Plan Area covers a majority of the South Richmond PDA. According to ABAG, the South Richmond PDA is expected to add 2,340 jobs and 1,380 housing units between 2010 and 2040. The proposed Land Use Map and Program for the Specific Plan contemplates growth that is consistent with Plan Bay Area's increased job and housing growth and is more ambitious than the ABAG's projected growth targets.

F. PROBABLE ENVIRONMENTAL EFFECTS

There is reasonable potential that implementation of the Specific Plan may result in potentially significant environmental effects to the following CEQA environmental issue areas. Therefore each of the areas below will be addressed in the EIR. The EIR will also examine a reasonable range of alternatives to the Project, including the CEQA-mandated No Project Alternative, and other potential alternatives that may be capable of reducing or avoiding potential environmental effects.

- **Aesthetics** - The Specific Plan contemplates more intensive development in the Plan Area. The EIR will evaluate whether the proposed development patterns would adversely affect the existing visual character or quality of the Plan Area and its surroundings.

- **Air Quality** – Development within the Specific Plan will increase the number of vehicle miles traveled (VMT) in the Plan Area and sensitive receptors may be exposed to localized concentrations of air pollutants. The Bay Area Air Quality Management District (BAAQMD) has prepared guidance for assessing the impacts of Specific Plans. This guidance suggests that an air quality analysis should examine the potential impact to air quality in several ways: 1) Consistency with the current air quality plan control measures; 2) The ratio of increase in VMT to population increases; and 3) Identification of mitigation measures, as needed, to address sources of toxic air contaminants; and 4) Identification of mitigation measures, as needed.

- **Agriculture and Forestry** - The Plan Area is not located on or near any agricultural land, forest land, or timberland, nor is the site zoned for agricultural uses. The EIR will briefly describe the land use conditions and confirm the Plan Area's designation, as established by the California Department of Conservation, Farmland Mapping and Monitoring Program.

- **Biological Resources** - While there is long-standing existing development in much of the Plan Area, and large portions of the Plan Area do not appear to contain significant biological resources, wetlands and related biological resources in and adjacent to the Plan Area include the federally and state listed California clapper rail, nesting raptors

and other protected birds, and roosting monarch butterflies. The EIR will examine the potential for adverse effects on biological resources, associated with these habitats.

- **Cultural and Historic Resources** - The Stege Mound Archaeological District is located within the Plan Area and is eligible for listing in the National Register of Historic Places due to their potential to yield data important to prehistory. The analysis in the EIR will assess the potential for ground-disturbance associated with new construction allowable under the Specific Plan to damage or destroy recorded or unrecorded archaeological sites, including consultation with Native American representatives, or paleontological resources.

  The Plan Area contains no recognized historical resources as described in the Richmond General Plan 2030, however, portions of the Plan Area have been in industrial use since World War II and thus appear to be 45 years old, or older, based on an initial review of historic aerial map and could meet the minimum age threshold for listing in the California Register of Historic Resources.

- **Geology and Soils** - The Plan Area has little topography. The area is nearly level, with the majority of the site at an elevation between 10 feet and 20 feet, with the lower elevations towards the bay gradually sloping up to the northeast. The San Francisco Bay Area is located in a seismically-active region of California. Soils that liquefy and subsequently fail during ground shaking may be of concern for the Plan Area because of the potential for encountering shallow groundwater or loose granular soils. Additionally, some soils may contain clays that can exhibit expansive characteristics. The EIR will evaluate the risk of geologic hazards associated with seismic events on future development, as well as whether future development would adversely affect any sensitive geological resources.

- **Greenhouse Gases (GHG) and Global Climate Change** – The City has published a GHG inventory and is in the beginning phases of developing a Climate Action Plan. Transportation is the greatest contributor to GHGs, and the intensity of development contemplated by the proposed Land Use Map would generate a substantial number of net new motor vehicle trips, as well as other lesser emitters. However, based on the infill location of the Plan Area and its jobs-housing balance, the Project is anticipated to be

significantly lower GHG emissions than typical California mixed use project. The EIR analysis will evaluate potential contributions to GHG emissions and assess the Specific Plan's alignment with state, local, and regional plans and policies pertaining to GHG emissions and climate change.

- **Hazards and Hazardous Materials** – Historically, the Plan Area has been used primarily for commercial/industrial land uses. A wide array of hazardous materials sources originate from commercial and industrial land use. Moreover, industrial, light industrial, and research and development land uses typically involve storage and use of large quantities of fuel or hazardous materials in above-ground or underground storage tanks. These land uses may also result in the regulated emission of hazardous chemicals, such as anhydrous ammonia. These sources of hazardous materials have been and are currently present in the existing environment within the Plan Area. New construction within the Plan Area would presumably involve excavation for facility improvements and, therefore, could potentially encounter contaminated soil or groundwater. In the investigations to date in the Plan Area, groundwater has been reported at depths of less than 10 feet below ground surface. Sites exist within the Plan Area with documented releases to soil or groundwater. A number of impacted sites in the Plan Area are currently subject to environmental restrictions and for which remediation efforts are currently underway.

  The EIR will evaluate the potential for increased risks associated with potential uses or accidental release of hazardous materials within or near the Plan Area. In addition, the EIR will identify, evaluate and propose mitigation measures to address potential hazards. Potential impacts related to emergency access as a result of the Specific Plan's implementation will also be addressed.

- **Hydrology and Water Quality** - The Plan Area is developed with buildings and paved surfaces and the Specific Plan would include design standards to increase green open space and pervious surfaces. The EIR will assess whether the Specific Plan would result in adverse hydrology and water quality impacts associated with urban runoff and the potential for adverse effects due to sites prone to flooding from a dam failure, tsunami, or seiche, from information sources such as published flood maps and data. The analysis will also evaluate groundwater conditions and discuss use of groundwater,

trends and aquifer conditions. The EIR will also discuss the potential for inundation and sea level rise and adaptation.

- **Land Use and Planning** – The General Plan 2030 articulates a vision for revitalizing Richmond's Southern Gateway area anchored by the Berkeley Global Campus. The land uses envisioned by the Specific Plan are generally consistent with the General Plan. The revitalized area's mixture of high-intensity residential, light industrial,commercial, retail and open space uses would harmonize with the existing ecologically sensitive areas, maximize Bay views and provide efficient regional connections to the San Francisco Bay Trail. The EIR will describe and evaluate the potential land use impacts and General Plan consistency. Further, the EIR analysis will assess whether the proposed Specific Plan land use development is consistent with applicable local and regional plans, pursuant to CEQA, including any applicable conservation plans.

- **Mineral Resources** – The EIR will assess whether development under the Specific Plan would result in the loss of available known mineral resources or important recovery sites.

- **Noise** – Short-term (construction) and long-term noise level increases would be associated with the Specific Plan's implementation. The EIR will analyze the potential for traffic noise impacts from changes in trip numbers and distribution in the vicinity. The EIR will also consider the potential for ambient noise levels to exceed established standards and assess the land use compatibility of areas proposed for residential use or other noise-sensitive land uses based on monitored noise levels and the compatibility guidelines of the State of California General Plan Guidelines, including any proposed residential areas within proximity to I-580 or other major roadways.

- **Population and Housing** – The proposed Specific Plan could result in expanded residential and other mixed use residential and commercial uses, as well as new or extended infrastructure. The EIR would consider if the resulting population growth would be in a manner contemplated in the General Plan 2030.The EIR would assess whether any existing dwelling units or residents would be displaced necessitating the construction of replacement housing elsewhere. Since commute patterns extend

beyond jurisdictional boundaries, the analysis will also consider the potential for Plan-related growth to other nearby communities. Moreover, the EIR will describe the housing demand associated with employment growth and cumulative employment growth under the Specific Plan.

- **Public Services and Recreation** – Implementation of the Specific Plan could increase both permanent and daytime populations associated with new residential units, as well as new employment opportunities. The anticipated population growth could result in an increased need for fire and police protection services, contribute to increases in the number of primary and secondary students in local school districts, and increase use of, and impact to, local public parks and recreational facilities. The EIR will examine the potential for changes in demand for public services and recreational facilities. Any increases in demand for public services will be reviewed to determine if new facilities will be required to maintain acceptable levels of services.

- **Transportation/Traffic** – The proposed Specific Plan addresses the existing barriers of connectivity throughout the Plan Area and the rest of Richmond. Barriers primarily include nearby freeways and railroads. The EIR will assess the proposed improvements and potential impacts to nearby pedestrian and bicycle facilities, existing and future transit service, on-site circulation patterns among user types, emergency access/egress, as well as hazards pertaining to all modes of transportation. Also, the EIR will evaluate potential traffic impacts along nearby roadways and at key intersections resulting from the increase in development that would result from implementation of the Specific Plan.

- **Utilities and Service Systems** – Implementation of the Specific Plan would increase demand for utilities in the City of Richmond, and require expansion of the City's public utility infrastructure in the Specific Plan Area. The EIR will assess whether the utilities infrastructure (wastewater, solid wastes) serve the Specific Plan Area and determine the adequacy of the infrastructure to serve future demand. East Bay Municipal Utilities District (EBMUD) will determine whether water supply is available for the proposed project. The EIR analysis will also address potential energy conservation features and methods that would reduce energy consumption in the Plan Area.

G. DOCUMENTS FOR AVAILABLE FOR REVIEW ONLINE

- **SSSP: Existing Conditions Report (September 2013)** - The purpose of this document is to provide an analysis of the existing conditions within the South Richmond PDA and the South Shoreline Specific Plan Area (see http://www.ci.richmond.ca.us/DocumentCenter/View/27610).

- **SSSP: Community Workshop Summary (March 2014)** – This document summarizes the community outreach and visioning process that informed the development of the Recommended Land Use Map and Development Program for the South Shoreline Specific Plan (see http://www.ci.richmond.ca.us/DocumentCenter/View/28590).

- **SSSP: Recommended Land Use Map Summary (March 2014)** – This document describes the community vision that was developed for the South Shoreline Specific Plan as well as the land use map and development program that is recommended for implementation (see http://www.ci.richmond.ca.us/DocumentCenter/View/28589).

- **Berkeley Global Campus at Richmond Bay Long-Range Development Plan and EIR** – These documents contain the long-range plan and environmental impact report that were adopted and certified by the UC Regents in May 2014 to develop the Berkeley Global Campus (see http://richmondbaycampus.lbl.gov/environmental_documents.html).

H. ATTACHED FIGURES

- Figure 1: South Shoreline Specific Plan Area
- Figure 2: Berkeley Global Campus at Richmond Bay LRDP Area
- Figure 3: South Shoreline Specific Plan Proposed Land Use Map and Program
- Figure 4: South Shoreline Specific Plan Illustrative Plan
- Figure 5: Berkeley Global Campus Land Use Plan
- Figure 6: Berkeley Global Campus Illustrative Plan

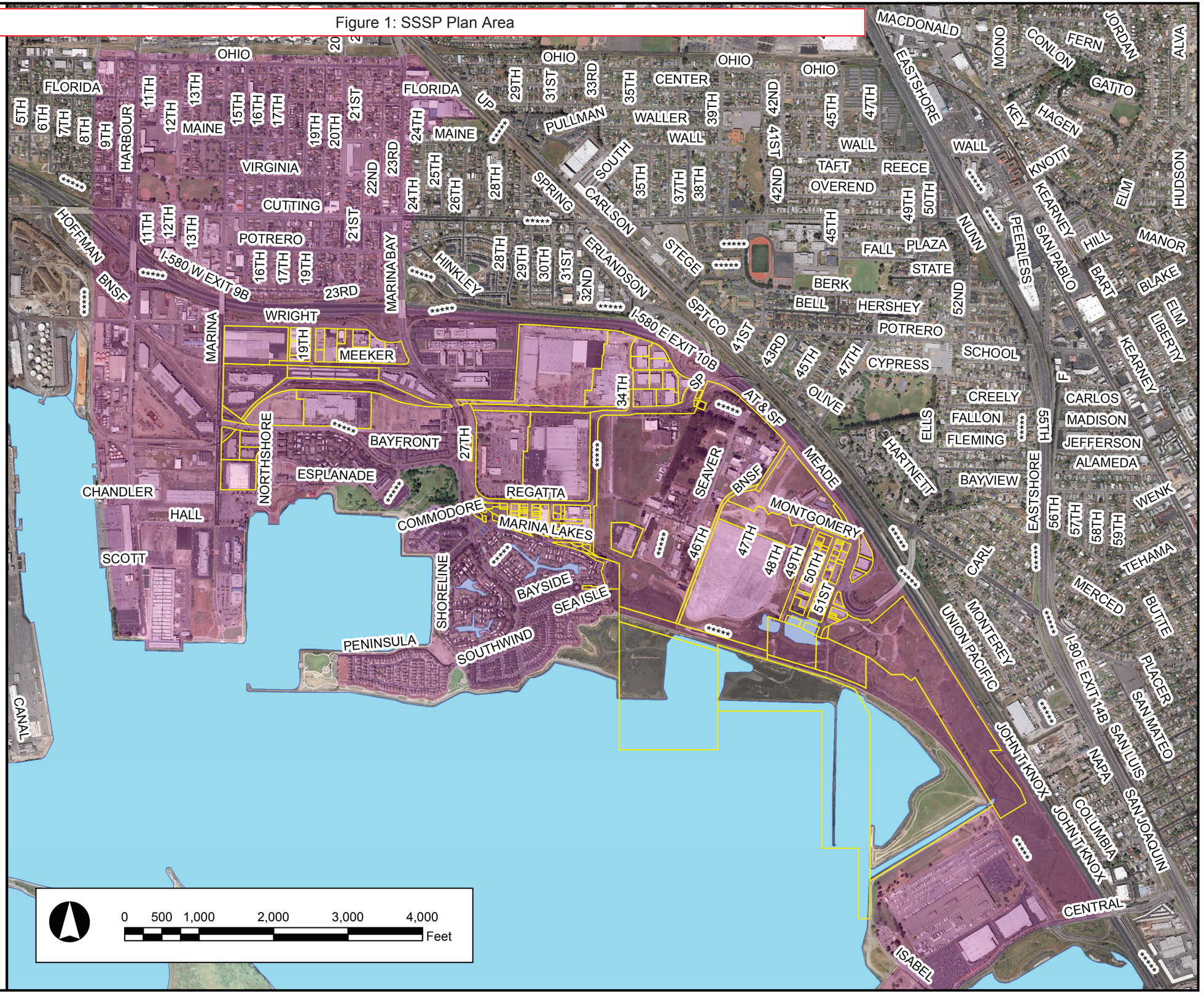
South Shoreline Specific Plan (SSSP)

Map of Plan Area

Figure 1: SSSP Plan Area

Legend

- Plan Area Parcels
- South Richmond PDA
- Water



Richmond General Plan 2030
Planning & Building Services Department

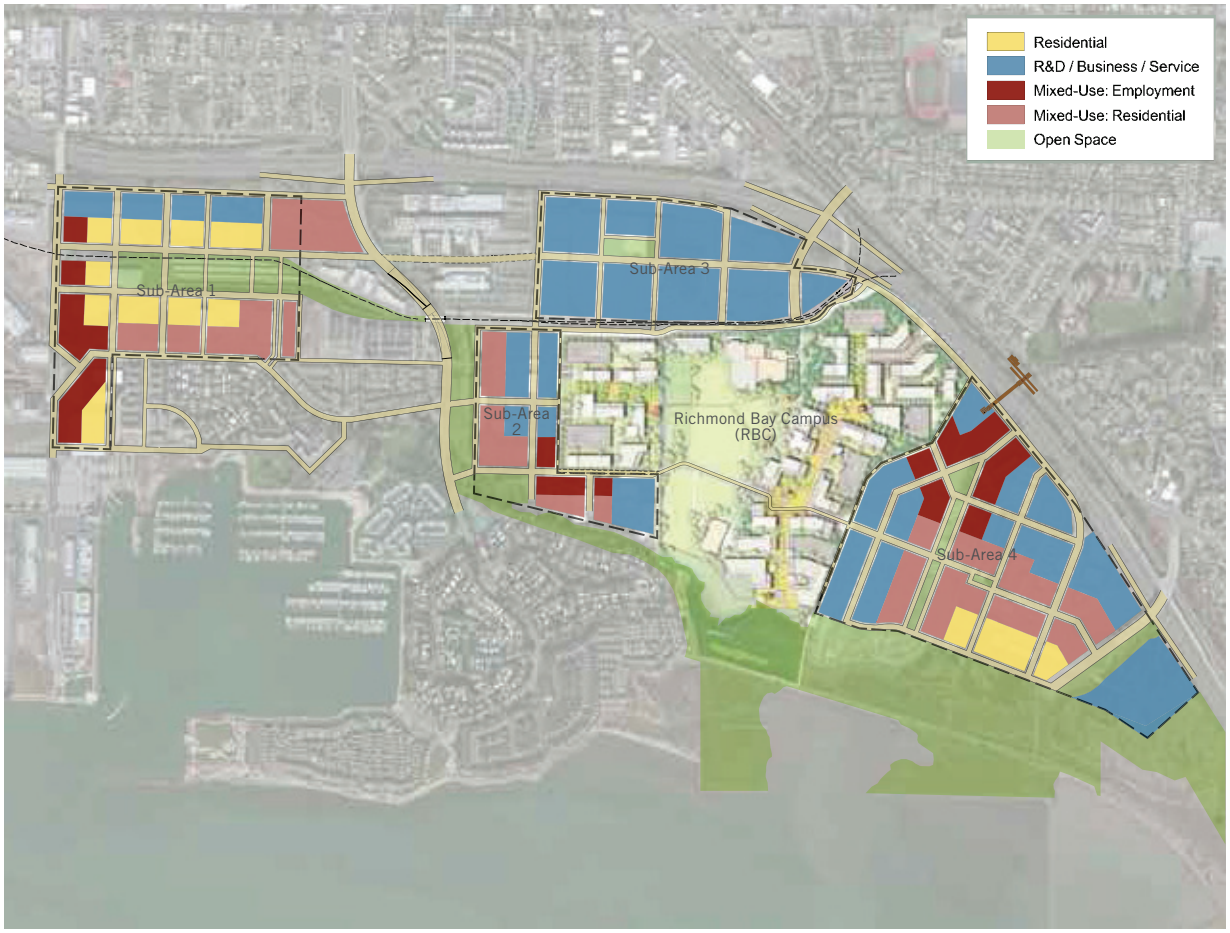
Figure 1: SSSP Plan Area

Figure 2.3: *University of California Richmond Properties*



Figure 3: South Shoreline Specific Plan Proposed Land Use Map and Program

Recommended Land Use Map



Recommended Land Use Map Program by Sub-Area					
	Sub-Area 1	Sub-Area 2	Sub-Area 3	Sub-Area 4	Total
R&D/Business/Service	1,170,000 sf	840,000 sf	1,560,000 sf	2,120,000 sf	5,690,000 sf
Retail (ground floor)	270,000 sf	130,000 sf		320,000 sf	720,000 sf
Residential	2160 units	330 units		1590 units	4070 units
Open Space	12.8 acres	12.4 acres	1.4 acres	5.9 acres	144.8 acres[1]

[1] Total Open Space includes areas of the Meeker Slough Wetlands, Stege Marsh, and Hoffman Marsh within the Plan Area (112.3 acres)

In the Recommended Land Use Map, a single rail line is maintained through the Plan Area, and the existing switching yard(s) within the Plan Area are relocated* to enable a better connected street grid and open space network. The improved connectivity increases the viability of mixed-use redevelopment between Marina Way South and Marina Bay Parkway (sub-area 1) and west of the RBC (sub-area 2). Mixed-use neighborhoods in these two locations could help to finance changes to the rail and circulation network.

The area north of the RBC (sub-area 3) has an R&D emphasis that could accommodate a R&D campus.

To the east of the RBC (sub-area 4), the existing industrial land uses on the eastern edge are assumed to transition to residentially-focused mixed-use, R&D, and higher-density residential along the Bay.

This plan considers that the major freeway interchanges could be reconstructed over the life of the project to improve access to the Plan Area and increase development potential on neighboring parcels.

Land Use	FAR	Stories
Light Industrial/R&D	.75	1 to 2
R&D/Business/Service	1	1 to 3
Mixed Use: Employment	1.5	2 to 3
Mixed Use: Residential	2.5	3 to 5
Residential	2.5	3 to 5

Parking

Parking will be a mix of surface and structured parking, the structures being used in large residential buildings or mixed-use nodes.

*Relocation would depend on availability of suitable alternative sites, long-term freight traffic projections, and financial resources to cover costs.

Figure 3: South Shoreline Specific Plan Proposed Land Use Map and Program



RICHMOND
SHAPING THE NEW 100 YEARS

Illustrative Plan
Richmond South Shoreline Specific Plan

SUMMARY OF EIR SCOPING COMMENTS RECEIVED IN RESPONSE TO THE NOP

South Shoreline Specific Plan EIR

The following summary is based on the format applied in the Richmond Bay Campus LRDP Draft EIR (11/2013), where the NOP comments on a particular topic are summarized in bullet form at the beginning of the EIR analysis section for that topic. For internal tracking purposes, a matrix of individual comments, sorted by commenter and topic supports this summary. Each comment letter and the Scoping Meeting minutes (reference keyed to the matrix).[1]

A. Prevalent Topics[2]

Comprising nearly two-thirds of the approximately 390 total comments received (including those addressing common issues), most that address environmental issues pertain to the issue of **land use compatibility**, associated with introducing new residential and park uses in areas that are currently and historically industrial and rail uses which will remain in the foreseeable future, and the need for buffer zones and overlays. Following are comments pertaining to **biological resources and habitats**, **traffic/transportation** issues of circulation (primarily Lark Drive), and increased traffic locally and (given considerations of displaced industrial/rail uses) regionally. Related are references to the need for a goods movement plan so that regional transportation effects are fully considered within that context. Several comments call for **alternatives** of land use and circulation configurations to address both land use compatibility and impacts to sensitive habitats. Several comments also address **existing contaminated site conditions** and largely overlap with those pertaining to **hydrology/water quality** and the aforementioned biological resources/habitats.

Non-CEQA Topics: Comments on the **Project description/Specific Plan (44)** generally overlap with comments on land use and alternatives. A range of **non-CEQA topics (41)** call for an assessment of economic effects and address overall viability of the plan and community review of specific draft plan text.

B. Topics Raised by Comments

Generally, topics are listed in order of how frequently they were mentioned – from most to fewest or single mention. *Topics mentioned only once or twice are italicized.*

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1 The NOP, comment letters, and Scoping Meeting minutes will be published, as received (un-keyed), in an appendix to the SSSP Draft EIR.

2 Comments that address more than one topic are counted and listed in each topic that may apply.

Project Description / Specific Plan

a) Protect existing businesses; establish a buffer zone / Overlay District language to protect existing uses; no residential development is allowed

b) Recommends the City add language to the South Shoreline Specific Plan so that any future development adjacent to or near the planned railroad right-of-way (ROW) is planned with the safety of the rail corridor in mind

c) Plan proposes to change zoning to uses that are incompatible with existing rail operations, which are at full capacity and critical to the movement of trains in this region; Plan seeks zoning changes that could negatively impact businesses and properties today (inconsistent uses)

d) Concerned that the Plan shows removal of all rail facilities in the Plan area, when it is expected that use of these facilities will increase in the future and City has no power to demand ceased operations; Plan needs to state the intent to serve as a long-term vision.

e) Consider alternative that returns the Safeway yard and the 23rd Street yard back in as rail yards and switch yards rather than showing it as a park; Rail yards should not be converted to parks, which have a lesser economic value, and would be contrary to the City's General Plan goals for increased goods movement at the Port

f) Need for phasing plan, timelines and benchmarks; Part of the plan should consider how to transition over the 40 years

g) Identify alternative methods for redirecting traffic from Lark Drive through Coastal Prairie

h) Recognize economic importance of existing uses in the Plan Area

i) [Include] Transition zone between protected habitat and development

j) Integrate newly-built natural or park-like areas that consider wetlands

k) BNSF/Richmond Pacific Railroad have no intention of relocating existing switching yard in the short- or long-term; need to regulate how the development proceeds in light of increase in future rail use

l) Re-affirm 2012 General Plan open space designation between the Bay View Avenue, Hoffman Marsh and the Shoreline; set a high standard as a public and natural resource

m) [Be consistent with] Bay Plan policies regarding shoreline protection

n) Establish a parallel process for addressing non-conforming use issues

o) Consistency with existing land use restrictions enforceable by RWQCB

p) Describe relationship of the Southern Gateway concept, the Richmond Southeast Shoreline Specific Plan, and the South Richmond Priority Development Area, and applicable PDA environmental review regime.

q) Figure 1 map, Remove the buffer zone area as well as other highlighted areas that are not part of the South Shoreline Specific Plan per the General Plan

r) Extensive opportunities to use recycled water / incorporate water conservation measures 2

s) Refer to "Main Street, California - A Guide for Improving Community and Transportation Vitality" for example policies

t) Consider creating riparian meander corridor along Regatta Boulevard to filter street runoff

u) Identify where switching yard could be relocated

v) Ensure local access to employment, living wages, and community benefits

w) Locate housing, jobs, and neighborhood services

x) Property parcels should be considered and treated as one whole homogenous zoned area

y) (Consider requiring) solar and hook up of electric vehicles

z) Consider adopting environmentally safe guidelines to prevent garbage and other waste to enter creeks and the Bay

Aesthetics

a) New night time light (light pollution; overly bright lights) and glare which could impact sensitive wildlife species; dark skies policy

b) Concerned with what the structures look like as far as aesthetics; recommend buildings compatible with surrounding area; avoid very large buildings next to marshes

c) Visual cohesion, not only for the visitors but also from the shoreline, on the Bay Trail and for residents in the community

d) Tree replacement plan

Air Quality

a) Air quality impacts of intensified land uses must be analyzed for consistency with the 2004 RWQCB Deed Restrictions; should not assume development of UCB Global Campus because it is uncertain; impacts to areas that are rezoned from light industrial to residential and mixed-use,

b) Air pollutant and GHG emissions from motor vehicle traffic and roadway congestion effect on public health

c) Encourage biking and walking and implement improvements from the Bicycle Master Plan and Pedestrian Plan to mitigate impacts related to air pollution

d) Impact of Bio Rad (second highest emitter within the City) on the surrounding area

e) Need to determine how City will handle issue of whether an EIR can consider hazards posed by existing conditions

Agriculture and Forestry

a) Impacts of conserving dead trees, which can be used by cavity nesting birds (comment specifically noted to be addressed under this topic)

Biological Resources

a) Effects on existing wildlife and habitat, sensitive wetlands and subtidal habitats (adverse impacts of urban runoff, un-remediated contaminated sites, increased population)

b) Address the adverse impacts of not maintaining the current hydrological and water quality conditions that currently attract waterfowl to the area at Meeker slough, and alternatively consider minimizing disruptions to waterfowl by people crossing the slough

c) Alternative methods for routing traffic along Lark Drive because of impacts on coastal prairie

d) Address impacts of any allowed uses along the southern uplands edge of Lot 3 at Campus Bay that might be inconsistent with the 100-foot set-back (for the Biologically Active Permeable Barrier) described in the Draft Final FS/RAP

e) Use buffer land / setbacks to separate trails from the shoreline; transition zone between protected habitat and development

f) Avian fatalities; adopt standards for bird-safe building standards

g) Light and glare and noise which could impact sensitive wildlife species and habitat

h) Consider impacts of daylighting the cement drainage ditch that runs north-south along Regatta Blvd on North Coastal Prairie habitat and alternatively, assess having the daylighted stream bed run where Regatta Blvd currently runs and consider encouraging the UC Campus to daylight the cement drainage ditch

i) Include a riparian meander corridor and plant habitat in Regatta Boulevard's current location as a replacement for existing concrete drainage ditch on the western portion of the Richmond Field Station site

j) Consider the Bay Plan policies that aim to maximize public access opportunities while minimizing significant adverse impacts on wildlife

k) Consider that burrowing owls winter in ground squirrel colonies along the East Bay Shoreline, including the South Shoreline, and alternatively explore the impacts of designating/protecting these areas for the burrowing owls

l) Migrating birds and a large number of ducks

m) Evaluate the environmental impacts of re-zoning of Habitat Area-1 on Lot 3

n) Assess impacts of increased recreational fishing in the Plan Area, and alternatively consider implementing a fishing line recycling program along the shoreline

o) Evaluate the risks associated with potential uses or accidental releases of hazardous materials, and minimize use of rodenticides, herbicides, and pesticides

p) Recommend 3:1 ratio for mitigation of damage to native grassland

q) If the Plan envisions the need for Bay fill the DEIR should discuss Bay Plan Safety of Fills findings and policies

Cultural Resources

a) Please Review Map of San Francisco Bay Region showing distribution of Shellmounds, which have been identified in this area

Geology and Soils

a) Consider potential for liquefaction and subsidence from seismic event, and possible impacts to shoreline

Greenhouse Gases (GHG) and Global Climate Change

a) Address motor vehicle traffic and roadway congestion with associated air pollutant and GHG emissions effect on public health

b) Encourage biking and walking and implement improvements from the Bicycle Master Plan and Pedestrian Plan to mitigate impacts related to GHG (emissions)

c) EIR should not assume development of the Berkeley Global Campus to determine impacts on increased GHG from trip generation, because it is uncertain

Hazards and Hazardous Materials

a) Address effects of contamination on and around the Zeneca site, including former chemical waste ponds and their geotechnical stability (sea level rise impacts); address toxics leaking into lagoons and groundwater; impacts from sea-level rise in the short- and long-term with respect to toxic soil seepage

b) Need to do a full clean up to residential standards on a permanent basis of the contaminated area in the plan; not capping toxic hazards (especially on Zeneca site)

c) Consider impacts from rezoning existing light industrial uses to residential or mixed use; implications of placing residential within the area where petroleum facilities currently operate

d) Reference consistency with the Draft Final Feasibility Study/Remedial Action Plan (Draft Final FS/RAP) and associated clean up efforts to allow proposed future land uses

e) Consistency with existing land use restrictions enforceable by RWQCB

f) Address impacts of any allowed uses along the southern uplands edge of Lot 3 at Campus Bay that might be inconsistent with the 100-foot set-back (for the Biologically Active Permeable Barrier) described in the Draft Final FS/RAP

g) Acknowledge existing uses within Sub-Area 4 (Allied Propane) that propose potential hazard to residential development

h) Evaluate the risks associated with potential uses or accidental releases of hazardous materials, and minimize use of rodenticides, herbicides, and pesticides

i) EBMUD will not inspect, install, or maintain pipeline in contaminated soil or groundwater

j) A permit from CCEHD is required for any well or soil boring prior to commencing drilling activities

k) Any abandon wells (water, environmental, or geotechnical) and septic tanks must be destroyed under permit from CCEHD

l) CCEHD is the LEA for solid waste facilities

m) Hazardous construction and demolition (C&D) materials should be separated from those that can be recycled or disposed

Hydrology and Water Quality

Water Quality

a) Include a riparian meander corridor and plant habitat in Regatta Boulevard's current location as a replacement for existing concrete drainage ditch on the western portion of the Richmond Field Station site

b) Concerned about impacts of runoff water quality on adjacent wetlands and sensitive, fragile habitats

c) Consider adopting environmentally safe guidelines to prevent garbage and other waste to enter creeks and the Bay

d) Address effects of former chemical waste ponds, toxic soil seepage and their geotechnical stability in light of short and long term sea level rise impacts

Sea Level Rise / Flooding

e) Assess potential for flooding due to sea level rise, and provide adaptation strategies for the Bay Trail assess adverse impacts of urban runoff on subtidal habitats and implement a thoughtful stormwater management plan

f) Flooding impacts during heavy rain and high tide need to be reconsidered

g) Consider alternative that considers of marshland was to be modified to allow marshes to expand upward to serve as horizontal levees

h) Analyze sea level rise impacting the open space closest to the shoreline

i) If the Plan envisions the need for shoreline protection then the DEIR should consider applicable Bay Plan policies regarding shoreline protection requirements

j) Assess the potential for sea level rise impacts on the Bay and its shoreline in the Specific Plan area at mid-and-end-of-century; include the worst case sea level rise

n) Refer to publicly available mapping tools, including NOAA's SLR Viewer, OCOF, and Climate Central's Surging Seas (on BCDC website) refer to the CO-CAT updated State of California Sea-Level Rise Guidance Document, March 2013

Land Use and Planning

a) Impacts of the Plan on existing businesses in Harbor Front; implement a buffer zone; consider how well the proposed zoning treats businesses that will now become non-conforming uses; establish a parallel process for addressing non-conforming use issues, i.e., grandfathering in current properties or businesses and/or establish an overlay zone; how would existing businesses (warehouse and office) fit into the business light industrial zoning

b) Reconsider the Land Use Map designations for Sub-Areas 1 and 4, or else the EIR must analyze the potential impacts to new residential and mixed-use uses should rail operations continue; implications of placing residential within the area where petroleum facilities currently operate

c) Look at alternative land use plans that also include minimizing the impacts to the existing businesses there and the rail infrastructure in place there; this is an industrial area so somehow the City needs to identify in the plan alternatives looking at different scenarios

d) A specific plan policy that identifies and supports existing businesses and allowing flexibility short-term and long-term through modifications and permitting processes and this is what many businesses are asking for here

e) Plan seeks zoning changes that could negatively impact businesses and properties today (inconsistent uses)

f) EIR should require as a mitigation measure the recordation of restrictive covenants in the chain of title for all commercial and residential development proximate to Allied's operations;

g) Require covenant noting presence of the railroad traffic and its impacts should be required with all commercial and residential development adjacent to rail yards

h) EIR should consider the sleep disturbing impacts of train horn noise on residential uses, and require an analysis along with CBC noise standards to ensure construction near the rail yards meets a noise mitigation standard sufficient to protect against sleep disturbance

i) EIR needs to address impacts of possible loss of industrial uses

j) Describe relationship of the Southern Gateway concept, the Richmond Southeast Shoreline Specific Plan, and the South Richmond Priority Development Area

k) Goods Movement Plan should logically precede the commitment of the Plan area to potentially incompatible uses

l) demonstrate consistency with policies in the General Plan 2030 (as listed in comment letter), and the Bicycle Master Plan and Pedestrian Plan

m) Re-affirm 2012 General Plan open space designation between the Bay View Avenue, Hoffman Marsh and the Shoreline; set a high standard as a public and natural resource

n) Assess the Plan's consistency with the adopted Eastshore State Park General Plan

o) impacts of building on UP property and to McLaughlin East Shore Park

p) EIR should explain streamlined environmental review for projects in Priority Development Areas

o) The BCDC has a designated Eastshore State Park as an area that should be reserved for waterfront park/beach priority land uses

p) Address the relationship between the Southern Gateway concept, the Richmond Southeast Shoreline Specific Plan, and the South Richmond Priority Development Area, and applicable PDA environmental review regime

q) Conform to local zoning and land use policies to maximum degree; consistency with Point Isabel Sub-Area policies,; in particular, of Land Use Issue I and II, Public Recreation, Other Open Space and Public Access Issue II

r) Analyze the Plan's potential for displacement of low income residents by unaffordable new housing costs

s) From a sustainability perspective, supports what is currently in place as far as land uses

Mineral Resources

No Comments

Noise

a) Impacts to areas that are rezoned from light industrial to residential and mixed-use, including impacts related to relocation of uses and incompatibility btw old and new uses (vibration and noise)

b) EIR should address impacts of ambient noise on future land uses, and impacts of noise to adjacent wetland and shoreline areas

c) Noise impacts could be reduced or mitigated by reducing or eliminating the Mixed-Use Residential and Residential uses in Sub-Area 4

d) Consider impact of concurrent permits and understanding the noise level and impacts for those who work and live in the area

e) EIR should consider the sleep disturbing impacts of train horn noise on residential uses, and require an analysis along with CBC noise standards to ensure construction near the rail yards meets a noise mitigation standard sufficient to protect against sleep disturbance

f) In the underpass plan there was a terrific mitigation of allowing the community to vote about whether they wanted a long-term disruption or a short-term disruption

Population and Housing

a) Potential for displacement of low income residents by unaffordable new housing costs

b) May displace existing local artisans in Sub Areas 1, 3, and 4 by locating near light industrial

c) Need to consider total estimated population in the planned area including the potential number of employees, people living in the area and estimated numbers of guests or visitors

d) Plan should include principles and guidelines for new development to ensure local access to employment, living wages, and community benefits such as a housing stability trust fund

Public Services and Recreation

a) Assess Project and cumulative recreational impacts on the Bay Trail, UP property and McLaughlin Eastshore State Park, from construction, development related traffic and increased users, and new visitors

b) The Specific Plan area is within the Point Isabel Sub-Area and several issues will need to be considered; in particular, consistency with continuing policies of Land Use Issue I and II, Public Recreation, Other Open Space and Public Access Issue II

c) Assess Plan's consistency with the adopted Eastshore State Park General Plan

d) The BCDC has a designated Eastshore State Park as an area that should be reserved for waterfront park/beach priority land uses

e) Plan's should be consistent with the Bay Plan Recreation policies

f) Determine current level of service on Bay Trail and analyze impacts

Transportation/Traffic

Lark Drive

a) identify alternative methods for routing traffic along Lark Drive (because of impacts on coastal prairie)

Traffic/Methods

b) Plan could generate substantially more vehicle trips during AM and PM weekday peak hours at several locations (listed); address the impacts from increased traffic loads to I-580 and local streets

c) Evaluate cumulative growth-inducing impacts, with respect to traffic on roads and trails

d) Impact that traffic from new development would have on Allied's operations

e) The EIR should include what might happen if they shorten some of the development so they are not extending it over a long period of time

f) Provides list of items to include/analyze in the Traffic Impact Study (TIS)

g) EIR must address cumulative impacts of traffic within five miles of site

Regional System / Roadways

h) Impacts to Richmond as a regional transportation hub; EIR needs to consider congestion on local freeways and feeder streets, and indirect impacts that would incite pressure to curtail goods movement in and around the Port

i) A Goods Movement Plan for the greater port area needs to be completed to reduce impacts to regional transportation, and should logically precede the commitment of the Plan area to potentially incompatible uses

j) Neither the Plan, nor the Connectivity Plan for South Richmond provide data regarding long-term growth of regional transportation, so the EIR cannot adequately address these impacts

Pedestrian/Bicycles

k) Recognize and mitigate significant transportation impacts on Bay Trail users

l) Analyze secondary impacts on pedestrians and bicyclists resulting from traffic impact mitigation

m) Project should encourage biking and walking and implement improvements from the Bicycle Master Plan and Pedestrian Plan (as listed in letter) to mitigate impacts related to traffic Rail

n) Include language in the plan that ensures future development adjacent to or near the planned railroad right-of-way is planned with the safety of the rail corridor in mind

o) Mitigation measures to consider include: the planning for grade separations for major thoroughfares, improvements to existing at-grade crossings due to increase in traffic volumes, and continuous vandal resistant fencing to limit trespassers onto ROW

TDM

p) Locate housing, jobs, and neighborhood services together to reduce VMT

q) Develop transportation demand management (TDM) policies to reduce VMT

Agencies

r) City is responsible for all mitigation/improvements to the State Highway System (SHS)

s) City works with WCCTAC, CCTA, and Caltrans to mitigate regional impacts using traffic impact fees

t) Caltrans requests coordination effort to ensure transportation impacts are adequately addressed

u) Note that any work or traffic control that encroaches onto the State ROW must obtain an encroachment permit from Caltrans

v) CPUC requires approval for the construction or alteration of rail crossings and has exclusive power over the design, alteration, and closure of all crossings in CA

Utilities and Service Systems

w) The planning area is 1.5 miles from a recycled water transmission line, therefore extensive opportunities to use recycled water exist

x) Individual developments within the specific plan should incorporate water conservation measures

y) If any recycling facilities are proposed, include LEA in the review process to ensure compliance with solid waste regulations

z) Substantial construction and demolition (C&D) waste could result from this project. Hazardous C&D materials should be separated from those that can be recycled or disposed

aa) CCEHD is the LEA for solid waste facilities; prospective operators should contact CCEHD for requirements

bb) Any extension of water service shall be at the project sponsor's expense

Cumulative and Growth Inducing

a) The Campus combined with the SSP is an extremely large development and an addition to the expanded area of the South Shoreline plan; It is important that all potential impacts are addressed

b) Impacts of the Plan, in combination of the Berkeley Global Campus Plan, on the Bay Trail and McLaughlin Eastshore State Park

c) Evaluate cumulative growth-inducing impacts, with respect to traffic on roads and trails

d) Address cumulative impacts of traffic within five miles of site

Alternatives

a) Identify alternative methods for routing traffic along Lark Drive because of impacts on coastal prairie

b) Analyze an alternative that assumes continued operations of rail yard which will continue to exist and maintains adequate buffer zones around the switching yards; Reconsider the Land Use Map designations for Sub-Areas 1 and 4

c) Alternative that minimizes the impacts to the existing businesses

d) a range of feasible alternative land use configurations which relocates residential land away from the railway

e) Alternatives looking at different scenarios since this is an industrial area

f) Consider the use of buffer land to separate trails from the shoreline

g) Consider adopting a plan to allow marshes to expand upward to serve as horizontal levees

General / Other Non-CEQA

a) Impact new development on rail operations, which would lead to social, political, economic, and regulatory pressure to limit operations

b) Re-examine the economic viability of moving the BNSF Richmond Railroad Switching Yard and replacing that with parks and residential, which would be considered a land taking

c) Plan does not provide protection for existing small businesses or the artisan community

d) Consider the physical impact on the environment of increased property values; industry is often compelled to flee to exurbs and services needed to support highly developed area have to be imported for lack of room to locate in the immediate vicinity

e) Concerned that area organizations (Council of Industries) and businesses have not seen the draft Plan and City does not seem to be seeking public input on process; It is necessary to make the changes to the overlay language, and those changes need to include input from all of the community; could support the Plan if the language was included and a draft was made available for review prior to being presented

f) Businesses have not seen the overlay district language they were promised, and are concerned about possible effects on zoning

g) Developer would [not] spend millions to buy the land and turn it into a park, nor will railroads give up their operations and build a park

h) Whether the City would spend millions to buy the yards and turn them into parks, as the City is broke and cannot afford the price or the political fallout in doing so; no one will want the City to develop another park in Marina Bay

i) Concerned with creation of blight

j) Given the lack of a good management plan which the City has needed for some time, they think the connectivity plan is premature and unbalanced

LAW OFFICES OF PAUL M. MINAULT
475 GATE 5 ROAD, SUITE 324
SAUSALITO, CA 94965

TELEPHONE: 415-332-3350
FAX: 415-331-1321

E-MAIL:
pminault@earthlink.net

October 30, 2014

BY EMAIL:

Richard Mitchell, Director
Department of Planning and Building Services
450 Civic Center Plaza, P.O. Box 4046
Richmond, CA 94804-1630

Re: Scoping for the Richmond Southeast Shoreline Specific Plan EIR

Attn: Hector Rojas

Dear Mr. Mitchell:

I write on behalf of Allied Propane in response to the City's request for public input on scoping issues regarding the Environmental Impact Report for the Richmond Southeast Shoreline Specific Plan (the "Plan").

1-1

Our primary concern is the impacts of the Plan on existing businesses in Harbor Front, including Allied Propane. City planning staff have stated that the Plan will include regulations to protect existing businesses using an overlay zone, but have provided no details of how this will function. Since the Plan is likely to result in land use conflicts between proposed new residential uses and existing industrial uses, the means that the Plan proposes to resolve these conflicts will be crucial and needs to be given careful study in the EIR. We again call for a buffer zone, at the very least as a component of a phasing plan, between South 49th and 48th streets to separate existing industries from proposed development on the Zeneca site

1-2

Our longstanding concern, reflected in our comments on the General Plan and EIR and on other plans and development proposals in the Plan area, is the impact that new development, and particularly new residential development, will have on Allied's operations. Allied is the sole-source distributor for propane from Chevron's Richmond refinery. Propane is an EPA-designated green fuel, and all of Allied's delivery trucks are powered by propane. Allied is therefore a type of green industry, a sector of the economy upon which the City has staked its future. Allied has been at its present location since 1967. At this location, Allied has 55 employees and serves customers throughout the 9-county Bay Area and beyond seven days a week, 24 hours a day. On

a typical day, Allied's operations may generate upwards of 250 vehicle round trips, including employee commuting, truck deliveries, and direct customer visits.

The new development proposed in the plan is immediately adjacent to Allied's operation and is certain to lead to social, political, economic and regulatory pressure to limit the hours and volume of Allied's operations and seek to compel Allied to relocate outside the Plan area. If these pressures are effective in reducing the volume and limiting the times of Allied's operations, this would likely lead to similar pressures being exerted on other businesses in Harbor Front, and this would constitute a significant environmental impact on local businesses. This possibility needs to be addressed in the EIR.

1-3

The EIR should also require, as a mitigation measure, the recordation of restrictive covenants in the chain of title for all commercial and residential development reasonable proximate to Allied's operation. Such a covenant, to be drafted by Allied Propane and reviewed by city staff, would bind affected property owners and their successors and lessees, would acknowledge the presence of Allied's operation, and would protect Allied from any attempt to halt or interfere with its operations that comply with all applicable laws and regulations. Requiring such a covenant, and ensuring that it is effective as a mitigation measure, also demonstrates that the City has no covert agenda to use the Plan to foment land use conflicts as a means to compel Allied and other businesses to relocate outside the Plan area. The use of such covenants is also recommended in the General Plan.

1-4

We believe that pursuing a plan for significant new development in the Plan Area without first completing a Goods Movement Plan for the greater port area, a plan called for in the General Plan and which should logically precede the commitment of the Plan area to uses that are potentially incompatible with the growth of the Port, is inconsistent with the General Plan. This inconsistency needs to be addressed in the EIR.

Richmond, including the Port of Richmond, is a regional hub for goods movement, a role that the General Plan recognizes. The Plan, however, is narrowly focused on implementing currently fashionable trends in urban neighborhood planning and streetscaping, without regard to the part that Richmond plays in the greater Bay Area economy. If the Plan disregards Richmond's role as a regional transportation hub, as seems likely, this is will result in significant impacts to regional transportation that need to be examined in the EIR. These include direct impacts, such as congestion on local freeways and feeder streets, as well as indirect impacts, such as social, economic, political and regulatory pressure to curtail goods movement uses in and around the Port of Richmond.

1-5

City staff have explained that the EIR will cover both the Plan and the Connectivity Plan for South Richmond. The Connectivity Plan has not attempted any sort of forecasting of regional transportation growth and includes no comprehensive review of the role of, or projected growth

in Richmond's port area. Instead, like the Plan, it appears to be narrowly focused on providing urban amenities to transportation corridors in the Plan Area, without regard to the long-term effects these amenities will have on regional transportation modes and economics. In the absence of solid data regarding long-term growth of regional transportation and Richmond's role in this component of the Bay Area's overall economy, it is inconceivable that the EIR can competently address the impacts of either of the plans on the goods movement sector of the Bay Area economy. We consider this to be a very significant vulnerability of the combined plans and the EIR.

1-6

The Plan and the EIR should explain the relationship between the Southern Gateway concept developed in the General Plan, the Richmond Southeast Shoreline Specific Plan ("RSSSP") area and its proposed uses, and the South Richmond Priority Development Area ("PDA") and the particular environmental review regime that is applicable to PDAs. Without such an explanation, citizens cannot understand how the Southern Gateway morphed to the RSSSP, which in turn is incorporated into the PDA, under which impacts and follow-on projects are analyzed under a different analytical regime than is typical under CEQA.

1-7

The Plan will have the effect of increasing property values in and around the Plan area. Industrial uses typically need lower property values to survive development pressure. One impact of the Plan will be the loss of industrial uses in and around the Plan area, and the transfer of these uses to more remote locations in the city or surrounding areas of the county with lower property values, resulting in more vehicle miles travelled for these industries to continue operations. The environmental effects of this loss of industrial uses in the Plan area, and the resulting transportation impacts, need to be considered in the EIR.

1-8

The EIR also needs to consider the environmental impacts resulting from the Plans' lack of any phasing component to ensure orderly development. We have been informed by City planning staff that they believe phasing guidance is not necessary in the Plan because market forces will handle phasing issues. Leaving phasing to the market means simply that developments will be built anywhere anytime so long as developers think they can be sold—period. Overly ambitious development projects in other areas, notably Hercules show the limitations of this approach. The likely consequences of failing to include a phasing aspect in the Plan, including imbalances between residential development and supporting commercial services or utility and transportation infrastructure, need to be considered in the EIR in order to forestall the likely negative consequences of the City's misguided approach to phasing.

1-9

The environmental review will also need to consider the effects of contamination on and around the Zeneca site on new and existing development. This review needs to encompass not only the Zeneca site itself, but adjacent sites which have been impacted by contaminants from the Zeneca site that have been transported off the site or carried offsite in contaminated groundwater. Of particular concern to Allied is the contaminated groundwater under its property that came

from the Zeneca site. Allied is also concerned about contamination in the former chemical waste ponds, immediately adjacent to Allied, which contains toxic metals and pesticides at levels that the most recent reports have characterized as constituting an unacceptable risk. The EIR also needs to consider the geotechnical stability of these ponds for use as stormwater holding ponds, as Zeneca is proposing, in light of the fact that projected sea level rise will reach the top of the ponds, meaning that storm surges and tsunamis would overtop and flood the ponds and subject them to violent wave action.

I-10

Finally, the EIR should explain the streamlined environmental review for projects in Priority Development Areas so that citizens and stakeholders are clear about the nature and importance of the environmental review for the Plan and the limited environmental review they can expect at the project level.

Sincerely yours,

Paul Minault

Cc: Stanley Teaderman
Dustin Kaiser
Steve Kaiser
Katrinka Ruk, Council of Industries

Marisa Blackshire
Senior General Attorney

BNSF Railway Company
3770 East 26th Street
Los Angeles, CA 90058
323-267-4103 Office
323-267-4157 Fax
marisa.blackshire@bnsf.com

October 29, 2014

City of Richmond
Planning and Building Services Department
Attn: Hector Rojas, Senior Planner
450 Civic Center Plaza
P.O. Box 4046
Richmond, CA 94804-1630
hector_rojas@ci.richmond.ca.us

VIA EMAIL

Re: Notice of Preparation of an Environmental Impact Report for the Richmond South Shoreline Specific Plan

Dear Mr. Rojas:

BNSF Railway Company (BNSF) appreciates the opportunity to comment on the Notice of Preparation (NOP) for the Richmond South Shoreline Specific Plan (SSSP) Environmental Impact Report (EIR). After reviewing much of the material on your website and attending or having representatives in attendance at many of the public hearings and workshops on the SSSP, BNSF provides this letter to: (1) reiterate concerns about the current version of the "Recommended Land Use Map" and how it treats existing rail operations[1]; and (2) to remind the City that, should it choose to go forward with the current proposal, it must carefully and realistically analyze impacts associated with current and future rail operations in the EIR for the SSSP.

2-1

As the City is well aware, the SSSP area contains no less than three existing rail switching yards that are operated by the three separate railroads (BNSF, Union Pacific and Richmond Pacific Railroad) that provide service through the South Shoreline area of Richmond daily. As the City acknowledges in its SSSP documents, the switching yards are currently operating at their full capacity and operations in the SSSP area are critical to the movement of trains in this region. This fact should not be trivialized. As common carriers, all three railroads have a legal obligation to serve their numerous customers and it is important that the City recognize how critical operations in the SSSP area are to this undertaking.

[1] BNSF also supports comments by the West Contra Costa County Council of Industries on this issue and contained in letters to the Planning Commission and the City Council dated April 9, 2014 and May 27, 2014, respectively.

Despite the fact that the City appears to fundamentally understand the importance of rail operations in the SSSP area[2], the Recommended Land Use map still envisions that only a single rail line is maintained through the South Shoreline area, and that the existing switching yard(s) are relocated. It also changes the zoning in the area from light industrial, to residential, open space and mixed use designations that are wholly incompatible with existing rail operations. Even the short-term implementation plan, which assumes that the switching yards have not yet been relocated, proposes incompatible residential and mixed-use development adjacent to the existing yards.

2-2

First, BNSF would like to confirm that it has no intention of relocating its existing switching yard in either the short or long-term. Moreover, even if relocation were a possibility (it is not), the idea that switching yards operated by separate competitive business entities could be consolidated and/or relocated to a single alternative site is inconsistent with reality and operations that serve a variety of different customers for different purposes and on different schedules. For these reasons, the assumptions underlying the Recommended Land Use Map are a fiction and zoning changes proposed based on these flawed assumptions are inconsistent with a realistic take on potential future development in the SSSP area. BNSF respects the City's prerogative to move forward with the SSSP, but from BNSF's perspective the City's current efforts are an exercise in futility.

2-3

Notwithstanding the above, should the City choose to proceed with the EIR, BNSF urges it to reconsider the Land Use Map designations for Sub-Areas 1 and 4. It is unclear why the SSSP couldn't simply be amended to maintain the current light industrial zoning designation at the yards and at properties in their immediate vicinity. To the extent the City opts not to consider this recommendation, however, BNSF reminds the City that the EIR must appropriately analyze the environmental impacts associated with proposed zone changes and the potential environmental impacts (noise, land use, traffic, etc.) that could be associated with citing residential and mixed uses in Sub-Areas 1 and 4 should rail operations continue. Moreover, it suggests that the EIR analyze an Alternative that assumes continued operations and maintains adequate buffer zones between the switching yards and incompatible uses, particularly residential uses.

2-4

2-5

Finally, while BNSF understands that the purpose of current comment period is to solicit input on the scope of the EIR for the SSSP Project, BNSF also asks the City to consider the potential economic impacts of the current version of the SSSP. Existing industrial businesses (including the railroads) in the SSSP area contribute greatly to the City's economy. In BNSF's assessment, the SSSP could be successful absent the need to

[2] "After further discussions with the project team's rail consultant and local operators, it was agreed that the elimination of the rail line as presented at the third public workshop was not a feasible alternative. The surrounding users still rely heavily on the existing rail line and the 'Y' connection between the BNSF and UPRR is an extremely important connection for the movement of trains along both lines. . ." South Shoreline Specific Plan: Recommended Land Use: March 2014, p. 2.

BNSF RAILWAY

2-6

disrupt this thriving sector of the City's economy. As such, the City might also be served by analyzing an Alternative that eliminates portions of Sub-Areas 1 and 4 altogether and, which realizes the City's vision without compromising businesses and property values in an area that is destined to include at least industrial rail uses for the foreseeable future.

Thank you for your consideration. Should you have any questions about the above, please do not hesitate to contact me.

Sincerely,

/s/

Marisa Blackshire

DEPARTMENT OF TRANSPORTATION
111 GRAND AVENUE
OAKLAND, CA 94612
PHONE (510) 286-6053
FAX (510) 286-5559
TTY 771
www.dot.ca.gov

Serious Drought.
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October 17, 2014

CCVAR019
SCH# 2014092082

Mr. Hector Rojas
City of Richmond
450 Civic Center Plaza
Richmond, CA 94804

Dear Mr. Rojas:

South Shoreline Specific Plan – Notice of Preparation

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the project referenced above. We have reviewed the environmental document and have the following comments to offer.

3-1

Lead Agency
As the lead agency, the City of Richmond (City) is responsible for all project mitigation, including any needed improvements to State Highway System (SHS). The project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures.

3-2

Traffic Impact Study
The environmental document should include an analysis of the impacts of the proposed plan on the SHS. Please ensure your analysis includes the Interstate (I-) 580 and the State corridor and all ramps and interchanges in the plan's area. Pedestrian and bicyclist volumes generated by the project should also be accounted for in the plan area. Please ensure that a Traffic Impact Study (TIS) is prepared providing the information detailed below:

1. Information on the plan's traffic impacts in terms of trip generation, distribution, and assignment. The assumptions and methodologies used in compiling this information should be addressed. The study should clearly show the percentage of project trips assigned to State facilities.

2. Current Average Daily Traffic (ADT) and AM and PM peak hour volumes on all significantly affected streets, highway segments and intersections.

3. Schematic illustration and level of service (LOS) analysis for various duration and buildout scenarios.

4. Calculation of cumulative traffic volumes should consider all traffic-generating developments, both existing and future, that would affect the SHS being evaluated.

5. The procedures contained in the 2010 update of the Highway Capacity Manual should be used as a guide for the analysis. We also recommend using Caltrans' *Guide for the Preparation of Traffic Impact Studies;* it is available on the following web site: www.dot.ca.gov/hq/tpp/offices/ocp/igr_ceqa_files/tisguide.pdf

6. Mitigation measures should be identified where plan implementation is expected to have a significant impact. Mitigation measures proposed should be fully discussed, including financing, scheduling, implementation responsibilities, and lead agency monitoring.

We look forward to reviewing the TIS, including Technical Appendices, and environmental document for this project. Please send two copies to the address at the top of this letterhead, marked ATTN: Keith Wayne, Mail Stop #10D.

Early Consultation

As the owner and operator of the SHS, Caltrans' top priority is to ensure safety for the traveling public. Caltrans would like to coordinate and meet with the City to coordinate to ensure transportation impacts are adequately addressed in the Draft Environmental Impact Report. Specifically, the specific plan will increase the number of residential units, commercial and office square footage and significantly impact state facilities that are already operating at poor LOS. As a result, we encourage the City to coordinate preparation of the study with our office, and we would appreciate the opportunity to review the scope of work.

3-3

Traffic Impact Fees

To ensure any necessary SHS improvements from increased demand are funded, we recommend the City work with the WCCTAC committee, the Contra Costa Transportation Authority (CCTA) and Caltrans to help mitigate regional impacts resulting from the proposed plan. In addition to mitigation projects or programs, please identify traffic impact fees to be used for plan mitigation. Development plans should require traffic impact fees based on projected traffic and / or based on associated cost estimates for bicycle, pedestrian, or public transportation facilities necessitated by development. Scheduling and costs associated with planned improvements on the State right-of-way (ROW) should be listed, in addition to identifying viable funding sources correlated to the pace of improvements for roadway improvements, if any.

3-4

Vehicle Trip Reduction

Caltrans appreciates the City locating needed housing, jobs and neighborhood services near major mass transit centers, with connecting streets configured to facilitate walking and biking,

3-5

as a means of promoting mass transit use and reducing regional vehicle miles traveled and traffic impacts on the State highways.

3-6 We also encourage you to further develop Travel Demand Management (TDM) policies to encourage usage of nearby public transit lines and reduce vehicle trips on the SHS. These policies could include lower parking ratios, car-sharing programs, bicycle parking and showers for employees, and providing transit passes to residents and employees, among others. For information about parking ratios, see the Metropolitan Transportation Commission (MTC) report *Reforming Parking Policies to Support Smart Growth* or visit the MTC parking webpage: http://www.mtc.ca.gov/planning/smart_growth/parking.

3-7 In addition, secondary impacts on pedestrians and bicyclists resulting from any traffic impact mitigation measures should be analyzed. The analysis should describe any pedestrian and bicycle mitigation measures and safety countermeasures that would in turn be needed as a means of maintaining and improving access to transit facilities and reducing vehicle trips and traffic impacts on State highways.

3-8 In addition, please refer to "Main Street, California - A Guide for Improving Community and Transportation Vitality," for samples of Caltrans recommended policies and designs guidelines to create vibrant and sustainable main streets. Doing so will encourage use of alternate forms of transportation, reduce regional vehicle miles traveled, and lessen future traffic impacts on the state. This can be found at the following web site: http://www.dot.ca.gov/hq/LandArch/mainstreet/main_street_3rd_edition.pdf

3-9 ***Encroachment Permit***

Please be advised that any work or traffic control that encroaches onto the State ROW requires an encroachment permit that is issued by Caltrans. To apply, a completed encroachment permit application, environmental documentation, and five (5) sets of plans clearly indicating State ROW must be submitted to the address below. David Salladay, District Office Chief, Office of Permits, California Department of Transportation, District 4, P.O. Box 23660, Oakland, CA 94623-0660. Traffic-related mitigation measures should be incorporated into the construction plans prior to the encroachment permit process. See this website for more information: http://www.dot.ca.gov/hq/traffops/developserv/permits.

Should you have any questions regarding this letter, please contact Keith Wayne of my staff by telephone at (510) 286-5737, or by email at Keith_Wayne@dot.ca.gov.

Sincerely,

ERIK ALM, AICP
District Branch Chief
Local Development – Intergovernmental Review

c: Scott Morgan, State Clearinghouse

Hector Rojas, Senior Planner
City of Richmond
Planning and Building Services Department
450 Civic Center Plaza
P.O. Box 4046
Richmond, CA 94804-1630

RECEIVED
OCT 30 2014
CITY OF RICHMOND
PLANNING AND BUILDING

October 29th, 2014

Comment on the Scoping Analysis of the South Shoreline Specific Plan

On behalf of our three organizations and thousands of residents who are members of ACCE and CCISCO, we thank you for the opportunity to comment on the scope of the Environmental Impact Report ("EIR") for the proposed Specific Plan for the South Shoreline. We look forward to working with the City of Richmond as its environmental analysis continues, but these initial comments should serve to direct special attention to the analyzing the potential impacts of the proposed plan.

4-1 We would like to request that the analysis look specifically at the plan's effect on housing costs for low income tenants, the provision of affordable units, and potential for low income tenants to be indirectly displaced by unaffordable housing costs. This is critical given the ongoing trend of low income residents being displaced from the urban core and inner ring of the Bay Area region, and resettling in the periphery where affordable housing costs can be found. This pattern can have significant environmental effects, since the bulk of jobs available are in the core areas, requiring residents on the periphery to commute back in. These longer commutes can be avoided if city planning and development take into consideration and mitigate these effects.

4-2 We also urge you to look at the local employment and other benefits to local residents in your analysis. The plan should have principles and guidelines for new development to ensure local access to employment, living wages, and community benefits such as investment in a housing stability trust fund.

Thank you for your attention to these issues. We look forward to ongoing collaboration.

Cristina Hernandez
Contra Costa Interfaith Supporting Community Organization

David Sharples
Alliance of Californians for Community Empowerment

Eli Moore
Haas Institute for a Fair and Inclusive Society

Citizens for East Shore Parks

Mail: PO Box 6087, Albany, Ca 94706 Office: 520 El Cerrito Plaza, El Cerrito CA 94530
Ph: 510. 524.5000 Fax: 510.524.5008 eastshorepark@hotmail.com www.eastshorepark.org

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Emeritus Co-Chair
(1914 - 2002)

Sylvia McLaughlin
Emeritus Co-Chair
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Hon. Rochelle Nason

Executive Director:
Patricia V. Jones
Administrative Assistant
Cameron Wilson

October 30, 2014

Hector Rojas
City of Richmond Planning & Building Services
P.O. Box 4046; 450 Civic Center Plaza, Richmond, CA 94804
via email: Hector_Rojas@ci.richmond.ca.us

Re: Richmond South Shoreline Specific Plan Scoping Comments

Dear Mr. Rojas:

Citizens for East Shore Parks (CESP) would like to thank the City of Richmond for providing us the opportunity to comment on the California Environmental Quality Act ("CEQA") scoping documents for the proposed Richmond South Shoreline Specific Plan (Plan). CESP is an environmental non-profit organization dedicated to creating parks and open space along our East Bay shoreline. CESP was instrumental in creating the McLaughlin Eastshore State Park which runs along the west side of the South Richmond Shoreline.

CESP works to make sure that the public has access to places to relax, have fun and enjoy nature. To do that, we must protect the fauna and the habitat where special vegetation grows. Because this property is adjacent to what little is left of our undeveloped San Francisco Bay shoreline, it is important to strive to see that future developments set a high standard as a public and natural resource for generations to come.

As such, the CESP has a substantial interest in ensuring that proposed developments in this area do not have a detrimental effect on the Bay Area wildlife, habitats and the public's health and access to the shoreline.

Improvements to the City of Richmond South Shoreline that clean up brown fields, improve the use of old industrial areas, increase public transportation, and allow people to enjoy the bay and its wildlife, are highly desirable, but impacts on wildlife of new developments must also be considered. Therefore, CESP recommends that the South Shore Specific Plan incorporate or consider the following steps to 1) reduce the current detrimental conditions of the area and 2) minimize any new negative cumulative effects.

A. The Specific Site and its Immediate Borders

We expect that the Plan will play a positive conservation role in both avoiding degradation of existing natural resources and improving and expanding them.

To these ends, the Plan needs to analyze alternatives that:

5-2 A1. Do not require unacceptable or unmitigated degradation of existing site habitat and natural resources.

5-3 A2. The Plan includes highly sensitive and fragile wetlands that are intertwined throughout the Planned Areas. Biological studies performed as part of the restoration of East and West Stege Marshlands identified that State and federally endangered species were present. The Baxter Creek Corridor, Hoffman Marsh, Meeker Slough, among other sensitive wetlands are some of the last natural resources left along this part of the shoreline. The EIR must minimize negative impacts upon natural areas and wildlife habitats from both buildings and potential increased human access. Specifically, the EIR must also analyze the impact of any development on the adjacent wetlands. Development close to wetlands can have a devastating impact on wetland wildlife due to human intrusion, domestic pet intrusion, and the intrusion from vermin creatures such as rats that are attracted to any human development. The entire area of the shoreline of Richmond must be analyzed for these impacts from any proposed development.

5-4 A3. Conform to emerging "bird safe" design standards. The San Francisco Bay is an important component of the Pacific Flyway and is a Western Hemisphere Shorebird Reserve Network site of hemispheric importance. The Plan's area includes and is adjacent to areas of marsh and bay that are essential to many species of birds that are present in large numbers year-round, on fall or spring migration, or throughout the winter.

5-5 A4. Integrate newly-built natural or park-like areas into the overall site design, with special attention to fragile wetlands.

5-6 A5. Recommend buildings that do not dominate or overwhelm their immediate surroundings in such respects as: height, massing/FAR, facing materials, night illumination, view corridors, noise, etc.

5-7 A6. Conform to local zoning and approved local land-use policies to the maximum degree feasible. Respect the community and the 2030 General Plan and reaffirm the open space designation between Bayview Ave., Hoffman Marsh and the shoreline.

5-8 A7. Include a credible plan to remove (Not cap) any existing toxic hazards, to residential standards on a permanent basis of the contaminated area in the Plan particularly on the Zeneca site.

5-9 A8. Include a credible plan to address the existing toxics leaking into the lagoons and groundwater.

5-10 A9. Accommodate the potential impact of future sea-level rise, in the short-term and long-term, in particular to include the impacts of sea level rise on the potential release and spread of contaminants that are known to exist in this area. Inundation of contaminated lands will mean that water will cover areas that contain toxics. The EIR must address the ability of caps and seals to withstand complete and continued inundation due to sea level rise, the amount, if any, of any seepage or discharge of the toxics from the site due to sea level rise, and the impacts of such seepage on the Bay and the flora and fauna of the Bay.

5-11 A10. Include an analysis of creating a riparian meander corridor and appropriate plant habitat in Regatta Boulevard's current location which will result in a native-vegetated wetland habitat

to provide the added ecosystem service function of street runoff water cleansing before it enters into the Bay at Meeker Slough.

A11. The EIR needs to identify alternative methods for keeping traffic from going onto Lark Drive within the UC Field Station site because of the impacts on the coastal prairie from such a roadway. The EIR must also analyze all impacts to the coastal prairie from traffic using Lark Drive.

A12. The EIR should provide for a transition zone between the protected zone and development in order to ensure full protection of habitat.

A13. Recommend a 3:1 mitigation ratio for any damage done to native grassland habitat as a result of actions prior, during and after construction.

A14. Address the cumulative impacts of various pollutants that will enter the area once it is developed:

- Polluted runoff water from rooftops, parking areas, herbicides and pesticides and other pollutants from all developments.
- Illegal dumping of motor oil, radiator fluid, garbage and other debris into the creeks and marshlands and other unnamed wetlands and surrounding habitat areas and upland habitat areas.
- Introduction of domestic cats and dogs that will prey upon endangered species and other birds.
- Increased noise from vehicles and humans disrupting wildlife and human intrusion into sensitive and fragile wetlands and creeks.
- Increased nighttime lighting from residences and commercial areas as it impacts birds and other wildlife.

B. The Surrounding Community

B1. The EIR should evaluate the growth-inducing and cumulative impacts of this plan, especially in terms of increased traffic on roads and trails. Specifically, the EIR must address cumulative impacts of traffic in an area at least five miles from outer perimeter of the site to deal with traffic impacts in Richmond, on the Richmond San Rafael Bridge and El Cerrito.

B2. The EIR should address the motor vehicle traffic and congestion on roads with associated air pollutant and greenhouse gas emissions has the potential for very significant impacts

B3. The EIR should Plan for cumulative impacts and protect the much used Bay trail along the Richmond and surrounding Bay Shoreline.

CESP joins in the thoughtful comments submitted by our supporting organizations on this NOP as our own. We ask that you give those letters and verbal comments careful consideration and adopt their comments as you move forward. The letters/comments we support include:

- Sierra Club, Oct 30, 2014
- Trails for Richmond Action Committee (TRAC), Oct 29, 2014
- Richmond Annex Neighborhood Council (RANC), Oct 30, 2014
- California Native Plant Society, East Bay Chapter (EBCNPS), Oct 16, 2014 and Oct. 30, 2014
- Richmond Southeast Shoreline Area Community Advisory Group Toxics Committee (RSSACAG), verbal comments on Oct 16, 2014
- Golden Gate Audubon Society (GGAS), Oct 30, 2014

We look forward to a Plan that respects the Park and the shoreline in terms of habitat conservation, public access and community health.

CESP appreciates the consideration of these comments and will look forward to following this Plan in the future. Please do not hesitate to contact us with questions at pjones@eastshorepark.org or by phone at (510)524-5000.

Sincerely,

Patricia V. Jones

Patricia Vaughan Jones
Executive Director

CC: CESP Board, Sierra Club, EBCNPS, RANC, RSSA CAG, GGAS, TRAC
Mayor Gayle McLaughlin, Richmond City Council, Richard Mitchell

THE COUNCIL OF INDUSTRIES
P.O. BOX 70088
Pt. Richmond, CA 94807
(510)215-9325 office (510)215-9029 fax
www.councilofindustries.org

October 29, 2014

BY EMAIL:

Richard Mitchell, Planning Director
Hector Rojas, Senior Planner
Planning Department
City of Richmond
450 Civic Center Plaza
Richmond, CA 94804

Re: Notice of Preparation of Environmental Impact Report for Richmond South Shoreline Specific Plan

This letter is being submitted on behalf of the Council of Industries' (COI) businesses in response to the City's request for public input on scoping issues regarding the Environmental Impact Report (EIR) for the Richmond South Shoreline Specific Plan (the "Plan").

6-1

The foremost concern is that the COI and other impacted businesses have not seen the draft Plan. This was promised to be delivered to the participants by August, 2014. What was delivered were maps and definitions given to some of the businesses at an October 14, 2014 meeting – but, which were *not* included in the presentation given to the public on October 16, 2014. It is concerning that the City is asking for public input to identify the environmental impacts of the plan on land-use decisions that could impact current businesses future and future businesses interest in locating to the City when no plan has been presented for review.

In regards to the minimum information that has been presented:

6-2

1) The Plan's land use map indicates that the 23rd Street and the Safeway rail yards, and, the Siberia Lead which serves them, have been removed and converted into parks – these need to be placed back onto the maps as the rail companies have not relinquished these properties to the City for rezoning, nor are they considering relocating these yards.

(a)The maps indicate the rail yards have been replaced with a park, surrounded by residential. The replacing a working rail yard with a park is a lesser economically valued use of the land. This impact needs to be reviewed. It also portrays an inaccurate picture of potential property development based on unknown future market demands.

(b) With the City of Richmond private and public Port being noted in the General Plan for increased goods movement, removing two of the three switching yards for three railroads- BNSF, Union Pacific and Richmond Pacific Railroad is contrary to the General Plan. This is also being considered before a Goods Movement Plan has been prepared.

(c) Consideration of locating residential adjacent to rail yards requires a thorough review of the impact that noise, vibrations, lights, etc. would have on local residents.

(d) A covenant – noting the presence of the railroad traffic and its impacts should be required with all commercial and residential development adjacent to the rail yards.

(e) Economic impacts on the City need to be studied regarding replacing current and increased goods movement with residential.

2) The Connectivity Plan should only be adopted after a Goods Movement Plan has been completed. Increased Port business, rail and truck service to the Port businesses and on the local roads must be included in the Connectivity Plan and could potentially result in street relocations and/or restrictions.

3) The General Plan supports the protection and growth of the Arts and local artisans, yet in Sub Area 1 and Sub Area 3 & 4 we find local renowned artists who will be impacted by locating residential near their light industrial businesses. This could result in their relocating to other areas of Richmond or leaving the City.

4) Those businesses – including the Artisans – who are rezoned from light industrial (M-1 and M-2) to residential and mixed use will result in several issues:

(a) Inability to expand their business on their own property as it would be a nonconforming use.

(b) Inability to expand their business by purchasing property for the same reason as stated in (4)(a).

(c) Increases in insurance due to changes in zoning.

(d) Increases in cost of loans or inability to obtain loans due to the rezoning of property.

(e) The zoning map shows parcels – including that of Allied Propane – that are dissected into two different and conflicting land use zones – how does this impact the owners in regards to the same issues noted in (4)(a-d)?

(f) The General Plan calls for the entire Plan area to be zoned light industrial but the Plan has no light industrial. This conflicts with the General Plan.

(g) Residential and mixed use is being placed directly adjacent to light industrial uses without consideration of any buffer zones. This includes zoning adjacent to artisans whose businesses include a foundry, warehouses, and manufacturers of solar equipment. What would the impact be on residential uses in regards to proximity to truck and forklift traffic, noise, odors, etc.?

(h) Should these business relocate to another city – what is the economic impact on the City of Richmond regarding – property taxes, sales taxes, use taxes, etc. And – how will these changes impact the cost of utilities and City services to this area?

(i) The UCB and LBNL plan provides for a working R&D center which would not be compatible adjacent to residential or mixed use – as LBNL has stated in several meetings.

(j) The same plan provides for much needed light industrial areas to support incubator manufacturing and supporting start-ups as seen in the San Francisco Mission Bay plan, however, the Plan is replacing light industrial with residential / mixed use.

(k) The Plan needs to include the impact of manufacturing leaving this area and relocating to other parts of the City or to other cities.

6-9

5) In previous presentations, the City described a phase-in plan whereby development / zoning is changed based on the market demands. We would like to see this included with review benchmarks to determine if the City is in alignment with the market and the UCB/LBNL development phases. What is the impact on the environment without such a plan? Planning for increased residential that the market doesn't support leaves vacant property which was once a viable light industrial or artisan business area that provided a tax base for the area.

6-10

6) The overlay zone was discussed by City Staff and was promised for review by the impacted businesses but to-date has never been presented. Staff has stated that their intent is to maintain the current zoning of M-1 for current businesses - which would also allow for the City's revenue to be protected. To-date, there is no clear language in the Plan supporting the continuation of allowed manufacturing and industrial use through overlay zoning, or a definition of what overlay zoning includes. In addition, staff has

presented draft "acceptable uses" in specific zones, but these were not included in the draft Plan for public review, or, the NOP for the EIR at the public meeting that was held.

Overall, the Plan does not provide any analysis of protection of manufacturing, goods movement, port development and the artisan community, as well as the potential impact that limiting, eliminating or relocating these businesses will have on other areas of the City, or I they left the city entirely.

The COI businesses and the businesses located in the area would like to stress their continued commitment to work with the City on ensuring that the SSSP is developed with consideration and input from all those that reside in the area – business, community, artisans, UCB, LBNL, etc.

With regards,

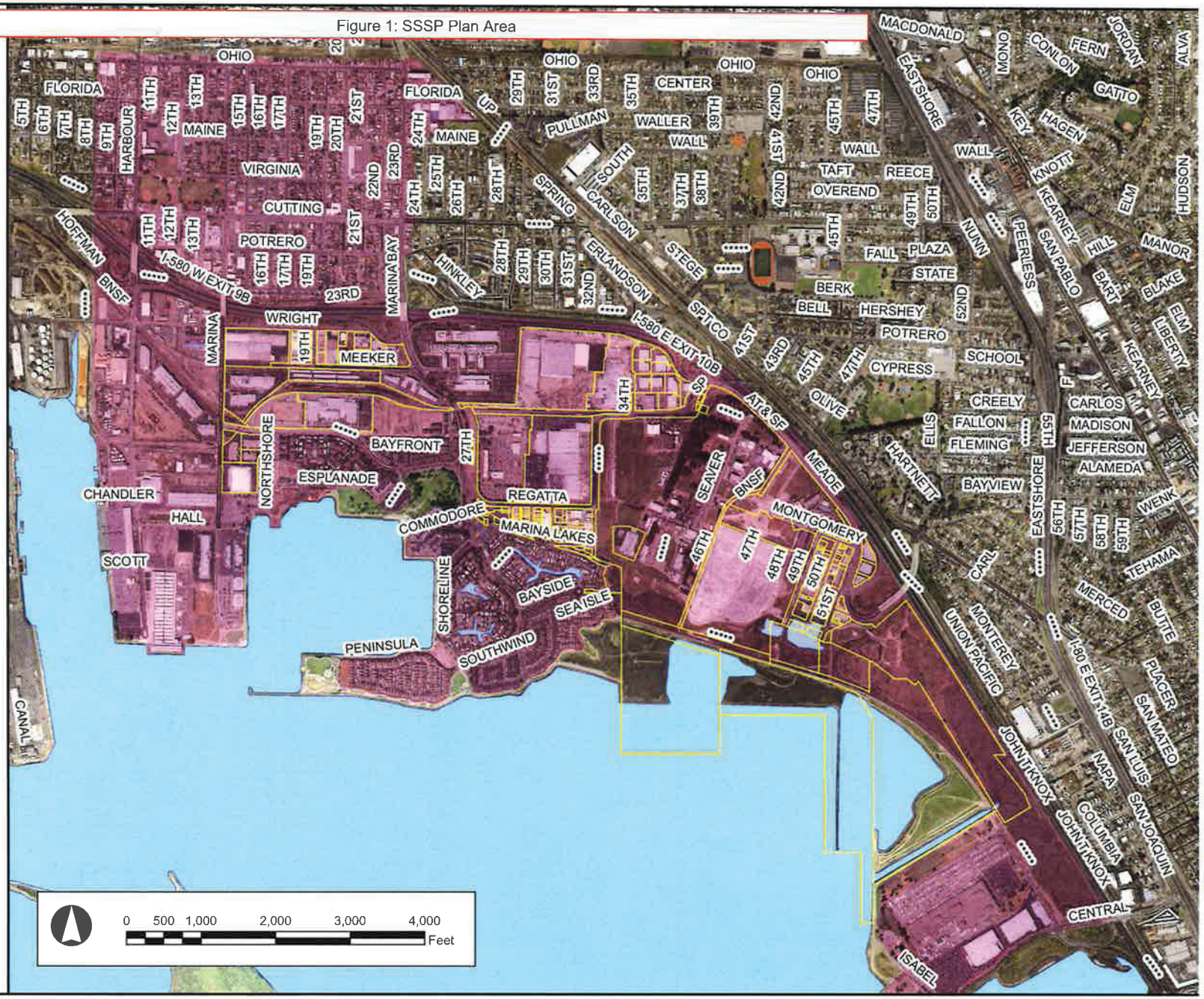
Katrinka Ruk
Executive Director

Cc:
COI Board of Directors
RSSSP Business Community
Ruth Vasquez, Richmond Chamber of Commerce
Michael Davenport, President, Richmond Chamber of Commerce

South Shoreline Specific Plan (SSSP)

Map of Plan Area

Figure 1: SSSP Plan Area



Richmond General Plan 2030
Planning & Building Services Department

CALIFORNIA
NATIVE PLANT SOCIETY

East Bay Chapter, www.ebcnps.org
PO Box 5597, Elmwood Station, Berkeley, CA 94705

10/30/2014

Submitted via email to:

Hector Rojas
City of Richmond
Planning and Building Services Department
hector_rojas@ci.richmond.ca.us

Re: Richmond South Shoreline Specific Plan NOP Comments

Dear Mr. Rojas,

The California Native Plant Society's East Bay Chapter is writing to comment on the NOP for the South Shoreline Specific Plan. This letter will add to the comments submitted on October 15th, 2014.

7-1

EBCNPS asks that planners consider facilitating the construction of a riparian meander corridor and appropriate plant habitat in Regatta Boulevard's current location as a replacement for the existing concrete drainage ditch on the western portion of the Richmond Field Station site. This riparian area would be a wonderful feature for the area from a habitat perspective. It would also prove to be a valuable resource for residents and employees of the new UC/Lawrence Berkeley Campus to enjoy. It could include walking pathways and even an arboretum style design that could educate visitors about the natural history of the site.

We appreciate the consideration of these comments and will look forward to following this project as it moves forward.

Sincerely,

Mack Casterman
Conservation Analyst
California Native Plant Society, East Bay Chapter

STATE OF CALIFORNIA
PUBLIC UTILITIES COMMISSION
320 WEST 4TH STREET, SUITE 500
LOS ANGELES, CA 90013
(213) 576-7083

November 4, 2014

Mr. Hector Rojas
City of Richmond
450 Civic Center Plaza
Richmond, CA 94804

Dear Mr. Rojas:

Re: SCH 2014092082 Richmond (Contra Costa) South Shoreline Specific Plan - NOP

8-1

The California Public Utilities Commission (Commission) has jurisdiction over the safety of highway-rail crossings (crossings) in California. The California Public Utilities Code requires Commission approval for the construction or alteration of crossings and grants the Commission exclusive power on the design, alteration, and closure of crossings in California. The Commission Rail Crossings and Engineering Branch (RCEB) is in receipt of the *Notice of Preparation (NOP)* from the State Clearinghouse for the proposed City of Richmond (City) South Shoreline Specific Plan project.

8-2

The project area includes active rail tracks and at-grade crossings. RCEB recommends that the City add language to the South Shoreline Specific Plan so that any future development adjacent to or near the planned railroad right-of-way (ROW) is planned with the safety of the rail corridor in mind. New developments may increase traffic volumes not only on streets and at intersections, but also at any planned at-grade crossings. This includes considering pedestrian circulation patterns or destinations with respect to railroad ROW and compliance with the Americans with Disabilities Act. Mitigation measures to consider include, but are not limited to, the planning for grade separations for major thoroughfares, improvements to existing at-grade crossings due to increase in traffic volumes, and continuous vandal resistant fencing or other appropriate barriers to limit the access of trespassers onto the railroad ROW.

If you have any questions in this matter, please contact me at (213) 576-7076, ykc@cpuc.ca.gov.

Sincerely,

Ken Chiang, P.E., Utilities Engineer
Rail Crossings and Engineering Branch
Safety and Enforcement Division

C: State Clearinghouse

EAST BAY
MUNICIPAL UTILITY DISTRICT

October 16, 2014

RECEIVED
OCT 28 2014
RICHMOND
PLANNING DEPARTMENT

Hector Rojas, Senior Planner
City of Richmond
Planning and Building Services Department
450 Civic Center Plaza
Richmond, CA 94804

Re: Notice of Preparation of a Draft Environmental Impact Report – Richmond South Shoreline Specific Plan, Richmond

Dear Mr. Rojas:

East Bay Municipal Utility District (EBMUD) appreciates the opportunity to comment on the Notice of Preparation of a Draft Environmental Impact Report for the Richmond South Shoreline Specific Plan (Specific Plan) located in the city of Richmond (City). EBMUD has the following comments.

WATER SERVICE

9-1

EBMUD's Central Pressure Zone, with a service elevation between 0 and 100 feet, serves the project area. Main extensions that may be required to serve any specific development to provide adequate domestic water supply, fire flows, and system redundancy will be at the project sponsors expense. Pipeline and fire hydrant relocations and replacements due to modifications of existing streets, and off-site pipeline improvements, also at the project sponsors expense, may be required depending on EBMUD metering requirements and fire flow requirements set by the local fire department. When the development plans are finalized, project sponsors should contact EBMUD's New Business Office and request a water service estimate to determine costs and conditions of providing water service to the development. Engineering and installation of new and relocated pipelines and services requires substantial lead-time, which should be provided for in the project sponsors development schedule.

9-2

Project sponsors should be aware that EBMUD will not inspect, install or maintain pipeline in contaminated soil or groundwater (if groundwater is present at any time during the year at the depth piping is to be installed) that must be handled as a hazardous waste or that may pose a health and safety risk to construction or maintenance personnel wearing Level D personal protective equipment. Nor will EBMUD install piping in areas where groundwater contaminant concentrations exceed specified limits for discharge to sanitary sewer systems or sewage treatment plants. Project sponsors for EBMUD services requiring excavation in contaminated areas must submit copies of existing information regarding soil and groundwater quality within or adjacent to the project boundary.

Recycled Paper

In addition, project sponsors must provide a legally sufficient, complete and specific written remedial plan establishing the methodology, planning and design of all necessary systems for the removal, treatment, and disposal of all identified contaminated soil and/or groundwater. EBMUD will not design the installation of pipelines until such time as soil and groundwater quality data and remediation plans are received and reviewed and will not install pipelines until remediation has been carried out and documentation of the effectiveness of the remediation has been received and reviewed. If no soil or groundwater quality data exists or the information supplied by a project sponsor is insufficient EBMUD may require the applicant to perform sampling and analysis to characterize the soil being excavated and groundwater that may be encountered during excavation or perform such sampling and analysis itself at the project sponsor's expense.

WATER RECYCLING

The Richmond South Shoreline Specific Plan is located approximately 1.5 miles from an existing recycled water transmission pipeline with some parcels being 3 to 5 miles away. The size and nature of proposed developments within the Specific Plan present several opportunities for the use of recycled water for landscape irrigation, commercial and industrial processes, toilet and urinal flushing in non-residential buildings, and cooling towers. As part of the long term water supply planning, EBMUD may investigate expanding the existing recycled water infrastructure or construct a localized satellite facility that utilizes onsite waste and rain water treatment to provide recycled water to the project. EBMUD recommends that the City and their developers maintain continued coordination and consultation with EBMUD as they plan and implement the various projects regarding the feasibility of providing recycled water for appropriate non-potable uses.

q-3

WATER CONSERVATION

Individual developments within the Specific Plan present opportunities to incorporate water conservation measures. EBMUD requests that the City include in its conditions of approval a requirement that the project sponsors comply with the California Model Water Efficient Landscape Ordinance (Division 2, Title 23, California Code of Regulations, Chapter 2.7, Sections 490 through 495). Project sponsors should be aware that Section 31 of EBMUD's Water Service Regulations requires that water service shall not be furnished for new or expanded service unless all the applicable water-efficiency measures described in the regulation are installed at the project sponsors expense.

q-4

If you have any questions concerning this response, please contact David J. Rehnstrom, Senior Civil Engineer, Water Service Planning at (510) 287-1365.

Sincerely,

for WRK

William R. Kirkpatrick
Manager of Water Distribution Planning Division

WRK:TRM:djr
sb14_222.docx



East Bay Regional Park District

2950 PERALTA OAKS COURT • P.O. BOX 5381 • OAKLAND • CA • 94605-0381
T 1 888 EBPARKS F. 510 569 4319 TDD. 510 633 0460 WWW.EBPARKS.ORG

October 30, 2014

Hector Rojas
Senior Planner
City of Richmond
Planning and Building Services Dept
450 Civic Center Plaza
P.O. Box 4046
Richmond, CA 94804-1630

Sent via email to Hector_Rojas@ci.richmond.ca.us

RE: Notice of Preparation of an EIR for the Richmond South Shoreline Specific Plan

Dear Mr. Rojas,

The East Bay Regional Park District appreciates the opportunity to review and comment on the Notice of Preparation of an Environmental Impact Report (EIR) for the Richmond South Shoreline Specific Plan. The District owns property within the plan area that is operated as part of the McLaughlin Eastshore State Park and includes a segment of the San Francisco Bay Trail.

10-1

The Richmond South Shoreline Specific Plan identifies a substantial amount of development including over 5 million square feet of office space and over 4,000 new residential units, which will result in substantial increase of use within McLaughlin Eastshore State Park and on the Bay Trail. Additionally, the Berkley Global Campus at Richmond Bay Long Range Development Plan (LRDP) calls for the development of a 5.4 million square-foot research campus that would have a daytime population of over 10,000.

Both the Berkeley Global Campus LRDP and the Richmond South Shoreline Specific Plan proposal emphasize bicycling and walking as a primary mean of mobility throughout the plan area. The District supports the goal of encouraging bicycling and walking as a means of limiting automobile dependency and providing connectivity to the plan area. However, the concern for impacts to the Bay Trail and McLaughlin Eastshore State Park as a result of the increased population utilizing the trail for both commute and recreation purposes, as well as the potential for conflicts between user groups, remain.

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10-2 The draft EIR will need to review the potential for impacts resulting from increased recreational and commuter use on the Bay Trail and the potential for user conflicts within McLaughlin Eastshore State Park. The draft EIR should identify specific measures to improve the Bay Trail where needed at specific pinch points, including the potential for widening of bridges along the Bay Trail as necessary to accommodate increased usership as well as emergency and maintenance vehicles. Additionally, alternative non-motorized facilities should be identified throughout the plan area to accommodate the increased demand.

10-3 The draft EIR will need to assess the Specific Plans consistency with the adopted Eastshore State Park General Plan, including, but not limited to, the Recreation and Preservation use designations along the portion of the Bay Trail through the plan area. The plan should identify how land uses within the plan area will participate in the partnership and funding for implementing the various improvements of the Eastshore State Park General Plan, including, but not limited to, the Gateways, Vista Points, and other features in the vicinity of the Bay Trail within the plan area.

10-4 Lastly, the draft EIR will need to evaluate the potential for increased flooding due to sea level rise within the plan area. Any sea level rise adaptation strategies should provide for improvements to shoreline infrastructure in a manner that can accommodate the Bay Trail.

Thank you for the opportunity to provide comments on the NOP for the draft EIR for the Richmond South Shoreline Specific Plan. We look forward to reviewing the final document and participating its development. Please feel free to contact me at (510) 544-2623 or bholt@ebparks.org should you have any questions.

Brian W. Holt, AICP
Senior Planner

Cc: Larry Tong, Interagency Planning Manager
Kevin Takei, Shoreline Unit Manager
Bruce Bayeart, TRA

inspiring people to protect Bay Area birds since 1917

October 30, 2014

VIA E-MAIL

To: Hector Rojas, Senior Planner
City of Richmond
Planning and Building Services Department
450 Civic Center Plaza
P.O. Box 4046
Richmond CA 94804-1630
Hector_Rojas@ci.richmond.ca.us

RE: Comments on South Shoreline Specific Plans

Dear Mr. Rojas:

The Golden Gate Audubon Society would like to thank the City of Richmond for providing us the opportunity to comment on the California Environmental Quality Act ("CEQA") scoping documents for the proposed Richmond South Shoreline Specific Plan. The Golden Gate Audubon Society ("GGAS") is a 97-year old non-profit organization dedicated to protecting Bay Area birds, other wildlife, and their natural habitats. The San Francisco Bay is an important component of the Pacific Flyway and is a Western Hemisphere Shorebird Reserve Network site of hemispheric importance (highest possible designation). The City of Richmond's South Shoreline district includes and lies adjacent to areas of marsh and bay which are vital for myriad species of birds present in large numbers year-round, throughout the winter months, or during fall &/or spring migration periods. As such, the GGAS has a substantial interest in ensuring that proposed developments in this area do not have a detrimental effect on so many wildlife species and crucial habitats upon which they depend.

Improvements to the City of Richmond South Shoreline that clean up brown fields, improve the use of old industrial areas, increase public transportation, and allow people to enjoy the bay and its wildlife, are highly desirable, but impacts on wildlife of new developments must also be considered. Therefore, the GGAS recommends that the South Shore Specific Plan incorporate or consider the following steps to 1) reduce the current detrimental conditions present in the area and 2) minimize any new negative effects.

Specific Comments and Proposed Alternatives for Consideration in the EIR

11-1

1. Section F of the September 30, 2014 Notice of Preparation letter ("NOP") states that the Environmental Impact Report ("EIR") will examine the potential for adverse effects on biological resources associated with habitats of certain nesting raptors and protected birds. In furtherance of this, it is strongly recommended that the City of

GOLDEN GATE AUDUBON SOCIETY
2530 San Pablo Avenue, Suite G, Berkeley, CA 94702
phone 510.843.2222 *web* www.goldengateaudubon.org *email* ggas@goldengateaudubon.org

Richmond consider in its EIR avian fatalities related to new construction, such as bird collisions with buildings possessing large expanses of glass and/or with emanating light pollution. **PROPOSED ALTERNATIVE(S):** These environmental impacts would be best addressed by adopting standards for bird-safe buildings. Such standards have already been adopted by both the Cities of San Francisco and Oakland, as well. An example of one such standard would be avoiding the placement of excessively tall buildings in close proximity to marshes, which would prevent unnecessary collisions of birds with such building and minimize if not eliminate any increase in avian mortality rates in the area. Additional information concerning these standards is available from the GGAS, which has resources to assist municipalities and urban planners related to this topic.

11-2

2. The NOP states that the EIR will consider the adverse impacts of the development on aesthetics, traffic, and noise, but does not state that it will consider light pollution. The City should explore the negative impacts of lights on migrating birds and other birds using the shoreline and bay. Light pollution, or over-illumination, is a significant environmental harm which is caused by poor lighting design. Light pollution affects migration, reproduction, circadian rhthyms and feeding of myriad species of birds – including many using these areas in Richmond. **PROPOSED ALTERNATIVE(S):** The EIR should consider adopting a dark skies policy for lighting standards to mitigate the harms caused by light pollution. Further, the EIR should certainly consider the prohibition of LED billboards in the Plan Area because of proximity to the bay and marshes.

11-3

3. The NOP states that the EIR will assess adverse hydrology and water quality impacts associated with urban runoff. In furtherance of this assessment, the GGAC recommends that the City consider the effects of storm water and urban runoff on the subtidal habitats within and near the Plan Area. For example, eel grass beds off of the South Shore are important as fish nurseries, support the life cycles of crabs and oysters, promote nutrient recycling, stabilize the shoreline, produce oxygen, and provide feeding grounds for large numbers of over-wintering flocks of diving waterfowl. The EIR should include an evaluation of these habitats, the effects of runoff and of recreational water use on these habitats and implement a thoughtful storm-water management plan which minimizes damage to these habitats.

11-4

4. The NOP states that the EIR will assess whether utilities infrastructure will service the Plan Area. In furtherance of this, the GGAS requests that the City consider implementing methods which would prevent garbage and other waste from entering the creeks that run into the bay. **PROPOSED ALTERNATIVE(S):** The EIR should consider the adoption of environmentally safe guidelines which incorporate methods to mitigate the exposure of the Plan Area's waterways to garbage and other waste.

11-5

5. The NOP further states that the Plan Area includes a wide array of hazardous materials caused by the storage and use of large quantities of fuel or hazardous materials in above/underground storage tanks ("AST/UST"). In addition, the NOP states that groundwater in the Plan Area is less than 10 feet bgs. There are no less than 23 documented released of hazardous substances or other toxins in the Plan Area which invariably have a substantial effect on avian habitats. Sources of potential hazardous materials include gas stations, dry cleaners, landfill, businesses using solvents, and AST/UST leaks. Each source is, in itself, of grave concern for its potentially toxic impact on soils and shallow groundwater. While the Specific Plan calls for mixed use zoning, it is recommended that the EIR consider the negative impacts of not remediating these known and/or potential contamination in the Plan Area to appropriate screening and remediation standards. **PROPOSED ALTERNATIVE(S):** The EIR should consider conducting the remediation of all known and potential toxic sites to residential soil, water and air remediation levels. This should only be accomplished by screening soil, water and air at levels appropriate given the substantial amount of residential housing within the plan area. It should be noted that the GGAS will not support efforts to cap or maintain existing caps to such hazardous materials.

11-6

6. In furtherance of the City's assessment of the Specific Plan's impact on biological resources, it is recommended that the EIR explore the impacts of increased fishing in the Plan Area caused by the resulting population growth of the area. Increased populations which use the bay area to fish recreationally will have direct and incidental negative impacts on the avian habitats and food sources, and these impacts need to be considered. **PROPOSED ALTERNATIVE(S):** It is recommended that the EIR explore the implementation of fishing line-recycling programs along the south shoreline to diminish the often lethal effects of discarded fishing line on birds and harbor seals. Additionally, if there is a water trail system, the EIR should consider the impacts of hand-carried watercraft on wildlife both at the entry site and out on the water. Designation of acceptable entry sites and educational signage are important to the sustainability of avian habitats, and should be assessed in the EIR.

11-7

7. It is also recommended that the EIR assess the impact of placing housing, walkways, trails, and parking lots near avian habitats. Impacts in winter are particularly important, when huge rafts of diving ducks, grebes and cormorants gather near and offshore. Increased recreational use occurring within the Plan Area must be considered, particularly with regard to the degradation of avian habitats by such increased use. **PROPOSED ALTERNATIVE(S):** The EIR should consider the use of buffer land to separate trails from the shoreline so that shorebirds can feed on the mudflats without being right next to a trail. Additionally, the EIR should consider increasing the use of educational signage with regard to "keeping wildlife wild" by not feeding ducks, geese or ground squirrels, and by also providing attractive and

educational information about local wildlife of the area. GGAS has a volunteer docent program along the Bay Trail which has demonstrated people's curiosity and interest in learning more about local wildlife in Richmond.

11-8

8. The NOP states that the EIR will address its contribution of greenhouse gases and will assess state, local and regional plans and policies pertaining to climate change. However, the NOP does not state that the EIR will consider the inevitable impacts of sea level rise. Modifying the San Francisco Bay estuary makes the area especially susceptible to sea-level rise as there are few areas available for upslope marsh movement. Urban infrastructure which surrounds marshland blocks upslope movement, and this problem should be considered in light of expected sea-level rise. It is also recommended that the EIR address the accommodation for sea level rise by consulting with the California Coastal Commission's Sea-Level Rise Policy Guidelines. **PROPOSED ALTERNATIVE(S):** In its assessment of the negative effects on the Plan Area due to impending sea level rise, the EIR should consider the adoption of a plan to allow marshes to expand upward. Marshes and wetlands can serve as horizontal levees which absorb the brunt of intense storm surges and reduce damage to manmade structures from high water events.

11-9

9. In addition to the EIR's consideration of the population growth's impact on avian habitats, it is recommended that the EIR consider the biological impacts caused by the use of the ferry service. The EIR should evaluate and determine how to mitigate the multiple negative impacts of a high- speed ferry service from the Ford Building on the nesting birds at Brook's Island and on other birds along the Brook's Island shoreline as well as in the channel and bay.

11-10

10. The NOP states that the EIR will evaluate the risks associated with potential uses or accidental releases of hazardous materials within or near the Plan Area. It is recommended that, in addition, the EIR consider ways to eliminate or minimize adverse impacts from the use of rodenticides, herbicides, and pesticides. Such substances are harmful to people and often lethal for pets and even non-target wildlife species, such as the Peregrine Falcons that nest at Point Isabelle.

11-11

11. The NOP states that the EIR will assess the Specific Plan's adverse impacts on hydrology and water quality. In furtherance of this assessment, it is recommended that the EIR specifically assess the negative impacts of not maintaining the current conditions which attract waterfowl to the area where the drainage channel and tidal creek enter Meeker slough. If there is to be extensive clean up in that area, current avian habitat will be disturbed and the negative impacts on local wildlife ought to be addressed. The pond created where the drainage channel enters the slough is heavily used by waterfowl, during winter it attracts numerous waterfowl species, including Gadwall, Green-winged Teal, and Widgeon as well as Mallards, Coots, Canada Geese

and Egrets. This is an important avian biological habitat in the Plan Area, and increased pedestrian and bike traffic threatens to disturb waterfowl and water bird species. **PROPOSED ALTERNATIVE(S):** It is recommended that this area not be disturbed as a means of preserving the current biological habitat. In the event this area is included as an area for re-development, then the EIR should consider minimizing perpetual disruption to waterfowl by adopting a means for people to cross Meeker Tidal Creek or Meeker Slough at 32nd street when accessing the Bay Trail. In addition, the EIR should consider only doing such construction in the summer in order to minimize the disruption to the peak avian population in this area, which occurs during late autumn and winter months.

11-12

12. The EIR should also consider the impacts of constructing roads and pathways across the Native Coastal Prairie, which is vital habitat to birds and wildlife. **PROPOSED ALTERNATIVE(S):** The EIR should consider mitigating disruption of this specific habitat by avoiding the construction of roads and pathways which cross the Native Coastal Prairie on the UC Global Richmond Bay Campus.

11-13

13. The City should consider in its EIR the impacts of daylighting the cement drainage ditch, which currently runs parallel to the North-South section of Regatta Blvd. In the ditch's current location, it would be too close to the Native Coastal Prairie and this should be considered. It is recommended that the EIR consider the benefits of stream daylightling, such as improved bird habitats, water cleansing by vegetation, and reduction of flow of pollutants from storm drains into the bay. **PROPOSED ALTERNATIVE(S):** As there are plans to move that section of Regatta further west, it is recommended that the EIR assess having the daylighted stream bed run where Regatta Blvd currently runs (North-South). The EIR should also consider encouraging the UC Global Campus to participate in daylighting the cement drainage ditch.

11-14

14. The NOP only states that the "EIR will briefly describe the land use conditions and confirm the Plan Area's designation" with regard to the Specific Plan's impact on agriculture and forestry. In this section of the EIR's assessment, it is recommended that the City consider the impacts of conserving dead trees which can be used for cavity nesting birds. A few limited areas in the South Shore have such trees, which are valuable for a number of bird species. For example, a Downy Woodpecker had a cavity nest along the bay trail in the Meeker slough area.

11-15

15. In addition to the foregoing considerations of impacts to biological resources, it is recommended that the EIR consider that burrowing owls winter in ground squirrel colonies along the East Bay Shoreline. It should be noted that these burrowing owls have been observed along the South Shoreline. **PROPOSED ALTERNATIVE(S):** The EIR should explore the impacts of designating areas where California Ground

Squirrels can thrive, as their presence is important for the survival of Burrowing Owls, which are a species of Special Concern in California.

The GGAS would like to again thank the City of Richmond for providing our organization the opportunity to submit our comments on the proposed Richmond South Shoreline Specific Plan. Golden Gate Audubon Society (GGAS) would welcome the opportunity to meet with the City and its consultants to discuss any of these comments in further detail.

Sincerely yours,

Cindy Margulis

Cindy Margulis
Executive Director
GOLDEN GATE AUDUBON SOCIETY

LAW OFFICES OF PAUL M. MINAULT
475 GATE 5 ROAD, SUITE 324
SAUSALITO, CA 94965

TELEPHONE: 415-332-3350
FAX: 415-331-1321

E-MAIL:
Pminault@earthlink.net

October 30, 2014

BY EMAIL:

Richard Mitchell, Director
Department of Planning and Building Services
450 Civic Center Plaza, P.O. Box 4046
Richmond, CA 94804-1630

Re: Scoping for the Richmond Southeast Shoreline Specific Plan EIR

Attn: Hector Rojas

Dear Mr. Mitchell:

I write on behalf of the Levin Richmond Terminal Corporation ("LRTC") and the Richmond Pacific Railroad Corporation ("RPRC" or "Richmond Pacific Railroad") in response to the City's request for public input on scoping issues regarding the Environmental Impact Report (the "EIR") for the Richmond Southeast Shoreline Specific Plan (the "Plan").

12-1

Our foremost concern is that the Plan's land use map indicates that all rail facilities in the Plan area have been removed and converted into parks, including the 23rd Street and the Safeway rail yards, the BNSF's Siberia Lead which serves them, the interchange track identified as the Stege Wye Overcrossing, and the new Marina Bay Parkway Rail Crossing. The Plan needs to explain that the Plan represents the city's vision of the future, despite the fact that the Union Pacific Railroad, the BNSF Railway Company, and the Richmond Pacific Railroad have no intention of relocating the Stege Wye, the Siberia Lead or these rail yards. Moreover, it is expected that rail use of these rail facilities will increase in the future, and the city has no power to compel the relocation of any of the current rail infrastructure. Without this information, the Plan's land use map would present an inaccurate and misleading description of the Plan area to citizens and developers.

12-2

The Plan should address the economic importance of these rail facilities, including the Marina Bay Parkway Bridge and undercrossing, the RPRC crossings on Regatta Boulevard, Marina Way South, Seaver Rail Yard and Harbour Way South, which provide connections to over a dozen industries including California Oils, Amtecol, 799 Wright Avenue LLC, Sims Metal Management, LRTC, Plains All American, CEMEX, IMTT, Sasol, Linde LLC, and Channel Lumber. The Plan in its present form proposes to eliminate both the UP and the BNSF rail access to these existing industries and would force them to cease operations. Rail access to

these existing industries is essential to their continuing operations and future growth. [I am deleting this because the city has no power to compel the removal of rail facilities.The Federal Surface Transportation Board ("STB) will never permit the destruction of rail service to these industries.

12-3

Our longstanding concern, reflected in our comments on the General Plan and EIR and other plans and development proposals in the Plan area, is the impact that new development adjacent to the two rail yards, and particularly new residential development, will have on the operations of the Richmond Pacific Railroad in these yards. As Richmond Pacific's Director of Operations, Chip Savoye, explained in the scoping meeting on October 16, the Richmond Pacific Railroad currently has 6 locomotives and handles approximately 1500 carloads of freight a month. The new development proposed in the Plan is immediately adjacent to these yards and is certain to lead to social, political, economic and regulatory pressure to limit the rail operations in these yards. If these pressures were effective in reducing the volume and limiting the times of rail operations in these yards, this would constitute a significant environmental impact on rail transportation in the Port of Richmond. This possibility needs to be addressed in the EIR.

12-4

Locating commercial and residential uses adjacent to the yards could also subject the occupants of the buildings to significant impacts from rail operations. As you know, train horn noise is of particular concern to residential uses. Richmond Pacific's switching locomotives are required by Federal regulations and railroad rules (GCOR) to sound their horn every time they change direction.

As we have explained on several previous occasions, the City's noise analysis standards, which rely on 24-hour noise averages, fail to capture the sleep disturbing impact of instantaneous train horn blasts exceeding 100 decibels on nearby residents. We strongly urge the City to include a noise analysis that takes into account the impact of instantaneous noise levels from train horn blasts on sleep disturbance. The EIR should require such an analysis along with the noise standards in the California Building Code, to ensure that construction near the rail yards meets a noise mitigation standard sufficient to protect against sleep disturbance.

12-5

The EIR should also require, as an additional mitigation measure, the recordation of restrictive covenants in the chain of title for all commercial and residential development immediately adjacent to the Siberia Lead and the two rail yards. Such a covenant, to be drafted by BNSF, UP, and Richmond Pacific Railroad and reviewed by City Staff, would bind affected property owners and their successors and lessees. IT would acknowledge the presence of the railroads and the impacts of rail operations, and would protect the railroad from any attempt to halt or interfere with rail operations that comply with all applicable laws and regulations. Requiring such a covenant, and ensuring that it is effective as a mitigation measure, also demonstrates that the City has no agenda to use the Plan to foment land use conflicts as a means to pressure the railroads to relocate outside the Plan area. The use of such covenants is also recommended in the General Plan.

12-6

The EIR will need to include a range of feasible alternatives to the currently proposed land use configuration. Relocating the proposed residential uses immediately adjacent to the 23 Street yard to a different portion of the Plan area should be a component of the alternatives review.

12-7

We also believe that pursuing a plan for significant new development in the Plan Area without first completing a Goods Movement Plan for the greater port area, a plan called for in the General Plan and which should logically precede the commitment of the Plan area to uses that are potentially incompatible with the growth of the Port, is inconsistent with the General Plan. This inconsistency needs to be addressed in the EIR.

12-8

Richmond, including the Port of Richmond, is a regional hub for goods movement, a role that the General Plan recognizes. The Plan, however, is narrowly focused on implementing currently fashionable trends in urban neighborhood planning and streetsscaping, without regard to the part that Richmond plays in the greater Bay Area economy. If the Plan disregards Richmond's role as a regional transportation hub, as seems likely, this will result in significant impacts to regional transportation that need to be examined in the EIR. These include direct impacts, such as congestion on local freeways and feeder streets, as well as indirect impacts, such as social, economic, political and regulatory pressure to curtail goods movement uses in and around the Port of Richmond.

12-9

City staff have explained that the EIR will cover both the Plan and the Connectivity Plan for South Richmond. The Connectivity Plan has not attempted any sort of forecasting of regional transportation growth and includes no comprehensive review of the role or projected growth in Richmond's port area. Instead, like the Plan, it appears to be narrowly focused on providing urban amenities to transportation corridors in the Plan Area, without regard to the long-term effects these amenities will have on regional transportation modes and regional economics. In the absence of solid data regarding long-term growth of regional transportation and Richmond's role in this component of the Bay Area's overall economy, including maritime transportation, it is inconceivable that the EIR can competently address the impacts of either plan on this sector of the Bay Area economy. We consider this to be a very significant vulnerability of the combined plans and the EIR.

12-10

The Connectivity Plan map should be revised to show the location of the buffer zone between Harbor Way and Marina Way South and annotated to explain that within the buffer zone no residential development is permitted.

12-11

The Plan and the EIR should explain the relationship between the Southern Gateway concept as developed in the General Plan, the Richmond South Shoreline Specific Plan ("RSSSP") area and its proposed uses, and the South Richmond Priority Development Area ("PDA") and the particular environmental review regime that is applicable to PDAs. Without

such an explanation, citizens cannot understand how the Southern Gateway morphed to the RSSSP, which in turn is incorporated into the PDA.

12-12 Finally, the EIR should explain the streamlined environmental review for projects in Priority Development Areas so that citizens and stakeholders are clear regarding the importance of the environmental review for the Plan and the limitations on environmental review at the project level when the Plan area is developed.

Sincerely yours,

Paul Minault

Cc: Gary Levin
Jim Cannon
Chip Savoye
Barbara O'Neill
Pat O'Driscoll
Katrinka Ruk, Council of Industries

Richmond Annex Neighborhood Council

Founded 1974 **PO Box 5436, Richmond, California 94805** **** Neighbors Helping Neighbors ****

October 30, 2014

Hector Rojas, Senior Planner
Richmond Planning Department
450 Civic Center Plaza
Richmond, CA 94804

RE: Notice of Preparation of an Environmental Impact Report (EIR) for the proposed South Shoreline Specific Plan

Dear Mr. Rojas:

Thank you for the opportunity to review and comment of the Notice of Intent to prepare an Environmental Impact Report for the above-titled Specific Plan. The Richmond Annex Neighborhood Council has reviewed the NOP documents, and we have the following comments for the scope of work needed to properly evaluate the Plan.

As pointed out by the City Manager on October 29th, *"As we learned informally this week, and it has now been made public, that University of California is setting a new strategic direction for development of the Richmond campus in a way that expands UC Berkeley's educational and research activities in a global context. What began two years ago as a second research campus for LBNL at the Richmond Field Station, and later evolved more broadly into the Richmond Bay Campus, has further evolved in its vision to be the Berkeley Global Campus at Richmond Bay (BGC). The BGC will be patterned after what several American universities have done to establish a physical presence overseas through the construction of a foreign campus. These overseas campuses typically involve partnerships with other global educational institutions. What UC Berkeley will be seeking to do in Richmond is to achieve this same type of global engagement by building an international campus on American soil in partnership with other global universities."*

Therefore, it becomes even more important to do what we can to protect our ecological resources along the South Shoreline. The City of Richmond must recognize that there is a distinction and *direct contrast* between the shoreline, wetlands, creeks, and the South Shoreline Specific Plan's proposed development areas.

TABLE 1: PROPOSED LAND USE PROGRAM BY PLAN SUB-AREA

Proposed Land Use	Sub-Area 1	Sub-Area 2	Sub-Area 3	Sub-Area 4	Total
R&D/Business/Service[1]	1,170,000 sf	840,000 sf	1,560,000 sf	2,120,000 sf	5,690,000 sf
Retail/Commercial (Ground Floor)	270,000 sf	130,000 sf		320,000 sf	720,000 sf
Residential	2160 units	330 units		1,590 units	4,070 units
Open Space	12.8 acres	12.4 acres	1.4 acres	5.9 acres	144.8 acres[2]

[1] Land uses permitted under this designation, as provided in the Richmond General Plan 2030, include commercial and institutional uses such as large-scale research and development campus, light industrial, and industrially-related storage and distribution, and office uses.

[2] Total Open Space includes areas of the Meeker Slough Wetlands, Stege and Hoffman Marsh within the Plan Area (112.3 acres)

1. **Biological Resources:** The SSSP includes highly sensitive and fragile wetlands that are intertwined throughout the Specific Planned areas. East and West Stege Marshlands were restored sometime in the early 2000s, but remain extremely fragile and will take much more time to recover. Biological studies performed as part of the restoration of East and West Stege Marshlands identified that State and federally endangered species were present.

   Other Major Marshlands, Creeks, and other unnamed wetlands have not been restored, but are present in a major way, e.g. Baxter Creek Corridor, the expansive 40-acre Hoffman Marsh, Meeker Slough, among other sensitive wetlands. These wetlands and surrounding areas are an important nesting ground for wildfowl and stopping ground for the Pacific Flyway. This flyway is a well-defined "highway in the sky," or flight route followed by migrating land and water birds.

   The EIR must consider and include discussion of such potentially significant impacts:

   - Polluted runoff water from rooftops, parking areas, herbicides and pesticides and other pollutants from all developments.
   - Illegal dumping of motor oil, radiator fluid, garbage and other debris into the creeks and marshlands and other unnamed wetlands and surrounding habitat areas and upland habitat areas.
   - Introduction of domestic cats and dogs who have been documented in similar situations to prey upon endangered species and other birds.
   - Increased noise from vehicles and humans disrupting wildlife and human intrusion into sensitive and fragile wetlands and creeks.
   - Increased nighttime lighting from residences and commercial areas.
   - Increased human activity in sensitive areas, including trespassing, vandalism, and introduction of non-native species.

Distinguishing between Setbacks and Buffers:

Although similar, buffers and setbacks are not quite the same thing.

Gmt. 13-1

Setbacks: Typical setbacks will not protect the existing shoreline or critical wetland functions.

Buffers: Buffers are intended to protect ecological functions. A buffer provides a high level of protection that is to be maintained in an undisturbed state. Restoring and keeping native vegetation in our natural and habitat buffer areas has many benefits.

Buffers provide a transition between the wetlands and upland areas.

Buffers are generally recognized as a "separation zone" between a body of water and a land use activity (e.g. commercial or residential development) to protect ecological processes.

Shoreline modifications can have direct and indirect impacts on wildlife including interfering with species behavior, lowering survival, and decreasing habitat quality and quantity.

For wildlife, the buffer widths needed to achieve greater than or equal to 80% effectiveness are:

A) Buffer width range of 240 feet to achieve 90% of hibernation and nesting to 902 feet to achieve 100% of hibernation and nesting. Average of all literature – 571 feet to achieve greater than or equal to 80% effectiveness.

Undeveloped shorelines should be protected with buffers of 500 feet. Shorelines with extensive critical areas, or within channel migration zones or floodplains, also will need protective buffers to protect life and property during flooding.

Tidal salt marshes, particularly the South Richmond Marshes, and Hoffman Marsh, are ecologically very important areas because they contribute to the nearshore and coastal ecosystems and provide habitat for many organisms, including many shorebirds.

In most cases, **a "one-size" buffer** applied throughout shoreline jurisdiction ***will not*** reflect shoreline ecological functions and local shoreline conditions. Shoreline conditions and ecological functions likely vary enough for most shorelines within local government boundaries that more than one buffer or setback with vegetation conservation and restoration will be needed to protect ecological functions.

A setback from a buffer zone protects the buffer from the impacts related to use of the structure. Additional structural setbacks (10-30 ft) landward of buffers will allow careful routine maintenance of structures without compromising buffer function integrity.

Urban growth and development account for significant historical losses of wetlands: Degradation of wetlands (e.g. Baxter Creek and Hoffman Marsh, Stege Marshes, Meeker Slough, and other unnamed wetlands) is less obvious than outright loss, and can occur as a direct or indirect consequence of many human activities and foot traffic. Urban growth, for example, can result in wetlands degradation by increasing the volume of runoff and the amount of pollutants that the runoff carries, especially commercial and residential.

Losing Ground: The sad irony in all this is that our human activities would create the environmental need ***for more*** wetland resources. The proposal for new roads, new residential and commercial buildings, parking lots – essentially all of the development proposed under the SSSP will cause disruption in the functioning of our watersheds. The hard surfaces prevent water from infiltrating into the soil, and one result is more faster runoff. If there were ***more*** rather than fewer wetlands to handle these consequences of proposed development, we might be able to maintain the original hydrologic balance. As it is, we not only create the need for more of the environmental functions of wetlands, we also destroy or damage the resources that provide those functions.

In Summation: The City must recognize the value and importance of preserving all wetlands, creeks, and marshlands and provide a significant buffer zone. A large percentage of marsh and shore birds depends upon the preservation of South Richmond Wetlands for their survival. Those who feel the nearby land between Baxter Creek and Hoffman Marsh should be used for commercial or industrial revenue producing purposes remark that the birds can go elsewhere. They cannot. Because birds are largely creatures of instinct, they would not go elsewhere, anyway. This area is their pattern of life and it should be retained as open space. The most significant natural features in this area are wetlands, creeks, marshes, ***and the land surrounding it***. The land, located between Baxter Creek and Hoffman Marsh needs to be preserved as open space (green), as currently designated on the General Plan Land Use Maps. This is what the City had decided when the 2030 General Plan was adopted in 2012, and the community consistently made it clear during all the SSSP Workshops.

13-2

2. **Cultural Resources:** Nelson's Shellmounds of the San Francisco Bay Area (1909) and Ellis Landing Shellmounds in the Journal of Archaeology and Ethnology does identify and maps shellmounds in this specific area. Please review Map of San Francisco Bay Region showing Distribution of Shellmounds, California University American Archaeology and Ethnology, Vol. 7, Map 1, 1907–1910. At least five are known to be located within the Specific Plan area.

13-3

3. **Aesthetics:** The major construction of future land uses along the South Shoreline will change the visual character of the area in a major way, by introducing high-density compact/condensed housing (i.e. less private/common open space) and commercial development, and new nighttime light and glare into the entire South Shoreline area. The building mass and scale adjacent to the shoreline could cause visual impacts to the S.F. Bay view and G.G. Bridge. This is a unique and irreplaceable scenic resource of world-class value. A number of sensitive wildlife species adjacent to the development may be adversely affected by this new source of lighting. The Specific Plan should consider and include policies that provide for transition between land uses, such as major 500' setbacks from the wetlands, low profile structures and downward directed lighting. The EIR should discuss and address these impacts.

13-4

4. **Geology and Soils:** The EIR should include discussion of the potentially significant effect of liquefaction and subsidence from a seismic event on the proposed land uses along the shoreline/marshland/wetland areas and areas with high water table and land fill. A magnitude 6.7 earthquake has a 99.7% chance of striking somewhere in CA over the next 30 years. In San Francisco, the probability is 63%; in Los Angeles it's 67%. In the Bay Area, the biggest threat is the Hayward Fault and its northern extension, the Rodgers Creek Fault. The probability went from 27% in 2003 to 31% in 2008. The probability of a 7.5 earthquake in California is 15% in the north and 37% in the south.

Threat to Shoreline: A team of geologists at the USGS in Menlo Park found that much of the East Bay fill would turn into soup if a 1906-sized quake were to reoccur today. Much of the East Bay shoreline is made up of the worst possible kind of artificial fill—loose sandy soil primarily dredged from the Bay. Treasure Island and the East Bay are the fill capitals of the Bay Area. It's estimated that a magnitude 6.6 quake or greater on the Hayward fault, which runs along the East Bay hills from San Pablo to Fremont, could subject more than half of the fill land to liquefaction. But it is the San Andreas fault, 10-15 miles away on the San Francisco peninsula that poses the greatest threat to the East Bay filled land. This is because that fault is capable of much greater earthquakes, such as the magnitude 7.8 quake of 1906, than the Hayward fault.

The U.S. Geological Survey findings basically guarantee a large earthquake is going to happen. The Hayward fault is in close proximity to the Richmond South Shoreline area—approximately 2 miles away. The Hayward fault runs along Arlington Boulevard and through the Mira Vista Golf Course in the El Cerrito Hills. The EIR should examine, discuss and address the land fill areas in the SSSP.

13-5

5. **Hazards and Hazardous Materials:** The development proposed under the SSSP will be located on top of several contaminated toxic sites. The EIR should discuss and address these impacts. Also, if proposed development will be located adjacent to any operating railroad lines, then any hazardous materials that are transported on these tracks should be discussed and addressed for potential rail accident releasing chemicals in the SSSP area. This is a potentially significant and unmitigatible impact.

13-6

6. **Hydrology and Water Quality:** We are concerned about how runoff water quality will affect adjacent wetlands and sensitive, fragile habitats. The EIR should examine, discuss and address the increase in impervious surfaces with the proposed changes for the Specific Plan area that will change the types of pollutants that may run off from the site or be used at or discharged from the site. The FEMA floodplain map should be completely revised and updated for the SSSP area. Historically, the South Shoreline was and still is subjected to severe flooding during heavy rain storms. Flooding has been and still is exacerbated when high tides coincide with heavy rain. When this occurs, backups are expected, especially in the low-lying areas of the City, particularly the South Shoreline area. This happened in 2010 when the El Nino Storms hit us hard, after coming out of a bad three-year drought in 2007, 2008, and 2009. Because water collected by the storm drain system is carried into San Francisco Bay, high tides can further overload the system in a major way. The end result is major flooding in this area. Severe drought conditions for the last four years in 2011, 2012, 2013, and 2014 has resulted in the marshlands, creeks, and other unnamed wetland areas significantly receding. When major rain returns, the wetlands expand. It is critical to prepare for any major future storms.

13-7

7. **Noise:** The EIR should discuss and address the impacts of ambient noise levels on future proposed land uses in the planned area and how noise generated from the future land uses would impact adjacent wetland areas and shoreline areas, including the adjacent Brooks Island.

13-8

8. **Recreation:** The EIR should address the impacts that the proposed land uses would have on recreation and public services at the adjacent shoreline and wetland areas. The new types of uses introduced to the Specific Plan area could significantly increase shoreline usage, trespassing, dumping, vandalism, light intrusion, introduction of domestic pets and emergency responses calls.

13-9

9. **Transportation/Traffic:** Currently, the existing land uses have low-level vehicle trip generation limited to week-day working hours and limited or no weekend use. Depending on the proposed future land uses, the Specific Plan could generate substantially more vehicle trips during AM and PM weekday peak hours and a new source of trips on weekends that could impact the existing natural area along the shoreline with a new source of pollution. Increased traffic could impact both I-80 and I-580, including local thoroughfares, such as Carlson Boulevard and Central Avenue in a major way. Other major thoroughfares that need to be evaluated are San Pablo Avenue, Central Avenue, and Cutting Boulevard. Increased traffic congestion would affect the safety and livability of the Single-Family Residentially-Zoned District along Carlson Boulevard in the Richmond Annex area. The EIR should discuss and address these impacts.

RANC would like to review the Draft EIR, including the technical appendices, when it becomes available. If you need any further information from us, please let us know.

Sincerely,

Mary Selva,
President
(510) 375-7769

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San Francisco Bay Chapter
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RICHMOND
PLANNING DEPARTMENT

REPLY TO: 802 Balra Drive
El Cerrito, CA 94530

October 16, 2014

Hector Rojas, Senior Planner
City of Richmond Planning and Building Services Department
450 Civic Center Plaza
Box 4046
Richmond, CA 94804-1630

Re: Comments on Notice Preparation of the EIR for the Richmond South Shoreline Specific Plan

Dear Mr. Rojas:

These comments are made on behalf the Sierra Club.

14-1 The EIR needs to identify alternative methods for keeping traffic from going onto Lark Drive within the UC Field Station site because of the impacts on the coastal prairie from such a roadway. The EIR must also all impacts to the coastal prairie from traffic using Lark Drive.

14-2 The EIR must adequately address sea level rise. It is clear from documentation an the elevations of the site that within the next 30 to 50 years, sea levels will rise to inundate most of the South Shoreline area. How does the EIR propose to address this impact?

14-3 The EIR must address the impacts of building on the Union Pacific property at the Southeast end of the plan area, especially as to impacts on the McLaughlin East Shore Park.

14-4 The EIR must address cumulative impacts of traffic in an area at least five miles from outer perimeter of the site to deal with traffic impacts in Richmond, on the Richmond San Rafael Bridge and El Cerrito.

14-5 The EIR must address impacts on the wildlife and habitat along the shoreline especially at the former Zeneca site

14-6 The Sierra Club joins in the comments of the California Native Plant Society.

Sincerely yours,

Norman La Force, Chair
Sierra Club West Contra Costa County Group

SPRAWLDEF

Sustainability, Parks, Recycling And Wildlife Legal Defense Fund

802 Balra Drive, El Cerrito, CA 94530
510 526-4362 www. sprawldef.org n.laforce@comcast.net

October 16, 2014

Hector Rojas, Senior Planner

City of Richmond Planning and Building Services Department

450 Civic Center Plaza

Box 4046

Richmond, CA 94804-1630

Re: Comments on Notice Preparation of the EIR for the Richmond South Shoreline Specific Plan

Dear Mr. Rojas:

These comments are made on behalf the SPRAWLDEF.

15-1 The EIR needs to identify alternative methods for keeping traffic from going onto Lark Drive within the UC Field Station site because of the impacts on the coastal prairie from such a roadway. The EIR must also all impacts to the coastal prairie from traffic using Lark Drive.

15-2 The EIR must adequately address sea level rise. It is clear from documentation and the elevations of the site that within the next 30 to 50 years, sea levels will rise to inundate most of the South Shoreline area. How does the EIR propose to address this impact?

15-3 The EIR must address the impacts of building on the Union Pacific property at the Southeast end of the plan area, especially as to impacts on the McLaughlin East Shore Park.

15-4 The EIR must address cumulative impacts of traffic in an area at least five miles from outer perimeter of the site to deal with traffic impacts in Richmond, on the Richmond San Rafael Bridge and El Cerrito.

15-5 The EIR must address impacts on the wildlife and habitat along the shoreline especially at the former Zeneca site.

15-6 SPRAWLDEF joins in the comments of the California Native Plant Society.

Sincerely yours,

Norman La Force, President

TRAC
Trails for Richmond Action Committee

73 Belvedere Avenue
Richmond, CA 94801
Phone/Fax 510-235-2835
tracbaytrail@earthlink.net

October 29, 2014

Mr. Hector Rojas, Senior Planner
City of Richmond
Richmond, CA

Dear Mr. Rojas:

TRAC, the Trails for Richmond Action Committee, appreciates the opportunity to comment in response to the Notice of Preparation for the Richmond South Shoreline Specific Plan. Our comments focus on the San Francisco Bay Trail and related multi-use trails.

Overall, the EIR must undertake a comprehensive and detailed evaluation of the Specific Plan's potential environmental impacts, identification of mitigation measures for those impacts, and formulation of alternatives that would involve fewer and less severe environmental impacts. Project definition is critical for assessing environmental effects of the plan. Since the EIR is programmatic in nature without clear project definitions, it will be necessary to formulate and adopt mitigation measures to avoid significant effects where feasible. It will be especially important to evaluate the growth-inducing and cumulative impacts of this plan, especially in terms of increased traffic on roads and trails, recreational impacts and the need for improving Bay Trail safety, utility, connectivity and enjoyment in the area.

16-1

In particular, the EIR should:

1. recognize and mitigate significant recreational and transportation impacts on Bay Trail users,

2. adopt enforceable trail mitigation measures for significant and unavoidable motor vehicle transportation impacts with deadlines for implementation and meaningful metrics for performance and

3. evaluate and mitigate growth-inducing impacts cumulatively with all new developments likely to be stimulated, especially in terms of increased traffic, recreational usage and transportation.

16-2

Land Use & Planning

Consistency with adopted plans is a major factor for CEQA review. For example, CEQA requires the DEIR to discuss inconsistencies with general and regional plans (Guidelines §15125(d)).

Area-specific requirements of Richmond's General Plan 2030, Pedestrian Plan and Bicycle & Pedestrian Plan are cited below under Transportation, Traffic, Air Quality & Greenhouse Gas Impacts. In addition, the General Plan contains numerous citywide provisions

requiring that new projects incorporate the Bay Trail and maximum feasible public access to the shoreline, e.g.:

Policy CR1.5: "... require new development and redevelopment projects to provide pedestrian and bicycle amenities, streetscape improvements and linkages to planned and completed City and regional multi-use trails ...."

Action CR1.D: "Require new development and redevelopment projects to be pedestrian and bicycle-friendly, and to provide adequate connections to the existing and proposed bicycle and and pedestrian network." "Include provisions that require owners of property along the shoreline to provide maximum feasible access to the shoreline and to complete the Bay Trail as part of any project approval process."

Action CR1.E: "Expand multi-use trails and greenways in the City. Provide connector trails and linkages to improve access from neighborhoods in Central Richmond to the regional open space in the hills and along the shoreline."

Action CN2.H: "Initiate and carry through on coordinated planning to provide public access at points along Richmond's southern shoreline, from Point Isabel to and including the Marina Bay."

Policy PR 1.2: Multimodal Connections to Parks, Open Space and Recreational Facilities: "Improve connections to parks, open space and recreational facilities through an interconnected network of pedestrian-friendly green streets, multimodal corridors and trails. Enhance trails and greenways to provide recreational opportunities for residents, connect neighborhoods and community uses, improve access to natural resources and the shoreline and promote walking and bicycling."

Action LU2.B Streetscape Improvements: "Continue to implement streetscape improvements to enhance access, lighting, safety and experience for pedestrians, bicyclists, transit users, and motorists."

TRAC Recommendation: The EIR should demonstrate that the Specific Plan will fully implement the above General Plan 2030 policy and actions, Bicycle Master Plan and Pedestrian Plan.

Transportation, Traffic, Air Quality & Greenhouse Gas Impacts

Motor vehicle traffic and congestion on roads with associated air pollutant and greenhouse gas emissions has the potential for very significant impacts Thus, it is very important that the Specific Plan facilitate and encourage bicycling and walking for commuting, shopping and recreation by residents, employees and visitors.

Richmond's over 32 miles of San Francisco Bay Trail shown on the attached map will allow residents, employees and visitors to walk and bike to/from the places of employment and retail establishments, thus reducing motor vehicle congestion and air pollution as well as parking needs. Many already use the Bay Trail to commute by bicycle to/from locations between Point Richmond and Emeryville. Connectivity improvements will be important to facilitate non-motorized transportation for residents, employees and visitors.

Richmond's General Plan 2030, Bicycle Master Plan and Pedestrian Plan provide important guidance as to needed improvements for safe, convenient pedestrian and bicyclist access. The Specific Plan should include the following new Class I multi-use trails and trail staging areas as specified in the General Plan:

a. Trail staging areas at the southern ends of both S. 32nd and S. 46th streets with multi-use trails providing access to the San Francisco Bay Trail spine between Pt. Isabel and Marina Bay and

b. A Class I multi-use trail inland of Stege Marsh between S. 46 St. and the existing Meeker Tidal Creek Trail.

These trails are shown on the attached General Plan Map 4.1 Planned Pedestrian and Bicycle Improvements and also specified as follows:

Action CR1.E: "Create a Class I multi-use trail loop north of Meeker Tidal Creek and Stege Marsh as a transportation and scenic route. Also provide trailhead staging areas at the south end of 32nd and 46th streets with bridges across Meeker Tidal Creek and the unnamed creek east of South 32nd Street."
Action CN2.H: " Require the dedication of trailheads at the ends of South 46th and South 32nd Streets as part of any plans to redevelop the lands adjacent to the existing University of California Field Station."

The following additional trail improvements are specified in the Bicycle Master Plan and Pedestrian Plan:

1. Remedy the unduly wide and dangerous Bay Trail crossing of Central Ave. at Ry-din Rd., which will be used by RBC bicycle commuters (Pedestrian Plan page 98 last bullet);
2. Provide pedestrian and bicycle improvements at I-580 interchanges with Harbour Way, Marina Way, Marina Bay Parkway, Bay View Ave., Regatta Blvd. & Central Ave. (Pedestrian Plan pp. 104 - 106 and Bicycle Master Plan p. 72); and
3. Improve Key Corridors as "complete streets" for bicyclist and pedestrian safety, (Bicycle Master Plan pp. 59 - 60 and Pedestrian Plan pp. 47, 50, 55 - 56, 59 - 60, 98 & 104 - 108).

TRAC Recommendation: Mitigate impacts related to traffic, automotive air pollution, greenhouse gases and land use for parking by implementing the 2030 General Plan, Bicycle Master Plan and Pedestrian Plan improvements cited above.

Recreational Impacts

The EIR should evaluate and mitigate impacts on shoreline parks, as well as recreational and transportation usage of the Bay Trail, including growth-inducing and cumulative effects. For example, Bay Trail sections between Central Ave. and Harbour Way are popular with bicyclists, hikers, joggers, dog walkers, baby strollers, roller bladers, bird watchers, etc. After establishing baseline usage, the EIR should predict future traffic for recreation and transportation and evaluate the potential need for mitigating improvements to allow safe, enjoyable use of the Bay Trail. For example, existing Class I trail sections at best only satisfy Bay Trail minimum width standards for a two-way multi-use trail.

16-4

TRAC Recommendation: Determine existing bicycle and pedestrian level of service on the Bay Trail, analyze impacts on the trail system of additional users generated by the Specific Plan and provide mitigations for these impacts to eliminate or bring them to a less than significant level.

Growth-Inducing & Cumulative Impacts

16-5

It will be especially important to evaluate the growth-inducing impacts for the Specific Plan cumulatively with all other new developments it is likely to stimulate, especially in terms of increased traffic, recreational usage and transportation needs for improving Bay Trail connectivity in the area (CEQA Guidelines §§15126(d) & 15126.2(d)). An EIR also must discuss the cumulative impacts of a project when the incremental effects of a project are considerable viewed in connection with the effects of other past, current, and probable future projects (CEQA Guidelines §§15130(a) & 15130(b)). All probable

future projects should be considered. Projects anticipated beyond the near future should be analyzed for their cumulative effect if they are reasonably foreseeable (See *Bozung v. Local Agency Formation Comm'n*, 13 Cal. 3d 263, 284 (1975)).

The analysis of cumulative impacts is particularly important in the context of long-range planning or programmatic documents because the growth allowed under such plans is often substantial and because they set forth the policies that will guide the development of future individual projects for many years. As noted in the CEQA Guidelines, one requirement of an EIR for planning documents is that they provide a more thorough analysis of cumulative impacts than is required for individual projects (CEQA Guidelines §15168).

TRAC Recommendation: Evaluate and mitigate for growth-inducing and cumulative impacts of the Specific Plan, including but not limited to satellite R&D enterprises, supply and manufacturing facilities, hotels, restaurants and service businesses such as retail stores.

TRAC hopes that these comments will be helpful and would appreciate receiving a copy of the DEIR.

Sincerely,

Bruce Beyaert

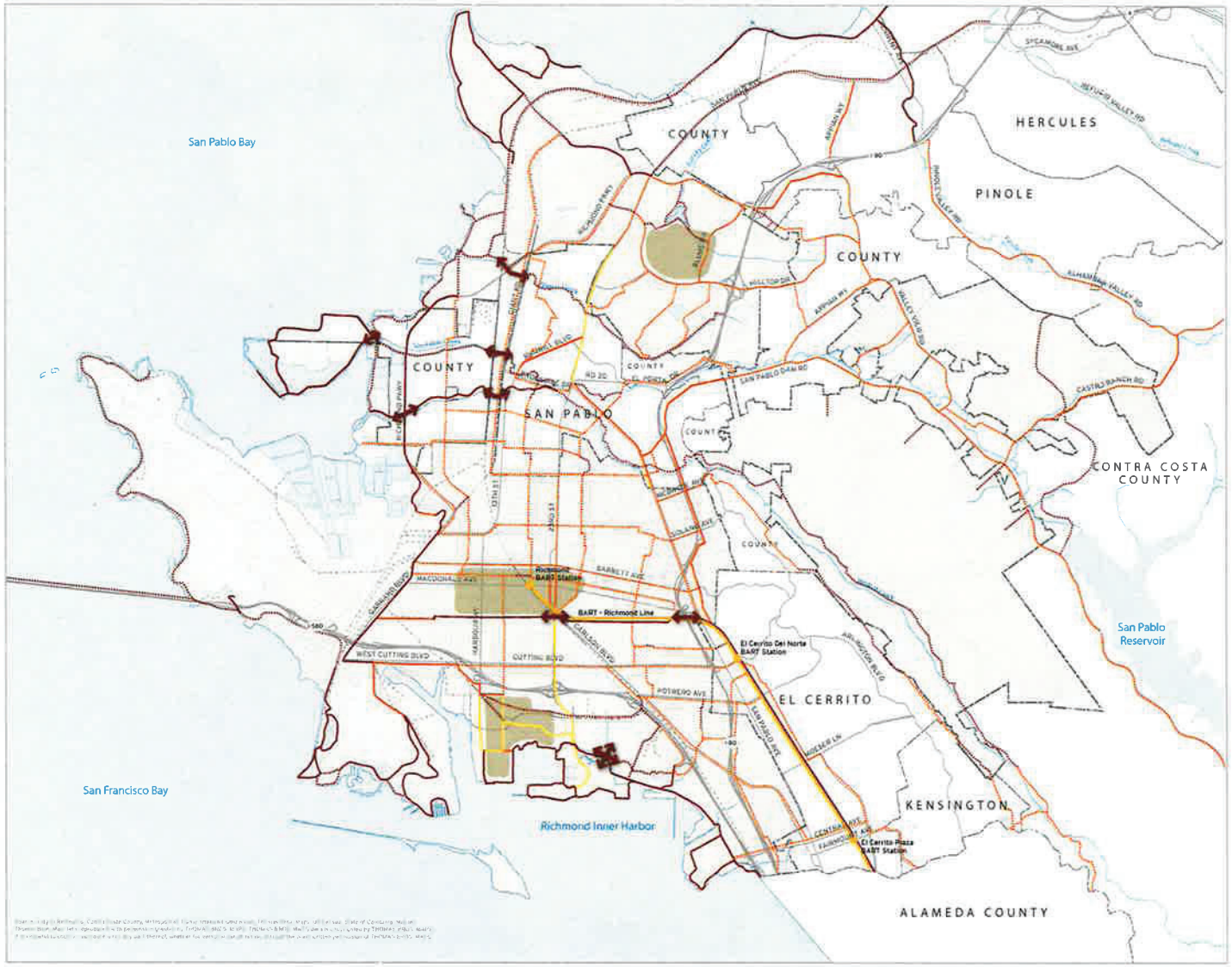
Bruce Beyaert, TRAC Chair

Attachments:

Richmond Bay Trail Map

General Plan 2030 Map 4.1 Planned Pedestrian and Bicycle Improvements


SAN FRANCISCO
BAY TRAIL PROJECT
Richmond
Bay Trail
Complete
Incomplete
Connector trails
Complete
Incomplete
P Parking
Parks/Open Space
Water Bodies
Point Wilson
Point Pinole Regional Shoreline
UP rail corridor
Atlas Road
San Pablo Avenue
Goodrick Ave
Richmond Parkway
Point San Pablo
Point San Pablo Yacht Harbor
Terminal 4
West County Landfill
San Pablo Creek
SAN PABLO
Wildcat Creek Trail
Wildcat Creek Viewpoint
Davis Park
Gertrude
Hensley St
23rd Street
Point Molate NFD
Point Molate
Western Drive
Pennsylvania
Castro Point
Castro Street
Richmond BART Station
West Macdonald
RICHMOND
Richmond-San Rafael Bridge
Garrard Blvd
Ohio Ave
Richmond Greenway
El Cerrito del Norte BART Station
Ohlone Greenway Trail
Chevron Long Wharf
Cutting Blvd
Boat Ramp Street
Hoffman Canal
580
Marina Bay Pkwy
Keller Beach
Regatta
Marina Bay Park
Miller-Knox Regional Shoreline
Dornan Dr
Seacliff Dr
Brickyard Cove
Harbour Wy South
Marina Wy
Hall
Marina Bay
80
Eastshore State Park
Ferry Point
Lucretia Edwards Park
Vincent Park
Shimada Park
Shipyard 3
Central
Point Isabel Regional Shoreline
Brooks Island Regional Preserve
N
0 0.3 0.6 0.9 1.2 Miles
January 1, 2014



Map 4.1

Planned Pedestrian and Bicycle Improvements

Existing Bicycle Routes
- Class I
- Class II
- Class III

Planned Pedestrian Improvements and Bicycle Routes
- Class I Bicycle Route
- Class II and III Bicycle Route
- Bicycle and Pedestrian Connector
- Pedestrian Improvement District

ACRES

0 0.5 1 2 MILES

Note: Larger format maps are available for view or purchase at the Planning and Building Services Department.

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REAL ESTATE DIVISION

BERKELEY, CALIFORNIA 94720-1380

October 30, 2014
via electronic mail

Hector Rojas, Senior Planner
City of Richmond
Planning and Building Services Department
450 Civic Center Plaza
PO Box 4046
Richmond CA 94804-1680

Re: Notice of Preparation of an Environmental Impact Report for the Richmond South Shoreline Specific Plan

Dear Hector,

Thank you for the opportunity to comment upon the referenced document. We have no comments on the scope for review and look forward to reviewing the environmental impact report.

The City and University share a vital interest in the viability and success of the South Shoreline area. We have greatly appreciated our partnership with the City of Richmond and the community to date, and we look forward to planning and implementing our shared vision.

Sincerely,

Terezia Nemeth
Berkeley Global Campus at Richmond Bay
Development Manager

cc: Jennifer McDougall, Principal Planner, UCB
Doug Lockhart, Senior Project Manager, LBNL
Jeffrey Philliber, Chief Environmental Planner, LBNL
Karl Hans, EH&S Senior Specialist, UCB
David Robinson, Associate Campus Counsel, UCB
Ruben Lizardo, Director Local Government & Community Relations, UCB
Barton Lounsbury, Staff Counsel, UCOP

Thursday, October 30, 2014

To:

Richard Mitchell, Planning Director
Hector Rojas, Senior Planner
Planning Department
City of Richmond
450 Civic Center Plaza
Richmond, CA 94804

Re: Notice of Preparation of Environmental Impact Report for the Richmond South Shoreline Specific Plan

We, the property owners of 825, 833, 860, and 867 So 19th Street, Richmond are submitting this letter at the City's request for public input on the Environmental Impact Report for the Richmond South Shoreline Specific Plan.

18-1

The property owners and impacted businesses have not seen the draft plan: this is greatly disturbing. The City Council instructed the Planning Department to work with owners and businesses to create overlay language for their impacted properties back in June. We met with Planning and were promised that this would be delivered to the participants by August, 2014. What was finally delivered at an October 14, 2014 meeting, were maps and definitions given to some of the businesses: two days prior to the Notice of Preparation meeting. Two days later on October 16, these were *not* included in the presentation given to the public. It is concerning that the City is asking for public input to identify environmental impacts of the plan on land-use decisions that could impact companies that are currently doing business in our city, when the plan that has been presented is missing critical language that affects zoning. This would dampen future businesses interest in re-locating to Richmond. Without overlay language that specifically protects, as promised, many of the light industrial buildings, these properties will be un-marketable. This will cause a blighted situation in the near term in most of the industrial sections of the SSSP. And while the zoning would allow for residential, the market has not shown that residential is viable in large amounts at this time.

18-2

The General Plan supports the protection and growth of the Arts and local artisans, yet in Sub Area 1 and Sub Area 3 & 4 we find local, renowned artists who will be impacted by locating residential near their light industrial businesses. This could result in their relocating to other areas of Richmond or leaving the City entirely.

Those businesses, including the Artisans, who are rezoned from light industrial (M-to residential and mixed use will be subjected to several issues:

(a) Inability to expand their business on their own property as it would be a nonconforming use.

(b) In ability to expand their business by purchasing property for the same reason.

(c) Increases in insurance due to changes in zoning.

(d) Increases in cost of loans or inability to obtain loans due to the rezoning of their property.

(e) Possible loan defaults if lenders deem the zoning changes a breach of contract.

(f) Residential and mixed use is being placed directly adjacent to light industrial uses without consideration of any buffer zones: in some cases, there are two different zonings on the same parcel? This includes adjacent to artisans who have a foundry, warehouse, and manufacturers of solar equipment. What would be the impact on these uses in regards to traffic, noise, odors, etc? What will be the economic impact of these businesses relocating out of Richmond due to the insertion of incompatible uses, adjacent to each other and without appropriate buffer zones?

(g) Should these business relocate to another city – what is the economic impact on the City of Richmond regarding – property taxes, sales taxes, use taxes, etc. And – how will these changes impact the cost of utilities and City services to this area?

(h) The same plan provides for much needed light industrial areas to support incubator manufacturing and supporting start-ups as seen in the San Francisco Mission Bay plan, however, the Plan is replacing light industrial with residential / mixed use. Tear it down to build it again? This seems at odds with the green goals within the plan when there are currently properties to meet these needs.

(i) The Plan needs to include the impact of manufacturing leaving this area and relocating to other parts of the City or leaving entirely.

18-3 The plan shows parkland on Railroad property next to proposed residential. The Railways have made it abundantly clear that they will not surrender their rights of way for such use. They are integral to the movement of goods to and from the port: a vital part of this city

18-4 This is a plan with a far reaching goal: 30-40 years, yet seeks zoning changes that will negatively impact businesses and properties today. Where are the timelines and bench-marks that would make these zoning changes align with market condition realities?

18-5 This plan does not provide for the protection of the small business or the artisan community. The potential impact that limiting, eliminating or relocating these businesses will have on the City will be far reaching, both culturally and economically.

18-6

We, as business and property owners, are committed to working with the City to make Richmond a better place to live and work. We feel that necessary changes to the overlay language are needed to this plan before we can support it. Input is critically needed from all of the community: residents, businesses, artisans, and the Berkeley Campus. We feel that we could support the plan if overlay language is provided, and a draft is made available for review prior to being presented.

We look forward to helping make this plan a success for the community as a whole.

Sincerely,

Christine Firstenberg, Dr Xiao P. Jiang,
Jin Chen, R Guy Corrie

R Guy Corrie
Union Street Glass Inc.
833 So 19th Street
Richmond, CA 94804
guy@unionstreetglass.com

Dr. Xiao P. Jiang PHD
MTI Corporation
860 So 19th Street
Richmond, CA 94804
xpj@mtixtl.com

AA Portable Power Corporation
Jin Chen & Dr. Xiao P. Jiang
825 So 19th Street
Richmond, CA 94804

Christine Firstenberg
867 So 19th Street
Richmond, CA 94804
cfirstenberg@metrovation.com

ELG EDGCOMB LAW GROUP LLP
ENVIRONMENTAL LAW

One Post Street, Suite 2100
San Francisco, California 94104
415.399.1115 direct
415.399.1885 fax
bmarsh@edgcomb-law.com

October 30, 2014

Via E-mail

Hector Rojas, Senior Planner
Planning Department
City of Richmond
450 Civic Center Plaza
Richmond, CA 94804-1630
hector_rojas@ci.richmond.ca.us

Re: Zeneca's Comments on City of Richmond's Notice of Preparation of Environmental Impact Report for the Richmond South Shoreline Specific Plan

On behalf of Zeneca Inc. ("Zeneca"), we have prepared the following comments regarding the City of Richmond's Notice of Preparation ("NOP") of Environmental Impact Report ("EIR") for the Richmond South Shoreline Specific Plan ("SSSP"). Per the City's request, Zeneca is limiting its comments to the scope and content of the EIR, focusing on the potentially significant environmental effects that the proposed "Project" may have on the environment.

General Comments

19-1 As a preliminary matter, the "Project" has not been sufficiently defined for Zeneca to fully comment at this time because no draft SSSP has been disseminated to the public. Thus, Zeneca cannot assess the significant potential environmental impacts without a draft SSSP that provides more detail on the scope of the Project.

19-2 Zeneca is a respondent on the California Department of Toxic Substances Control ("DTSC") 2006 Order requiring remediation of the Campus Bay site. In that role, Zeneca submitted its Draft Final Feasibility Study/Remedial Action Plan ("Draft Final FS/RAP") to the DTSC on October 15, 2014. The Draft Final FS/RAP expressly refers to the NOP and the potential re-zoning of Campus Bay from its current designation as M-1 (Industrial/Office Flex), M-2 (Light Industrial) and M-3 (Heavy Industrial) to the various designations set forth in the March 2014 Recommended Land Use Map that the NOP states will provide the basis for the yet to be drafted SSSP. Although Zeneca supports retaining the current zoning of Sub-Area 4 because it best serves the Richmond community by promoting long-term job creation, consistency with

neighboring uses, and the development of the adjacent Berkeley Global Campus at Richmond Bay, Zeneca's Draft Final FS/RAP proposes a cleanup sufficient to allow for the uses permitted by the "R&D/Business Service," "Mixed Use: Employment," "Mixed-Use: Residential," and "Open Space" designations specified in the Short-Term Implementation map. We anticipate DTSC soon will issue the Draft Final FS/RAP for formal public comment. Accordingly, the EIR and Specific Plan should make specific reference to the Draft Final FS/RAP and be consistent with it.

The EIR and SSSP also must be consistent with the existing land use restrictions enforceable by the Regional Water Quality Control Board ("RWQCB") that Cherokee recorded in 2004 (the "2004 RWQCB Deed Restrictions") on the titles to the three lots at Campus Bay. Such land use restrictions prohibit the use of the property for detached single family residential development and certain other specified uses, but conditionally allows for other types of residential uses.

19-3

The Deed Restrictions provide, in relevant part, that:

- land use is restricted to industrial, commercial or office space use, or, under limited circumstances, residential use if a residential construction design plan and
- related risk assessment establishing acceptable risk levels are submitted to the RWQCB and approved by the same; and
- the Site shall not be used under any circumstances for detached, single family homes, schools for children under 21, or hospitals.

In our September 23, 2013 letter to the City Manager, we explained how any re-zoning of Campus Bay inconsistent with the 2004 RWQCB Deed Restrictions would be contrary to California law. Thus, any portions of Campus Bay designated as residential would, at a minimum, have to comply with the above conditions.

Specific Comments

19-4

1. Air Quality

(a) The Short-Term Implementation map identifies an area on Campus Bay as "Mixed Use: Residential" (defined at 3.12 of the Development Alternatives Workshop Summary as "Retail with residential above") that would have the effect of re-zoning portions of Lot 3 from the current zoning of M-3 (Heavy Industrial). The EIR must evaluate the impacts on air quality of re-zoning this portion of property and how mixed use residential land use will meet the air quality requirements set forth in both the 2004 RWQCB Deed Restrictions and the engineering and land use controls set forth in the Draft Final FS/RAP for the proposed uses, particularly the residential ones.

(b) The EIR should not assume the development of the Berkeley Global Campus at Richmond Bay to determine the impact on air quality from assumed trip generation rates because such development is uncertain. If the Berkeley Global Campus at Richmond Bay is not developed as projected, the vehicle miles travelled ("VMT") by any residents in Sub-Area 4 will be substantially higher because of commuting to jobs elsewhere.

(c) The EIR must evaluate the impact re-zoning of Lot 3 would have on, and how any proposed development must meet, the indoor air emission mitigation measures required by the Draft Final FS/RAP and the proposed Site Management Plan, including the necessary risk assessment preparation, and implementation of required engineering controls depending on the type of development being considered.

2. Hydrology and Water Quality

19-5

(a) The EIR should address the impact of any allowed uses (i.e. uses other than Open Space) along the southern uplands edge of Lot 3 at Campus Bay that might be inconsistent with and encroach on the 100-foot set-back described in the Draft Final FS/RAP from the biologically active permeable barrier ("BAPB") which has been installed along the southern boundary of the upland portion of Lot 3 at Campus Bay.

3. Biological Resources

19-6

(a) The EIR should fully evaluate the potential environmental impacts of the undefined "Residential" re-zoning (yellow on the Recommended Land Use map) from the current open space uses of Habitat Area-1 in this portion of Lot 3 that includes, and is immediately adjacent to, the jurisdictional wetlands of the Upper Lagoon, the Lower Lagoon, and the associated wetlands "ponded area." The aesthetic and biological resources of these open space areas could be detrimentally impacted by any potential development. For your convenience, we have attached a figure depicting the jurisdictional wetland areas superimposed over the land use designations in the Recommended Land Use map. (*See*, Figure 1). Specifically, this area includes East Stege Marsh, which has been identified as Northern Coastal Salt Marsh habitat, providing habitat for federal and state-listed endangered species. Moreover, the two lagoons in Habitat Area-2 are part of a conservation easement held by East Bay Regional Park District and their aesthetic and biological value would be substantially impacted by the potential encroachment or use of the adjoining area for residential development. Thus, no development should occur within a substantial buffer zone to be established above the northern boundaries of the two lagoons and wetlands ponded area to preserve their aesthetics and biological value.

(b) The EIR should fully evaluate the potential environmental impacts of constructing the proposed Lark Drive, including but not limited to, the University of California Richmond Field Station's Coastal Terrace Prairie.

4. Hazards and Hazardous Materials

19-7

(a) The EIR should acknowledge and address the many existing uses within Sub-Area 4, including the business adjacent to Campus Bay at Allied Propane, that are incompatible with, and pose a potential hazard to, residential development in this area.

5. Greenhouse Gases ('GHG") and Global Climate Change

19-8

(a) The EIR should not assume the development of the Berkeley Global Campus at Richmond Bay to determine the impacts on increased GHG and climate change from assumed trip generation rates because such development is uncertain. If the Berkeley Global Campus at Richmond Bay is not developed as projected, the VMT by residents in Sub-Area 4, and a resulting increase in GHG, will be substantially higher because of residents commuting to jobs elsewhere.

6. Transportation/Traffic

19-9

(a) The EIR should address the impacts from increased traffic loads to Interstate 580 and local streets from the current low-intensity use of Sub-Area 4 to the high-intensity use contemplated in the Recommended Land Use map.

7. Noise

19-10

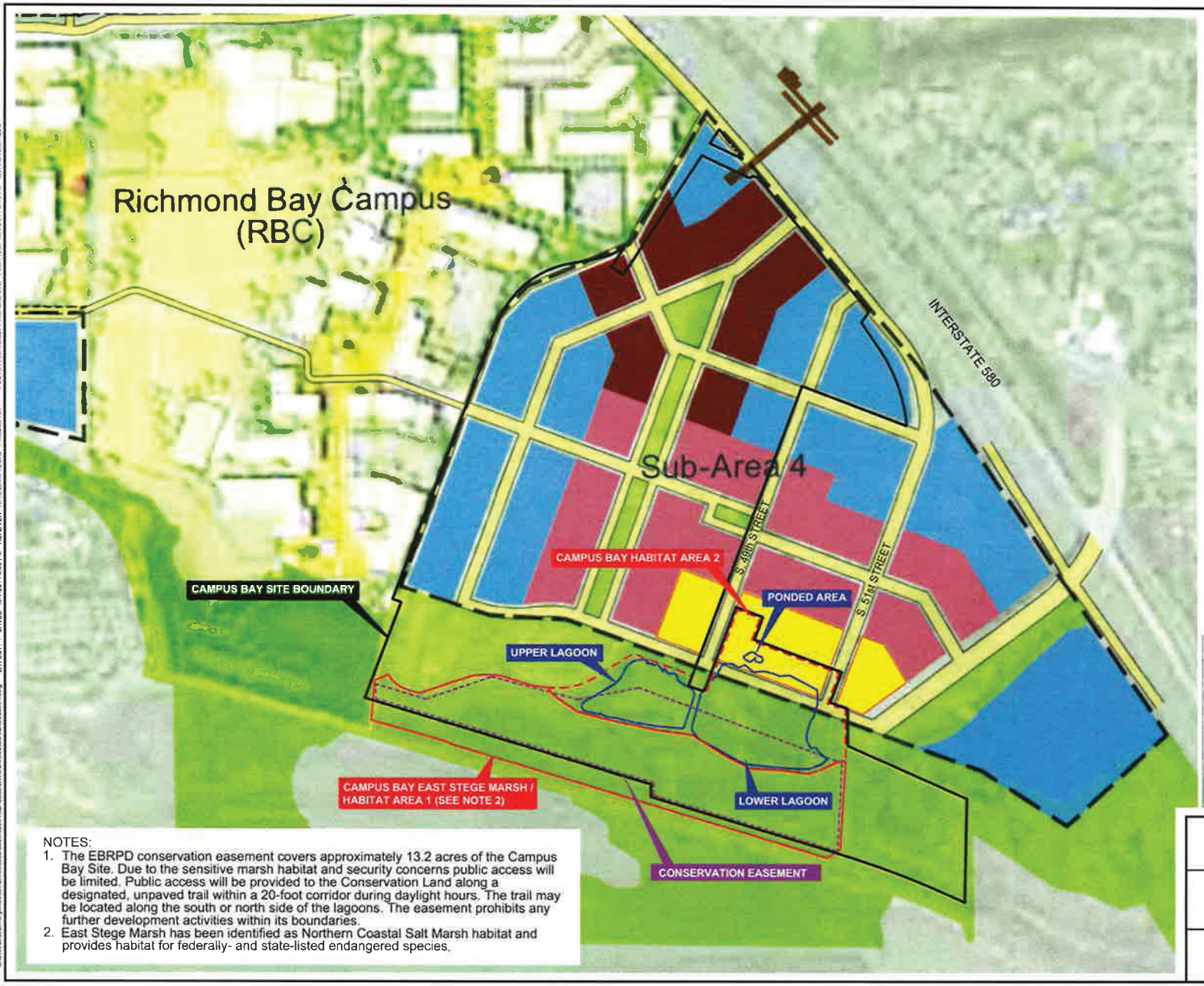
(a) The EIR should consider that residential uses are being placed in Sub-Area 4 near Interstate 580 and directly adjacent to commercial/industrial uses (including the contemplated use of Berkeley Global Campus at Richmond Bay) without sufficiently large, or in some cases any, buffer zones to protect inhabitants from excessive noise pollution. This can be mitigated by reducing the footprint of, or eliminating altogether, the Mixed Use Residential and Residential use designations and keeping Sub-Area 4 zoned M-1, M-2, and M-3.

Zeneca looks forward to seeing the draft SSSP as soon as possible. As Zeneca was not invited to participate in the previous SSSP Advisory Group meetings held to date, we hope to be invited to attend all future meetings to ensure that any future re-zoning of Campus Bay remain consistent with the Draft Final FS/RAP and the best interests of Richmond.

Very truly yours,

William D. Marsh
Attachment (1) – Figure 1

cc: Richard Mitchell, City of Richmond Dir. of Planning
William Lindsay, City Manager
Bruce Goodmiller, Esq., City Attorney
Barbara Cook, DTSC
Lynn Nakashima, DTSC
Stephanie Lai, Esq. - counsel for DTSC
Brett Henrickson, Esq. - counsel for UC
Vivian Kahn
Charles Elmendorf
Terezia Nemeth



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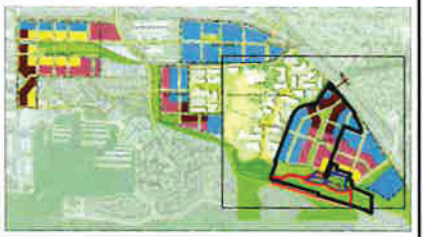
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CAMPUS BAY SITE FEATURES LEGEND:

- CAMPUS BAY SITE BOUNDARY
- CAMPUS BAY HABITAT AREA 1
- CAMPUS BAY HABITAT AREA 2
- DELINEATED WETLAND
- EAST BAY REGIONAL PARK DISTRICT (EBRPD) CONSERVATION EASEMENT (SEE NOTE 1)

CITY OF RICHMOND PROPOSED LAND USE LEGEND:

- RESIDENTIAL
- R&D / BUSINESS / SERVICE
- MIXED-USE: EMPLOYMENT
- MIXED-USE; RESIDENTIAL
- OPEN SPACE



NOTES:

1. The EBRPD conservation easement covers approximately 13.2 acres of the Campus Bay Site. Due to the sensitive marsh habitat and security concerns public access will be limited. Public access will be provided to the Conservation Land along a designated, unpaved trail within a 20-foot corridor during daylight hours. The trail may be located along the south or north side of the lagoons. The easement prohibits any further development activities within its boundaries.
2. East Stege Marsh has been identified as Northern Coastal Salt Marsh habitat and provides habitat for federally- and state-listed endangered species.

CAMPUS BAY SITE, RICHMOND, CALIFORNIA

WETLANDS, EASEMENT, AND RESIDENTIAL LAND USE

ARCADIS

FIGURE 1

Each Public Scoping Comment Highlighted.

MEETING MINUTES

SOUTH SHORELINE SPECIFIC PLAN SCOPING SESSION

OCTOBER 16, 2014, 6PM

CITY OF RICHMOND COUNCIL CHAMBERS

STAFF PRESENTATION:

Senior Planner Hector Rojas said the City began the South Shoreline Specific Plan scoping process originally in June 2013 where three community meetings were held. Input received has led to material he will present tonight. He said the purpose of tonight's meeting is to solicit input and receive comments on the EIR. He introduced Crescentia Brown with ESA who will provide the overview of the EIR process.

Mr. Rojas stated the Richmond Field Station and properties owned by UC Berkeley were accepted by UC Berkeley and Lawrence Livermore Laboratory to host a 5.4 million square foot research and development campus. This was a long-term plan developed over a year with community support from Richmond. The site is located in an area with sweeping views of the Bay and the City of Richmond shares the area via 32 miles of shoreline and the City wants to be able to take advantage of the economic development opportunity. The long-range development plan looks at the approximately 134 acres of land. The specific plan is a vision plan for the 220 acres that surrounds the campus. The idea is they are bringing a world-class development and want to foresee the projects that will be brought to Richmond. What was once called a Richmond Bay Campus is now being called the Berkeley Global Campus.

Mr. Rojas identified an objective as being able to optimize economic benefits from the Berkeley Global Campus. A vision of the plan is to create a complete waterfront community that both integrates existing development, neighborhoods and businesses, create mixed use, commercial and residential development, support new research off and opportunities for the campus. The type of buildings built over the next 40 years will be sustainable, climate-resilient projects. They want neighborhoods tightly knit with a street network that promotes healthy neighborhoods and walkability. Given that the City has developed very auto-centric, they want to be able to create mixed uses so developments are transit-oriented so they can take advantage of existing buses, public transit, bike lanes, and pedestrian circulation so people can both live and work in a reasonable distance from each other. Another goal is to create affordable housing within the planning area as well as inclusionary housing policies so there is some requirement that affordability be built into the projects. There will also be 145 acres of open space in addition to existing shoreline amenities.

Mr. Rojas presented the recommended land use map which was reviewed by the Planning Commission and City Council in April and May. The area is broken down into 4 subarea neighborhoods. They want to create opportunities for residential amenities such as grocery, schools, open space, entertainment, and

he said each subarea would be a tightly knit neighborhood. He said street networks shown on the plan is not in existence today, and walkable blocks will be created and include various options and amenities to get from one area to another. He presented the illustrative plan for the Berkeley Global Campus and the goal is to connect both sides of the campus together through a network of streets.

He presented an idea of what the plan would look like at build-out in 30-40 years which displayed buildings, street grid network, landscaping, pedestrian plazas, open spaces, and enhanced biological resources, SF Bay Trail, and creeks.

He presented the anticipated build-out of the development program which will be a major factor in the EIR analysis. They include 5.6 million square feet of research and business service land uses in the area. They anticipate 720,000 square feet of retail uses, up to 13,000 new jobs in the plan area and an estimate of 10,000 new residents over build-out, 148 acres of open space, about 4,000 new units in the area, and he said impacts will be considered in the EIR.

Crescentia Brown, AICP, ESA, explained that CEQA mandates that environmental effects and impacts be identified and an EIR prepared. The project description is contained in the RFP and it is important to think about the potential environmental effects that the EIR should consider and evaluate. She discussed the purpose of CEQA which is to inform and engage the public and decision-makers throughout the process, to disclose potential impacts, and ways of addressing those impacts through alternatives and mitigation measures documented in the EIR to reduce impacts with implementation of the specific plan. CEQA is the process and the EIR is the document resulting from the process. She said the yellow text is the area where the public has a formal opportunity to have input into the process and document. The City is in the 30-day comment period which began with the City issuing a Notice of Preparation. Within the 30 days the public scoping meeting is held to receive input. After tonight, staff works on preparation of the Draft EIR or DEIR. A notice will be published to announce it has been prepared and the public has 45 days to review it, submit questions and comments in writing, and there will be a public hearing within the 45 days, as well. At the end of the 45 days, the City will prepare written responses to comments, and prepare the Final EIR or FEIR with incorporated responses, as well as any adjustments to the DEIR.

Ms. Brown said for input to be most meaningful to the DEIR, they will discuss environmental topics, issues of concern, ways to analyze impacts, proposed alternatives to be less impactful, and considerations about the context or other projects in talking about this specific plan. She presented topics and subtopics for discussion and said speakers will be given 2 minutes to comment at this meeting, but otherwise will also have until 5:00 p.m., October 30th to provide written comments to staff.

Mr. Rojas reviewed next steps, stating the Notice of Preparation was released September 30th, tonight is the scoping meeting, the end of the comment period is October 30th, and hopefully the City will have a draft of the specific plan document with a recommended land use map. The specific plan will have its own zoning ordinance for this area as well as its own rules for development. Along with the draft specific plan, staff will also release a draft of the Connectivity Plan, which focuses only on improving connectivity within the specific plan. If kept on track, in January of next year, the City would also release a draft of

the EIR. That the end of the 45 day comment period, comments would be documented and responded to, they will take the DEIR to the Planning Commission and City Council, presenting feedback and at that time, revisions may be made, and staff would complete the Final EIR and final draft of the specific plan. And lastly, it is anticipated that staff will take the specific plan and EIR to both the Planning Commission and City Council for consideration of adoption in May and June. He noted they are on an aggressive schedule, given grant funding requirements, and he next invited the public to comment.

Speaker Comments:

Katrinka Ruk said she is commenting on behalf of the Council of Industries and other businesses located within the South Shoreline Specific Plan, particularly Subareas 1, 3 and 4. They have worked with the City on this project over the last year and they request that the EIR consider how well the proposed zoning treats businesses that will now become non-conforming uses where now they are conforming uses. Secondly, in the NOP, Item F; "Probable Environmental Effects", they ask that an economic element be included in the plan to identify impacts on businesses, property owners, City and community and how will this change in the zoning impact the City and local community in regards to the economy, jobs, unemployment, taxes, etc. They asked that Item F include a study on the impact of the arts and culture element should the artisans located in the South Shoreline Specific Plan now become non-conforming uses and either relocate within the City or outside of the City. The General Plan has a special element to preserve art and culture in the City. Thirdly, they want to establish a parallel process for addressing non-conforming use issues, i.e., grandfathering in current properties or businesses and/or establish an overlay zone, and to consider potential resulting mitigations should these things not be addressed. Fourth, they ask to re-examine the economic viability of moving the BNSF Richmond Railroad Switching Yard and replacing that with parks and residential. They ask if this is a replacement to a higher and better economic use than real transport or would this be considered a land taking. Fifth, on Figure 1 map, they ask to remove the buffer zone area as well as other highlighted areas that are not part of the South Shoreline Specific Plan per the General Plan. She said this is confusing and thinks this was an MTC map. Sixth, she referred to the Figure 3 map in Subareas 1 and 4, and said there are single property parcels that are actually split in half and are designated as two separate land uses. Property parcels should be considered and treated as one whole homogenous zoned area. She asked to consider the impact this has on a property owner in regards to insurance expansion and sale of property if there are two different zoned areas on one piece of property.

Paul Minault said he thinks it would be useful for people to know the relationship of the map of the specific plan to the map of the priority development area and a map for the southern gateway in the General Plan so they see how they all fit or do not fit. The connectivity plan should include consideration of the growth of the Port and the fact that Richmond is a very important distribution hub and regional center for the Bay Area. If it is thought simply as a city facility, it is not. They are concerned that the connectivity plan will be too narrow in its focus. Given the lack of a good management plan which the City has needed for some time, they think the connectivity plan is premature and unbalanced. A legal issue with CEQA right now is the issue of whether an EIR can consider hazards posed by existing conditions, which is in the courts at the moment and this needs to be resolved. The City needs to determine in the EIR how it will handle this still unsettled issue. Under California law, it is not consistent

with CEQA to consider the impact of the environment on a project. One can only consider the impact of a project on the environment. In tying in with Ms. Ruk's request for an economic analysis, part of this should be the physical impact on the environment of increased property values. Industry relies on lower property values to survive. When property values go up, industry is often compelled to flee to exurbs and there is then a situation where in order for a highly developed area like the proposed plan area to function, all the service components of that economy have to come in from the exurbs because there is no place for them to locate in the immediate vicinity of a recently developed area. There is a need for some sort of phasing structure in the plan to ensure there is orderly development and not an immediate rush for residential. They have seen a lot of residential around the plan area that is not well served by commercial, job opportunities or transportation, and one of their concerns is a continuation of that and that there may be an imbalance that may persist for some time. He suggested a phasing component that regulates how the development proceeds in this 220 acre area and also cited the existence of increased rail use.

Stan Teaderman, Allied Propane Corporation, said they had the opportunity to work with the City within the South Shoreline area. They have a group of businesses contiguous to the old Stauffer Zeneca facilities and they have a number of businesses that have impacts not only in the Richmond area with specialized industrial uses and distribution. Their business is in the distribution of liquefied petroleum gases. Their facilities have been established since 1967 in the area and their area of activity has an inherent buffer zone with the bay to the south. They have had Stauffer Zeneca to the west and Highway 17 which is now I-580. He recognized progress cannot be stopped; however, the properties they recognize here which they not only have a long term issue with but they know that the UC Global Campus and the Lawrence National Lab will be a world class facility. This is millions of square feet of R&D development. His company has had a very significant relationship over the years with UC Berkeley and Lawrence National Lab with infrastructure by which they have very close working relationship, with other industrial and commercial communities, the airlines, the ports, the manufacturing people, and they have distribution nationally and distribution throughout northern California for their liquefied petroleum gases. So as they see this component, particularly on the south and Section 4, in the planning, they have taken the 4 blocks and have actually split properties in half that are existing properties. When they show residential within the community right in the middle of these areas that have been controlled under an industrial based zone where there are buffer zones that have not really encroached. He knows this may be a proprietary selfish issue, but to consider his position and concern themselves to have this permitted in a buffered area in this region will probably never work again. As they get ready to think about this with other business in the area, surely in 40 years as this beautiful facility develops, those of them can incorporate a great desire to want to be involved even though they may not be given the privilege of maintaining their petroleum facilities, but they arbitrarily put residential right in the middle of the whole area. He said he has been working with the City for about 4 years now and he thanked staff for the opportunity to comment, but there is a great desire of somebody arbitrarily making these decisions not recognizing the fact that there have been millions of dollars put back into the community and many, many employees and he thinks this must be a priority for the City to contemplate.

Frances Dupont said she is speaking tonight as a volunteer with Golden Gate Audubon, said she is a resident of Richmond and has lived in the Marina Bay area since 1986, and would love to see the area properly improved. Her concerns are strictly impacts on the environment and wildlife and they will turn in a comment letter on her comments today. Things they are concerned with mostly involve taking an industrial area and improving it hopefully, but because they are right on the bay they have many migrating birds and a large number of ducks that spend the winter on the bay and feed off shore. The impact of toxic substances going into the bay is important and they would like to see this minimized. She noted the City of San Francisco and Oakland have implemented bird-safe building standards which is something to take into account. When buildings are built, glass is wonderful to use but this might not be the best thing for birds. The impact of overly bright lights is important, as well as the proximity of having very large buildings next to the marshes, and she asked to consider preserving these habitats, accommodating sea level rise, and abandoning the use of harmful chemicals to wildlife.

Manny Ditz, BNSF Railway, said they would like to look at alternative land use plans that also include minimizing the impacts to the existing businesses there and the rail infrastructure in place there. Right now the plan looks at eliminating switch yards into some sort of park surrounded by housing. He thinks the plan needs to be adequately mitigated and addressed and looks at different land use alternatives there. Regarding sustainability, he understands it helps the environment, but a lot of it also deals with supporting what is currently in place as far as land uses. It is also about sustainable communities and he asked staff to keep this in mind. This is an industrial area so somehow the City needs to identify in the plan alternatives looking at different scenarios. He was not sure where the switching yard could be located and this needs to be identified. He thinks it is very important to have a specific plan policy that identifies and supports existing businesses and allowing flexibility short-term and long-term through modifications and permitting processes and this is what many businesses are asking for here.

Sherry Padgett said she is a member of the Richmond Southeast Shoreline Area Community Advisory Group and a Richmond resident, and also owns a business located in the nearby area and employs 10 people. She will be submitting formal comments in writing, and referred to Aesthetics. A question she would like answered in the EIR is whether there will be a visual cohesion and impression for visitors and residents as they enter the City on I-580. The prior specific plan for the area was cognizant of visitors to the community on I-580 and she would like to know if the visual impact is going to have a positive impression when people move through the community, not only for the visitors but also from the shoreline, on the Bay Trail and for residents in the community. Another question she would like answered under Biological is what will happen to trees as they are removed and whether there is a plan to replace them. Another area is under Hazardous Material and she said there is an Air District permit for Bio Rad as the second highest emitter within the City of Richmond, and she wants to know what impact that would have on the surrounding plans, given they are a heavy polluter and it is a long-standing permit of nasty toxins. Under Hydrology and Water Quality, she would like to see the plan include the worst case sea level rise. Under Noise, on the underpass plan there was a terrific mitigation of allowing the community to vote about whether they wanted a long-term disruption or a short-term disruption. This was a very positive impact on the community in that they got to choose a short-term disruption rather than extending noise over a longer period. She asked that the EIR include what might

happen if they shorten some of the development so they are not extending it over a long period of time. A similar concern would be the impact of concurrent permits and understanding the noise level and impacts for those who work and live in the area. Lastly, under Utilities and Services, she asked if there will be consideration calling for solar and hook up of electric vehicles.

Curtis Savoye, Director of Operations, Richmond Pacific Railroad, said he has prepared comments and said today is his 60th birthday. He could retire today and spend his time with his family and friends, but he is choosing to work and his work is in Richmond. He is right in the middle of the South Shoreline Specific Plan as well as his customers. Together they employ hundreds and help drive the economy of the Bay Area and they are not planning to go anywhere. He and Richmond Pacific Railroad are very concerned with the Planning Commission's refusal to acknowledge their existence into the future. He asked what logical visionary could put a park where a thriving railroad now sits. They and their predecessors have been there over 75 years. When they started 30 years ago, their accounts were about 4,000 annually and it will exceed 20,000 this year. At that growth rate, he questioned whether in 40 years their facilities will be nothing but a park. He did not think they will be a park but a thriving economic foundation supporting the City of Richmond. Their key partners are the Union Pacific and the Burlington-Northern Santa Fe Railway and they have gone on record with the City that they do not plan to be shoved aside. They have been in business for nearly 150 years together and plan to continue to support the U.S. economy for at least another 150 years including those parts of this wonderful community. They respectfully requested, as has been done many times since this project has started, to acknowledge the importance of all industry in Richmond by making sure the public knows they are here and intend to stay here.

Mary Selva, President, Richmond Annex Neighborhood Council (RANC), said their neighborhood sits adjacent to the planned area, said she appreciates all comments tonight and agrees with some. At an RANC meeting, LBL did a presentation and for their area of 5.4 million square feet of laboratory. They did an overlay of the lab for the South Shoreline area and the Berkeley campus and informed them that it is about the same size. Then they did a reverse by putting the campus on the shoreline and vice versa. She said it is an extremely large development and an addition to the expanded area of the South Shoreline plan. It is important that all potential impacts are addressed and asked to include the total estimated population in the planned area including the potential number of employees, people living in the area and estimated numbers of guests or visitors, traffic impacts, potential impacts on the surrounding marshlands, creeks and other wetlands and the shoreline area itself.

Patricia Jones, Executive Director, Citizens Free Shore Parks, appreciates work by City staff and said as an environmental non-profit organization dedicated to creating park and open space along the East Bay shoreline, they were instrumental in creating the McLaughlin East Shore Park running along the west side of the South Richmond Shoreline. They worked to make sure the public has access to places to relax, have fun and enjoy nature. To this, they must protect habitat and critters where special vegetation grows. Because this property is adjacent to what little is left of the undeveloped San Francisco shoreline, it is important they strive to see that future development set a high standard as a public and natural resource. They would like to see the City do all it can to protect the quickly disappearing and sensitive coastal prairie which includes not extending Lark Drive through the coastal

prairie. She asked to plan for and protect the much used Bay Trail and open space as this area is developed, as more people move in to live here and to work, do a full clean up to residential standards on a permanent basis of the contaminated area in the plan and this does not mean a capped solution. She asked to respect the community and the 2012 General Plan and re-affirm open space designation between the Bay View Avenue, Hoffman Marsh and the Shoreline. And as has been mentioned, she would add air pollution as it impacts the area, as well as sea level rise impacting the open space closest to the shoreline. She said they will also provide written comments.

Rich Doellstedt, Richmond Wholesale owner, said part of the plan should consider how to transition over the 40 years. With them being closely impacted, he asked how this will be phased in. Secondly, he asked how their business which is a warehouse and office building fit into the business light industrial zoning. They are very concerned about how this plan would be approached, the aggressiveness of it, the timing of it, and how it impacts their business which has been there since 1964. Lastly, he said sometimes business of R&D almost is being looked upon as negative and he asked what the structures look like as far as aesthetics. They are a meat company and have a beautiful office building, and while the plan is for a high profile he also asked how the business is maintained and kept.

Jim Cannon asked staff to put up both the Safeway yard and the 23rd Street yard back in as rail yards and switch yards rather than showing it as a park. The rail yard will continue being there and he asked to let the people know it is there. The map shown is deceitful and he has heard from Mr. Rojas and Mr. Mitchell the explanation of this. In the future, the rail yards would sell those yards because the value of them would go up. He questioned whether the City would spend millions to buy the yards and turn them into parks, as the City is broke and cannot afford the price or the political fallout in doing so. He said no one will want the City to develop another park in Marina Bay. He did not believe the developer will spend millions to buy the land and turn it into a park, nor did he believe the railroads will give up their operations and build a park. To show the prospective developers of this map is to mislead and deceive them into believing they are building something near a park, so he asked to show them what is real. It is outright dishonesty and deceit and the City will spend millions to put in the underpass with two railroad lines across it and he asked why this was done if they do not believe rail will exist. He asked the City to be truthful and put back the rail yards and not show the plan as a park, as the railroads are not going away. Also to put in is a noise component and the component should show instantaneous noise like the train horns that go off, yet all studies are being done on a 12 or 24 hour period.

Mr. Rojas thanked everybody for attending and concluded the meeting.

Appendix B

Air Quality and Greenhouse Gas Emissions Technical Data

ESA

Weekend Vehicle Trip Calculations - Full Specific PlanSubarea 4

Per Fehr & Peers Project Trip Generation for weekday =

			Size	
Residential	37920	trips	5700	units
Retail	35460	trips	720	ksf
Office	22310	trips	2840	ksf
R&D	19860		2850	ksf
Total =	115550	trips		

Post Adjustment Total = 71450 trips This is weekday

Reallocate adjusted trips to land use =

				Rate	
Residential	23447.72	trips	Weekday	4.113635	trip/unit
Retail	21926.59	trips	Weekday	30.45359	trip/ksf
Office	13795.32	trips	Weekday	4.857508	trip/ksf
R&D	12280.37	trips	Weekday	4.308903	trip/ksf
Total =	71450				

CalEEMod Weekday and Weekend default rates from ITE =

	Weekday	Saturday	Sunday
Residential	6.59	7.16	6.07
Retail	57.24	71.07	56.36
Office	11.01	2.37	0.98
R&D	8.11	1.9	1.11

Calculate weekend trips based on Project specific Trip demand from Fehr & Peers

	Saturday		Rate		Sunday		Rate	
Residential	25476	trips	4.469443	trip/unit	21598	trips	3.789039	trip/unit
Retail	27224	trips	37.81161	trip/ksf	21589	trips	29.9854	trip/ksf
Office	2970	trips	1.045622	trip/ksf	1228	trips	0.432367	trip/ksf
R&D	2877	trips	1.009484	trip/ksf	1681	trips	0.589751	trip/ksf
	58547	trips			46096	trips		

Weekend Vehicle Trip Calculations - Subarea 4

Per Fehr & Peers Project Trip Generation for weekday =

			Size	
Residential	10110	trips	1520	units
Retail	10310	trips	190	ksf
Office	5320	trips	630	ksf
R&D	4690		640	ksf
Total =	30430	trips		

Post Adjustment Total = 24620 trips This is weekday

Reallocate adjusted trips to land use =

				Rate	
Residential	8179.698	trips	Weekday	5.38138	trip/unit
Retail	8341.512	trips	Weekday	43.90269	trip/ksf
Office	4304.252	trips	Weekday	6.832147	trip/ksf
R&D	3794.538	trips	Weekday	5.928966	trip/ksf
Total =	24620				

CalEEMod Weekday and Weekend default rates from ITE =

	Weekday	Saturday	Sunday
Residential	6.59	7.16	6.07
Retail	57.24	71.07	56.36
Office	11.01	2.37	0.98
R&D	8.11	1.9	1.11

Calculate weekend trips based on Project specific Trip demand from Fehr & Peers

	Saturday		Rate		Sunday		Rate	
Residential	8887	trips	5.846841	trip/unit	7534	trips	4.956749	trip/unit
Retail	10357	trips	54.51021	trip/ksf	8213	trips	43.22774	trip/ksf
Office	927	trips	1.47068	trip/ksf	383	trips	0.608129	trip/ksf
R&D	889	trips	1.38903	trip/ksf	519	trips	0.811486	trip/ksf
	21060	trips			16650	trips		

Adjustment for 2013 nad 2016 Title 24 Energy Requirements

CalEEMod Default energy Intensities using 2008 Title 24

Land Use	T24 electricity energy intensity (kW-hr/size/yr)	Non-T24 electricity energy intensity (kW-hr/size/yr)	Lighting energy intensity (kW-hr/size/yr)	T24 natural gas energy intensity (kBtu/size/yr)	Non-T24 natural gas energy intensity (kBtu/size/yr)
Apartments	312.05	2,561.86	741.44	7,191.67	1,662
General Office Building	5.01	4.8	4.07	19.28	1.01
R&D	1.48	3.36	3.43	18.78	6.9
Retail	2.74	3.36	5.51	4.1	0.7

Adjustment Factors (2008 T24 to 2013 T24)					
Apartments	23.30%			3.80%	
General Office Building	21.80%			16.80%	
R&D	21.80%			16.80%	
Retail	21.80%			16.80%	

Adjusted energy Intensities using 2013 Title 24 (25% decrease per www.energy.ca.gov/title24 May 2012)

Land Use	T24 electricity energy intensity (kW-hr/size/yr)	Non-T24 electricity energy intensity (kW-hr/size/yr)	Lighting energy intensity (kW-hr/size/yr)	T24 natural gas energy intensity (kBtu/size/yr)	Non-T24 natural gas energy intensity (kBtu/size/yr)
Apartments	239.34	3125.85	1001.10	6918.39	2951.00
General Office Building	3.92	4.80	4.07	16.04	1.01
R&D	1.16	20.97	6.01	15.62	128.02
Retail	2.14	3.36	5.51	3.41	0.70

Adjustment Factors (2013 T24 to 2016 T24)					
Apartments	23.30%			3.80%	
General Office Building	21.80%			16.80%	
R&D	21.80%			16.80%	
Retail	21.80%			16.80%	

Adjusted energy Intensities using 2016 Title 24 (From CEC FAQ document: Single family homes built to the 2016 standards will use about 28 percent less energy for lighting, heating, cooling, ventilation, and water heating than those built to the 2013 standards.

Land Use	T24 electricity energy intensity (kW-hr/size/yr)	Non-T24 electricity energy intensity (kW-hr/size/yr)	Lighting energy intensity (kW-hr/size/yr)	T24 natural gas energy intensity (kBtu/size/yr)	Non-T24 natural gas energy intensity (kBtu/size/yr)
Apartments	183.58	3125.85	1001.10	6655.49	2951.00
General Office Building	3.06	4.80	4.07	13.35	1.01
R&D	0.91	20.97	6.01	13.00	128.02
Retail	1.68	3.36	5.51	2.84	0.70

Full Specific Plan

Construction Emissions -

Construction Emissions in Tons (from CalEEMod)

	ROG	NOx	PM10	PM2.5
Specific Plan =	144.3378	274.0746	7.3305	6.7941
Roadway Addition =	0.5942	1.7874	0.0985	0.0949
Total =	144.932	275.862	7.429	6.889

Construction days = 5740 (1/1/2018 to 12/31/2039)

Daily average construction emissions (pounds/day)

ROG	NOx	PM10	PM2.5
50.50	96.12	2.59	2.40

MITIGATED TIER 4

	ROG	NOx	PM10	PM2.5
Specific Plan =	138.7165	219.69	4.9618	4.5891
Roadway Addition =	0.3877	0.4137	0.0046	0.0045
Total =	139.1042	220.1037	4.9664	4.5936

Construction days = 5740 (1/1/2018 to 12/31/2039)

Daily average construction emissions (pounds/day)

ROG	NOx	PM10	PM2.5
48.47	76.69	1.73	1.60

SubArea 4 Project

Construction Emissions -

Construction Emissions in Tons (from CalEEMod)

ROG	NOx	PM10	PM2.5
35.1374	82.2414	2.8077	2.6108

Construction days = 3391 (1/1/2017 to 12/31/29)

Daily average construction emissions (pounds/day)

ROG	NOx	PM10	PM2.5
20.72	48.51	1.66	1.54

ALT A

Construction Emissions -

Construction Emissions in Tons (from CalEEMod)

ROG	NOx	PM10	PM2.5
48.0611	84.4291	2.2587	2.0966

Construction days = 2085

Daily average construction emissions (pounds/day)

ROG	NOx	PM10	PM2.5
46.10	80.99	2.17	2.01

MITIGATED TIER 4

ROG	NOx	PM10	PM2.5
46.007	62.8869	1.0456	0.9665

Construction days = 2085

Daily average construction emissions (pounds/day)

ROG	NOx	PM10	PM2.5
44.13	60.32	1.00	0.93

ALT B

Construction Emissions -

Construction Emissions in Tons (from CalEEMod)

ROG	NOx	PM10	PM2.5
68.5294	140.8275	3.8731	3.5935

Construction days = 4170

Daily average construction emissions (pounds/day)

ROG	NOx	PM10	PM2.5
32.87	67.54	1.86	1.72

MITIGATED TIER 4

ROG	NOx	PM10	PM2.5
65.1942	106.1871	2.135	1.9741

Construction days = 4170

Daily average construction emissions (pounds/day)

ROG	NOx	PM10	PM2.5
31.27	50.93	1.02	0.95

No Projcet

Construction Emissions -

Construction Emissions in Tons (from CalEEMod)

ROG	NOx	PM10	PM2.5
30.2756	53.772	1.5529	1.4438

Construction days = 1480

Daily average construction emissions (pounds/day)

ROG	NOx	PM10	PM2.5
40.91	72.66	2.10	1.95

MITIGATED TIER 4

ROG	NOx	PM10	PM2.5
28.6517	37.0392	0.5713	0.5285

Construction days = 4170

Daily average construction emissions (pounds/day)

ROG	NOx	PM10	PM2.5
38.72	50.05	0.77	0.71

RSSSP Full Build 1990

Contra Costa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	2,840.00	1000sqft	70.69	2,840,000.00	0
Research & Development	2,850.00	1000sqft	70.94	2,850,000.00	0
Parking Lot	4,900.00	Space	47.81	1,960,000.00	0
City Park	32.70	Acre	32.70	1,424,412.00	0
Apartments Mid Rise	5,700.00	Dwelling Unit	162.63	5,700,000.00	11490
Free-Standing Discount Store	720.00	1000sqft	17.92	720,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	5			**Operational Year**	1990
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - adjusted CO2 EF consistent with GHG Reduction Strategy and MCE provisions. CH4 and N2O scaled down proprtionaltely.

Land Use - 145 acres open space - 112.3 acres wetlands =32.7 acres park.Adjust Population to match P&H Section.

Construction Phase - Scale phase durations proportionally to complete by 2040. Separate calc. sheet.

Off-road Equipment - 'Equipment hours adjusted to match 45% increase in schedule over default.

Off-road Equipment - 'Equipment hours adjusted to match 45% increase in schedule over default.

Off-road Equipment - 'Equipment hours adjusted to match 45% increase in schedule over default.

Off-road Equipment - 'Equipment hours adjusted to match 45% increase in schedule over default.

Demolition - 830,000 cy per data request response. 1.264 ton/cy per user guide.

Grading -

Architectural Coating -

Vehicle Trips -

Vechicle Emission Factors -

Woodstoves - Assume no woodstoves. No wood burning fireplace restrictions in 1990.

Consumer Products - ADjust ROG EF to updated CC County specific value calculated by Ramboll.

Energy Use - Adjust T24 energy to reflect 2013 and 2016 T24.

Water And Wastewater - All wastewater treatment aerobic. No septic or lagoons.

Solid Waste -

Waste Mitigation - Adoption of Zero Waste Ordinance and achieving 90% diversion by 2030. Baseline diversion rate for 2005 = 49%.

Vechicle Emission Factors -

Vechicle Emission Factors -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	250	100
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	250	150
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	250	100
tblLandUse	LotAcreage	65.20	70.69
tblLandUse	LotAcreage	65.43	70.94
tblLandUse	LotAcreage	44.10	47.81
tblLandUse	LotAcreage	150.00	162.63
tblLandUse	LotAcreage	16.53	17.92
tblLandUse	Population	16,302.00	11,490.00
tblProjectCharacteristics	OperationalYear	2014	1990
tblTripsAndVMT	HaulingTripNumber	103,736.00	7,499.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00

tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWoodstoves	NumberCatalytic	28.50	0.00
tblWoodstoves	NumberNoncatalytic	28.50	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017											0.0000	622.8670	622.8670	0.1324	0.0000	625.6465
2018											0.0000	605.4797	605.4797	0.1332	0.0000	608.2776
2019											0.0000	476.1960	476.1960	0.1460	0.0000	479.2629

2020											0.0000	710.8817	710.8817	0.2249	0.0000	715.6037
2021											0.0000	725.9136	725.9136	0.2298	0.0000	730.7386
2022											0.0000	723.5034	723.5034	0.2291	0.0000	728.3136
2023											0.0000	12,175.7529	12,175.7529	0.3918	0.0000	12,183.9805
2024											0.0000	12,641.8322	12,641.8322	0.3899	0.0000	12,650.0206
2025											0.0000	12,516.1918	12,516.1918	0.3790	0.0000	12,524.1503
2026											0.0000	12,448.4863	12,448.4863	0.3705	0.0000	12,456.2662
2027											0.0000	12,390.0693	12,390.0693	0.3634	0.0000	12,397.7007
2028											0.0000	12,292.3819	12,292.3819	0.3556	0.0000	12,299.8487
2029											0.0000	12,295.9539	12,295.9539	0.3507	0.0000	12,303.3183
2030											0.0000	12,298.6780	12,298.6780	0.2879	0.0000	12,304.7235
2031											0.0000	12,266.9939	12,266.9939	0.2823	0.0000	12,272.9215
2032											0.0000	12,287.4776	12,287.4776	0.2784	0.0000	12,293.3238
2033											0.0000	12,171.3440	12,171.3440	0.2721	0.0000	12,177.0577
2034											0.0000	12,152.4656	12,152.4656	0.2680	0.0000	12,158.0941
2035											0.0000	12,183.6213	12,183.6213	0.2646	0.0000	12,189.1770
2036											0.0000	342.8367	342.8367	0.0128	0.0000	343.1050
2037											0.0000	341.5281	341.5281	0.0127	0.0000	341.7954
2038											0.0000	341.5281	341.5281	0.0127	0.0000	341.7954
2039											0.0000	340.2196	340.2196	0.0127	0.0000	340.4859
2040											0.0000	341.5282	341.5282	0.0123	0.0000	341.7861
2041											0.0000	341.5282	341.5282	0.0123	0.0000	341.7861
2042											0.0000	341.5282	341.5282	0.0123	0.0000	341.7861

2043											0.0000	341.5282	341.5282	0.0123	0.0000	341.7861
2044											0.0000	341.5282	341.5282	0.0123	0.0000	341.7861
2045											0.0000	340.2196	340.2196	0.0122	0.0000	340.4766
2046											0.0000	341.5282	341.5282	0.0123	0.0000	341.7861
2047											0.0000	341.5282	341.5282	0.0123	0.0000	341.7861
2048											0.0000	342.8367	342.8367	0.0123	0.0000	343.0956
2049											0.0000	341.5282	341.5282	0.0123	0.0000	341.7861
2050											0.0000	340.2196	340.2196	0.0122	0.0000	340.4766
2051											0.0000	340.2196	340.2196	0.0122	0.0000	340.4766
2052											0.0000	334.1801	334.1801	0.0118	0.0000	334.4286
2053											0.0000	307.8062	307.8062	0.0104	0.0000	308.0235
2054											0.0000	266.7910	266.7910	8.9800e-003	0.0000	266.9796
2055											0.0000	33.3200	33.3200	1.1700e-003	0.0000	33.3446
2056											0.0000	31.9157	31.9157	1.1200e-003	0.0000	31.9393
Total											**0.0000**	**170,421.9363**	**170,421.9363**	**5.5810**	**0.0000**	**170,539.1370**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017											0.0000	622.8665	622.8665	0.1324	0.0000	625.6460
2018											0.0000	605.4791	605.4791	0.1332	0.0000	608.2771

2019											0.0000	476.1954	476.1954	0.1460	0.0000	479.2624
2020											0.0000	710.8809	710.8809	0.2249	0.0000	715.6028
2021											0.0000	725.9127	725.9127	0.2298	0.0000	730.7377
2022											0.0000	723.5026	723.5026	0.2291	0.0000	728.3128
2023											0.0000	12,175.7525	12,175.7525	0.3918	0.0000	12,183.9801
2024											0.0000	12,641.8318	12,641.8318	0.3899	0.0000	12,650.0202
2025											0.0000	12,516.1915	12,516.1915	0.3790	0.0000	12,524.1499
2026											0.0000	12,448.4859	12,448.4859	0.3705	0.0000	12,456.2658
2027											0.0000	12,390.0690	12,390.0690	0.3634	0.0000	12,397.7003
2028											0.0000	12,292.3816	12,292.3816	0.3556	0.0000	12,299.8483
2029											0.0000	12,295.9535	12,295.9535	0.3507	0.0000	12,303.3180
2030											0.0000	12,298.6776	12,298.6776	0.2879	0.0000	12,304.7231
2031											0.0000	12,266.9934	12,266.9934	0.2823	0.0000	12,272.9211
2032											0.0000	12,287.4772	12,287.4772	0.2784	0.0000	12,293.3234
2033											0.0000	12,171.3436	12,171.3436	0.2721	0.0000	12,177.0573
2034											0.0000	12,152.4652	12,152.4652	0.2680	0.0000	12,158.0937
2035											0.0000	12,183.6209	12,183.6209	0.2646	0.0000	12,189.1766
2036											0.0000	342.8363	342.8363	0.0128	0.0000	343.1046
2037											0.0000	341.5277	341.5277	0.0127	0.0000	341.7950
2038											0.0000	341.5277	341.5277	0.0127	0.0000	341.7950
2039											0.0000	340.2192	340.2192	0.0127	0.0000	340.4855
2040											0.0000	341.5278	341.5278	0.0123	0.0000	341.7857
2041											0.0000	341.5278	341.5278	0.0123	0.0000	341.7857

2042											0.0000	341.5278	341.5278	0.0123	0.0000	341.7857
2043											0.0000	341.5278	341.5278	0.0123	0.0000	341.7857
2044											0.0000	341.5278	341.5278	0.0123	0.0000	341.7857
2045											0.0000	340.2192	340.2192	0.0122	0.0000	340.4762
2046											0.0000	341.5278	341.5278	0.0123	0.0000	341.7857
2047											0.0000	341.5278	341.5278	0.0123	0.0000	341.7857
2048											0.0000	342.8363	342.8363	0.0123	0.0000	343.0952
2049											0.0000	341.5278	341.5278	0.0123	0.0000	341.7857
2050											0.0000	340.2192	340.2192	0.0122	0.0000	340.4762
2051											0.0000	340.2192	340.2192	0.0122	0.0000	340.4762
2052											0.0000	334.1797	334.1797	0.0118	0.0000	334.4282
2053											0.0000	307.8058	307.8058	0.0104	0.0000	308.0232
2054											0.0000	266.7907	266.7907	8.9800e-003	0.0000	266.9792
2055											0.0000	33.3199	33.3199	1.1700e-003	0.0000	33.3446
2056											0.0000	31.9156	31.9156	1.1200e-003	0.0000	31.9392
Total											**0.0000**	**170,421.9195**	**170,421.9195**	**5.5810**	**0.0000**	**170,539.1202**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											56.8577	220.0534	276.9111	0.4974	7.7800e-003	289.7676
Energy											0.0000	37,110.7270	37,110.7270	1.4212	0.4357	37,275.6359
Mobile											0.0000	122,168.3564	122,168.3564	44.3982	0.0000	123,100.7192
Waste											1,741.4777	0.0000	1,741.4777	102.9184	0.0000	3,902.7638
Water											824.6413	4,295.3057	5,119.9471	3.0326	1.8335	5,752.0185
Total											**2,622.9768**	**163,794.4425**	**166,417.4193**	**152.2678**	**2.2770**	**170,320.9050**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											56.8577	220.0534	276.9111	0.4974	7.7800e-003	289.7676
Energy											0.0000	37,110.7270	37,110.7270	1.4212	0.4357	37,275.6359
Mobile											0.0000	122,168.3564	122,168.3564	44.3982	0.0000	123,100.7192
Waste											174.1478	0.0000	174.1478	10.2918	0.0000	390.2764
Water											824.6413	4,295.3057	5,119.9471	3.0171	1.8303	5,750.7029
Total											**1,055.6468**	**163,794.4425**	**164,850.0893**	**59.6258**	**2.2738**	**166,807.1019**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e

Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**59.75**	**0.00**	**0.94**	**60.84**	**0.14**	**2.06**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2017	11/30/2018	5	500	
2	Site Preparation	Site Preparation	12/1/2018	1/24/2020	5	300	
3	Grading	Grading	1/25/2020	1/13/2023	5	775	
4	Building Construction	Building Construction	1/14/2023	9/27/2052	5	7750	
5	Paving	Paving	9/28/2052	11/6/2054	5	550	
6	Architectural Coating	Architectural Coating	11/7/2054	12/15/2056	5	550	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1937.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	162	0.38
Demolition	Rubber Tired Dozers	2	8.00	255	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48

Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	7,499.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	7,577.00	2,215.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1,515.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	476.0368	476.0368	0.1306	0.0000	478.7792
Total											**0.0000**	**476.0368**	**476.0368**	**0.1306**	**0.0000**	**478.7792**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	131.4088	131.4088	9.6000e-004	0.0000	131.4289
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	15.4214	15.4214	8.1000e-004	0.0000	15.4384
Total											**0.0000**	**146.8302**	**146.8302**	**1.7700e-003**	**0.0000**	**146.8673**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	476.0362	476.0362	0.1306	0.0000	478.7786
Total											**0.0000**	**476.0362**	**476.0362**	**0.1306**	**0.0000**	**478.7786**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	131.4088	131.4088	9.6000e-004	0.0000	131.4289
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	15.4214	15.4214	8.1000e-004	0.0000	15.4384
Total											**0.0000**	**146.8302**	**146.8302**	**1.7700e-003**	**0.0000**	**146.8673**

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	433.6337	433.6337	0.1199	0.0000	436.1518
Total											**0.0000**	**433.6337**	**433.6337**	**0.1199**	**0.0000**	**436.1518**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling											0.0000	119.1736	119.1736	8.9000e-004	0.0000	119.1922
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	13.7052	13.7052	6.9000e-004	0.0000	13.7197
Total											**0.0000**	**132.8788**	**132.8788**	**1.5800e-003**	**0.0000**	**132.9119**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	433.6332	433.6332	0.1199	0.0000	436.1513
Total											**0.0000**	**433.6332**	**433.6332**	**0.1199**	**0.0000**	**436.1513**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	119.1736	119.1736	8.9000e-004	0.0000	119.1922
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	13.7052	13.7052	6.9000e-004	0.0000	13.7197

Total											**0.0000**	**132.8788**	**132.8788**	**1.5800e-003**	**0.0000**	**132.9119**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	37.5281	37.5281	0.0117	0.0000	37.7734
Total											**0.0000**	**37.5281**	**37.5281**	**0.0117**	**0.0000**	**37.7734**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.4391	1.4391	7.0000e-005	0.0000	1.4406
Total											**0.0000**	**1.4391**	**1.4391**	**7.0000e-005**	**0.0000**	**1.4406**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	37.5280	37.5280	0.0117	0.0000	37.7734
Total											**0.0000**	**37.5280**	**37.5280**	**0.0117**	**0.0000**	**37.7734**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.4391	1.4391	7.0000e-005	0.0000	1.4406
Total											**0.0000**	**1.4391**	**1.4391**	**7.0000e-005**	**0.0000**	**1.4406**

3.3 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	458.9560	458.9560	0.1452	0.0000	462.0054
Total											**0.0000**	**458.9560**	**458.9560**	**0.1452**	**0.0000**	**462.0054**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	17.2400	17.2400	8.4000e-004	0.0000	17.2575
Total											**0.0000**	**17.2400**	**17.2400**	**8.4000e-004**	**0.0000**	**17.2575**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	458.9555	458.9555	0.1452	0.0000	462.0048
Total											**0.0000**	**458.9555**	**458.9555**	**0.1452**	**0.0000**	**462.0048**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	17.2400	17.2400	8.4000e-004	0.0000	17.2575
Total											**0.0000**	**17.2400**	**17.2400**	**8.4000e-004**	**0.0000**	**17.2575**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	30.9627	30.9627	0.0100	0.0000	31.1730
Total											**0.0000**	**30.9627**	**30.9627**	**0.0100**	**0.0000**	**31.1730**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.1410	1.1410	5.0000e-005	0.0000	1.1422
Total											**0.0000**	**1.1410**	**1.1410**	**5.0000e-005**	**0.0000**	**1.1422**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	30.9627	30.9627	0.0100	0.0000	31.1730
Total											**0.0000**	**30.9627**	**30.9627**	**0.0100**	**0.0000**	**31.1730**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	1.1410	1.1410	5.0000e-005	0.0000	1.1422

Total											**0.0000**	**1.1410**	**1.1410**	**5.0000e-005**	**0.0000**	**1.1422**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	661.5921	661.5921	0.2140	0.0000	666.0855
Total											**0.0000**	**661.5921**	**661.5921**	**0.2140**	**0.0000**	**666.0855**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	17.1859	17.1859	8.2000e-004	0.0000	17.2030
Total											**0.0000**	**17.1859**	**17.1859**	**8.2000e-004**	**0.0000**	**17.2030**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	661.5913	661.5913	0.2140	0.0000	666.0848
Total											**0.0000**	**661.5913**	**661.5913**	**0.2140**	**0.0000**	**666.0848**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	17.1859	17.1859	8.2000e-004	0.0000	17.2030
Total											**0.0000**	**17.1859**	**17.1859**	**8.2000e-004**	**0.0000**	**17.2030**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	707.8532	707.8532	0.2289	0.0000	712.6608
Total											**0.0000**	**707.8532**	**707.8532**	**0.2289**	**0.0000**	**712.6608**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	18.0604	18.0604	8.3000e-004	0.0000	18.0778
Total											**0.0000**	**18.0604**	**18.0604**	**8.3000e-004**	**0.0000**	**18.0778**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	707.8524	707.8524	0.2289	0.0000	712.6600
Total											**0.0000**	**707.8524**	**707.8524**	**0.2289**	**0.0000**	**712.6600**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	18.0604	18.0604	8.3000e-004	0.0000	18.0778
Total											**0.0000**	**18.0604**	**18.0604**	**8.3000e-004**	**0.0000**	**18.0778**

3.4 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	705.8054	705.8054	0.2283	0.0000	710.5991
Total											**0.0000**	**705.8054**	**705.8054**	**0.2283**	**0.0000**	**710.5991**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	17.6980	17.6980	7.9000e-004	0.0000	17.7146
Total											**0.0000**	**17.6980**	**17.6980**	**7.9000e-004**	**0.0000**	**17.7146**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	705.8045	705.8045	0.2283	0.0000	710.5982
Total											**0.0000**	**705.8045**	**705.8045**	**0.2283**	**0.0000**	**710.5982**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	17.6980	17.6980	7.9000e-004	0.0000	17.7146

Total											**0.0000**	**17.6980**	**17.6980**	**7.9000e-004**	**0.0000**	**17.7146**

3.4 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	27.1495	27.1495	8.7800e-003	0.0000	27.3339
Total											**0.0000**	**27.1495**	**27.1495**	**8.7800e-003**	**0.0000**	**27.3339**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.6705	0.6705	3.0000e-005	0.0000	0.6711
Total											**0.0000**	**0.6705**	**0.6705**	**3.0000e-005**	**0.0000**	**0.6711**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	27.1495	27.1495	8.7800e-003	0.0000	27.3338
Total											**0.0000**	**27.1495**	**27.1495**	**8.7800e-003**	**0.0000**	**27.3338**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.6705	0.6705	3.0000e-005	0.0000	0.6711
Total											**0.0000**	**0.6705**	**0.6705**	**3.0000e-005**	**0.0000**	**0.6711**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road											0.0000	288.5558	288.5558	0.0685	0.0000	289.9951
Total											**0.0000**	**288.5558**	**288.5558**	**0.0685**	**0.0000**	**289.9951**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	5,509.1913	5,509.1913	0.0399	0.0000	5,510.0282
Worker											0.0000	6,350.1858	6,350.1858	0.2746	0.0000	6,355.9522
Total											**0.0000**	**11,859.3772**	**11,859.3772**	**0.3144**	**0.0000**	**11,865.9804**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	288.5554	288.5554	0.0685	0.0000	289.9948
Total											**0.0000**	**288.5554**	**288.5554**	**0.0685**	**0.0000**	**289.9948**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	5,509.1913	5,509.1913	0.0399	0.0000	5,510.0282
Worker											0.0000	6,350.1858	6,350.1858	0.2746	0.0000	6,355.9522
Total											**0.0000**	**11,859.3772**	**11,859.3772**	**0.3144**	**0.0000**	**11,865.9804**

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	302.4646	302.4646	0.0714	0.0000	303.9643
Total											**0.0000**	**302.4646**	**302.4646**	**0.0714**	**0.0000**	**303.9643**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	5,775.7019	5,775.7019	0.0419	0.0000	5,776.5827
Worker											0.0000	6,563.6657	6,563.6657	0.2766	0.0000	6,569.4736
Total											**0.0000**	**12,339.3676**	**12,339.3676**	**0.3185**	**0.0000**	**12,346.0563**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	302.4642	302.4642	0.0714	0.0000	303.9639
Total											**0.0000**	**302.4642**	**302.4642**	**0.0714**	**0.0000**	**303.9639**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	5,775.7019	5,775.7019	0.0419	0.0000	5,776.5827
Worker											0.0000	6,563.6657	6,563.6657	0.2766	0.0000	6,569.4736

Total											**0.0000**	**12,339.3676**	**12,339.3676**	**0.3185**	**0.0000**	**12,346.0563**

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	301.4019	301.4019	0.0707	0.0000	302.8874
Total											**0.0000**	**301.4019**	**301.4019**	**0.0707**	**0.0000**	**302.8874**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	5,756.0074	5,756.0074	0.0419	0.0000	5,756.8881
Worker											0.0000	6,458.7825	6,458.7825	0.2663	0.0000	6,464.3748
Total											**0.0000**	**12,214.7900**	**12,214.7900**	**0.3082**	**0.0000**	**12,221.2629**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	301.4015	301.4015	0.0707	0.0000	302.8871
Total											**0.0000**	**301.4015**	**301.4015**	**0.0707**	**0.0000**	**302.8871**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	5,756.0074	5,756.0074	0.0419	0.0000	5,756.8881
Worker											0.0000	6,458.7825	6,458.7825	0.2663	0.0000	6,464.3748
Total											**0.0000**	**12,214.7900**	**12,214.7900**	**0.3082**	**0.0000**	**12,221.2629**

3.5 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road											0.0000	301.4019	301.4019	0.0707	0.0000	302.8874
Total											**0.0000**	**301.4019**	**301.4019**	**0.0707**	**0.0000**	**302.8874**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	5,757.5299	5,757.5299	0.0414	0.0000	5,758.3984
Worker											0.0000	6,389.5545	6,389.5545	0.2584	0.0000	6,394.9804
Total											**0.0000**	**12,147.0844**	**12,147.0844**	**0.2997**	**0.0000**	**12,153.3788**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	301.4015	301.4015	0.0707	0.0000	302.8871
Total											**0.0000**	**301.4015**	**301.4015**	**0.0707**	**0.0000**	**302.8871**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	5,757.5299	5,757.5299	0.0414	0.0000	5,758.3984
Worker											0.0000	6,389.5545	6,389.5545	0.2584	0.0000	6,394.9804
Total											**0.0000**	**12,147.0844**	**12,147.0844**	**0.2997**	**0.0000**	**12,153.3788**

3.5 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	301.4019	301.4019	0.0707	0.0000	302.8874
Total											**0.0000**	**301.4019**	**301.4019**	**0.0707**	**0.0000**	**302.8874**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	5,759.6489	5,759.6489	0.0414	0.0000	5,760.5192
Worker											0.0000	6,329.0185	6,329.0185	0.2512	0.0000	6,334.2941
Total											**0.0000**	**12,088.6675**	**12,088.6675**	**0.2927**	**0.0000**	**12,094.8133**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	301.4015	301.4015	0.0707	0.0000	302.8871
Total											**0.0000**	**301.4015**	**301.4015**	**0.0707**	**0.0000**	**302.8871**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	5,759.6489	5,759.6489	0.0414	0.0000	5,760.5192
Worker											0.0000	6,329.0185	6,329.0185	0.2512	0.0000	6,334.2941

Total											**0.0000**	**12,088.6675**	**12,088.6675**	**0.2927**	**0.0000**	**12,094.8133**

3.5 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	300.2471	300.2471	0.0705	0.0000	301.7269
Total											**0.0000**	**300.2471**	**300.2471**	**0.0705**	**0.0000**	**301.7269**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	5,739.5422	5,739.5422	0.0412	0.0000	5,740.4083
Worker											0.0000	6,252.5926	6,252.5926	0.2439	0.0000	6,257.7134
Total											**0.0000**	**11,992.1348**	**11,992.1348**	**0.2851**	**0.0000**	**11,998.1217**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	300.2467	300.2467	0.0705	0.0000	301.7266
Total											**0.0000**	**300.2467**	**300.2467**	**0.0705**	**0.0000**	**301.7266**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	5,739.5422	5,739.5422	0.0412	0.0000	5,740.4083
Worker											0.0000	6,252.5926	6,252.5926	0.2439	0.0000	6,257.7134
Total											**0.0000**	**11,992.1348**	**11,992.1348**	**0.2851**	**0.0000**	**11,998.1217**

3.5 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road											0.0000	301.4019	301.4019	0.0707	0.0000	302.8874
Total											**0.0000**	**301.4019**	**301.4019**	**0.0707**	**0.0000**	**302.8874**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	5,763.4031	5,763.4031	0.0414	0.0000	5,764.2735
Worker											0.0000	6,231.1489	6,231.1489	0.2385	0.0000	6,236.1574
Total											**0.0000**	**11,994.5520**	**11,994.5520**	**0.2799**	**0.0000**	**12,000.4309**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	301.4015	301.4015	0.0707	0.0000	302.8871
Total											**0.0000**	**301.4015**	**301.4015**	**0.0707**	**0.0000**	**302.8871**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	5,763.4031	5,763.4031	0.0414	0.0000	5,764.2735
Worker											0.0000	6,231.1489	6,231.1489	0.2385	0.0000	6,236.1574
Total											**0.0000**	**11,994.5520**	**11,994.5520**	**0.2799**	**0.0000**	**12,000.4309**

3.5 Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	341.5281	341.5281	0.0137	0.0000	341.8160
Total											**0.0000**	**341.5281**	**341.5281**	**0.0137**	**0.0000**	**341.8160**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	5,765.0787	5,765.0787	0.0415	0.0000	5,765.9500
Worker											0.0000	6,192.0712	6,192.0712	0.2327	0.0000	6,196.9576
Total											**0.0000**	**11,957.1498**	**11,957.1498**	**0.2742**	**0.0000**	**11,962.9075**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	341.5277	341.5277	0.0137	0.0000	341.8156
Total											**0.0000**	**341.5277**	**341.5277**	**0.0137**	**0.0000**	**341.8156**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	5,765.0787	5,765.0787	0.0415	0.0000	5,765.9500
Worker											0.0000	6,192.0712	6,192.0712	0.2327	0.0000	6,196.9576

Total											**0.0000**	**11,957.14 98**	**11,957.149 8**	**0.2742**	**0.0000**	**11,962.907 5**

3.5 Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	341.5281	341.5281	0.0137	0.0000	341.8160
Total											**0.0000**	**341.5281**	**341.5281**	**0.0137**	**0.0000**	**341.8160**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	5,766.939 8	5,766.9398	0.0415	0.0000	5,767.8122
Worker											0.0000	6,158.526 0	6,158.5260	0.2270	0.0000	6,163.2933
Total											**0.0000**	**11,925.46 57**	**11,925.465 7**	**0.2686**	**0.0000**	**11,931.105 5**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	341.5277	341.5277	0.0137	0.0000	341.8156
Total											**0.0000**	**341.5277**	**341.5277**	**0.0137**	**0.0000**	**341.8156**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	5,766.9398	5,766.9398	0.0415	0.0000	5,767.8122
Worker											0.0000	6,158.5260	6,158.5260	0.2270	0.0000	6,163.2933
Total											**0.0000**	**11,925.4657**	**11,925.4657**	**0.2686**	**0.0000**	**11,931.1055**

3.5 Building Construction - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road											0.0000	342.8367	342.8367	0.0138	0.0000	343.1257
Total											**0.0000**	**342.8367**	**342.8367**	**0.0138**	**0.0000**	**343.1257**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	5,790.8542	5,790.8542	0.0418	0.0000	5,791.7310
Worker											0.0000	6,153.7868	6,153.7868	0.2229	0.0000	6,158.4672
Total											**0.0000**	**11,944.6410**	**11,944.6410**	**0.2646**	**0.0000**	**11,950.1982**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	342.8363	342.8363	0.0138	0.0000	343.1252
Total											**0.0000**	**342.8363**	**342.8363**	**0.0138**	**0.0000**	**343.1252**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	5,790.8542	5,790.8542	0.0418	0.0000	5,791.7310
Worker											0.0000	6,153.7868	6,153.7868	0.2229	0.0000	6,158.4672
Total											**0.0000**	**11,944.6410**	**11,944.6410**	**0.2646**	**0.0000**	**11,950.1982**

3.5 Building Construction - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	340.2196	340.2196	0.0137	0.0000	340.5064
Total											**0.0000**	**340.2196**	**340.2196**	**0.0137**	**0.0000**	**340.5064**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	5,747.7828	5,747.7828	0.0415	0.0000	5,748.6536
Worker											0.0000	6,083.3416	6,083.3416	0.2170	0.0000	6,087.8977
Total											**0.0000**	**11,831.1244**	**11,831.1244**	**0.2584**	**0.0000**	**11,836.5513**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	340.2192	340.2192	0.0137	0.0000	340.5060
Total											**0.0000**	**340.2192**	**340.2192**	**0.0137**	**0.0000**	**340.5060**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	5,747.7828	5,747.7828	0.0415	0.0000	5,748.6536
Worker											0.0000	6,083.3416	6,083.3416	0.2170	0.0000	6,087.8977

Total											**0.0000**	**11,831.1244**	**11,831.1244**	**0.2584**	**0.0000**	**11,836.5513**

3.5 Building Construction - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	340.2196	340.2196	0.0137	0.0000	340.5064
Total											**0.0000**	**340.2196**	**340.2196**	**0.0137**	**0.0000**	**340.5064**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	5,749.1256	5,749.1256	0.0415	0.0000	5,749.9970
Worker											0.0000	6,063.1204	6,063.1204	0.2129	0.0000	6,067.5907
Total											**0.0000**	**11,812.2460**	**11,812.2460**	**0.2544**	**0.0000**	**11,817.5877**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	340.2192	340.2192	0.0137	0.0000	340.5060
Total											**0.0000**	**340.2192**	**340.2192**	**0.0137**	**0.0000**	**340.5060**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	5,749.1256	5,749.1256	0.0415	0.0000	5,749.9970
Worker											0.0000	6,063.1204	6,063.1204	0.2129	0.0000	6,067.5907
Total											**0.0000**	**11,812.2460**	**11,812.2460**	**0.2544**	**0.0000**	**11,817.5877**

3.5 Building Construction - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road											0.0000	341.5281	341.5281	0.0127	0.0000	341.7954
Total											**0.0000**	**341.5281**	**341.5281**	**0.0127**	**0.0000**	**341.7954**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	5,772.6298	5,772.6298	0.0417	0.0000	5,773.5053
Worker											0.0000	6,069.4634	6,069.4634	0.2101	0.0000	6,073.8763
Total											**0.0000**	**11,842.0932**	**11,842.0932**	**0.2518**	**0.0000**	**11,847.3816**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	341.5277	341.5277	0.0127	0.0000	341.7950
Total											**0.0000**	**341.5277**	**341.5277**	**0.0127**	**0.0000**	**341.7950**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	5,772.6298	5,772.6298	0.0417	0.0000	5,773.5053
Worker											0.0000	6,069.4634	6,069.4634	0.2101	0.0000	6,073.8763
Total											**0.0000**	**11,842.0932**	**11,842.0932**	**0.2518**	**0.0000**	**11,847.3816**

3.5 Building Construction - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	342.8367	342.8367	0.0128	0.0000	343.1050
Total											**0.0000**	**342.8367**	**342.8367**	**0.0128**	**0.0000**	**343.1050**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	342.8363	342.8363	0.0128	0.0000	343.1046
Total											**0.0000**	**342.8363**	**342.8363**	**0.0128**	**0.0000**	**343.1046**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2037

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	341.5281	341.5281	0.0127	0.0000	341.7954
Total											**0.0000**	**341.5281**	**341.5281**	**0.0127**	**0.0000**	**341.7954**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	341.5277	341.5277	0.0127	0.0000	341.7950
Total											**0.0000**	**341.5277**	**341.5277**	**0.0127**	**0.0000**	**341.7950**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road											0.0000	341.5281	341.5281	0.0127	0.0000	341.7954
Total											**0.0000**	**341.5281**	**341.5281**	**0.0127**	**0.0000**	**341.7954**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	341.5277	341.5277	0.0127	0.0000	341.7950
Total											**0.0000**	**341.5277**	**341.5277**	**0.0127**	**0.0000**	**341.7950**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	340.2196	340.2196	0.0127	0.0000	340.4859
Total											**0.0000**	**340.2196**	**340.2196**	**0.0127**	**0.0000**	**340.4859**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	340.2192	340.2192	0.0127	0.0000	340.4855
Total											**0.0000**	**340.2192**	**340.2192**	**0.0127**	**0.0000**	**340.4855**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2040

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	341.5282	341.5282	0.0123	0.0000	341.7861
Total											**0.0000**	**341.5282**	**341.5282**	**0.0123**	**0.0000**	**341.7861**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	341.5278	341.5278	0.0123	0.0000	341.7857
Total											**0.0000**	**341.5278**	**341.5278**	**0.0123**	**0.0000**	**341.7857**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2041

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road											0.0000	341.5282	341.5282	0.0123	0.0000	341.7861
Total											**0.0000**	**341.5282**	**341.5282**	**0.0123**	**0.0000**	**341.7861**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	341.5278	341.5278	0.0123	0.0000	341.7857
Total											**0.0000**	**341.5278**	**341.5278**	**0.0123**	**0.0000**	**341.7857**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2042

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	341.5282	341.5282	0.0123	0.0000	341.7861
Total											**0.0000**	**341.5282**	**341.5282**	**0.0123**	**0.0000**	**341.7861**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	341.5278	341.5278	0.0123	0.0000	341.7857
Total											**0.0000**	**341.5278**	**341.5278**	**0.0123**	**0.0000**	**341.7857**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2043

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	341.5282	341.5282	0.0123	0.0000	341.7861
Total											**0.0000**	**341.5282**	**341.5282**	**0.0123**	**0.0000**	**341.7861**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	341.5278	341.5278	0.0123	0.0000	341.7857
Total											**0.0000**	**341.5278**	**341.5278**	**0.0123**	**0.0000**	**341.7857**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2044

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road											0.0000	341.5282	341.5282	0.0123	0.0000	341.7861
Total											**0.0000**	**341.5282**	**341.5282**	**0.0123**	**0.0000**	**341.7861**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	341.5278	341.5278	0.0123	0.0000	341.7857
Total											**0.0000**	**341.5278**	**341.5278**	**0.0123**	**0.0000**	**341.7857**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2045

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	340.2196	340.2196	0.0122	0.0000	340.4766
Total											**0.0000**	**340.2196**	**340.2196**	**0.0122**	**0.0000**	**340.4766**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	340.2192	340.2192	0.0122	0.0000	340.4762
Total											**0.0000**	**340.2192**	**340.2192**	**0.0122**	**0.0000**	**340.4762**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2046

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	341.5282	341.5282	0.0123	0.0000	341.7861
Total											**0.0000**	**341.5282**	**341.5282**	**0.0123**	**0.0000**	**341.7861**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	341.5278	341.5278	0.0123	0.0000	341.7857
Total											**0.0000**	**341.5278**	**341.5278**	**0.0123**	**0.0000**	**341.7857**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2047

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road											0.0000	341.5282	341.5282	0.0123	0.0000	341.7861
Total											**0.0000**	**341.5282**	**341.5282**	**0.0123**	**0.0000**	**341.7861**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	341.5278	341.5278	0.0123	0.0000	341.7857
Total											**0.0000**	**341.5278**	**341.5278**	**0.0123**	**0.0000**	**341.7857**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2048

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	342.8367	342.8367	0.0123	0.0000	343.0956
Total											**0.0000**	**342.8367**	**342.8367**	**0.0123**	**0.0000**	**343.0956**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	342.8363	342.8363	0.0123	0.0000	343.0952
Total											**0.0000**	**342.8363**	**342.8363**	**0.0123**	**0.0000**	**343.0952**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2049

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	341.5282	341.5282	0.0123	0.0000	341.7861
Total											**0.0000**	**341.5282**	**341.5282**	**0.0123**	**0.0000**	**341.7861**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	341.5278	341.5278	0.0123	0.0000	341.7857
Total											**0.0000**	**341.5278**	**341.5278**	**0.0123**	**0.0000**	**341.7857**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2050

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road											0.0000	340.2196	340.2196	0.0122	0.0000	340.4766
Total											**0.0000**	**340.2196**	**340.2196**	**0.0122**	**0.0000**	**340.4766**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	340.2192	340.2192	0.0122	0.0000	340.4762
Total											**0.0000**	**340.2192**	**340.2192**	**0.0122**	**0.0000**	**340.4762**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2051

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	340.2196	340.2196	0.0122	0.0000	340.4766
Total											**0.0000**	**340.2196**	**340.2196**	**0.0122**	**0.0000**	**340.4766**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	340.2192	340.2192	0.0122	0.0000	340.4762
Total											**0.0000**	**340.2192**	**340.2192**	**0.0122**	**0.0000**	**340.4762**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2052

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	255.1647	255.1647	9.1800e-003	0.0000	255.3574
Total											**0.0000**	**255.1647**	**255.1647**	**9.1800e-003**	**0.0000**	**255.3574**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	255.1644	255.1644	9.1800e-003	0.0000	255.3571
Total											**0.0000**	**255.1644**	**255.1644**	**9.1800e-003**	**0.0000**	**255.3571**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Paving - 2052

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road											0.0000	79.0154	79.0154	2.6600e-003	0.0000	79.0712
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**79.0154**	**79.0154**	**2.6600e-003**	**0.0000**	**79.0712**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	79.0153	79.0153	2.6600e-003	0.0000	79.0711
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**79.0153**	**79.0153**	**2.6600e-003**	**0.0000**	**79.0711**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Paving - 2053

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	307.8062	307.8062	0.0104	0.0000	308.0235
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**307.8062**	**307.8062**	**0.0104**	**0.0000**	**308.0235**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	307.8058	307.8058	0.0104	0.0000	308.0232
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**307.8058**	**307.8058**	**0.0104**	**0.0000**	**308.0232**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Paving - 2054

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	261.8122	261.8122	8.8000e-003	0.0000	261.9970
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**261.8122**	**261.8122**	**8.8000e-003**	**0.0000**	**261.9970**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	261.8119	261.8119	8.8000e-003	0.0000	261.9967
Paving											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**261.8119**	**261.8119**	**8.8000e-003**	**0.0000**	**261.9967**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2054

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road											0.0000	4.9788	4.9788	1.8000e-004	0.0000	4.9825
Total											**0.0000**	**4.9788**	**4.9788**	**1.8000e-004**	**0.0000**	**4.9825**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	4.9788	4.9788	1.8000e-004	0.0000	4.9825
Total											**0.0000**	**4.9788**	**4.9788**	**1.8000e-004**	**0.0000**	**4.9825**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2055

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	33.3200	33.3200	1.1700e-003	0.0000	33.3446
Total											**0.0000**	**33.3200**	**33.3200**	**1.1700e-003**	**0.0000**	**33.3446**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	33.3199	33.3199	1.1700e-003	0.0000	33.3446
Total											**0.0000**	**33.3199**	**33.3199**	**1.1700e-003**	**0.0000**	**33.3446**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2056

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	31.9157	31.9157	1.1200e-003	0.0000	31.9393
Total											**0.0000**	**31.9157**	**31.9157**	**1.1200e-003**	**0.0000**	**31.9393**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road											0.0000	31.9156	31.9156	1.1200e-003	0.0000	31.9392
Total											**0.0000**	**31.9156**	**31.9156**	**1.1200e-003**	**0.0000**	**31.9392**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total											**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											0.0000	122,168.3564	122,168.3564	44.3982	0.0000	123,100.7192
Unmitigated											0.0000	122,168.3564	122,168.3564	44.3982	0.0000	123,100.7192

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	37,563.00	40,812.00	34599.00	83,945,255	83,945,255
City Park	51.99	51.99	51.99	110,997	110,997
Free-Standing Discount Store	41,212.80	51,170.40	40579.20	66,338,470	66,338,470
General Office Building	31,268.40	6,730.80	2783.20	56,622,121	56,622,121
Parking Lot	0.00	0.00	0.00		
Research & Development	23,113.50	5,415.00	3163.50	44,448,655	44,448,655
Total	133,209.69	104,180.19	81,176.89	251,465,498	251,465,498

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Free-Standing Discount Store	9.50	7.30	7.30	12.20	68.80	19.00	47.5	35.5	17
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.591282	0.177474	0.149382	0.025771	0.005391	0.007134	0.009785	0.017786	0.000600	0.001085	0.007618	0.003548	0.003144

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated											0.0000	27,252.6429	27,252.6429	1.2323	0.2550	27,357.5572
Electricity Unmitigated											0.0000	27,252.6429	27,252.6429	1.2323	0.2550	27,357.5572
NaturalGas Mitigated											0.0000	9,858.0841	9,858.0841	0.1890	0.1807	9,918.0787
NaturalGas Unmitigated											0.0000	9,858.0841	9,858.0841	0.1890	0.1807	9,918.0787

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	5.04659e+007											0.0000	2,693.0536	2,693.0536	0.0516	0.0494	2,709.4431
City Park	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Free-Standing Discount Store	3.456e+006											0.0000	184.4253	184.4253	3.5300e-003	3.3800e-003	185.5477
General Office Building	5.76236e+007											0.0000	3,075.0147	3,075.0147	0.0589	0.0564	3,093.7288
Parking Lot	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Research & Development	7.3188e+007											0.0000	3,905.5904	3,905.5904	0.0749	0.0716	3,929.3592
Total												**0.0000**	**9,858.0841**	**9,858.0841**	**0.1890**	**0.1807**	**9,918.0787**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	5.04659e+007											0.0000	2,693.0536	2,693.0536	0.0516	0.0494	2,709.4431
City Park	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Free-Standing Discount Store	3.456e+006											0.0000	184.4253	184.4253	3.5300e-003	3.3800e-003	185.5477
General Office Building	5.76236e+007											0.0000	3,075.0147	3,075.0147	0.0589	0.0564	3,093.7288
Parking Lot	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Research & Development	7.3188e+007											0.0000	3,905.5904	3,905.5904	0.0749	0.0716	3,929.3592
Total												**0.0000**	**9,858.0841**	**9,858.0841**	**0.1890**	**0.1807**	**9,918.0787**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	2.06075e+007	5,994.9566	0.2711	0.0561	6,018.0353
City Park	0	0.0000	0.0000	0.0000	0.0000

Free-Standing Discount Store	8.3592e+006	2,431.7871	0.1100	0.0228	2,441.1488
General Office Building	3.94192e+007	11,467.4973	0.5185	0.1073	11,511.6436
Parking Lot	1.7248e+006	501.7641	0.0227	4.6900e-003	503.6957
Research & Development	2.35695e+007	6,856.6378	0.3100	0.0642	6,883.0338
Total		**27,252.6429**	**1.2323**	**0.2550**	**27,357.5572**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	2.06075e+007	5,994.9566	0.2711	0.0561	6,018.0353
City Park	0	0.0000	0.0000	0.0000	0.0000
Free-Standing Discount Store	8.3592e+006	2,431.7871	0.1100	0.0228	2,441.1488
General Office Building	3.94192e+007	11,467.4973	0.5185	0.1073	11,511.6436
Parking Lot	1.7248e+006	501.7641	0.0227	4.6900e-003	503.6957
Research & Development	2.35695e+007	6,856.6378	0.3100	0.0642	6,883.0338
Total		**27,252.6429**	**1.2323**	**0.2550**	**27,357.5572**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated											56.8577	220.0534	276.9111	0.4974	7.7800e-003	289.7676
Unmitigated											56.8577	220.0534	276.9111	0.4974	7.7800e-003	289.7676

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											56.8577	150.7166	207.5743	2.8900e-003	7.7800e-003	210.0467
Landscaping											0.0000	69.3368	69.3368	0.4945	0.0000	79.7209
Total											**56.8577**	**220.0534**	**276.9111**	**0.4974**	**7.7800e-003**	**289.7676**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Consumer Products												0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth												56.8577	150.7166	207.5743	2.8900e-003	7.7800e-003	210.0467
Landscaping												0.0000	69.3368	69.3368	0.4945	0.0000	79.7209
Total												**56.8577**	**220.0534**	**276.9111**	**0.4974**	**7.7800e-003**	**289.7676**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	5,119.9471	3.0171	1.8303	5,750.7029
Unmitigated	5,119.9471	3.0326	1.8335	5,752.0185

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	371.378 / 234.13	954.3767	0.4895	0.2934	1,055.6212
City Park	0 / 38.9614	39.6702	1.7900e-003	3.7000e-004	39.8229
Free-Standing Discount Store	53.3322 / 32.6875	136.1025	0.0703	0.0421	150.6382

General Office Building	504.764 / 309.371	1,288.1450	0.6649	0.3988	1,425.7183
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Research & Development	1401.33 / 0	2,701.6527	1.8062	1.0988	3,080.2179
Total		**5,119.9471**	**3.0326**	**1.8335**	**5,752.0185**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	371.378 / 234.13	954.3767	0.4870	0.2929	1,055.4116
City Park	0 / 38.9614	39.6702	1.7900e-003	3.7000e-004	39.8229
Free-Standing Discount Store	53.3322 / 32.6875	136.1025	0.0699	0.0421	150.6081
General Office Building	504.764 / 309.371	1,288.1450	0.6615	0.3981	1,425.4334
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Research & Development	1401.33 / 0	2,701.6527	1.7969	1.0969	3,079.4269
Total		**5,119.9471**	**3.0171**	**1.8303**	**5,750.7029**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	174.1478	10.2918	0.0000	390.2764
Unmitigated	1,741.4777	102.9184	0.0000	3,902.7638

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	2622	532.2423	31.4546	0.0000	1,192.7893
City Park	2.81	0.5704	0.0337	0.0000	1.2783
Free-Standing Discount Store	3096.5	628.5615	37.1469	0.0000	1,408.6469
General Office Building	2641.2	536.1397	31.6850	0.0000	1,201.5237
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Research & Development	216.58	43.9638	2.5982	0.0000	98.5257
Total		**1,741.4777**	**102.9184**	**0.0000**	**3,902.7639**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	262.2	53.2242	3.1455	0.0000	119.2789
City Park	0.281	0.0570	3.3700e-003	0.0000	0.1278
Free-Standing Discount Store	309.65	62.8562	3.7147	0.0000	140.8647
General Office Building	264.12	53.6140	3.1685	0.0000	120.1524
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Research & Development	21.658	4.3964	0.2598	0.0000	9.8526
Total		**174.1478**	**10.2918**	**0.0000**	**390.2764**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

RSSSP Full Build

Contra Costa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	2,840.00	1000sqft	70.69	2,840,000.00	0
Research & Development	2,850.00	1000sqft	70.94	2,850,000.00	0
Parking Lot	4,900.00	Space	47.81	1,960,000.00	0
City Park	32.70	Acre	32.70	1,424,412.00	0
Apartments Mid Rise	5,700.00	Dwelling Unit	162.63	5,700,000.00	11490
Free-Standing Discount Store	720.00	1000sqft	17.92	720,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	5			**Operational Year**	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.013	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Adjusted CO2 EF consistent with PG&E AB32 mandate for 2020. CH4 and N2O scaled down proprtionaltely.

Land Use - 145 acres open space - 112.3 acres wetlands =32.7 acres park.Adjust Population to match P&H Section.

Construction Phase - Scale phase durations proportionally to complete by 2040. Separate calc. sheet.

Off-road Equipment - 'Equipment hours adjusted to match 45% increase in schedule over default.

Off-road Equipment - 'Equipment hours adjusted to match 45% increase in schedule over default.

Off-road Equipment - 'Equipment hours adjusted to match 45% increase in schedule over default.

Off-road Equipment - 'Equipment hours adjusted to match 45% increase in schedule over default.

Trips and VMT -

Demolition - 830,000 cy per data request response. 1.264 ton/cy per user guide.

Grading -

Architectural Coating -

Vehicle Trips - Adjust trip rates to match trip generation of transportation analysis. Weekend trips rates proportional to ITE in model.

Vechicle Emission Factors - EMFAC2014

Woodstoves - Assume no woodstoves. Assume default percentage of fireplaces bu all gas-fired.

Consumer Products - ADjust ROG EF to updated CC County specific value calculated by Ramboll.

Energy Use - Adjust T24 energy to reflect 2013 and 2016 T24.

Water And Wastewater - All wastewater treatment aerobic. No septic or lagoons.

Solid Waste -

Construction Off-road Equipment Mitigation - Tier 4 and renewable diesel as Mitigation

Waste Mitigation - Assume current diversion rate of 49 percent.

Mobile Commute Mitigation -

Area Mitigation - Assume super-compliant coatings

Mobile Land Use Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintNonresidentialExterior Value	150	100
tblAreaMitigation	UseLowVOCPaintNonresidentialInterior Value	100	50
tblAreaMitigation	UseLowVOCPaintResidentialExteriorVa lue	150	100
tblAreaMitigation	UseLowVOCPaintResidentialInteriorVal ue	100	50
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
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tblConstructionPhase	NumDays	775.00	427.00
tblConstructionPhase	NumDays	550.00	303.00
tblConstructionPhase	NumDays	300.00	165.00
tblConstructionPhase	PhaseEndDate	12/30/2039	12/31/2039
tblConstructionPhase	PhaseEndDate	9/6/2019	9/8/2019
tblConsumerProducts	ROG_EF	2.14E-05	1.62E-05
tblEnergyUse	T24E	312.05	183.58
tblEnergyUse	T24E	2.74	1.68
tblEnergyUse	T24E	5.01	3.06
tblEnergyUse	T24E	1.48	0.91
tblEnergyUse	T24NG	7,191.67	6,655.49
tblEnergyUse	T24NG	4.10	2.84
tblEnergyUse	T24NG	19.28	13.35
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tblGrading	MaterialExported	0.00	47,000.00
tblLandUse	LotAcreage	65.20	70.69
tblLandUse	LotAcreage	65.43	70.94
tblLandUse	LotAcreage	44.10	47.81
tblLandUse	LotAcreage	150.00	162.63
tblLandUse	LotAcreage	16.53	17.92
tblLandUse	Population	16,302.00	11,490.00

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tblOffRoadEquipment	UsageHours	8.00	11.60
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tblOffRoadEquipment	UsageHours	8.00	11.60
tblOffRoadEquipment	UsageHours	8.00	11.60
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tblProjectCharacteristics	CO2IntensityFactor	641.35	290
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tblProjectCharacteristics	OperationalYear	2014	2035
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tblVehicleEF	LDT1	0.09	0.02
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tblVehicleEF	LDT2	0.07	0.03
tblVehicleEF	LDT2	0.08	0.02
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tblVehicleEF	LDT2	0.10	0.04
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tblVehicleEF	LDT2	0.35	0.18
tblVehicleEF	LDT2	0.08	0.02
tblVehicleEF	LDT2	4.6180e-003	2.3760e-003
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tblVehicleEF	LHD1	8.7240e-003	7.1450e-003

tblVehicleEF	LHD1	2.6400e-004	4.2400e-004
tblVehicleEF	LHD1	5.8400e-004	9.0940e-003
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	2.3290e-003	2.6360e-003
tblVehicleEF	LHD1	8.0290e-003	6.8070e-003
tblVehicleEF	LHD1	2.4500e-004	3.9000e-004
tblVehicleEF	LHD1	1.3580e-003	0.01
tblVehicleEF	LHD1	0.05	0.04
tblVehicleEF	LHD1	0.03	0.16
tblVehicleEF	LHD1	9.7700e-004	8.9640e-003
tblVehicleEF	LHD1	0.04	0.09
tblVehicleEF	LHD1	0.28	0.18
tblVehicleEF	LHD1	0.19	0.06
tblVehicleEF	LHD1	9.0000e-005	1.1750e-003
tblVehicleEF	LHD1	8.1460e-003	6.0180e-003
tblVehicleEF	LHD1	4.7400e-004	2.2000e-004
tblVehicleEF	LHD2	0.13	1.56
tblVehicleEF	LHD2	0.60	0.44
tblVehicleEF	LHD2	1.42	0.73
tblVehicleEF	LHD2	8.88	176.60
tblVehicleEF	LHD2	617.06	662.94
tblVehicleEF	LHD2	22.11	18.63
tblVehicleEF	LHD2	4.8600e-003	4.5630e-003
tblVehicleEF	LHD2	0.12	0.63
tblVehicleEF	LHD2	0.65	0.08
tblVehicleEF	LHD2	0.48	0.16
tblVehicleEF	LHD2	1.3020e-003	0.01
tblVehicleEF	LHD2	0.07	0.09
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.02	7.2650e-003

tblVehicleEF	LHD2	1.1100e-004	3.3900e-004
tblVehicleEF	LHD2	1.1970e-003	0.01
tblVehicleEF	LHD2	0.03	0.04
tblVehicleEF	LHD2	2.6320e-003	2.7120e-003
tblVehicleEF	LHD2	0.01	6.9260e-003
tblVehicleEF	LHD2	1.0300e-004	3.1200e-004
tblVehicleEF	LHD2	6.2200e-004	5.4420e-003
tblVehicleEF	LHD2	0.02	0.01
tblVehicleEF	LHD2	0.02	0.14
tblVehicleEF	LHD2	4.5900e-004	3.7800e-003
tblVehicleEF	LHD2	0.06	0.09
tblVehicleEF	LHD2	0.12	0.06
tblVehicleEF	LHD2	0.09	0.02
tblVehicleEF	LHD2	9.7000e-005	1.7180e-003
tblVehicleEF	LHD2	6.7020e-003	6.4400e-003
tblVehicleEF	LHD2	2.7000e-004	1.9800e-004
tblVehicleEF	MCY	23.93	17.75
tblVehicleEF	MCY	11.25	10.51
tblVehicleEF	MCY	151.95	175.99
tblVehicleEF	MCY	36.31	41.75
tblVehicleEF	MCY	6.5840e-003	0.02
tblVehicleEF	MCY	1.22	1.14
tblVehicleEF	MCY	0.32	0.32
tblVehicleEF	MCY	0.04	0.01
tblVehicleEF	MCY	8.0000e-003	4.0000e-003
tblVehicleEF	MCY	2.5100e-004	2.2900e-003
tblVehicleEF	MCY	6.7300e-004	3.3830e-003
tblVehicleEF	MCY	0.02	5.0400e-003
tblVehicleEF	MCY	2.0000e-003	1.0000e-003
tblVehicleEF	MCY	2.1700e-004	2.1350e-003

tblVehicleEF	MCY	5.8900e-004	3.1580e-003
tblVehicleEF	MCY	0.65	1.65
tblVehicleEF	MCY	0.36	0.59
tblVehicleEF	MCY	0.38	0.98
tblVehicleEF	MCY	2.64	2.15
tblVehicleEF	MCY	1.17	1.24
tblVehicleEF	MCY	2.19	2.10
tblVehicleEF	MCY	2.1470e-003	2.1150e-003
tblVehicleEF	MCY	6.4900e-004	6.5100e-004
tblVehicleEF	MDV	0.92	0.45
tblVehicleEF	MDV	2.08	0.91
tblVehicleEF	MDV	415.78	317.29
tblVehicleEF	MDV	91.38	70.20
tblVehicleEF	MDV	0.14	0.11
tblVehicleEF	MDV	0.10	0.04
tblVehicleEF	MDV	0.15	0.06
tblVehicleEF	MDV	1.9330e-003	8.3100e-004
tblVehicleEF	MDV	4.8000e-003	1.3110e-003
tblVehicleEF	MDV	1.7930e-003	7.6500e-004
tblVehicleEF	MDV	4.4540e-003	1.2050e-003
tblVehicleEF	MDV	0.07	0.25
tblVehicleEF	MDV	0.17	0.10
tblVehicleEF	MDV	0.08	0.29
tblVehicleEF	MDV	0.02	6.8580e-003
tblVehicleEF	MDV	0.53	0.29
tblVehicleEF	MDV	0.14	0.05
tblVehicleEF	MDV	5.9160e-003	3.1710e-003
tblVehicleEF	MDV	1.3250e-003	7.1700e-004
tblVehicleEF	MH	0.26	0.21
tblVehicleEF	MH	4.44	3.14

tblVehicleEF	MH	687.56	1,168.85
tblVehicleEF	MH	27.35	55.68
tblVehicleEF	MH	1.9780e-003	2.4540e-003
tblVehicleEF	MH	0.82	0.67
tblVehicleEF	MH	0.53	0.54
tblVehicleEF	MH	0.05	0.13
tblVehicleEF	MH	8.6500e-003	0.01
tblVehicleEF	MH	0.01	6.9980e-003
tblVehicleEF	MH	1.9000e-004	8.7400e-004
tblVehicleEF	MH	0.02	0.06
tblVehicleEF	MH	2.1620e-003	3.2220e-003
tblVehicleEF	MH	9.9170e-003	6.6550e-003
tblVehicleEF	MH	1.7600e-004	8.0300e-004
tblVehicleEF	MH	0.37	0.03
tblVehicleEF	MH	0.03	0.02
tblVehicleEF	MH	0.20	0.01
tblVehicleEF	MH	0.03	0.03
tblVehicleEF	MH	0.49	0.24
tblVehicleEF	MH	0.23	0.19
tblVehicleEF	MH	7.5430e-003	0.01
tblVehicleEF	MH	3.8000e-004	6.1100e-004
tblVehicleEF	MHD	2.12	1.97
tblVehicleEF	MHD	0.40	0.22
tblVehicleEF	MHD	8.74	0.00
tblVehicleEF	MHD	572.86	607.88
tblVehicleEF	MHD	991.14	1,157.17
tblVehicleEF	MHD	49.32	15.68
tblVehicleEF	MHD	0.01	8.2050e-003
tblVehicleEF	MHD	3.22	1.51
tblVehicleEF	MHD	0.93	0.91

tblVehicleEF	MHD	0.95	0.11
tblVehicleEF	MHD	7.5330e-003	1.4400e-004
tblVehicleEF	MHD	0.12	0.13
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	0.03	2.7890e-003
tblVehicleEF	MHD	4.1400e-004	2.2600e-004
tblVehicleEF	MHD	6.9310e-003	1.4400e-004
tblVehicleEF	MHD	0.05	0.06
tblVehicleEF	MHD	2.8610e-003	3.0000e-003
tblVehicleEF	MHD	0.03	2.6610e-003
tblVehicleEF	MHD	3.8400e-004	2.0800e-004
tblVehicleEF	MHD	1.2910e-003	2.9750e-003
tblVehicleEF	MHD	0.07	6.9830e-003
tblVehicleEF	MHD	0.18	0.13
tblVehicleEF	MHD	9.2800e-004	2.0830e-003
tblVehicleEF	MHD	0.10	0.04
tblVehicleEF	MHD	0.36	0.04
tblVehicleEF	MHD	0.51	0.05
tblVehicleEF	MHD	6.0730e-003	5.8660e-003
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	7.0000e-004	1.7100e-004
tblVehicleEF	OBUS	3.31	4.86
tblVehicleEF	OBUS	0.52	0.22
tblVehicleEF	OBUS	6.71	4.29
tblVehicleEF	OBUS	533.36	350.15
tblVehicleEF	OBUS	940.08	1,210.94
tblVehicleEF	OBUS	32.73	71.37
tblVehicleEF	OBUS	1.3150e-003	6.4700e-004
tblVehicleEF	OBUS	3.20	0.05
tblVehicleEF	OBUS	0.85	0.10

tblVehicleEF	OBUS	0.88	0.70
tblVehicleEF	OBUS	8.7960e-003	0.00
tblVehicleEF	OBUS	0.08	0.13
tblVehicleEF	OBUS	9.9080e-003	0.01
tblVehicleEF	OBUS	0.03	1.4040e-003
tblVehicleEF	OBUS	2.9500e-004	1.1300e-003
tblVehicleEF	OBUS	8.0920e-003	0.00
tblVehicleEF	OBUS	0.03	0.06
tblVehicleEF	OBUS	2.4770e-003	3.0000e-003
tblVehicleEF	OBUS	0.02	1.2910e-003
tblVehicleEF	OBUS	2.7400e-004	1.0390e-003
tblVehicleEF	OBUS	6.7900e-004	0.03
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.56	0.59
tblVehicleEF	OBUS	3.6800e-004	0.01
tblVehicleEF	OBUS	0.09	0.01
tblVehicleEF	OBUS	0.27	0.20
tblVehicleEF	OBUS	0.40	0.28
tblVehicleEF	OBUS	5.6540e-003	3.5970e-003
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	4.8100e-004	7.8900e-004
tblVehicleEF	SBUS	2.03	6.75
tblVehicleEF	SBUS	0.88	0.30
tblVehicleEF	SBUS	12.45	1.15
tblVehicleEF	SBUS	573.46	3,308.24
tblVehicleEF	SBUS	1,110.14	1,184.66
tblVehicleEF	SBUS	115.30	10.72
tblVehicleEF	SBUS	1.5580e-003	2.3400e-003
tblVehicleEF	SBUS	3.64	8.71
tblVehicleEF	SBUS	4.15	1.26

tblVehicleEF	SBUS	1.21	0.08
tblVehicleEF	SBUS	7.6550e-003	6.8600e-004
tblVehicleEF	SBUS	0.68	0.74
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.05	3.1510e-003
tblVehicleEF	SBUS	5.8300e-004	2.3400e-004
tblVehicleEF	SBUS	7.0420e-003	6.8600e-004
tblVehicleEF	SBUS	0.29	0.32
tblVehicleEF	SBUS	2.9070e-003	2.9100e-003
tblVehicleEF	SBUS	0.04	3.0090e-003
tblVehicleEF	SBUS	5.4100e-004	2.1500e-004
tblVehicleEF	SBUS	0.01	2.6480e-003
tblVehicleEF	SBUS	0.11	6.1290e-003
tblVehicleEF	SBUS	0.17	0.83
tblVehicleEF	SBUS	5.8890e-003	1.3610e-003
tblVehicleEF	SBUS	0.27	0.05
tblVehicleEF	SBUS	0.85	0.04
tblVehicleEF	SBUS	0.82	0.06
tblVehicleEF	SBUS	6.0790e-003	0.03
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	1.5000e-003	1.2700e-004
tblVehicleEF	UBUS	2.08	2.12
tblVehicleEF	UBUS	7.29	8.39
tblVehicleEF	UBUS	1,757.36	1,838.46
tblVehicleEF	UBUS	31.14	147.51
tblVehicleEF	UBUS	1.3900e-003	3.6500e-004
tblVehicleEF	UBUS	8.30	1.56
tblVehicleEF	UBUS	1.21	1.39
tblVehicleEF	UBUS	0.65	0.48
tblVehicleEF	UBUS	8.0000e-003	0.01

tblVehicleEF	UBUS	0.16	0.02
tblVehicleEF	UBUS	1.9200e-004	1.6460e-003
tblVehicleEF	UBUS	0.28	0.21
tblVehicleEF	UBUS	2.0000e-003	3.0000e-003
tblVehicleEF	UBUS	0.15	0.02
tblVehicleEF	UBUS	1.7800e-004	1.5130e-003
tblVehicleEF	UBUS	2.7020e-003	0.01
tblVehicleEF	UBUS	0.05	0.05
tblVehicleEF	UBUS	1.6020e-003	9.1290e-003
tblVehicleEF	UBUS	0.39	0.06
tblVehicleEF	UBUS	0.50	0.55
tblVehicleEF	UBUS	0.69	0.81
tblVehicleEF	UBUS	0.02	0.02
tblVehicleEF	UBUS	4.8200e-004	1.6310e-003
tblVehicleTrips	ST_TR	7.16	4.47
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	71.07	37.81
tblVehicleTrips	ST_TR	2.37	1.05
tblVehicleTrips	ST_TR	1.90	1.01
tblVehicleTrips	SU_TR	6.07	3.79
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	56.36	29.99
tblVehicleTrips	SU_TR	0.98	0.43
tblVehicleTrips	SU_TR	1.11	0.59
tblVehicleTrips	WD_TR	6.59	4.11
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	57.24	30.45
tblVehicleTrips	WD_TR	11.01	4.86
tblVehicleTrips	WD_TR	8.11	4.31
tblWater	AerobicPercent	87.46	100.00

tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWoodstoves	NumberCatalytic	28.50	0.00
tblWoodstoves	NumberNoncatalytic	28.50	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	1.6599	19.0191			11.5367	0.5094	12.0462	1.8545	0.4727	2.3272	0.0000	3,958.3533	3,958.3533	0.2141	0.0000	3,962.8487

2019	0.8732	9.3824			6.1516	0.4338	6.5853	2.5698	0.3992	2.9690	0.0000	1,012.7931	1,012.7931	0.2499	0.0000	1,018.0414
2020	0.9043	9.7405			2.7564	0.4358	3.1922	1.1320	0.4009	1.5330	0.0000	1,163.2022	1,163.2022	0.3349	0.0000	1,170.2353
2021	3.7489	17.6517			10.1444	0.4663	10.6107	3.1222	0.4318	3.5540	0.0000	9,268.6797	9,268.6797	0.4221	0.0000	9,277.5430
2022	4.8527	19.4393			10.8233	0.4691	11.2924	2.9163	0.4353	3.3515	0.0000	12,885.5424	12,885.5424	0.4474	0.0000	12,894.9379
2023	4.5751	16.9403			10.8238	0.4422	11.2660	2.9165	0.4101	3.3265	0.0000	12,769.9642	12,769.9642	0.4307	0.0000	12,779.0094
2024	4.4063	16.6068			10.9075	0.4305	11.3381	2.9391	0.3990	3.3381	0.0000	12,779.0197	12,779.0197	0.4224	0.0000	12,787.8903
2025	4.2472	16.1289			10.8664	0.4141	11.2805	2.9281	0.3836	3.3116	0.0000	12,652.8977	12,652.8977	0.4112	0.0000	12,661.5320
2026	4.1149	15.7988			10.8669	0.4099	11.2768	2.9283	0.3797	3.3079	0.0000	12,585.1922	12,585.1922	0.4027	0.0000	12,593.6479
2027	4.0207	15.6138			10.8674	0.4108	11.2782	2.9285	0.3805	3.3090	0.0000	12,526.7752	12,526.7752	0.3956	0.0000	12,535.0824
2028	3.9136	15.3783			10.8262	0.4091	11.2353	2.9174	0.3790	3.2964	0.0000	12,428.5640	12,428.5640	0.3876	0.0000	12,436.7040
2029	3.8271	15.2834			10.8682	0.4111	11.2793	2.9288	0.3808	3.3096	0.0000	12,432.6598	12,432.6598	0.3829	0.0000	12,440.7000
2030	3.7303	14.2887			10.8687	0.3399	11.2085	2.9290	0.3155	3.2445	0.0000	12,453.6502	12,453.6502	0.2941	0.0000	12,459.8264
2031	3.6685	14.1733			10.8690	0.3402	11.2093	2.9292	0.3158	3.2449	0.0000	12,421.9661	12,421.9661	0.2885	0.0000	12,428.0243
2032	3.6104	14.1276			10.9111	0.3418	11.2529	2.9405	0.3172	3.2578	0.0000	12,443.0436	12,443.0436	0.2846	0.0000	12,449.0209
2033	3.4906	13.9017			10.8281	0.3393	11.1674	2.9182	0.3149	3.2332	0.0000	12,325.7225	12,325.7225	0.2783	0.0000	12,331.5662
2034	3.4246	13.8176			10.8284	0.3394	11.1678	2.9184	0.3150	3.2333	0.0000	12,306.8441	12,306.8441	0.2742	0.0000	12,312.6026
2035	3.3510	13.6665			10.8703	0.3298	11.2001	2.9297	0.3053	3.2350	0.0000	12,338.5935	12,338.5935	0.2703	0.0000	12,344.2705
2036	0.2309	1.3611			9.1577	0.0172	9.1749	2.2478	0.0172	2.2650	0.0000	498.4027	498.4027	0.0186	0.0000	498.7927
2037	0.2201	1.1179			6.1568	0.0193	6.1761	1.5112	0.0193	1.5305	0.0000	435.0482	435.0482	0.0163	0.0000	435.3913
2038	11.7045	0.5383			0.2693	0.0202	0.2894	0.0661	0.0202	0.0863	0.0000	262.5843	262.5843	0.0101	0.0000	262.7964
2039	69.7629	0.0985			1.5503	1.2900e-003	1.5516	0.3805	1.2900e-003	0.3818	0.0000	33.1923	33.1923	1.2300e-003	0.0000	33.2181
Total	**144.3378**	**274.0746**			**199.7484**	**7.3305**	**207.0789**	**53.8520**	**6.7941**	**60.6461**	**0.0000**	**191,982.6908**	**191,982.6908**	**6.2377**	**0.0000**	**192,113.6816**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2018	1.0758	12.3801			11.5367	0.1791	11.7158	1.8545	0.1657	2.0202	0.0000	3,958.3525	3,958.3525	0.2141	0.0000	3,962.8479
2019	0.1747	1.1242			6.1516	0.0251	6.1767	2.5698	0.0243	2.5940	0.0000	1,012.7921	1,012.7921	0.2499	0.0000	1,018.0405
2020	0.1837	0.8893			2.7564	0.0253	2.7817	1.1320	0.0248	1.1568	0.0000	1,163.2009	1,163.2009	0.3349	0.0000	1,170.2340
2021	3.3394	13.1433			10.1444	0.2329	10.3773	3.1222	0.2155	3.3377	0.0000	9,268.6789	9,268.6789	0.4221	0.0000	9,277.5422
2022	4.5934	16.8609			10.8233	0.3246	11.1479	2.9163	0.2997	3.2160	0.0000	12,885.5419	12,885.5419	0.4474	0.0000	12,894.9374
2023	4.3410	14.5933			10.8238	0.3182	11.1420	2.9165	0.2939	3.2103	0.0000	12,769.9637	12,769.9637	0.4307	0.0000	12,779.0089
2024	4.1895	14.4198			10.9075	0.3220	11.2295	2.9391	0.2974	3.2365	0.0000	12,779.0192	12,779.0192	0.4224	0.0000	12,787.8898
2025	4.0509	14.1340			10.8664	0.3222	11.1886	2.9281	0.2976	3.2257	0.0000	12,652.8972	12,652.8972	0.4112	0.0000	12,661.5314
2026	3.9186	13.8038			10.8669	0.3180	11.1849	2.9283	0.2937	3.2220	0.0000	12,585.1916	12,585.1916	0.4027	0.0000	12,593.6474
2027	3.8244	13.6189			10.8674	0.3189	11.1863	2.9285	0.2945	3.2230	0.0000	12,526.7747	12,526.7747	0.3956	0.0000	12,535.0818
2028	3.7181	13.3910			10.8262	0.3176	11.1438	2.9174	0.2933	3.2108	0.0000	12,428.5635	12,428.5635	0.3876	0.0000	12,436.7035
2029	3.6309	13.2884			10.8682	0.3192	11.1875	2.9288	0.2948	3.2237	0.0000	12,432.6593	12,432.6593	0.3829	0.0000	12,440.6995
2030	3.5448	13.1463			10.8687	0.3196	11.1882	2.9290	0.2952	3.2242	0.0000	12,453.6496	12,453.6496	0.2941	0.0000	12,459.8258
2031	3.4830	13.0309			10.8690	0.3199	11.1890	2.9292	0.2955	3.2247	0.0000	12,421.9655	12,421.9655	0.2885	0.0000	12,428.0237
2032	3.4243	12.9808			10.9111	0.3214	11.2325	2.9405	0.2969	3.2374	0.0000	12,443.0430	12,443.0430	0.2846	0.0000	12,449.0203
2033	3.3058	12.7636			10.8281	0.3191	11.1472	2.9182	0.2947	3.2130	0.0000	12,325.7219	12,325.7219	0.2783	0.0000	12,331.5657
2034	3.2398	12.6795			10.8284	0.3192	11.1475	2.9184	0.2948	3.2131	0.0000	12,306.8435	12,306.8435	0.2742	0.0000	12,312.6021

2035	3.1830	12.6697			10.8703	0.3204	11.1908	2.9297	0.2959	3.2256	0.0000	12,338.5930	12,338.5930	0.2703	0.0000	12,344.2699
2036	0.0622	0.3604			9.1577	7.7300e-003	9.1655	2.2478	7.7300e-003	2.2555	0.0000	498.4021	498.4021	0.0186	0.0000	498.7921
2037	0.0710	0.2851			6.1568	6.7500e-003	6.1635	1.5112	6.7500e-003	1.5180	0.0000	435.0477	435.0477	0.0163	0.0000	435.3908
2038	11.6108	0.1126			0.2693	4.0700e-003	0.2733	0.0661	4.0700e-003	0.0702	0.0000	262.5840	262.5840	0.0101	0.0000	262.7961
2039	69.7515	0.0142			1.5503	5.2000e-004	1.5508	0.3805	5.2000e-004	0.3810	0.0000	33.1923	33.1923	1.2300e-003	0.0000	33.2180
Total	**138.7165**	**219.6900**			**199.7484**	**4.9618**	**204.7103**	**53.8520**	**4.5871**	**58.4391**	**0.0000**	**191,982.6779**	**191,982.6779**	**6.2377**	**0.0000**	**192,113.6687**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**3.89**	**19.84**	**0.00**	**0.00**	**0.00**	**32.31**	**1.14**	**0.00**	**32.48**	**3.64**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	55.2271	0.4875				0.2483	0.2483		0.2481	0.2481	0.0000	258.5137	258.5137	0.0700	3.4700e-003	261.0580
Energy	0.7951	7.0888				0.5494	0.5494		0.5494	0.5494	0.0000	19,052.7823	19,052.7823	0.6522	0.2600	19,147.0647
Mobile	23.5743	18.4066			50.4708	0.1706	50.6414	13.4902	0.1585	13.6487	0.0000	33,663.8236	33,663.8236	1.1890	0.0000	33,688.7934
Waste						0.0000	0.0000		0.0000	0.0000	1,741.4777	0.0000	1,741.4777	102.9184	0.0000	3,902.7638
Water						0.0000	0.0000		0.0000	0.0000	824.6413	1,942.2136	2,766.8549	2.9254	1.8134	3,390.4475
Total	**79.5965**	**25.9829**			**50.4708**	**0.9683**	**51.4391**	**13.4902**	**0.9560**	**14.4462**	**2,566.1191**	**54,917.3332**	**57,483.4522**	**107.7550**	**2.0769**	**60,390.1275**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	51.6145	0.4875				0.2483	0.2483		0.2481	0.2481	0.0000	258.5137	258.5137	0.0700	3.4700e-003	261.0580
Energy	0.7951	7.0888				0.5494	0.5494		0.5494	0.5494	0.0000	19,052.7823	19,052.7823	0.6522	0.2600	19,147.0647
Mobile	22.3062	16.8082			43.1934	0.1510	43.3443	11.5451	0.1402	11.6853	0.0000	29,246.4572	29,246.4572	1.0325	0.0000	29,268.1396
Waste						0.0000	0.0000		0.0000	0.0000	888.1537	0.0000	888.1537	52.4884	0.0000	1,990.4096
Water						0.0000	0.0000		0.0000	0.0000	824.6413	1,942.2136	2,766.8549	2.9185	1.8118	3,389.8065
Total	**74.7159**	**24.3845**			**43.1934**	**0.9486**	**44.1420**	**11.5451**	**0.9377**	**12.4828**	**1,712.7950**	**50,499.9667**	**52,212.7616**	**57.1615**	**2.0753**	**54,056.4784**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**6.13**	**6.15**	**0.00**	**0.00**	**14.42**	**2.03**	**14.19**	**14.42**	**1.91**	**13.59**	**33.25**	**8.04**	**9.17**	**46.95**	**0.08**	**10.49**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2018	1/18/2019	5	275	
2	Site Preparation	Site Preparation	1/19/2019	9/8/2019	5	165	
3	Grading	Grading	9/9/2019	4/27/2021	5	427	
4	Building Construction	Building Construction	4/28/2021	9/3/2037	5	4267	
5	Paving	Paving	9/4/2037	11/2/2038	5	303	
6	Architectural Coating	Architectural Coating	11/3/2038	12/31/2039	5	303	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1547.88

Acres of Paving: 0

Residential Indoor: 11,542,500; Residential Outdoor: 3,847,500; Non-Residential Indoor: 11,839,818; Non-Residential Outdoor: 3,946,606

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	11.60	81	0.73
Demolition	Excavators	3	11.60	162	0.38
Demolition	Rubber Tired Dozers	2	11.60	255	0.40
Site Preparation	Rubber Tired Dozers	3	11.60	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	11.60	97	0.37
Grading	Excavators	2	11.60	162	0.38
Grading	Graders	1	11.60	174	0.41
Grading	Rubber Tired Dozers	1	11.60	255	0.40
Grading	Scrapers	2	11.60	361	0.48
Grading	Tractors/Loaders/Backhoes	2	11.60	97	0.37
Building Construction	Cranes	1	10.20	226	0.29
Building Construction	Forklifts	3	11.60	89	0.20
Building Construction	Generator Sets	1	11.60	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	10.20	97	0.37
Building Construction	Welders	1	11.60	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	103,736.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

Site Preparation	7	18.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	5,875.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	7,577.00	2,215.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	1,515.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use Oxidation Catalyst for Construction Equipment

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					10.6536	0.0000	10.6536	1.6131	0.0000	1.6131	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.6738	6.9693				0.3423	0.3423		0.3190	0.3190	0.0000	683.7862	683.7862	0.1891	0.0000	687.7568
Total	**0.6738**	**6.9693**			**10.6536**	**0.3423**	**10.9959**	**1.6131**	**0.3190**	**1.9320**	**0.0000**	**683.7862**	**683.7862**	**0.1891**	**0.0000**	**687.7568**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.9803	12.0410			0.8653	0.1670	1.0323	0.2367	0.1536	0.3903	0.0000	3,259.6626	3,259.6626	0.0242	0.0000	3,260.1717

Vendor	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.8000e-003	8.7300e-003			0.0178	1.3000e-004	0.0180	4.7400e-003	1.2000e-004	4.8600e-003	0.0000	14.9044	14.9044	7.5000e-004	0.0000	14.9202
Total	**0.9861**	**12.0498**			**0.8831**	**0.1671**	**1.0503**	**0.2415**	**0.1538**	**0.3952**	**0.0000**	**3,274.5671**	**3,274.5671**	**0.0250**	**0.0000**	**3,275.0919**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					10.6536	0.0000	10.6536	1.6131	0.0000	1.6131	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0897	0.3303				0.0120	0.0120		0.0120	0.0120	0.0000	683.7854	683.7854	0.1891	0.0000	687.7560
Total	**0.0897**	**0.3303**			**10.6536**	**0.0120**	**10.6656**	**1.6131**	**0.0120**	**1.6250**	**0.0000**	**683.7854**	**683.7854**	**0.1891**	**0.0000**	**687.7560**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.9803	12.0410			0.8653	0.1670	1.0323	0.2367	0.1536	0.3903	0.0000	3,259.6626	3,259.6626	0.0242	0.0000	3,260.1717
Vendor	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.8000e-003	8.7300e-003			0.0178	1.3000e-004	0.0180	4.7400e-003	1.2000e-004	4.8600e-003	0.0000	14.9044	14.9044	7.5000e-004	0.0000	14.9202
Total	**0.9861**	**12.0498**			**0.8831**	**0.1671**	**1.0503**	**0.2415**	**0.1538**	**0.3952**	**0.0000**	**3,274.5671**	**3,274.5671**	**0.0250**	**0.0000**	**3,275.0919**

3.2 Demolition - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.5715	0.0000	0.5715	0.0865	0.0000	0.0865	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0337	0.3445				0.0167	0.0167		0.0156	0.0156	0.0000	36.1801	36.1801	0.0101	0.0000	36.3923
Total	**0.0337**	**0.3445**			**0.5715**	**0.0167**	**0.5882**	**0.0865**	**0.0156**	**0.1021**	**0.0000**	**36.1801**	**36.1801**	**0.0101**	**0.0000**	**36.3923**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0507	0.5944			0.6696	8.8500e-003	0.6785	0.1657	8.1400e-003	0.1738	0.0000	171.8967	171.8967	1.3000e-003	0.0000	171.9239
Vendor	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	4.3000e-004			9.6000e-004	1.0000e-005	9.6000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	0.7706	0.7706	4.0000e-005	0.0000	0.7714
Total	**0.0509**	**0.5949**			**0.6706**	**8.8600e-003**	**0.6794**	**0.1659**	**8.1500e-003**	**0.1741**	**0.0000**	**172.6673**	**172.6673**	**1.3400e-003**	**0.0000**	**172.6953**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Fugitive Dust					0.5715	0.0000	0.5715	0.0865	0.0000	0.0865	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.8100e-003	0.0177				6.4000e-004	6.4000e-004		6.4000e-004	6.4000e-004	0.0000	36.1800	36.1800	0.0101	0.0000	36.3922
Total	**4.8100e-003**	**0.0177**			**0.5715**	**6.4000e-004**	**0.5721**	**0.0865**	**6.4000e-004**	**0.0872**	**0.0000**	**36.1800**	**36.1800**	**0.0101**	**0.0000**	**36.3922**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0507	0.5944			0.6696	8.8500e-003	0.6785	0.1657	8.1400e-003	0.1738	0.0000	171.8967	171.8967	1.3000e-003	0.0000	171.9239
Vendor	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	4.3000e-004			9.6000e-004	1.0000e-005	9.6000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	0.7706	0.7706	4.0000e-005	0.0000	0.7714
Total	**0.0509**	**0.5949**			**0.6706**	**8.8600e-003**	**0.6794**	**0.1659**	**8.1500e-003**	**0.1741**	**0.0000**	**172.6673**	**172.6673**	**1.3400e-003**	**0.0000**	**172.6953**

3.3 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.1612	0.0000	2.1612	1.1880	0.0000	1.1880	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.4808	5.0846				0.2573	0.2573		0.2367	0.2367	0.0000	420.7097	420.7097	0.1331	0.0000	423.5049

Total	**0.4808**	**5.0846**			**2.1612**	**0.2573**	**2.4184**	**1.1880**	**0.2367**	**1.4246**	**0.0000**	**420.7097**	**420.7097**	**0.1331**	**0.0000**	**423.5049**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-003	6.0300e-003			0.0135	1.0000e-004	0.0136	3.6000e-003	9.0000e-005	3.6900e-003	0.0000	10.8988	10.8988	5.3000e-004	0.0000	10.9099
Total	**4.0000e-003**	**6.0300e-003**			**0.0135**	**1.0000e-004**	**0.0136**	**3.6000e-003**	**9.0000e-005**	**3.6900e-003**	**0.0000**	**10.8988**	**10.8988**	**5.3000e-004**	**0.0000**	**10.9099**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.1612	0.0000	2.1612	1.1880	0.0000	1.1880	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0569	0.2096				7.5900e-003	7.5900e-003		7.5900e-003	7.5900e-003	0.0000	420.7092	420.7092	0.1331	0.0000	423.5044
Total	**0.0569**	**0.2096**			**2.1612**	**7.5900e-003**	**2.1688**	**1.1880**	**7.5900e-003**	**1.1956**	**0.0000**	**420.7092**	**420.7092**	**0.1331**	**0.0000**	**423.5044**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-003	6.0300e-003			0.0135	1.0000e-004	0.0136	3.6000e-003	9.0000e-005	3.6900e-003	0.0000	10.8988	10.8988	5.3000e-004	0.0000	10.9099
Total	**4.0000e-003**	**6.0300e-003**			**0.0135**	**1.0000e-004**	**0.0136**	**3.6000e-003**	**9.0000e-005**	**3.6900e-003**	**0.0000**	**10.8988**	**10.8988**	**5.3000e-004**	**0.0000**	**10.9099**

3.4 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.6877	0.0000	2.6877	1.1138	0.0000	1.1138	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2908	3.2221				0.1489	0.1489		0.1370	0.1370	0.0000	329.5961	329.5961	0.1043	0.0000	331.7860
Total	**0.2908**	**3.2221**			**2.6877**	**0.1489**	**2.8366**	**1.1138**	**0.1370**	**1.2508**	**0.0000**	**329.5961**	**329.5961**	**0.1043**	**0.0000**	**331.7860**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0108	0.1270			0.0397	1.8900e-003	0.0416	0.0100	1.7400e-003	0.0118	0.0000	36.7229	36.7229	2.8000e-004	0.0000	36.7287
Vendor	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2100e-003	3.3300e-003			7.4700e-003	5.0000e-005	7.5200e-003	1.9900e-003	5.0000e-005	2.0400e-003	0.0000	6.0182	6.0182	2.9000e-004	0.0000	6.0243
Total	**0.0130**	**0.1303**			**0.0471**	**1.9400e-003**	**0.0491**	**0.0120**	**1.7900e-003**	**0.0138**	**0.0000**	**42.7411**	**42.7411**	**5.7000e-004**	**0.0000**	**42.7530**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.6877	0.0000	2.6877	1.1138	0.0000	1.1138	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0450	0.1656				6.0000e-003	6.0000e-003		6.0000e-003	6.0000e-003	0.0000	329.5957	329.5957	0.1043	0.0000	331.7856
Total	**0.0450**	**0.1656**			**2.6877**	**6.0000e-003**	**2.6937**	**1.1138**	**6.0000e-003**	**1.1198**	**0.0000**	**329.5957**	**329.5957**	**0.1043**	**0.0000**	**331.7856**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0108	0.1270			0.0397	1.8900e-003	0.0416	0.0100	1.7400e-003	0.0118	0.0000	36.7229	36.7229	2.8000e-004	0.0000	36.7287
Vendor	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2100e-003	3.3300e-003			7.4700e-003	5.0000e-005	7.5200e-003	1.9900e-003	5.0000e-005	2.0400e-003	0.0000	6.0182	6.0182	2.9000e-004	0.0000	6.0243
Total	**0.0130**	**0.1303**			**0.0471**	**1.9400e-003**	**0.0491**	**0.0120**	**1.7900e-003**	**0.0138**	**0.0000**	**42.7411**	**42.7411**	**5.7000e-004**	**0.0000**	**42.7530**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.6877	0.0000	2.6877	1.1138	0.0000	1.1138	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.8643	9.3805				0.4297	0.4297		0.3953	0.3953	0.0000	1,030.0772	1,030.0772	0.3332	0.0000	1,037.0733
Total	**0.8643**	**9.3805**			**2.6877**	**0.4297**	**3.1174**	**1.1138**	**0.3953**	**1.5091**	**0.0000**	**1,030.0772**	**1,030.0772**	**0.3332**	**0.0000**	**1,037.0733**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0335	0.3503			0.0449	5.9500e-003	0.0508	0.0119	5.4800e-003	0.0174	0.0000	114.6713	114.6713	8.9000e-004	0.0000	114.6899
Vendor	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.5400e-003	9.7900e-003			0.0239	1.7000e-004	0.0240	6.3400e-003	1.6000e-004	6.5000e-003	0.0000	18.4537	18.4537	8.8000e-004	0.0000	18.4721
Total	**0.0400**	**0.3601**			**0.0687**	**6.1200e-003**	**0.0749**	**0.0182**	**5.6400e-003**	**0.0239**	**0.0000**	**133.1249**	**133.1249**	**1.7700e-003**	**0.0000**	**133.1619**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.6877	0.0000	2.6877	1.1138	0.0000	1.1138	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1437	0.5292				0.0192	0.0192		0.0192	0.0192	0.0000	1,030.0760	1,030.0760	0.3332	0.0000	1,037.0721
Total	**0.1437**	**0.5292**			**2.6877**	**0.0192**	**2.7069**	**1.1138**	**0.0192**	**1.1330**	**0.0000**	**1,030.0760**	**1,030.0760**	**0.3332**	**0.0000**	**1,037.0721**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0335	0.3503			0.0449	5.9500e-003	0.0508	0.0119	5.4800e-003	0.0174	0.0000	114.6713	114.6713	8.9000e-004	0.0000	114.6899
Vendor	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.5400e-003	9.7900e-003			0.0239	1.7000e-004	0.0240	6.3400e-003	1.6000e-004	6.5000e-003	0.0000	18.4537	18.4537	8.8000e-004	0.0000	18.4721
Total	**0.0400**	**0.3601**			**0.0687**	**6.1200e-003**	**0.0749**	**0.0182**	**5.6400e-003**	**0.0239**	**0.0000**	**133.1249**	**133.1249**	**1.7700e-003**	**0.0000**	**133.1619**

3.4 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.6877	0.0000	2.6877	1.1138	0.0000	1.1138	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	0.2524	2.6774				0.1212	0.1212		0.1115	0.1115	0.0000	326.3990	326.3990	0.1056	0.0000	328.6158
Total	**0.2524**	**2.6774**			**2.6877**	**0.1212**	**2.8089**	**1.1138**	**0.1115**	**1.2253**	**0.0000**	**326.3990**	**326.3990**	**0.1056**	**0.0000**	**328.6158**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0102	0.0926			0.0397	1.8600e-003	0.0416	0.0100	1.7100e-003	0.0117	0.0000	36.2700	36.2700	2.8000e-004	0.0000	36.2760
Vendor	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9600e-003	2.8900e-003			7.5600e-003	5.0000e-005	7.6100e-003	2.0100e-003	5.0000e-005	2.0600e-003	0.0000	5.7433	5.7433	2.6000e-004	0.0000	5.7489
Total	**0.0122**	**0.0954**			**0.0473**	**1.9100e-003**	**0.0492**	**0.0120**	**1.7600e-003**	**0.0138**	**0.0000**	**42.0134**	**42.0134**	**5.4000e-004**	**0.0000**	**42.0249**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.6877	0.0000	2.6877	1.1138	0.0000	1.1138	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0455	0.1677				6.0700e-003	6.0700e-003		6.0700e-003	6.0700e-003	0.0000	326.3986	326.3986	0.1056	0.0000	328.6154
Total	**0.0455**	**0.1677**			**2.6877**	**6.0700e-003**	**2.6938**	**1.1138**	**6.0700e-003**	**1.1199**	**0.0000**	**326.3986**	**326.3986**	**0.1056**	**0.0000**	**328.6154**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0102	0.0926			0.0397	1.8600e-003	0.0416	0.0100	1.7100e-003	0.0117	0.0000	36.2700	36.2700	2.8000e-004	0.0000	36.2760
Vendor	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9600e-003	2.8900e-003			7.5600e-003	5.0000e-005	7.6100e-003	2.0100e-003	5.0000e-005	2.0600e-003	0.0000	5.7433	5.7433	2.6000e-004	0.0000	5.7489
Total	**0.0122**	**0.0954**			**0.0473**	**1.9100e-003**	**0.0492**	**0.0120**	**1.7600e-003**	**0.0138**	**0.0000**	**42.0134**	**42.0134**	**5.4000e-004**	**0.0000**	**42.0249**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2448	2.2436				0.1235	0.1235		0.1161	0.1161	0.0000	298.4204	298.4204	0.0720	0.0000	299.9314
Total	**0.2448**	**2.2436**				**0.1235**	**0.1235**		**0.1161**	**0.1161**	**0.0000**	**298.4204**	**298.4204**	**0.0720**	**0.0000**	**299.9314**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6499	10.2873			1.2697	0.1752	1.4449	0.3636	0.1612	0.5248	0.0000	3,935.5419	3,935.5419	0.0300	0.0000	3,936.1725
Worker	1.5895	2.3480			6.1398	0.0444	6.1842	1.6328	0.0412	1.6740	0.0000	4,666.3050	4,666.3050	0.2140	0.0000	4,670.7983
Total	**3.2395**	**12.6353**			**7.4095**	**0.2196**	**7.6291**	**1.9964**	**0.2024**	**2.1988**	**0.0000**	**8,601.8469**	**8,601.8469**	**0.2440**	**0.0000**	**8,606.9708**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0422	0.2449				5.2500e-003	5.2500e-003		5.2500e-003	5.2500e-003	0.0000	298.4200	298.4200	0.0720	0.0000	299.9311
Total	**0.0422**	**0.2449**				**5.2500e-003**	**5.2500e-003**		**5.2500e-003**	**5.2500e-003**	**0.0000**	**298.4200**	**298.4200**	**0.0720**	**0.0000**	**299.9311**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6499	10.2873			1.2697	0.1752	1.4449	0.3636	0.1612	0.5248	0.0000	3,935.5419	3,935.5419	0.0300	0.0000	3,936.1725
Worker	1.5895	2.3480			6.1398	0.0444	6.1842	1.6328	0.0412	1.6740	0.0000	4,666.3050	4,666.3050	0.2140	0.0000	4,670.7983
Total	**3.2395**	**12.6353**			**7.4095**	**0.2196**	**7.6291**	**1.9964**	**0.2024**	**2.1988**	**0.0000**	**8,601.8469**	**8,601.8469**	**0.2440**	**0.0000**	**8,606.9708**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3210	2.9360				0.1522	0.1522		0.1432	0.1432	0.0000	436.0613	436.0613	0.1044	0.0000	438.2538
Total	**0.3210**	**2.9360**				**0.1522**	**0.1522**		**0.1432**	**0.1432**	**0.0000**	**436.0613**	**436.0613**	**0.1044**	**0.0000**	**438.2538**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.3319	13.2917			1.8551	0.2521	2.1072	0.5313	0.2319	0.7633	0.0000	5,744.5773	5,744.5773	0.0448	0.0000	5,745.5183
Worker	2.1999	3.2116			8.9682	0.0648	9.0330	2.3849	0.0601	2.4450	0.0000	6,704.9038	6,704.9038	0.2982	0.0000	6,711.1658
Total	**4.5317**	**16.5033**			**10.8233**	**0.3169**	**11.1402**	**2.9163**	**0.2920**	**3.2083**	**0.0000**	**12,449.4811**	**12,449.4811**	**0.3430**	**0.0000**	**12,456.6841**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0617	0.3577				7.6700e-003	7.6700e-003		7.6700e-003	7.6700e-003	0.0000	436.0608	436.0608	0.1044	0.0000	438.2533
Total	**0.0617**	**0.3577**				**7.6700e-003**	**7.6700e-003**		**7.6700e-003**	**7.6700e-003**	**0.0000**	**436.0608**	**436.0608**	**0.1044**	**0.0000**	**438.2533**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.3319	13.2917			1.8551	0.2521	2.1072	0.5313	0.2319	0.7633	0.0000	5,744.5773	5,744.5773	0.0448	0.0000	5,745.5183
Worker	2.1999	3.2116			8.9682	0.0648	9.0330	2.3849	0.0601	2.4450	0.0000	6,704.9038	6,704.9038	0.2982	0.0000	6,711.1658
Total	**4.5317**	**16.5033**			**10.8233**	**0.3169**	**11.1402**	**2.9163**	**0.2920**	**3.2083**	**0.0000**	**12,449.4811**	**12,449.4811**	**0.3430**	**0.0000**	**12,456.6841**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2959	2.7047				0.1316	0.1316		0.1239	0.1239	0.0000	436.2119	436.2119	0.1037	0.0000	438.3897

Total	**0.2959**	**2.7047**				**0.1316**	**0.1316**		**0.1239**	**0.1239**	**0.0000**	**436.2119**	**436.2119**	**0.1037**	**0.0000**	**438.3897**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1924	11.2172			1.8556	0.2458	2.1015	0.5315	0.2262	0.7577	0.0000	5,729.5590	5,729.5590	0.0415	0.0000	5,730.4294
Worker	2.0869	3.0184			8.9682	0.0647	9.0329	2.3849	0.0600	2.4450	0.0000	6,604.1933	6,604.1933	0.2856	0.0000	6,610.1903
Total	**4.2793**	**14.2356**			**10.8238**	**0.3105**	**11.1343**	**2.9165**	**0.2862**	**3.2027**	**0.0000**	**12,333.7523**	**12,333.7523**	**0.3270**	**0.0000**	**12,340.6197**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0617	0.3577				7.6700e-003	7.6700e-003		7.6700e-003	7.6700e-003	0.0000	436.2114	436.2114	0.1037	0.0000	438.3892
Total	**0.0617**	**0.3577**				**7.6700e-003**	**7.6700e-003**		**7.6700e-003**	**7.6700e-003**	**0.0000**	**436.2114**	**436.2114**	**0.1037**	**0.0000**	**438.3892**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1924	11.2172			1.8556	0.2458	2.1015	0.5315	0.2262	0.7577	0.0000	5,729.5590	5,729.5590	0.0415	0.0000	5,730.4294
Worker	2.0869	3.0184			8.9682	0.0647	9.0329	2.3849	0.0600	2.4450	0.0000	6,604.1933	6,604.1933	0.2856	0.0000	6,610.1903
Total	**4.2793**	**14.2356**			**10.8238**	**0.3105**	**11.1343**	**2.9165**	**0.2862**	**3.2027**	**0.0000**	**12,333.7523**	**12,333.7523**	**0.3270**	**0.0000**	**12,340.6197**

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2790	2.5474				0.1163	0.1163		0.1094	0.1094	0.0000	439.6521	439.6521	0.1039	0.0000	441.8340
Total	**0.2790**	**2.5474**				**0.1163**	**0.1163**		**0.1094**	**0.1094**	**0.0000**	**439.6521**	**439.6521**	**0.1039**	**0.0000**	**441.8340**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1286	11.1893			1.8704	0.2491	2.1195	0.5358	0.2292	0.7650	0.0000	5,775.7019	5,775.7019	0.0419	0.0000	5,776.5827
Worker	1.9988	2.8701			9.0372	0.0652	9.1023	2.4033	0.0605	2.4637	0.0000	6,563.6657	6,563.6657	0.2766	0.0000	6,569.4736
Total	**4.1274**	**14.0594**			**10.9075**	**0.3143**	**11.2218**	**2.9391**	**0.2896**	**3.2287**	**0.0000**	**12,339.3676**	**12,339.3676**	**0.3185**	**0.0000**	**12,346.0563**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0622	0.3604				7.7300e-003	7.7300e-003		7.7300e-003	7.7300e-003	0.0000	439.6516	439.6516	0.1039	0.0000	441.8335
Total	**0.0622**	**0.3604**				**7.7300e-003**	**7.7300e-003**		**7.7300e-003**	**7.7300e-003**	**0.0000**	**439.6516**	**439.6516**	**0.1039**	**0.0000**	**441.8335**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1286	11.1893			1.8704	0.2491	2.1195	0.5358	0.2292	0.7650	0.0000	5,775.7019	5,775.7019	0.0419	0.0000	5,776.5827
Worker	1.9988	2.8701			9.0372	0.0652	9.1023	2.4033	0.0605	2.4637	0.0000	6,563.6657	6,563.6657	0.2766	0.0000	6,569.4736
Total	**4.1274**	**14.0594**			**10.9075**	**0.3143**	**11.2218**	**2.9391**	**0.2896**	**3.2287**	**0.0000**	**12,339.3676**	**12,339.3676**	**0.3185**	**0.0000**	**12,346.0563**

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2582	2.3540				0.0996	0.0996		0.0937	0.0937	0.0000	438.1078	438.1078	0.1029	0.0000	440.2691
Total	**0.2582**	**2.3540**				**0.0996**	**0.0996**		**0.0937**	**0.0937**	**0.0000**	**438.1078**	**438.1078**	**0.1029**	**0.0000**	**440.2691**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0822	11.0566			1.8637	0.2494	2.1131	0.5340	0.2294	0.7634	0.0000	5,756.0074	5,756.0074	0.0419	0.0000	5,756.8881
Worker	1.9068	2.7183			9.0027	0.0652	9.0678	2.3941	0.0605	2.4546	0.0000	6,458.7825	6,458.7825	0.2663	0.0000	6,464.3748
Total	**3.9890**	**13.7749**			**10.8664**	**0.3145**	**11.1809**	**2.9281**	**0.2899**	**3.2180**	**0.0000**	**12,214.7900**	**12,214.7900**	**0.3082**	**0.0000**	**12,221.2629**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0619	0.3591				7.7000e-003	7.7000e-003		7.7000e-003	7.7000e-003	0.0000	438.1073	438.1073	0.1029	0.0000	440.2686
Total	**0.0619**	**0.3591**				**7.7000e-003**	**7.7000e-003**		**7.7000e-003**	**7.7000e-003**	**0.0000**	**438.1073**	**438.1073**	**0.1029**	**0.0000**	**440.2686**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0822	11.0566			1.8637	0.2494	2.1131	0.5340	0.2294	0.7634	0.0000	5,756.0074	5,756.0074	0.0419	0.0000	5,756.8881
Worker	1.9068	2.7183			9.0027	0.0652	9.0678	2.3941	0.0605	2.4546	0.0000	6,458.7825	6,458.7825	0.2663	0.0000	6,464.3748
Total	**3.9890**	**13.7749**			**10.8664**	**0.3145**	**11.1809**	**2.9281**	**0.2899**	**3.2180**	**0.0000**	**12,214.7900**	**12,214.7900**	**0.3082**	**0.0000**	**12,221.2629**

3.5 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2582	2.3540				0.0996	0.0996		0.0937	0.0937	0.0000	438.1078	438.1078	0.1029	0.0000	440.2691

Total	**0.2582**	**2.3540**				**0.0996**	**0.0996**		**0.0937**	**0.0937**	**0.0000**	**438.1078**	**438.1078**	**0.1029**	**0.0000**	**440.2691**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0245	10.8464			1.8642	0.2447	2.1089	0.5342	0.2251	0.7593	0.0000	5,757.5299	5,757.5299	0.0414	0.0000	5,758.3984
Worker	1.8322	2.5984			9.0027	0.0656	9.0683	2.3941	0.0609	2.4550	0.0000	6,389.5545	6,389.5545	0.2584	0.0000	6,394.9804
Total	**3.8567**	**13.4448**			**10.8669**	**0.3103**	**11.1772**	**2.9283**	**0.2860**	**3.2143**	**0.0000**	**12,147.0844**	**12,147.0844**	**0.2997**	**0.0000**	**12,153.3788**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0619	0.3591				7.7000e-003	7.7000e-003		7.7000e-003	7.7000e-003	0.0000	438.1073	438.1073	0.1029	0.0000	440.2686
Total	**0.0619**	**0.3591**				**7.7000e-003**	**7.7000e-003**		**7.7000e-003**	**7.7000e-003**	**0.0000**	**438.1073**	**438.1073**	**0.1029**	**0.0000**	**440.2686**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0245	10.8464			1.8642	0.2447	2.1089	0.5342	0.2251	0.7593	0.0000	5,757.5299	5,757.5299	0.0414	0.0000	5,758.3984
Worker	1.8322	2.5984			9.0027	0.0656	9.0683	2.3941	0.0609	2.4550	0.0000	6,389.5545	6,389.5545	0.2584	0.0000	6,394.9804
Total	**3.8567**	**13.4448**			**10.8669**	**0.3103**	**11.1772**	**2.9283**	**0.2860**	**3.2143**	**0.0000**	**12,147.0844**	**12,147.0844**	**0.2997**	**0.0000**	**12,153.3788**

3.5 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2582	2.3540				0.0996	0.0996		0.0937	0.0937	0.0000	438.1078	438.1078	0.1029	0.0000	440.2691
Total	**0.2582**	**2.3540**				**0.0996**	**0.0996**		**0.0937**	**0.0937**	**0.0000**	**438.1078**	**438.1078**	**0.1029**	**0.0000**	**440.2691**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0005	10.7697			1.8647	0.2453	2.1100	0.5344	0.2257	0.7600	0.0000	5,759.6489	5,759.6489	0.0414	0.0000	5,760.5192
Worker	1.7620	2.4902			9.0027	0.0659	9.0686	2.3941	0.0612	2.4553	0.0000	6,329.0185	6,329.0185	0.2512	0.0000	6,334.2941
Total	**3.7625**	**13.2598**			**10.8674**	**0.3112**	**11.1786**	**2.9285**	**0.2868**	**3.2153**	**0.0000**	**12,088.6675**	**12,088.6675**	**0.2927**	**0.0000**	**12,094.8133**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0619	0.3591				7.7000e-003	7.7000e-003		7.7000e-003	7.7000e-003	0.0000	438.1073	438.1073	0.1029	0.0000	440.2686
Total	**0.0619**	**0.3591**				**7.7000e-003**	**7.7000e-003**		**7.7000e-003**	**7.7000e-003**	**0.0000**	**438.1073**	**438.1073**	**0.1029**	**0.0000**	**440.2686**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0005	10.7697			1.8647	0.2453	2.1100	0.5344	0.2257	0.7600	0.0000	5,759.6489	5,759.6489	0.0414	0.0000	5,760.5192
Worker	1.7620	2.4902			9.0027	0.0659	9.0686	2.3941	0.0612	2.4553	0.0000	6,329.0185	6,329.0185	0.2512	0.0000	6,334.2941
Total	**3.7625**	**13.2598**			**10.8674**	**0.3112**	**11.1786**	**2.9285**	**0.2868**	**3.2153**	**0.0000**	**12,088.6675**	**12,088.6675**	**0.2927**	**0.0000**	**12,094.8133**

3.5 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2572	2.3450				0.0992	0.0992		0.0933	0.0933	0.0000	436.4292	436.4292	0.1025	0.0000	438.5822
Total	**0.2572**	**2.3450**				**0.0992**	**0.0992**		**0.0933**	**0.0933**	**0.0000**	**436.4292**	**436.4292**	**0.1025**	**0.0000**	**438.5822**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.9656	10.6510			1.8580	0.2440	2.1020	0.5325	0.2245	0.7570	0.0000	5,739.5422	5,739.5422	0.0412	0.0000	5,740.4083
Worker	1.6908	2.3823			8.9682	0.0660	9.0341	2.3849	0.0612	2.4461	0.0000	6,252.5926	6,252.5926	0.2439	0.0000	6,257.7134
Total	**3.6564**	**13.0333**			**10.8262**	**0.3099**	**11.1361**	**2.9174**	**0.2856**	**3.2031**	**0.0000**	**11,992.1348**	**11,992.1348**	**0.2851**	**0.0000**	**11,998.1217**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0617	0.3577				7.6700e-003	7.6700e-003		7.6700e-003	7.6700e-003	0.0000	436.4287	436.4287	0.1025	0.0000	438.5817
Total	**0.0617**	**0.3577**				**7.6700e-003**	**7.6700e-003**		**7.6700e-003**	**7.6700e-003**	**0.0000**	**436.4287**	**436.4287**	**0.1025**	**0.0000**	**438.5817**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.9656	10.6510			1.8580	0.2440	2.1020	0.5325	0.2245	0.7570	0.0000	5,739.5422	5,739.5422	0.0412	0.0000	5,740.4083
Worker	1.6908	2.3823			8.9682	0.0660	9.0341	2.3849	0.0612	2.4461	0.0000	6,252.5926	6,252.5926	0.2439	0.0000	6,257.7134
Total	**3.6564**	**13.0333**			**10.8262**	**0.3099**	**11.1361**	**2.9174**	**0.2856**	**3.2031**	**0.0000**	**11,992.1348**	**11,992.1348**	**0.2851**	**0.0000**	**11,998.1217**

3.5 Building Construction - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2582	2.3540				0.0996	0.0996		0.0937	0.0937	0.0000	438.1078	438.1078	0.1029	0.0000	440.2691

Total	**0.2582**	**2.3540**				**0.0996**	**0.0996**		**0.0937**	**0.0937**	**0.0000**	**438.1078**	**438.1078**	**0.1029**	**0.0000**	**440.2691**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.9361	10.6346			1.8656	0.2451	2.1107	0.5347	0.2255	0.7603	0.0000	5,763.4031	5,763.4031	0.0414	0.0000	5,764.2735
Worker	1.6328	2.2947			9.0027	0.0664	9.0691	2.3941	0.0616	2.4557	0.0000	6,231.1489	6,231.1489	0.2385	0.0000	6,236.1574
Total	**3.5689**	**12.9294**			**10.8682**	**0.3115**	**11.1798**	**2.9288**	**0.2871**	**3.2160**	**0.0000**	**11,994.5520**	**11,994.5520**	**0.2799**	**0.0000**	**12,000.4309**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0619	0.3591				7.7000e-003	7.7000e-003		7.7000e-003	7.7000e-003	0.0000	438.1073	438.1073	0.1029	0.0000	440.2686
Total	**0.0619**	**0.3591**				**7.7000e-003**	**7.7000e-003**		**7.7000e-003**	**7.7000e-003**	**0.0000**	**438.1073**	**438.1073**	**0.1029**	**0.0000**	**440.2686**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.9361	10.6346			1.8656	0.2451	2.1107	0.5347	0.2255	0.7603	0.0000	5,763.4031	5,763.4031	0.0414	0.0000	5,764.2735
Worker	1.6328	2.2947			9.0027	0.0664	9.0691	2.3941	0.0616	2.4557	0.0000	6,231.1489	6,231.1489	0.2385	0.0000	6,236.1574
Total	**3.5689**	**12.9294**			**10.8682**	**0.3115**	**11.1798**	**2.9288**	**0.2871**	**3.2160**	**0.0000**	**11,994.5520**	**11,994.5520**	**0.2799**	**0.0000**	**12,000.4309**

3.5 Building Construction - 2030

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2474	1.5015				0.0280	0.0280		0.0280	0.0280	0.0000	496.5004	496.5004	0.0199	0.0000	496.9189
Total	**0.2474**	**1.5015**				**0.0280**	**0.0280**		**0.0280**	**0.0280**	**0.0000**	**496.5004**	**496.5004**	**0.0199**	**0.0000**	**496.9189**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.9108	10.5818			1.8660	0.2454	2.1114	0.5349	0.2258	0.7607	0.0000	5,765.0787	5,765.0787	0.0415	0.0000	5,765.9500
Worker	1.5721	2.2055			9.0027	0.0665	9.0692	2.3941	0.0617	2.4558	0.0000	6,192.0712	6,192.0712	0.2327	0.0000	6,196.9576
Total	**3.4829**	**12.7873**			**10.8687**	**0.3119**	**11.1805**	**2.9290**	**0.2875**	**3.2165**	**0.0000**	**11,957.1498**	**11,957.1498**	**0.2742**	**0.0000**	**11,962.9075**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0619	0.3591				7.7000e-003	7.7000e-003		7.7000e-003	7.7000e-003	0.0000	496.4998	496.4998	0.0199	0.0000	496.9183
Total	**0.0619**	**0.3591**				**7.7000e-003**	**7.7000e-003**		**7.7000e-003**	**7.7000e-003**	**0.0000**	**496.4998**	**496.4998**	**0.0199**	**0.0000**	**496.9183**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.9108	10.5818			1.8660	0.2454	2.1114	0.5349	0.2258	0.7607	0.0000	5,765.0787	5,765.0787	0.0415	0.0000	5,765.9500
Worker	1.5721	2.2055			9.0027	0.0665	9.0692	2.3941	0.0617	2.4558	0.0000	6,192.0712	6,192.0712	0.2327	0.0000	6,196.9576
Total	**3.4829**	**12.7873**			**10.8687**	**0.3119**	**11.1805**	**2.9290**	**0.2875**	**3.2165**	**0.0000**	**11,957.1498**	**11,957.1498**	**0.2742**	**0.0000**	**11,962.9075**

3.5 Building Construction - 2031

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2474	1.5015				0.0280	0.0280		0.0280	0.0280	0.0000	496.5004	496.5004	0.0199	0.0000	496.9189
Total	**0.2474**	**1.5015**				**0.0280**	**0.0280**		**0.0280**	**0.0280**	**0.0000**	**496.5004**	**496.5004**	**0.0199**	**0.0000**	**496.9189**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.9083	10.5565			1.8664	0.2458	2.1122	0.5351	0.2262	0.7612	0.0000	5,766.9398	5,766.9398	0.0415	0.0000	5,767.8122
Worker	1.5128	2.1153			9.0027	0.0664	9.0691	2.3941	0.0616	2.4557	0.0000	6,158.5260	6,158.5260	0.2270	0.0000	6,163.2933
Total	**3.4211**	**12.6718**			**10.8690**	**0.3122**	**11.1813**	**2.9292**	**0.2878**	**3.2169**	**0.0000**	**11,925.4657**	**11,925.4657**	**0.2686**	**0.0000**	**11,931.1055**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0619	0.3591				7.7000e-003	7.7000e-003		7.7000e-003	7.7000e-003	0.0000	496.4998	496.4998	0.0199	0.0000	496.9183
Total	**0.0619**	**0.3591**				**7.7000e-003**	**7.7000e-003**		**7.7000e-003**	**7.7000e-003**	**0.0000**	**496.4998**	**496.4998**	**0.0199**	**0.0000**	**496.9183**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.9083	10.5565			1.8664	0.2458	2.1122	0.5351	0.2262	0.7612	0.0000	5,766.9398	5,766.9398	0.0415	0.0000	5,767.8122
Worker	1.5128	2.1153			9.0027	0.0664	9.0691	2.3941	0.0616	2.4557	0.0000	6,158.5260	6,158.5260	0.2270	0.0000	6,163.2933
Total	**3.4211**	**12.6718**			**10.8690**	**0.3122**	**11.1813**	**2.9292**	**0.2878**	**3.2169**	**0.0000**	**11,925.4657**	**11,925.4657**	**0.2686**	**0.0000**	**11,931.1055**

3.5 Building Construction - 2032

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2484	1.5072				0.0281	0.0281		0.0281	0.0281	0.0000	498.4027	498.4027	0.0200	0.0000	498.8228

Total	**0.2484**	**1.5072**				**0.0281**	**0.0281**		**0.0281**	**0.0281**	**0.0000**	**498.4027**	**498.4027**	**0.0200**	**0.0000**	**498.8228**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.8979	10.5749			1.8739	0.2471	2.1210	0.5373	0.2274	0.7646	0.0000	5,790.8542	5,790.8542	0.0418	0.0000	5,791.7310
Worker	1.4642	2.0455			9.0372	0.0666	9.1037	2.4033	0.0618	2.4651	0.0000	6,153.7868	6,153.7868	0.2229	0.0000	6,158.4672
Total	**3.3621**	**12.6204**			**10.9111**	**0.3137**	**11.2248**	**2.9405**	**0.2891**	**3.2297**	**0.0000**	**11,944.6410**	**11,944.6410**	**0.2646**	**0.0000**	**11,950.1982**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0622	0.3604				7.7300e-003	7.7300e-003		7.7300e-003	7.7300e-003	0.0000	498.4021	498.4021	0.0200	0.0000	498.8222
Total	**0.0622**	**0.3604**				**7.7300e-003**	**7.7300e-003**		**7.7300e-003**	**7.7300e-003**	**0.0000**	**498.4021**	**498.4021**	**0.0200**	**0.0000**	**498.8222**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.8979	10.5749			1.8739	0.2471	2.1210	0.5373	0.2274	0.7646	0.0000	5,790.8542	5,790.8542	0.0418	0.0000	5,791.7310
Worker	1.4642	2.0455			9.0372	0.0666	9.1037	2.4033	0.0618	2.4651	0.0000	6,153.7868	6,153.7868	0.2229	0.0000	6,158.4672
Total	**3.3621**	**12.6204**			**10.9111**	**0.3137**	**11.2248**	**2.9405**	**0.2891**	**3.2297**	**0.0000**	**11,944.6410**	**11,944.6410**	**0.2646**	**0.0000**	**11,950.1982**

3.5 Building Construction - 2033

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2465	1.4957				0.0279	0.0279		0.0279	0.0279	0.0000	494.5981	494.5981	0.0199	0.0000	495.0150
Total	**0.2465**	**1.4957**				**0.0279**	**0.0279**		**0.0279**	**0.0279**	**0.0000**	**494.5981**	**494.5981**	**0.0199**	**0.0000**	**495.0150**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.8406	10.4398			1.8599	0.2455	2.1054	0.5333	0.2258	0.7591	0.0000	5,747.7828	5,747.7828	0.0415	0.0000	5,748.6536
Worker	1.4035	1.9661			8.9682	0.0660	9.0342	2.3849	0.0612	2.4462	0.0000	6,083.3416	6,083.3416	0.2170	0.0000	6,087.8977
Total	**3.2441**	**12.4060**			**10.8281**	**0.3115**	**11.1395**	**2.9182**	**0.2871**	**3.2053**	**0.0000**	**11,831.1244**	**11,831.1244**	**0.2584**	**0.0000**	**11,836.5513**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0617	0.3577				7.6700e-003	7.6700e-003		7.6700e-003	7.6700e-003	0.0000	494.5975	494.5975	0.0199	0.0000	495.0144
Total	**0.0617**	**0.3577**				**7.6700e-003**	**7.6700e-003**		**7.6700e-003**	**7.6700e-003**	**0.0000**	**494.5975**	**494.5975**	**0.0199**	**0.0000**	**495.0144**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.8406	10.4398			1.8599	0.2455	2.1054	0.5333	0.2258	0.7591	0.0000	5,747.7828	5,747.7828	0.0415	0.0000	5,748.6536
Worker	1.4035	1.9661			8.9682	0.0660	9.0342	2.3849	0.0612	2.4462	0.0000	6,083.3416	6,083.3416	0.2170	0.0000	6,087.8977
Total	**3.2441**	**12.4060**			**10.8281**	**0.3115**	**11.1395**	**2.9182**	**0.2871**	**3.2053**	**0.0000**	**11,831.1244**	**11,831.1244**	**0.2584**	**0.0000**	**11,836.5513**

3.5 Building Construction - 2034

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2465	1.4957				0.0279	0.0279		0.0279	0.0279	0.0000	494.5981	494.5981	0.0199	0.0000	495.0150
Total	**0.2465**	**1.4957**				**0.0279**	**0.0279**		**0.0279**	**0.0279**	**0.0000**	**494.5981**	**494.5981**	**0.0199**	**0.0000**	**495.0150**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.8254	10.4103			1.8602	0.2457	2.1059	0.5334	0.2260	0.7594	0.0000	5,749.1256	5,749.1256	0.0415	0.0000	5,749.9970
Worker	1.3527	1.9116			8.9682	0.0658	9.0340	2.3849	0.0610	2.4460	0.0000	6,063.1204	6,063.1204	0.2129	0.0000	6,067.5907
Total	**3.1781**	**12.3218**			**10.8284**	**0.3115**	**11.1399**	**2.9184**	**0.2871**	**3.2054**	**0.0000**	**11,812.2460**	**11,812.2460**	**0.2544**	**0.0000**	**11,817.5877**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0617	0.3577				7.6700e-003	7.6700e-003		7.6700e-003	7.6700e-003	0.0000	494.5975	494.5975	0.0199	0.0000	495.0144
Total	**0.0617**	**0.3577**				**7.6700e-003**	**7.6700e-003**		**7.6700e-003**	**7.6700e-003**	**0.0000**	**494.5975**	**494.5975**	**0.0199**	**0.0000**	**495.0144**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.8254	10.4103			1.8602	0.2457	2.1059	0.5334	0.2260	0.7594	0.0000	5,749.1256	5,749.1256	0.0415	0.0000	5,749.9970
Worker	1.3527	1.9116			8.9682	0.0658	9.0340	2.3849	0.0610	2.4460	0.0000	6,063.1204	6,063.1204	0.2129	0.0000	6,067.5907
Total	**3.1781**	**12.3218**			**10.8284**	**0.3115**	**11.1399**	**2.9184**	**0.2871**	**3.2054**	**0.0000**	**11,812.2460**	**11,812.2460**	**0.2544**	**0.0000**	**11,817.5877**

3.5 Building Construction - 2035

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2300	1.3559				0.0171	0.0171		0.0171	0.0171	0.0000	496.5004	496.5004	0.0185	0.0000	496.8890

Total	**0.2300**	**1.3559**				**0.0171**	**0.0171**		**0.0171**	**0.0171**	**0.0000**	**496.5004**	**496.5004**	**0.0185**	**0.0000**	**496.8890**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.8083	10.4335			1.8677	0.2469	2.1145	0.5356	0.2271	0.7627	0.0000	5,772.6298	5,772.6298	0.0417	0.0000	5,773.5053
Worker	1.3128	1.8771			9.0027	0.0659	9.0686	2.3941	0.0611	2.4552	0.0000	6,069.4634	6,069.4634	0.2101	0.0000	6,073.8763
Total	**3.1211**	**12.3106**			**10.8703**	**0.3127**	**11.1831**	**2.9297**	**0.2882**	**3.2179**	**0.0000**	**11,842.0932**	**11,842.0932**	**0.2518**	**0.0000**	**11,847.3816**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0619	0.3591				7.7000e-003	7.7000e-003		7.7000e-003	7.7000e-003	0.0000	496.4998	496.4998	0.0185	0.0000	496.8884
Total	**0.0619**	**0.3591**				**7.7000e-003**	**7.7000e-003**		**7.7000e-003**	**7.7000e-003**	**0.0000**	**496.4998**	**496.4998**	**0.0185**	**0.0000**	**496.8884**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.8083	10.4335			1.8677	0.2469	2.1145	0.5356	0.2271	0.7627	0.0000	5,772.6298	5,772.6298	0.0417	0.0000	5,773.5053
Worker	1.3128	1.8771			9.0027	0.0659	9.0686	2.3941	0.0611	2.4552	0.0000	6,069.4634	6,069.4634	0.2101	0.0000	6,073.8763
Total	**3.1211**	**12.3106**			**10.8703**	**0.3127**	**11.1831**	**2.9297**	**0.2882**	**3.2179**	**0.0000**	**11,842.0932**	**11,842.0932**	**0.2518**	**0.0000**	**11,847.3816**

3.5 Building Construction - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2309	1.3611				0.0172	0.0172		0.0172	0.0172	0.0000	498.4027	498.4027	0.0186	0.0000	498.7927
Total	**0.2309**	**1.3611**				**0.0172**	**0.0172**		**0.0172**	**0.0172**	**0.0000**	**498.4027**	**498.4027**	**0.0186**	**0.0000**	**498.7927**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					1.3446	0.0000	1.3446	0.3300	0.0000	0.3300	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					7.8131	0.0000	7.8131	1.9178	0.0000	1.9178	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**9.1577**	**0.0000**	**9.1577**	**2.2478**	**0.0000**	**2.2478**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0622	0.3604				7.7300e-003	7.7300e-003		7.7300e-003	7.7300e-003	0.0000	498.4021	498.4021	0.0186	0.0000	498.7921
Total	**0.0622**	**0.3604**				**7.7300e-003**	**7.7300e-003**		**7.7300e-003**	**7.7300e-003**	**0.0000**	**498.4021**	**498.4021**	**0.0186**	**0.0000**	**498.7921**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					1.3446	0.0000	1.3446	0.3300	0.0000	0.3300	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					7.8131	0.0000	7.8131	1.9178	0.0000	1.9178	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**9.1577**	**0.0000**	**9.1577**	**2.2478**	**0.0000**	**2.2478**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.5 Building Construction - 2037

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1551	0.9143				0.0115	0.0115		0.0115	0.0115	0.0000	334.8048	334.8048	0.0125	0.0000	335.0669
Total	**0.1551**	**0.9143**				**0.0115**	**0.0115**		**0.0115**	**0.0115**	**0.0000**	**334.8048**	**334.8048**	**0.0125**	**0.0000**	**335.0669**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.9033	0.0000	0.9033	0.2217	0.0000	0.2217	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					5.2485	0.0000	5.2485	1.2883	0.0000	1.2883	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**6.1518**	**0.0000**	**6.1518**	**1.5100**	**0.0000**	**1.5100**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0418	0.2421				5.2000e-003	5.2000e-003		5.2000e-003	5.2000e-003	0.0000	334.8044	334.8044	0.0125	0.0000	335.0665
Total	**0.0418**	**0.2421**				**5.2000e-003**	**5.2000e-003**		**5.2000e-003**	**5.2000e-003**	**0.0000**	**334.8044**	**334.8044**	**0.0125**	**0.0000**	**335.0665**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.9033	0.0000	0.9033	0.2217	0.0000	0.2217	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					5.2485	0.0000	5.2485	1.2883	0.0000	1.2883	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**6.1518**	**0.0000**	**6.1518**	**1.5100**	**0.0000**	**1.5100**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Paving - 2037

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0475	0.2035				7.7900e-003	7.7900e-003		7.7900e-003	7.7900e-003	0.0000	100.2434	100.2434	3.8600e-003	0.0000	100.3244

Paving	0.0176					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0650**	**0.2035**				**7.7900e-003**	**7.7900e-003**		**7.7900e-003**	**7.7900e-003**	**0.0000**	**100.2434**	**100.2434**	**3.8600e-003**	**0.0000**	**100.3244**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					5.0200e-003	0.0000	5.0200e-003	1.2300e-003	0.0000	1.2300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**5.0200e-003**	**0.0000**	**5.0200e-003**	**1.2300e-003**	**0.0000**	**1.2300e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0117	0.0430				1.5600e-003	1.5600e-003		1.5600e-003	1.5600e-003	0.0000	100.2433	100.2433	3.8600e-003	0.0000	100.3243
Paving	0.0176					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0292**	**0.0430**				**1.5600e-003**	**1.5600e-003**		**1.5600e-003**	**1.5600e-003**	**0.0000**	**100.2433**	**100.2433**	**3.8600e-003**	**0.0000**	**100.3243**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					5.0200e-003	0.0000	5.0200e-003	1.2300e-003	0.0000	1.2300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**5.0200e-003**	**0.0000**	**5.0200e-003**	**1.2300e-003**	**0.0000**	**1.2300e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Paving - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1217	0.5220				0.0200	0.0200		0.0200	0.0200	0.0000	257.0948	257.0948	9.9000e-003	0.0000	257.3026
Paving	0.0451					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1668**	**0.5220**				**0.0200**	**0.0200**		**0.0200**	**0.0200**	**0.0000**	**257.0948**	**257.0948**	**9.9000e-003**	**0.0000**	**257.3026**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					0.0129	0.0000	0.0129	3.1600e-003	0.0000	3.1600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**0.0129**	**0.0000**	**0.0129**	**3.1600e-003**	**0.0000**	**3.1600e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0299	0.1102				3.9900e-003	3.9900e-003		3.9900e-003	3.9900e-003	0.0000	257.0945	257.0945	9.9000e-003	0.0000	257.3023
Paving	0.0451					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0750**	**0.1102**				**3.9900e-003**	**3.9900e-003**		**3.9900e-003**	**3.9900e-003**	**0.0000**	**257.0945**	**257.0945**	**9.9000e-003**	**0.0000**	**257.3023**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					0.0129	0.0000	0.0129	3.1600e-003	0.0000	3.1600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**0.0129**	**0.0000**	**0.0129**	**3.1600e-003**	**0.0000**	**3.1600e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2038

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	11.5352					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5300e-003	0.0163				2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	5.4895	5.4895	2.0000e-004	0.0000	5.4938
Total	**11.5377**	**0.0163**				**2.1000e-004**	**2.1000e-004**		**2.1000e-004**	**2.1000e-004**	**0.0000**	**5.4895**	**5.4895**	**2.0000e-004**	**0.0000**	**5.4938**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					0.2564	0.0000	0.2564	0.0629	0.0000	0.0629	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**0.2564**	**0.0000**	**0.2564**	**0.0629**	**0.0000**	**0.0629**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	11.5352					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.4000e-004	2.3500e-003				9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	5.4895	5.4895	2.0000e-004	0.0000	5.4938
Total	**11.5358**	**2.3500e-003**				**9.0000e-005**	**9.0000e-005**		**9.0000e-005**	**9.0000e-005**	**0.0000**	**5.4895**	**5.4895**	**2.0000e-004**	**0.0000**	**5.4938**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					0.2564	0.0000	0.2564	0.0629	0.0000	0.0629	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**0.2564**	**0.0000**	**0.2564**	**0.0629**	**0.0000**	**0.0629**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.7 Architectural Coating - 2039

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	69.7476					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Off-Road	0.0153	0.0985				1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	33.1923	33.1923	1.2300e-003	0.0000	33.2181
Total	**69.7629**	**0.0985**				**1.2900e-003**	**1.2900e-003**		**1.2900e-003**	**1.2900e-003**	**0.0000**	**33.1923**	**33.1923**	**1.2300e-003**	**0.0000**	**33.2181**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					1.5503	0.0000	1.5503	0.3805	0.0000	0.3805	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**1.5503**	**0.0000**	**1.5503**	**0.3805**	**0.0000**	**0.3805**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	69.7476					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8600e-003	0.0142				5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004	0.0000	33.1923	33.1923	1.2300e-003	0.0000	33.2180
Total	**69.7515**	**0.0142**				**5.2000e-004**	**5.2000e-004**		**5.2000e-004**	**5.2000e-004**	**0.0000**	**33.1923**	**33.1923**	**1.2300e-003**	**0.0000**	**33.2180**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker					1.5503	0.0000	1.5503	0.3805	0.0000	0.3805	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total					**1.5503**	**0.0000**	**1.5503**	**0.3805**	**0.0000**	**0.3805**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Implement Trip Reduction Program

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	22.3062	16.8082			43.1934	0.1510	43.3443	11.5451	0.1402	11.6853	0.0000	29,246.4572	29,246.4572	1.0325	0.0000	29,268.1396
Unmitigated	23.5743	18.4066			50.4708	0.1706	50.6414	13.4902	0.1585	13.6487	0.0000	33,663.8236	33,663.8236	1.1890	0.0000	33,688.7934

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	23,427.00	25,479.00	21603.00	52,370,351	47,218,187

City Park	0.00	0.00	0.00		
Free-Standing Discount Store	21,924.00	27,223.20	21592.80	35,291,880	29,238,992
General Office Building	13,802.40	2,982.00	1221.20	24,995,176	20,653,339
Parking Lot	0.00	0.00	0.00		
Research & Development	12,283.50	2,878.50	1681.50	23,622,277	19,518,907
Total	71,436.90	58,562.70	46,098.50	136,279,683	116,629,424

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Free-Standing Discount Store	9.50	7.30	7.30	12.20	68.80	19.00	47.5	35.5	17
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.624165	0.033087	0.173349	0.108294	0.011300	0.004563	0.008205	0.006492	0.000647	0.000365	0.024387	0.002340	0.002454

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	11,183.9743	11,183.9743	0.5014	0.1157	11,230.3685

Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	11,183.9743	11,183.9743	0.5014	0.1157	11,230.3685
NaturalGas Mitigated	0.7951	7.0888				0.5494	0.5494		0.5494	0.5494	0.0000	7,868.8080	7,868.8080	0.1508	0.1443	7,916.6963
NaturalGas Unmitigated	0.7951	7.0888				0.5494	0.5494		0.5494	0.5494	0.0000	7,868.8080	7,868.8080	0.1508	0.1443	7,916.6963

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Free-Standing Discount Store	2.5488e+006	0.0137	0.1249				9.5000e-003	9.5000e-003		9.5000e-003	9.5000e-003	0.0000	136.0137	136.0137	2.6100e-003	2.4900e-003	136.8414
General Office Building	4.07824e+007	0.2199	1.9991				0.1519	0.1519		0.1519	0.1519	0.0000	2,176.3042	2,176.3042	0.0417	0.0399	2,189.5488
Parking Lot	0	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Research & Development	5.6715e+007	0.3058	2.7802				0.2113	0.2113		0.2113	0.2113	0.0000	3,026.5284	3,026.5284	0.0580	0.0555	3,044.9473
Apartments Mid Rise	4.74097e+007	0.2556	2.1846				0.1766	0.1766		0.1766	0.1766	0.0000	2,529.9618	2,529.9618	0.0485	0.0464	2,545.3587
Total		**0.7951**	**7.0888**				**0.5493**	**0.5493**		**0.5493**	**0.5493**	**0.0000**	**7,868.8080**	**7,868.8080**	**0.1508**	**0.1443**	**7,916.6963**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					

City Park	0	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Free-Standing Discount Store	2.5488e+006	0.0137	0.1249				9.5000e-003	9.5000e-003		9.5000e-003	9.5000e-003	0.0000	136.0137	136.0137	2.6100e-003	2.4900e-003	136.8414
General Office Building	4.07824e+007	0.2199	1.9991				0.1519	0.1519		0.1519	0.1519	0.0000	2,176.3042	2,176.3042	0.0417	0.0399	2,189.5488
Parking Lot	0	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Research & Development	5.6715e+007	0.3058	2.7802				0.2113	0.2113		0.2113	0.2113	0.0000	3,026.5284	3,026.5284	0.0580	0.0555	3,044.9473
Apartments Mid Rise	4.74097e+007	0.2556	2.1846				0.1766	0.1766		0.1766	0.1766	0.0000	2,529.9618	2,529.9618	0.0485	0.0464	2,545.3587
Total		**0.7951**	**7.0888**				**0.5493**	**0.5493**		**0.5493**	**0.5493**	**0.0000**	**7,868.8080**	**7,868.8080**	**0.1508**	**0.1443**	**7,916.6963**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.98752e+007	2,614.4214	0.1172	0.0271	2,625.2668
City Park	0	0.0000	0.0000	0.0000	0.0000
Free-Standing Discount Store	7.596e+006	999.1914	0.0448	0.0103	1,003.3363
General Office Building	3.38812e+007	4,456.7936	0.1998	0.0461	4,475.2816
Parking Lot	1.7248e+006	226.8833	0.0102	2.3500e-003	227.8245
Research & Development	2.1945e+007	2,886.6845	0.1294	0.0299	2,898.6593
Total		**11,183.9743**	**0.5014**	**0.1157**	**11,230.3685**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.98752e+007	2,614.4214	0.1172	0.0271	2,625.2668
City Park	0	0.0000	0.0000	0.0000	0.0000
Free-Standing Discount Store	7.596e+006	999.1914	0.0448	0.0103	1,003.3363
General Office Building	3.38812e+007	4,456.7936	0.1998	0.0461	4,475.2816
Parking Lot	1.7248e+006	226.8833	0.0102	2.3500e-003	227.8245
Research & Development	2.1945e+007	2,886.6845	0.1294	0.0299	2,898.6593
Total		**11,183.9743**	**0.5014**	**0.1157**	**11,230.3685**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	51.6145	0.4875				0.2483	0.2483		0.2481	0.2481	0.0000	258.5137	258.5137	0.0700	3.4700e-003	261.0580
Unmitigated	55.2271	0.4875				0.2483	0.2483		0.2481	0.2481	0.0000	258.5137	258.5137	0.0700	3.4700e-003	261.0580

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	8.1283					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	45.8092					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0191	0.0000				0.0132	0.0132		0.0131	0.0131	0.0000	189.1769	189.1769	3.6300e-003	3.4700e-003	190.3282
Landscaping	1.2705	0.4875				0.2351	0.2351		0.2351	0.2351	0.0000	69.3368	69.3368	0.0663	0.0000	70.7298
Total	**55.2271**	**0.4875**				**0.2483**	**0.2483**		**0.2481**	**0.2481**	**0.0000**	**258.5137**	**258.5137**	**0.0700**	**3.4700e-003**	**261.0580**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	4.5157					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	45.8092					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0191	0.0000				0.0132	0.0132		0.0131	0.0131	0.0000	189.1769	189.1769	3.6300e-003	3.4700e-003	190.3282
Landscaping	1.2705	0.4875				0.2351	0.2351		0.2351	0.2351	0.0000	69.3368	69.3368	0.0663	0.0000	70.7298
Total	**51.6145**	**0.4875**				**0.2483**	**0.2483**		**0.2481**	**0.2481**	**0.0000**	**258.5137**	**258.5137**	**0.0700**	**3.4700e-003**	**261.0580**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2,766.8549	2.9185	1.8118	3,389.8065
Unmitigated	2,766.8549	2.9254	1.8134	3,390.4475

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	371.378 / 234.13	503.5231	0.4689	0.2896	603.1431
City Park	0 / 38.9614	17.9377	8.0000e-004	1.9000e-004	18.0121
Free-Standing Discount Store	53.3322 / 32.6875	71.8786	0.0673	0.0416	86.1829
General Office Building	504.764 / 309.371	680.2968	0.6372	0.3936	815.6798
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Research & Development	1401.33 / 0	1,493.2187	1.7512	1.0885	1,867.4295
Total		**2,766.8549**	**2.9254**	**1.8134**	**3,390.4475**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	371.378 / 234.13	503.5231	0.4678	0.2893	603.0410
City Park	0 / 38.9614	17.9377	8.0000e-004	1.9000e-004	18.0121
Free-Standing Discount Store	53.3322 / 32.6875	71.8786	0.0672	0.0416	86.1682
General Office Building	504.764 / 309.371	680.2968	0.6357	0.3932	815.5410
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Research & Development	1401.33 / 0	1,493.2187	1.7470	1.0875	1,867.0441
Total		**2,766.8549**	**2.9185**	**1.8118**	**3,389.8065**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	888.1537	52.4884	0.0000	1,990.4096
Unmitigated	1,741.4777	102.9184	0.0000	3,902.7638

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	2622	532.2423	31.4546	0.0000	1,192.7893
City Park	2.81	0.5704	0.0337	0.0000	1.2783
Free-Standing Discount Store	3096.5	628.5615	37.1469	0.0000	1,408.6469
General Office Building	2641.2	536.1397	31.6850	0.0000	1,201.5237
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Research & Development	216.58	43.9638	2.5982	0.0000	98.5257
Total		**1,741.4777**	**102.9184**	**0.0000**	**3,902.7639**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	1337.22	271.4436	16.0419	0.0000	608.3226
City Park	1.4331	0.2909	0.0172	0.0000	0.6519
Free-Standing Discount Store	1579.21	320.5664	18.9449	0.0000	718.4099

General Office Building	1347.01	273.4313	16.1593	0.0000	612.7771
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Research & Development	110.456	22.4215	1.3251	0.0000	50.2481
Total		**888.1537**	**52.4884**	**0.0000**	**1,990.4096**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

RSSSP Subarea 4 1990

Contra Costa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	635.00	1000sqft	15.44	635,000.00	0
Research & Development	635.00	1000sqft	15.44	635,000.00	0
Parking Lot	1,850.00	Space	17.63	740,000.00	0
City Park	6.50	Acre	6.50	283,140.00	0
Apartments Mid Rise	1,520.00	Dwelling Unit	42.36	1,520,000.00	3070
Free-Standing Discount Store	190.00	1000sqft	4.62	190,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	5			**Operational Year**	1990
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Adjust Population to match P&H Section. Parking spaces from SP 60% of SA4. Acreages adjusted based on 60% of developabe acreage for SA4.

Construction Phase - Operational run only.

Off-road Equipment - Equipment hours adjusted to match 19% increase in schedule over default.

Off-road Equipment - Equipment hours adjusted to match 19% increase in schedule over default.

Demolition - 60,000 cy per PD. 1.264 ton/cy per user guide.

Grading - Export of material addressed in DTSC CEQA documant.

Architectural Coating -

Vehicle Trips -

Vechicle Emission Factors - EMFAC2014

Vechicle Emission Factors -

Vechicle Emission Factors -

Woodstoves - 'Assume no woodstoves. No wood burning fireplace restrictions in 1990.

Consumer Products - Inserted CC County-specific EF calculated by Ramboll.

Energy Use -

Water And Wastewater - All wastewater treatment aerobic. No septic or lagoons.

Waste Mitigation - Adoption of Zero Waste Ordinance and achieving 75% diversion by 2020, and 90% diversion by 2030. Baseline diversion rate for 2005 = 40%

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaMitigation	UseLowVOCPaintNonresidentialInteriorValue	250	100
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	250	150
tblAreaMitigation	UseLowVOCPaintResidentialInteriorValue	250	100
tblLandUse	LotAcreage	14.58	15.44
tblLandUse	LotAcreage	14.58	15.44
tblLandUse	LotAcreage	16.65	17.63
tblLandUse	LotAcreage	40.00	42.36
tblLandUse	LotAcreage	4.36	4.62
tblLandUse	Population	4,347.00	3,070.00
tblProjectCharacteristics	OperationalYear	2014	1990
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00

tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWoodstoves	NumberCatalytic	7.60	0.00
tblWoodstoves	NumberNoncatalytic	7.60	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017											0.0000	113.2167	113.2167	0.0336	0.0000	113.9224
2018											0.0000	111.3346	111.3346	0.0336	0.0000	112.0400
Total											**0.0000**	**224.5513**	**224.5513**	**0.0672**	**0.0000**	**225.9624**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017											0.0000	113.2166	113.2166	0.0336	0.0000	113.9223
2018											0.0000	111.3345	111.3345	0.0336	0.0000	112.0398
Total											**0.0000**	**224.5511**	**224.5511**	**0.0672**	**0.0000**	**225.9621**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											15.1621	58.6861	73.8482	0.1327	2.0700e-003	77.2786
Energy											0.0000	8,846.1164	8,846.1164	0.3394	0.1036	8,885.3693
Mobile											0.0000	30,365.5464	30,365.5464	11.0551	0.0000	30,597.7043
Waste											437.5876	0.0000	437.5876	25.8607	0.0000	980.6621
Water											190.4141	997.8534	1,188.2674	0.7005	0.4234	1,334.2393
Total											**643.1637**	**40,268.2023**	**40,911.3660**	**38.0885**	**0.5291**	**41,875.2536**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area											15.1621	58.6861	73.8482	0.1327	2.0700e-003	77.2786
Energy											0.0000	8,846.1164	8,846.1164	0.3394	0.1036	8,885.3693
Mobile											0.0000	30,365.5464	30,365.5464	11.0551	0.0000	30,597.7043
Waste											85.7672	0.0000	85.7672	5.0687	0.0000	192.2098
Water											190.4141	997.8534	1,188.2674	0.6969	0.4227	1,333.9355
Total											**291.3433**	**40,268.2023**	**40,559.5456**	**17.2929**	**0.5284**	**41,086.4976**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**54.70**	**0.00**	**0.86**	**54.60**	**0.14**	**1.88**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	10/7/2017	3/23/2018	5	120	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	108.9462	108.9462	0.0334	0.0000	109.6472
Total											**0.0000**	**108.9462**	**108.9462**	**0.0334**	**0.0000**	**109.6472**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	4.2705	4.2705	2.2000e-004	0.0000	4.2753
Total											**0.0000**	**4.2705**	**4.2705**	**2.2000e-004**	**0.0000**	**4.2753**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	108.9460	108.9460	0.0334	0.0000	109.6470
Total											**0.0000**	**108.9460**	**108.9460**	**0.0334**	**0.0000**	**109.6470**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	4.2705	4.2705	2.2000e-004	0.0000	4.2753

Total											**0.0000**	**4.2705**	**4.2705**	**2.2000e-004**	**0.0000**	**4.2753**

3.2 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	107.2231	107.2231	0.0334	0.0000	107.9240
Total											**0.0000**	**107.2231**	**107.2231**	**0.0334**	**0.0000**	**107.9240**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	4.1116	4.1116	2.1000e-004	0.0000	4.1159
Total											**0.0000**	**4.1116**	**4.1116**	**2.1000e-004**	**0.0000**	**4.1159**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road											0.0000	107.2229	107.2229	0.0334	0.0000	107.9239
Total											**0.0000**	**107.2229**	**107.2229**	**0.0334**	**0.0000**	**107.9239**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker											0.0000	4.1116	4.1116	2.1000e-004	0.0000	4.1159
Total											**0.0000**	**4.1116**	**4.1116**	**2.1000e-004**	**0.0000**	**4.1159**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Unmitigated											0.0000	30,365.5464	30,365.5464	11.0551	0.0000	30,597.7043
Mitigated											0.0000	30,365.5464	30,365.5464	11.0551	0.0000	30,597.7043

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	10,016.80	10,883.20	9226.40	22,385,401	22,385,401
City Park	10.34	10.34	10.34	22,064	22,064
Free-Standing Discount Store	10,875.60	13,503.30	10708.40	17,505,985	17,505,985
General Office Building	6,991.35	1,504.95	622.30	12,660,228	12,660,228
Parking Lot	0.00	0.00	0.00		
Research & Development	5,149.85	1,206.50	704.85	9,903,472	9,903,472
Total	33,043.94	27,108.29	21,272.29	62,477,150	62,477,150

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Free-Standing Discount Store	9.50	7.30	7.30	12.20	68.80	19.00	47.5	35.5	17
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.591282	0.177474	0.149382	0.025771	0.005391	0.007134	0.009785	0.017786	0.000600	0.001085	0.007618	0.003548	0.003144

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
NaturalGas Mitigated											0.0000	2,324.5557	2,324.5557	0.0446	0.0426	2,338.7025
NaturalGas Unmitigated											0.0000	2,324.5557	2,324.5557	0.0446	0.0426	2,338.7025
Electricity Mitigated											0.0000	6,521.5608	6,521.5608	0.2949	0.0610	6,546.6668
Electricity Unmitigated											0.0000	6,521.5608	6,521.5608	0.2949	0.0610	6,546.6668

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Free-Standing Discount Store	912000											0.0000	48.6678	48.6678	9.3000e-004	8.9000e-004	48.9640
General Office Building	1.28842e+007											0.0000	687.5473	687.5473	0.0132	0.0126	691.7316
Apartments Mid Rise	1.34576e+007											0.0000	718.1476	718.1476	0.0138	0.0132	722.5182
Parking Lot	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Research & Development	1.63068e+007											0.0000	870.1930	870.1930	0.0167	0.0160	875.4888
Total												**0.0000**	**2,324.5557**	**2,324.5557**	**0.0446**	**0.0426**	**2,338.7026**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Free-Standing Discount Store	912000											0.0000	48.6678	48.6678	9.3000e-004	8.9000e-004	48.9640
General Office Building	1.28842e+007											0.0000	687.5473	687.5473	0.0132	0.0126	691.7316
Apartments Mid Rise	1.34576e+007											0.0000	718.1476	718.1476	0.0138	0.0132	722.5182
City Park	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Research & Development	1.63068e+007											0.0000	870.1930	870.1930	0.0167	0.0160	875.4888
Total												**0.0000**	**2,324.5557**	**2,324.5557**	**0.0446**	**0.0426**	**2,338.7026**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	5.49533e+006	1,598.6551	0.0723	0.0150	1,604.8094
City Park	0	0.0000	0.0000	0.0000	0.0000

Free-Standing Discount Store	2.2059e+006	641.7216	0.0290	6.0000e-003	644.1920
General Office Building	8.8138e+006	2,564.0355	0.1159	0.0240	2,573.9062
Parking Lot	651200	189.4416	8.5700e-003	1.7700e-003	190.1708
Research & Development	5.25145e+006	1,527.7070	0.0691	0.0143	1,533.5882
Total		**6,521.5607**	**0.2949**	**0.0610**	**6,546.6667**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	5.49533e+006	1,598.6551	0.0723	0.0150	1,604.8094
City Park	0	0.0000	0.0000	0.0000	0.0000
Free-Standing Discount Store	2.2059e+006	641.7216	0.0290	6.0000e-003	644.1920
General Office Building	8.8138e+006	2,564.0355	0.1159	0.0240	2,573.9062
Parking Lot	651200	189.4416	8.5700e-003	1.7700e-003	190.1708
Research & Development	5.25145e+006	1,527.7070	0.0691	0.0143	1,533.5882
Total		**6,521.5607**	**0.2949**	**0.0610**	**6,546.6667**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Unmitigated											15.1621	58.6861	73.8482	0.1327	2.0700e-003	77.2786
Mitigated											15.1621	58.6861	73.8482	0.1327	2.0700e-003	77.2786

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											15.1621	40.1911	55.3531	7.7000e-004	2.0700e-003	56.0125
Landscaping											0.0000	18.4950	18.4950	0.1320	0.0000	21.2662
Total											**15.1621**	**58.6861**	**73.8482**	**0.1327**	**2.0700e-003**	**77.2786**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Consumer Products											0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth											15.1621	40.1911	55.3531	7.7000e-004	2.0700e-003	56.0125
Landscaping											0.0000	18.4950	18.4950	0.1320	0.0000	21.2662
Total											**15.1621**	**58.6861**	**73.8482**	**0.1327**	**2.0700e-003**	**77.2786**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	1,188.2674	0.7005	0.4234	1,334.2393
Mitigated	1,188.2674	0.6969	0.4227	1,333.9355

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	99.0341 / 62.4346	254.5005	0.1305	0.0783	281.4990
City Park	0 / 7.74463	7.8855	3.6000e-004	7.0000e-005	7.9159
Free-Standing Discount Store	14.0738 / 8.62586	35.9159	0.0185	0.0111	39.7518

General Office Building	112.861 / 69.1728	288.0183	0.1487	0.0892	318.7786
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Research & Development	312.226 / 0	601.9472	0.4024	0.2448	686.2942
Total		**1,188.2674**	**0.7005**	**0.4234**	**1,334.2393**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	99.0341 / 62.4346	254.5005	0.1299	0.0781	281.4431
City Park	0 / 7.74463	7.8855	3.6000e-004	7.0000e-005	7.9159
Free-Standing Discount Store	14.0738 / 8.62586	35.9159	0.0184	0.0111	39.7438
General Office Building	112.861 / 69.1728	288.0183	0.1479	0.0890	318.7149
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Research & Development	312.226 / 0	601.9472	0.4004	0.2444	686.1179
Total		**1,188.2674**	**0.6970**	**0.4227**	**1,333.9355**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	85.7672	5.0687	0.0000	192.2098
Unmitigated	437.5876	25.8607	0.0000	980.6621

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	699.2	141.9313	8.3879	0.0000	318.0772
City Park	0.56	0.1137	6.7200e-003	0.0000	0.2548
Free-Standing Discount Store	817.13	165.8700	9.8026	0.0000	371.7254
General Office Building	590.55	119.8763	7.0845	0.0000	268.6505
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Research & Development	48.26	9.7963	0.5790	0.0000	21.9542
Total		**437.5876**	**25.8607**	**0.0000**	**980.6621**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	137.043	27.8185	1.6440	0.0000	62.3431
City Park	0.10976	0.0223	1.3200e-003	0.0000	0.0499
Free-Standing Discount Store	160.157	32.5105	1.9213	0.0000	72.8582
General Office Building	115.748	23.4958	1.3886	0.0000	52.6555
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Research & Development	9.45896	1.9201	0.1135	0.0000	4.3030
Total		**85.7672**	**5.0687**	**0.0000**	**192.2098**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

RSSSP Subarea 4

Contra Costa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	635.00	1000sqft	15.44	635,000.00	0
Research & Development	635.00	1000sqft	15.44	635,000.00	0
Parking Lot	1,850.00	Space	17.63	740,000.00	0
City Park	6.50	Acre	6.50	283,140.00	0
Apartments Mid Rise	1,520.00	Dwelling Unit	42.36	1,520,000.00	3070
Free-Standing Discount Store	190.00	1000sqft	4.62	190,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	5			**Operational Year**	2014
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	290	**CH4 Intensity (lb/MWhr)**	0.013	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Adjusted CO2 EF consistent with PG&E AB32 mandate for 2020. CH4 and N2O scaled down proportionaly.

Land Use - Adjust Population to match P&H Section. Parking spaces from SP 60% of SA4. Acreages adjusted based on 60% of developabe acreage for SA4

Construction Phase - Scale phase durations proportionally to complete by 2030. Separate calc. sheet.

Off-road Equipment - Equipment hours adjusted to match 19% increase in schedule over default.

Off-road Equipment - Equipment hours adjusted to match 19% increase in schedule over default.

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Off-road Equipment - Equipment hours adjusted to match 19% increase in schedule over default.

Off-road Equipment - Equipment hours adjusted to match 19% increase in schedule over default.

Off-road Equipment - Equipment hours adjusted to match 19% increase in schedule over default.

Demolition - 60,000 cy per PD. 1.264 ton/cy per user guide.

Grading - Export of material addressed in DTSC CEQA documant.

Architectural Coating -

Vehicle Trips - Adjust trip rates to match trip generation of transportation analysis. Weekend trips rates proportional to ITE in model.

Vechicle Emission Factors - EMFAC2014

Vechicle Emission Factors -

Vechicle Emission Factors -

Woodstoves - Assume no woodstoves. Assume default percentage of fireplaces bu all gas-fired.

Consumer Products - Inserted CC County-specific EF calculated by Ramboll.

Energy Use - Adjust T24 energy to reflect 2013 and 2016 T24.

Water And Wastewater - All wastewater treatment aerobic. No septic or lagoons.

Waste Mitigation - Assume current diversion rate of 49 percent.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	220.00	178.00
tblConstructionPhase	NumDays	3,100.00	2,521.00
tblConstructionPhase	NumDays	200.00	163.00
tblConstructionPhase	NumDays	310.00	252.00
tblConstructionPhase	NumDays	220.00	179.00
tblConstructionPhase	NumDays	120.00	98.00
tblConsumerProducts	ROG_EF	2.14E-05	1.62E-05
tblEnergyUse	T24E	312.05	183.58
tblEnergyUse	T24E	2.74	1.68
tblEnergyUse	T24E	5.01	3.06
tblEnergyUse	T24E	1.48	0.91
tblEnergyUse	T24NG	7,191.67	6,655.49
tblEnergyUse	T24NG	4.10	2.84
tblEnergyUse	T24NG	19.28	13.35

tblEnergyUse	T24NG	18.78	13.00
tblFireplaces	NumberGas	836.00	1,048.80
tblFireplaces	NumberWood	212.80	0.00
tblGrading	AcresOfGrading	748.13	749.70
tblLandUse	LotAcreage	14.58	15.44
tblLandUse	LotAcreage	14.58	15.44
tblLandUse	LotAcreage	16.65	17.63
tblLandUse	LotAcreage	40.00	42.36
tblLandUse	LotAcreage	4.36	4.62
tblLandUse	Population	4,347.00	3,070.00
tblOffRoadEquipment	UsageHours	6.00	7.10
tblOffRoadEquipment	UsageHours	8.00	9.50
tblOffRoadEquipment	UsageHours	7.00	8.30
tblOffRoadEquipment	UsageHours	8.00	9.50
tblOffRoadEquipment	UsageHours	8.00	9.50
tblOffRoadEquipment	UsageHours	8.00	9.50
tblOffRoadEquipment	UsageHours	8.00	9.50
tblOffRoadEquipment	UsageHours	8.00	9.50
tblOffRoadEquipment	UsageHours	8.00	9.50
tblOffRoadEquipment	UsageHours	8.00	9.50
tblOffRoadEquipment	UsageHours	8.00	9.50
tblOffRoadEquipment	UsageHours	8.00	9.50
tblOffRoadEquipment	UsageHours	8.00	9.50
tblOffRoadEquipment	UsageHours	8.00	9.50
tblOffRoadEquipment	UsageHours	8.00	9.50
tblOffRoadEquipment	UsageHours	7.00	8.30
tblOffRoadEquipment	UsageHours	8.00	9.50
tblOffRoadEquipment	UsageHours	8.00	9.50
tblOffRoadEquipment	UsageHours	8.00	9.50
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.013

tblProjectCharacteristics	CO2IntensityFactor	641.35	290
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblVehicleEF	HHD	0.02	0.03
tblVehicleEF	HHD	0.02	9.8350e-003
tblVehicleEF	HHD	2.77	3.72
tblVehicleEF	HHD	2.05	1.13
tblVehicleEF	HHD	88.12	0.00
tblVehicleEF	HHD	576.43	10,537.24
tblVehicleEF	HHD	1,715.63	1,562.82
tblVehicleEF	HHD	73.23	1.20
tblVehicleEF	HHD	0.02	6.6500e-003
tblVehicleEF	HHD	6.02	31.95
tblVehicleEF	HHD	8.58	1.86
tblVehicleEF	HHD	5.24	0.03
tblVehicleEF	HHD	0.03	9.5180e-003
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.03	0.04
tblVehicleEF	HHD	0.16	6.7440e-003
tblVehicleEF	HHD	7.5520e-003	1.3000e-005
tblVehicleEF	HHD	0.03	9.5180e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.6880e-003	8.9630e-003
tblVehicleEF	HHD	0.15	6.4520e-003
tblVehicleEF	HHD	5.9870e-003	1.2000e-005
tblVehicleEF	HHD	3.5280e-003	1.8600e-004
tblVehicleEF	HHD	0.28	4.5000e-004
tblVehicleEF	HHD	0.53	0.97
tblVehicleEF	HHD	2.0090e-003	1.2800e-004
tblVehicleEF	HHD	0.35	0.08
tblVehicleEF	HHD	1.14	2.1720e-003

tblVehicleEF	HHD	4.48	7.1960e-003
tblVehicleEF	HHD	5.5830e-003	0.10
tblVehicleEF	HHD	0.02	0.01
tblVehicleEF	HHD	2.2670e-003	1.8000e-005
tblVehicleEF	HHD	3.5280e-003	1.3820e-003
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tblVehicleEF	LDA	0.02	3.7320e-003
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tblVehicleEF	LDA	0.27	0.03

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tblVehicleEF	LDT1	0.12	8.8220e-003
tblVehicleEF	LDT1	1.17	0.51
tblVehicleEF	LDT1	0.56	0.07
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tblVehicleEF	LDT1	0.31	0.16
tblVehicleEF	LDT1	0.10	0.06
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tblVehicleEF	LDT2	0.02	9.5030e-003
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tblVehicleEF	LDT2	0.40	0.05
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tblVehicleEF	LHD1	0.02	0.01
tblVehicleEF	LHD1	1.3580e-003	6.0600e-004
tblVehicleEF	LHD1	6.4500e-004	0.01
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tblVehicleEF	LHD1	0.02	0.01
tblVehicleEF	LHD1	1.2490e-003	5.5700e-004
tblVehicleEF	LHD1	2.1560e-003	0.02
tblVehicleEF	LHD1	0.07	0.08
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tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	1.1160e-003	1.0550e-003
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tblVehicleEF	LHD1	0.48	0.35
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tblVehicleEF	LHD2	4.9620e-003	4.5660e-003
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tblVehicleEF	LHD2	2.76	0.27
tblVehicleEF	LHD2	0.75	0.24
tblVehicleEF	LHD2	1.3840e-003	0.01
tblVehicleEF	LHD2	0.07	0.09
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.03	9.8570e-003
tblVehicleEF	LHD2	8.6100e-004	3.2100e-004

tblVehicleEF	LHD2	1.2730e-003	0.01
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tblVehicleEF	LHD2	0.28	0.09
tblVehicleEF	LHD2	0.28	0.04
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tblVehicleEF	LHD2	0.02	0.02
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tblVehicleEF	MCY	0.32	0.32
tblVehicleEF	MCY	0.04	0.01

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tblVehicleEF	MCY	2.0000e-003	1.0000e-003
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tblVehicleEF	MCY	0.49	0.36
tblVehicleEF	MCY	0.42	0.38
tblVehicleEF	MCY	3.22	2.90
tblVehicleEF	MCY	1.94	1.17
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tblVehicleEF	MDV	0.03	0.01
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tblVehicleEF	MDV	552.97	367.20
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tblVehicleEF	MDV	0.15	0.11
tblVehicleEF	MDV	0.39	0.07
tblVehicleEF	MDV	0.64	0.13

tblVehicleEF	MDV	2.2440e-003	1.3660e-003
tblVehicleEF	MDV	3.5050e-003	2.0800e-003
tblVehicleEF	MDV	2.0650e-003	1.2580e-003
tblVehicleEF	MDV	3.2320e-003	1.9130e-003
tblVehicleEF	MDV	0.07	0.34
tblVehicleEF	MDV	0.19	0.14
tblVehicleEF	MDV	0.06	0.37
tblVehicleEF	MDV	0.07	0.01
tblVehicleEF	MDV	0.65	0.48
tblVehicleEF	MDV	0.59	0.11
tblVehicleEF	MDV	5.8850e-003	3.6730e-003
tblVehicleEF	MDV	1.3810e-003	8.7300e-004
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.19	0.19
tblVehicleEF	MDV	0.06	0.08
tblVehicleEF	MDV	0.10	0.04
tblVehicleEF	MDV	0.65	0.58
tblVehicleEF	MDV	0.63	0.21
tblVehicleEF	MH	6.20	0.52
tblVehicleEF	MH	11.77	3.82
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tblVehicleEF	MH	2.20	0.94
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tblVehicleEF	MH	0.05	0.13
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tblVehicleEF	MH	0.04	0.02
tblVehicleEF	MH	2.0220e-003	8.5600e-004
tblVehicleEF	MH	0.02	0.06

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tblVehicleEF	MH	0.03	0.01
tblVehicleEF	MH	1.7300e-003	7.8700e-004
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tblVehicleEF	MH	0.09	0.04
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tblVehicleEF	MH	0.73	0.23
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tblVehicleEF	MHD	5.02	1.08
tblVehicleEF	MHD	2.62	0.13
tblVehicleEF	MHD	0.05	2.9900e-004

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tblVehicleEF	MHD	3.4780e-003	2.8550e-003
tblVehicleEF	MHD	0.19	7.2780e-003
tblVehicleEF	MHD	0.21	0.12
tblVehicleEF	MHD	1.7990e-003	1.8640e-003
tblVehicleEF	MHD	0.30	0.04
tblVehicleEF	MHD	0.85	0.04
tblVehicleEF	MHD	2.02	0.06
tblVehicleEF	MHD	5.8700e-003	5.9780e-003
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	1.1730e-003	1.5600e-004
tblVehicleEF	MHD	3.4780e-003	1.4150e-003
tblVehicleEF	MHD	0.19	0.07
tblVehicleEF	MHD	0.24	0.20
tblVehicleEF	MHD	1.7990e-003	9.5800e-004
tblVehicleEF	MHD	0.34	0.12
tblVehicleEF	MHD	0.85	0.39
tblVehicleEF	MHD	2.17	0.61
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	2.3410e-003	2.1960e-003
tblVehicleEF	OBUS	2.30	4.82
tblVehicleEF	OBUS	3.36	0.32

tblVehicleEF	OBUS	16.33	4.80
tblVehicleEF	OBUS	573.90	354.20
tblVehicleEF	OBUS	983.63	1,218.64
tblVehicleEF	OBUS	37.29	72.19
tblVehicleEF	OBUS	1.2220e-003	6.2700e-004
tblVehicleEF	OBUS	7.28	0.05
tblVehicleEF	OBUS	4.64	0.13
tblVehicleEF	OBUS	2.12	0.79
tblVehicleEF	OBUS	0.06	0.00
tblVehicleEF	OBUS	0.07	0.13
tblVehicleEF	OBUS	9.5990e-003	0.01
tblVehicleEF	OBUS	0.07	1.3390e-003
tblVehicleEF	OBUS	1.2860e-003	1.0430e-003
tblVehicleEF	OBUS	0.05	0.00
tblVehicleEF	OBUS	0.03	0.06
tblVehicleEF	OBUS	2.4000e-003	3.0000e-003
tblVehicleEF	OBUS	0.06	1.2310e-003
tblVehicleEF	OBUS	1.1170e-003	9.5900e-004
tblVehicleEF	OBUS	6.4300e-004	0.02
tblVehicleEF	OBUS	0.03	0.02
tblVehicleEF	OBUS	0.49	0.57
tblVehicleEF	OBUS	3.0500e-004	0.01
tblVehicleEF	OBUS	0.28	0.02
tblVehicleEF	OBUS	0.24	0.19
tblVehicleEF	OBUS	0.98	0.30
tblVehicleEF	OBUS	5.5590e-003	3.6360e-003
tblVehicleEF	OBUS	9.7580e-003	0.01
tblVehicleEF	OBUS	6.6500e-004	8.0600e-004
tblVehicleEF	OBUS	6.4300e-004	6.7100e-004
tblVehicleEF	OBUS	0.03	0.02

tblVehicleEF	OBUS	0.56	0.64
tblVehicleEF	OBUS	3.0500e-004	3.6000e-004
tblVehicleEF	OBUS	0.33	0.11
tblVehicleEF	OBUS	0.24	0.27
tblVehicleEF	OBUS	1.04	0.47
tblVehicleEF	SBUS	5.3980e-003	6.5080e-003
tblVehicleEF	SBUS	9.1740e-003	0.01
tblVehicleEF	SBUS	1.04	5.96
tblVehicleEF	SBUS	2.48	0.34
tblVehicleEF	SBUS	31.97	0.97
tblVehicleEF	SBUS	581.72	3,493.15
tblVehicleEF	SBUS	1,240.39	1,219.65
tblVehicleEF	SBUS	141.39	8.68
tblVehicleEF	SBUS	2.1420e-003	2.4430e-003
tblVehicleEF	SBUS	8.19	19.75
tblVehicleEF	SBUS	9.79	2.57
tblVehicleEF	SBUS	1.69	0.07
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	0.69	0.74
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.11	0.01
tblVehicleEF	SBUS	0.01	1.6500e-004
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	0.30	0.32
tblVehicleEF	SBUS	2.9270e-003	2.9280e-003
tblVehicleEF	SBUS	0.10	0.01
tblVehicleEF	SBUS	8.2950e-003	1.5200e-004
tblVehicleEF	SBUS	0.03	1.7160e-003
tblVehicleEF	SBUS	0.32	4.0270e-003
tblVehicleEF	SBUS	0.12	0.71

tblVehicleEF	SBUS	9.5410e-003	8.6900e-004
tblVehicleEF	SBUS	0.29	0.08
tblVehicleEF	SBUS	1.86	0.03
tblVehicleEF	SBUS	2.92	0.05
tblVehicleEF	SBUS	5.6340e-003	0.03
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	2.0280e-003	1.0400e-004
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	0.32	0.13
tblVehicleEF	SBUS	0.13	0.16
tblVehicleEF	SBUS	9.5410e-003	7.1150e-003
tblVehicleEF	SBUS	0.33	0.27
tblVehicleEF	SBUS	1.86	1.25
tblVehicleEF	SBUS	3.14	1.11
tblVehicleEF	UBUS	4.76	2.98
tblVehicleEF	UBUS	13.02	10.32
tblVehicleEF	UBUS	2,075.44	1,885.93
tblVehicleEF	UBUS	34.09	151.48
tblVehicleEF	UBUS	1.4970e-003	3.8900e-004
tblVehicleEF	UBUS	14.24	3.12
tblVehicleEF	UBUS	1.58	1.63
tblVehicleEF	UBUS	0.65	0.48
tblVehicleEF	UBUS	8.0000e-003	0.01
tblVehicleEF	UBUS	0.24	0.05
tblVehicleEF	UBUS	7.4700e-004	1.5000e-003
tblVehicleEF	UBUS	0.28	0.21
tblVehicleEF	UBUS	2.0000e-003	3.0000e-003
tblVehicleEF	UBUS	0.22	0.05
tblVehicleEF	UBUS	6.9400e-004	1.3790e-003
tblVehicleEF	UBUS	4.5190e-003	0.02

tblVehicleEF	UBUS	0.10	0.08
tblVehicleEF	UBUS	2.1440e-003	0.01
tblVehicleEF	UBUS	0.82	0.18
tblVehicleEF	UBUS	0.76	0.76
tblVehicleEF	UBUS	0.93	0.92
tblVehicleEF	UBUS	0.02	0.02
tblVehicleEF	UBUS	5.7900e-004	1.7050e-003
tblVehicleEF	UBUS	4.5190e-003	4.2640e-003
tblVehicleEF	UBUS	0.10	0.09
tblVehicleEF	UBUS	2.1440e-003	2.1660e-003
tblVehicleEF	UBUS	0.92	0.61
tblVehicleEF	UBUS	0.76	1.02
tblVehicleEF	UBUS	1.00	0.91
tblVehicleTrips	ST_TR	7.16	5.85
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	71.07	54.51
tblVehicleTrips	ST_TR	2.37	1.47
tblVehicleTrips	ST_TR	1.90	1.39
tblVehicleTrips	SU_TR	6.07	4.96
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	56.36	43.23
tblVehicleTrips	SU_TR	0.98	0.61
tblVehicleTrips	SU_TR	1.11	0.81
tblVehicleTrips	WD_TR	6.59	5.38
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	57.24	43.90
tblVehicleTrips	WD_TR	11.01	6.83
tblVehicleTrips	WD_TR	8.11	5.93
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00

tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWoodstoves	NumberCatalytic	7.60	0.00
tblWoodstoves	NumberNoncatalytic	7.60	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.7595	8.1323			1.9451	0.3773	2.3224	0.7232	0.3495	1.0727	0.0000	832.8310	832.8310	0.1640	0.0000	836.2753
2018	0.8612	9.2772			2.4600	0.4291	2.8891	1.1457	0.3949	1.5406	0.0000	983.9467	983.9467	0.2703	0.0000	989.6235

2019	1.7733	9.8166			2.8438	0.2982	3.1420	0.7660	0.2785	1.0445	0.0000	3,788.5693	3,788.5693	0.1922	0.0000	3,792.6061
2020	1.6438	8.6665			2.8546	0.2638	3.1184	0.7689	0.2463	1.0152	0.0000	3,685.5630	3,685.5630	0.1858	0.0000	3,689.4653
2021	1.5271	7.4647			2.8439	0.2310	3.0749	0.7661	0.2156	0.9817	0.0000	3,637.5119	3,637.5119	0.1798	0.0000	3,641.2874
2022	1.4392	6.6549			2.8331	0.2061	3.0392	0.7632	0.1923	0.9555	0.0000	3,593.5116	3,593.5116	0.1750	0.0000	3,597.1866
2023	1.3532	5.8825			2.8332	0.1876	3.0209	0.7632	0.1750	0.9382	0.0000	3,563.3126	3,563.3126	0.1703	0.0000	3,566.8878
2024	1.2998	5.7080			2.8552	0.1760	3.0312	0.7692	0.1640	0.9332	0.0000	3,567.3248	3,567.3248	0.1682	0.0000	3,570.8563
2025	1.2468	5.4762			2.8444	0.1625	3.0069	0.7663	0.1513	0.9176	0.0000	3,533.4445	3,533.4445	0.1647	0.0000	3,536.9024
2026	1.2124	5.3907			2.8445	0.1614	3.0059	0.7663	0.1503	0.9166	0.0000	3,515.6446	3,515.6446	0.1624	0.0000	3,519.0557
2027	1.1877	5.3426			2.8446	0.1616	3.0063	0.7664	0.1505	0.9169	0.0000	3,500.2820	3,500.2820	0.1606	0.0000	3,503.6540
2028	0.7960	3.8100			1.7941	0.1250	1.9191	0.4833	0.1162	0.5995	0.0000	2,307.3330	2,307.3330	0.1361	0.0000	2,310.1916
2029	20.0375	0.6193			0.3282	0.0281	0.3563	0.0873	0.0263	0.1136	0.0000	350.5915	350.5915	0.0414	0.0000	351.4607
Total	**35.1374**	**82.2414**			**32.1247**	**2.8077**	**34.9324**	**9.3350**	**2.6108**	**11.9457**	**0.0000**	**36,859.8663**	**36,859.8663**	**2.1708**	**0.0000**	**36,905.4527**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.7595	8.1323			1.9451	0.3773	2.3224	0.7232	0.3495	1.0727	0.0000	832.8303	832.8303	0.1640	0.0000	836.2746
2018	0.8612	9.2772			2.4600	0.4291	2.8891	1.1457	0.3949	1.5406	0.0000	983.9457	983.9457	0.2703	0.0000	989.6225
2019	1.7733	9.8166			2.8438	0.2982	3.1420	0.7660	0.2785	1.0445	0.0000	3,788.5689	3,788.5689	0.1922	0.0000	3,792.6057
2020	1.6438	8.6665			2.8546	0.2638	3.1184	0.7689	0.2463	1.0152	0.0000	3,685.5626	3,685.5626	0.1858	0.0000	3,689.4649
2021	1.5271	7.4647			2.8439	0.2310	3.0749	0.7661	0.2156	0.9817	0.0000	3,637.5115	3,637.5115	0.1798	0.0000	3,641.2870

2022	1.4392	6.6549			2.8331	0.2061	3.0392	0.7632	0.1923	0.9555	0.0000	3,593.5112	3,593.5112	0.1750	0.0000	3,597.1862
2023	1.3532	5.8825			2.8332	0.1876	3.0209	0.7632	0.1750	0.9382	0.0000	3,563.3122	3,563.3122	0.1703	0.0000	3,566.8874
2024	1.2998	5.7080			2.8552	0.1760	3.0312	0.7692	0.1640	0.9332	0.0000	3,567.3244	3,567.3244	0.1682	0.0000	3,570.8558
2025	1.2468	5.4762			2.8444	0.1625	3.0069	0.7663	0.1513	0.9176	0.0000	3,533.4440	3,533.4440	0.1647	0.0000	3,536.9020
2026	1.2124	5.3907			2.8445	0.1614	3.0059	0.7663	0.1503	0.9166	0.0000	3,515.6442	3,515.6442	0.1624	0.0000	3,519.0553
2027	1.1877	5.3426			2.8446	0.1616	3.0063	0.7664	0.1505	0.9169	0.0000	3,500.2815	3,500.2815	0.1606	0.0000	3,503.6536
2028	0.7960	3.8100			1.7941	0.1250	1.9191	0.4833	0.1162	0.5995	0.0000	2,307.3326	2,307.3326	0.1361	0.0000	2,310.1912
2029	20.0375	0.6193			0.3282	0.0281	0.3563	0.0873	0.0263	0.1136	0.0000	350.5913	350.5913	0.0414	0.0000	351.4605
Total	**35.1373**	**82.2414**			**32.1247**	**2.8077**	**34.9324**	**9.3350**	**2.6108**	**11.9457**	**0.0000**	**36,859.8602**	**36,859.8602**	**2.1708**	**0.0000**	**36,905.4465**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	14.2111	0.1374				0.0650	0.0650		0.0650	0.0650	0.0000	68.9166	68.9166	0.0208	9.2000e-004	69.6399
Energy	0.1891	1.6820				0.1307	0.1307		0.1307	0.1307	0.0000	4,557.6735	4,557.6735	0.1563	0.0621	4,580.2061
Mobile	11.0252	8.7115			17.3465	0.1029	17.4494	4.6386	0.0956	4.7342	0.0000	13,129.9711	13,129.9711	0.4442	0.0000	13,139.2994
Waste						0.0000	0.0000		0.0000	0.0000	437.5876	0.0000	437.5876	25.8607	0.0000	980.6621
Water						0.0000	0.0000		0.0000	0.0000	190.4141	451.2006	641.6146	0.6756	0.4188	785.6168

Total	**25.4254**	**10.5308**			**17.3465**	**0.2986**	**17.6451**	**4.6386**	**0.2912**	**4.9299**	**628.0017**	**18,207.7617**	**18,835.7633**	**27.1576**	**0.4818**	**19,555.4242**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	14.2111	0.1374				0.0650	0.0650		0.0650	0.0650	0.0000	68.9166	68.9166	0.0208	9.2000e-004	69.6399
Energy	0.1891	1.6820				0.1307	0.1307		0.1307	0.1307	0.0000	4,557.6735	4,557.6735	0.1563	0.0621	4,580.2061
Mobile	11.0252	8.7115			17.3465	0.1029	17.4494	4.6386	0.0956	4.7342	0.0000	13,129.9711	13,129.9711	0.4442	0.0000	13,139.2994
Waste						0.0000	0.0000		0.0000	0.0000	223.1697	0.0000	223.1697	13.1890	0.0000	500.1377
Water						0.0000	0.0000		0.0000	0.0000	190.4141	451.2006	641.6146	0.6740	0.4184	785.4688
Total	**25.4254**	**10.5308**			**17.3465**	**0.2986**	**17.6451**	**4.6386**	**0.2912**	**4.9299**	**413.5837**	**18,207.7617**	**18,621.3454**	**14.4843**	**0.4814**	**19,074.7518**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**34.14**	**0.00**	**1.14**	**46.67**	**0.08**	**2.46**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2017	8/16/2017	5	163	
2	Site Preparation	Site Preparation	8/17/2017	1/1/2018	5	98	
3	Grading	Grading	1/2/2018	12/19/2018	5	252	
4	Building Construction	Building Construction	12/20/2018	8/17/2028	5	2521	

5	Paving	Paving	8/18/2028	4/25/2029	5	179	
6	Architectural Coating	Architectural Coating	4/26/2029	12/31/2029	5	178	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 749.7

Acres of Paving: 0

Residential Indoor: 3,078,000; Residential Outdoor: 1,026,000; Non-Residential Indoor: 2,648,010; Non-Residential Outdoor: 882,670

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	9.50	81	0.73
Demolition	Excavators	3	9.50	162	0.38
Demolition	Rubber Tired Dozers	2	9.50	255	0.40
Site Preparation	Rubber Tired Dozers	3	9.50	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	9.50	97	0.37
Grading	Excavators	2	9.50	162	0.38
Grading	Graders	1	9.50	174	0.41
Grading	Rubber Tired Dozers	1	9.50	255	0.40
Grading	Scrapers	2	9.50	361	0.48
Grading	Tractors/Loaders/Backhoes	2	9.50	97	0.37
Building Construction	Cranes	1	8.30	226	0.29
Building Construction	Forklifts	3	9.50	89	0.20
Building Construction	Generator Sets	1	9.50	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	8.30	97	0.37
Building Construction	Welders	1	9.50	46	0.45
Paving	Pavers	2	9.50	125	0.42
Paving	Paving Equipment	2	9.50	130	0.36
Paving	Rollers	2	9.50	80	0.38
Architectural Coating	Air Compressors	1	7.10	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	7,499.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	1,991.00	569.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	398.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.8115	0.0000	0.8115	0.1229	0.0000	0.1229	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3918	4.1323				0.2057	0.2057		0.1916	0.1916	0.0000	354.3957	354.3957	0.0972	0.0000	356.4373
Total	**0.3918**	**4.1323**			**0.8115**	**0.2057**	**1.0171**	**0.1229**	**0.1916**	**0.3145**	**0.0000**	**354.3957**	**354.3957**	**0.0972**	**0.0000**	**356.4373**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0821	1.0090			0.0634	0.0129	0.0762	0.0174	0.0118	0.0292	0.0000	252.7093	252.7093	1.8400e-003	0.0000	252.7479
Vendor	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0700e-003	6.0500e-003			0.0111	9.0000e-005	0.0112	2.9600e-003	8.0000e-005	3.0400e-003	0.0000	9.6680	9.6680	5.1000e-004	0.0000	9.6787
Total	**0.0862**	**1.0150**			**0.0745**	**0.0130**	**0.0875**	**0.0204**	**0.0119**	**0.0323**	**0.0000**	**262.3773**	**262.3773**	**2.3500e-003**	**0.0000**	**262.4266**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.8115	0.0000	0.8115	0.1229	0.0000	0.1229	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.3918	4.1323				0.2057	0.2057		0.1916	0.1916	0.0000	354.3953	354.3953	0.0972	0.0000	356.4369
Total	**0.3918**	**4.1323**			**0.8115**	**0.2057**	**1.0171**	**0.1229**	**0.1916**	**0.3145**	**0.0000**	**354.3953**	**354.3953**	**0.0972**	**0.0000**	**356.4369**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0821	1.0090			0.0634	0.0129	0.0762	0.0174	0.0118	0.0292	0.0000	252.7093	252.7093	1.8400e-003	0.0000	252.7479
Vendor	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0700e-003	6.0500e-003			0.0111	9.0000e-005	0.0112	2.9600e-003	8.0000e-005	3.0400e-003	0.0000	9.6680	9.6680	5.1000e-004	0.0000	9.6787

Total	**0.0862**	**1.0150**			**0.0745**	**0.0130**	**0.0875**	**0.0204**	**0.0119**	**0.0323**	**0.0000**	**262.3773**	**262.3773**	**2.3500e-003**	**0.0000**	**262.4266**

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0512	0.0000	1.0512	0.5778	0.0000	0.5778	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2787	2.9807				0.1586	0.1586		0.1459	0.1459	0.0000	209.1539	209.1539	0.0641	0.0000	210.4997
Total	**0.2787**	**2.9807**			**1.0512**	**0.1586**	**1.2099**	**0.5778**	**0.1459**	**0.7238**	**0.0000**	**209.1539**	**209.1539**	**0.0641**	**0.0000**	**210.4997**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9100e-003	4.3200e-003			7.9500e-003	6.0000e-005	8.0100e-003	2.1100e-003	6.0000e-005	2.1700e-003	0.0000	6.9040	6.9040	3.6000e-004	0.0000	6.9117
Total	**2.9100e-003**	**4.3200e-003**			**7.9500e-003**	**6.0000e-005**	**8.0100e-003**	**2.1100e-003**	**6.0000e-005**	**2.1700e-003**	**0.0000**	**6.9040**	**6.9040**	**3.6000e-004**	**0.0000**	**6.9117**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0512	0.0000	1.0512	0.5778	0.0000	0.5778	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2787	2.9807				0.1586	0.1586		0.1459	0.1459	0.0000	209.1537	209.1537	0.0641	0.0000	210.4994
Total	**0.2787**	**2.9807**			**1.0512**	**0.1586**	**1.2099**	**0.5778**	**0.1459**	**0.7238**	**0.0000**	**209.1537**	**209.1537**	**0.0641**	**0.0000**	**210.4994**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9100e-003	4.3200e-003			7.9500e-003	6.0000e-005	8.0100e-003	2.1100e-003	6.0000e-005	2.1700e-003	0.0000	6.9040	6.9040	3.6000e-004	0.0000	6.9117
Total	**2.9100e-003**	**4.3200e-003**			**7.9500e-003**	**6.0000e-005**	**8.0100e-003**	**2.1100e-003**	**6.0000e-005**	**2.1700e-003**	**0.0000**	**6.9040**	**6.9040**	**3.6000e-004**	**0.0000**	**6.9117**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Fugitive Dust					1.0512	0.0000	1.0512	0.5778	0.0000	0.5778	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5500e-003	0.0271				1.4000e-003	1.4000e-003		1.2900e-003	1.2900e-003	0.0000	2.1221	2.1221	6.6000e-004	0.0000	2.1360
Total	**2.5500e-003**	**0.0271**			**1.0512**	**1.4000e-003**	**1.0526**	**0.5778**	**1.2900e-003**	**0.5791**	**0.0000**	**2.1221**	**2.1221**	**6.6000e-004**	**0.0000**	**2.1360**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	4.0000e-005			8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0685	0.0685	0.0000	0.0000	0.0686
Total	**3.0000e-005**	**4.0000e-005**			**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0685**	**0.0685**	**0.0000**	**0.0000**	**0.0686**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0512	0.0000	1.0512	0.5778	0.0000	0.5778	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5500e-003	0.0271				1.4000e-003	1.4000e-003		1.2900e-003	1.2900e-003	0.0000	2.1221	2.1221	6.6000e-004	0.0000	2.1360
Total	**2.5500e-003**	**0.0271**			**1.0512**	**1.4000e-003**	**1.0526**	**0.5778**	**1.2900e-003**	**0.5791**	**0.0000**	**2.1221**	**2.1221**	**6.6000e-004**	**0.0000**	**2.1360**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	4.0000e-005			8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0685	0.0685	0.0000	0.0000	0.0686
Total	**3.0000e-005**	**4.0000e-005**			**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0685**	**0.0685**	**0.0000**	**0.0000**	**0.0686**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.2986	0.0000	1.2986	0.5382	0.0000	0.5382	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.7915	8.9077				0.4172	0.4172		0.3838	0.3838	0.0000	843.3106	843.3106	0.2625	0.0000	848.8238
Total	**0.7915**	**8.9077**			**1.2986**	**0.4172**	**1.7157**	**0.5382**	**0.3838**	**0.9220**	**0.0000**	**843.3106**	**843.3106**	**0.2625**	**0.0000**	**848.8238**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4700e-003	0.0112			0.0229	1.7000e-004	0.0231	6.1000e-003	1.6000e-004	6.2600e-003	0.0000	19.1873	19.1873	9.6000e-004	0.0000	19.2076
Total	**7.4700e-003**	**0.0112**			**0.0229**	**1.7000e-004**	**0.0231**	**6.1000e-003**	**1.6000e-004**	**6.2600e-003**	**0.0000**	**19.1873**	**19.1873**	**9.6000e-004**	**0.0000**	**19.2076**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.2986	0.0000	1.2986	0.5382	0.0000	0.5382	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.7914	8.9077				0.4172	0.4172		0.3838	0.3838	0.0000	843.3096	843.3096	0.2625	0.0000	848.8228
Total	**0.7914**	**8.9077**			**1.2986**	**0.4172**	**1.7157**	**0.5382**	**0.3838**	**0.9220**	**0.0000**	**843.3096**	**843.3096**	**0.2625**	**0.0000**	**848.8228**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4700e-003	0.0112			0.0229	1.7000e-004	0.0231	6.1000e-003	1.6000e-004	6.2600e-003	0.0000	19.1873	19.1873	9.6000e-004	0.0000	19.2076

Total	**7.4700e-003**	**0.0112**			**0.0229**	**1.7000e-004**	**0.0231**	**6.1000e-003**	**1.6000e-004**	**6.2600e-003**	**0.0000**	**19.1873**	**19.1873**	**9.6000e-004**	**0.0000**	**19.2076**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0127	0.1104				7.0900e-003	7.0900e-003		6.6700e-003	6.6700e-003	0.0000	11.2380	11.2380	2.7500e-003	0.0000	11.2958
Total	**0.0127**	**0.1104**				**7.0900e-003**	**7.0900e-003**		**6.6700e-003**	**6.6700e-003**	**0.0000**	**11.2380**	**11.2380**	**2.7500e-003**	**0.0000**	**11.2958**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0234	0.1852			0.0147	2.7000e-003	0.0174	4.2000e-003	2.4800e-003	6.6800e-003	0.0000	47.3821	47.3821	3.7000e-004	0.0000	47.3898
Worker	0.0236	0.0355			0.0725	5.4000e-004	0.0731	0.0193	5.0000e-004	0.0198	0.0000	60.6380	60.6380	3.0500e-003	0.0000	60.7020
Total	**0.0470**	**0.2207**			**0.0872**	**3.2400e-003**	**0.0904**	**0.0235**	**2.9800e-003**	**0.0265**	**0.0000**	**108.0202**	**108.0202**	**3.4200e-003**	**0.0000**	**108.0918**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0127	0.1104				7.0900e-003	7.0900e-003		6.6700e-003	6.6700e-003	0.0000	11.2380	11.2380	2.7500e-003	0.0000	11.2958
Total	**0.0127**	**0.1104**				**7.0900e-003**	**7.0900e-003**		**6.6700e-003**	**6.6700e-003**	**0.0000**	**11.2380**	**11.2380**	**2.7500e-003**	**0.0000**	**11.2958**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0234	0.1852			0.0147	2.7000e-003	0.0174	4.2000e-003	2.4800e-003	6.6800e-003	0.0000	47.3821	47.3821	3.7000e-004	0.0000	47.3898
Worker	0.0236	0.0355			0.0725	5.4000e-004	0.0731	0.0193	5.0000e-004	0.0198	0.0000	60.6380	60.6380	3.0500e-003	0.0000	60.7020
Total	**0.0470**	**0.2207**			**0.0872**	**3.2400e-003**	**0.0904**	**0.0235**	**2.9800e-003**	**0.0265**	**0.0000**	**108.0202**	**108.0202**	**3.4200e-003**	**0.0000**	**108.0918**

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road	0.3642	3.2463				0.1990	0.1990		0.1871	0.1871	0.0000	362.5431	362.5431	0.0882	0.0000	364.3950
Total	**0.3642**	**3.2463**				**0.1990**	**0.1990**		**0.1871**	**0.1871**	**0.0000**	**362.5431**	**362.5431**	**0.0882**	**0.0000**	**364.3950**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.7092	5.5148			0.4782	0.0818	0.5600	0.1369	0.0753	0.2122	0.0000	1,519.0935	1,519.0935	0.0117	0.0000	1,519.3385
Worker	0.6999	1.0555			2.3656	0.0174	2.3830	0.6291	0.0161	0.6452	0.0000	1,906.9327	1,906.9327	0.0924	0.0000	1,908.8726
Total	**1.4091**	**6.5703**			**2.8438**	**0.0992**	**2.9430**	**0.7660**	**0.0914**	**0.8574**	**0.0000**	**3,426.0262**	**3,426.0262**	**0.1040**	**0.0000**	**3,428.2111**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3642	3.2463				0.1990	0.1990		0.1871	0.1871	0.0000	362.5427	362.5427	0.0882	0.0000	364.3946
Total	**0.3642**	**3.2463**				**0.1990**	**0.1990**		**0.1871**	**0.1871**	**0.0000**	**362.5427**	**362.5427**	**0.0882**	**0.0000**	**364.3946**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.7092	5.5148			0.4782	0.0818	0.5600	0.1369	0.0753	0.2122	0.0000	1,519.0935	1,519.0935	0.0117	0.0000	1,519.3385
Worker	0.6999	1.0555			2.3656	0.0174	2.3830	0.6291	0.0161	0.6452	0.0000	1,906.9327	1,906.9327	0.0924	0.0000	1,908.8726
Total	**1.4091**	**6.5703**			**2.8438**	**0.0992**	**2.9430**	**0.7660**	**0.0914**	**0.8574**	**0.0000**	**3,426.0262**	**3,426.0262**	**0.1040**	**0.0000**	**3,428.2111**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3282	2.9664				0.1730	0.1730		0.1627	0.1627	0.0000	358.5357	358.5357	0.0873	0.0000	360.3696
Total	**0.3282**	**2.9664**				**0.1730**	**0.1730**		**0.1627**	**0.1627**	**0.0000**	**358.5357**	**358.5357**	**0.0873**	**0.0000**	**360.3696**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6647	4.7257			0.4800	0.0735	0.5535	0.1374	0.0677	0.2051	0.0000	1,489.9645	1,489.9645	0.0114	0.0000	1,490.2031
Worker	0.6509	0.9744			2.3747	0.0172	2.3919	0.6315	0.0160	0.6475	0.0000	1,837.0629	1,837.0629	0.0871	0.0000	1,838.8925
Total	**1.3156**	**5.7001**			**2.8547**	**0.0908**	**2.9454**	**0.7689**	**0.0836**	**0.8526**	**0.0000**	**3,327.0273**	**3,327.0273**	**0.0985**	**0.0000**	**3,329.0957**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3282	2.9664				0.1730	0.1730		0.1627	0.1627	0.0000	358.5353	358.5353	0.0873	0.0000	360.3692
Total	**0.3282**	**2.9664**				**0.1730**	**0.1730**		**0.1627**	**0.1627**	**0.0000**	**358.5353**	**358.5353**	**0.0873**	**0.0000**	**360.3692**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6647	4.7257			0.4800	0.0735	0.5535	0.1374	0.0677	0.2051	0.0000	1,489.9645	1,489.9645	0.0114	0.0000	1,490.2031
Worker	0.6509	0.9744			2.3747	0.0172	2.3919	0.6315	0.0160	0.6475	0.0000	1,837.0629	1,837.0629	0.0871	0.0000	1,838.8925

Total	**1.3156**	**5.7001**			**2.8547**	**0.0908**	**2.9454**	**0.7689**	**0.0836**	**0.8526**	**0.0000**	**3,327.0273**	**3,327.0273**	**0.0985**	**0.0000**	**3,329.0957**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2932	2.6851				0.1479	0.1479		0.1390	0.1390	0.0000	357.2096	357.2096	0.0860	0.0000	359.0163
Total	**0.2932**	**2.6851**				**0.1479**	**0.1479**		**0.1390**	**0.1390**	**0.0000**	**357.2096**	**357.2096**	**0.0860**	**0.0000**	**359.0163**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6215	3.8749			0.4783	0.0660	0.5443	0.1370	0.0607	0.1977	0.0000	1,482.3938	1,482.3938	0.0113	0.0000	1,482.6313
Worker	0.6124	0.9047			2.3656	0.0171	2.3827	0.6291	0.0159	0.6450	0.0000	1,797.9086	1,797.9086	0.0824	0.0000	1,799.6398
Total	**1.2339**	**4.7796**			**2.8439**	**0.0831**	**2.9270**	**0.7661**	**0.0766**	**0.8427**	**0.0000**	**3,280.3023**	**3,280.3023**	**0.0938**	**0.0000**	**3,282.2711**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2932	2.6851				0.1479	0.1479		0.1390	0.1390	0.0000	357.2092	357.2092	0.0860	0.0000	359.0159
Total	**0.2932**	**2.6851**				**0.1479**	**0.1479**		**0.1390**	**0.1390**	**0.0000**	**357.2092**	**357.2092**	**0.0860**	**0.0000**	**359.0159**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.6215	3.8749			0.4783	0.0660	0.5443	0.1370	0.0607	0.1977	0.0000	1,482.3938	1,482.3938	0.0113	0.0000	1,482.6313
Worker	0.6124	0.9047			2.3656	0.0171	2.3827	0.6291	0.0159	0.6450	0.0000	1,797.9086	1,797.9086	0.0824	0.0000	1,799.6398
Total	**1.2339**	**4.7796**			**2.8439**	**0.0831**	**2.9270**	**0.7661**	**0.0766**	**0.8427**	**0.0000**	**3,280.3023**	**3,280.3023**	**0.0938**	**0.0000**	**3,282.2711**

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road	0.2621	2.3966				0.1243	0.1243		0.1170	0.1170	0.0000	355.9763	355.9763	0.0851	0.0000	357.7642
Total	**0.2621**	**2.3966**				**0.1243**	**0.1243**		**0.1170**	**0.1170**	**0.0000**	**355.9763**	**355.9763**	**0.0851**	**0.0000**	**357.7642**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5990	3.4144			0.4766	0.0648	0.5413	0.1365	0.0596	0.1961	0.0000	1,475.6950	1,475.6950	0.0115	0.0000	1,475.9368
Worker	0.5781	0.8439			2.3566	0.0170	2.3736	0.6267	0.0158	0.6425	0.0000	1,761.8402	1,761.8402	0.0784	0.0000	1,763.4857
Total	**1.1771**	**4.2583**			**2.8331**	**0.0818**	**2.9149**	**0.7632**	**0.0754**	**0.8386**	**0.0000**	**3,237.5353**	**3,237.5353**	**0.0899**	**0.0000**	**3,239.4225**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2621	2.3966				0.1243	0.1243		0.1170	0.1170	0.0000	355.9759	355.9759	0.0851	0.0000	357.7637
Total	**0.2621**	**2.3966**				**0.1243**	**0.1243**		**0.1170**	**0.1170**	**0.0000**	**355.9759**	**355.9759**	**0.0851**	**0.0000**	**357.7637**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5990	3.4144			0.4766	0.0648	0.5413	0.1365	0.0596	0.1961	0.0000	1,475.6950	1,475.6950	0.0115	0.0000	1,475.9368
Worker	0.5781	0.8439			2.3566	0.0170	2.3736	0.6267	0.0158	0.6425	0.0000	1,761.8402	1,761.8402	0.0784	0.0000	1,763.4857
Total	**1.1771**	**4.2583**			**2.8331**	**0.0818**	**2.9149**	**0.7632**	**0.0754**	**0.8386**	**0.0000**	**3,237.5353**	**3,237.5353**	**0.0899**	**0.0000**	**3,239.4225**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2416	2.2078				0.1075	0.1075		0.1011	0.1011	0.0000	356.0989	356.0989	0.0846	0.0000	357.8747
Total	**0.2416**	**2.2078**				**0.1075**	**0.1075**		**0.1011**	**0.1011**	**0.0000**	**356.0989**	**356.0989**	**0.0846**	**0.0000**	**357.8747**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5632	2.8815			0.4767	0.0632	0.5398	0.1365	0.0581	0.1946	0.0000	1,471.8371	1,471.8371	0.0107	0.0000	1,472.0606
Worker	0.5484	0.7931			2.3566	0.0170	2.3736	0.6267	0.0158	0.6425	0.0000	1,735.3766	1,735.3766	0.0750	0.0000	1,736.9525
Total	**1.1116**	**3.6747**			**2.8332**	**0.0802**	**2.9134**	**0.7632**	**0.0739**	**0.8371**	**0.0000**	**3,207.2137**	**3,207.2137**	**0.0857**	**0.0000**	**3,209.0131**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2416	2.2078				0.1075	0.1075		0.1011	0.1011	0.0000	356.0985	356.0985	0.0846	0.0000	357.8743
Total	**0.2416**	**2.2078**				**0.1075**	**0.1075**		**0.1011**	**0.1011**	**0.0000**	**356.0985**	**356.0985**	**0.0846**	**0.0000**	**357.8743**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5632	2.8815			0.4767	0.0632	0.5398	0.1365	0.0581	0.1946	0.0000	1,471.8371	1,471.8371	0.0107	0.0000	1,472.0606
Worker	0.5484	0.7931			2.3566	0.0170	2.3736	0.6267	0.0158	0.6425	0.0000	1,735.3766	1,735.3766	0.0750	0.0000	1,736.9525

Total	**1.1116**	**3.6747**			**2.8332**	**0.0802**	**2.9134**	**0.7632**	**0.0739**	**0.8371**	**0.0000**	**3,207.2137**	**3,207.2137**	**0.0857**	**0.0000**	**3,209.0131**

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2278	2.0794				0.0949	0.0949		0.0893	0.0893	0.0000	358.9071	358.9071	0.0847	0.0000	360.6861
Total	**0.2278**	**2.0794**				**0.0949**	**0.0949**		**0.0893**	**0.0893**	**0.0000**	**358.9071**	**358.9071**	**0.0847**	**0.0000**	**360.6861**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5468	2.8744			0.4805	0.0640	0.5445	0.1376	0.0589	0.1965	0.0000	1,483.6905	1,483.6905	0.0108	0.0000	1,483.9167
Worker	0.5252	0.7542			2.3747	0.0171	2.3918	0.6315	0.0159	0.6474	0.0000	1,724.7272	1,724.7272	0.0727	0.0000	1,726.2534
Total	**1.0720**	**3.6285**			**2.8552**	**0.0811**	**2.9363**	**0.7692**	**0.0748**	**0.8439**	**0.0000**	**3,208.4177**	**3,208.4177**	**0.0834**	**0.0000**	**3,210.1701**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2278	2.0794				0.0949	0.0949		0.0893	0.0893	0.0000	358.9066	358.9066	0.0847	0.0000	360.6857
Total	**0.2278**	**2.0794**				**0.0949**	**0.0949**		**0.0893**	**0.0893**	**0.0000**	**358.9066**	**358.9066**	**0.0847**	**0.0000**	**360.6857**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5468	2.8744			0.4805	0.0640	0.5445	0.1376	0.0589	0.1965	0.0000	1,483.6905	1,483.6905	0.0108	0.0000	1,483.9167
Worker	0.5252	0.7542			2.3747	0.0171	2.3918	0.6315	0.0159	0.6474	0.0000	1,724.7272	1,724.7272	0.0727	0.0000	1,726.2534
Total	**1.0720**	**3.6285**			**2.8552**	**0.0811**	**2.9363**	**0.7692**	**0.0748**	**0.8439**	**0.0000**	**3,208.4177**	**3,208.4177**	**0.0834**	**0.0000**	**3,210.1701**

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road	0.2108	1.9217				0.0813	0.0813		0.0765	0.0765	0.0000	357.6460	357.6460	0.0839	0.0000	359.4082
Total	**0.2108**	**1.9217**				**0.0813**	**0.0813**		**0.0765**	**0.0765**	**0.0000**	**357.6460**	**357.6460**	**0.0839**	**0.0000**	**359.4082**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5349	2.8403			0.4788	0.0641	0.5428	0.1372	0.0589	0.1961	0.0000	1,478.6313	1,478.6313	0.0108	0.0000	1,478.8575
Worker	0.5011	0.7143			2.3656	0.0171	2.3828	0.6291	0.0159	0.6450	0.0000	1,697.1672	1,697.1672	0.0700	0.0000	1,698.6367
Total	**1.0359**	**3.5546**			**2.8444**	**0.0812**	**2.9256**	**0.7663**	**0.0748**	**0.8411**	**0.0000**	**3,175.7985**	**3,175.7985**	**0.0807**	**0.0000**	**3,177.4942**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2108	1.9217				0.0813	0.0813		0.0765	0.0765	0.0000	357.6456	357.6456	0.0839	0.0000	359.4078
Total	**0.2108**	**1.9217**				**0.0813**	**0.0813**		**0.0765**	**0.0765**	**0.0000**	**357.6456**	**357.6456**	**0.0839**	**0.0000**	**359.4078**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5349	2.8403			0.4788	0.0641	0.5428	0.1372	0.0589	0.1961	0.0000	1,478.6313	1,478.6313	0.0108	0.0000	1,478.8575
Worker	0.5011	0.7143			2.3656	0.0171	2.3828	0.6291	0.0159	0.6450	0.0000	1,697.1672	1,697.1672	0.0700	0.0000	1,698.6367
Total	**1.0359**	**3.5546**			**2.8444**	**0.0812**	**2.9256**	**0.7663**	**0.0748**	**0.8411**	**0.0000**	**3,175.7985**	**3,175.7985**	**0.0807**	**0.0000**	**3,177.4942**

3.5 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2108	1.9217				0.0813	0.0813		0.0765	0.0765	0.0000	357.6460	357.6460	0.0839	0.0000	359.4082
Total	**0.2108**	**1.9217**				**0.0813**	**0.0813**		**0.0765**	**0.0765**	**0.0000**	**357.6460**	**357.6460**	**0.0839**	**0.0000**	**359.4082**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5201	2.7863			0.4789	0.0629	0.5418	0.1372	0.0578	0.1951	0.0000	1,479.0224	1,479.0224	0.0106	0.0000	1,479.2455
Worker	0.4815	0.6828			2.3656	0.0172	2.3829	0.6291	0.0160	0.6451	0.0000	1,678.9762	1,678.9762	0.0679	0.0000	1,680.4020
Total	**1.0015**	**3.4691**			**2.8445**	**0.0801**	**2.9246**	**0.7663**	**0.0738**	**0.8401**	**0.0000**	**3,157.9986**	**3,157.9986**	**0.0785**	**0.0000**	**3,159.6475**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2108	1.9217				0.0813	0.0813		0.0765	0.0765	0.0000	357.6456	357.6456	0.0839	0.0000	359.4078
Total	**0.2108**	**1.9217**				**0.0813**	**0.0813**		**0.0765**	**0.0765**	**0.0000**	**357.6456**	**357.6456**	**0.0839**	**0.0000**	**359.4078**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5201	2.7863			0.4789	0.0629	0.5418	0.1372	0.0578	0.1951	0.0000	1,479.0224	1,479.0224	0.0106	0.0000	1,479.2455
Worker	0.4815	0.6828			2.3656	0.0172	2.3829	0.6291	0.0160	0.6451	0.0000	1,678.9762	1,678.9762	0.0679	0.0000	1,680.4020

Total	**1.0015**	**3.4691**			**2.8445**	**0.0801**	**2.9246**	**0.7663**	**0.0738**	**0.8401**	**0.0000**	**3,157.9986**	**3,157.9986**	**0.0785**	**0.0000**	**3,159.6475**

3.5 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2108	1.9217				0.0813	0.0813		0.0765	0.0765	0.0000	357.6460	357.6460	0.0839	0.0000	359.4082
Total	**0.2108**	**1.9217**				**0.0813**	**0.0813**		**0.0765**	**0.0765**	**0.0000**	**357.6460**	**357.6460**	**0.0839**	**0.0000**	**359.4082**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5139	2.7666			0.4790	0.0630	0.5420	0.1373	0.0580	0.1952	0.0000	1,479.5667	1,479.5667	0.0107	0.0000	1,479.7903
Worker	0.4630	0.6543			2.3656	0.0173	2.3829	0.6291	0.0161	0.6452	0.0000	1,663.0693	1,663.0693	0.0660	0.0000	1,664.4555
Total	**0.9769**	**3.4209**			**2.8446**	**0.0803**	**2.9250**	**0.7664**	**0.0740**	**0.8404**	**0.0000**	**3,142.6360**	**3,142.6360**	**0.0767**	**0.0000**	**3,144.2458**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2108	1.9217				0.0813	0.0813		0.0765	0.0765	0.0000	357.6456	357.6456	0.0839	0.0000	359.4078
Total	**0.2108**	**1.9217**				**0.0813**	**0.0813**		**0.0765**	**0.0765**	**0.0000**	**357.6456**	**357.6456**	**0.0839**	**0.0000**	**359.4078**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.5139	2.7666			0.4790	0.0630	0.5420	0.1373	0.0580	0.1952	0.0000	1,479.5667	1,479.5667	0.0107	0.0000	1,479.7903
Worker	0.4630	0.6543			2.3656	0.0173	2.3829	0.6291	0.0161	0.6452	0.0000	1,663.0693	1,663.0693	0.0660	0.0000	1,664.4555
Total	**0.9769**	**3.4209**			**2.8446**	**0.0803**	**2.9250**	**0.7664**	**0.0740**	**0.8404**	**0.0000**	**3,142.6360**	**3,142.6360**	**0.0767**	**0.0000**	**3,144.2458**

3.5 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Off-Road	0.1325	1.2075				0.0511	0.0511		0.0481	0.0481	0.0000	224.7278	224.7278	0.0527	0.0000	225.8351
Total	**0.1325**	**1.2075**				**0.0511**	**0.0511**		**0.0481**	**0.0481**	**0.0000**	**224.7278**	**224.7278**	**0.0527**	**0.0000**	**225.8351**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3185	1.7258			0.3011	0.0395	0.3406	0.0863	0.0364	0.1227	0.0000	930.0072	930.0072	6.6800e-003	0.0000	930.1475
Worker	0.2802	0.3949			1.4865	0.0109	1.4974	0.3953	0.0101	0.4054	0.0000	1,036.3456	1,036.3456	0.0404	0.0000	1,037.1944
Total	**0.5987**	**2.1207**			**1.7875**	**0.0505**	**1.8380**	**0.4816**	**0.0465**	**0.5281**	**0.0000**	**1,966.3528**	**1,966.3528**	**0.0471**	**0.0000**	**1,967.3419**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1325	1.2075				0.0511	0.0511		0.0481	0.0481	0.0000	224.7275	224.7275	0.0527	0.0000	225.8348
Total	**0.1325**	**1.2075**				**0.0511**	**0.0511**		**0.0481**	**0.0481**	**0.0000**	**224.7275**	**224.7275**	**0.0527**	**0.0000**	**225.8348**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3185	1.7258			0.3011	0.0395	0.3406	0.0863	0.0364	0.1227	0.0000	930.0072	930.0072	6.6800e-003	0.0000	930.1475
Worker	0.2802	0.3949			1.4865	0.0109	1.4974	0.3953	0.0101	0.4054	0.0000	1,036.3456	1,036.3456	0.0404	0.0000	1,037.1944
Total	**0.5987**	**2.1207**			**1.7875**	**0.0505**	**1.8380**	**0.4816**	**0.0465**	**0.5281**	**0.0000**	**1,966.3528**	**1,966.3528**	**0.0471**	**0.0000**	**1,967.3419**

3.6 Paving - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0512	0.4800				0.0234	0.0234		0.0216	0.0216	0.0000	111.6821	111.6821	0.0361	0.0000	112.4406
Paving	0.0124					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0635**	**0.4800**				**0.0234**	**0.0234**		**0.0216**	**0.0216**	**0.0000**	**111.6821**	**111.6821**	**0.0361**	**0.0000**	**112.4406**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2400e-003	1.7400e-003			6.5600e-003	5.0000e-005	6.6000e-003	1.7400e-003	4.0000e-005	1.7900e-003	0.0000	4.5704	4.5704	1.8000e-004	0.0000	4.5741
Total	**1.2400e-003**	**1.7400e-003**			**6.5600e-003**	**5.0000e-005**	**6.6000e-003**	**1.7400e-003**	**4.0000e-005**	**1.7900e-003**	**0.0000**	**4.5704**	**4.5704**	**1.8000e-004**	**0.0000**	**4.5741**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0512	0.4800				0.0234	0.0234		0.0216	0.0216	0.0000	111.6819	111.6819	0.0361	0.0000	112.4405
Paving	0.0124					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0635**	**0.4800**				**0.0234**	**0.0234**		**0.0216**	**0.0216**	**0.0000**	**111.6819**	**111.6819**	**0.0361**	**0.0000**	**112.4405**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2400e-003	1.7400e-003			6.5600e-003	5.0000e-005	6.6000e-003	1.7400e-003	4.0000e-005	1.7900e-003	0.0000	4.5704	4.5704	1.8000e-004	0.0000	4.5741

Total	**1.2400e-003**	**1.7400e-003**			**6.5600e-003**	**5.0000e-005**	**6.6000e-003**	**1.7400e-003**	**4.0000e-005**	**1.7900e-003**	**0.0000**	**4.5704**	**4.5704**	**1.8000e-004**	**0.0000**	**4.5741**

3.6 Paving - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0442	0.4150				0.0203	0.0203		0.0186	0.0186	0.0000	96.5585	96.5585	0.0312	0.0000	97.2143
Paving	0.0107					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0549**	**0.4150**				**0.0203**	**0.0203**		**0.0186**	**0.0186**	**0.0000**	**96.5585**	**96.5585**	**0.0312**	**0.0000**	**97.2143**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0300e-003	1.4400e-003			5.6700e-003	4.0000e-005	5.7100e-003	1.5100e-003	4.0000e-005	1.5500e-003	0.0000	3.9228	3.9228	1.5000e-004	0.0000	3.9260
Total	**1.0300e-003**	**1.4400e-003**			**5.6700e-003**	**4.0000e-005**	**5.7100e-003**	**1.5100e-003**	**4.0000e-005**	**1.5500e-003**	**0.0000**	**3.9228**	**3.9228**	**1.5000e-004**	**0.0000**	**3.9260**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0442	0.4150				0.0203	0.0203		0.0186	0.0186	0.0000	96.5583	96.5583	0.0312	0.0000	97.2142
Paving	0.0107					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0549**	**0.4150**				**0.0203**	**0.0203**		**0.0186**	**0.0186**	**0.0000**	**96.5583**	**96.5583**	**0.0312**	**0.0000**	**97.2142**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0300e-003	1.4400e-003			5.6700e-003	4.0000e-005	5.7100e-003	1.5100e-003	4.0000e-005	1.5500e-003	0.0000	3.9228	3.9228	1.5000e-004	0.0000	3.9260
Total	**1.0300e-003**	**1.4400e-003**			**5.6700e-003**	**4.0000e-005**	**5.7100e-003**	**1.5100e-003**	**4.0000e-005**	**1.5500e-003**	**0.0000**	**3.9228**	**3.9228**	**1.5000e-004**	**0.0000**	**3.9260**

3.7 Architectural Coating - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Archit. Coating	19.9050					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0180	0.1206				5.4200e-003	5.4200e-003		5.4200e-003	5.4200e-003	0.0000	26.8900	26.8900	1.4700e-003	0.0000	26.9208
Total	**19.9230**	**0.1206**				**5.4200e-003**	**5.4200e-003**		**5.4200e-003**	**5.4200e-003**	**0.0000**	**26.8900**	**26.8900**	**1.4700e-003**	**0.0000**	**26.9208**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0585	0.0822			0.3225	2.3800e-003	0.3249	0.0858	2.2100e-003	0.0880	0.0000	223.2202	223.2202	8.5400e-003	0.0000	223.3996
Total	**0.0585**	**0.0822**			**0.3225**	**2.3800e-003**	**0.3249**	**0.0858**	**2.2100e-003**	**0.0880**	**0.0000**	**223.2202**	**223.2202**	**8.5400e-003**	**0.0000**	**223.3996**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	19.9050					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0180	0.1206				5.4200e-003	5.4200e-003		5.4200e-003	5.4200e-003	0.0000	26.8900	26.8900	1.4700e-003	0.0000	26.9208
Total	**19.9230**	**0.1206**				**5.4200e-003**	**5.4200e-003**		**5.4200e-003**	**5.4200e-003**	**0.0000**	**26.8900**	**26.8900**	**1.4700e-003**	**0.0000**	**26.9208**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0585	0.0822			0.3225	2.3800e-003	0.3249	0.0858	2.2100e-003	0.0880	0.0000	223.2202	223.2202	8.5400e-003	0.0000	223.3996
Total	**0.0585**	**0.0822**			**0.3225**	**2.3800e-003**	**0.3249**	**0.0858**	**2.2100e-003**	**0.0880**	**0.0000**	**223.2202**	**223.2202**	**8.5400e-003**	**0.0000**	**223.3996**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Unmitigated	11.0252	8.7115			17.3465	0.1029	17.4494	4.6386	0.0956	4.7342	0.0000	13,129.9711	13,129.9711	0.4442	0.0000	13,139.2994
Mitigated	11.0252	8.7115			17.3465	0.1029	17.4494	4.6386	0.0956	4.7342	0.0000	13,129.9711	13,129.9711	0.4442	0.0000	13,139.2994

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT

Apartments Mid Rise	8,177.60	8,892.00	7539.20	18,279,634	18,279,634
City Park	0.00	0.00	0.00		
Free-Standing Discount Store	8,341.00	10,356.90	8213.70	13,426,489	13,426,489
General Office Building	4,337.05	933.45	387.35	7,854,110	7,854,110
Parking Lot	0.00	0.00	0.00		
Research & Development	3,765.55	882.65	514.35	7,241,175	7,241,175
Total	24,621.20	21,065.00	16,654.60	46,801,408	46,801,408

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-...	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Free-Standing Discount Store	9.50	7.30	7.30	12.20	68.80	19.00	47.5	35.5	17
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.615666	0.034738	0.173074	0.111547	0.013802	0.004566	0.008754	0.006650	0.000627	0.000389	0.024637	0.002443	0.002743

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
NaturalGas Unmitigated	0.1891	1.6820				0.1307	0.1307		0.1307	0.1307	0.0000	1,871.4840	1,871.4840	0.0359	0.0343	1,882.8735

Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2,686.1895	2,686.1895	0.1204	0.0278	2,697.3326
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2,686.1895	2,686.1895	0.1204	0.0278	2,697.3326
NaturalGas Mitigated	0.1891	1.6820				0.1307	0.1307		0.1307	0.1307	0.0000	1,871.4840	1,871.4840	0.0359	0.0343	1,882.8735

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	1.26426e+007	0.0682	0.5826				0.0471	0.0471		0.0471	0.0471	0.0000	674.6565	674.6565	0.0129	0.0124	678.7623
City Park	0	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Free-Standing Discount Store	672600	3.6300e-003	0.0330				2.5100e-003	2.5100e-003		2.5100e-003	2.5100e-003	0.0000	35.8925	35.8925	6.9000e-004	6.6000e-004	36.1109
General Office Building	9.1186e+006	0.0492	0.4470				0.0340	0.0340		0.0340	0.0340	0.0000	486.6032	486.6032	9.3300e-003	8.9200e-003	489.5646
Parking Lot	0	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Research & Development	1.26365e+007	0.0681	0.6194				0.0471	0.0471		0.0471	0.0471	0.0000	674.3318	674.3318	0.0129	0.0124	678.4356
Total		**0.1891**	**1.6820**				**0.1307**	**0.1307**		**0.1307**	**0.1307**	**0.0000**	**1,871.4840**	**1,871.4840**	**0.0359**	**0.0343**	**1,882.8735**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					

Apartments Mid Rise	1.26426e+007	0.0682	0.5826				0.0471	0.0471		0.0471	0.0471	0.0000	674.6565	674.6565	0.0129	0.0124	678.7623
City Park	0	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Free-Standing Discount Store	672600	3.6300e-003	0.0330				2.5100e-003	2.5100e-003		2.5100e-003	2.5100e-003	0.0000	35.8925	35.8925	6.9000e-004	6.6000e-004	36.1109
General Office Building	9.1186e+006	0.0492	0.4470				0.0340	0.0340		0.0340	0.0340	0.0000	486.6032	486.6032	9.3300e-003	8.9200e-003	489.5646
Parking Lot	0	0.0000	0.0000				0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Research & Development	1.26365e+007	0.0681	0.6194				0.0471	0.0471		0.0471	0.0471	0.0000	674.3318	674.3318	0.0129	0.0124	678.4356
Total		**0.1891**	**1.6820**				**0.1307**	**0.1307**		**0.1307**	**0.1307**	**0.0000**	**1,871.4840**	**1,871.4840**	**0.0359**	**0.0343**	**1,882.8735**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	5.30006e+006	697.1791	0.0313	7.2100e-003	700.0711
City Park	0	0.0000	0.0000	0.0000	0.0000
Free-Standing Discount Store	2.0045e+006	263.6755	0.0118	2.7300e-003	264.7693
General Office Building	7.57555e+006	996.5014	0.0447	0.0103	1,000.6352
Parking Lot	651200	85.6600	3.8400e-003	8.9000e-004	86.0154
Research & Development	4.8895e+006	643.1736	0.0288	6.6500e-003	645.8416
Total		**2,686.1895**	**0.1204**	**0.0278**	**2,697.3326**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	5.30006e+006	697.1791	0.0313	7.2100e-003	700.0711
City Park	0	0.0000	0.0000	0.0000	0.0000
Free-Standing Discount Store	2.0045e+006	263.6755	0.0118	2.7300e-003	264.7693
General Office Building	7.57555e+006	996.5014	0.0447	0.0103	1,000.6352
Parking Lot	651200	85.6600	3.8400e-003	8.9000e-004	86.0154
Research & Development	4.8895e+006	643.1736	0.0288	6.6500e-003	645.8416
Total		**2,686.1895**	**0.1204**	**0.0278**	**2,697.3326**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Unmitigated	14.2111	0.1374				0.0650	0.0650		0.0650	0.0650	0.0000	68.9166	68.9166	0.0208	9.2000e-004	69.6399
Mitigated	14.2111	0.1374				0.0650	0.0650		0.0650	0.0650	0.0000	68.9166	68.9166	0.0208	9.2000e-004	69.6399

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.9905					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	11.8353					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	5.0900e-003	0.0000				3.5200e-003	3.5200e-003		3.4800e-003	3.4800e-003	0.0000	50.4215	50.4215	9.7000e-004	9.2000e-004	50.7284
Landscaping	0.3803	0.1374				0.0615	0.0615		0.0615	0.0615	0.0000	18.4950	18.4950	0.0198	0.0000	18.9115
Total	**14.2111**	**0.1374**				**0.0650**	**0.0650**		**0.0650**	**0.0650**	**0.0000**	**68.9166**	**68.9166**	**0.0208**	**9.2000e-004**	**69.6399**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.9905					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	11.8353					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	5.0900e-003	0.0000				3.5200e-003	3.5200e-003		3.4800e-003	3.4800e-003	0.0000	50.4215	50.4215	9.7000e-004	9.2000e-004	50.7284
Landscaping	0.3803	0.1374				0.0615	0.0615		0.0615	0.0615	0.0000	18.4950	18.4950	0.0198	0.0000	18.9115
Total	**14.2111**	**0.1374**				**0.0650**	**0.0650**		**0.0650**	**0.0650**	**0.0000**	**68.9166**	**68.9166**	**0.0208**	**9.2000e-004**	**69.6399**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	641.6146	0.6756	0.4188	785.6168
Mitigated	641.6146	0.6740	0.4184	785.4688

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	99.0341 / 62.4346	134.2728	0.1251	0.0772	160.8382
City Park	0 / 7.74463	3.5656	1.6000e-004	4.0000e-005	3.5804
Free-Standing Discount Store	14.0738 / 8.62586	18.9680	0.0178	0.0110	22.7427
General Office Building	112.861 / 69.1728	152.1086	0.1425	0.0880	182.3791
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Research & Development	312.226 / 0	332.6996	0.3902	0.2425	416.0764
Total		**641.6146**	**0.6756**	**0.4188**	**785.6168**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	99.0341 / 62.4346	134.2728	0.1248	0.0772	160.8109
City Park	0 / 7.74463	3.5656	1.6000e-004	4.0000e-005	3.5804
Free-Standing Discount Store	14.0738 / 8.62586	18.9680	0.0177	0.0110	22.7388
General Office Building	112.861 / 69.1728	152.1086	0.1421	0.0879	182.3481
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Research & Development	312.226 / 0	332.6996	0.3893	0.2423	415.9905
Total		**641.6146**	**0.6740**	**0.4184**	**785.4688**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	223.1697	13.1890	0.0000	500.1377
Unmitigated	437.5876	25.8607	0.0000	980.6621

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	699.2	141.9313	8.3879	0.0000	318.0772
City Park	0.56	0.1137	6.7200e-003	0.0000	0.2548
Free-Standing Discount Store	817.13	165.8700	9.8026	0.0000	371.7254
General Office Building	590.55	119.8763	7.0845	0.0000	268.6505
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Research & Development	48.26	9.7963	0.5790	0.0000	21.9542
Total		**437.5876**	**25.8607**	**0.0000**	**980.6621**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	356.592	72.3850	4.2778	0.0000	162.2194
City Park	0.2856	0.0580	3.4300e-003	0.0000	0.1299
Free-Standing Discount Store	416.736	84.5937	4.9993	0.0000	189.5799
General Office Building	301.18	61.1369	3.6131	0.0000	137.0118
Parking Lot	0	0.0000	0.0000	0.0000	0.0000

Research & Development	24.6126	4.9961	0.2953	0.0000	11.1967
Total		**223.1697**	**13.1890**	**0.0000**	**500.1377**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

RAMBOLL ENVIRON

ENVIRONMENT
& HEALTH

Via Electronic Mail

Nicholas Targ
Holland & Knight LLP
50 California Street, Suite 2800
San Francisco, CA 94111
nicholas.targ@hklaw.com

CONSUMER PRODUCTS EMISSION FACTOR FOR PROPOSED PROJECT IN RICHMOND, CALIFORNIA

Date August 8, 2016

Ramboll Environ
201 California Street
Suite 1200
San Francisco, CA 94111
USA

T +1 415 796 1950
F +1 415 398 5812
www.ramboll-environ.com

Dear Mr. Targ:

At your request, Ramboll Environ US Corporation (Ramboll Environ) has evaluated an appropriate consumer products emission factor for use in estimating emissions associated with new developments in Richmond, California. This factor is intended to replace the consumer products emissions factor currently in the California Emissions Estimator Model (CalEEMod®), for the volatile organic compound (VOC) emissions of consumer product for projects under development in Richmond, California, in Contra Costa County. Consumer products is a term that covers, for example, cleaning supplies, kitchen aerosols, cosmetics, and toiletries, many of which emit VOCs. The California Air Resources Board (ARB) regulates many consumer products and periodically implements more stringent regulations.

Ramboll Environ evaluated the currently used VOC emission factors for consumer products and, using the same methodology used to develop statewide and other location-specific emission factors, has developed a VOC emission factor for consumer products specific to Contra Costa County that incorporates the most recent ARB regulations for consumer products and is appropriate to use for developments that will be occupied no sooner than 2017.

VOC EMISSION FACTORS FOR CONSUMER PRODUCTS

CalEEMod®[1] was developed by Ramboll Environ (as ENVIRON International Corporation) in collaboration with the California Air Pollution Control Officers Association (CAPCOA) for use in developing emission inventories suitable for the California Environmental Quality Act (CEQA) analysis. The model is publicly available and employs widely accepted calculation methodologies for emission estimates combined with appropriate default data if site-specific information is not available.

[1] Software and User's Guide available publicly at www.caleemod.com. Version 2013.2.2.

In CalEEMod®, one VOC emission factor is used for consumer product usage for projects anywhere in California except the South Coast Air Quality Management District (SCAQMD). This emission factor has not changed since the launch of CalEEMod®, and is based on emission factors developed in 2008. The SCAQMD VOC emission factor for consumer products is also incorporated into CalEEMod® and is also based on 2008 data.[2] The City of San Francisco Environmental Planning department has developed a San Francisco-specific consumer product emission factor, which it applies in place of the CalEEMod® emission factor in the course of its CEQA analyses.[3] The CalEEMod® statewide, CalEEMod® SCAQMD, and San Francisco consumer product VOC emission factors are all in units of pounds of VOC per developed square foot of building per day. Table 1 summarizes these emission factors.

Table 1: Comparison of VOC Emission Factors for Consumer Products

Emission Factor Type	Total 2008 VOC Inventory (tons/day)	Total Building Square Footage	Consumer Products VOC Emission Factor (lb/square foot/day)
CalEEMod® statewide[a]	239.6	22,435,267,518	0.0000214
CalEEMod® SCAQMD[a]	Adjusted statewide: 222.1	Same as statewide	0.0000198
City of San Francisco Environmental Planning Department[b]	5.30	703,541,231	0.0000151

Notes:
[a] From CalEEMod® Users Guide, Appendix E
[b] See for example the recently approved Environmental Impact Report for the Golden State Warriors Event Center & Mixed-Use Development Project at Mission Bay Blocks 29-32, available online at http://www.gsweventcenter.com/Draft_SEIR_and_Appendices/Vol_3_GSW_MB_DSEIR.pdf.

The CalEEMod® value for statewide VOC emissions from consumer products is from the 2008 ARB Consumer Product Emission Inventory,[4] as is the value for San Francisco VOC emissions from consumer products.[5] For reference, the 2008 ARB almanac data for Contra Costa County show that total county VOC emissions in 2008 were 6.43 tons/day.[6]

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2 The SCAQMD emission factor accounts for SCAQMD Rule 1143.
3 See for example the recently approved Environmental Impact Report for the Golden State Warriors Event Center & Mixed-Use Development Project at Mission Bay Blocks 29-32, available online at http://www.gsweventcenter.com/Draft_SEIR_and_Appendices/Vol_3_GSW_MB_DSEIR.pdf.
4 From the CalEEMod® Users Guide, Appendix E, see http://www.arb.ca.gov/app/emsinv/emssumcat_query.php?F_YR=2008&F_DIV=-4&F_SEASON=A&SP=2009&F_AREA=CA#5.
5 See http://www.arb.ca.gov/app/emsinv/emssumcat_query.php?F_YR=2008&F_DIV=-4&F_SEASON=A&SP=2009&F_AREA=CO&F_CO=38&F_COAB=.
6 See http://www.arb.ca.gov/app/emsinv/emssumcat_query.php?F_YR=2008&F_DIV=-4&F_SEASON=A&SP=2009&F_AREA=CO&F_CO=7&F_COAB=.

The total building square footage CalEEMod® relies upon is from the Federal Emergency Management Agency (FEMA) HAZUS-MH software and represents the entire state.[7] The total building square footage the City of San Francisco Environmental Planning Department relies upon is San Francisco Planning Department 2011 Land Use data.

ARB REGULATIONS OF CONSUMER PRODUCTS SINCE 2008

ARB has adopted four regulatory amendments affecting consumer product VOC emissions since the CalEEMod® emissions inventory was developed in 2008. These regulations are increasingly stringent and have reduced the statewide VOC emissions inventory from consumer products. The most recent regulation, promulgated in 2013, shows the ARB 2013 consumer products inventory for the state. Table 2 shows the estimated statewide inventory in 2013 (taking into account earlier regulations) and estimated reductions from 2010 and 2013 amendments to the ARB consumer products regulation and, based on the Initial Statement of Reasons (ISOR) for the 2013 amendment, the total tons of VOC reductions achieved by each regulation after the effective date to show an estimated inventory for 2017.

[7] From the CalEEMod® Users Guide, Appendix E, see the HAZUS-MH Earthquake Technical Manual, Chapter 3.2.1.3.

Table 2: ARB Consumer Products Regulations Since 2008		
Year	**Proposed VOC Emissions Reductions following Regulatory Amendments (tons/day)**	**Statewide VOC Emissions from Consumer Products (tons/day)**
2013[a]	-	205
2010 Amendments effective January 1, 2014[a]	-5	200
2010 Amendments effective January 1, 2015[a]	-0.2	199.8
2013 Amendments effective January 1, 2017[a]	-4.1	195.7
2017 inventory adjusted from 2013 inventory by rule amendments	-	195.7
Notes: [a] See http://www.arb.ca.gov/regact/2013/cp2013/cp13isor.pdf		

As can be seen in Table 2, the total statewide VOC emissions inventory from consumer products will decrease from 205 tons/day in 2013 to about 195.7 tons/day in 2017. This is an 18.3% reduction, which is not incorporated into the latest version of CalEEMod®.

CONTRA COSTA COUNTY VOC EMISSION FACTOR FOR CONSUMER PRODUCTS

Using the same methods as applied by CalEEMod® and the City of San Francisco Environmental Planning Department, Ramboll Environ estimated a VOC emission factor for consumer product usage in Contra Costa County. The emission factor represents 2017 usage and population, as 2017 is the year when the most recent ARB consumer products regulatory amendments are fully effective. The ARB, in the ISOR for the 2013 amendments, gives the 2013 consumer products VOC emissions inventory as 205 tons/day, with amendments being implemented from 2013 to 2017. After January 1, 2017, the statewide consumer products VOC emissions inventory is 195.7 tons/day.

Table 3 shows, in addition to the 2008 and 2017 statewide VOC emissions inventories from consumer products, the California population in 2008 and 2017. Ramboll Environ used population growth to estimate total building square footage in 2017, also shown in Table 3. From this, Ramboll Environ calculated a 2017 consumer products VOC emission factor of 0.0000169 lb/square foot/day, which incorporates the emissions reductions from ARB rulemaking not included in CalEEMod®. This emission factor is lower than the CalEEMod® emission factor by 20.8%.

Table 3: Statewide Parameters for development of 2013 VOC Emission Factor from Consumer Products

Year	Total VOC Inventory (tons/day)[a]	California Population[b]	Total Building Square Footage[c]	Consumer Products VOC Emission Factor (lb/square foot/day)
2008, from CalEEMod®	239.6	36,856,222	22,435,267,518	0.0000214
2017	195.7	39,589,144	23,150,198,410	0.0000169

Notes:
[a] 2008 value from CalEEMod® Users Guide, Appendix E.
2017 value calculated from http://www.arb.ca.gov/regact/2013/cp2013/cp13isor.pdf.
[b] 2008 value from State of California, Department of Finance, California County Population Estimates and Components of Change by Year, July 1, 2000-2010. Sacramento, California, December 2011. Available online at http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-2/2000-10/documents/E-2_Report_July2000-2010_updated_with_2010_Census.xls.
2017 value from State of California, Department of Finance, State and County Population Projections by Race/Ethnicity and Age (5-year groups), 2010 through 2060 (as of July 1). Sacramento, California, December 2014. Available online at http://www.dof.ca.gov/Forecasting/Demographics/Projections/documents/P-2_Age5yr_CAProj_2010-2060.xls.
[c] 2008 value from CalEEMod® Users Guide, Appendix E.
2017 value calculated by Ramboll Environ using the growth in California population and the 2008 total building square footage.

Contra Costa County consumer products usage differs from the statewide average, as shown in Table 4. Table 4 shows the statewide and Contra Costa County 2008 Total VOC Inventories in tons/day, along with the 2008 statewide and Contra Costa County populations. On a per-capita basis, Contra Costa County emits 4.3% less VOC from consumer products than the statewide average.

Table 4: Statewide and Contra Costa County 2008 VOC Emissions from Consumer Products Per Capita

Geography	2008 Total VOC Inventory (tons/day)[a]	2008 Population[b]	Consumer Products VOC Emissions per Capita (lb/person/day)
California statewide	239.6	36,856,222	0.013
Contra Costa County	6.43	1,033,292	0.012
Contra Costa County VOC from consumer products efficiency per capita relative to statewide average			**4.3%**

Notes:
[a] Statewide value from the CalEEMod® Users Guide, Appendix E, see http://www.arb.ca.gov/app/emsinv/emssumcat_query.php?F_YR=2008&F_DIV=-4&F_SEASON=A&SP=2009&F_AREA=CA#5.
Contra Costa County value from http://www.arb.ca.gov/app/emsinv/emssumcat_query.php?F_YR=2008&F_DIV=-4&F_SEASON=A&SP=2009&F_AREA=CO&F_CO=7&F_COAB=.
[b] State of California, Department of Finance, California County Population Estimates and Components of Change by Year, July 1, 2000-2010. Sacramento, California, December 2011. Available online at http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-2/2000-10/documents/E-2_Report_July2000-2010_updated_with_2010_Census.xls.

Contra Costa County emits 4.3% fewer VOC emissions from consumer products than the statewide average. The calculated 2017 VOC emission factor for statewide consumer products is 0.0000169 tons/square foot/day. The adjusted 2017 VOC emission factor for Contra Costa County consumer products is 0.0000162 tons/square foot/day, with a per-capita efficiency credit of 4.3% from the statewide average.

Table 5: 2017 Contra Costa County VOC Emission Factor for Consumer Products				
Emission Factor Type	**Total VOC Inventory (tons/day)**	**Total Building Square Footage**	**Consumer Products VOC Emission Factor (lb/square foot/day)**	**Reduction from CalEEMod® Default Emission Factor**
CalEEMod® statewide	239.6	22,435,267,518	0.0000214	-
2017 Statewide inventory	195.7	23,150,198,410	0.0000169	20.8%
2017 Contra Costa County	**4.3% decrease for per capita emissions efficiency**		**0.0000162**	**24.2%**

The VOC emission factor of 0.0000162 from consumer products is appropriate for projects in Contra Costa County for operational years 2017 and beyond, using methodologies consistent with CalEEMod®. The emission factor incorporates the latest ARB regulations and is specific to land development in Contra Costa County, including the efficiency benefit in per capita emissions in Contra Costa County versus the state as a whole.

LIMITATIONS AND UNCERTANTIES

This updated emissions factor for consumer products relies on the statewide emissions estimates provided by the ARB in the most recent of its consumer products regulation regulatory support documents. The ARB periodically resurveys consumer product use in California. When a new updated consumer products survey is published, the updated inventory may be vary those regulatory emissions inventory estimates previously published by the ARB.

CLOSING

Please let us know if you have any questions about the analysis presented here.

Yours Sincerely,

Shari Beth Libicki, PhD
Principal
D +1 415 796 1933
slibicki@ramboll.com

Catherine Mukai, PE
Senior Manager
D +1 415 426 5014
cmukai@ramboll.com

Richmond South Shoreline Specific Plan – Sub Area 4
Health Risk Assessment



Prepared by:

RCH Group
11060 White Rock Road
Rancho Cordova, California 95670

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ATTACHMENTS

A - Health Risk Assessment Methodologies and Assumptions

B – CalEEMod Output Files

C – Exposure Reduction Measures

1.0 INTRODUCTION

This document presents results of a health risk assessment (HRA) associated with the Richmond South Shoreline Specific Plan (RSSSP or Specific Plan) in the City of Richmond, California. This HRA focuses on health impacts on existing residences from diesel equipment and haul truck emissions associated with the proposed project construction activities. Secondly, the proposed project would construct new residences and emissions of toxic air contaminants (TAC)[1] such as diesel particulate matter (DPM) could also adversely affect these new residents.[2] This HRA was conducted to determine the health impacts, in terms of excess cancer risk and non-cancer hazards, using the significance levels[3] identified by the Bay Area Air Quality Management District (BAAQMD)'s *CEQA Air Quality Guidelines*.[4] In accordance with the BAAQMD guidelines, this HRA also evaluated concentrations of particulate matter equal to or less than 2.5 micrometers (fine particulate or $PM_{2.5}$). This HRA was prepared based on the California Office of Environmental Health Hazard Assessment (OEHHA)'s *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*.[5]

The supporting methodology, assumptions, and detailed results used in this HRA are provided in **Attachment A: Health Risk Assessment and Attachment B: CalEEMod Output Files**. For existing and proposed residents, this HRA indicates less-than-significant exposures to the health impacts from the proposed project construction activities with construction mitigation measures. This HRA also indicates less-than-significant exposures for proposed residents to nearby existing emission sources such as Interstate 580 (I-580) and rail activities; and therefore, no further mitigation measures to reduce exposure levels are necessary. Nevertheless, **Attachment C: Exposure Reduction Measures** provides measures to reduce DPM exposure to proposed residents.

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[1] Toxic air contaminants (TAC) are a broad class of compounds known to cause morbidity or mortality. TAC are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., gasoline service stations, dry cleaners). TAC are typically found in low concentrations, even near their source (e.g., diesel particulate matter near a freeway). Because chronic exposure can result in adverse health effects, TAC are regulated at the regional, state, and Federal level.

[2] In 1998, the California Air Resources Board (CARB) classified diesel particulate matter (DPM) as a TAC, citing its potential to cause cancer and other health problems. The US Environmental Protection Agency (USEPA) concluded that long-term exposure to diesel engine exhaust is likely to pose a lung cancer hazard to humans and can also contribute to other acute and chronic health effects.

[3] In June of 2010, the Air District's adopted thresholds of significance were challenged in a lawsuit (California Building Industry Association v Bay Area Air Quality Management District). On December 15, 2015, the California Supreme Court (S213478) concluded that agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project's future users or residents. Nevertheless, an analysis of the health impacts from existing sources on the proposed residents is presented within this document.

[4] Bay Area Air Quality Management District. *CEQA Air Quality Guidelines*, May 2012, http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_Final_May%202012.ashx?la=en

[5] Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*, February 2015, http://oehha.ca.gov/air/hot_spots/hotspots2015.html

2.0 PROJECT OVERVIEW

The Richmond South Shoreline Specific Plan's general boundaries are Marina Way South to the west, the San Francisco Bay to the south, and I-580 to the north and east. The Specific Plan defines four sub-areas where potential land uses are envisioned to develop over time. This HRA focused on developing an assessment of the health impacts due to the construction activities within Sub Area 4. Existing residential areas are located south of the Plan Area within the Harbour View area, as well as to the north and east of the Specific Plan east of I-580. Sub Area 1 (bounded by the Port of Richmond on the west, I-580 on the north, and Marina Bay Parkway on the east) includes R&D, retail/commercial, and residential units. Sub Area 2 includes R&D, retail/commercial, and residential units. Sub Area 3 (bounded by Berkeley Global Campus on the south and I-580 on the north) includes R&D land use. Sub Area 4 (bounded by Berkeley Global Campus on the northwest and I-580 on the east) includes R&D, retail/commercial, and approximately 1,520 residential units.

3.0 ANALYSIS METHODOLGY

This HRA addresses DPM emissions from construction equipment such as cranes, loaders, excavators, and haul trucks from the proposed project and cumulative health impacts from nearby permitted stationary sources, local roadways, I-580, and rail activities. Regulatory models used to estimate health impacts include:

- CalEEMod (California Emissions Estimator Model Version 2013.2.2)[6] land use emissions model estimates emissions due to construction activities and operations.
- AERMOD (American Meteorological Society/ US Environmental Protection Agency (USEPA) Regulatory Model, Version 15181) is an atmospheric dispersion model which can simulate point, area, volume, and line emissions sources and has the capability to include simple, intermediate, and complex terrain along with meteorological conditions and multiple receptor locations.[7,8] AERMOD is commonly executed to yield 1-hour maximum and annual average concentrations (in $\mu g/m^3$) at each receptor.

Sensitive Receptors

Land uses such as schools, children's daycare centers, hospitals, and convalescent homes are considered to be more sensitive than the general public to poor air quality because the population groups associated with these uses have increased susceptibility to respiratory distress. Persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality. The

[6] California Emissions Estimator Model User's Guide, July 2013. http://www.caleemod.com/
[7] USEPA Preferred/Recommended Models, *AERMOD Modeling System*, https://www3.epa.gov/ttn/scram/dispersion_prefrec.htm#aermod
[8] Title 40 CFR Part 51, *Revision to the Guideline on Air Quality Models: Adoption of a Preferred General Purpose (Flat and Complex Terrain) Dispersion Model and Other Revisions; Final Rule,* http://www.epa.gov/ttn/scram/guidance/guide/appw_05.pdf

CARB has identified the following people as most likely to be affected by air pollution: children less than 14 years of age, the elderly over 65 years of age, athletes, and those with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive population groups.

Residential areas are considered more sensitive to air quality conditions than commercial and industrial areas, because people generally spend longer periods of time at their residences, resulting in greater exposure to ambient air quality conditions. Recreational uses are also considered sensitive, due to the greater exposure to ambient air quality conditions and because the presence of pollution detracts from the recreational experience. According to the BAAQMD, off-site workers are not considered sensitive receptors because all employers must follow regulations set forth by the Occupation Safety and Health Administration to ensure the health and well-being of their employees.

BAAQMD considers the relevant zone of influence for an assessment of air quality health risks to be within 1,000 feet of a project site. I-580, a four-lane freeway, is located directly north and east of the Specific Plan Sub-Area 4. North and east of I-580, the predominant land use is low/medium density residential neighborhoods. Additional residential areas are located southwest of Sub-Area 4 within the marina area. Nearby schools and daycare centers include Stege Elementary School; located to the northeast of the proposed project. Recreational uses in the project vicinity include the Booker T Anderson Park and Crescent Park. An active, railway corridor runs through the Plan Area and parallel to the eastern boundary of Sub Area 4 and I-580. The rail corridor connects to the Port of Richmond.

Impact Evaluation

This HRA was conducted following methodologies in OEHHA's *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*.[9] This was accomplished by applying the estimated concentrations at the receptors analyzed to the established cancer risk estimates and acceptable reference concentrations for non-cancer health effects.

Recent OEHHA's revisions to its *Guidance Manual* were primarily designed to ensure that the greater sensitivity of children to cancer and other health risks is reflected in HRA. For example, OEHHA now recommends that risks be analyzed separately for multiple age groups, focusing especially on young children and teenagers, rather than the past practice of analyzing risks to the general population, without distinction by age. OEHHA also now recommends that statistical "age sensitivity factors" be incorporated into a HRA, and that children's relatively high breathing rates be accounted for. On the other hand, the *Guidance Manual* revisions also include some changes that would reduce calculated health risks. For example, under the former guidance, OEHHA recommended that residential cancer risks be assessed by assuming 70 years of

[9] Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*, February 2015, http://oehha.ca.gov/air/hot_spots/hotspots2015.html

exposure at a residential receptor; under the *Guidance Manual*, this assumption is lessened to 30 years. **Attachment A: Health Risk Assessment Methodology and Assumptions** provides additional assumptions used within the health impact evaluation.

4.0 CONSTRUCTION ACTIVITIES

Project construction would generate short-term emissions of air pollutants, including fugitive dust and equipment exhaust emissions. The CalEEMod (California Emissions Estimator Model, Version 2013.2.2) was used to quantify construction-related pollutant emissions. CalEEMod output worksheets are included in **Attachment B: CalEEMod Output Files**. The proposed project would be developed over a period of thirteen years; 2017 through 2029.

Fugitive dust emissions (i.e., emissions released through means other than through a stack or tailpipe such as material handling and travel on unpaved surfaces) from grading and site preparation can create nuisances and localized health impacts. Construction-related fugitive dust emissions would vary from day to day, depending on the level and type of activity, silt content of the soil, and the weather. High winds (greater than 10 miles per hour) occur infrequently in the area, less than two percent of the time. In the absence of mitigation, construction activities may result in significant quantities of dust, and as a result, local visibility and particulate matter concentrations may be adversely affected on a temporary and intermittent basis during construction. Appropriate dust control measures would be implemented during construction through inclusion of BAAQMD's *Fugitive Dust Control Measures*. Therefore, the proposed project would not expose receptors to substantial fugitive dust concentrations from construction activities.

BAAQMD Fugitive Dust Control Measures: The construction contractor shall reduce construction-related air pollutant emissions by implementing BAAQMD's *Fugitive Dust Control Measures*, including:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- A publically visible sign shall be posted with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and

take corrective action with 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

A dust control efficiency of over 50 percent due to daily watering and other measures (e.g., limiting vehicle speed to 15 mph, management of stockpiles, screening process controls, etc.) is typical. Based on CalEEMod, one water application per day reduces fugitive dust by 34 percent, two water applications per day reduces fugitive dust by 55 percent, and three water applications per day reduces fugitive dust by 61 percent.

Combustion emissions would result from the operation of off-road construction equipment, haul trucks, (primarily diesel-operated), and construction worker automobile trips (primarily gasoline-operated). Appropriate exhaust control measures would be implemented during construction through inclusion of BAAQMD's *Basic Exhaust Emissions Reduction Measures*.

BAAQMD Basic Exhaust Emissions Reduction Measures. The construction contractor shall implement the following measures during construction to reduce construction-related exhaust emissions:

- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

5.0 IMPACT ANALYSIS AND MITIGATION

This HRA addresses the DPM emissions from on-site construction equipment and haul trucks associated with the proposed project and cumulative impacts from nearby permitted sources, I-580, and nearby rail activities. Activities associated with construction of the other Sub Areas 1, 2, and 3, and the Port of Richmond are greater than 1,000 feet of proposed residences within Sub Area 4 and thus, were not included in the HRA per BAAQMD guidance.

The significance of potential impacts was determined based on State CEQA Guidelines, Appendix G, and the BAAQMD *CEQA Air Quality Guidelines*.[10] Using Appendix G evaluation thresholds, the proposed project would be considered to have significant health impacts if it were

[10] Bay Area Air Quality Management District. *CEQA Air Quality Guidelines*, May 2012, http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_Final_May%202012.ashx?la=en

to expose sensitive receptors to substantial pollutant concentrations. The thresholds of significance applied to assess project-level health impacts are:

- Exposure of persons by siting a new source or a new sensitive receptor to substantial levels of TAC resulting in (a) a cancer risk level greater than 10 in one million, (b) a noncancerous risk (chronic or acute) hazard index greater than 1.0, or (c) an increase of annual average $PM_{2.5}$ of greater than 0.3 micrograms per cubic meter ($\mu g/m^3$). For this threshold, sensitive receptors include residential uses, schools, parks, daycare centers, nursing homes, and medical centers.

The thresholds of significance applied to assess cumulative-level health impacts are:

- Exposure of persons, by siting a new source or a new sensitive receptor, to substantial levels of TAC during either construction or operation resulting in (a) a cancer risk level greater than 100 in a million, (b) a noncancer risk (chronic or acute) hazard index greater than 10.0, or (c) annual average $PM_{2.5}$ of greater than 0.8 $\mu g/m^3$.

For projects that are considered new sources of TAC or $PM_{2.5}$ (such as construction activity, stationary sources, industrial sources, or roadway projects), it is generally appropriate to use both the project-level and cumulative-level thresholds because the project-level threshold identifies project's incremental contribution to health impacts, while the cumulative threshold assesses project's cumulative contribution to health impacts. However, for projects that consist of new receptors (such as proposed residences or schools), it is generally appropriate to use only the cumulative-level threshold because the project itself is not a source of TAC or $PM_{2.5}$ and, thus, the individual project-level threshold is not relevant. The proposed project would be an exception because the construction would be phased over thirteen years during which a portion of the new residences would be constructed and inhabited. The cumulative risk threshold accounts for all potential sources of TAC and $PM_{2.5}$ in proximity to the new receptors on the project site. Therefore, the proposed project, which does include nearby existing receptors and proposed receptors, was compared to both the project-level and cumulative-level thresholds.

IMPACT: *Would the proposed project expose sensitive receptors to substantial concentrations of toxic air contaminants (TAC)?* **Less than Significant Impact with Mitigation**

The proposed project would constitute a new emission source of DPM and $PM_{2.5}$ due to its construction activities. Studies have demonstrated that DPM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to DPM poses a chronic health risk. The proposed project would also locate sensitive receptors near I-580, a source of DPM due to truck activities, rail activities, and nearby stationary sources.

Health effects from carcinogenic air toxics are usually described in terms of individual cancer risk. Individual cancer risk is the likelihood that a person exposed to air toxic concentrations over a 70-year lifetime will contract cancer, based on the use of standard risk-assessment methodology. The maximally exposed individual (MEI) represents the worst–case risk estimate,

based on a theoretical person continuously exposed for a lifetime at the point of highest compound concentration in the air. This is a highly conservative assumption, since most people do not remain at home all day and on average residents change residences every 11 to 12 years. In addition, this assumption assumes that residents are experiencing outdoor concentrations for the entire exposure period.

This HRA analyzes the incremental cancer risks to sensitive receptors in the vicinity of the proposed project, using emission rates (in pounds per hour) from CARB's CalEEMod emission model. DPM (reported as exhaust of $PM_{2.5}$) emission rates were input into the USEPA's AERMOD atmospheric dispersion model to calculate ambient air concentrations at receptors in the proposed project vicinity. This HRA is intended to provide a worst–case estimate of the increased exposure by employing a standard emission estimation program, an accepted pollutant dispersion model, approved toxicity factors, and conservative exposure parameters.

In accordance with OEHHA *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments,* this HRA was accomplished by applying the highest estimated concentrations of TAC at the receptors analyzed to the established cancer potency factors and acceptable reference concentrations for non-cancer health effects. The maximum DPM concentrations occurred at a residential receptor (also known as the MEI) within Landmark Place to the west of the proposed project. Increased cancer risks were calculated using the modeled DPM concentrations and OEHHA-recommended methodologies for both a child exposure (3rd trimester through 2 years of age) and adult exposure. The cancer risk calculations were based on applying the OEHHA-recommended age sensitivity factors and breathing rates, as well as fraction of time at home and an exposure duration of 30 years, to the DPM concentration exposures. Age-sensitivity factors reflect the greater sensitivity of infants and small children to cancer causing air pollutants. The supporting methodology and assumptions used in this HRA are provided in **Attachment A: Health Risk Assessment Methodology and Assumptions**.

These conservative methodologies overestimate both non-carcinogenic and carcinogenic health risk, possibly by an order of magnitude or more. Therefore, for carcinogenic risks, the actual probabilities of cancer formation in the populations of concern due to exposure to carcinogenic pollutants are likely to be lower than the risks derived using the HRA methodology. The extrapolation of toxicity data in animals to humans, the estimation of concentration prediction methods within dispersion models; and the variability in lifestyles, fitness and other confounding factors of the human population also contribute to the overestimation of health impacts. Therefore, the results of this HRA are highly overstated.

Cumulative Health Impact Methodology

The BAAQMD's *CEQA Air Quality Guidelines* also include standards and methods for determining the significance of cumulative health risk impacts. The method for determining cumulative health risk requires the tallying of health risk from permitted stationary sources,

major roadways and any other identified substantial TAC sources in the vicinity of a project site (i.e., within a 1,000-foot radius) and then adding the individual sources to determine whether the BAAQMD's cumulative health risk thresholds are exceeded.

BAAQMD has developed a geo-referenced database of permitted stationary emissions sources throughout the San Francisco Bay Area and the *Stationary Source Risk & Hazard Analysis Tool* for estimating cumulative health risks from the permitted sources. Four permitted sources are located within 1,000 feet of the proposed project. None of the four permitted sources are located within 1,000 feet of the existing receptors.

BAAQMD has also developed a geo-referenced database of roadways throughout the San Francisco Bay Area and has developed the *Highway Screening Analysis Tool* for estimating cumulative health risks from roadways. I-580 is located within 1,000 feet of the proposed project. BAAQMD *CEQA Air Quality Guidelines* also require the inclusion of surface streets within 1,000 feet of the proposed project with annual average daily traffic of 10,000 or greater. Upon review of nearby roadways, Carlson Boulevard, Meade Street, Seaport Avenue, and Seaver Avenue meet the criteria.[11] BAAQMD has developed a county-specific tool; *Roadway Screening Analysis Calculator*, for estimating cumulative health risks from minor roadways.

Health Impacts on Existing Residences

The following describes the HRA results associated with existing receptors due to unmitigated proposed project construction activities and cumulative emisson sources. As shown in **Table 1**, the maximum cancer risk from unmitigated proposed project construction emissions for a residential-adult receptor would be 0.4 per million and for a residential-child receptor would be 22.5 per million. The total maximum cancer risk from unmitigated proposed project construction emissions for a residential receptor would be 23.8 per million.[12] The maximum unmitigated cancer risk from construction emissions for a school child would be 0.2 per million. The maximum cancer risk from proposed project operational emissions (due to motor vehicle traffic on local roadways) would be 4.6 per million. The maximum concentrations would occur at a residential receptor (also known as the maximum exposed individual or MEI) on Hartnett Avenue to the northeast of the proposed project; approximately 250 feet from I-580. Thus, the cancer risk due to construction activities and project operations are potentially above the BAAQMD threshold of 10 per million and would be potentially significant.

[11] Fehr and Peers, Richmond Bay Specific Plan - Transportation and Traffic, April 4, 2016 and based on a ratio of 10 percent for peak hour to annual average daily traffic.

[12] This theoretical individual would be born on construction year 1 and subsequently be exposed to the full thirteen year construction period. Individuals born after construction year 1 would be exposed to shorter construction duration and thus, result in a lower risk and health impacts.

Table 1: Estimated Unmitigated Health Impacts for Existing Receptors

Source	Cancer Risk	Hazard Impact (acute/chronic)	$PM_{2.5}$ Concentration
	Proposed Project		
Unmitigated Proposed Project Construction	23.8	0.13/0.01	0.07
Proposed Project Operations	4.60	<0.01	0.05
Total Proposed Project	**28.4**	**0.13/0.01**	**0.12**
Significance Threshold	10	1.0	0.3
Potentially Significant (Yes or No)?	**Yes**	No	No

a Cancer Risk, Hazard Impact, and $PM_{2.5}$ Concentration values for permitted stationary sources are based on BAAQMD's *Stationary Source Risk & Hazard Analysis Tool*, dated May 30, 2012. Cancer Risk was adjusted by a factor of 2.6 to account for the Revised OEHHA Guidance Manual, See Attachment B for details.
b Cancer Risk, Hazard Impact, and $PM_{2.5}$ Concentration values for Interstate 580 are based on BAAQMD's Highway Screening Analysis Tool, dated April 29, 2011. Cancer Risk was adjusted by a factor of 2.6 to account for the Revised OEHHA Guidance Manual, See Attachment B for details.
c Cancer Risk, Health Impact, and $PM_{2.5}$ Concentration values for local roadways are based on BAAQMD's Roadway Screening Analysis Calculator, dated April 16, 2015. Cancer Risk was adjusted by a factor of 2.6 to account for the Revised OEHHA Guidance Manual, See Attachment B for details.
d Cancer Risk, Hazard Impact, and $PM_{2.5}$ Concentration values based on the assumption of the number of diesel locomotives passing by on a weekly basis. The AERMOD model was used to estimate maximum downwind concentrations and potential health risk at sensitive receptors from the rail line source.

Therefore, the proposed project would be required to implement **Mitigation Measure HRA-1**; BAAQMD's *Enhanced Exhaust Emission Reduction Measures*.

> ***Mitigation Measure HRA-1:*** *Implement Enhanced Exhaust Emissions Reduction Measures.* The applicant shall implement the following measures during construction to further reduce construction-related exhaust emissions:
>
> All off-road equipment greater than 25 horsepower (hp) and operating for more than 20 total hours over the entire duration of construction activities shall meet the following requirements:

1. Where access to alternative sources of power are available, portable diesel engines shall be prohibited; and
2. All off-road equipment shall have:
    a. Engines that meet or exceed either USEPA or CARB Tier 2 off-road emission standards, and
    b. Engines that are retrofitted with a CARB Level 3 Verified Diesel Emissions Control Strategy (VDECS). Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such are available.

As shown in **Table 2**, with the implementation of **Mitigation Measure HRA-1**, the maximum cancer risk from proposed project construction for a residential-adult receptor would be less than 0.1 per million and for a residential-child receptor would be 2.0 per million. The total maximum cancer risk from mitigated proposed project construction emissions for a residential receptor would be 2.3 per million. The maximum mitigated cancer risk from construction emissions for a school child would be 0.3 per million. The maximum cancer risk from proposed project operational emissions (due to motor vehicle traffic on local roadways) would be 4.6 per million. Thus, the cancer risk due to construction activities and project operations would be below the BAAQMD threshold of 10 per million and would be less than significant with mitigation.

Table 2: Estimated Mitigated Health Impacts for Existing Receptors

Source	Cancer Risk	Hazard Impact (acute/chronic)	$PM_{2.5}$ Concentration
	Proposed Project		
Mitigated Proposed Project Construction	2.26	0.01/<0.01	0.01
Proposed Project Operations	4.60	<0.01	0.05
Total Proposed Project	**6.86**	**0.01/0.01**	**0.06**
Significance Threshold	10	1.0	0.3
Potentially Significant (Yes or No)?	No	No	No

a Cancer Risk, Hazard Impact, and $PM_{2.5}$ Concentration values for permitted stationary sources are based on BAAQMD's *Stationary Source Risk & Hazard Analysis Tool*, dated May 30, 2012. Cancer Risk was adjusted by a factor of 2.6 to account for the Revised OEHHA Guidance Manual, See Attachment B for details.
b Cancer Risk, Hazard Impact, and $PM_{2.5}$ Concentration values for Interstate 580 are based on BAAQMD's Highway Screening Analysis Tool, dated April 29, 2011. Cancer Risk was adjusted by a factor of 2.6 to account for the Revised OEHHA Guidance Manual, See Attachment B for details.
c Cancer Risk, Health Impact, and $PM_{2.5}$ Concentration values for local roadways are based on BAAQMD's Roadway Screening Analysis Calculator, dated April 16, 2015. Cancer Risk was adjusted by a factor of 2.6 to account for the Revised OEHHA Guidance Manual, See Attachment B for details.
d Cancer Risk, Hazard Impact, and $PM_{2.5}$ Concentration values based on the assumption of the number of diesel locomotives passing by on a weekly basis. The AERMOD model was used to estimate maximum downwind concentrations and potential health risk at sensitive receptors from the rail line source.

CalEEMod estimated total proposed project exhaust $PM_{2.5}$ emissions (assumed to be DPM) for the off-road construction equipment. The total unmitigated exhaust $PM_{2.5}$ emissions would be approximately 1.90 tons over the thirteen year construction period. The total mitigated exhaust $PM_{2.5}$ emissions would be approximately 0.26 over the thirteen year construction period, which is an 86 percent control efficiency.

Non-Cancer Health Hazard Associated with Existing Receptors

Both acute (short-term) and chronic (long-term) adverse health impacts unrelated to cancer are measured against a hazard index (HI), which is defined as the ratio of the predicted incremental DPM exposure concentration from the proposed project to a reference exposure level (REL) that could cause adverse health effects. The REL are published by OEHHA based on epidemiological

research. The ratio (referred to as the Hazard Quotient [HQ]) of each non-carcinogenic substance that affects a certain organ system is added to produce an overall HI for that organ system. The overall HI is calculated for each organ system. The impact is considered to be significant if the overall HI for the highest-impacted organ system is greater than 1.0.

The chronic reference exposure level for DPM was established by the California OEHHA[14] as 5 $\mu g/m^3$. Thus, the proposed project-related annual concentration of DPM cannot exceed 5.0 $\mu g/m^3$; resulting in a chronic acute HI of greater than 1.0 (i.e., DPM annual concentration/5.0 $\mu g/m^3$). There is no acute REL for DPM. However, diesel exhaust does contain acrolein, formaldehyde and other compounds, which do have an acute REL. Based on DPM speciation data, acrolein emissions are approximately 1.3 percent of the total DPM emissions.[15] The acute REL for acrolein was established by the California OEHHA[16] as 2.5 $\mu g/m^3$. In total, acrolein emissions represent over 90 percent of the acute health impacts from diesel engines.

The unmitigated chronic HI would be 0.01, based on a proposed project-related maximum annual diesel concentration of 0.05 $\mu g/m^3$ (per dispersion modeling analysis) or 0.05 $\mu g/m^3$/5.0 $\mu g/m^3$, which is 0.01. The mitigated chronic HI would be less than 0.01. The chronic HI would be below the project-level threshold of 1 and the impact of the proposed project would therefore be less than significant.

The unmitigated acute HI would be 0.13, based on a project-related maximum 1-hour diesel concentration of 25.5 $\mu g/m^3$, respectively (per dispersion modeling analysis) and acrolein speciation of 1.3 percent for DPM or 25.5 $\mu g/m^3$/2.5 $\mu g/m^3$ times 1.3 percent, which is 0.13. The mitigated acute HI would be 0.01. The acute HI would be below the project-level threshold of 1 and the impact of the proposed project would therefore be less than significant.

$PM_{2.5}$ Concentration

Dispersion modeling also estimated the exposure of sensitive receptors to project-related concentrations of $PM_{2.5}$. The BAAQMD *Air Quality Guidelines* requires inclusion only of $PM_{2.5}$ exhaust emissions in this analysis (i.e., fugitive dust emissions are addressed under BAAQMD dust control measures which are required by law to be implemented during project construction). The proposed project's unmitigated annual $PM_{2.5}$ concentration from construction activities would be 0.07 $\mu g/m^3$. With implementation of **Mitigation Measure HRA-1**, the annual $PM_{2.5}$ concentration would be reduced to less than 0.01 $\mu g/m^3$. Thus, the annual $PM_{2.5}$ concentration

[14] California Office of Environmental Health Hazards Assessment - Acute, 8-hour, and Chronic Reference Exposure Levels, June 2014, http://www.oehha.ca.gov/air/allrels.html

[15] California Air Resources Board Speciation Profile 818 for Off-Road Diesel Emissions (Building Construction - Diesel)

[16] California Office of Environmental Health Hazards Assessment - Acute, 8-hour, and Chronic Reference Exposure Levels, June 2014**,** http://www.oehha.ca.gov/air/allrels.html

due to project construction would be below the BAAQMD threshold of 0.3 µg/m^3 and would be considered less than significant (see **Tables 1 and 2**).

Health Impacts on Proposed Residences

The following describes the health risk assessment associated with proposed residences as a result of existing cumulative sources such as permitted sources (i.e., diesel generators, gasoline stations), I-580, rail activities, Carlson Boulevard, Meade Street, Seaport Avenue, and Seaver Avenue as well as proposed project construction and operations.

The BAAQMD's *CEQA Air Quality Guidelines* include standards and methods for determining the significance of cumulative health risk impacts. The method for determining cumulative health risk requires the tallying of health risk from permitted stationary sources, major roadways and any other identified substantial air toxic sources in the vicinity of a project site (i.e., within a 1,000-foot radius) and then adding the individual sources to determine whether the BAAQMD's cumulative health risk thresholds are exceeded.

Table 3 shows the cumulative cancer risks, hazard indexes, and $PM_{2.5}$ concentrations (in µg/m^3) impacting the proposed project residences from I-580, BAAQMD-permitted stationary sources, rail activities, major and local roadways within 1,000 feet of the proposed project, and also includes the effects of proposed project construction activities. Due to the construction schedule, proposed residences would not be expected to occupy the Specific Plan unitl after construction year 3 (starting in the year of 2020) and thus, would be exposed to ten years of construction activities. The maximum concentrations would occur at a proposed residential receptor (also known as the MEI) near 47th Street and Montgomery Avenue; approximately 1,000 feet from I-580. The maximum cancer risk from unmitigated proposed project construction emissions for a new residential-adult receptor would be 8.0 per million and for a new residential-child receptor would be 77.7 per million. The total maximum cancer risk from unmitigated proposed project construction emissions for a new residential receptor would be 78.4 per million.[17] The maximum cancer risk from proposed project operational emissions (due to motor vehicle traffic on local roadways) would be 2.0 per million.

As shown in **Table 3**, the maximum cancer risk from mitigated (with implementation of **Mitigation Measure HRA-1**) proposed project construction emissions for a new residential-adult receptor would be 1.6 per million and for a new residential-child receptor would be 12.5 per million. The total maximum cancer risk from mitigated proposed project construction emissions for a new residential receptor would be 12.7 per million. The maximum cancer risk from proposed project operational emissions (due to motor vehicle traffic on local roadways)

[17] This theoretical individual would be born on construction year 4 and subsequently be exposed to ten year construction period. Individuals born after construction year 4 would be exposed to shorter construction duration and thus, result in a lower risk and health impacts.

would be 2.0 per million. The cumulative cancer risk, 60.5 per million, would be below the BAAQMD cumulative significance threshold of 100 per million for new residential receptors. Thus, the proposed project would be a less than significant health impact on proposed receptors.

Table 3: Estimated Mitigated Health Impacts for Proposed Receptors

Source	Cancer Risk	Hazard Impact (acute/chronic)	$PM_{2.5}$ Concentration
Mitigated Proposed Project Construction	12.7	0.01/0.01	0.03
Proposed Project Operations	1.98	<0.01	0.02
University of CA-Richmond, 1301 South 46th Street[a]	0.55	<0.01	<0.01
Wareham Property Group, 1337 South 46th Street[a]	0.44	<0.01	0.01
Allied Propane Service, 5000 Seaport Boulevard[a]	No risk/health impacts reported		
Smith & Company, 5100 Channel Avenue[a]	No risk/health impacts reported		
Interstate 580[b]	39.9	0.01/0.01	0.08
Carlson Boulevard[c]	Beyond 1,000 feet of the receptor		
Meade Street[c]	0.94	<0.01	0.01
Seaport Avenue[c]	0.08	<0.01	<0.01
Seaver Avenue[c]	Beyond 1,000 feet of the receptor		
Rail Activities[d]	3.86	0.01/<0.01	0.01
Cumulative Impact	**60.5**	**0.03/0.03**	**0.16**
Significance Threshold	100	10	0.8
Potentially Significant (Yes or No)?	No	No	No

a Cancer Risk, Hazard Impact, and $PM_{2.5}$ Concentration values for permitted stationary sources are based on BAAQMD's *Stationary Source Risk & Hazard Analysis Tool*, dated May 30, 2012. Cancer Risk was adjusted by a factor of 2.6 to account for the Revised OEHHA Guidance Manual, See Attachment B for details.
b Cancer Risk, Hazard Impact, and $PM_{2.5}$ Concentration values for Interstate 580 are based on BAAQMD's Highway Screening Analysis Tool, dated April 29, 2011. Cancer Risk was adjusted by a factor of 2.6 to account for the Revised OEHHA Guidance Manual, See Attachment B for details.
c Cancer Risk, Health Impact, and $PM_{2.5}$ Concentration values for local roadways are based on BAAQMD's Roadway Screening Analysis Calculator, dated April 16, 2015. Cancer Risk was adjusted by a factor of 2.6 to account for the Revised OEHHA Guidance Manual, See Attachment B for details.
d Cancer Risk, Hazard Impact, and $PM_{2.5}$ Concentration values based on the assumption of the number of diesel locomotives passing by on a weekly basis. The AERMOD model was used to estimate maximum downwind concentrations and potential health risk at sensitive receptors from the rail line source.

As a conservative estimate of cumulative health impacts on proposed receptors, the proposed receptor nearest to I-580 was also examined. This receptor is located within the northeastern portion of the proposed project and approximately 150 feet from I-580 (near 51st Street and Montgomery Avenue). The proposed project construction contribution at this receptor would be 7.0 per million. The maximum cancer risk from proposed project operational emissions (due to motor vehicle traffic on local roadways) would be 2.0 per million. The contribution from the rail activities would be 9.8 per million and the nearby stationary sources would contribute 1.0 per million. The contribution from I-580 would be 149 per million and the contribution from other roadways would be 1.0 per million. Thus, the maximum cumulative cancer risk for a proposed residence near I-580 would be 170 per million, which is above the BAAQMD threshold of 100 per million and would be potentially significant. Notably, the existing cancer risk due to I-580,

minor roadways, nearby stationary sources, and rail activities would be 161 per million[18]; which is already above the BAAQMD threshold of 100 per million; while the proposed project would contribute only 9.0 per million. The proposed project would not have a considerably significant contribution to the overall health impacts for existing receptors. To reduce the cumultive health impacts for proposed residences near I-580, **Mitigation Measure HRA-2** shall be implemented for proposed residences within 400 feet of I-580[19]:

> ***Mitigation Measure HRA-2:*** The Project sponsor shall install and operate in good working order an indoor air filtration system that meets or exceeds an efficiency standard of Minimum Efficiency Reporting Value (MERV) 13 (i.e., a filter efficiency of approximately 85 percent of particulates in the range of 1.0 to 3.0 micrometers) to limit DPM and other particulate and gaseous air toxics entry to the Project residential buildings. The filtration system shall use filters rated by American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)[20] to attain the prescribed level of pollutant reduction indoors. These filters shall be maintained and replaced according to manufacture specifications. Residences shall also be equipped with low-air infiltration windows and sealed doors to limit entry of air toxics from the outdoor air.
>
> The indoor air filtration system shall be maintained (e.g. filters changed on a prescribed basis) and repaired when necessary. An operation and maintenance manual shall be prepared for the system and the filters. The manual shall include the operating instructions and the maintenance and replacement schedule.
>
> The Project sponsor shall retain a qualified consultant during the design phase to locate the air intakes of the indoor ventilation system for each building at points that provide the maximum reduction of air toxics from the pollutant sources identified herein (i.e., at the farthest feasible point from site boundaries and the highest feasible point above ground level) to provide the cleanest intake air to residences.

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[18] The proposed project is within the city of Richmond, which is part of the seven Community Air Risk Evaluation program impacted communities in the Bay Area. The health impacts in the Bay Area, as determined both by pollution levels and by existing health vulnerabilities in a community, are approximately 160 cancer risk per million persons, while in Richmond, the health impact is approximately 218 cancer risk per million persons and the Specific Plan Area, the health impact is approximately 224 cancer risk per million persons. Bay Area Air Quality Management District, *Improving Air Quality and Health in Bay Area Communities, Community Air Risk Program Retrospective & Path Forward (2004 – 2013),* April 2014, http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CARE%20Program/Documents/CARE_Retrospective_April2014.ashx?la=en

[19] At 400 feet, the contribution from I-580 would decrease from 149 per million to 77 per million and the cumulative impacts would decrease from 170 per million to 98 per million; which is below the BAAQMD threshold of 100 per million.

[20] ASHRAE Standard 52.2-1992: "Method of Testing General Ventilation Air Cleaning Devices for Removal Efficiency by Particle Size."

As the proposed project construction schedule and project elements is not specifically known at this time, the applicant shall implement **Mitigation Measure HRA-3** prior to approval of a construction permit:

> ***Mitigation Measure HRA-3:*** *Project-specific Health Risk Assessment.* The project applicant shall retain a qualified air quality consultant to prepare a HRA in accordance with BAAQMD, CARB, and OEHHA requirements to determine the health risk of exposure of project residents to air pollutants. The HRA shall be prepared for development of a project that would introduce project residents in the Specific Plan Area within 1,000 feet of project construction and operations, I-580, rail activities, or permitted stationary sources. The HRA shall be submitted to the City for review and approval. Health impacts reduction measures shall be identified to reduce the health risk to acceptable levels. Identified risk reduction measures shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City.

Exposure Reduction Measures for Proposed Residences

Although not required, the following exposure reduction measures shall be considered in project design to reduce DPM exposure to proposed project residents (See **Attachment C: Exposure Reduction Measures** for further details)[21]:

- The proposed project shall consider locating residential units further than 400 feet from the nearest traffic lane for I-580. According to the USEPA, air pollutants from cars, trucks and other motor vehicles are found in higher concentrations near major roadways. People who live, work or attend school near major roadways appear to have an increased incidence and severity of health problems associated with air pollution exposures related to roadway traffic including higher rates of asthma onset and aggravation, cardiovascular disease, impaired lung development in children, pre-term and low-birthweight infants, childhood leukemia, and premature death. Research findings indicate that roadways generally influence air quality within a few hundred feet – about 500 to 600 feet downwind from the vicinity of heavily traveled roadways or along corridors with significant truck traffic. This distance will vary by location and time of day or year, prevailing meteorology, topography, nearby land use, traffic patterns, as well as the individual pollutant.[22]

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[21] Metropolitan Transportation Commission and Association of Bay Area Governments. *Plan Bay Area Environmental Impact Report*. April 2013. http://planbayarea.org/pdf/Draft_EIR_Chapters/Appendix_E_Air_Quality_Methodology_032713.pdf

[22] US Environmental Protection Agency, *Near Roadway Air Pollution and Health: Frequently Asked Questions*, August 2014, http://www3.epa.gov/otaq/documents/nearroadway/420f14044.pdf

- The proposed project shall consider installing and operating in good working order an indoor air filtration systems that meets or exceeds an efficiency standard of Minimum Efficiency Reporting Value (MERV) 13 (i.e., a filter efficiency of approximately 80 percent of fine particulates in the range of 1.0 to 3.0 micrometers) to limit DPM within proposed project residential units.
- The proposed project shall consider design elements to limit exposure from sources of DPM emissions. Locate operable windows, balconies, and building air intakes as far away as is feasible from I-580. Operable windows and balconies should be installed away from I-580 and other sources of air pollution (i.e., on the north side where the exposure concentrations are likely to be lower). Similarly, if mechanical ventilation is installed, the proposed project should consider installing inoperable windows along the south side.
- The proposed project shall consider phased residential development located within the setback distance of 500 feet from I-580 until 2023, or as late as feasible. According to CARB, DPM emissions from diesel trucks will decline by approximately 80 percent by 2023 as lower emitting trucks replace older vehicles.
- The proposed project shall consider planting trees between residential units and I-580. Large, evergreen trees with long-life spans work best in trapping $PM_{2.5}$. Planting certain trees can be an effective strategy for reducing exposure to air pollution. The presence of a noise barrier may also lead to pollutant concentration reductions.

6.0 REFERENCES

Bay Area Air Quality Management District. *Air Toxics New Source Review Program Health Risk Screening Analysis Guidelines*. January 2010. http://www.baaqmd.gov/~/media/Files/Engineering/Air%20Toxics%20Programs/hrsa_guidelines.ashx

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Office of Environmental Health Hazards Assessment. *Toxicity Criteria Database.* February 2015. http://www.oehha.ca.gov/tcdb/index.asp

United States Environmental Protection Agency. Preferred/Recommended Models, *AERMOD Modeling System*, https://www3.epa.gov/ttn/scram/dispersion_prefrec.htm#aermod

Attachment A

Health Risk Assessment Methodology and Assumptions

A health risk assessment (HRA) is accomplished in four steps: 1) hazards identification, 2) exposure assessment, 3) toxicity assessment, and 4) risk characterization. These steps cover the estimation of air emissions, the estimation of the air concentrations resulting from a dispersion analysis, the incorporation of the toxicity of the pollutants emitted, and the characterization of the risk based on exposure parameters such as breathing rate, age adjustment factors, and exposure duration; each depending on receptor type (i.e., residence, school, adult, child, recreational areas).

This HRA was conducted in accordance with technical guidelines developed by federal, state, and regional agencies, including U.S. Environmental Protection Agency (USEPA), California Environmental Protection Agency (CalEPA), California Office of Environmental Health Hazard Assessment (OEHHA) *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*[1] and the Bay Area Air Quality Management District (BAAQMD) *Health Risk Screening Analysis Guidelines*.[2] This HRA addresses the emissions from construction activities including onsite equipment and haul trucks. Specific focus is on diesel particulate matter (DPM) and particulate matter equal to or less than 2.5 micrometers (fine particulate or $PM_{2.5}$) emissions.

According to CalEPA, a HRA should not be interpreted as the expected rates of cancer or other potential human health effects, but rather as estimates of potential risk or likelihood of adverse effects based on current knowledge, under a number of highly conservative assumptions and the best assessment tools currently available.

TERMS AND DEFINITIONS

As the practice of conducting a HRA is particularly complex and involves concepts that are not altogether familiar to most people, several terms and definitions are provided that are considered essential to the understanding of the approach, methodology and results:

> *Acute effect* – a health effect (non-cancer) produced within a short period of time (few minutes to several days) following an exposure to toxic air contaminants (TAC).
>
> *Cancer risk* – the probability of an individual contracting cancer from a lifetime (i.e., 70 year) exposure to TAC such as DPM in the ambient air.

[1] Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*, February 2015, http://oehha.ca.gov/air/hot_spots/hotspots2015.html.

[2] Bay Area Air Quality Management District, BAAQMD *Health Risk Screening Analysis Guidelines*, January 2010, http://www.baaqmd.gov/~/media/Files/Engineering/Air%20Toxics%20Programs/hrsa_guidelines.ashx

Chronic effect – a health effect (non-cancer) produced from a continuous exposure occurring over an extended period of time (weeks, months, years).

Hazard Index (HI) – the unitless ratio of an exposure level over the acceptable reference dose. The HI can be applied to multiple compounds in an additive manner.

Hazard Quotient (HQ) – the unitless ratio of an exposure level over the acceptable reference dose. The HQ is applied to individual compounds.

Toxic air contaminants – any air pollutant that is capable of causing short-term (acute) and/or long-term (chronic or carcinogenic, i.e., cancer causing) adverse human health effects (i.e., injury or illness). The current California list of TAC lists approximately 200 compounds, including particulate emissions from diesel-fueled engines.

Human Health Effects - comprise disorders such as eye watering, respiratory or heart ailments, and other (i.e., non-cancer) related diseases.

Health Risk Assessment – an analysis designed to predict the generation and dispersion of TAC in the outdoor environment, evaluate the potential for exposure of human populations, and to assess and quantify both the individual and population-wide health risks associated with those levels of exposure.

Incremental – under CEQA, the net difference (or change) in conditions or impacts when comparing the baseline to future year project conditions.

Maximum exposed individual (MEI) – an individual assumed to be located at the point where the highest concentrations of TAC, and therefore, health risks are predicted to occur.

Non-cancer risks – health risks such as eye watering, respiratory or heart ailments, and other non-cancer related diseases.

Receptors – the locations where potential health impacts or risks are predicted (i.e., schools, residences, and recreational sites).

LIMITATIONS AND UNCERTAINTIES

There are a number of important limitations and uncertainties commonly associated with a HRA due to the wide variability of human exposures to TACs, the extended timeframes over which the exposures are evaluated and the inability to verify the results. Among these challenges are the following:

- The HRA exposure estimates do not take into account that people do not usually reside at the same location for 30 years and that other exposures (i.e., school children) are also of much shorter durations than was assumed in this analysis. Therefore, the results of the HRA are highly overstated for those cases.
- Other limitations and uncertainties associated with HRA and identified by the CalEPA include: (a.) lack of reliable monitoring data; (b.) extrapolation of toxicity data in animals

to humans; (c.) estimation errors in calculating TAC emissions; (d.) concentration prediction errors with dispersion models; and (e.) the variability in lifestyles, fitness and other confounding factors of the human population.

Health effects from carcinogenic air toxics are usually described in terms of individual cancer risk. Individual cancer risk is the likelihood that a person exposed to air toxic concentrations over a lifetime will contract cancer, based on the use of standard risk-assessment methodology. The MEI represents the worst–case risk estimate, based on a theoretical person continuously exposed for a lifetime at the point of highest compound concentration in the air. This is a highly conservative assumption, since most people do not remain at home all day and on average residents change residences every 11 to 12 years. In addition, this assumption assumes that residents are experiencing outdoor concentrations for the entire exposure period.

These conservative methodologies overestimate both non-carcinogenic and carcinogenic health risk, possibly by an order of magnitude or more. Therefore, for carcinogenic risks, the actual probabilities of cancer formation in the populations of concern due to exposure to carcinogenic pollutants are likely to be lower than the risks derived using the HRA methodology. The extrapolation of toxicity data in animals to humans, the estimation of concentration prediction methods within dispersion models; and the variability in lifestyles, fitness and other confounding factors of the human population also contribute to the overestimation of health impacts. Therefore, the results of this HRA are highly overstated.

HAZARDS IDENTIFICATION

California Air Resources Board (CARB) has developed a list of TAC, where a TAC is "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health (California Health and Safety Code Section 39655). All USEPA hazardous air pollutants are TAC. The CARB administers the Air Toxics "Hot Spots" program under Assembly Bill 2588 (AB2588) "Hot Spots" Information and Assessment Act, which requires periodic local review of facilities which emit TAC. Local air agencies periodically must prioritize stationary sources of TAC and prepare health risk assessments for high-priority sources.

Diesel exhaust is a complex mixture of numerous individual gaseous and particulate compounds emitted from diesel-fueled combustion engines. Diesel particulate matter is formed primarily through the incomplete combustion of diesel fuel. DPM is removed from the atmosphere through physical processes including atmospheric fall-out and washout by rain. Humans can be exposed to airborne DPM by deposition on water, soil, and vegetation; although the main pathway of exposure is inhalation.

In August 1998, the CARB identified DPM as an air toxic. The CARB developed the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel- Fueled Engines and Vehicles* and *Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled*

Engines and approved these documents on September 28, 2000.[3,4] The documents represent proposals to reduce DPM emissions, with the goal of reducing emissions and the associated health risk by 75 percent in 2010 and by 85 percent in 2020. The program aimed to require the use of state-of-the-art catalyzed DPM filters and ultra-low-sulfur diesel fuel.

In 2001, CARB assessed the state-wide health risks from exposure to diesel exhaust and to other toxic air contaminants. It is difficult to distinguish the health risks of diesel emissions from those of other air toxics, since diesel exhaust contains approximately 40 different TAC. The CARB study detected diesel exhaust by using ambient air carbon soot measurements as a surrogate for diesel emissions. The study reported that the state-wide cancer risk from exposure to diesel exhaust was about 540 per million population as compared to a total risk for exposure to all ambient air toxics of 760 per million. This estimate, which accounts for about 70 percent of the total risk from TAC, included both urban and rural areas in the state. The estimate can also be considered an average worst-case for the state, since it assumes constant exposure to outdoor concentrations of diesel exhaust and does not account for expected lower concentrations indoors, where most of time is spent.

COMMUNITY AIR RISK EVALUATION

The BAAQMD's Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposure to outdoor air toxics in the Bay Area. Based on findings of the latest report, DPM was found to account for approximately 85 percent of the cancer risk from airborne toxics. Carcinogenic compounds from gasoline-powered cars and light duty trucks were also identified as significant contributors: 1,3-butadiene contributed four percent of the cancer risk-weighted emissions, and benzene contributed three percent. Collectively, five compounds—DPM, 1,3-butadiene, benzene, formaldehyde, and acetaldehyde—were found to be responsible for more than 90 percent of the cancer risk attributed to emissions. All of these compounds are associated with emissions from internal combustion engines. The most important sources of cancer risk-weighted emissions were combustion-related sources of DPM, including on-road mobile sources (31 percent), construction equipment (29 percent), and ships and harbor craft (13 percent). A 75 percent reduction in DPM was predicted between 2005 and 2015 when the inventory accounted for CARB's diesel regulations. Overall, cancer risk from TAC dropped by more than 50 percent between 2005 and 2015, when emissions inputs accounted for state diesel regulations and other reductions.[5]

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[3] California Air Resources Board, *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles,* October 2000, http://www.arb.ca.gov/diesel/documents/rrpfinal.pdf

[4] California Air Resources Board, *Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines,* October 2000, http://www.arb.ca.gov/diesel/documents/rmgfinal.pdf

[5] Bay Area Air Quality Management District, *Improving Air Quality and Health in Bay Area Communities, Community Air Risk Program Retrospective & Path Forward (2004 – 2013),* April 2014, http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CARE%20Program/Documents/CARE_Retrospective_April2014.ashx?la=en

Modeled cancer risks from TAC in 2005 were highest near sources of DPM: near core urban areas, along major roadways and freeways, and near maritime shipping terminals. Peak modeled risks were found to be located east of San Francisco, near West Oakland, and the maritime Port of Oakland. BAAQMD has identified seven impacted communities in the Bay Area:

- Western Contra Costa County and the cities of Richmond and San Pablo.
- Western Alameda County along the Interstate 880 corridor and the cities of Berkeley, Alameda, Oakland, and Hayward.
- San Jose.
- Eastern side of San Francisco.
- Concord.
- Vallejo.
- Pittsburgh and Antioch.

The proposed project is within the city of Richmond, which is part of the seven CARE program impacted communities in the Bay Area. The health impacts in the Bay Area, as determined both by pollution levels and by existing health vulnerabilities in a community, are approximately 160 cancer risk per million persons, while in Richmond, the health impact is approximately 218 cancer risk per million persons and the Specific Plan Area, the health impact is approximately 224 cancer risk per million persons.[6]

EXPOSURE ASSESSMENT

Dispersion is the process by which atmospheric pollutants disseminate due to wind and vertical stability. The results of a dispersion analysis are used to assess pollutant concentrations at or near an emission source. The results of an analysis allow predicted concentrations of pollutants to be compared directly to air quality standards and other criteria such as health risks based on modeled concentrations.

A rising pollutant plume reacts with the environment in several ways before it levels off. First, the plume's own turbulence interacts with atmospheric turbulence to entrain ambient air. This mixing process reduces and eventually eliminates the density and momentum differences that cause the plume to rise. Second, the wind transports the plume during its rise and entrainment process. Higher winds mix the plume more rapidly, resulting in a lower final rise. Third, the plume interacts with the vertical temperature stratification of the atmosphere, rising as a result of buoyancy in the unstable-to-neutrally stratified mixed layer. However, after the plume encounters the mixing lid and the stably stratified air above, its vertical motion is dampened.

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[6] Bay Area Air Quality Management District, *Identifying Areas with Cumulative Impacts from Air Pollution in the San Francisco Bay Area*, March 2014, http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CARE%20Program/Documents/ImpactCommunities_2_Methodology.ashx?la=en

Molecules of gas or small particles injected into the atmosphere will separate from each other as they are acted on by turbulent eddies. The Gaussian mathematical model such as AERMOD simulates the dispersion of the gas or particles within the atmosphere. The formulation of the Gaussian model is based on the following assumptions:

- The predictions are not time-dependent (all conditions remain unchanged with time)
- The wind speed and direction are uniform, both horizontally and vertically, throughout the region of concern
- The rate of diffusion is not a function of position
- Diffusion in the direction of the transporting wind is negligible when compared to the transport flow

Dispersion Modeling Approach

Air dispersion modeling was performed to estimate the downwind dispersion of DPM exhaust emissions resulting from construction activities. The following sections present the fundamental components of an air dispersion modeling analysis including air dispersion model selection and options, receptor locations, meteorological data, and source exhaust parameters.

Model Selection and Options

AERMOD (Version 15181)[7] was used for the dispersion analysis. AERMOD is the USEPA preferred atmospheric dispersion modeling system for general industrial sources. The model can simulate point, area, volume, and line sources. AERMOD is the appropriate model for this analysis based on the coverage of simple, intermediate, and complex terrain. It also predicts both short-term and long-term (annual) average concentrations. The model was executed using the regulatory default options (stack-tip downwash, buoyancy-induced dispersion, and final plume rise), default wind speed profile categories, default potential temperature gradients, and assuming no pollutant decay.

The selection of the appropriate dispersion coefficients depends on the land use within three kilometers (km) of the project site. The types of land use were based on the classification method defined by Auer (1978); using pertinent United States Geological Survey (USGS) 1:24,000 scale (7.5 minute) topographic maps of the area. If the Auer land use types of heavy industrial, light-to-moderate industrial, commercial, and compact residential account for 50 percent or more of the total area, the USEPA *Guideline on Air Quality Models* recommends using urban dispersion coefficients; otherwise, the appropriate rural coefficients can be used. Based on observation of the area surrounding the project site, rural (urban is only designated within dense city centers such as downtown San Francisco) dispersion coefficients were applied AERMOD.

[7] US Environmental Protection Agency, AERMOD Modeling System, http://www.epa.gov/scram001/dispersion_prefrec.htm

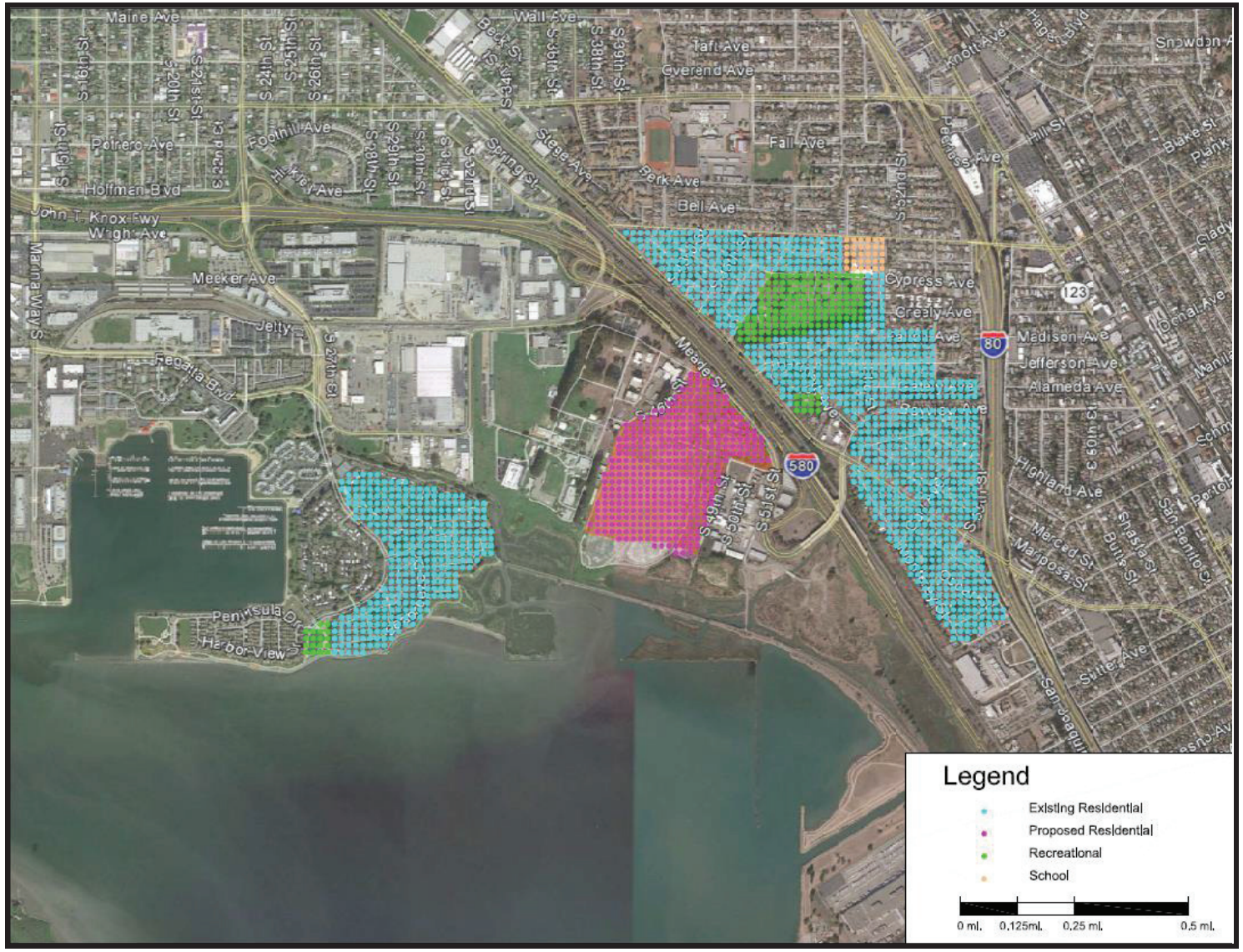
Receptor Locations

Some receptors are considered more sensitive to air pollutants than others, because of preexisting health problems, proximity to the emissions source, or duration of exposure to air pollutants. Land uses such as primary and secondary schools, hospitals, and convalescent homes are considered to be relatively sensitive to poor air quality because the very young, the old, and the infirm are more susceptible to respiratory infections and other air quality-related health problems than the general public. Residential areas are also considered sensitive to poor air quality because people in residential areas are often at home for extended periods. Recreational land uses are moderately sensitive to air pollution because vigorous exercise associated with recreation places having a high demand on respiratory system function.

I-580, a four-lane freeway, is located directly north and east of the Specific Plan Sub-Area 4. North and east of I-580, the predominant land use is low/medium density residential neighborhoods. Additional residential areas are located southwest of Sub-Area 4 within the marina area. Nearby schools and daycare centers include Stege Elementary School; located to the northeast of the proposed project. Recreational uses in the project vicinity include the Booker T Anderson Park and Crescent Park. An active, railway corridor runs through the Plan Area and parallel to the eastern boundary of Sub Area 4 and I-580. The rail corridor connects to the Port of Richmond.

Receptors were placed at a height of 1.8 meters (typical breathing height). Terrain elevations for receptor locations were used (i.e., complex terrain) based on available USGS information for the area. Sensitive receptors were placed at existing residences and schools to estimate health impacts due to proposed project construction on existing receptors. Sensitive receptors were also placed at the proposed project to estimate health impacts on new residences due to proposed project construction and from existing sources such as the I-580, rail activities, and nearby permitted sources. **Figure A-1** displays the location of the sensitive receptors used in this HRA.

FIGURE A-1
HEALTH RISK ASSESSMENT RECEPTORS



Meteorological Data

Air quality is a function of both the rate and location of pollutant emissions under the influence of meteorological conditions and topographic features affecting pollutant movement and dispersal. Atmospheric conditions such as wind speed, wind direction, atmospheric stability, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants, and consequently affect air quality.

Hourly meteorological data from BAAQMD's University of California at Richmond monitoring station (surface data), located approximately two miles to the east of the proposed project, and Oakland International Airport (upper air) were used in the dispersion modeling analysis. Meteorological data from 2004 through 2009 were used (the most recent available data from the BAAQMD's monitoring station). **Figure A-2** displays the wind rose during this five year period. Wind directions are predominately from the south-southwest and a low frequency of calm conditions with moderate wind speed conditions, as shown in **Figure A-3**. The average annual wind speed is 6.9 miles per hour.

Source Release Characteristics

Construction equipment activities were treated as an area source. The release height of the off-road equipment exhaust was 3.05 meters. Haul trucks were treated as a line source (i.e., volume sources placed at regular intervals) located along an access road. The haul trucks were assigned a release height of 3.05 meters and an initial vertical dimension of 4.15 meters, which accounts for dispersion from the movement of vehicles. Typically, construction activities would occur between 8 a.m. and 5 p.m. (eight hours per day), on Monday through Friday. **Table A-1** provides the estimate annual construction (from haul truck plus on-site equipment and on-site equipment only) exhaust $PM_{2.5}$ emissions, by year, based on CalEEMod.

TABLE A-1
ANNUAL CONSTRUCTION EXHAUST $PM_{2.5}$ EMISSIONS (TONS)

Construction Year	Unmitigated Total Exhaust $PM_{2.5}$ Emissions	Unmitigated On-Site Exhaust $PM_{2.5}$ Emissions	Mitigated DPF2 Total Exhaust $PM_{2.5}$ Emissions	Mitigated DPF2 On-Site Exhaust $PM_{2.5}$ Emissions	Mitigated DPF3 Total Exhaust $PM_{2.5}$ Emissions	Mitigated DPF3 On-Site Exhaust $PM_{2.5}$ Emissions
2017	0.3495	0.3375	0.0823	0.0704	0.0331	0.0211
2018	0.3949	0.3918	0.1046	0.1014	0.0336	0.0304
2019	0.2785	0.1871	0.1612	0.0698	0.1123	0.0209
2020	0.2463	0.1627	0.1537	0.0701	0.1047	0.0210
2021	0.2156	0.1390	0.1464	0.0698	0.0975	0.0209
2022	0.1923	0.1170	0.1449	0.0695	0.0962	0.0209
2023	0.1750	0.1011	0.1434	0.0695	0.0947	0.0209
2024	0.1640	0.0893	0.1448	0.0701	0.0958	0.0210
2025	0.1513	0.0813	0.1446	0.0698	0.0958	0.0209
2026	0.1503	0.0765	0.1436	0.0698	0.0948	0.0209
2027	0.1505	0.0765	0.1439	0.0698	0.0950	0.0209
2028	0.1162	0.1197	0.1075	0.0610	0.0648	0.0183
2029	0.0263	0.0240	0.0220	0.0197	0.0082	0.0059

SOURCE: CalEEMod Version 2013.2.2

Model parameters for volume sources include emission rate, release height, and plume width. Locomotive switch/line haul activities for the rail operations are simulated as volume sources with a release height of 4.15 meters, and a plume width of twelve meters.

Terrain elevations for emission source locations were used (i.e., complex terrain) based on available USGS DEM for the area. AERMAP (Version 11103)[8] was used to develop the terrain elevations.

[8] US Environmental Protection Agency, AERMAP, https://www3.epa.gov/ttn/scram/dispersion_prefrec.htm#aermod.

FIGURE A-2
WINDROSE FOR UNIVERSITY OF CALIFORNIA AT RICHMOND

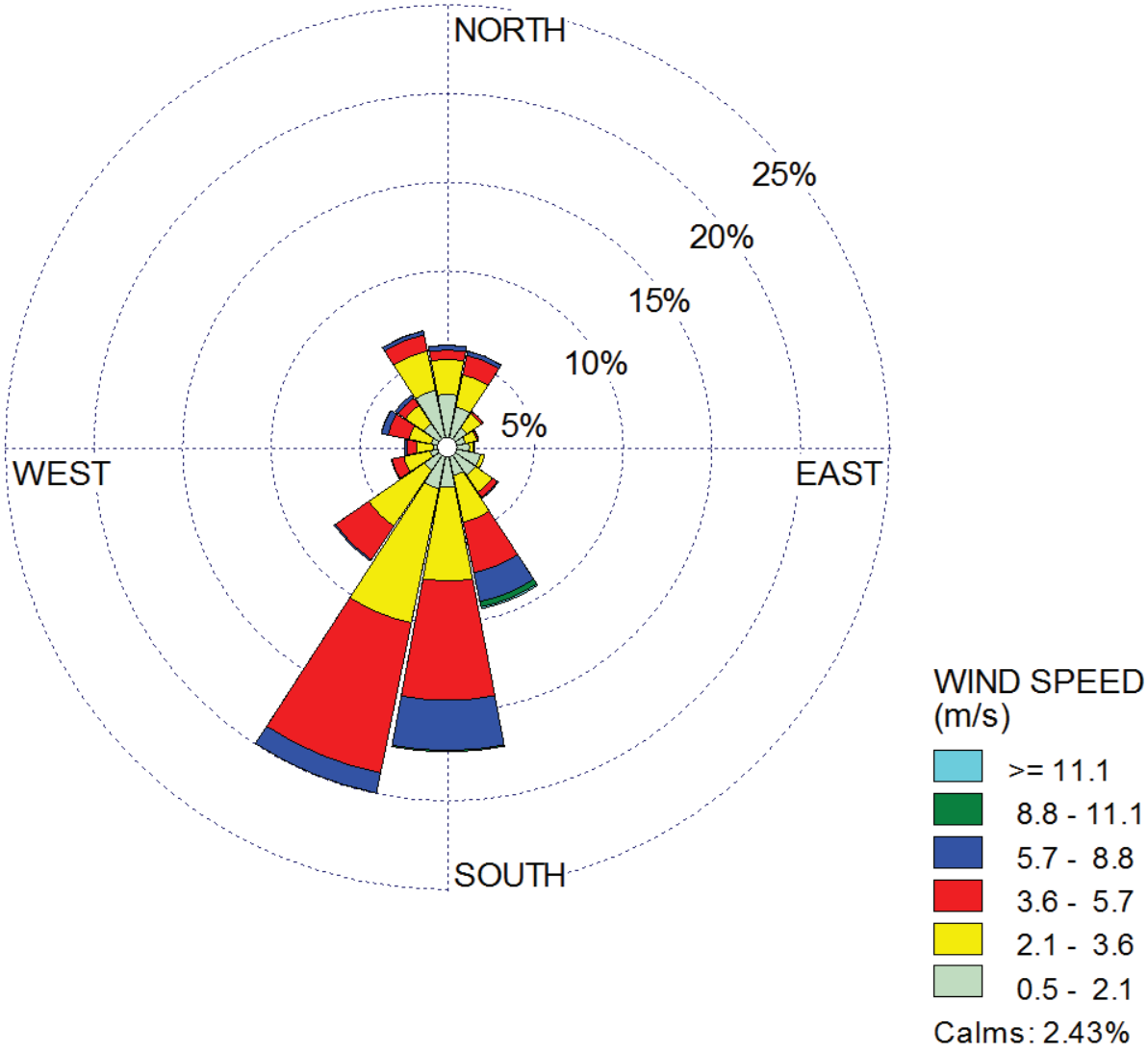
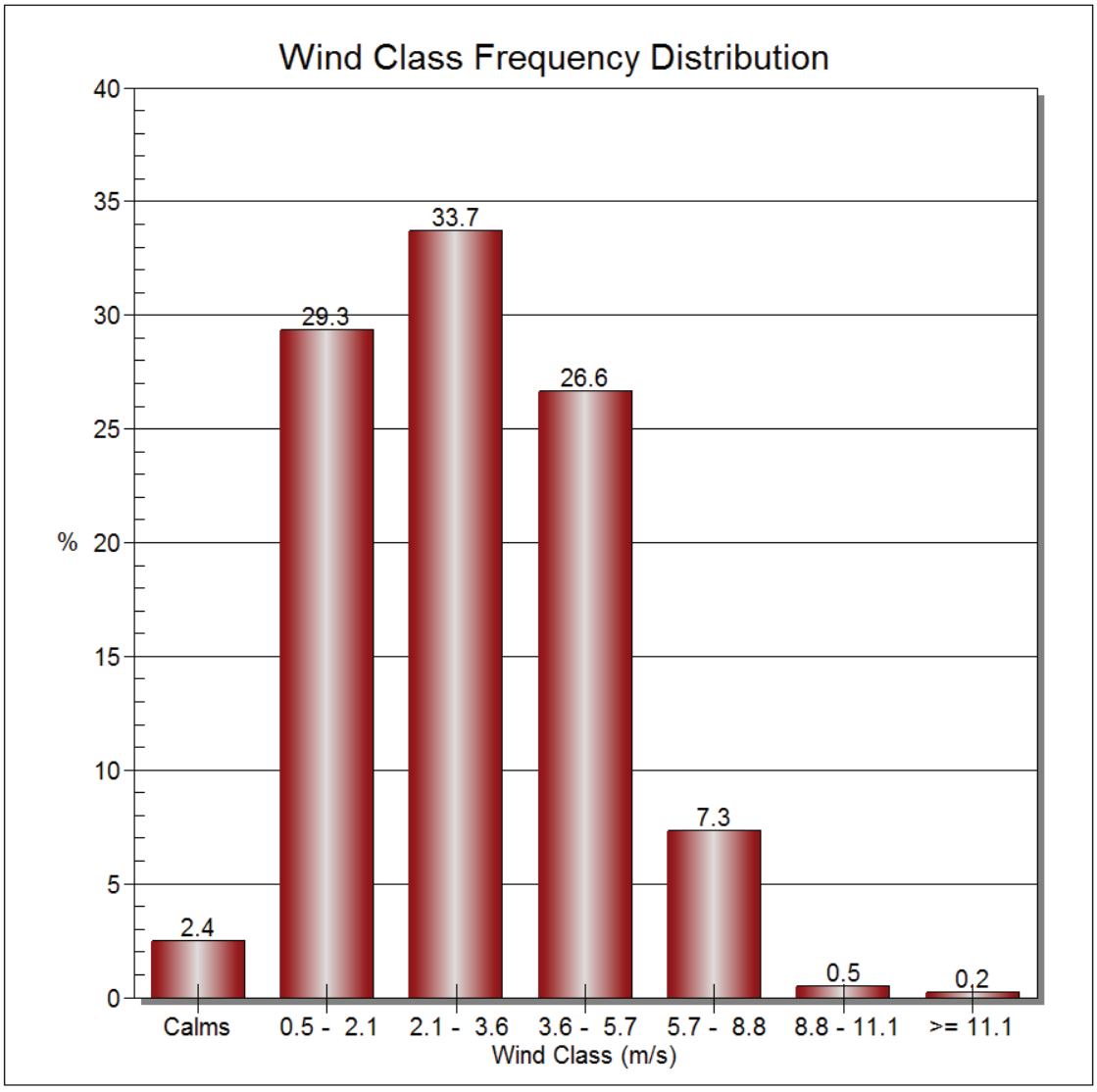


FIGURE A-3
WIND SPEED DISTRIBUTION FOR UNIVERSITY OF CALIFORNIA AT RICHMOND



Temporal factors (**Table A-2**) were used to describe the relationship of activity levels in one period of time to another period of time (i.e., the relationship of the activity during one-hour to the activity during a 24-hour period) for rail operations. The use of temporal factors gives the model the ability to more accurately reflect real world conditions.

TABLE A-2
EMISSION SOURCE TEMPORAL DISTRIBUTION FOR RAIL ACTIVITIES

Period	Activity Distribution	Hours per Day
6 a.m. – 6 p.m.	0.80	12
6 p.m. – 6 a.m.	0.20	12

SOURCE: California Air Resources Board, *Diesel Particulate Matter Exposure Assessment Study for the Ports of Los Angeles and Long Beach*, April 2006, http://www.arb.ca.gov/ports/marinevess/documents/portstudy0406.pdf.

Railroad operations are typically described in terms of two different types of operation, line haul and switching. Line haul operations involve long-distance transportation between a port of call and points across the country whereas switching is the local movement of railcars to prepare them for line haul transportation or to distribute them to destination terminals upon their arrival.

The types of information available for these two types of activity differs – for the switching locomotives, information on each locomotive and its activity (e.g., fuel use and throttle notch setting frequency) can be used to estimate emissions, whereas for the line haul locomotives the information is more general (e.g., in terms of fuel use per ton of cargo and total tons of cargo carried). Published emissions information for switch and line haul locomotive operations in both throttle notch and fuel consumption modes along with facility operational data was used to estimate emissions.[9]

Locomotives operate differently from other types of mobile sources with respect to how they transmit power from engine to wheels. While most mobile sources use a physical coupling such as a transmission to transfer power from the engine to the wheels, a locomotive's engine turns a generator or alternator powering an electric motor that, in turn, powers the locomotive's wheels. The physical connection of a typical mobile source means that the engine's speed is dictated by the vehicle's speed through a fixed set of gear ratios, resulting in the highly transient operating conditions (particularly engine speed and load) that characterize mobile source operations.

In contrast, the locomotive's engine and drive system operate more independently, such that the engine can be operated at a particular speed without respect to the speed of the locomotive itself. This allows operation under more steady-state load and speed conditions, and as a result locomotives have been designed to operate in a series of discrete throttle settings called notches, ranging from notch positions one through eight, plus an idle position.

Many locomotives also have a feature known as dynamic braking, in which the electric drive engine operates as a generator to help slow the locomotive, with the resistance-generated power being dissipated as heat. While the engine is not generating motive power under dynamic

[9] U.S. Environmental Protection Agency. Emission Factors for Locomotives. April 2009. http://www.epa.gov/nonroad/locomotv/420f09025.pdf

braking, it is generating power to run cooling fans, so this operating condition is somewhat different from idling. Switch engines typically do not feature dynamic braking.

Locomotive switching activities consist of:

- Breaking up inbound trains and sorting railcars into contiguous fragments, and delivering the fragments to terminals.
- Delivering empty container flat cars to terminals.
- Delivering rail cars to non-container facilities, and removing previously delivered rail cars.
- Rearranging full and empty railcars to facilitate loading by a terminal.
- Picking up outbound containers in less than full train configuration and transporting them to a yard for assembly into full trains – to be transported out of the facility by one of the line haul railroads.

Line haul locomotives are typically operated in groups of two to five units, with three or four units being most common, depending on the power requirements of the specific train being pulled and the horsepower capacities of available locomotives. Thus, two higher-horsepower locomotives may be able to pull a train that would take three units with lower power outputs. Locomotives operated in sets are connected such that every engine in the set is operated in unison by an engineer in one of the locomotives.

Line haul activities occur to the north and along the northeastern side of the project site and were included in the cumulative analysis. Switching areas are located at the 23rd Street railyard, Seaver railyard, and the Safeway railyard, all areas of which are greater than 1,000 feet from the project site and thus, were not included in the cumulative analysis. Based on Federal Railroad Administration's Office of Safety Analysis, this HRA included 20 daily haul rail operations.[10] Two line haul engines were assumed to operate simultaneously for the rail operations.

For locomotives, emissions were estimated as a function of power demand (expressed in horsepower-hours) multiplied by an emission factor (shown in **Table A-3)**, expressed in terms of grams per horsepower-hour (g/hp-hr), and then applied to the various activity data (**Table A-4**). Estimate emission efficiency improvements were accounted for to determine the lifetime exposure (**Table A-5**).

[10] Federal Railroad Administration, Office of Safety Analysis, http://safetydata.fra.dot.gov/OfficeofSafety/default.aspx

TABLE A-3
EMISSION FACTORS FOR LOCOMOTIVES

Pollutant	Line Haul Emission Factor (g/hp-hr)
PM10	0.18
PM2.5	0.17

SOURCE: U.S. Environmental Protection Agency. Emission Factors for Locomotives, April 2009.

TABLE A-4
OPERATIONAL ASSUMPTIONS FOR LOCOMOTIVES

Parameters	Line Haul
Load Factor	0.20
Horsepower	3,300
Daily Operations	20

SOURCE: September 2013. Detroit Diesel Specification 4000 Series. Federal Railroad Administration, Office of Safety Analysis. U.S. DOT Crossing Inventory. U.S. Environmental Protection Agency. Emission Factors for Locomotives, April 2009.

TABLE A-5
EMISSION FACTORS FOR LOCOMOTIVES BY YEAR

Year	Line Haul Emission Factor (g/gal)
2016	3.1
2017	2.9
2018	2.7
2019	2.5
2020	2.3
2021	2.2
2022	2.0
2023	1.9
2024	1.7
2025	1.6
2026	1.5
2027	1.4
2028	1.3
2029	1.1
2030	1.0
2031	1.0
2032	0.9
2033	0.8
2034	0.7
2035	0.7
2036	0.6
2037	0.6
2038	0.5
2039	0.5
2040	0.4

SOURCE: U.S. Environmental Protection Agency. *Emission Factors for Locomotives*, April 2009.

EXPOSURE PARAMETERS

This HRA was conducted following methodologies in OEHHA's *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*.[11] This was accomplished by applying the estimated concentrations at the receptors analyzed to the established cancer risk estimates and acceptable reference concentrations for non-cancer health effects.

OEHHA's revisions to its *Guidance Manual* were primarily designed to ensure that the greater sensitivity of children to cancer and other health risks is reflected in HRAs. For example, OEHHA now recommends that risks be analyzed separately for multiple age groups, focusing especially on young children and teenagers, rather than the past practice of analyzing risks to the general population, without distinction by age. OEHHA also now recommends that statistical "age sensitivity factors" be incorporated into a HRA, and that children's relatively high breathing rates be accounted for. On the other hand, the *Guidance Manual* revisions also include some changes that would reduce calculated health risks. For example, under the former guidance, OEHHA recommended that residential cancer risks be assessed by assuming 70 years of exposure at a residential receptor; under the *Guidance Manual*, this assumption is lessened to 30 years.

OEHHA has developed exposure factors (e.g., daily breathing rates) for six age groups including the last trimester to birth, birth to 2 years, 2 to 9 years, 2 to 16 years, 16 to 30 years, and 16 to 70 years. These age bins allow for more refined exposure information to be used when estimating exposure and the potential for developing cancer over a lifetime. This means that exposure variates are needed for the third trimester, ages zero to less than two, ages two to less than nine, ages two to less than 16, ages 16 to less than 30, and ages 16 to 70. Residential receptors utilize the 95th percentile breathing rate values. The breathing rates are age-specific and are 1,090 liters per kilogram-day for ages less than 2 years, 745 liters per kilogram-day for ages 2 to 16 years, and 335 liters per kilogram-day for ages 16 to 30 years. A school child breathing rate is 520 liters per kilogram-day and an off-site worker breathing rate is 230 liters per kilogram-day.

OEHHA developed age sensitivity factors (ASF) to take into account the increased sensitivity to carcinogens during early-in-life exposures. OEHHA recommends that cancer risks be weighted by a factor of 10 for exposures that occur from the third trimester of pregnancy to 2 years of age, and by a factor of 3 for exposures from 2 years through 15 years of age.

Based on OEHHA recommendations, the cancer risk to residential receptors assumes exposure occurs 24 hours per day for 350 days per year while accounting for a percentage of time at home. OEHHA evaluated information from activity pattern databases to estimate the fraction of time at home (FAH) during the day. This information was used to adjust exposure duration and cancer risk based on the assumption that a person is not present at home continuously for 24 hours and therefore exposure to emissions is not occurring when a person is away from their home. In

[11] Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*, February 2015, http://oehha.ca.gov/air/hot_spots/hotspots2015.html

general, the FAH factors are age-specific and are 0.85 for ages less than 2 years, 0.72 for ages 2 to 16 years, and 0.73 for ages 16 to 70 years.

OEHHA has decreased the exposure duration currently being used for estimating cancer risk at the maximum exposed individual resident from 70 years to 30 years. This is based on studies showing that 30 years is a reasonable estimate of the 90th to 95th percentile of residency duration in the population. Additionally, OEHHA recommends using the 9 and 70-year exposure duration to represent the potential impacts over the range of residency periods.

Given the exposure durations of less than 24 hours, sensitive recreational receptors were evaluated for acute impacts only. Based on OEHHA recommendations, for children at school sites, exposure is assumed to occur 10 hours per day for 180 days (or 36 weeks) per year. Cancer risk estimates for children at school sites are calculated based on 9 year exposure duration. School sites also include teachers and other adult staff which are treated as off-site workers.

RISK CHARACTERIZATION

Cancer risk is defined as the lifetime probability of developing cancer from exposure to carcinogenic substances. Cancer risks are expressed as the chance in one million of getting cancer (i.e., number of cancer cases among one million people exposed). The cancer risks are assumed to occur exclusively through the inhalation pathway. The cancer risk can be estimated by using the cancer potency factor (milligrams per kilogram of body weight per day [mg/kg-day]), the 30-year annual average concentration (microgram per cubic meter [$\mu g/m^3$]), and the lifetime exposure adjustment.

Following guidelines established by OEHHA, the incremental cancer risks attributable to the proposed project were calculated by applying exposure parameters to modeled DPM concentrations in order to determine the inhalation dose (mg/kg-day) or the amount of pollutants inhaled per body weight mass per day. The cancer risks occur exclusively through the inhalation pathway; therefore, the cancer risks can be estimated from the following equation:

$$\text{Dose-inh} = \frac{C_{air} * \{DBR\} * A * ASF * FAH * EF * ED * 10^{-6}}{AT}$$

Where:

Dose-inh = Dose of the toxic substance through inhalation in mg/kg-day
10^{-6} = Micrograms to milligrams conversion, Liters to cubic meters conversion
C_{air} = Concentration in air in microgram (μg)/cubic meter (m^3)
{DBR} = Daily breathing rate in liter (L)/kg body weight – day
A = Inhalation absorption factor, 1.0
ASF = Age Sensitivity Factor
EF = Exposure frequency (days/year)
ED = Exposure duration (years)
FAH = Fraction of Time at Home

AT = Averaging time period over which exposure is averaged in days (25,550 days for a 70 year cancer risk)

To determine incremental cancer risk, the estimated inhalation dose attributed to the proposed project was multiplied by the cancer potency slope factor (cancer risk per mg/kg-day). The cancer potency slope factor is the upper bound on the increased cancer risk from a lifetime exposure to a pollutant. These slope factors are based on epidemiological studies and are different values for different pollutants. This allows the estimated inhalation dose to be equated to a cancer risk.

Non-cancer adverse health impacts, acute (short-term) and chronic (long-term), are measured against a hazard index (HI), which is defined as the ratio of the predicted incremental exposure concentration from the proposed project to a published reference exposure level (REL) that could cause adverse health effects as established by OEHHA. The ratio (referred to as the Hazard Quotient [HQ]) of each non-carcinogenic substance that affects a certain organ system is added to produce an overall HI for that organ system. The overall HI is calculated for each organ system. If the overall HI for the highest-impacted organ system is greater than one, then the impact is considered to be significant.

The HI is an expression used for the potential for non-cancer health effects. The relationship for the non-cancer health effects is given by the annual concentration (in $\mu g/m^3$) and the REL (in $\mu g/m^3$). The acute hazard index was determined using the "simple" concurrent maximum approach, which tends to be conservative (i.e., overpredicts).

The relationship for the non-cancer health effects is given by the following equation:

$$HI = C/REL$$

Where:

HI = Hazard index; an expression of the potential for non-cancer health effects.
C = Annual average concentration ($\mu g/m^3$) during the 70 year exposure period.
REL = Concentration at which no adverse health effects are anticipated.

The chronic REL for DPM was established by the California OEHHA[12] as 5 $\mu g/m^3$. There is no acute REL for DPM. However, diesel exhaust does contain acrolein and other compounds, which do have an acute REL. BAAQMD's DPM speciation table (based on profile 4674 within the USEPA Speciate 4.2)[13] was used to assess the acute impacts. Acrolein emissions are approximately 1.3 percent of the total diesel fuel emissions. The acute REL for acrolein was established by the California OEHHA[14] as 2.5 $\mu g/m^3$.

[12] Office of Environmental Health Hazards Assessment - Acute, 8-hour, and Chronic Reference Exposure Levels, June 2014**,** http://www.oehha.ca.gov/air/allrels.html

[13] Provides for a speciation faction of 1.3 percent of acrolein per DPM emission rate

[14] Office of Environmental Health Hazards Assessment - Acute, 8-hour, and Chronic Reference Exposure Levels, June 2014**,** http://www.oehha.ca.gov/air/allrels.html

CUMULATIVE SOURCES

The BAAQMD's *CEQA Air Quality Guidelines* include standards and methods for determining the significance of cumulative health risk impacts.[15] The method for determining cumulative health risk requires the tallying of health risk from permitted stationary sources, rail activities, and roadways in the vicinity of a Project (i.e., within a 1,000-foot radius), then adding the Project impacts due to construction and operations to determine whether the cumulative health risk thresholds are exceeded.

BAAQMD has developed a geo-referenced database of permitted emissions sources throughout the San Francisco Bay Area, and has developed the *Stationary Source Risk & Hazard Analysis Tool* for estimating cumulative health risks from permitted sources. Four permitted sources are located within 1,000 feet of the project site. None of the four permitted sources are located within 1,000 feet of the existing receptors.

Table A-6 provide the estimated screening cancer risk, hazard impacts, and the particulate matter equal to or less than 2.5 micrometers (fine particulate or $PM_{2.5}$) concentrations for the nearby cumulative permitted source. **Figure A-4** displays the locations of the nearby permitted stationary sources.

Information (cancer risks and chronic index) was adjusted for distance from emission source to receptor, based on BAAQMD's *Distance Adjustment Multiplier for Diesel Internal Combustion Engine* and the *Distance Adjustment Multiplier for Gasoline Dispensing Facilities*.

Source G9842 is a gasoline service station associated with the University of California at Richmond. Source 15508 contains a diesel engine, a natural gas cogeneration plant, and two natural gas boilers. Per BAAQMD recommendation, a distance adjustment multiplier of 0.015 was applied to Sources G9842 and 15508 given the distance between the emission source and the sensitive proposed receptors is approximately 1,000 feet. No cancer risks or health impacts were reported for Sources 2946 and 10106.

TABLE A-6
CUMULATIVE HEALTH IMPACTS – PERMITTED SOURCES

Facility ID	Facility Type	Address	Cancer Rick	Hazard Impact	PM2.5 Concentration
G9842	University of California - Richmond	1301 South 46th Street	14.0	0.069	<0.01
15508	Wareham Property Group	1337 South 46th Street	11.0	0.020	0.37
2946	Allied Propane Service	5000 Seaport Boulevard	No risk/health impacts reported		
10106	Smith & Company	5100 Channel Avenue	No risk/health impacts reported		

SOURCE: Bay Area Air Quality Management District, *Stationary Source Risk & Hazard Analysis Tool*, May 2011 and Email from Alison Kirk at BAAQMD on June 22, 2016 - Stationary Source Inquiry Form Request – Richmond South Shoreline Specific Plan. Cancer Risk was subsequently adjusted by a factor of 2.6 to account for the Revised OEHHA Guidance Manual.

[15] Bay Area Air Quality Management District, *CEQA Air Quality Guidelines,* May 2012, http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines_Final_May%202012.ashx?la=en

Table A-7 provide the estimated adjusted for distance cancer risk, hazard impacts, and the $PM_{2.5}$ concentrations for the cumulative permitted source for the proposed receptors.

TABLE A-7
ADJUSTED CUMULATIVE HEALTH IMPACTS – PERMITTED SOURCES – PROPOSED RESIDENCES

Facility ID	Facility Type	Address	Cancer Rick	Hazard Impact	PM2.5 Concentration
G9842	University of California - Richmond	1301 South 46th Street	0.21	0.001	<0.01
15508	Wareham Property Group	1337 South 46th Street	0.17	0.000	0.01
2946	Allied Propane Service	5000 Seaport Boulevard	No risk/health impacts reported		
10106	Smith & Company	5100 Channel Avenue	No risk/health impacts reported		

SOURCE: Bay Area Air Quality Management District, *Stationary Source Risk & Hazard Analysis Tool*, May 2011 and Email from Alison Kirk at BAAQMD on June 22, 2016 - Stationary Source Inquiry Form Request – Richmond South Shoreline Specific Plan. Cancer Risk was subsequently adjusted by a factor of 2.6 to account for the Revised OEHHA Guidance Manual.

BAAQMD has also developed a geo-referenced database of roadways throughout the San Francisco Bay Area and has developed the *Highway Screening Analysis Tool* for estimating cumulative health risks from major roadways. **Table A-8** display the health impacts from I-580 in association with the existing residences at ground floor. **Table A-9** display the health impacts from I-580 in association with the existing residences at second floor. **Table A-10** display the health impacts from I-580 in association with the proposed residences at ground floor. **Table A-11** display the health impacts from I-580 in association with the proposed residences at second floor. Typically, health impacts are lower at second floor. Generally, the health impacts from I-580 are lower at the proposed residences as these receptors are located to the west of I-580 and the predominate wind direction is from the west to the east (blowing away from the highway). The maximum exposed proposed residences are within 1,000 feet of I-580 and the maximum exposed existing residences are within 250 feet of I-580.

BAAQMD *CEQA Air Quality Guidelines* also require the inclusion of surface streets within 1,000 feet of the proposed project with annual average daily traffic of 10,000 or greater. Upon review of nearby roadways, Carlson Boulevard, Meade Street, Seaport Avenue, and Seaver Avenue the criteria.[16] BAAQMD has developed a county-specific tool, *Roadway Screening Analysis Calculator*, for estimating cumulative health risks from minor roadways. **Table A-12** display the health impacts related to the nearby minor roadways in association with the existing residences. **Table A-13** display the health impacts related to the nearby minor roadways in association with the proposed residences.

[16] Fehr and Peers, Richmond Bay Specific Plan - Transportation and Traffic, April 4, 2016 and based on a ratio of 10 percent for peak hour to annual average daily traffic.

FIGURE A-4
NEARBY STATIONARY SOURCES



TABLE A-8
I-580 HEALTH IMPACTS AT GROUND FLOOR – EXISTING RESIDENCES

Distance from Nearest Travel Lane (feet)	Cancer Risk	Chronic Impact	Acute Impact	$PM_{2.5}$ Concentration
10	209	0.171	0.054	1.162
25	175	0.143	0.046	0.975
50	139	0.113	0.042	0.772
75	116	0.095	0.039	0.644
100	100	0.082	0.035	0.555
200	66.4	0.054	0.023	0.368
250	58.4	0.048	0.021	0.324
300	50.4	0.041	0.019	0.279
400	41.0	0.033	0.013	0.227
500	34.7	0.028	0.008	0.192
750	25.2	0.020	0.006	0.139
1000	19.7	0.016	0.000	0.109

SOURCE: Bay Area Air Quality Management District, *Highway Screening Analysis Tool*, May 2011. Cancer Risk was subsequently adjusted by a factor of 2.6 to account for the Revised OEHHA Guidance Manual.

TABLE A-9
I-580 HEALTH IMPACTS AT SECOND FLOOR – EXISTING RESIDENCES

Distance from Nearest Travel Lane (feet)	Cancer Risk	Chronic Impact	Acute Impact	$PM_{2.5}$ Concentration
10	105	0.085	0.047	0.580
25	106	0.086	0.042	0.586
50	100	0.082	0.039	0.556
75	91.9	0.075	0.036	0.511
100	84.0	0.068	0.033	0.466
200	61.1	0.050	0.022	0.339
250	54.5	0.045	0.020	0.302
300	47.8	0.039	0.018	0.265
400	39.5	0.032	0.013	0.218
500	33.7	0.027	0.008	0.187
750	24.7	0.020	0.006	0.137
1000	19.4	0.015	0.005	0.107

SOURCE: Bay Area Air Quality Management District, *Highway Screening Analysis Tool*, May 2011. Cancer Risk was subsequently adjusted by a factor of 2.6 to account for the Revised OEHHA Guidance Manual.

TABLE A-10
I-580 HEALTH IMPACTS AT GROUND FLOOR – PROPOSED RESIDENCES

Distance from Nearest Travel Lane (feet)	Cancer Risk	Chronic Impact	Acute Impact	$PM_{2.5}$ Concentration
10	141	0.113	0.041	0.747
25	117	0.093	0.034	0.616
50	92.8	0.074	0.027	0.489
75	78.2	0.062	0.022	0.411
100	68.0	0.054	0.019	0.357
200	46.3	0.037	0.014	0.242
300	35.8	0.028	0.011	0.187
400	29.6	0.023	0.009	0.154
500	25.5	0.020	0.008	0.132
750	19.0	0.015	0.006	0.098
1000	15.3	0.012	0.005	0.079

SOURCE: Bay Area Air Quality Management District, *Highway Screening Analysis Tool*, May 2011. Cancer Risk was subsequently adjusted by a factor of 2.6 to account for the Revised OEHHA Guidance Manual.

TABLE A-11
I-580 HEALTH IMPACTS AT SECOND FLOOR – PROPOSED RESIDENCES

Distance from Nearest Travel Lane (feet)	Cancer Risk	Chronic Impact	Acute Impact	$PM_{2.5}$ Concentration
10	86.9	0.070	0.035	0.459
25	81.9	0.065	0.029	0.432
50	73.1	0.058	0.024	0.385
75	65.4	0.052	0.020	0.344
100	59.0	0.047	0.017	0.310
200	42.8	0.034	0.013	0.224
300	33.9	0.027	0.011	0.177
400	28.4	0.022	0.009	0.148
500	24.6	0.019	0.008	0.128
750	18.6	0.014	0.006	0.096
1000	15.0	0.011	0.005	0.077

SOURCE: Bay Area Air Quality Management District, *Highway Screening Analysis Tool*, May 2011. Cancer Risk was subsequently adjusted by a factor of 2.6 to account for the Revised OEHHA Guidance Manual.

TABLE A-12
MINOR ROADWAYS HEALTH IMPACTS – EXISTING RESIDENCES

Roadway	Alternative	Estimated Daily Volume	Cancer Risk	$PM_{2.5}$ Concentration
Carlson Boulevard	Existing	10,570	3.15	0.082
	2040 No Project	16,400	4.88	0.128
	2040 Project	19,100	5.68	0.149
Meade Street	Existing	2,280	0.10	0.003
	2040 No Project	12,600	0.57	0.015
	2040 Project	27,200	1.24	0.033
Seaport Avenue	Existing	540	Roadway beyond 1,000 feet from receptor	
	2040 No Project	800		
	2040 Project	8,800		
Seaver Avenue	Existing	530	0.03	0.001
	2040 No Project	10,900	0.71	0.018
	2040 Project	15,700	1.01	0.026

SOURCE: Bay Area Air Quality Management District, *Roadway Screening Analysis Calculator,* April 16, 2015. Cancer Risk was subsequently adjusted by a factor of 2.6 to account for the Revised OEHHA Guidance Manual.

TABLE A-13
MINOR ROADWAYS HEALTH IMPACTS – PROPOSED RESIDENCES

Roadway	Alternative	Estimated Daily Volume	Cancer Risk	$PM_{2.5}$ Concentration
Carlson Boulevard	Existing	10,570	Roadway beyond 1,000 feet from receptor	
	2040 No Project	16,400		
	2040 Project	19,100		
Meade Street	Existing	2,280	0.07	0.002
	2040 No Project	12,600	0.36	0.009
	2040 Project	27,200	0.78	0.019
Seaport Avenue	Existing	540	0.02	0.001
	2040 No Project	800	0.03	0.001
	2040 Project	8,800	0.37	0.010
Seaver Avenue	Existing	530	Roadway beyond 1,000 feet from receptor	
	2040 No Project	10,900		
	2040 Project	15,700		

SOURCE: Bay Area Air Quality Management District, *Roadway Screening Analysis Calculator,* April 16, 2015. Cancer Risk was subsequently adjusted by a factor of 2.6 to account for the Revised OEHHA Guidance Manual.

ADJUSTMENT OF BAAQMD DATA FOR REVISED OEHHA GUIDANCE

This HRA was conducted following methodologies in OEHHA's *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*.[17] BAAQMD's *Stationary Source Risk & Hazard Analysis Tool* for estimating cumulative health risks from permitted sources. *Highway Screening Analysis Tool* for estimating cumulative health risks from major roadways, and *Roadway Screening Analysis Calculator* for estimating cumulative health risks from surface streets were based on the previous OEHHA guidance. Thus, an adjustment factor was developed to adjust the BAAQMD-developed cancer risks to account for the revised OEHHA guidance. The cancer risks for project construction activities as well as nearby rail activities were developed using AERMOD and the revised OEHHA guidance and thus were not further adjusted.

OEHHA's revisions to its *Guidance Manual* were primarily designed to ensure that the greater sensitivity of children to cancer and other health risks is reflected in HRA. For example, OEHHA now recommends that risks be analyzed separately for multiple age groups, focusing especially on young children and teenagers, rather than the past practice of analyzing risks to the general population, without distinction by age. OEHHA also now recommends that statistical "age sensitivity factors" be incorporated into a HRA, and that children's relatively high breathing rates be accounted for. On the other hand, the *Guidance Manual* revisions also include some changes that would reduce calculated health risks. For example, under the former guidance, OEHHA recommended that residential cancer risks be assessed by assuming 70 years of exposure at a residential receptor; under the *Guidance Manual*, this assumption is lessened to 30 years.

The revised OEHHA guidance has developed exposure factors (e.g., daily breathing rates) for six age groups including the last trimester to birth, birth to 2 years, 2 to 9 years, 2 to 16 years, 16 to 30 years, and 16 to 70 years. OEHHA also developed age sensitivity factors (ASF) to take into account the increased sensitivity to carcinogens during early-in-life exposures. OEHHA recommends that cancer risks be weighted by a factor of 10 for exposures that occur from the third trimester of pregnancy to 2 years of age, and by a factor of 3 for exposures from 2 years through 15 years of age.

In the previous OEHHA guidance, the adult breathing rate of 302 liters per kilogram per day (L/kg-day) and the children breathing rate of 581 L/kg-day was recommended. For estimating cancer risks for residential receptors over a 70 year lifetime, the incorporation of the ASF results in a cancer risk adjustment factor of 1.7.

In the revised OEHHA guidance, residential receptors utilize the 95th percentile breathing rate values. The breathing rates are age-specific and are 1,090 liters per kilogram-day for ages less

[17] Office of Environmental Health Hazard Assessment, *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*, February 2015, http://oehha.ca.gov/air/hot_spots/hotspots2015.html

than 2 years, 745 liters per kilogram-day for ages 2 to 16 years, and 335 liters per kilogram-day for ages 16 to 30 years.

These differences in breathing rates, exposure duration, and other factors result in difference in health risk results. According to the SJVAPCD, these differences would increase the likelihood of finding significant health risks by as much as three-fold. Based on calculations for this proposed project, an adjustment factor of 2.6 was calculated to account for differences in the previous OEHHA and revised OEHHA guidance related to differences in breathing rates, incorporation of a age sensitivity factors, incorporation of a fraction of time at home during the day, and a modification of the lifetime exposure of 70 to 30 years. The adjustment factor was determined by evaluating the cancer risk for the rail activities using the previous OEHHA guidance and comparing to the cancer risk for the rail activities using the revised OEHHA guidance. In this evaluation, the cancer risk associated with the revised OEHHA guidance (9.77 per million) was approximately 2.6 times the value associated with the previous OEHHA guidance (3.72 per million). Several presentation have reviewed the differences between the previous and revised OEHHA guidance and have determined that the differences range from 2.1 to 3.0, using a 30 year exposure and 95th percentile breathing rates, depending on the type of emission source.[18]

In conclusion, the cancer risks for project construction activities as well as nearby rail activities were developed using AERMOD and the revised OEHHA guidance and thus were not further adjusted. Cancer risks associated with project operations, I-580, nearby surface streets, and permitted stationary sources were adjusted by a factor of 2.6.

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[18] ERM, Updated Health Risk Assessment Guidelines, March 31, 2015, http://www.erm.com/contentassets/c107b8507dbb4cd3a58e04f1e6438384/erm-oehha-webinar-3-31-15.pdf
San Joaquin Valley Air Pollution Control District, Update to District's Risk Management Policy to Address OEHHA's Revised Risk Assessment Guidance Document, May 28, 2015, http://www.valleyair.org/busind/pto/staff-report-5-28-15.pdf
San Joaquin Valley Air Pollution Control District, Update On District's Implementation Of OEHHA's Revised Air Toxics Health Risk Assessment Guidelines, August 20, 2015, http://www.valleyair.org/Board_meetings/GB/agenda_minutes/Agenda/2015/August/presentations/09.pdf

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Unmitigated
Receptor:	Existing
Period:	Construction Year 1

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2017	0.29	0.06	1,090	10.0	0.85	8.43
2	2018	0.33	0.07	1,090	10.0	0.85	9.78
3	2019	0.16	0.03	745	4.75	0.72	1.28
4	2020	0.14	0.03	745	3.00	0.72	0.71
5	2021	0.12	0.02	745	3.00	0.72	0.60
6	2022	0.10	0.02	745	3.00	0.72	0.51
7	2023	0.09	0.02	745	3.00	0.72	0.44
8	2024	0.08	0.02	745	3.00	0.72	0.39
9	2025	0.07	0.01	745	3.00	0.72	0.35
10	2026	0.06	0.01	745	3.00	0.72	0.33
11	2027	0.06	0.01	745	3.00	0.72	0.33
12	2028	0.10	0.02	745	3.00	0.72	0.52
13	2029	0.02	0.00	745	3.00	0.72	0.10
14	2030			745	3.00	0.72	
15	2031			745	3.00	0.72	
16	2032			745	3.00	0.72	
17	2033			335	1.70	0.73	
18	2034			335	1.00	0.73	
19	2035			335	1.00	0.73	
20	2036			335	1.00	0.73	
21	2037			335	1.00	0.73	
22	2038			335	1.00	0.73	
23	2039			335	1.00	0.73	
24	2040			335	1.00	0.73	
25	2041			335	1.00	0.73	
26	2042			335	1.00	0.73	
27	2043			335	1.00	0.73	
28	2044			335	1.00	0.73	
29	2045			335	1.00	0.73	
30	2046			335	1.00	0.73	

0.07	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.01	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.13	Acute Hazard Impact
1	Significance Threshold
No	Significant?
22.5	Cancer Risk (Child)
10	Significance Threshold
Yes	Significant?
2.13	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
23.8	30-Year Exposure Cancer Risk
10	Significance Threshold
Yes	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Unmitigated
Receptor:	Existing
Period:	Construction Year 2

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2018	0.33	0.07	1,090	10.0	0.85	9.78
2	2019	0.16	0.03	1,090	10.0	0.85	4.67
3	2020	0.14	0.03	745	4.75	0.72	1.12
4	2021	0.12	0.02	745	3.00	0.72	0.60
5	2022	0.10	0.02	745	3.00	0.72	0.51
6	2023	0.09	0.02	745	3.00	0.72	0.44
7	2024	0.08	0.02	745	3.00	0.72	0.39
8	2025	0.07	0.01	745	3.00	0.72	0.35
9	2026	0.06	0.01	745	3.00	0.72	0.33
10	2027	0.06	0.01	745	3.00	0.72	0.33
11	2028	0.10	0.02	745	3.00	0.72	0.52
12	2029	0.02	0.00	745	3.00	0.72	0.10
13	2030			745	3.00	0.72	
14	2031			745	3.00	0.72	
15	2032			745	3.00	0.72	
16	2033			745	3.00	0.72	
17	2034			335	1.70	0.73	
18	2035			335	1.00	0.73	
19	2036			335	1.00	0.73	
20	2037			335	1.00	0.73	
21	2038			335	1.00	0.73	
22	2039			335	1.00	0.73	
23	2040			335	1.00	0.73	
24	2041			335	1.00	0.73	
25	2042			335	1.00	0.73	
26	2043			335	1.00	0.73	
27	2044			335	1.00	0.73	
28	2045			335	1.00	0.73	
29	2046			335	1.00	0.73	
30	2047			335	1.00	0.73	

0.07	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.01	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.13	Acute Hazard Impact
1	Significance Threshold
No	Significant?
18.2	Cancer Risk (Child)
10	Significance Threshold
Yes	Significant?
1.75	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
19.1	30-Year Exposure Cancer Risk
10	Significance Threshold
Yes	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Unmitigated
Receptor:	Existing
Period:	Construction Year 3

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2019	0.16	0.03	1,090	10.0	0.85	4.67
2	2020	0.14	0.03	1,090	10.0	0.85	4.06
3	2021	0.12	0.02	745	4.75	0.72	0.95
4	2022	0.10	0.02	745	3.00	0.72	0.51
5	2023	0.09	0.02	745	3.00	0.72	0.44
6	2024	0.08	0.02	745	3.00	0.72	0.39
7	2025	0.07	0.01	745	3.00	0.72	0.35
8	2026	0.06	0.01	745	3.00	0.72	0.33
9	2027	0.06	0.01	745	3.00	0.72	0.33
10	2028	0.10	0.02	745	3.00	0.72	0.52
11	2029	0.02	0.00	745	3.00	0.72	0.10
12	2030			745	3.00	0.72	
13	2031			745	3.00	0.72	
14	2032			745	3.00	0.72	
15	2033			745	3.00	0.72	
16	2034			745	3.00	0.72	
17	2035			335	1.70	0.73	
18	2036			335	1.00	0.73	
19	2037			335	1.00	0.73	
20	2038			335	1.00	0.73	
21	2039			335	1.00	0.73	
22	2040			335	1.00	0.73	
23	2041			335	1.00	0.73	
24	2042			335	1.00	0.73	
25	2043			335	1.00	0.73	
26	2044			335	1.00	0.73	
27	2045			335	1.00	0.73	
28	2046			335	1.00	0.73	
29	2047			335	1.00	0.73	
30	2048			335	1.00	0.73	

0.03	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.01	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.06	Acute Hazard Impact
1	Significance Threshold
No	Significant?
12.0	Cancer Risk (Child)
10	Significance Threshold
Yes	Significant?
1.32	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
12.7	30-Year Exposure Cancer Risk
10	Significance Threshold
Yes	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Unmitigated
Receptor:	Existing
Period:	Construction Year 4

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2020	0.14	0.03	1,090	10.0	0.85	4.06
2	2021	0.12	0.02	1,090	10.0	0.85	3.47
3	2022	0.10	0.02	745	4.75	0.72	0.80
4	2023	0.09	0.02	745	3.00	0.72	0.44
5	2024	0.08	0.02	745	3.00	0.72	0.39
6	2025	0.07	0.01	745	3.00	0.72	0.35
7	2026	0.06	0.01	745	3.00	0.72	0.33
8	2027	0.06	0.01	745	3.00	0.72	0.33
9	2028	0.10	0.02	745	3.00	0.72	0.52
10	2029	0.02	0.00	745	3.00	0.72	0.10
11	2030			745	3.00	0.72	
12	2031			745	3.00	0.72	
13	2032			745	3.00	0.72	
14	2033			745	3.00	0.72	
15	2034			745	3.00	0.72	
16	2035			745	3.00	0.72	
17	2036			335	1.70	0.73	
18	2037			335	1.00	0.73	
19	2038			335	1.00	0.73	
20	2039			335	1.00	0.73	
21	2040			335	1.00	0.73	
22	2041			335	1.00	0.73	
23	2042			335	1.00	0.73	
24	2043			335	1.00	0.73	
25	2044			335	1.00	0.73	
26	2045			335	1.00	0.73	
27	2046			335	1.00	0.73	
28	2047			335	1.00	0.73	
29	2048			335	1.00	0.73	
30	2049			335	1.00	0.73	

0.03	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.01	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.06	Acute Hazard Impact
1	Significance Threshold
No	Significant?
10.7	Cancer Risk (Child)
10	Significance Threshold
Yes	Significant?
1.11	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
10.8	30-Year Exposure Cancer Risk
10	Significance Threshold
Yes	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Unmitigated
Receptor:	Existing
Period:	Construction Year 5

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2021	0.12	0.02	1,090	10.0	0.85	3.47
2	2022	0.10	0.02	1,090	10.0	0.85	2.92
3	2023	0.09	0.02	745	4.75	0.72	0.69
4	2024	0.08	0.02	745	3.00	0.72	0.39
5	2025	0.07	0.01	745	3.00	0.72	0.35
6	2026	0.06	0.01	745	3.00	0.72	0.33
7	2027	0.06	0.01	745	3.00	0.72	0.33
8	2028	0.10	0.02	745	3.00	0.72	0.52
9	2029	0.02	0.00	745	3.00	0.72	0.10
10	2030			745	3.00	0.72	
11	2031			745	3.00	0.72	
12	2032			745	3.00	0.72	
13	2033			745	3.00	0.72	
14	2034			745	3.00	0.72	
15	2035			745	3.00	0.72	
16	2036			745	3.00	0.72	
17	2037			335	1.70	0.73	
18	2038			335	1.00	0.73	
19	2039			335	1.00	0.73	
20	2040			335	1.00	0.73	
21	2041			335	1.00	0.73	
22	2042			335	1.00	0.73	
23	2043			335	1.00	0.73	
24	2044			335	1.00	0.73	
25	2045			335	1.00	0.73	
26	2046			335	1.00	0.73	
27	2047			335	1.00	0.73	
28	2048			335	1.00	0.73	
29	2049			335	1.00	0.73	
30	2050			335	1.00	0.73	

0.02	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.05	Acute Hazard Impact
1	Significance Threshold
No	Significant?
9.11	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.92	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
9.11	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Unmitigated
Receptor:	Existing
Period:	Construction Year 6

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2022	0.10	0.02	1,090	10.0	0.85	2.92
2	2023	0.09	0.02	1,090	10.0	0.85	2.52
3	2024	0.08	0.02	745	4.75	0.72	0.61
4	2025	0.07	0.01	745	3.00	0.72	0.35
5	2026	0.06	0.01	745	3.00	0.72	0.33
6	2027	0.06	0.01	745	3.00	0.72	0.33
7	2028	0.10	0.02	745	3.00	0.72	0.52
8	2029	0.02	0.00	745	3.00	0.72	0.10
9	2030			745	3.00	0.72	
10	2031			745	3.00	0.72	
11	2032			745	3.00	0.72	
12	2033			745	3.00	0.72	
13	2034			745	3.00	0.72	
14	2035			745	3.00	0.72	
15	2036			745	3.00	0.72	
16	2037			745	3.00	0.72	
17	2038			335	1.70	0.73	
18	2039			335	1.00	0.73	
19	2040			335	1.00	0.73	
20	2041			335	1.00	0.73	
21	2042			335	1.00	0.73	
22	2043			335	1.00	0.73	
23	2044			335	1.00	0.73	
24	2045			335	1.00	0.73	
25	2046			335	1.00	0.73	
26	2047			335	1.00	0.73	
27	2048			335	1.00	0.73	
28	2049			335	1.00	0.73	
29	2050			335	1.00	0.73	
30	2051			335	1.00	0.73	

0.02	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.04	Acute Hazard Impact
1	Significance Threshold
No	Significant?
7.70	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.77	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
7.70	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Unmitigated
Receptor:	Existing
Period:	Construction Year 7

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2023	0.09	0.02	1,090	10.0	0.85	2.52
2	2024	0.08	0.02	1,090	10.0	0.85	2.23
3	2025	0.07	0.01	745	4.75	0.72	0.56
4	2026	0.06	0.01	745	3.00	0.72	0.33
5	2027	0.06	0.01	745	3.00	0.72	0.33
6	2028	0.10	0.02	745	3.00	0.72	0.52
7	2029	0.02	0.00	745	3.00	0.72	0.10
8	2030			745	3.00	0.72	
9	2031			745	3.00	0.72	
10	2032			745	3.00	0.72	
11	2033			745	3.00	0.72	
12	2034			745	3.00	0.72	
13	2035			745	3.00	0.72	
14	2036			745	3.00	0.72	
15	2037			745	3.00	0.72	
16	2038			745	3.00	0.72	
17	2039			335	1.70	0.73	
18	2040			335	1.00	0.73	
19	2041			335	1.00	0.73	
20	2042			335	1.00	0.73	
21	2043			335	1.00	0.73	
22	2044			335	1.00	0.73	
23	2045			335	1.00	0.73	
24	2046			335	1.00	0.73	
25	2047			335	1.00	0.73	
26	2048			335	1.00	0.73	
27	2049			335	1.00	0.73	
28	2050			335	1.00	0.73	
29	2051			335	1.00	0.73	
30	2052			335	1.00	0.73	

0.02	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.04	Acute Hazard Impact
1	Significance Threshold
No	Significant?
6.60	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.64	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
6.60	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Unmitigated
Receptor:	Existing
Period:	Construction Year 8

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2024	0.08	0.02	1,090	10.0	0.85	2.23
2	2025	0.07	0.01	1,090	10.0	0.85	2.03
3	2026	0.06	0.01	745	4.75	0.72	0.53
4	2027	0.06	0.01	745	3.00	0.72	0.33
5	2028	0.10	0.02	745	3.00	0.72	0.52
6	2029	0.02	0.00	745	3.00	0.72	0.10
7	2030			745	3.00	0.72	
8	2031			745	3.00	0.72	
9	2032			745	3.00	0.72	
10	2033			745	3.00	0.72	
11	2034			745	3.00	0.72	
12	2035			745	3.00	0.72	
13	2036			745	3.00	0.72	
14	2037			745	3.00	0.72	
15	2038			745	3.00	0.72	
16	2039			745	3.00	0.72	
17	2040			335	1.70	0.73	
18	2041			335	1.00	0.73	
19	2042			335	1.00	0.73	
20	2043			335	1.00	0.73	
21	2044			335	1.00	0.73	
22	2045			335	1.00	0.73	
23	2046			335	1.00	0.73	
24	2047			335	1.00	0.73	
25	2048			335	1.00	0.73	
26	2049			335	1.00	0.73	
27	2050			335	1.00	0.73	
28	2051			335	1.00	0.73	
29	2052			335	1.00	0.73	
30	2053			335	1.00	0.73	

0.02	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.04	Acute Hazard Impact
1	Significance Threshold
No	Significant?
5.74	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.52	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
5.74	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Unmitigated
Receptor:	Existing
Period:	Construction Year 9

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2025	0.07	0.01	1,090	10.0	0.85	2.03
2	2026	0.06	0.01	1,090	10.0	0.85	1.91
3	2027	0.06	0.01	745	4.75	0.72	0.53
4	2028	0.10	0.02	745	3.00	0.72	0.52
5	2029	0.02	0.00	745	3.00	0.72	0.10
6	2030			745	3.00	0.72	
7	2031			745	3.00	0.72	
8	2032			745	3.00	0.72	
9	2033			745	3.00	0.72	
10	2034			745	3.00	0.72	
11	2035			745	3.00	0.72	
12	2036			745	3.00	0.72	
13	2037			745	3.00	0.72	
14	2038			745	3.00	0.72	
15	2039			745	3.00	0.72	
16	2040			745	3.00	0.72	
17	2041			335	1.70	0.73	
18	2042			335	1.00	0.73	
19	2043			335	1.00	0.73	
20	2044			335	1.00	0.73	
21	2045			335	1.00	0.73	
22	2046			335	1.00	0.73	
23	2047			335	1.00	0.73	
24	2048			335	1.00	0.73	
25	2049			335	1.00	0.73	
26	2050			335	1.00	0.73	
27	2051			335	1.00	0.73	
28	2052			335	1.00	0.73	
29	2053			335	1.00	0.73	
30	2054			335	1.00	0.73	

0.02	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.04	Acute Hazard Impact
1	Significance Threshold
No	Significant?
5.09	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.42	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
5.09	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Unmitigated
Receptor:	Existing
Period:	Construction Year 10

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2026	0.06	0.01	1,090	10.0	0.85	1.91
2	2027	0.06	0.01	1,090	10.0	0.85	1.91
3	2028	0.10	0.02	745	4.75	0.72	0.82
4	2029	0.02	0.00	745	3.00	0.72	0.10
5	2030			745	3.00	0.72	
6	2031			745	3.00	0.72	
7	2032			745	3.00	0.72	
8	2033			745	3.00	0.72	
9	2034			745	3.00	0.72	
10	2035			745	3.00	0.72	
11	2036			745	3.00	0.72	
12	2037			745	3.00	0.72	
13	2038			745	3.00	0.72	
14	2039			745	3.00	0.72	
15	2040			745	3.00	0.72	
16	2041			745	3.00	0.72	
17	2042			335	1.70	0.73	
18	2043			335	1.00	0.73	
19	2044			335	1.00	0.73	
20	2045			335	1.00	0.73	
21	2046			335	1.00	0.73	
22	2047			335	1.00	0.73	
23	2048			335	1.00	0.73	
24	2049			335	1.00	0.73	
25	2050			335	1.00	0.73	
26	2051			335	1.00	0.73	
27	2052			335	1.00	0.73	
28	2053			335	1.00	0.73	
29	2054			335	1.00	0.73	
30	2055			335	1.00	0.73	

0.02	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.04	Acute Hazard Impact
1	Significance Threshold
No	Significant?
4.75	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.33	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
4.75	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Unmitigated
Receptor:	Existing
Period:	Construction Year 11

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2027	0.06	0.01	1,090	10.0	0.85	1.91
2	2028	0.10	0.02	1,090	10.0	0.85	2.99
3	2029	0.02	0.00	745	4.75	0.72	0.16
4	2030			745	3.00	0.72	
5	2031			745	3.00	0.72	
6	2032			745	3.00	0.72	
7	2033			745	3.00	0.72	
8	2034			745	3.00	0.72	
9	2035			745	3.00	0.72	
10	2036			745	3.00	0.72	
11	2037			745	3.00	0.72	
12	2038			745	3.00	0.72	
13	2039			745	3.00	0.72	
14	2040			745	3.00	0.72	
15	2041			745	3.00	0.72	
16	2042			745	3.00	0.72	
17	2043			335	1.70	0.73	
18	2044			335	1.00	0.73	
19	2045			335	1.00	0.73	
20	2046			335	1.00	0.73	
21	2047			335	1.00	0.73	
22	2048			335	1.00	0.73	
23	2049			335	1.00	0.73	
24	2050			335	1.00	0.73	
25	2051			335	1.00	0.73	
26	2052			335	1.00	0.73	
27	2053			335	1.00	0.73	
28	2054			335	1.00	0.73	
29	2055			335	1.00	0.73	
30	2056			335	1.00	0.73	

0.02	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.04	Acute Hazard Impact
1	Significance Threshold
No	Significant?
5.06	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.25	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
5.06	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Unmitigated
Receptor:	Existing
Period:	Construction Year 12

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2028	0.10	0.02	1,090	10.0	0.85	2.99
2	2029	0.02	0.00	1,090	10.0	0.85	0.60
3	2030			745	4.75	0.72	
4	2031			745	3.00	0.72	
5	2032			745	3.00	0.72	
6	2033			745	3.00	0.72	
7	2034			745	3.00	0.72	
8	2035			745	3.00	0.72	
9	2036			745	3.00	0.72	
10	2037			745	3.00	0.72	
11	2038			745	3.00	0.72	
12	2039			745	3.00	0.72	
13	2040			745	3.00	0.72	
14	2041			745	3.00	0.72	
15	2042			745	3.00	0.72	
16	2043			745	3.00	0.72	
17	2044			335	1.70	0.73	
18	2045			335	1.00	0.73	
19	2046			335	1.00	0.73	
20	2047			335	1.00	0.73	
21	2048			335	1.00	0.73	
22	2049			335	1.00	0.73	
23	2050			335	1.00	0.73	
24	2051			335	1.00	0.73	
25	2052			335	1.00	0.73	
26	2053			335	1.00	0.73	
27	2054			335	1.00	0.73	
28	2055			335	1.00	0.73	
29	2056			335	1.00	0.73	
30	2057			335	1.00	0.73	

0.02	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.04	Acute Hazard Impact
1	Significance Threshold
No	Significant?
3.59	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.16	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
3.59	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Unmitigated
Receptor:	Existing
Period:	Construction Year 13

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2029	0.02	0.00	1,090	10.0	0.85	0.60
2	2030			1,090	10.0	0.85	
3	2031			745	4.75	0.72	
4	2032			745	3.00	0.72	
5	2033			745	3.00	0.72	
6	2034			745	3.00	0.72	
7	2035			745	3.00	0.72	
8	2036			745	3.00	0.72	
9	2037			745	3.00	0.72	
10	2038			745	3.00	0.72	
11	2039			745	3.00	0.72	
12	2040			745	3.00	0.72	
13	2041			745	3.00	0.72	
14	2042			745	3.00	0.72	
15	2043			745	3.00	0.72	
16	2044			745	3.00	0.72	
17	2045			335	1.70	0.73	
18	2046			335	1.00	0.73	
19	2047			335	1.00	0.73	
20	2048			335	1.00	0.73	
21	2049			335	1.00	0.73	
22	2050			335	1.00	0.73	
23	2051			335	1.00	0.73	
24	2052			335	1.00	0.73	
25	2053			335	1.00	0.73	
26	2054			335	1.00	0.73	
27	2055			335	1.00	0.73	
28	2056			335	1.00	0.73	
29	2057			335	1.00	0.73	
30	2058			335	1.00	0.73	

0.00	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.01	Acute Hazard Impact
1	Significance Threshold
No	Significant?
0.60	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.03	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
0.60	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 2
Receptor:	Existing
Period:	Construction Year 1

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2017	0.06	0.01	1,090	10.0	0.85	1.76
2	2018	0.09	0.02	1,090	10.0	0.85	2.53
3	2019	0.06	0.01	745	4.75	0.72	0.48
4	2020	0.06	0.01	745	3.00	0.72	0.30
5	2021	0.06	0.01	745	3.00	0.72	0.30
6	2022	0.06	0.01	745	3.00	0.72	0.30
7	2023	0.06	0.01	745	3.00	0.72	0.30
8	2024	0.06	0.01	745	3.00	0.72	0.30
9	2025	0.06	0.01	745	3.00	0.72	0.30
10	2026	0.06	0.01	745	3.00	0.72	0.30
11	2027	0.06	0.01	745	3.00	0.72	0.30
12	2028	0.05	0.01	745	3.00	0.72	0.26
13	2029	0.02	0.00	745	3.00	0.72	0.09
14	2030			745	3.00	0.72	
15	2031			745	3.00	0.72	
16	2032			745	3.00	0.72	
17	2033			335	1.70	0.73	
18	2034			335	1.00	0.73	
19	2035			335	1.00	0.73	
20	2036			335	1.00	0.73	
21	2037			335	1.00	0.73	
22	2038			335	1.00	0.73	
23	2039			335	1.00	0.73	
24	2040			335	1.00	0.73	
25	2041			335	1.00	0.73	
26	2042			335	1.00	0.73	
27	2043			335	1.00	0.73	
28	2044			335	1.00	0.73	
29	2045			335	1.00	0.73	
30	2046			335	1.00	0.73	

0.02	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.03	Acute Hazard Impact
1	Significance Threshold
No	Significant?
6.59	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.99	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
7.54	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 2
Receptor:	Existing
Period:	Construction Year 2

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2018	0.09	0.02	1,090	10.0	0.85	2.53
2	2019	0.06	0.01	1,090	10.0	0.85	1.74
3	2020	0.06	0.01	745	4.75	0.72	0.48
4	2021	0.06	0.01	745	3.00	0.72	0.30
5	2022	0.06	0.01	745	3.00	0.72	0.30
6	2023	0.06	0.01	745	3.00	0.72	0.30
7	2024	0.06	0.01	745	3.00	0.72	0.30
8	2025	0.06	0.01	745	3.00	0.72	0.30
9	2026	0.06	0.01	745	3.00	0.72	0.30
10	2027	0.06	0.01	745	3.00	0.72	0.30
11	2028	0.05	0.01	745	3.00	0.72	0.26
12	2029	0.02	0.00	745	3.00	0.72	0.09
13	2030			745	3.00	0.72	
14	2031			745	3.00	0.72	
15	2032			745	3.00	0.72	
16	2033			745	3.00	0.72	
17	2034			335	1.70	0.73	
18	2035			335	1.00	0.73	
19	2036			335	1.00	0.73	
20	2037			335	1.00	0.73	
21	2038			335	1.00	0.73	
22	2039			335	1.00	0.73	
23	2040			335	1.00	0.73	
24	2041			335	1.00	0.73	
25	2042			335	1.00	0.73	
26	2043			335	1.00	0.73	
27	2044			335	1.00	0.73	
28	2045			335	1.00	0.73	
29	2046			335	1.00	0.73	
30	2047			335	1.00	0.73	

0.02	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.03	Acute Hazard Impact
1	Significance Threshold
No	Significant?
6.57	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.91	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
7.23	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 2
Receptor:	Existing
Period:	Construction Year 3

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2019	0.06	0.01	1,090	10.0	0.85	1.74
2	2020	0.06	0.01	1,090	10.0	0.85	1.75
3	2021	0.06	0.01	745	4.75	0.72	0.48
4	2022	0.06	0.01	745	3.00	0.72	0.30
5	2023	0.06	0.01	745	3.00	0.72	0.30
6	2024	0.06	0.01	745	3.00	0.72	0.30
7	2025	0.06	0.01	745	3.00	0.72	0.30
8	2026	0.06	0.01	745	3.00	0.72	0.30
9	2027	0.06	0.01	745	3.00	0.72	0.30
10	2028	0.05	0.01	745	3.00	0.72	0.26
11	2029	0.02	0.00	745	3.00	0.72	0.09
12	2030			745	3.00	0.72	
13	2031			745	3.00	0.72	
14	2032			745	3.00	0.72	
15	2033			745	3.00	0.72	
16	2034			745	3.00	0.72	
17	2035			335	1.70	0.73	
18	2036			335	1.00	0.73	
19	2037			335	1.00	0.73	
20	2038			335	1.00	0.73	
21	2039			335	1.00	0.73	
22	2040			335	1.00	0.73	
23	2041			335	1.00	0.73	
24	2042			335	1.00	0.73	
25	2043			335	1.00	0.73	
26	2044			335	1.00	0.73	
27	2045			335	1.00	0.73	
28	2046			335	1.00	0.73	
29	2047			335	1.00	0.73	
30	2048			335	1.00	0.73	

0.01	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.02	Acute Hazard Impact
1	Significance Threshold
No	Significant?
5.79	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.79	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
6.14	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 2
Receptor:	Existing
Period:	Construction Year 4

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2020	0.06	0.01	1,090	10.0	0.85	1.75
2	2021	0.06	0.01	1,090	10.0	0.85	1.74
3	2022	0.06	0.01	745	4.75	0.72	0.48
4	2023	0.06	0.01	745	3.00	0.72	0.30
5	2024	0.06	0.01	745	3.00	0.72	0.30
6	2025	0.06	0.01	745	3.00	0.72	0.30
7	2026	0.06	0.01	745	3.00	0.72	0.30
8	2027	0.06	0.01	745	3.00	0.72	0.30
9	2028	0.05	0.01	745	3.00	0.72	0.26
10	2029	0.02	0.00	745	3.00	0.72	0.09
11	2030			745	3.00	0.72	
12	2031			745	3.00	0.72	
13	2032			745	3.00	0.72	
14	2033			745	3.00	0.72	
15	2034			745	3.00	0.72	
16	2035			745	3.00	0.72	
17	2036			335	1.70	0.73	
18	2037			335	1.00	0.73	
19	2038			335	1.00	0.73	
20	2039			335	1.00	0.73	
21	2040			335	1.00	0.73	
22	2041			335	1.00	0.73	
23	2042			335	1.00	0.73	
24	2043			335	1.00	0.73	
25	2044			335	1.00	0.73	
26	2045			335	1.00	0.73	
27	2046			335	1.00	0.73	
28	2047			335	1.00	0.73	
29	2048			335	1.00	0.73	
30	2049			335	1.00	0.73	

0.01	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.02	Acute Hazard Impact
1	Significance Threshold
No	Significant?
5.75	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.72	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
5.83	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 2
Receptor:	Existing
Period:	Construction Year 5

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2021	0.06	0.01	1,090	10.0	0.85	1.74
2	2022	0.06	0.01	1,090	10.0	0.85	1.74
3	2023	0.06	0.01	745	4.75	0.72	0.48
4	2024	0.06	0.01	745	3.00	0.72	0.30
5	2025	0.06	0.01	745	3.00	0.72	0.30
6	2026	0.06	0.01	745	3.00	0.72	0.30
7	2027	0.06	0.01	745	3.00	0.72	0.30
8	2028	0.05	0.01	745	3.00	0.72	0.26
9	2029	0.02	0.00	745	3.00	0.72	0.09
10	2030			745	3.00	0.72	
11	2031			745	3.00	0.72	
12	2032			745	3.00	0.72	
13	2033			745	3.00	0.72	
14	2034			745	3.00	0.72	
15	2035			745	3.00	0.72	
16	2036			745	3.00	0.72	
17	2037			335	1.70	0.73	
18	2038			335	1.00	0.73	
19	2039			335	1.00	0.73	
20	2040			335	1.00	0.73	
21	2041			335	1.00	0.73	
22	2042			335	1.00	0.73	
23	2043			335	1.00	0.73	
24	2044			335	1.00	0.73	
25	2045			335	1.00	0.73	
26	2046			335	1.00	0.73	
27	2047			335	1.00	0.73	
28	2048			335	1.00	0.73	
29	2049			335	1.00	0.73	
30	2050			335	1.00	0.73	

0.01	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.02	Acute Hazard Impact
1	Significance Threshold
No	Significant?
5.52	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.64	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
5.52	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project: Richmond South Shoreline Specific Plan
Date: August 15, 2016
Condition: Mitigated DPF Level 2
Receptor: Existing
Period: Construction Year 6

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2022	0.06	0.01	1,090	10.0	0.85	1.74
2	2023	0.06	0.01	1,090	10.0	0.85	1.74
3	2024	0.06	0.01	745	4.75	0.72	0.48
4	2025	0.06	0.01	745	3.00	0.72	0.30
5	2026	0.06	0.01	745	3.00	0.72	0.30
6	2027	0.06	0.01	745	3.00	0.72	0.30
7	2028	0.05	0.01	745	3.00	0.72	0.26
8	2029	0.02	0.00	745	3.00	0.72	0.09
9	2030			745	3.00	0.72	
10	2031			745	3.00	0.72	
11	2032			745	3.00	0.72	
12	2033			745	3.00	0.72	
13	2034			745	3.00	0.72	
14	2035			745	3.00	0.72	
15	2036			745	3.00	0.72	
16	2037			745	3.00	0.72	
17	2038			335	1.70	0.73	
18	2039			335	1.00	0.73	
19	2040			335	1.00	0.73	
20	2041			335	1.00	0.73	
21	2042			335	1.00	0.73	
22	2043			335	1.00	0.73	
23	2044			335	1.00	0.73	
24	2045			335	1.00	0.73	
25	2046			335	1.00	0.73	
26	2047			335	1.00	0.73	
27	2048			335	1.00	0.73	
28	2049			335	1.00	0.73	
29	2050			335	1.00	0.73	
30	2051			335	1.00	0.73	

0.01	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.02	Acute Hazard Impact
1	Significance Threshold
No	Significant?
5.21	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.56	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
5.21	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project: Richmond South Shoreline Specific Plan
Date: August 15, 2016
Condition: Mitigated DPF Level 2
Receptor: Existing
Period: Construction Year 7

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2023	0.06	0.01	1,090	10.0	0.85	1.74
2	2024	0.06	0.01	1,090	10.0	0.85	1.75
3	2025	0.06	0.01	745	4.75	0.72	0.48
4	2026	0.06	0.01	745	3.00	0.72	0.30
5	2027	0.06	0.01	745	3.00	0.72	0.30
6	2028	0.05	0.01	745	3.00	0.72	0.26
7	2029	0.02	0.00	745	3.00	0.72	0.09
8	2030			745	3.00	0.72	
9	2031			745	3.00	0.72	
10	2032			745	3.00	0.72	
11	2033			745	3.00	0.72	
12	2034			745	3.00	0.72	
13	2035			745	3.00	0.72	
14	2036			745	3.00	0.72	
15	2037			745	3.00	0.72	
16	2038			745	3.00	0.72	
17	2039			335	1.70	0.73	
18	2040			335	1.00	0.73	
19	2041			335	1.00	0.73	
20	2042			335	1.00	0.73	
21	2043			335	1.00	0.73	
22	2044			335	1.00	0.73	
23	2045			335	1.00	0.73	
24	2046			335	1.00	0.73	
25	2047			335	1.00	0.73	
26	2048			335	1.00	0.73	
27	2049			335	1.00	0.73	
28	2050			335	1.00	0.73	
29	2051			335	1.00	0.73	
30	2052			335	1.00	0.73	

0.01	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.02	Acute Hazard Impact
1	Significance Threshold
No	Significant?
4.92	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.48	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
4.92	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 2
Receptor:	Existing
Period:	Construction Year 8

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2024	0.06	0.01	1,090	10.0	0.85	1.75
2	2025	0.06	0.01	1,090	10.0	0.85	1.74
3	2026	0.06	0.01	745	4.75	0.72	0.48
4	2027	0.06	0.01	745	3.00	0.72	0.30
5	2028	0.05	0.01	745	3.00	0.72	0.26
6	2029	0.02	0.00	745	3.00	0.72	0.09
7	2030			745	3.00	0.72	
8	2031			745	3.00	0.72	
9	2032			745	3.00	0.72	
10	2033			745	3.00	0.72	
11	2034			745	3.00	0.72	
12	2035			745	3.00	0.72	
13	2036			745	3.00	0.72	
14	2037			745	3.00	0.72	
15	2038			745	3.00	0.72	
16	2039			745	3.00	0.72	
17	2040			335	1.70	0.73	
18	2041			335	1.00	0.73	
19	2042			335	1.00	0.73	
20	2043			335	1.00	0.73	
21	2044			335	1.00	0.73	
22	2045			335	1.00	0.73	
23	2046			335	1.00	0.73	
24	2047			335	1.00	0.73	
25	2048			335	1.00	0.73	
26	2049			335	1.00	0.73	
27	2050			335	1.00	0.73	
28	2051			335	1.00	0.73	
29	2052			335	1.00	0.73	
30	2053			335	1.00	0.73	

0.01	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.02	Acute Hazard Impact
1	Significance Threshold
No	Significant?
4.63	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.40	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
4.63	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 2
Receptor:	Existing
Period:	Construction Year 9

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2025	0.06	0.01	1,090	10.0	0.85	1.74
2	2026	0.06	0.01	1,090	10.0	0.85	1.74
3	2027	0.06	0.01	745	4.75	0.72	0.48
4	2028	0.05	0.01	745	3.00	0.72	0.26
5	2029	0.02	0.00	745	3.00	0.72	0.09
6	2030			745	3.00	0.72	
7	2031			745	3.00	0.72	
8	2032			745	3.00	0.72	
9	2033			745	3.00	0.72	
10	2034			745	3.00	0.72	
11	2035			745	3.00	0.72	
12	2036			745	3.00	0.72	
13	2037			745	3.00	0.72	
14	2038			745	3.00	0.72	
15	2039			745	3.00	0.72	
16	2040			745	3.00	0.72	
17	2041			335	1.70	0.73	
18	2042			335	1.00	0.73	
19	2043			335	1.00	0.73	
20	2044			335	1.00	0.73	
21	2045			335	1.00	0.73	
22	2046			335	1.00	0.73	
23	2047			335	1.00	0.73	
24	2048			335	1.00	0.73	
25	2049			335	1.00	0.73	
26	2050			335	1.00	0.73	
27	2051			335	1.00	0.73	
28	2052			335	1.00	0.73	
29	2053			335	1.00	0.73	
30	2054			335	1.00	0.73	

0.01	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.02	Acute Hazard Impact
1	Significance Threshold
No	Significant?
4.32	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.33	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
4.32	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 2
Receptor:	Existing
Period:	Construction Year 10

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2026	0.06	0.01	1,090	10.0	0.85	1.74
2	2027	0.06	0.01	1,090	10.0	0.85	1.74
3	2028	0.05	0.01	745	4.75	0.72	0.42
4	2029	0.02	0.00	745	3.00	0.72	0.09
5	2030			745	3.00	0.72	
6	2031			745	3.00	0.72	
7	2032			745	3.00	0.72	
8	2033			745	3.00	0.72	
9	2034			745	3.00	0.72	
10	2035			745	3.00	0.72	
11	2036			745	3.00	0.72	
12	2037			745	3.00	0.72	
13	2038			745	3.00	0.72	
14	2039			745	3.00	0.72	
15	2040			745	3.00	0.72	
16	2041			745	3.00	0.72	
17	2042			335	1.70	0.73	
18	2043			335	1.00	0.73	
19	2044			335	1.00	0.73	
20	2045			335	1.00	0.73	
21	2046			335	1.00	0.73	
22	2047			335	1.00	0.73	
23	2048			335	1.00	0.73	
24	2049			335	1.00	0.73	
25	2050			335	1.00	0.73	
26	2051			335	1.00	0.73	
27	2052			335	1.00	0.73	
28	2053			335	1.00	0.73	
29	2054			335	1.00	0.73	
30	2055			335	1.00	0.73	

0.01	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.02	Acute Hazard Impact
1	Significance Threshold
No	Significant?
3.99	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.25	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
3.99	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 2
Receptor:	Existing
Period:	Construction Year 11

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2027	0.06	0.01	1,090	10.0	0.85	1.74
2	2028	0.05	0.01	1,090	10.0	0.85	1.52
3	2029	0.02	0.00	745	4.75	0.72	0.14
4	2030			745	3.00	0.72	
5	2031			745	3.00	0.72	
6	2032			745	3.00	0.72	
7	2033			745	3.00	0.72	
8	2034			745	3.00	0.72	
9	2035			745	3.00	0.72	
10	2036			745	3.00	0.72	
11	2037			745	3.00	0.72	
12	2038			745	3.00	0.72	
13	2039			745	3.00	0.72	
14	2040			745	3.00	0.72	
15	2041			745	3.00	0.72	
16	2042			745	3.00	0.72	
17	2043			335	1.70	0.73	
18	2044			335	1.00	0.73	
19	2045			335	1.00	0.73	
20	2046			335	1.00	0.73	
21	2047			335	1.00	0.73	
22	2048			335	1.00	0.73	
23	2049			335	1.00	0.73	
24	2050			335	1.00	0.73	
25	2051			335	1.00	0.73	
26	2052			335	1.00	0.73	
27	2053			335	1.00	0.73	
28	2054			335	1.00	0.73	
29	2055			335	1.00	0.73	
30	2056			335	1.00	0.73	

0.01	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.02	Acute Hazard Impact
1	Significance Threshold
No	Significant?
3.40	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.17	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
3.40	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 2
Receptor:	Existing
Period:	Construction Year 12

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2028	0.05	0.01	1,090	10.0	0.85	1.52
2	2029	0.02	0.00	1,090	10.0	0.85	0.49
3	2030			745	4.75	0.72	
4	2031			745	3.00	0.72	
5	2032			745	3.00	0.72	
6	2033			745	3.00	0.72	
7	2034			745	3.00	0.72	
8	2035			745	3.00	0.72	
9	2036			745	3.00	0.72	
10	2037			745	3.00	0.72	
11	2038			745	3.00	0.72	
12	2039			745	3.00	0.72	
13	2040			745	3.00	0.72	
14	2041			745	3.00	0.72	
15	2042			745	3.00	0.72	
16	2043			745	3.00	0.72	
17	2044			335	1.70	0.73	
18	2045			335	1.00	0.73	
19	2046			335	1.00	0.73	
20	2047			335	1.00	0.73	
21	2048			335	1.00	0.73	
22	2049			335	1.00	0.73	
23	2050			335	1.00	0.73	
24	2051			335	1.00	0.73	
25	2052			335	1.00	0.73	
26	2053			335	1.00	0.73	
27	2054			335	1.00	0.73	
28	2055			335	1.00	0.73	
29	2056			335	1.00	0.73	
30	2057			335	1.00	0.73	

0.01	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.02	Acute Hazard Impact
1	Significance Threshold
No	Significant?
2.02	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.09	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
2.02	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 2
Receptor:	Existing
Period:	Construction Year 13

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2029	0.02	0.00	1,090	10.0	0.85	0.49
2	2030			1,090	10.0	0.85	
3	2031			745	4.75	0.72	
4	2032			745	3.00	0.72	
5	2033			745	3.00	0.72	
6	2034			745	3.00	0.72	
7	2035			745	3.00	0.72	
8	2036			745	3.00	0.72	
9	2037			745	3.00	0.72	
10	2038			745	3.00	0.72	
11	2039			745	3.00	0.72	
12	2040			745	3.00	0.72	
13	2041			745	3.00	0.72	
14	2042			745	3.00	0.72	
15	2043			745	3.00	0.72	
16	2044			745	3.00	0.72	
17	2045			335	1.70	0.73	
18	2046			335	1.00	0.73	
19	2047			335	1.00	0.73	
20	2048			335	1.00	0.73	
21	2049			335	1.00	0.73	
22	2050			335	1.00	0.73	
23	2051			335	1.00	0.73	
24	2052			335	1.00	0.73	
25	2053			335	1.00	0.73	
26	2054			335	1.00	0.73	
27	2055			335	1.00	0.73	
28	2056			335	1.00	0.73	
29	2057			335	1.00	0.73	
30	2058			335	1.00	0.73	

0.00	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.01	Acute Hazard Impact
1	Significance Threshold
No	Significant?
0.49	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.02	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
0.49	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 3
Receptor:	Existing
Period:	Construction Year 1

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2017	0.02	0.00	1,090	10.0	0.85	0.53
2	2018	0.03	0.01	1,090	10.0	0.85	0.76
3	2019	0.02	0.00	745	4.75	0.72	0.14
4	2020	0.02	0.00	745	3.00	0.72	0.09
5	2021	0.02	0.00	745	3.00	0.72	0.09
6	2022	0.02	0.00	745	3.00	0.72	0.09
7	2023	0.02	0.00	745	3.00	0.72	0.09
8	2024	0.02	0.00	745	3.00	0.72	0.09
9	2025	0.02	0.00	745	3.00	0.72	0.09
10	2026	0.02	0.00	745	3.00	0.72	0.09
11	2027	0.02	0.00	745	3.00	0.72	0.09
12	2028	0.02	0.00	745	3.00	0.72	0.08
13	2029	0.01	0.00	745	3.00	0.72	0.03
14	2030			745	3.00	0.72	
15	2031			745	3.00	0.72	
16	2032			745	3.00	0.72	
17	2033			335	1.70	0.73	
18	2034			335	1.00	0.73	
19	2035			335	1.00	0.73	
20	2036			335	1.00	0.73	
21	2037			335	1.00	0.73	
22	2038			335	1.00	0.73	
23	2039			335	1.00	0.73	
24	2040			335	1.00	0.73	
25	2041			335	1.00	0.73	
26	2042			335	1.00	0.73	
27	2043			335	1.00	0.73	
28	2044			335	1.00	0.73	
29	2045			335	1.00	0.73	
30	2046			335	1.00	0.73	

0.01	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.01	Acute Hazard Impact
1	Significance Threshold
No	Significant?
1.98	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.30	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
2.26	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 3
Receptor:	Existing
Period:	Construction Year 2

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2018	0.03	0.01	1,090	10.0	0.85	0.76
2	2019	0.02	0.00	1,090	10.0	0.85	0.52
3	2020	0.02	0.00	745	4.75	0.72	0.14
4	2021	0.02	0.00	745	3.00	0.72	0.09
5	2022	0.02	0.00	745	3.00	0.72	0.09
6	2023	0.02	0.00	745	3.00	0.72	0.09
7	2024	0.02	0.00	745	3.00	0.72	0.09
8	2025	0.02	0.00	745	3.00	0.72	0.09
9	2026	0.02	0.00	745	3.00	0.72	0.09
10	2027	0.02	0.00	745	3.00	0.72	0.09
11	2028	0.02	0.00	745	3.00	0.72	0.08
12	2029	0.01	0.00	745	3.00	0.72	0.03
13	2030			745	3.00	0.72	
14	2031			745	3.00	0.72	
15	2032			745	3.00	0.72	
16	2033			745	3.00	0.72	
17	2034			335	1.70	0.73	
18	2035			335	1.00	0.73	
19	2036			335	1.00	0.73	
20	2037			335	1.00	0.73	
21	2038			335	1.00	0.73	
22	2039			335	1.00	0.73	
23	2040			335	1.00	0.73	
24	2041			335	1.00	0.73	
25	2042			335	1.00	0.73	
26	2043			335	1.00	0.73	
27	2044			335	1.00	0.73	
28	2045			335	1.00	0.73	
29	2046			335	1.00	0.73	
30	2047			335	1.00	0.73	

0.01	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.01	Acute Hazard Impact
1	Significance Threshold
No	Significant?
1.97	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.27	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
2.17	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 3
Receptor:	Existing
Period:	Construction Year 3

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2019	0.02	0.00	1,090	10.0	0.85	0.52
2	2020	0.02	0.00	1,090	10.0	0.85	0.52
3	2021	0.02	0.00	745	4.75	0.72	0.14
4	2022	0.02	0.00	745	3.00	0.72	0.09
5	2023	0.02	0.00	745	3.00	0.72	0.09
6	2024	0.02	0.00	745	3.00	0.72	0.09
7	2025	0.02	0.00	745	3.00	0.72	0.09
8	2026	0.02	0.00	745	3.00	0.72	0.09
9	2027	0.02	0.00	745	3.00	0.72	0.09
10	2028	0.02	0.00	745	3.00	0.72	0.08
11	2029	0.01	0.00	745	3.00	0.72	0.03
12	2030			745	3.00	0.72	
13	2031			745	3.00	0.72	
14	2032			745	3.00	0.72	
15	2033			745	3.00	0.72	
16	2034			745	3.00	0.72	
17	2035			335	1.70	0.73	
18	2036			335	1.00	0.73	
19	2037			335	1.00	0.73	
20	2038			335	1.00	0.73	
21	2039			335	1.00	0.73	
22	2040			335	1.00	0.73	
23	2041			335	1.00	0.73	
24	2042			335	1.00	0.73	
25	2043			335	1.00	0.73	
26	2044			335	1.00	0.73	
27	2045			335	1.00	0.73	
28	2046			335	1.00	0.73	
29	2047			335	1.00	0.73	
30	2048			335	1.00	0.73	

0.00	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.01	Acute Hazard Impact
1	Significance Threshold
No	Significant?
1.73	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.24	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
1.84	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 3
Receptor:	Existing
Period:	Construction Year 4

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2020	0.02	0.00	1,090	10.0	0.85	0.52
2	2021	0.02	0.00	1,090	10.0	0.85	0.52
3	2022	0.02	0.00	745	4.75	0.72	0.14
4	2023	0.02	0.00	745	3.00	0.72	0.09
5	2024	0.02	0.00	745	3.00	0.72	0.09
6	2025	0.02	0.00	745	3.00	0.72	0.09
7	2026	0.02	0.00	745	3.00	0.72	0.09
8	2027	0.02	0.00	745	3.00	0.72	0.09
9	2028	0.02	0.00	745	3.00	0.72	0.08
10	2029	0.01	0.00	745	3.00	0.72	0.03
11	2030			745	3.00	0.72	
12	2031			745	3.00	0.72	
13	2032			745	3.00	0.72	
14	2033			745	3.00	0.72	
15	2034			745	3.00	0.72	
16	2035			745	3.00	0.72	
17	2036			335	1.70	0.73	
18	2037			335	1.00	0.73	
19	2038			335	1.00	0.73	
20	2039			335	1.00	0.73	
21	2040			335	1.00	0.73	
22	2041			335	1.00	0.73	
23	2042			335	1.00	0.73	
24	2043			335	1.00	0.73	
25	2044			335	1.00	0.73	
26	2045			335	1.00	0.73	
27	2046			335	1.00	0.73	
28	2047			335	1.00	0.73	
29	2048			335	1.00	0.73	
30	2049			335	1.00	0.73	

0.00	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.01	Acute Hazard Impact
1	Significance Threshold
No	Significant?
1.72	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.21	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
1.75	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project: Richmond South Shoreline Specific Plan
Date: August 15, 2016
Condition: Mitigated DPF Level 3
Receptor: Existing
Period: Construction Year 5

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2021	0.02	0.00	1,090	10.0	0.85	0.52
2	2022	0.02	0.00	1,090	10.0	0.85	0.52
3	2023	0.02	0.00	745	4.75	0.72	0.14
4	2024	0.02	0.00	745	3.00	0.72	0.09
5	2025	0.02	0.00	745	3.00	0.72	0.09
6	2026	0.02	0.00	745	3.00	0.72	0.09
7	2027	0.02	0.00	745	3.00	0.72	0.09
8	2028	0.02	0.00	745	3.00	0.72	0.08
9	2029	0.01	0.00	745	3.00	0.72	0.03
10	2030			745	3.00	0.72	
11	2031			745	3.00	0.72	
12	2032			745	3.00	0.72	
13	2033			745	3.00	0.72	
14	2034			745	3.00	0.72	
15	2035			745	3.00	0.72	
16	2036			745	3.00	0.72	
17	2037			335	1.70	0.73	
18	2038			335	1.00	0.73	
19	2039			335	1.00	0.73	
20	2040			335	1.00	0.73	
21	2041			335	1.00	0.73	
22	2042			335	1.00	0.73	
23	2043			335	1.00	0.73	
24	2044			335	1.00	0.73	
25	2045			335	1.00	0.73	
26	2046			335	1.00	0.73	
27	2047			335	1.00	0.73	
28	2048			335	1.00	0.73	
29	2049			335	1.00	0.73	
30	2050			335	1.00	0.73	

0.00	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.01	Acute Hazard Impact
1	Significance Threshold
No	Significant?
1.66	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.19	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
1.66	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 3
Receptor:	Existing
Period:	Construction Year 6

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2022	0.02	0.00	1,090	10.0	0.85	0.52
2	2023	0.02	0.00	1,090	10.0	0.85	0.52
3	2024	0.02	0.00	745	4.75	0.72	0.14
4	2025	0.02	0.00	745	3.00	0.72	0.09
5	2026	0.02	0.00	745	3.00	0.72	0.09
6	2027	0.02	0.00	745	3.00	0.72	0.09
7	2028	0.02	0.00	745	3.00	0.72	0.08
8	2029	0.01	0.00	745	3.00	0.72	0.03
9	2030			745	3.00	0.72	
10	2031			745	3.00	0.72	
11	2032			745	3.00	0.72	
12	2033			745	3.00	0.72	
13	2034			745	3.00	0.72	
14	2035			745	3.00	0.72	
15	2036			745	3.00	0.72	
16	2037			745	3.00	0.72	
17	2038			335	1.70	0.73	
18	2039			335	1.00	0.73	
19	2040			335	1.00	0.73	
20	2041			335	1.00	0.73	
21	2042			335	1.00	0.73	
22	2043			335	1.00	0.73	
23	2044			335	1.00	0.73	
24	2045			335	1.00	0.73	
25	2046			335	1.00	0.73	
26	2047			335	1.00	0.73	
27	2048			335	1.00	0.73	
28	2049			335	1.00	0.73	
29	2050			335	1.00	0.73	
30	2051			335	1.00	0.73	

0.00	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.01	Acute Hazard Impact
1	Significance Threshold
No	Significant?
1.57	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.17	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
1.57	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project: Richmond South Shoreline Specific Plan
Date: August 15, 2016
Condition: Mitigated DPF Level 3
Receptor: Existing
Period: Construction Year 7

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2023	0.02	0.00	1,090	10.0	0.85	0.52
2	2024	0.02	0.00	1,090	10.0	0.85	0.52
3	2025	0.02	0.00	745	4.75	0.72	0.14
4	2026	0.02	0.00	745	3.00	0.72	0.09
5	2027	0.02	0.00	745	3.00	0.72	0.09
6	2028	0.02	0.00	745	3.00	0.72	0.08
7	2029	0.01	0.00	745	3.00	0.72	0.03
8	2030			745	3.00	0.72	
9	2031			745	3.00	0.72	
10	2032			745	3.00	0.72	
11	2033			745	3.00	0.72	
12	2034			745	3.00	0.72	
13	2035			745	3.00	0.72	
14	2036			745	3.00	0.72	
15	2037			745	3.00	0.72	
16	2038			745	3.00	0.72	
17	2039			335	1.70	0.73	
18	2040			335	1.00	0.73	
19	2041			335	1.00	0.73	
20	2042			335	1.00	0.73	
21	2043			335	1.00	0.73	
22	2044			335	1.00	0.73	
23	2045			335	1.00	0.73	
24	2046			335	1.00	0.73	
25	2047			335	1.00	0.73	
26	2048			335	1.00	0.73	
27	2049			335	1.00	0.73	
28	2050			335	1.00	0.73	
29	2051			335	1.00	0.73	
30	2052			335	1.00	0.73	

0.00	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.01	Acute Hazard Impact
1	Significance Threshold
No	Significant?
1.48	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.14	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
1.48	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 3
Receptor:	Existing
Period:	Construction Year 8

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2024	0.02	0.00	1,090	10.0	0.85	0.52
2	2025	0.02	0.00	1,090	10.0	0.85	0.52
3	2026	0.02	0.00	745	4.75	0.72	0.14
4	2027	0.02	0.00	745	3.00	0.72	0.09
5	2028	0.02	0.00	745	3.00	0.72	0.08
6	2029	0.01	0.00	745	3.00	0.72	0.03
7	2030			745	3.00	0.72	
8	2031			745	3.00	0.72	
9	2032			745	3.00	0.72	
10	2033			745	3.00	0.72	
11	2034			745	3.00	0.72	
12	2035			745	3.00	0.72	
13	2036			745	3.00	0.72	
14	2037			745	3.00	0.72	
15	2038			745	3.00	0.72	
16	2039			745	3.00	0.72	
17	2040			335	1.70	0.73	
18	2041			335	1.00	0.73	
19	2042			335	1.00	0.73	
20	2043			335	1.00	0.73	
21	2044			335	1.00	0.73	
22	2045			335	1.00	0.73	
23	2046			335	1.00	0.73	
24	2047			335	1.00	0.73	
25	2048			335	1.00	0.73	
26	2049			335	1.00	0.73	
27	2050			335	1.00	0.73	
28	2051			335	1.00	0.73	
29	2052			335	1.00	0.73	
30	2053			335	1.00	0.73	

0.00	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.01	Acute Hazard Impact
1	Significance Threshold
No	Significant?
1.39	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.12	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
1.39	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 3
Receptor:	Existing
Period:	Construction Year 9

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2025	0.02	0.00	1,090	10.0	0.85	0.52
2	2026	0.02	0.00	1,090	10.0	0.85	0.52
3	2027	0.02	0.00	745	4.75	0.72	0.14
4	2028	0.02	0.00	745	3.00	0.72	0.08
5	2029	0.01	0.00	745	3.00	0.72	0.03
6	2030			745	3.00	0.72	
7	2031			745	3.00	0.72	
8	2032			745	3.00	0.72	
9	2033			745	3.00	0.72	
10	2034			745	3.00	0.72	
11	2035			745	3.00	0.72	
12	2036			745	3.00	0.72	
13	2037			745	3.00	0.72	
14	2038			745	3.00	0.72	
15	2039			745	3.00	0.72	
16	2040			745	3.00	0.72	
17	2041			335	1.70	0.73	
18	2042			335	1.00	0.73	
19	2043			335	1.00	0.73	
20	2044			335	1.00	0.73	
21	2045			335	1.00	0.73	
22	2046			335	1.00	0.73	
23	2047			335	1.00	0.73	
24	2048			335	1.00	0.73	
25	2049			335	1.00	0.73	
26	2050			335	1.00	0.73	
27	2051			335	1.00	0.73	
28	2052			335	1.00	0.73	
29	2053			335	1.00	0.73	
30	2054			335	1.00	0.73	

0.00	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.01	Acute Hazard Impact
1	Significance Threshold
No	Significant?
1.29	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.10	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
1.29	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 3
Receptor:	Existing
Period:	Construction Year 10

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2026	0.02	0.00	1,090	10.0	0.85	0.52
2	2027	0.02	0.00	1,090	10.0	0.85	0.52
3	2028	0.02	0.00	745	4.75	0.72	0.13
4	2029	0.01	0.00	745	3.00	0.72	0.03
5	2030			745	3.00	0.72	
6	2031			745	3.00	0.72	
7	2032			745	3.00	0.72	
8	2033			745	3.00	0.72	
9	2034			745	3.00	0.72	
10	2035			745	3.00	0.72	
11	2036			745	3.00	0.72	
12	2037			745	3.00	0.72	
13	2038			745	3.00	0.72	
14	2039			745	3.00	0.72	
15	2040			745	3.00	0.72	
16	2041			745	3.00	0.72	
17	2042			335	1.70	0.73	
18	2043			335	1.00	0.73	
19	2044			335	1.00	0.73	
20	2045			335	1.00	0.73	
21	2046			335	1.00	0.73	
22	2047			335	1.00	0.73	
23	2048			335	1.00	0.73	
24	2049			335	1.00	0.73	
25	2050			335	1.00	0.73	
26	2051			335	1.00	0.73	
27	2052			335	1.00	0.73	
28	2053			335	1.00	0.73	
29	2054			335	1.00	0.73	
30	2055			335	1.00	0.73	

0.00	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.01	Acute Hazard Impact
1	Significance Threshold
No	Significant?
1.20	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.07	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
1.20	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 3
Receptor:	Existing
Period:	Construction Year 11

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2027	0.02	0.00	1,090	10.0	0.85	0.52
2	2028	0.02	0.00	1,090	10.0	0.85	0.46
3	2029	0.01	0.00	745	4.75	0.72	0.04
4	2030			745	3.00	0.72	
5	2031			745	3.00	0.72	
6	2032			745	3.00	0.72	
7	2033			745	3.00	0.72	
8	2034			745	3.00	0.72	
9	2035			745	3.00	0.72	
10	2036			745	3.00	0.72	
11	2037			745	3.00	0.72	
12	2038			745	3.00	0.72	
13	2039			745	3.00	0.72	
14	2040			745	3.00	0.72	
15	2041			745	3.00	0.72	
16	2042			745	3.00	0.72	
17	2043			335	1.70	0.73	
18	2044			335	1.00	0.73	
19	2045			335	1.00	0.73	
20	2046			335	1.00	0.73	
21	2047			335	1.00	0.73	
22	2048			335	1.00	0.73	
23	2049			335	1.00	0.73	
24	2050			335	1.00	0.73	
25	2051			335	1.00	0.73	
26	2052			335	1.00	0.73	
27	2053			335	1.00	0.73	
28	2054			335	1.00	0.73	
29	2055			335	1.00	0.73	
30	2056			335	1.00	0.73	

0.00	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.01	Acute Hazard Impact
1	Significance Threshold
No	Significant?
1.02	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.05	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
1.02	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 3
Receptor:	Existing
Period:	Construction Year 12

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2028	0.02	0.00	1,090	10.0	0.85	0.46
2	2029	0.01	0.00	1,090	10.0	0.85	0.15
3	2030			745	4.75	0.72	
4	2031			745	3.00	0.72	
5	2032			745	3.00	0.72	
6	2033			745	3.00	0.72	
7	2034			745	3.00	0.72	
8	2035			745	3.00	0.72	
9	2036			745	3.00	0.72	
10	2037			745	3.00	0.72	
11	2038			745	3.00	0.72	
12	2039			745	3.00	0.72	
13	2040			745	3.00	0.72	
14	2041			745	3.00	0.72	
15	2042			745	3.00	0.72	
16	2043			745	3.00	0.72	
17	2044			335	1.70	0.73	
18	2045			335	1.00	0.73	
19	2046			335	1.00	0.73	
20	2047			335	1.00	0.73	
21	2048			335	1.00	0.73	
22	2049			335	1.00	0.73	
23	2050			335	1.00	0.73	
24	2051			335	1.00	0.73	
25	2052			335	1.00	0.73	
26	2053			335	1.00	0.73	
27	2054			335	1.00	0.73	
28	2055			335	1.00	0.73	
29	2056			335	1.00	0.73	
30	2057			335	1.00	0.73	

0.00	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.01	Acute Hazard Impact
1	Significance Threshold
No	Significant?
0.61	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.03	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
0.61	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 3
Receptor:	Existing
Period:	Construction Year 13

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2029	0.01	0.00	1,090	10.0	0.85	0.15
2	2030			1,090	10.0	0.85	
3	2031			745	4.75	0.72	
4	2032			745	3.00	0.72	
5	2033			745	3.00	0.72	
6	2034			745	3.00	0.72	
7	2035			745	3.00	0.72	
8	2036			745	3.00	0.72	
9	2037			745	3.00	0.72	
10	2038			745	3.00	0.72	
11	2039			745	3.00	0.72	
12	2040			745	3.00	0.72	
13	2041			745	3.00	0.72	
14	2042			745	3.00	0.72	
15	2043			745	3.00	0.72	
16	2044			745	3.00	0.72	
17	2045			335	1.70	0.73	
18	2046			335	1.00	0.73	
19	2047			335	1.00	0.73	
20	2048			335	1.00	0.73	
21	2049			335	1.00	0.73	
22	2050			335	1.00	0.73	
23	2051			335	1.00	0.73	
24	2052			335	1.00	0.73	
25	2053			335	1.00	0.73	
26	2054			335	1.00	0.73	
27	2055			335	1.00	0.73	
28	2056			335	1.00	0.73	
29	2057			335	1.00	0.73	
30	2058			335	1.00	0.73	

0.00	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.00	Acute Hazard Impact
1	Significance Threshold
No	Significant?
0.15	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.01	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
0.15	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Unmitigated
Receptor:	Proposed
Period:	Construction Year 4

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2020	0.23	0.21	1,090	10.0	0.85	29.5
2	2021	0.19	0.18	1,090	10.0	0.85	25.2
3	2022	0.16	0.15	745	4.75	0.72	5.83
4	2023	0.14	0.13	745	3.00	0.72	3.18
5	2024	0.12	0.12	745	3.00	0.72	2.81
6	2025	0.11	0.11	745	3.00	0.72	2.56
7	2026	0.11	0.10	745	3.00	0.72	2.41
8	2027	0.11	0.10	745	3.00	0.72	2.41
9	2028	0.17	0.16	745	3.00	0.72	3.77
10	2029	0.03	0.03	745	3.00	0.72	0.76
11	2030			745	3.00	0.72	
12	2031			745	3.00	0.72	
13	2032			745	3.00	0.72	
14	2033			745	3.00	0.72	
15	2034			745	3.00	0.72	
16	2035			745	3.00	0.72	
17	2036			335	1.70	0.73	
18	2037			335	1.00	0.73	
19	2038			335	1.00	0.73	
20	2039			335	1.00	0.73	
21	2040			335	1.00	0.73	
22	2041			335	1.00	0.73	
23	2042			335	1.00	0.73	
24	2043			335	1.00	0.73	
25	2044			335	1.00	0.73	
26	2045			335	1.00	0.73	
27	2046			335	1.00	0.73	
28	2047			335	1.00	0.73	
29	2048			335	1.00	0.73	
30	2049			335	1.00	0.73	

0.21	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.04	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.09	Acute Hazard Impact
1	Significance Threshold
No	Significant?
77.7	Cancer Risk (Child)
10	Significance Threshold
Yes	Significant?
8.03	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
78.4	30-Year Exposure Cancer Risk
10	Significance Threshold
Yes	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Unmitigated
Receptor:	Proposed
Period:	Construction Year 5

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2021	0.19	0.18	1,090	10.0	0.85	25.2
2	2022	0.16	0.15	1,090	10.0	0.85	21.2
3	2023	0.14	0.13	745	4.75	0.72	5.04
4	2024	0.12	0.12	745	3.00	0.72	2.81
5	2025	0.11	0.11	745	3.00	0.72	2.56
6	2026	0.11	0.10	745	3.00	0.72	2.41
7	2027	0.11	0.10	745	3.00	0.72	2.41
8	2028	0.17	0.16	745	3.00	0.72	3.77
9	2029	0.03	0.03	745	3.00	0.72	0.76
10	2030			745	3.00	0.72	
11	2031			745	3.00	0.72	
12	2032			745	3.00	0.72	
13	2033			745	3.00	0.72	
14	2034			745	3.00	0.72	
15	2035			745	3.00	0.72	
16	2036			745	3.00	0.72	
17	2037			335	1.70	0.73	
18	2038			335	1.00	0.73	
19	2039			335	1.00	0.73	
20	2040			335	1.00	0.73	
21	2041			335	1.00	0.73	
22	2042			335	1.00	0.73	
23	2043			335	1.00	0.73	
24	2044			335	1.00	0.73	
25	2045			335	1.00	0.73	
26	2046			335	1.00	0.73	
27	2047			335	1.00	0.73	
28	2048			335	1.00	0.73	
29	2049			335	1.00	0.73	
30	2050			335	1.00	0.73	

0.18	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.04	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.08	Acute Hazard Impact
1	Significance Threshold
No	Significant?
66.2	Cancer Risk (Child)
10	Significance Threshold
Yes	Significant?
6.71	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
66.2	30-Year Exposure Cancer Risk
10	Significance Threshold
Yes	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Unmitigated
Receptor:	Proposed
Period:	Construction Year 6

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2022	0.16	0.15	1,090	10.0	0.85	21.2
2	2023	0.14	0.13	1,090	10.0	0.85	18.3
3	2024	0.12	0.12	745	4.75	0.72	4.45
4	2025	0.11	0.11	745	3.00	0.72	2.56
5	2026	0.11	0.10	745	3.00	0.72	2.41
6	2027	0.11	0.10	745	3.00	0.72	2.41
7	2028	0.17	0.16	745	3.00	0.72	3.77
8	2029	0.03	0.03	745	3.00	0.72	0.76
9	2030			745	3.00	0.72	
10	2031			745	3.00	0.72	
11	2032			745	3.00	0.72	
12	2033			745	3.00	0.72	
13	2034			745	3.00	0.72	
14	2035			745	3.00	0.72	
15	2036			745	3.00	0.72	
16	2037			745	3.00	0.72	
17	2038			335	1.70	0.73	
18	2039			335	1.00	0.73	
19	2040			335	1.00	0.73	
20	2041			335	1.00	0.73	
21	2042			335	1.00	0.73	
22	2043			335	1.00	0.73	
23	2044			335	1.00	0.73	
24	2045			335	1.00	0.73	
25	2046			335	1.00	0.73	
26	2047			335	1.00	0.73	
27	2048			335	1.00	0.73	
28	2049			335	1.00	0.73	
29	2050			335	1.00	0.73	
30	2051			335	1.00	0.73	

0.16	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.03	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.07	Acute Hazard Impact
1	Significance Threshold
No	Significant?
55.9	Cancer Risk (Child)
10	Significance Threshold
Yes	Significant?
5.57	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
55.9	30-Year Exposure Cancer Risk
10	Significance Threshold
Yes	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Unmitigated
Receptor:	Proposed
Period:	Construction Year 7

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2023	0.14	0.13	1,090	10.0	0.85	18.3
2	2024	0.12	0.12	1,090	10.0	0.85	16.2
3	2025	0.11	0.11	745	4.75	0.72	4.05
4	2026	0.11	0.10	745	3.00	0.72	2.41
5	2027	0.11	0.10	745	3.00	0.72	2.41
6	2028	0.17	0.16	745	3.00	0.72	3.77
7	2029	0.03	0.03	745	3.00	0.72	0.76
8	2030			745	3.00	0.72	
9	2031			745	3.00	0.72	
10	2032			745	3.00	0.72	
11	2033			745	3.00	0.72	
12	2034			745	3.00	0.72	
13	2035			745	3.00	0.72	
14	2036			745	3.00	0.72	
15	2037			745	3.00	0.72	
16	2038			745	3.00	0.72	
17	2039			335	1.70	0.73	
18	2040			335	1.00	0.73	
19	2041			335	1.00	0.73	
20	2042			335	1.00	0.73	
21	2043			335	1.00	0.73	
22	2044			335	1.00	0.73	
23	2045			335	1.00	0.73	
24	2046			335	1.00	0.73	
25	2047			335	1.00	0.73	
26	2048			335	1.00	0.73	
27	2049			335	1.00	0.73	
28	2050			335	1.00	0.73	
29	2051			335	1.00	0.73	
30	2052			335	1.00	0.73	

0.16	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.03	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.07	Acute Hazard Impact
1	Significance Threshold
No	Significant?
47.9	Cancer Risk (Child)
10	Significance Threshold
Yes	Significant?
4.62	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
47.9	30-Year Exposure Cancer Risk
10	Significance Threshold
Yes	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Unmitigated
Receptor:	Proposed
Period:	Construction Year 8

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2024	0.12	0.12	1,090	10.0	0.85	16.2
2	2025	0.11	0.11	1,090	10.0	0.85	14.7
3	2026	0.11	0.10	745	4.75	0.72	3.81
4	2027	0.11	0.10	745	3.00	0.72	2.41
5	2028	0.17	0.16	745	3.00	0.72	3.77
6	2029	0.03	0.03	745	3.00	0.72	0.76
7	2030			745	3.00	0.72	
8	2031			745	3.00	0.72	
9	2032			745	3.00	0.72	
10	2033			745	3.00	0.72	
11	2034			745	3.00	0.72	
12	2035			745	3.00	0.72	
13	2036			745	3.00	0.72	
14	2037			745	3.00	0.72	
15	2038			745	3.00	0.72	
16	2039			745	3.00	0.72	
17	2040			335	1.70	0.73	
18	2041			335	1.00	0.73	
19	2042			335	1.00	0.73	
20	2043			335	1.00	0.73	
21	2044			335	1.00	0.73	
22	2045			335	1.00	0.73	
23	2046			335	1.00	0.73	
24	2047			335	1.00	0.73	
25	2048			335	1.00	0.73	
26	2049			335	1.00	0.73	
27	2050			335	1.00	0.73	
28	2051			335	1.00	0.73	
29	2052			335	1.00	0.73	
30	2053			335	1.00	0.73	

0.16	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.03	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.07	Acute Hazard Impact
1	Significance Threshold
No	Significant?
41.7	Cancer Risk (Child)
10	Significance Threshold
Yes	Significant?
3.80	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
41.7	30-Year Exposure Cancer Risk
10	Significance Threshold
Yes	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Unmitigated
Receptor:	Proposed
Period:	Construction Year 9

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2025	0.11	0.11	1,090	10.0	0.85	14.7
2	2026	0.11	0.10	1,090	10.0	0.85	13.9
3	2027	0.11	0.10	745	4.75	0.72	3.81
4	2028	0.17	0.16	745	3.00	0.72	3.77
5	2029	0.03	0.03	745	3.00	0.72	0.76
6	2030			745	3.00	0.72	
7	2031			745	3.00	0.72	
8	2032			745	3.00	0.72	
9	2033			745	3.00	0.72	
10	2034			745	3.00	0.72	
11	2035			745	3.00	0.72	
12	2036			745	3.00	0.72	
13	2037			745	3.00	0.72	
14	2038			745	3.00	0.72	
15	2039			745	3.00	0.72	
16	2040			745	3.00	0.72	
17	2041			335	1.70	0.73	
18	2042			335	1.00	0.73	
19	2043			335	1.00	0.73	
20	2044			335	1.00	0.73	
21	2045			335	1.00	0.73	
22	2046			335	1.00	0.73	
23	2047			335	1.00	0.73	
24	2048			335	1.00	0.73	
25	2049			335	1.00	0.73	
26	2050			335	1.00	0.73	
27	2051			335	1.00	0.73	
28	2052			335	1.00	0.73	
29	2053			335	1.00	0.73	
30	2054			335	1.00	0.73	

0.16	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.03	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.07	Acute Hazard Impact
1	Significance Threshold
No	Significant?
36.9	Cancer Risk (Child)
10	Significance Threshold
Yes	Significant?
3.07	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
36.9	30-Year Exposure Cancer Risk
10	Significance Threshold
Yes	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Unmitigated
Receptor:	Proposed
Period:	Construction Year 10

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2026	0.11	0.10	1,090	10.0	0.85	13.9
2	2027	0.11	0.10	1,090	10.0	0.85	13.9
3	2028	0.17	0.16	745	4.75	0.72	5.97
4	2029	0.03	0.03	745	3.00	0.72	0.76
5	2030			745	3.00	0.72	
6	2031			745	3.00	0.72	
7	2032			745	3.00	0.72	
8	2033			745	3.00	0.72	
9	2034			745	3.00	0.72	
10	2035			745	3.00	0.72	
11	2036			745	3.00	0.72	
12	2037			745	3.00	0.72	
13	2038			745	3.00	0.72	
14	2039			745	3.00	0.72	
15	2040			745	3.00	0.72	
16	2041			745	3.00	0.72	
17	2042			335	1.70	0.73	
18	2043			335	1.00	0.73	
19	2044			335	1.00	0.73	
20	2045			335	1.00	0.73	
21	2046			335	1.00	0.73	
22	2047			335	1.00	0.73	
23	2048			335	1.00	0.73	
24	2049			335	1.00	0.73	
25	2050			335	1.00	0.73	
26	2051			335	1.00	0.73	
27	2052			335	1.00	0.73	
28	2053			335	1.00	0.73	
29	2054			335	1.00	0.73	
30	2055			335	1.00	0.73	

0.16	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.03	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.07	Acute Hazard Impact
1	Significance Threshold
No	Significant?
34.5	Cancer Risk (Child)
10	Significance Threshold
Yes	Significant?
2.41	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
34.5	30-Year Exposure Cancer Risk
10	Significance Threshold
Yes	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Unmitigated
Receptor:	Proposed
Period:	Construction Year 11

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2027	0.11	0.10	1,090	10.0	0.85	13.9
2	2028	0.17	0.16	1,090	10.0	0.85	21.7
3	2029	0.03	0.03	745	4.75	0.72	1.20
4	2030			745	3.00	0.72	
5	2031			745	3.00	0.72	
6	2032			745	3.00	0.72	
7	2033			745	3.00	0.72	
8	2034			745	3.00	0.72	
9	2035			745	3.00	0.72	
10	2036			745	3.00	0.72	
11	2037			745	3.00	0.72	
12	2038			745	3.00	0.72	
13	2039			745	3.00	0.72	
14	2040			745	3.00	0.72	
15	2041			745	3.00	0.72	
16	2042			745	3.00	0.72	
17	2043			335	1.70	0.73	
18	2044			335	1.00	0.73	
19	2045			335	1.00	0.73	
20	2046			335	1.00	0.73	
21	2047			335	1.00	0.73	
22	2048			335	1.00	0.73	
23	2049			335	1.00	0.73	
24	2050			335	1.00	0.73	
25	2051			335	1.00	0.73	
26	2052			335	1.00	0.73	
27	2053			335	1.00	0.73	
28	2054			335	1.00	0.73	
29	2055			335	1.00	0.73	
30	2056			335	1.00	0.73	

0.16	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.03	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.07	Acute Hazard Impact
1	Significance Threshold
No	Significant?
36.8	Cancer Risk (Child)
10	Significance Threshold
Yes	Significant?
1.79	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
36.8	30-Year Exposure Cancer Risk
10	Significance Threshold
Yes	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Unmitigated
Receptor:	Proposed
Period:	Construction Year 12

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2028	0.17	0.16	1,090	10.0	0.85	21.7
2	2029	0.03	0.03	1,090	10.0	0.85	4.35
3	2030			745	4.75	0.72	
4	2031			745	3.00	0.72	
5	2032			745	3.00	0.72	
6	2033			745	3.00	0.72	
7	2034			745	3.00	0.72	
8	2035			745	3.00	0.72	
9	2036			745	3.00	0.72	
10	2037			745	3.00	0.72	
11	2038			745	3.00	0.72	
12	2039			745	3.00	0.72	
13	2040			745	3.00	0.72	
14	2041			745	3.00	0.72	
15	2042			745	3.00	0.72	
16	2043			745	3.00	0.72	
17	2044			335	1.70	0.73	
18	2045			335	1.00	0.73	
19	2046			335	1.00	0.73	
20	2047			335	1.00	0.73	
21	2048			335	1.00	0.73	
22	2049			335	1.00	0.73	
23	2050			335	1.00	0.73	
24	2051			335	1.00	0.73	
25	2052			335	1.00	0.73	
26	2053			335	1.00	0.73	
27	2054			335	1.00	0.73	
28	2055			335	1.00	0.73	
29	2056			335	1.00	0.73	
30	2057			335	1.00	0.73	

0.16	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.03	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.07	Acute Hazard Impact
1	Significance Threshold
No	Significant?
26.1	Cancer Risk (Child)
10	Significance Threshold
Yes	Significant?
1.17	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
26.1	30-Year Exposure Cancer Risk
10	Significance Threshold
Yes	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Unmitigated
Receptor:	Proposed
Period:	Construction Year 13

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2029	0.03	0.03	1,090	10.0	0.85	4.35
2	2030			1,090	10.0	0.85	
3	2031			745	4.75	0.72	
4	2032			745	3.00	0.72	
5	2033			745	3.00	0.72	
6	2034			745	3.00	0.72	
7	2035			745	3.00	0.72	
8	2036			745	3.00	0.72	
9	2037			745	3.00	0.72	
10	2038			745	3.00	0.72	
11	2039			745	3.00	0.72	
12	2040			745	3.00	0.72	
13	2041			745	3.00	0.72	
14	2042			745	3.00	0.72	
15	2043			745	3.00	0.72	
16	2044			745	3.00	0.72	
17	2045			335	1.70	0.73	
18	2046			335	1.00	0.73	
19	2047			335	1.00	0.73	
20	2048			335	1.00	0.73	
21	2049			335	1.00	0.73	
22	2050			335	1.00	0.73	
23	2051			335	1.00	0.73	
24	2052			335	1.00	0.73	
25	2053			335	1.00	0.73	
26	2054			335	1.00	0.73	
27	2055			335	1.00	0.73	
28	2056			335	1.00	0.73	
29	2057			335	1.00	0.73	
30	2058			335	1.00	0.73	

0.03	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.01	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.01	Acute Hazard Impact
1	Significance Threshold
No	Significant?
4.35	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.20	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
4.35	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 2
Receptor:	Proposed
Period:	Construction Year 4

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2020	0.10	0.09	1,090	10.0	0.85	12.7
2	2021	0.10	0.09	1,090	10.0	0.85	12.7
3	2022	0.10	0.09	745	4.75	0.72	3.46
4	2023	0.10	0.09	745	3.00	0.72	2.19
5	2024	0.10	0.09	745	3.00	0.72	2.21
6	2025	0.10	0.09	745	3.00	0.72	2.20
7	2026	0.10	0.09	745	3.00	0.72	2.20
8	2027	0.10	0.09	745	3.00	0.72	2.20
9	2028	0.08	0.08	745	3.00	0.72	1.92
10	2029	0.03	0.03	745	3.00	0.72	0.62
11	2030			745	3.00	0.72	
12	2031			745	3.00	0.72	
13	2032			745	3.00	0.72	
14	2033			745	3.00	0.72	
15	2034			745	3.00	0.72	
16	2035			745	3.00	0.72	
17	2036			335	1.70	0.73	
18	2037			335	1.00	0.73	
19	2038			335	1.00	0.73	
20	2039			335	1.00	0.73	
21	2040			335	1.00	0.73	
22	2041			335	1.00	0.73	
23	2042			335	1.00	0.73	
24	2043			335	1.00	0.73	
25	2044			335	1.00	0.73	
26	2045			335	1.00	0.73	
27	2046			335	1.00	0.73	
28	2047			335	1.00	0.73	
29	2048			335	1.00	0.73	
30	2049			335	1.00	0.73	

0.09	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.02	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.04	Acute Hazard Impact
1	Significance Threshold
No	Significant?
41.7	Cancer Risk (Child)
10	Significance Threshold
Yes	Significant?
5.20	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
42.4	30-Year Exposure Cancer Risk
10	Significance Threshold
Yes	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 2
Receptor:	Proposed
Period:	Construction Year 5

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2021	0.10	0.09	1,090	10.0	0.85	12.7
2	2022	0.10	0.09	1,090	10.0	0.85	12.6
3	2023	0.10	0.09	745	4.75	0.72	3.46
4	2024	0.10	0.09	745	3.00	0.72	2.21
5	2025	0.10	0.09	745	3.00	0.72	2.20
6	2026	0.10	0.09	745	3.00	0.72	2.20
7	2027	0.10	0.09	745	3.00	0.72	2.20
8	2028	0.08	0.08	745	3.00	0.72	1.92
9	2029	0.03	0.03	745	3.00	0.72	0.62
10	2030			745	3.00	0.72	
11	2031			745	3.00	0.72	
12	2032			745	3.00	0.72	
13	2033			745	3.00	0.72	
14	2034			745	3.00	0.72	
15	2035			745	3.00	0.72	
16	2036			745	3.00	0.72	
17	2037			335	1.70	0.73	
18	2038			335	1.00	0.73	
19	2039			335	1.00	0.73	
20	2040			335	1.00	0.73	
21	2041			335	1.00	0.73	
22	2042			335	1.00	0.73	
23	2043			335	1.00	0.73	
24	2044			335	1.00	0.73	
25	2045			335	1.00	0.73	
26	2046			335	1.00	0.73	
27	2047			335	1.00	0.73	
28	2048			335	1.00	0.73	
29	2049			335	1.00	0.73	
30	2050			335	1.00	0.73	

0.09	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.02	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.04	Acute Hazard Impact
1	Significance Threshold
No	Significant?
40.1	Cancer Risk (Child)
10	Significance Threshold
Yes	Significant?
4.63	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
40.1	30-Year Exposure Cancer Risk
10	Significance Threshold
Yes	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 2
Receptor:	Proposed
Period:	Construction Year 6

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2022	0.10	0.09	1,090	10.0	0.85	12.6
2	2023	0.10	0.09	1,090	10.0	0.85	12.6
3	2024	0.10	0.09	745	4.75	0.72	3.49
4	2025	0.10	0.09	745	3.00	0.72	2.20
5	2026	0.10	0.09	745	3.00	0.72	2.20
6	2027	0.10	0.09	745	3.00	0.72	2.20
7	2028	0.08	0.08	745	3.00	0.72	1.92
8	2029	0.03	0.03	745	3.00	0.72	0.62
9	2030			745	3.00	0.72	
10	2031			745	3.00	0.72	
11	2032			745	3.00	0.72	
12	2033			745	3.00	0.72	
13	2034			745	3.00	0.72	
14	2035			745	3.00	0.72	
15	2036			745	3.00	0.72	
16	2037			745	3.00	0.72	
17	2038			335	1.70	0.73	
18	2039			335	1.00	0.73	
19	2040			335	1.00	0.73	
20	2041			335	1.00	0.73	
21	2042			335	1.00	0.73	
22	2043			335	1.00	0.73	
23	2044			335	1.00	0.73	
24	2045			335	1.00	0.73	
25	2046			335	1.00	0.73	
26	2047			335	1.00	0.73	
27	2048			335	1.00	0.73	
28	2049			335	1.00	0.73	
29	2050			335	1.00	0.73	
30	2051			335	1.00	0.73	

0.09	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.02	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.04	Acute Hazard Impact
1	Significance Threshold
No	Significant?
37.8	Cancer Risk (Child)
10	Significance Threshold
Yes	Significant?
4.06	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
37.8	30-Year Exposure Cancer Risk
10	Significance Threshold
Yes	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 2
Receptor:	Proposed
Period:	Construction Year 7

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2023	0.10	0.09	1,090	10.0	0.85	12.6
2	2024	0.10	0.09	1,090	10.0	0.85	12.7
3	2025	0.10	0.09	745	4.75	0.72	3.48
4	2026	0.10	0.09	745	3.00	0.72	2.20
5	2027	0.10	0.09	745	3.00	0.72	2.20
6	2028	0.08	0.08	745	3.00	0.72	1.92
7	2029	0.03	0.03	745	3.00	0.72	0.62
8	2030			745	3.00	0.72	
9	2031			745	3.00	0.72	
10	2032			745	3.00	0.72	
11	2033			745	3.00	0.72	
12	2034			745	3.00	0.72	
13	2035			745	3.00	0.72	
14	2036			745	3.00	0.72	
15	2037			745	3.00	0.72	
16	2038			745	3.00	0.72	
17	2039			335	1.70	0.73	
18	2040			335	1.00	0.73	
19	2041			335	1.00	0.73	
20	2042			335	1.00	0.73	
21	2043			335	1.00	0.73	
22	2044			335	1.00	0.73	
23	2045			335	1.00	0.73	
24	2046			335	1.00	0.73	
25	2047			335	1.00	0.73	
26	2048			335	1.00	0.73	
27	2049			335	1.00	0.73	
28	2050			335	1.00	0.73	
29	2051			335	1.00	0.73	
30	2052			335	1.00	0.73	

0.09	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.02	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.04	Acute Hazard Impact
1	Significance Threshold
No	Significant?
35.7	Cancer Risk (Child)
10	Significance Threshold
Yes	Significant?
3.50	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
35.7	30-Year Exposure Cancer Risk
10	Significance Threshold
Yes	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 2
Receptor:	Proposed
Period:	Construction Year 8

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2024	0.10	0.09	1,090	10.0	0.85	12.7
2	2025	0.10	0.09	1,090	10.0	0.85	12.7
3	2026	0.10	0.09	745	4.75	0.72	3.48
4	2027	0.10	0.09	745	3.00	0.72	2.20
5	2028	0.08	0.08	745	3.00	0.72	1.92
6	2029	0.03	0.03	745	3.00	0.72	0.62
7	2030			745	3.00	0.72	
8	2031			745	3.00	0.72	
9	2032			745	3.00	0.72	
10	2033			745	3.00	0.72	
11	2034			745	3.00	0.72	
12	2035			745	3.00	0.72	
13	2036			745	3.00	0.72	
14	2037			745	3.00	0.72	
15	2038			745	3.00	0.72	
16	2039			745	3.00	0.72	
17	2040			335	1.70	0.73	
18	2041			335	1.00	0.73	
19	2042			335	1.00	0.73	
20	2043			335	1.00	0.73	
21	2044			335	1.00	0.73	
22	2045			335	1.00	0.73	
23	2046			335	1.00	0.73	
24	2047			335	1.00	0.73	
25	2048			335	1.00	0.73	
26	2049			335	1.00	0.73	
27	2050			335	1.00	0.73	
28	2051			335	1.00	0.73	
29	2052			335	1.00	0.73	
30	2053			335	1.00	0.73	

0.09	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.02	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.04	Acute Hazard Impact
1	Significance Threshold
No	Significant?
33.6	Cancer Risk (Child)
10	Significance Threshold
Yes	Significant?
2.93	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
33.6	30-Year Exposure Cancer Risk
10	Significance Threshold
Yes	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 2
Receptor:	Proposed
Period:	Construction Year 9

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2025	0.10	0.09	1,090	10.0	0.85	12.7
2	2026	0.10	0.09	1,090	10.0	0.85	12.7
3	2027	0.10	0.09	745	4.75	0.72	3.48
4	2028	0.08	0.08	745	3.00	0.72	1.92
5	2029	0.03	0.03	745	3.00	0.72	0.62
6	2030			745	3.00	0.72	
7	2031			745	3.00	0.72	
8	2032			745	3.00	0.72	
9	2033			745	3.00	0.72	
10	2034			745	3.00	0.72	
11	2035			745	3.00	0.72	
12	2036			745	3.00	0.72	
13	2037			745	3.00	0.72	
14	2038			745	3.00	0.72	
15	2039			745	3.00	0.72	
16	2040			745	3.00	0.72	
17	2041			335	1.70	0.73	
18	2042			335	1.00	0.73	
19	2043			335	1.00	0.73	
20	2044			335	1.00	0.73	
21	2045			335	1.00	0.73	
22	2046			335	1.00	0.73	
23	2047			335	1.00	0.73	
24	2048			335	1.00	0.73	
25	2049			335	1.00	0.73	
26	2050			335	1.00	0.73	
27	2051			335	1.00	0.73	
28	2052			335	1.00	0.73	
29	2053			335	1.00	0.73	
30	2054			335	1.00	0.73	

0.09	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.02	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.04	Acute Hazard Impact
1	Significance Threshold
No	Significant?
31.3	Cancer Risk (Child)
10	Significance Threshold
Yes	Significant?
2.36	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
31.3	30-Year Exposure Cancer Risk
10	Significance Threshold
Yes	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 2
Receptor:	Proposed
Period:	Construction Year 10

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2026	0.10	0.09	1,090	10.0	0.85	12.7
2	2027	0.10	0.09	1,090	10.0	0.85	12.7
3	2028	0.08	0.08	745	4.75	0.72	3.04
4	2029	0.03	0.03	745	3.00	0.72	0.62
5	2030			745	3.00	0.72	
6	2031			745	3.00	0.72	
7	2032			745	3.00	0.72	
8	2033			745	3.00	0.72	
9	2034			745	3.00	0.72	
10	2035			745	3.00	0.72	
11	2036			745	3.00	0.72	
12	2037			745	3.00	0.72	
13	2038			745	3.00	0.72	
14	2039			745	3.00	0.72	
15	2040			745	3.00	0.72	
16	2041			745	3.00	0.72	
17	2042			335	1.70	0.73	
18	2043			335	1.00	0.73	
19	2044			335	1.00	0.73	
20	2045			335	1.00	0.73	
21	2046			335	1.00	0.73	
22	2047			335	1.00	0.73	
23	2048			335	1.00	0.73	
24	2049			335	1.00	0.73	
25	2050			335	1.00	0.73	
26	2051			335	1.00	0.73	
27	2052			335	1.00	0.73	
28	2053			335	1.00	0.73	
29	2054			335	1.00	0.73	
30	2055			335	1.00	0.73	

0.09	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.02	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.04	Acute Hazard Impact
1	Significance Threshold
No	Significant?
29.0	Cancer Risk (Child)
10	Significance Threshold
Yes	Significant?
1.79	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
29.0	30-Year Exposure Cancer Risk
10	Significance Threshold
Yes	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 2
Receptor:	Proposed
Period:	Construction Year 11

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2027	0.10	0.09	1,090	10.0	0.85	12.7
2	2028	0.08	0.08	1,090	10.0	0.85	11.1
3	2029	0.03	0.03	745	4.75	0.72	0.98
4	2030			745	3.00	0.72	
5	2031			745	3.00	0.72	
6	2032			745	3.00	0.72	
7	2033			745	3.00	0.72	
8	2034			745	3.00	0.72	
9	2035			745	3.00	0.72	
10	2036			745	3.00	0.72	
11	2037			745	3.00	0.72	
12	2038			745	3.00	0.72	
13	2039			745	3.00	0.72	
14	2040			745	3.00	0.72	
15	2041			745	3.00	0.72	
16	2042			745	3.00	0.72	
17	2043			335	1.70	0.73	
18	2044			335	1.00	0.73	
19	2045			335	1.00	0.73	
20	2046			335	1.00	0.73	
21	2047			335	1.00	0.73	
22	2048			335	1.00	0.73	
23	2049			335	1.00	0.73	
24	2050			335	1.00	0.73	
25	2051			335	1.00	0.73	
26	2052			335	1.00	0.73	
27	2053			335	1.00	0.73	
28	2054			335	1.00	0.73	
29	2055			335	1.00	0.73	
30	2056			335	1.00	0.73	

0.09	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.02	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.04	Acute Hazard Impact
1	Significance Threshold
No	Significant?
24.7	Cancer Risk (Child)
10	Significance Threshold
Yes	Significant?
1.22	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
24.7	30-Year Exposure Cancer Risk
10	Significance Threshold
Yes	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 2
Receptor:	Proposed
Period:	Construction Year 12

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2028	0.08	0.08	1,090	10.0	0.85	11.1
2	2029	0.03	0.03	1,090	10.0	0.85	3.57
3	2030			745	4.75	0.72	
4	2031			745	3.00	0.72	
5	2032			745	3.00	0.72	
6	2033			745	3.00	0.72	
7	2034			745	3.00	0.72	
8	2035			745	3.00	0.72	
9	2036			745	3.00	0.72	
10	2037			745	3.00	0.72	
11	2038			745	3.00	0.72	
12	2039			745	3.00	0.72	
13	2040			745	3.00	0.72	
14	2041			745	3.00	0.72	
15	2042			745	3.00	0.72	
16	2043			745	3.00	0.72	
17	2044			335	1.70	0.73	
18	2045			335	1.00	0.73	
19	2046			335	1.00	0.73	
20	2047			335	1.00	0.73	
21	2048			335	1.00	0.73	
22	2049			335	1.00	0.73	
23	2050			335	1.00	0.73	
24	2051			335	1.00	0.73	
25	2052			335	1.00	0.73	
26	2053			335	1.00	0.73	
27	2054			335	1.00	0.73	
28	2055			335	1.00	0.73	
29	2056			335	1.00	0.73	
30	2057			335	1.00	0.73	

0.08	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.02	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.03	Acute Hazard Impact
1	Significance Threshold
No	Significant?
14.6	Cancer Risk (Child)
10	Significance Threshold
Yes	Significant?
0.66	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
14.6	30-Year Exposure Cancer Risk
10	Significance Threshold
Yes	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 2
Receptor:	Proposed
Period:	Construction Year 13

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2029	0.03	0.03	1,090	10.0	0.85	3.57
2	2030			1,090	10.0	0.85	
3	2031			745	4.75	0.72	
4	2032			745	3.00	0.72	
5	2033			745	3.00	0.72	
6	2034			745	3.00	0.72	
7	2035			745	3.00	0.72	
8	2036			745	3.00	0.72	
9	2037			745	3.00	0.72	
10	2038			745	3.00	0.72	
11	2039			745	3.00	0.72	
12	2040			745	3.00	0.72	
13	2041			745	3.00	0.72	
14	2042			745	3.00	0.72	
15	2043			745	3.00	0.72	
16	2044			745	3.00	0.72	
17	2045			335	1.70	0.73	
18	2046			335	1.00	0.73	
19	2047			335	1.00	0.73	
20	2048			335	1.00	0.73	
21	2049			335	1.00	0.73	
22	2050			335	1.00	0.73	
23	2051			335	1.00	0.73	
24	2052			335	1.00	0.73	
25	2053			335	1.00	0.73	
26	2054			335	1.00	0.73	
27	2055			335	1.00	0.73	
28	2056			335	1.00	0.73	
29	2057			335	1.00	0.73	
30	2058			335	1.00	0.73	

0.03	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.01	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.01	Acute Hazard Impact
1	Significance Threshold
No	Significant?
3.57	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.16	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
3.57	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 3
Receptor:	Proposed
Period:	Construction Year 4

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2020	0.03	0.03	1,090	10.0	0.85	3.81
2	2021	0.03	0.03	1,090	10.0	0.85	3.79
3	2022	0.03	0.03	745	4.75	0.72	1.04
4	2023	0.03	0.03	745	3.00	0.72	0.66
5	2024	0.03	0.03	745	3.00	0.72	0.66
6	2025	0.03	0.03	745	3.00	0.72	0.66
7	2026	0.03	0.03	745	3.00	0.72	0.66
8	2027	0.03	0.03	745	3.00	0.72	0.66
9	2028	0.03	0.02	745	3.00	0.72	0.58
10	2029	0.01	0.01	745	3.00	0.72	0.19
11	2030			745	3.00	0.72	
12	2031			745	3.00	0.72	
13	2032			745	3.00	0.72	
14	2033			745	3.00	0.72	
15	2034			745	3.00	0.72	
16	2035			745	3.00	0.72	
17	2036			335	1.70	0.73	
18	2037			335	1.00	0.73	
19	2038			335	1.00	0.73	
20	2039			335	1.00	0.73	
21	2040			335	1.00	0.73	
22	2041			335	1.00	0.73	
23	2042			335	1.00	0.73	
24	2043			335	1.00	0.73	
25	2044			335	1.00	0.73	
26	2045			335	1.00	0.73	
27	2046			335	1.00	0.73	
28	2047			335	1.00	0.73	
29	2048			335	1.00	0.73	
30	2049			335	1.00	0.73	

0.03	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.01	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.01	Acute Hazard Impact
1	Significance Threshold
No	Significant?
12.5	Cancer Risk (Child)
10	Significance Threshold
Yes	Significant?
1.56	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
12.7	30-Year Exposure Cancer Risk
10	Significance Threshold
Yes	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 3
Receptor:	Proposed
Period:	Construction Year 5

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2021	0.03	0.03	1,090	10.0	0.85	3.79
2	2022	0.03	0.03	1,090	10.0	0.85	3.79
3	2023	0.03	0.03	745	4.75	0.72	1.04
4	2024	0.03	0.03	745	3.00	0.72	0.66
5	2025	0.03	0.03	745	3.00	0.72	0.66
6	2026	0.03	0.03	745	3.00	0.72	0.66
7	2027	0.03	0.03	745	3.00	0.72	0.66
8	2028	0.03	0.02	745	3.00	0.72	0.58
9	2029	0.01	0.01	745	3.00	0.72	0.19
10	2030			745	3.00	0.72	
11	2031			745	3.00	0.72	
12	2032			745	3.00	0.72	
13	2033			745	3.00	0.72	
14	2034			745	3.00	0.72	
15	2035			745	3.00	0.72	
16	2036			745	3.00	0.72	
17	2037			335	1.70	0.73	
18	2038			335	1.00	0.73	
19	2039			335	1.00	0.73	
20	2040			335	1.00	0.73	
21	2041			335	1.00	0.73	
22	2042			335	1.00	0.73	
23	2043			335	1.00	0.73	
24	2044			335	1.00	0.73	
25	2045			335	1.00	0.73	
26	2046			335	1.00	0.73	
27	2047			335	1.00	0.73	
28	2048			335	1.00	0.73	
29	2049			335	1.00	0.73	
30	2050			335	1.00	0.73	

0.03	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.01	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.01	Acute Hazard Impact
1	Significance Threshold
No	Significant?
12.0	Cancer Risk (Child)
10	Significance Threshold
Yes	Significant?
1.39	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
12.0	30-Year Exposure Cancer Risk
10	Significance Threshold
Yes	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 3
Receptor:	Proposed
Period:	Construction Year 6

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2022	0.03	0.03	1,090	10.0	0.85	3.79
2	2023	0.03	0.03	1,090	10.0	0.85	3.79
3	2024	0.03	0.03	745	4.75	0.72	1.05
4	2025	0.03	0.03	745	3.00	0.72	0.66
5	2026	0.03	0.03	745	3.00	0.72	0.66
6	2027	0.03	0.03	745	3.00	0.72	0.66
7	2028	0.03	0.02	745	3.00	0.72	0.58
8	2029	0.01	0.01	745	3.00	0.72	0.19
9	2030			745	3.00	0.72	
10	2031			745	3.00	0.72	
11	2032			745	3.00	0.72	
12	2033			745	3.00	0.72	
13	2034			745	3.00	0.72	
14	2035			745	3.00	0.72	
15	2036			745	3.00	0.72	
16	2037			745	3.00	0.72	
17	2038			335	1.70	0.73	
18	2039			335	1.00	0.73	
19	2040			335	1.00	0.73	
20	2041			335	1.00	0.73	
21	2042			335	1.00	0.73	
22	2043			335	1.00	0.73	
23	2044			335	1.00	0.73	
24	2045			335	1.00	0.73	
25	2046			335	1.00	0.73	
26	2047			335	1.00	0.73	
27	2048			335	1.00	0.73	
28	2049			335	1.00	0.73	
29	2050			335	1.00	0.73	
30	2051			335	1.00	0.73	

0.03	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.01	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.01	Acute Hazard Impact
1	Significance Threshold
No	Significant?
11.4	Cancer Risk (Child)
10	Significance Threshold
Yes	Significant?
1.22	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
11.4	30-Year Exposure Cancer Risk
10	Significance Threshold
Yes	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 3
Receptor:	Proposed
Period:	Construction Year 7

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2023	0.03	0.03	1,090	10.0	0.85	3.79
2	2024	0.03	0.03	1,090	10.0	0.85	3.81
3	2025	0.03	0.03	745	4.75	0.72	1.04
4	2026	0.03	0.03	745	3.00	0.72	0.66
5	2027	0.03	0.03	745	3.00	0.72	0.66
6	2028	0.03	0.02	745	3.00	0.72	0.58
7	2029	0.01	0.01	745	3.00	0.72	0.19
8	2030			745	3.00	0.72	
9	2031			745	3.00	0.72	
10	2032			745	3.00	0.72	
11	2033			745	3.00	0.72	
12	2034			745	3.00	0.72	
13	2035			745	3.00	0.72	
14	2036			745	3.00	0.72	
15	2037			745	3.00	0.72	
16	2038			745	3.00	0.72	
17	2039			335	1.70	0.73	
18	2040			335	1.00	0.73	
19	2041			335	1.00	0.73	
20	2042			335	1.00	0.73	
21	2043			335	1.00	0.73	
22	2044			335	1.00	0.73	
23	2045			335	1.00	0.73	
24	2046			335	1.00	0.73	
25	2047			335	1.00	0.73	
26	2048			335	1.00	0.73	
27	2049			335	1.00	0.73	
28	2050			335	1.00	0.73	
29	2051			335	1.00	0.73	
30	2052			335	1.00	0.73	

0.03	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.01	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.01	Acute Hazard Impact
1	Significance Threshold
No	Significant?
10.7	Cancer Risk (Child)
10	Significance Threshold
Yes	Significant?
1.05	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
10.7	30-Year Exposure Cancer Risk
10	Significance Threshold
Yes	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 3
Receptor:	Proposed
Period:	Construction Year 8

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2024	0.03	0.03	1,090	10.0	0.85	3.81
2	2025	0.03	0.03	1,090	10.0	0.85	3.79
3	2026	0.03	0.03	745	4.75	0.72	1.04
4	2027	0.03	0.03	745	3.00	0.72	0.66
5	2028	0.03	0.02	745	3.00	0.72	0.58
6	2029	0.01	0.01	745	3.00	0.72	0.19
7	2030			745	3.00	0.72	
8	2031			745	3.00	0.72	
9	2032			745	3.00	0.72	
10	2033			745	3.00	0.72	
11	2034			745	3.00	0.72	
12	2035			745	3.00	0.72	
13	2036			745	3.00	0.72	
14	2037			745	3.00	0.72	
15	2038			745	3.00	0.72	
16	2039			745	3.00	0.72	
17	2040			335	1.70	0.73	
18	2041			335	1.00	0.73	
19	2042			335	1.00	0.73	
20	2043			335	1.00	0.73	
21	2044			335	1.00	0.73	
22	2045			335	1.00	0.73	
23	2046			335	1.00	0.73	
24	2047			335	1.00	0.73	
25	2048			335	1.00	0.73	
26	2049			335	1.00	0.73	
27	2050			335	1.00	0.73	
28	2051			335	1.00	0.73	
29	2052			335	1.00	0.73	
30	2053			335	1.00	0.73	

0.03	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.01	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.01	Acute Hazard Impact
1	Significance Threshold
No	Significant?
10.1	Cancer Risk (Child)
10	Significance Threshold
Yes	Significant?
0.88	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
10.1	30-Year Exposure Cancer Risk
10	Significance Threshold
Yes	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 3
Receptor:	Proposed
Period:	Construction Year 9

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2025	0.03	0.03	1,090	10.0	0.85	3.79
2	2026	0.03	0.03	1,090	10.0	0.85	3.79
3	2027	0.03	0.03	745	4.75	0.72	1.04
4	2028	0.03	0.02	745	3.00	0.72	0.58
5	2029	0.01	0.01	745	3.00	0.72	0.19
6	2030			745	3.00	0.72	
7	2031			745	3.00	0.72	
8	2032			745	3.00	0.72	
9	2033			745	3.00	0.72	
10	2034			745	3.00	0.72	
11	2035			745	3.00	0.72	
12	2036			745	3.00	0.72	
13	2037			745	3.00	0.72	
14	2038			745	3.00	0.72	
15	2039			745	3.00	0.72	
16	2040			745	3.00	0.72	
17	2041			335	1.70	0.73	
18	2042			335	1.00	0.73	
19	2043			335	1.00	0.73	
20	2044			335	1.00	0.73	
21	2045			335	1.00	0.73	
22	2046			335	1.00	0.73	
23	2047			335	1.00	0.73	
24	2048			335	1.00	0.73	
25	2049			335	1.00	0.73	
26	2050			335	1.00	0.73	
27	2051			335	1.00	0.73	
28	2052			335	1.00	0.73	
29	2053			335	1.00	0.73	
30	2054			335	1.00	0.73	

0.03	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.01	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.01	Acute Hazard Impact
1	Significance Threshold
No	Significant?
9.38	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.71	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
9.38	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 3
Receptor:	Proposed
Period:	Construction Year 10

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2026	0.03	0.03	1,090	10.0	0.85	3.79
2	2027	0.03	0.03	1,090	10.0	0.85	3.79
3	2028	0.03	0.02	745	4.75	0.72	0.91
4	2029	0.01	0.01	745	3.00	0.72	0.19
5	2030			745	3.00	0.72	
6	2031			745	3.00	0.72	
7	2032			745	3.00	0.72	
8	2033			745	3.00	0.72	
9	2034			745	3.00	0.72	
10	2035			745	3.00	0.72	
11	2036			745	3.00	0.72	
12	2037			745	3.00	0.72	
13	2038			745	3.00	0.72	
14	2039			745	3.00	0.72	
15	2040			745	3.00	0.72	
16	2041			745	3.00	0.72	
17	2042			335	1.70	0.73	
18	2043			335	1.00	0.73	
19	2044			335	1.00	0.73	
20	2045			335	1.00	0.73	
21	2046			335	1.00	0.73	
22	2047			335	1.00	0.73	
23	2048			335	1.00	0.73	
24	2049			335	1.00	0.73	
25	2050			335	1.00	0.73	
26	2051			335	1.00	0.73	
27	2052			335	1.00	0.73	
28	2053			335	1.00	0.73	
29	2054			335	1.00	0.73	
30	2055			335	1.00	0.73	

0.03	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.01	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.01	Acute Hazard Impact
1	Significance Threshold
No	Significant?
8.68	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.54	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
8.68	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 3
Receptor:	Proposed
Period:	Construction Year 11

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2027	0.03	0.03	1,090	10.0	0.85	3.79
2	2028	0.03	0.02	1,090	10.0	0.85	3.32
3	2029	0.01	0.01	745	4.75	0.72	0.30
4	2030			745	3.00	0.72	
5	2031			745	3.00	0.72	
6	2032			745	3.00	0.72	
7	2033			745	3.00	0.72	
8	2034			745	3.00	0.72	
9	2035			745	3.00	0.72	
10	2036			745	3.00	0.72	
11	2037			745	3.00	0.72	
12	2038			745	3.00	0.72	
13	2039			745	3.00	0.72	
14	2040			745	3.00	0.72	
15	2041			745	3.00	0.72	
16	2042			745	3.00	0.72	
17	2043			335	1.70	0.73	
18	2044			335	1.00	0.73	
19	2045			335	1.00	0.73	
20	2046			335	1.00	0.73	
21	2047			335	1.00	0.73	
22	2048			335	1.00	0.73	
23	2049			335	1.00	0.73	
24	2050			335	1.00	0.73	
25	2051			335	1.00	0.73	
26	2052			335	1.00	0.73	
27	2053			335	1.00	0.73	
28	2054			335	1.00	0.73	
29	2055			335	1.00	0.73	
30	2056			335	1.00	0.73	

0.03	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.01	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.01	Acute Hazard Impact
1	Significance Threshold
No	Significant?
7.40	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.37	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
7.40	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 3
Receptor:	Proposed
Period:	Construction Year 12

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2028	0.03	0.02	1,090	10.0	0.85	3.32
2	2029	0.01	0.01	1,090	10.0	0.85	1.07
3	2030			745	4.75	0.72	
4	2031			745	3.00	0.72	
5	2032			745	3.00	0.72	
6	2033			745	3.00	0.72	
7	2034			745	3.00	0.72	
8	2035			745	3.00	0.72	
9	2036			745	3.00	0.72	
10	2037			745	3.00	0.72	
11	2038			745	3.00	0.72	
12	2039			745	3.00	0.72	
13	2040			745	3.00	0.72	
14	2041			745	3.00	0.72	
15	2042			745	3.00	0.72	
16	2043			745	3.00	0.72	
17	2044			335	1.70	0.73	
18	2045			335	1.00	0.73	
19	2046			335	1.00	0.73	
20	2047			335	1.00	0.73	
21	2048			335	1.00	0.73	
22	2049			335	1.00	0.73	
23	2050			335	1.00	0.73	
24	2051			335	1.00	0.73	
25	2052			335	1.00	0.73	
26	2053			335	1.00	0.73	
27	2054			335	1.00	0.73	
28	2055			335	1.00	0.73	
29	2056			335	1.00	0.73	
30	2057			335	1.00	0.73	

0.02	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.01	Acute Hazard Impact
1	Significance Threshold
No	Significant?
4.39	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.20	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
4.39	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Mitigated DPF Level 3
Receptor:	Proposed
Period:	Construction Year 13

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2029	0.01	0.01	1,090	10.0	0.85	1.07
2	2030			1,090	10.0	0.85	
3	2031			745	4.75	0.72	
4	2032			745	3.00	0.72	
5	2033			745	3.00	0.72	
6	2034			745	3.00	0.72	
7	2035			745	3.00	0.72	
8	2036			745	3.00	0.72	
9	2037			745	3.00	0.72	
10	2038			745	3.00	0.72	
11	2039			745	3.00	0.72	
12	2040			745	3.00	0.72	
13	2041			745	3.00	0.72	
14	2042			745	3.00	0.72	
15	2043			745	3.00	0.72	
16	2044			745	3.00	0.72	
17	2045			335	1.70	0.73	
18	2046			335	1.00	0.73	
19	2047			335	1.00	0.73	
20	2048			335	1.00	0.73	
21	2049			335	1.00	0.73	
22	2050			335	1.00	0.73	
23	2051			335	1.00	0.73	
24	2052			335	1.00	0.73	
25	2053			335	1.00	0.73	
26	2054			335	1.00	0.73	
27	2055			335	1.00	0.73	
28	2056			335	1.00	0.73	
29	2057			335	1.00	0.73	
30	2058			335	1.00	0.73	

0.01	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.00	Acute Hazard Impact
1	Significance Threshold
No	Significant?
1.07	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.05	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
1.07	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project: Richmond South Shoreline Specific Plan
Date: August 15, 2016
Condition: Union Pacific
Receptor: Existing

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2017	0.05	0.06	1,090	10.0	0.85	8.03
2	2018	0.05	0.05	1,090	10.0	0.85	7.47
3	2019	0.04	0.05	745	4.75	0.72	1.90
4	2020	0.04	0.05	745	3.00	0.72	1.11
5	2021	0.04	0.04	745	3.00	0.72	1.06
6	2022	0.04	0.04	745	3.00	0.72	0.96
7	2023	0.03	0.04	745	3.00	0.72	0.91
8	2024	0.03	0.03	745	3.00	0.72	0.82
9	2025	0.03	0.03	745	3.00	0.72	0.77
10	2026	0.03	0.03	745	3.00	0.72	0.72
11	2027	0.02	0.03	745	3.00	0.72	0.67
12	2028	0.02	0.03	745	3.00	0.72	0.62
13	2029	0.02	0.02	745	3.00	0.72	0.53
14	2030	0.02	0.02	745	3.00	0.72	0.48
15	2031	0.02	0.02	745	3.00	0.72	0.48
16	2032	0.02	0.02	745	3.00	0.72	0.43
17	2033	0.01	0.02	335	1.70	0.73	0.10
18	2034	0.01	0.01	335	1.00	0.73	0.05
19	2035	0.01	0.01	335	1.00	0.73	0.05
20	2036	0.01	0.01	335	1.00	0.73	0.04
21	2037	0.01	0.01	335	1.00	0.73	0.04
22	2038	0.01	0.01	335	1.00	0.73	0.04
23	2039	0.01	0.01	335	1.00	0.73	0.04
24	2040	0.01	0.01	335	1.00	0.73	0.03
25	2041	0.01	0.01	335	1.00	0.73	0.03
26	2042	0.01	0.01	335	1.00	0.73	0.03
27	2043	0.01	0.01	335	1.00	0.73	0.03
28	2044	0.01	0.01	335	1.00	0.73	0.03
29	2045	0.01	0.01	335	1.00	0.73	0.03
30	2046	0.01	0.01	335	1.00	0.73	0.03

0.06	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.01	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.02	Acute Hazard Impact
1	Significance Threshold
No	Significant?
27.1	Cancer Risk (Child)
10	Significance Threshold
Yes	Significant?
4.37	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
27.5	30-Year Exposure Cancer Risk
10	Significance Threshold
Yes	Significant?

Health Risk Assessment Assumptions

5	Chronic Reference Exposure Level (ug/m3) for DPM	
2.5	Acute Reference Exposure Level (ug/m3) for Acrolien	
1.1	Cancer Potency Slope Factor (cancer risk per mg/kg-day) for DPM	
350	days per year	
25,550	days per lifetime	
1090	95th Percentile Daily Breathing Rates (L/kg-day)	0<2 Years
861	95th Percentile Daily Breathing Rates (L/kg-day)	2<9 Years
745	95th Percentile Daily Breathing Rates (L/kg-day)	2<16 Years
335	95th Percentile Daily Breathing Rates (L/kg-day)	16<30 Years
290	95th Percentile Daily Breathing Rates (L/kg-day)	16<70 Years
0.85	fraction of time at home	0<2 Years
0.72	fraction of time at home	2<16 Years
0.73	fraction of time at home	16<70 Years

Project:	Richmond South Shoreline Specific Plan
Date:	August 15, 2016
Condition:	Union Pacific
Receptor:	Proposed

Exposure Year	Calender Year	Maximum 1-Hour Acrolien Concentration (ug/m3)	Annual PM2.5 Concentration (ug/m3)	Daily Breathing Rates (L/kg-day)	Exposure Factor	fraction of time at home	Cancer Risk
1	2020	0.03	0.01	1,090	10.0	0.85	1.31
2	2021	0.02	0.01	1,090	10.0	0.85	0.99
3	2022	0.02	0.01	745	4.75	0.72	0.25
4	2023	0.02	0.01	745	3.00	0.72	0.15
5	2024	0.02	0.01	745	3.00	0.72	0.13
6	2025	0.02	0.01	745	3.00	0.72	0.13
7	2026	0.02	0.00	745	3.00	0.72	0.12
8	2027	0.01	0.00	745	3.00	0.72	0.11
9	2028	0.01	0.00	745	3.00	0.72	0.10
10	2029	0.01	0.00	745	3.00	0.72	0.09
11	2030	0.01	0.00	745	3.00	0.72	0.08
12	2031	0.01	0.00	745	3.00	0.72	0.08
13	2032	0.01	0.00	745	3.00	0.72	0.07
14	2033	0.01	0.00	745	3.00	0.72	0.06
15	2034	0.01	0.00	745	3.00	0.72	0.05
16	2035	0.01	0.00	745	3.00	0.72	0.05
17	2036	0.01	0.00	335	1.70	0.73	0.01
18	2037	0.01	0.00	335	1.00	0.73	0.01
19	2038	0.01	0.00	335	1.00	0.73	0.01
20	2039	0.01	0.00	335	1.00	0.73	0.01
21	2040	0.01	0.00	335	1.00	0.73	0.00
22	2041	0.00	0.00	335	1.00	0.73	0.01
23	2042	0.00	0.00	335	1.00	0.73	0.01
24	2043	0.00	0.00	335	1.00	0.73	0.01
25	2044	0.00	0.00	335	1.00	0.73	0.00
26	2045	0.00	0.00	335	1.00	0.73	0.01
27	2046	0.00	0.00	335	1.00	0.73	0.01
28	2047	0.00	0.00	335	1.00	0.73	0.01
29	2048	0.00	0.00	335	1.00	0.73	0.00
30	2049	0.00	0.00	335	1.00	0.73	0.01

0.01	Maximum Annual PM2.5 Concentration (ug/m3)
0.3	Significance Threshold (ug/m3)
No	Significant?
0.00	Chronic Hazard Impact
1	Significance Threshold
No	Significant?
0.01	Acute Hazard Impact
1	Significance Threshold
No	Significant?
3.78	Cancer Risk (Child)
10	Significance Threshold
No	Significant?
0.60	Cancer Risk (Adult)
10	Significance Threshold
No	Significant?
3.86	30-Year Exposure Cancer Risk
10	Significance Threshold
No	Significant?

Locomotive Emission Factors

Description	CO (g/hp-hr)	VOC (g/hp-hr)	NOx (g/hp-hr)	PM10 (g/hp-hr)	PM2.5 (g/hp-hr)
"Switch" duty-cycle, Tier 2	1.83	0.51	7.3	0.19	0.18
"Line-haul" duty-cycle, Tier 2	1.28	0.26	5.0	0.18	0.17

g/hp-hr means grams per horsepower-hour

Operation Assumptions

0	rail switch per day
365	days per year
0.5	idling time in hours
0.1	full load time in hours
3,300	Line Haul Locomotive engine size (hp)
2,500	Switch Locomotive engine size (hp)
5	Idle fuel usage (gal/hr)
0.28	line haul load factor
2	locomotive per line haul
1	locomotive per switch
20	rail haul per day
0.25	switch load factor

Locomotive Emissions - Line Haul duty-cycle

Description	CO (lb/day)	VOC (lb/day)	NOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	PM2.5 (lb/day)
Locomotive (idling)	1.494	0.303	5.777	0.210	0.204	0.078
Locomotive (at full load/horsepower)	10.42	2.12	40.31	1.47	1.42	0.545

Description	CO (tons/year)	VOC (tons/year)	NOx (tons/year)	PM10 (tons/year)	PM2.5 (tons/year)	PM2.5 (tons/year)
Locomotive (idling)	0.273	0.055	1.054	0.038	0.037	0.014
Locomotive (at full load/horsepower)	1.90	0.39	7.36	0.27	0.26	0.10

Locomotive Emissions - Switch duty-cycle

Description	CO (lb/day)	VOC (lb/day)	NOx (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	PM2.5 (lb/day)
Locomotive (idling)	0.000	0.000	0.000	0.000	0.000	0.000
Locomotive (at full load/horsepower)	0.00	0.00	0.00	0.00	0.00	0.000

Description	CO (tons/year)	VOC (tons/year)	NOx (tons/year)	PM10 (tons/year)	PM2.5 (tons/year)	PM2.5 (tons/year)
Locomotive (idling)	0.000	0.000	0.000	0.000	0.000	0.000
Locomotive (at full load/horsepower)	0.000	0.000	0.000	0.000	0.000	0.000

Attachment B

DPM Annual Construction Emissions

CalEEMod Output Files

- Unmitigated
- Mitigated with DPF Level 2
- Mitigated with DPF Level 3

RSSSP Subarea 4 - Level 2 DPF

Contra Costa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	635.00	1000sqft	15.44	635,000.00	0
Research & Development	635.00	1000sqft	15.44	635,000.00	0
Parking Lot	1,850.00	Space	17.63	740,000.00	0
City Park	6.50	Acre	6.50	283,140.00	0
Apartments Mid Rise	1,520.00	Dwelling Unit	42.36	1,520,000.00	3070
Free-Standing Discount Store	190.00	1000sqft	4.62	190,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	5			**Operational Year**	2014
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	0.05	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - adjusted CO2 EF consistent with GHG Reduction Strategy and MCE provisions. CH4 and N2O scaled down proprtionaltely.

Land Use - Adjust Population to match P&H Section. Parking spaces from SP 60% of SA4. Acreages adjusted based on 60% of developabe acreage for SA4.

Construction Phase - Scale phase durations proportionally to complete by 2030. Separate calc. sheet.

Off-road Equipment - Equipment hours adjusted to match 19% increase in schedule over default.

Off-road Equipment - Equipment hours adjusted to match 19% increase in schedule over default.

Off-road Equipment - Equipment hours adjusted to match 19% increase in schedule over default.

Off-road Equipment - Equipment hours adjusted to match 19% increase in schedule over default.

Off-road Equipment - Equipment hours adjusted to match 19% increase in schedule over default.

Off-road Equipment - Equipment hours adjusted to match 19% increase in schedule over default.

Demolition - 60,000 cy per PD. 1.264 ton/cy per user guide.

Grading - Export of material addressed in DTSC CEQA documant.

Architectural Coating -

Vehicle Trips - Adjust trip rates to match trip generation of transportation analysis. Weekend trips rates proportional to ITE in model.

Vechicle Emission Factors - EMFAC2014

Vechicle Emission Factors -

Vechicle Emission Factors -

Woodstoves - Assume no woodstoves. Assume default percentage of fireplaces bu all gas-fired.

Energy Use - Adjust T24 energy to reflect 2013 and 2016 T24.

Water And Wastewater - All wastewater treatment aerobic. No septic or lagoons.

Construction Off-road Equipment Mitigation - BAAQMD Enhanced Combustion Mitigation Measures

Waste Mitigation - Adoption of Zero Waste Ordinance and achieving 75% diversion by 2020, and 90% diversion by 2030. Baseline diversion rate for 2005 = 49%.

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2

tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
tblConstEquipMitigation	DPF	No Change	Level 2
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
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tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3

tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	220.00	178.00
tblConstructionPhase	NumDays	3,100.00	2,521.00
tblConstructionPhase	NumDays	200.00	163.00
tblConstructionPhase	NumDays	310.00	252.00
tblConstructionPhase	NumDays	220.00	179.00
tblConstructionPhase	NumDays	120.00	98.00
tblEnergyUse	T24E	312.05	183.58
tblEnergyUse	T24E	2.74	1.68
tblEnergyUse	T24E	5.01	3.06
tblEnergyUse	T24E	1.48	0.91
tblEnergyUse	T24NG	7,191.67	6,655.49
tblEnergyUse	T24NG	4.10	2.84
tblEnergyUse	T24NG	19.28	13.35
tblEnergyUse	T24NG	18.78	13.00
tblFireplaces	NumberGas	836.00	1,048.80
tblFireplaces	NumberWood	212.80	0.00
tblGrading	AcresOfGrading	748.13	749.70
tblLandUse	LotAcreage	14.58	15.44
tblLandUse	LotAcreage	14.58	15.44

tblLandUse	LotAcreage	16.65	17.63
tblLandUse	LotAcreage	40.00	42.36
tblLandUse	LotAcreage	4.36	4.62
tblLandUse	Population	4,347.00	3,070.00
tblOffRoadEquipment	UsageHours	6.00	7.10
tblOffRoadEquipment	UsageHours	8.00	9.50
tblOffRoadEquipment	UsageHours	7.00	8.30
tblOffRoadEquipment	UsageHours	8.00	9.50
tblOffRoadEquipment	UsageHours	8.00	9.50
tblOffRoadEquipment	UsageHours	8.00	9.50
tblOffRoadEquipment	UsageHours	8.00	9.50
tblOffRoadEquipment	UsageHours	8.00	9.50
tblOffRoadEquipment	UsageHours	8.00	9.50
tblOffRoadEquipment	UsageHours	8.00	9.50
tblOffRoadEquipment	UsageHours	8.00	9.50
tblOffRoadEquipment	UsageHours	8.00	9.50
tblOffRoadEquipment	UsageHours	8.00	9.50
tblOffRoadEquipment	UsageHours	8.00	9.50
tblOffRoadEquipment	UsageHours	8.00	9.50
tblOffRoadEquipment	UsageHours	8.00	9.50
tblOffRoadEquipment	UsageHours	7.00	8.30
tblOffRoadEquipment	UsageHours	8.00	9.50
tblOffRoadEquipment	UsageHours	8.00	9.50
tblOffRoadEquipment	UsageHours	8.00	9.50
tblProjectCharacteristics	CH4IntensityFactor	0.029	0
tblProjectCharacteristics	CO2IntensityFactor	641.35	0.05
tblProjectCharacteristics	N2OIntensityFactor	0.006	0
tblVehicleEF	HHD	0.02	0.03
tblVehicleEF	HHD	0.02	9.8350e-003

tblVehicleEF	HHD	2.77	3.72
tblVehicleEF	HHD	2.05	1.13
tblVehicleEF	HHD	88.12	0.00
tblVehicleEF	HHD	576.43	10,537.24
tblVehicleEF	HHD	1,715.63	1,562.82
tblVehicleEF	HHD	73.23	1.20
tblVehicleEF	HHD	0.02	6.6500e-003
tblVehicleEF	HHD	6.02	31.95
tblVehicleEF	HHD	8.58	1.86
tblVehicleEF	HHD	5.24	0.03
tblVehicleEF	HHD	0.03	9.5180e-003
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.03	0.04
tblVehicleEF	HHD	0.16	6.7440e-003
tblVehicleEF	HHD	7.5520e-003	1.3000e-005
tblVehicleEF	HHD	0.03	9.5180e-003
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.6880e-003	8.9630e-003
tblVehicleEF	HHD	0.15	6.4520e-003
tblVehicleEF	HHD	5.9870e-003	1.2000e-005
tblVehicleEF	HHD	3.5280e-003	1.8600e-004
tblVehicleEF	HHD	0.28	4.5000e-004
tblVehicleEF	HHD	0.53	0.97
tblVehicleEF	HHD	2.0090e-003	1.2800e-004
tblVehicleEF	HHD	0.35	0.08
tblVehicleEF	HHD	1.14	2.1720e-003
tblVehicleEF	HHD	4.48	7.1960e-003
tblVehicleEF	HHD	5.5830e-003	0.10

tblVehicleEF	HHD	0.02	0.01
tblVehicleEF	HHD	2.2670e-003	1.8000e-005
tblVehicleEF	HHD	3.5280e-003	1.3820e-003
tblVehicleEF	HHD	0.28	0.08
tblVehicleEF	HHD	0.60	0.70
tblVehicleEF	HHD	2.0090e-003	1.0060e-003
tblVehicleEF	HHD	0.40	0.25
tblVehicleEF	HHD	1.14	0.43
tblVehicleEF	HHD	4.81	1.38
tblVehicleEF	LDA	0.02	7.4980e-003
tblVehicleEF	LDA	0.02	3.7320e-003
tblVehicleEF	LDA	1.47	0.34
tblVehicleEF	LDA	3.26	0.67
tblVehicleEF	LDA	300.31	188.73
tblVehicleEF	LDA	66.50	42.49
tblVehicleEF	LDA	0.53	0.62
tblVehicleEF	LDA	0.14	0.03
tblVehicleEF	LDA	0.21	0.03
tblVehicleEF	LDA	2.1650e-003	1.2070e-003
tblVehicleEF	LDA	3.1020e-003	1.8520e-003
tblVehicleEF	LDA	1.9660e-003	1.1110e-003
tblVehicleEF	LDA	2.8220e-003	1.7030e-003
tblVehicleEF	LDA	0.06	0.12
tblVehicleEF	LDA	0.16	0.06
tblVehicleEF	LDA	0.05	0.11
tblVehicleEF	LDA	0.05	5.1550e-003
tblVehicleEF	LDA	0.39	0.16
tblVehicleEF	LDA	0.27	0.03

tblVehicleEF	LDA	3.4020e-003	1.8880e-003
tblVehicleEF	LDA	7.9000e-004	4.3600e-004
tblVehicleEF	LDA	0.06	0.02
tblVehicleEF	LDA	0.16	0.06
tblVehicleEF	LDA	0.05	0.02
tblVehicleEF	LDA	0.06	0.02
tblVehicleEF	LDA	0.39	0.17
tblVehicleEF	LDA	0.28	0.07
tblVehicleEF	LDT1	0.03	0.01
tblVehicleEF	LDT1	0.03	7.5270e-003
tblVehicleEF	LDT1	3.57	0.52
tblVehicleEF	LDT1	7.18	1.24
tblVehicleEF	LDT1	355.60	236.35
tblVehicleEF	LDT1	77.97	55.01
tblVehicleEF	LDT1	0.07	0.03
tblVehicleEF	LDT1	0.38	0.05
tblVehicleEF	LDT1	0.38	0.06
tblVehicleEF	LDT1	4.7920e-003	1.4410e-003
tblVehicleEF	LDT1	5.7400e-003	2.2390e-003
tblVehicleEF	LDT1	4.3620e-003	1.3260e-003
tblVehicleEF	LDT1	5.2380e-003	2.0580e-003
tblVehicleEF	LDT1	0.14	0.30
tblVehicleEF	LDT1	0.31	0.13
tblVehicleEF	LDT1	0.10	0.27
tblVehicleEF	LDT1	0.12	8.8220e-003
tblVehicleEF	LDT1	1.17	0.51
tblVehicleEF	LDT1	0.56	0.07
tblVehicleEF	LDT1	3.9510e-003	2.3680e-003

tblVehicleEF	LDT1	9.7000e-004	5.7100e-004
tblVehicleEF	LDT1	0.14	0.06
tblVehicleEF	LDT1	0.31	0.16
tblVehicleEF	LDT1	0.10	0.06
tblVehicleEF	LDT1	0.15	0.03
tblVehicleEF	LDT1	1.17	0.54
tblVehicleEF	LDT1	0.60	0.14
tblVehicleEF	LDT2	0.02	9.5030e-003
tblVehicleEF	LDT2	0.02	4.9020e-003
tblVehicleEF	LDT2	1.93	0.47
tblVehicleEF	LDT2	4.48	0.89
tblVehicleEF	LDT2	427.75	267.32
tblVehicleEF	LDT2	93.59	61.31
tblVehicleEF	LDT2	0.18	0.17
tblVehicleEF	LDT2	0.25	0.04
tblVehicleEF	LDT2	0.40	0.05
tblVehicleEF	LDT2	2.0310e-003	1.3010e-003
tblVehicleEF	LDT2	2.8980e-003	2.0160e-003
tblVehicleEF	LDT2	1.8500e-003	1.1960e-003
tblVehicleEF	LDT2	2.6520e-003	1.8530e-003
tblVehicleEF	LDT2	0.06	0.17
tblVehicleEF	LDT2	0.17	0.07
tblVehicleEF	LDT2	0.05	0.18
tblVehicleEF	LDT2	0.05	7.1090e-003
tblVehicleEF	LDT2	0.59	0.29
tblVehicleEF	LDT2	0.33	0.04
tblVehicleEF	LDT2	4.6410e-003	2.6760e-003
tblVehicleEF	LDT2	1.0780e-003	6.2700e-004

tblVehicleEF	LDT2	0.06	0.04
tblVehicleEF	LDT2	0.17	0.10
tblVehicleEF	LDT2	0.05	0.05
tblVehicleEF	LDT2	0.07	0.02
tblVehicleEF	LDT2	0.59	0.36
tblVehicleEF	LDT2	0.35	0.09
tblVehicleEF	LHD1	1.2170e-003	1.1410e-003
tblVehicleEF	LHD1	0.03	0.01
tblVehicleEF	LHD1	0.03	0.01
tblVehicleEF	LHD1	0.18	1.82
tblVehicleEF	LHD1	2.39	0.68
tblVehicleEF	LHD1	5.65	1.55
tblVehicleEF	LHD1	8.68	122.84
tblVehicleEF	LHD1	813.53	654.59
tblVehicleEF	LHD1	40.10	24.07
tblVehicleEF	LHD1	0.04	0.01
tblVehicleEF	LHD1	0.06	0.98
tblVehicleEF	LHD1	1.84	0.75
tblVehicleEF	LHD1	1.38	0.64
tblVehicleEF	LHD1	7.0100e-004	0.01
tblVehicleEF	LHD1	0.05	0.08
tblVehicleEF	LHD1	9.3080e-003	0.01
tblVehicleEF	LHD1	0.02	0.01
tblVehicleEF	LHD1	1.3580e-003	6.0600e-004
tblVehicleEF	LHD1	6.4500e-004	0.01
tblVehicleEF	LHD1	0.02	0.03
tblVehicleEF	LHD1	2.3270e-003	2.5730e-003
tblVehicleEF	LHD1	0.02	0.01

tblVehicleEF	LHD1	1.2490e-003	5.5700e-004
tblVehicleEF	LHD1	2.1560e-003	0.02
tblVehicleEF	LHD1	0.07	0.08
tblVehicleEF	LHD1	0.03	0.19
tblVehicleEF	LHD1	1.1160e-003	0.01
tblVehicleEF	LHD1	0.23	0.10
tblVehicleEF	LHD1	0.48	0.58
tblVehicleEF	LHD1	0.49	0.14
tblVehicleEF	LHD1	9.0000e-005	1.2190e-003
tblVehicleEF	LHD1	8.2060e-003	6.4050e-003
tblVehicleEF	LHD1	5.1100e-004	2.6900e-004
tblVehicleEF	LHD1	2.1560e-003	1.5620e-003
tblVehicleEF	LHD1	0.07	0.06
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	1.1160e-003	1.0550e-003
tblVehicleEF	LHD1	0.26	0.07
tblVehicleEF	LHD1	0.48	0.35
tblVehicleEF	LHD1	0.52	0.24
tblVehicleEF	LHD2	8.7400e-004	8.2900e-004
tblVehicleEF	LHD2	0.02	6.9370e-003
tblVehicleEF	LHD2	0.02	5.7720e-003
tblVehicleEF	LHD2	0.13	1.56
tblVehicleEF	LHD2	1.76	0.46
tblVehicleEF	LHD2	3.09	0.77
tblVehicleEF	LHD2	9.72	181.85
tblVehicleEF	LHD2	676.03	677.10
tblVehicleEF	LHD2	23.53	19.13
tblVehicleEF	LHD2	4.9620e-003	4.5660e-003

tblVehicleEF	LHD2	0.12	0.97
tblVehicleEF	LHD2	2.76	0.27
tblVehicleEF	LHD2	0.75	0.24
tblVehicleEF	LHD2	1.3840e-003	0.01
tblVehicleEF	LHD2	0.07	0.09
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.03	9.8570e-003
tblVehicleEF	LHD2	8.6100e-004	3.2100e-004
tblVehicleEF	LHD2	1.2730e-003	0.01
tblVehicleEF	LHD2	0.03	0.04
tblVehicleEF	LHD2	2.6380e-003	2.7090e-003
tblVehicleEF	LHD2	0.03	9.4080e-003
tblVehicleEF	LHD2	7.6200e-004	2.9600e-004
tblVehicleEF	LHD2	1.1960e-003	6.2490e-003
tblVehicleEF	LHD2	0.04	0.02
tblVehicleEF	LHD2	0.02	0.15
tblVehicleEF	LHD2	6.1900e-004	4.1600e-003
tblVehicleEF	LHD2	0.20	0.09
tblVehicleEF	LHD2	0.28	0.09
tblVehicleEF	LHD2	0.28	0.04
tblVehicleEF	LHD2	9.8000e-005	1.7700e-003
tblVehicleEF	LHD2	6.7240e-003	6.5780e-003
tblVehicleEF	LHD2	2.9600e-004	2.0400e-004
tblVehicleEF	LHD2	1.1960e-003	6.6800e-004
tblVehicleEF	LHD2	0.04	0.03
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	6.1900e-004	4.7700e-004
tblVehicleEF	LHD2	0.24	0.08

tblVehicleEF	LHD2	0.28	0.14
tblVehicleEF	LHD2	0.30	0.11
tblVehicleEF	MCY	32.08	18.40
tblVehicleEF	MCY	10.57	10.37
tblVehicleEF	MCY	149.72	175.15
tblVehicleEF	MCY	46.37	43.39
tblVehicleEF	MCY	6.2790e-003	0.02
tblVehicleEF	MCY	1.29	1.15
tblVehicleEF	MCY	0.32	0.32
tblVehicleEF	MCY	0.04	0.01
tblVehicleEF	MCY	8.0000e-003	4.0000e-003
tblVehicleEF	MCY	8.6600e-004	2.2020e-003
tblVehicleEF	MCY	2.4130e-003	3.3400e-003
tblVehicleEF	MCY	0.02	5.0400e-003
tblVehicleEF	MCY	2.0000e-003	1.0000e-003
tblVehicleEF	MCY	6.9200e-004	2.0550e-003
tblVehicleEF	MCY	1.8930e-003	3.1270e-003
tblVehicleEF	MCY	0.70	1.68
tblVehicleEF	MCY	0.49	0.63
tblVehicleEF	MCY	0.42	1.01
tblVehicleEF	MCY	2.96	2.19
tblVehicleEF	MCY	1.94	1.60
tblVehicleEF	MCY	2.39	2.14
tblVehicleEF	MCY	2.1160e-003	2.1170e-003
tblVehicleEF	MCY	7.1200e-004	6.6600e-004
tblVehicleEF	MCY	0.70	0.65
tblVehicleEF	MCY	0.49	0.36
tblVehicleEF	MCY	0.42	0.38

tblVehicleEF	MCY	3.22	2.90
tblVehicleEF	MCY	1.94	1.17
tblVehicleEF	MCY	2.57	2.36
tblVehicleEF	MDV	0.03	0.01
tblVehicleEF	MDV	0.03	0.01
tblVehicleEF	MDV	2.62	0.66
tblVehicleEF	MDV	6.96	1.69
tblVehicleEF	MDV	552.97	367.20
tblVehicleEF	MDV	119.99	84.41
tblVehicleEF	MDV	0.15	0.11
tblVehicleEF	MDV	0.39	0.07
tblVehicleEF	MDV	0.64	0.13
tblVehicleEF	MDV	2.2440e-003	1.3660e-003
tblVehicleEF	MDV	3.5050e-003	2.0800e-003
tblVehicleEF	MDV	2.0650e-003	1.2580e-003
tblVehicleEF	MDV	3.2320e-003	1.9130e-003
tblVehicleEF	MDV	0.07	0.34
tblVehicleEF	MDV	0.19	0.14
tblVehicleEF	MDV	0.06	0.37
tblVehicleEF	MDV	0.07	0.01
tblVehicleEF	MDV	0.65	0.48
tblVehicleEF	MDV	0.59	0.11
tblVehicleEF	MDV	5.8850e-003	3.6730e-003
tblVehicleEF	MDV	1.3810e-003	8.7300e-004
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.19	0.19
tblVehicleEF	MDV	0.06	0.08
tblVehicleEF	MDV	0.10	0.04

tblVehicleEF	MDV	0.65	0.58
tblVehicleEF	MDV	0.63	0.21
tblVehicleEF	MH	6.20	0.52
tblVehicleEF	MH	11.77	3.82
tblVehicleEF	MH	751.38	1,188.59
tblVehicleEF	MH	32.72	56.75
tblVehicleEF	MH	2.0570e-003	2.7430e-003
tblVehicleEF	MH	2.20	0.94
tblVehicleEF	MH	1.00	0.65
tblVehicleEF	MH	0.05	0.13
tblVehicleEF	MH	8.6600e-003	0.01
tblVehicleEF	MH	0.04	0.02
tblVehicleEF	MH	2.0220e-003	8.5600e-004
tblVehicleEF	MH	0.02	0.06
tblVehicleEF	MH	2.1650e-003	3.2250e-003
tblVehicleEF	MH	0.03	0.01
tblVehicleEF	MH	1.7300e-003	7.8700e-004
tblVehicleEF	MH	1.04	0.05
tblVehicleEF	MH	0.09	0.04
tblVehicleEF	MH	0.37	0.02
tblVehicleEF	MH	0.25	0.04
tblVehicleEF	MH	2.09	0.93
tblVehicleEF	MH	0.73	0.23
tblVehicleEF	MH	7.6310e-003	0.01
tblVehicleEF	MH	5.3900e-004	6.3400e-004
tblVehicleEF	MH	1.04	0.41
tblVehicleEF	MH	0.09	0.04
tblVehicleEF	MH	0.37	0.21

tblVehicleEF	MH	0.29	0.05
tblVehicleEF	MH	2.09	0.66
tblVehicleEF	MH	0.78	0.26
tblVehicleEF	MHD	9.6350e-003	8.2920e-003
tblVehicleEF	MHD	0.01	4.5850e-003
tblVehicleEF	MHD	2.03	1.75
tblVehicleEF	MHD	1.87	0.25
tblVehicleEF	MHD	29.60	0.00
tblVehicleEF	MHD	606.00	620.45
tblVehicleEF	MHD	1,090.39	1,169.28
tblVehicleEF	MHD	63.53	14.06
tblVehicleEF	MHD	9.4040e-003	8.7540e-003
tblVehicleEF	MHD	7.19	1.64
tblVehicleEF	MHD	5.02	1.08
tblVehicleEF	MHD	2.62	0.13
tblVehicleEF	MHD	0.05	2.9900e-004
tblVehicleEF	MHD	0.12	0.13
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	0.14	3.2920e-003
tblVehicleEF	MHD	5.3560e-003	1.9600e-004
tblVehicleEF	MHD	0.04	2.9900e-004
tblVehicleEF	MHD	0.05	0.06
tblVehicleEF	MHD	2.8410e-003	3.0000e-003
tblVehicleEF	MHD	0.13	3.1430e-003
tblVehicleEF	MHD	4.4630e-003	1.8000e-004
tblVehicleEF	MHD	3.4780e-003	2.8550e-003
tblVehicleEF	MHD	0.19	7.2780e-003
tblVehicleEF	MHD	0.21	0.12

tblVehicleEF	MHD	1.7990e-003	1.8640e-003
tblVehicleEF	MHD	0.30	0.04
tblVehicleEF	MHD	0.85	0.04
tblVehicleEF	MHD	2.02	0.06
tblVehicleEF	MHD	5.8700e-003	5.9780e-003
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	1.1730e-003	1.5600e-004
tblVehicleEF	MHD	3.4780e-003	1.4150e-003
tblVehicleEF	MHD	0.19	0.07
tblVehicleEF	MHD	0.24	0.20
tblVehicleEF	MHD	1.7990e-003	9.5800e-004
tblVehicleEF	MHD	0.34	0.12
tblVehicleEF	MHD	0.85	0.39
tblVehicleEF	MHD	2.17	0.61
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	2.3410e-003	2.1960e-003
tblVehicleEF	OBUS	2.30	4.82
tblVehicleEF	OBUS	3.36	0.32
tblVehicleEF	OBUS	16.33	4.80
tblVehicleEF	OBUS	573.90	354.20
tblVehicleEF	OBUS	983.63	1,218.64
tblVehicleEF	OBUS	37.29	72.19
tblVehicleEF	OBUS	1.2220e-003	6.2700e-004
tblVehicleEF	OBUS	7.28	0.05
tblVehicleEF	OBUS	4.64	0.13
tblVehicleEF	OBUS	2.12	0.79
tblVehicleEF	OBUS	0.06	0.00
tblVehicleEF	OBUS	0.07	0.13

tblVehicleEF	OBUS	9.5990e-003	0.01
tblVehicleEF	OBUS	0.07	1.3390e-003
tblVehicleEF	OBUS	1.2860e-003	1.0430e-003
tblVehicleEF	OBUS	0.05	0.00
tblVehicleEF	OBUS	0.03	0.06
tblVehicleEF	OBUS	2.4000e-003	3.0000e-003
tblVehicleEF	OBUS	0.06	1.2310e-003
tblVehicleEF	OBUS	1.1170e-003	9.5900e-004
tblVehicleEF	OBUS	6.4300e-004	0.02
tblVehicleEF	OBUS	0.03	0.02
tblVehicleEF	OBUS	0.49	0.57
tblVehicleEF	OBUS	3.0500e-004	0.01
tblVehicleEF	OBUS	0.28	0.02
tblVehicleEF	OBUS	0.24	0.19
tblVehicleEF	OBUS	0.98	0.30
tblVehicleEF	OBUS	5.5590e-003	3.6360e-003
tblVehicleEF	OBUS	9.7580e-003	0.01
tblVehicleEF	OBUS	6.6500e-004	8.0600e-004
tblVehicleEF	OBUS	6.4300e-004	6.7100e-004
tblVehicleEF	OBUS	0.03	0.02
tblVehicleEF	OBUS	0.56	0.64
tblVehicleEF	OBUS	3.0500e-004	3.6000e-004
tblVehicleEF	OBUS	0.33	0.11
tblVehicleEF	OBUS	0.24	0.27
tblVehicleEF	OBUS	1.04	0.47
tblVehicleEF	SBUS	5.3980e-003	6.5080e-003
tblVehicleEF	SBUS	9.1740e-003	0.01
tblVehicleEF	SBUS	1.04	5.96

tblVehicleEF	SBUS	2.48	0.34
tblVehicleEF	SBUS	31.97	0.97
tblVehicleEF	SBUS	581.72	3,493.15
tblVehicleEF	SBUS	1,240.39	1,219.65
tblVehicleEF	SBUS	141.39	8.68
tblVehicleEF	SBUS	2.1420e-003	2.4430e-003
tblVehicleEF	SBUS	8.19	19.75
tblVehicleEF	SBUS	9.79	2.57
tblVehicleEF	SBUS	1.69	0.07
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	0.69	0.74
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.11	0.01
tblVehicleEF	SBUS	0.01	1.6500e-004
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	0.30	0.32
tblVehicleEF	SBUS	2.9270e-003	2.9280e-003
tblVehicleEF	SBUS	0.10	0.01
tblVehicleEF	SBUS	8.2950e-003	1.5200e-004
tblVehicleEF	SBUS	0.03	1.7160e-003
tblVehicleEF	SBUS	0.32	4.0270e-003
tblVehicleEF	SBUS	0.12	0.71
tblVehicleEF	SBUS	9.5410e-003	8.6900e-004
tblVehicleEF	SBUS	0.29	0.08
tblVehicleEF	SBUS	1.86	0.03
tblVehicleEF	SBUS	2.92	0.05
tblVehicleEF	SBUS	5.6340e-003	0.03
tblVehicleEF	SBUS	0.01	0.01

tblVehicleEF	SBUS	2.0280e-003	1.0400e-004
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	0.32	0.13
tblVehicleEF	SBUS	0.13	0.16
tblVehicleEF	SBUS	9.5410e-003	7.1150e-003
tblVehicleEF	SBUS	0.33	0.27
tblVehicleEF	SBUS	1.86	1.25
tblVehicleEF	SBUS	3.14	1.11
tblVehicleEF	UBUS	4.76	2.98
tblVehicleEF	UBUS	13.02	10.32
tblVehicleEF	UBUS	2,075.44	1,885.93
tblVehicleEF	UBUS	34.09	151.48
tblVehicleEF	UBUS	1.4970e-003	3.8900e-004
tblVehicleEF	UBUS	14.24	3.12
tblVehicleEF	UBUS	1.58	1.63
tblVehicleEF	UBUS	0.65	0.48
tblVehicleEF	UBUS	8.0000e-003	0.01
tblVehicleEF	UBUS	0.24	0.05
tblVehicleEF	UBUS	7.4700e-004	1.5000e-003
tblVehicleEF	UBUS	0.28	0.21
tblVehicleEF	UBUS	2.0000e-003	3.0000e-003
tblVehicleEF	UBUS	0.22	0.05
tblVehicleEF	UBUS	6.9400e-004	1.3790e-003
tblVehicleEF	UBUS	4.5190e-003	0.02
tblVehicleEF	UBUS	0.10	0.08
tblVehicleEF	UBUS	2.1440e-003	0.01
tblVehicleEF	UBUS	0.82	0.18
tblVehicleEF	UBUS	0.76	0.76

tblVehicleEF	UBUS	0.93	0.92
tblVehicleEF	UBUS	0.02	0.02
tblVehicleEF	UBUS	5.7900e-004	1.7050e-003
tblVehicleEF	UBUS	4.5190e-003	4.2640e-003
tblVehicleEF	UBUS	0.10	0.09
tblVehicleEF	UBUS	2.1440e-003	2.1660e-003
tblVehicleEF	UBUS	0.92	0.61
tblVehicleEF	UBUS	0.76	1.02
tblVehicleEF	UBUS	1.00	0.91
tblVehicleTrips	ST_TR	7.16	5.85
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	71.07	54.51
tblVehicleTrips	ST_TR	2.37	1.47
tblVehicleTrips	ST_TR	1.90	1.39
tblVehicleTrips	SU_TR	6.07	4.96
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	56.36	43.23
tblVehicleTrips	SU_TR	0.98	0.61
tblVehicleTrips	SU_TR	1.11	0.81
tblVehicleTrips	WD_TR	6.59	5.38
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	57.24	43.90
tblVehicleTrips	WD_TR	11.01	6.83
tblVehicleTrips	WD_TR	8.11	5.93
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00

tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWoodstoves	NumberCatalytic	7.60	0.00
tblWoodstoves	NumberNoncatalytic	7.60	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017					1.9451	0.3773	2.3224	0.7232	0.3495	1.0727						
2018					2.4600	0.4291	2.8891	1.1457	0.3949	1.5406						
2019					2.8438	0.2982	3.1420	0.7660	0.2785	1.0445						
2020					2.8546	0.2638	3.1184	0.7689	0.2463	1.0152						
2021					2.8439	0.2310	3.0749	0.7661	0.2156	0.9817						
2022					2.8331	0.2061	3.0392	0.7632	0.1923	0.9555						
2023					2.8332	0.1876	3.0209	0.7632	0.1750	0.9382						
2024					2.8552	0.1760	3.0312	0.7692	0.1640	0.9332						
2025					2.8444	0.1625	3.0069	0.7663	0.1513	0.9176						
2026					2.8445	0.1614	3.0059	0.7663	0.1503	0.9166						
2027					2.8446	0.1616	3.0063	0.7664	0.1505	0.9169						
2028					1.7941	0.1250	1.9191	0.4833	0.1162	0.5995						
2029					0.3282	0.0281	0.3563	0.0873	0.0263	0.1136						
Total					**32.1247**	**2.8077**	**34.9324**	**9.3350**	**2.6108**	**11.9457**						

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017					1.9451	0.0834	2.0285	0.7232	0.0823	0.8055						
2018					2.4600	0.1049	2.5649	1.1457	0.1046	1.2502						
2019					2.8438	0.1690	3.0128	0.7660	0.1612	0.9272						
2020					2.8546	0.1609	3.0155	0.7689	0.1537	0.9227						
2021					2.8439	0.1529	2.9968	0.7661	0.1464	0.9125						
2022					2.8331	0.1513	2.9844	0.7632	0.1449	0.9081						
2023					2.8332	0.1497	2.9829	0.7632	0.1434	0.9066						
2024					2.8552	0.1512	3.0064	0.7692	0.1448	0.9140						
2025					2.8444	0.1510	2.9954	0.7663	0.1446	0.9109						
2026					2.8445	0.1499	2.9944	0.7663	0.1436	0.9100						
2027					2.8446	0.1501	2.9948	0.7664	0.1439	0.9102						
2028					1.7941	0.1114	1.9055	0.4833	0.1075	0.5908						
2029					0.3282	0.0222	0.3503	0.0873	0.0220	0.1093						
Total					**32.1247**	**1.7078**	**33.8325**	**9.3350**	**1.6429**	**10.9779**						

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**39.17**	**3.15**	**0.00**	**37.07**	**8.10**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area						0.0650	0.0650		0.0650	0.0650						
Energy						0.1307	0.1307		0.1307	0.1307						
Mobile					17.3465	0.1029	17.4494	4.6386	0.0956	4.7342						
Waste						0.0000	0.0000		0.0000	0.0000						
Water						0.0000	0.0000		0.0000	0.0000						
Total					**17.3465**	**0.2986**	**17.6451**	**4.6386**	**0.2912**	**4.9299**						

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area						0.0650	0.0650		0.0650	0.0650						
Energy						0.1307	0.1307		0.1307	0.1307						
Mobile					17.3465	0.1029	17.4494	4.6386	0.0956	4.7342						
Waste						0.0000	0.0000		0.0000	0.0000						
Water						0.0000	0.0000		0.0000	0.0000						
Total					**17.3465**	**0.2986**	**17.6451**	**4.6386**	**0.2912**	**4.9299**						

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2017	8/16/2017	5	163	
2	Site Preparation	Site Preparation	8/17/2017	1/1/2018	5	98	
3	Grading	Grading	1/2/2018	12/19/2018	5	252	
4	Building Construction	Building Construction	12/20/2018	8/17/2028	5	2521	
5	Paving	Paving	8/18/2028	4/25/2029	5	179	
6	Architectural Coating	Architectural Coating	4/26/2029	12/31/2029	5	178	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 749.7

Acres of Paving: 0

Residential Indoor: 3,078,000; Residential Outdoor: 1,026,000; Non-Residential Indoor: 2,648,010; Non-Residential Outdoor: 882,670 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	9.50	81	0.73
Demolition	Excavators	3	9.50	162	0.38
Demolition	Rubber Tired Dozers	2	9.50	255	0.40
Site Preparation	Rubber Tired Dozers	3	9.50	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	9.50	97	0.37
Grading	Excavators	2	9.50	162	0.38
Grading	Graders	1	9.50	174	0.41
Grading	Rubber Tired Dozers	1	9.50	255	0.40
Grading	Scrapers	2	9.50	361	0.48
Grading	Tractors/Loaders/Backhoes	2	9.50	97	0.37
Building Construction	Cranes	1	8.30	226	0.29
Building Construction	Forklifts	3	9.50	89	0.20
Building Construction	Generator Sets	1	9.50	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	8.30	97	0.37
Building Construction	Welders	1	9.50	46	0.45
Paving	Pavers	2	9.50	125	0.42
Paving	Paving Equipment	2	9.50	130	0.36
Paving	Rollers	2	9.50	80	0.38
Architectural Coating	Air Compressors	1	7.10	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	7,499.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	1,991.00	569.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	398.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Clean Paved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.8115	0.0000	0.8115	0.1229	0.0000	0.1229						
Off-Road						0.2057	0.2057		0.1916	0.1916						
Total					**0.8115**	**0.2057**	**1.0171**	**0.1229**	**0.1916**	**0.3145**						

3.2 Demolition - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0634	0.0129	0.0762	0.0174	0.0118	0.0292						
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker					0.0111	9.0000e-005	0.0112	2.9600e-003	8.0000e-005	3.0400e-003						
Total					**0.0745**	**0.0130**	**0.0875**	**0.0204**	**0.0119**	**0.0323**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.8115	0.0000	0.8115	0.1229	0.0000	0.1229						
Off-Road						0.0427	0.0427		0.0427	0.0427						
Total					**0.8115**	**0.0427**	**0.8541**	**0.1229**	**0.0427**	**0.1655**						

3.2 Demolition - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0634	0.0129	0.0762	0.0174	0.0118	0.0292						
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker					0.0111	9.0000e-005	0.0112	2.9600e-003	8.0000e-005	3.0400e-003						
Total					**0.0745**	**0.0130**	**0.0875**	**0.0204**	**0.0119**	**0.0323**						

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0512	0.0000	1.0512	0.5778	0.0000	0.5778						
Off-Road						0.1586	0.1586		0.1459	0.1459						
Total					**1.0512**	**0.1586**	**1.2099**	**0.5778**	**0.1459**	**0.7238**						

3.3 Site Preparation - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker					7.9500e-003	6.0000e-005	8.0100e-003	2.1100e-003	6.0000e-005	2.1700e-003						
Total					**7.9500e-003**	**6.0000e-005**	**8.0100e-003**	**2.1100e-003**	**6.0000e-005**	**2.1700e-003**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0512	0.0000	1.0512	0.5778	0.0000	0.5778						
Off-Road						0.0277	0.0277		0.0277	0.0277						
Total					**1.0512**	**0.0277**	**1.0789**	**0.5778**	**0.0277**	**0.6055**						

3.3 Site Preparation - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker					7.9500e-003	6.0000e-005	8.0100e-003	2.1100e-003	6.0000e-005	2.1700e-003						
Total					**7.9500e-003**	**6.0000e-005**	**8.0100e-003**	**2.1100e-003**	**6.0000e-005**	**2.1700e-003**						

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0512	0.0000	1.0512	0.5778	0.0000	0.5778						
Off-Road						1.4000e-003	1.4000e-003		1.2900e-003	1.2900e-003						
Total					**1.0512**	**1.4000e-003**	**1.0526**	**0.5778**	**1.2900e-003**	**0.5791**						

3.3 Site Preparation - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker					8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005						
Total					**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0512	0.0000	1.0512	0.5778	0.0000	0.5778						
Off-Road						2.9000e-004	2.9000e-004		2.9000e-004	2.9000e-004						
Total					**1.0512**	**2.9000e-004**	**1.0515**	**0.5778**	**2.9000e-004**	**0.5781**						

3.3 Site Preparation - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker					8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005						
Total					**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**						

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.2986	0.0000	1.2986	0.5382	0.0000	0.5382						
Off-Road						0.4172	0.4172		0.3838	0.3838						
Total					**1.2986**	**0.4172**	**1.7157**	**0.5382**	**0.3838**	**0.9220**						

3.4 Grading - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker					0.0229	1.7000e-004	0.0231	6.1000e-003	1.6000e-004	6.2600e-003						
Total					**0.0229**	**1.7000e-004**	**0.0231**	**6.1000e-003**	**1.6000e-004**	**6.2600e-003**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.2986	0.0000	1.2986	0.5382	0.0000	0.5382						
Off-Road						0.0990	0.0990		0.0990	0.0990						
Total					**1.2986**	**0.0990**	**1.3976**	**0.5382**	**0.0990**	**0.6372**						

3.4 Grading - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker					0.0229	1.7000e-004	0.0231	6.1000e-003	1.6000e-004	6.2600e-003						
Total					**0.0229**	**1.7000e-004**	**0.0231**	**6.1000e-003**	**1.6000e-004**	**6.2600e-003**						

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						7.0900e-003	7.0900e-003		6.6700e-003	6.6700e-003						
Total						**7.0900e-003**	**7.0900e-003**		**6.6700e-003**	**6.6700e-003**						

3.5 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.0147	2.7000e-003	0.0174	4.2000e-003	2.4800e-003	6.6800e-003						
Worker					0.0725	5.4000e-004	0.0731	0.0193	5.0000e-004	0.0198						
Total					**0.0872**	**3.2400e-003**	**0.0904**	**0.0235**	**2.9800e-003**	**0.0265**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						2.1400e-003	2.1400e-003		2.1400e-003	2.1400e-003						
Total						**2.1400e-003**	**2.1400e-003**		**2.1400e-003**	**2.1400e-003**						

3.5 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.0147	2.7000e-003	0.0174	4.2000e-003	2.4800e-003	6.6800e-003						
Worker					0.0725	5.4000e-004	0.0731	0.0193	5.0000e-004	0.0198						
Total					**0.0872**	**3.2400e-003**	**0.0904**	**0.0235**	**2.9800e-003**	**0.0265**						

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.1990	0.1990		0.1871	0.1871						
Total						**0.1990**	**0.1990**		**0.1871**	**0.1871**						

3.5 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4782	0.0818	0.5600	0.1369	0.0753	0.2122						
Worker					2.3656	0.0174	2.3830	0.6291	0.0161	0.6452						
Total					**2.8438**	**0.0992**	**2.9430**	**0.7660**	**0.0914**	**0.8574**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0698	0.0698		0.0698	0.0698						
Total						**0.0698**	**0.0698**		**0.0698**	**0.0698**						

3.5 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4782	0.0818	0.5600	0.1369	0.0753	0.2122						
Worker					2.3656	0.0174	2.3830	0.6291	0.0161	0.6452						
Total					**2.8438**	**0.0992**	**2.9430**	**0.7660**	**0.0914**	**0.8574**						

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.1730	0.1730		0.1627	0.1627						
Total						**0.1730**	**0.1730**		**0.1627**	**0.1627**						

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4800	0.0735	0.5535	0.1374	0.0677	0.2051						
Worker					2.3747	0.0172	2.3919	0.6315	0.0160	0.6475						
Total					**2.8547**	**0.0908**	**2.9454**	**0.7689**	**0.0836**	**0.8526**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0701	0.0701		0.0701	0.0701						
Total						**0.0701**	**0.0701**		**0.0701**	**0.0701**						

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4800	0.0735	0.5535	0.1374	0.0677	0.2051						
Worker					2.3747	0.0172	2.3919	0.6315	0.0160	0.6475						
Total					**2.8547**	**0.0908**	**2.9454**	**0.7689**	**0.0836**	**0.8526**						

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.1479	0.1479		0.1390	0.1390						
Total						**0.1479**	**0.1479**		**0.1390**	**0.1390**						

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4783	0.0660	0.5443	0.1370	0.0607	0.1977						
Worker					2.3656	0.0171	2.3827	0.6291	0.0159	0.6450						
Total					**2.8439**	**0.0831**	**2.9270**	**0.7661**	**0.0766**	**0.8427**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0698	0.0698		0.0698	0.0698						
Total						**0.0698**	**0.0698**		**0.0698**	**0.0698**						

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4783	0.0660	0.5443	0.1370	0.0607	0.1977						
Worker					2.3656	0.0171	2.3827	0.6291	0.0159	0.6450						
Total					**2.8439**	**0.0831**	**2.9270**	**0.7661**	**0.0766**	**0.8427**						

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.1243	0.1243		0.1170	0.1170						
Total						**0.1243**	**0.1243**		**0.1170**	**0.1170**						

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4766	0.0648	0.5413	0.1365	0.0596	0.1961						
Worker					2.3566	0.0170	2.3736	0.6267	0.0158	0.6425						
Total					**2.8331**	**0.0818**	**2.9149**	**0.7632**	**0.0754**	**0.8386**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0695	0.0695		0.0695	0.0695						
Total						**0.0695**	**0.0695**		**0.0695**	**0.0695**						

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4766	0.0648	0.5413	0.1365	0.0596	0.1961						
Worker					2.3566	0.0170	2.3736	0.6267	0.0158	0.6425						
Total					**2.8331**	**0.0818**	**2.9149**	**0.7632**	**0.0754**	**0.8386**						

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.1075	0.1075		0.1011	0.1011						
Total						**0.1075**	**0.1075**		**0.1011**	**0.1011**						

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4767	0.0632	0.5398	0.1365	0.0581	0.1946						
Worker					2.3566	0.0170	2.3736	0.6267	0.0158	0.6425						
Total					**2.8332**	**0.0802**	**2.9134**	**0.7632**	**0.0739**	**0.8371**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0695	0.0695		0.0695	0.0695						
Total						**0.0695**	**0.0695**		**0.0695**	**0.0695**						

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4767	0.0632	0.5398	0.1365	0.0581	0.1946						
Worker					2.3566	0.0170	2.3736	0.6267	0.0158	0.6425						
Total					**2.8332**	**0.0802**	**2.9134**	**0.7632**	**0.0739**	**0.8371**						

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0949	0.0949		0.0893	0.0893						
Total						**0.0949**	**0.0949**		**0.0893**	**0.0893**						

3.5 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4805	0.0640	0.5445	0.1376	0.0589	0.1965						
Worker					2.3747	0.0171	2.3918	0.6315	0.0159	0.6474						
Total					**2.8552**	**0.0811**	**2.9363**	**0.7692**	**0.0748**	**0.8439**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0701	0.0701		0.0701	0.0701						
Total						**0.0701**	**0.0701**		**0.0701**	**0.0701**						

3.5 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4805	0.0640	0.5445	0.1376	0.0589	0.1965						
Worker					2.3747	0.0171	2.3918	0.6315	0.0159	0.6474						
Total					**2.8552**	**0.0811**	**2.9363**	**0.7692**	**0.0748**	**0.8439**						

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0813	0.0813		0.0765	0.0765						
Total						**0.0813**	**0.0813**		**0.0765**	**0.0765**						

3.5 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4788	0.0641	0.5428	0.1372	0.0589	0.1961						
Worker					2.3656	0.0171	2.3828	0.6291	0.0159	0.6450						
Total					**2.8444**	**0.0812**	**2.9256**	**0.7663**	**0.0748**	**0.8411**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0698	0.0698		0.0698	0.0698						
Total						**0.0698**	**0.0698**		**0.0698**	**0.0698**						

3.5 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4788	0.0641	0.5428	0.1372	0.0589	0.1961						
Worker					2.3656	0.0171	2.3828	0.6291	0.0159	0.6450						
Total					**2.8444**	**0.0812**	**2.9256**	**0.7663**	**0.0748**	**0.8411**						

3.5 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0813	0.0813		0.0765	0.0765						
Total						**0.0813**	**0.0813**		**0.0765**	**0.0765**						

3.5 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4789	0.0629	0.5418	0.1372	0.0578	0.1951						
Worker					2.3656	0.0172	2.3829	0.6291	0.0160	0.6451						
Total					**2.8445**	**0.0801**	**2.9246**	**0.7663**	**0.0738**	**0.8401**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0698	0.0698		0.0698	0.0698						
Total						**0.0698**	**0.0698**		**0.0698**	**0.0698**						

3.5 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4789	0.0629	0.5418	0.1372	0.0578	0.1951						
Worker					2.3656	0.0172	2.3829	0.6291	0.0160	0.6451						
Total					**2.8445**	**0.0801**	**2.9246**	**0.7663**	**0.0738**	**0.8401**						

3.5 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0813	0.0813		0.0765	0.0765						
Total						**0.0813**	**0.0813**		**0.0765**	**0.0765**						

3.5 Building Construction - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4790	0.0630	0.5420	0.1373	0.0580	0.1952						
Worker					2.3656	0.0173	2.3829	0.6291	0.0161	0.6452						
Total					**2.8446**	**0.0803**	**2.9250**	**0.7664**	**0.0740**	**0.8404**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0698	0.0698		0.0698	0.0698						
Total						**0.0698**	**0.0698**		**0.0698**	**0.0698**						

3.5 Building Construction - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4790	0.0630	0.5420	0.1373	0.0580	0.1952						
Worker					2.3656	0.0173	2.3829	0.6291	0.0161	0.6452						
Total					**2.8446**	**0.0803**	**2.9250**	**0.7664**	**0.0740**	**0.8404**						

3.5 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0511	0.0511		0.0481	0.0481						
Total						**0.0511**	**0.0511**		**0.0481**	**0.0481**						

3.5 Building Construction - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.3011	0.0395	0.3406	0.0863	0.0364	0.1227						
Worker					1.4865	0.0109	1.4974	0.3953	0.0101	0.4054						
Total					**1.7875**	**0.0505**	**1.8380**	**0.4816**	**0.0465**	**0.5281**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0439	0.0439		0.0439	0.0439						
Total						**0.0439**	**0.0439**		**0.0439**	**0.0439**						

3.5 Building Construction - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.3011	0.0395	0.3406	0.0863	0.0364	0.1227						
Worker					1.4865	0.0109	1.4974	0.3953	0.0101	0.4054						
Total					**1.7875**	**0.0505**	**1.8380**	**0.4816**	**0.0465**	**0.5281**						

3.6 Paving - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0234	0.0234		0.0216	0.0216						
Paving						0.0000	0.0000		0.0000	0.0000						
Total						**0.0234**	**0.0234**		**0.0216**	**0.0216**						

3.6 Paving - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker					6.5600e-003	5.0000e-005	6.6000e-003	1.7400e-003	4.0000e-005	1.7900e-003						
Total					**6.5600e-003**	**5.0000e-005**	**6.6000e-003**	**1.7400e-003**	**4.0000e-005**	**1.7900e-003**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0171	0.0171		0.0171	0.0171						
Paving						0.0000	0.0000		0.0000	0.0000						
Total						**0.0171**	**0.0171**		**0.0171**	**0.0171**						

3.6 Paving - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker					6.5600e-003	5.0000e-005	6.6000e-003	1.7400e-003	4.0000e-005	1.7900e-003						
Total					**6.5600e-003**	**5.0000e-005**	**6.6000e-003**	**1.7400e-003**	**4.0000e-005**	**1.7900e-003**						

3.6 Paving - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0203	0.0203		0.0186	0.0186						
Paving						0.0000	0.0000		0.0000	0.0000						
Total						**0.0203**	**0.0203**		**0.0186**	**0.0186**						

3.6 Paving - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker					5.6700e-003	4.0000e-005	5.7100e-003	1.5100e-003	4.0000e-005	1.5500e-003						
Total					**5.6700e-003**	**4.0000e-005**	**5.7100e-003**	**1.5100e-003**	**4.0000e-005**	**1.5500e-003**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0147	0.0147		0.0147	0.0147						
Paving						0.0000	0.0000		0.0000	0.0000						
Total						**0.0147**	**0.0147**		**0.0147**	**0.0147**						

3.6 Paving - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker					5.6700e-003	4.0000e-005	5.7100e-003	1.5100e-003	4.0000e-005	1.5500e-003						
Total					**5.6700e-003**	**4.0000e-005**	**5.7100e-003**	**1.5100e-003**	**4.0000e-005**	**1.5500e-003**						

3.7 Architectural Coating - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating						0.0000	0.0000		0.0000	0.0000						
Off-Road						5.4200e-003	5.4200e-003		5.4200e-003	5.4200e-003						
Total						**5.4200e-003**	**5.4200e-003**		**5.4200e-003**	**5.4200e-003**						

3.7 Architectural Coating - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker					0.3225	2.3800e-003	0.3249	0.0858	2.2100e-003	0.0880						
Total					**0.3225**	**2.3800e-003**	**0.3249**	**0.0858**	**2.2100e-003**	**0.0880**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating						0.0000	0.0000		0.0000	0.0000						
Off-Road						5.0100e-003	5.0100e-003		5.0100e-003	5.0100e-003						
Total						**5.0100e-003**	**5.0100e-003**		**5.0100e-003**	**5.0100e-003**						

3.7 Architectural Coating - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker					0.3225	2.3800e-003	0.3249	0.0858	2.2100e-003	0.0880						
Total					**0.3225**	**2.3800e-003**	**0.3249**	**0.0858**	**2.2100e-003**	**0.0880**						

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated					17.3465	0.1029	17.4494	4.6386	0.0956	4.7342						
Unmitigated					17.3465	0.1029	17.4494	4.6386	0.0956	4.7342						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	8,177.60	8,892.00	7539.20	18,279,634	18,279,634
City Park	0.00	0.00	0.00		
Free-Standing Discount Store	8,341.00	10,356.90	8213.70	13,426,489	13,426,489
General Office Building	4,337.05	933.45	387.35	7,854,110	7,854,110
Parking Lot	0.00	0.00	0.00		
Research & Development	3,765.55	882.65	514.35	7,241,175	7,241,175
Total	24,621.20	21,065.00	16,654.60	46,801,408	46,801,408

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Free-Standing Discount Store	9.50	7.30	7.30	12.20	68.80	19.00	47.5	35.5	17
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.615666	0.034738	0.173074	0.111547	0.013802	0.004566	0.008754	0.006650	0.000627	0.000389	0.024637	0.002443	0.002743

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000						
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000						
NaturalGas Mitigated						0.1307	0.1307		0.1307	0.1307						
NaturalGas Unmitigated						0.1307	0.1307		0.1307	0.1307						

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0						0.0000	0.0000		0.0000	0.0000						
Free-Standing Discount Store	672600						2.5100e-003	2.5100e-003		2.5100e-003	2.5100e-003						
General Office Building	9.1186e+006						0.0340	0.0340		0.0340	0.0340						
Parking Lot	0						0.0000	0.0000		0.0000	0.0000						
Research & Development	1.26365e+007						0.0471	0.0471		0.0471	0.0471						
Apartments Mid Rise	1.26426e+007						0.0471	0.0471		0.0471	0.0471						
Total							**0.1307**	**0.1307**		**0.1307**	**0.1307**						

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0						0.0000	0.0000		0.0000	0.0000						
Free-Standing Discount Store	672600						2.5100e-003	2.5100e-003		2.5100e-003	2.5100e-003						
General Office Building	9.1186e+006						0.0340	0.0340		0.0340	0.0340						
Parking Lot	0						0.0000	0.0000		0.0000	0.0000						
Research & Development	1.26365e+007						0.0471	0.0471		0.0471	0.0471						
Apartments Mid Rise	1.26426e+007						0.0471	0.0471		0.0471	0.0471						
Total							**0.1307**	**0.1307**		**0.1307**	**0.1307**						

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	5.30006e +006				
City Park	0				
Free-Standing Discount Store	2.0045e +006				
General Office Building	7.57555e +006				
Parking Lot	651200				
Research & Development	4.8895e +006				
Total					

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	5.30006e +006				
City Park	0				
Free-Standing Discount Store	2.0045e +006				
General Office Building	7.57555e +006				
Parking Lot	651200				
Research & Development	4.8895e +006				
Total					

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated						0.0650	0.0650		0.0650	0.0650						
Unmitigated						0.0650	0.0650		0.0650	0.0650						

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating						0.0000	0.0000		0.0000	0.0000						
Consumer Products						0.0000	0.0000		0.0000	0.0000						
Hearth						3.5200e-003	3.5200e-003		3.4800e-003	3.4800e-003						
Landscaping						0.0615	0.0615		0.0615	0.0615						
Total						**0.0650**	**0.0650**		**0.0650**	**0.0650**						

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating						0.0000	0.0000		0.0000	0.0000						
Consumer Products						0.0000	0.0000		0.0000	0.0000						
Hearth						3.5200e-003	3.5200e-003		3.4800e-003	3.4800e-003						
Landscaping						0.0615	0.0615		0.0615	0.0615						
Total						**0.0650**	**0.0650**		**0.0650**	**0.0650**						

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated				
Unmitigated				

7.2 Water by Land Use

Unmitigated

	Indoor/ Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	99.0341 / 62.4346				
City Park	0 / 7.74463				
Free-Standing Discount Store	14.0738 / 8.62586				
General Office Building	112.861 / 69.1728				
Parking Lot	0 / 0				
Research & Development	312.226 / 0				
Total					

7.2 Water by Land Use

Mitigated

	Indoor/ Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	99.0341 / 62.4346				
City Park	0 / 7.74463				
Free-Standing Discount Store	14.0738 / 8.62586				
General Office Building	112.861 / 69.1728				
Parking Lot	0 / 0				
Research & Development	312.226 / 0				
Total					

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated				
Unmitigated				

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	699.2				
City Park	0.56				
Free-Standing Discount Store	817.13				
General Office Building	590.55				
Parking Lot	0				
Research & Development	48.26				
Total					

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	137.043				
City Park	0.10976				
Free-Standing Discount Store	160.157				
General Office Building	115.748				
Parking Lot	0				
Research & Development	9.45896				
Total					

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

RSSSP Subarea 4 - Level 3 DPF

Contra Costa County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	635.00	1000sqft	15.44	635,000.00	0
Research & Development	635.00	1000sqft	15.44	635,000.00	0
Parking Lot	1,850.00	Space	17.63	740,000.00	0
City Park	6.50	Acre	6.50	283,140.00	0
Apartments Mid Rise	1,520.00	Dwelling Unit	42.36	1,520,000.00	3070
Free-Standing Discount Store	190.00	1000sqft	4.62	190,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	58
Climate Zone	5			**Operational Year**	2014
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	0.05	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - adjusted CO2 EF consistent with GHG Reduction Strategy and MCE provisions. CH4 and N2O scaled down proprtionaltely.

Land Use - Adjust Population to match P&H Section. Parking spaces from SP 60% of SA4. Acreages adjusted based on 60% of developabe acreage for SA4.

Construction Phase - Scale phase durations proportionally to complete by 2030. Separate calc. sheet.

Off-road Equipment - Equipment hours adjusted to match 19% increase in schedule over default.

Off-road Equipment - Equipment hours adjusted to match 19% increase in schedule over default.

Off-road Equipment - Equipment hours adjusted to match 19% increase in schedule over default.

Off-road Equipment - Equipment hours adjusted to match 19% increase in schedule over default.

Off-road Equipment - Equipment hours adjusted to match 19% increase in schedule over default.

Off-road Equipment - Equipment hours adjusted to match 19% increase in schedule over default.

Demolition - 60,000 cy per PD. 1.264 ton/cy per user guide.

Grading - Export of material addressed in DTSC CEQA documant.

Architectural Coating -

Vehicle Trips - Adjust trip rates to match trip generation of transportation analysis. Weekend trips rates proportional to ITE in model.

Vechicle Emission Factors - EMFAC2014

Vechicle Emission Factors -

Vechicle Emission Factors -

Woodstoves - Assume no woodstoves. Assume default percentage of fireplaces bu all gas-fired.

Energy Use - Adjust T24 energy to reflect 2013 and 2016 T24.

Water And Wastewater - All wastewater treatment aerobic. No septic or lagoons.

Construction Off-road Equipment Mitigation - BAAQMD Enhanced Combustion Mitigation Measures

Waste Mitigation - Adoption of Zero Waste Ordinance and achieving 75% diversion by 2020, and 90% diversion by 2030. Baseline diversion rate for 2005 = 49%.

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tblLandUse	LotAcreage	14.58	15.44

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tblVehicleEF	MDV	0.64	0.13
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tblVehicleEF	MDV	3.5050e-003	2.0800e-003
tblVehicleEF	MDV	2.0650e-003	1.2580e-003
tblVehicleEF	MDV	3.2320e-003	1.9130e-003
tblVehicleEF	MDV	0.07	0.34
tblVehicleEF	MDV	0.19	0.14
tblVehicleEF	MDV	0.06	0.37
tblVehicleEF	MDV	0.07	0.01
tblVehicleEF	MDV	0.65	0.48
tblVehicleEF	MDV	0.59	0.11
tblVehicleEF	MDV	5.8850e-003	3.6730e-003
tblVehicleEF	MDV	1.3810e-003	8.7300e-004
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.19	0.19
tblVehicleEF	MDV	0.06	0.08
tblVehicleEF	MDV	0.10	0.04

tblVehicleEF	MDV	0.65	0.58
tblVehicleEF	MDV	0.63	0.21
tblVehicleEF	MH	6.20	0.52
tblVehicleEF	MH	11.77	3.82
tblVehicleEF	MH	751.38	1,188.59
tblVehicleEF	MH	32.72	56.75
tblVehicleEF	MH	2.0570e-003	2.7430e-003
tblVehicleEF	MH	2.20	0.94
tblVehicleEF	MH	1.00	0.65
tblVehicleEF	MH	0.05	0.13
tblVehicleEF	MH	8.6600e-003	0.01
tblVehicleEF	MH	0.04	0.02
tblVehicleEF	MH	2.0220e-003	8.5600e-004
tblVehicleEF	MH	0.02	0.06
tblVehicleEF	MH	2.1650e-003	3.2250e-003
tblVehicleEF	MH	0.03	0.01
tblVehicleEF	MH	1.7300e-003	7.8700e-004
tblVehicleEF	MH	1.04	0.05
tblVehicleEF	MH	0.09	0.04
tblVehicleEF	MH	0.37	0.02
tblVehicleEF	MH	0.25	0.04
tblVehicleEF	MH	2.09	0.93
tblVehicleEF	MH	0.73	0.23
tblVehicleEF	MH	7.6310e-003	0.01
tblVehicleEF	MH	5.3900e-004	6.3400e-004
tblVehicleEF	MH	1.04	0.41
tblVehicleEF	MH	0.09	0.04
tblVehicleEF	MH	0.37	0.21

tblVehicleEF	MH	0.29	0.05
tblVehicleEF	MH	2.09	0.66
tblVehicleEF	MH	0.78	0.26
tblVehicleEF	MHD	9.6350e-003	8.2920e-003
tblVehicleEF	MHD	0.01	4.5850e-003
tblVehicleEF	MHD	2.03	1.75
tblVehicleEF	MHD	1.87	0.25
tblVehicleEF	MHD	29.60	0.00
tblVehicleEF	MHD	606.00	620.45
tblVehicleEF	MHD	1,090.39	1,169.28
tblVehicleEF	MHD	63.53	14.06
tblVehicleEF	MHD	9.4040e-003	8.7540e-003
tblVehicleEF	MHD	7.19	1.64
tblVehicleEF	MHD	5.02	1.08
tblVehicleEF	MHD	2.62	0.13
tblVehicleEF	MHD	0.05	2.9900e-004
tblVehicleEF	MHD	0.12	0.13
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	0.14	3.2920e-003
tblVehicleEF	MHD	5.3560e-003	1.9600e-004
tblVehicleEF	MHD	0.04	2.9900e-004
tblVehicleEF	MHD	0.05	0.06
tblVehicleEF	MHD	2.8410e-003	3.0000e-003
tblVehicleEF	MHD	0.13	3.1430e-003
tblVehicleEF	MHD	4.4630e-003	1.8000e-004
tblVehicleEF	MHD	3.4780e-003	2.8550e-003
tblVehicleEF	MHD	0.19	7.2780e-003
tblVehicleEF	MHD	0.21	0.12

tblVehicleEF	MHD	1.7990e-003	1.8640e-003
tblVehicleEF	MHD	0.30	0.04
tblVehicleEF	MHD	0.85	0.04
tblVehicleEF	MHD	2.02	0.06
tblVehicleEF	MHD	5.8700e-003	5.9780e-003
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	1.1730e-003	1.5600e-004
tblVehicleEF	MHD	3.4780e-003	1.4150e-003
tblVehicleEF	MHD	0.19	0.07
tblVehicleEF	MHD	0.24	0.20
tblVehicleEF	MHD	1.7990e-003	9.5800e-004
tblVehicleEF	MHD	0.34	0.12
tblVehicleEF	MHD	0.85	0.39
tblVehicleEF	MHD	2.17	0.61
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	2.3410e-003	2.1960e-003
tblVehicleEF	OBUS	2.30	4.82
tblVehicleEF	OBUS	3.36	0.32
tblVehicleEF	OBUS	16.33	4.80
tblVehicleEF	OBUS	573.90	354.20
tblVehicleEF	OBUS	983.63	1,218.64
tblVehicleEF	OBUS	37.29	72.19
tblVehicleEF	OBUS	1.2220e-003	6.2700e-004
tblVehicleEF	OBUS	7.28	0.05
tblVehicleEF	OBUS	4.64	0.13
tblVehicleEF	OBUS	2.12	0.79
tblVehicleEF	OBUS	0.06	0.00
tblVehicleEF	OBUS	0.07	0.13

tblVehicleEF	OBUS	9.5990e-003	0.01
tblVehicleEF	OBUS	0.07	1.3390e-003
tblVehicleEF	OBUS	1.2860e-003	1.0430e-003
tblVehicleEF	OBUS	0.05	0.00
tblVehicleEF	OBUS	0.03	0.06
tblVehicleEF	OBUS	2.4000e-003	3.0000e-003
tblVehicleEF	OBUS	0.06	1.2310e-003
tblVehicleEF	OBUS	1.1170e-003	9.5900e-004
tblVehicleEF	OBUS	6.4300e-004	0.02
tblVehicleEF	OBUS	0.03	0.02
tblVehicleEF	OBUS	0.49	0.57
tblVehicleEF	OBUS	3.0500e-004	0.01
tblVehicleEF	OBUS	0.28	0.02
tblVehicleEF	OBUS	0.24	0.19
tblVehicleEF	OBUS	0.98	0.30
tblVehicleEF	OBUS	5.5590e-003	3.6360e-003
tblVehicleEF	OBUS	9.7580e-003	0.01
tblVehicleEF	OBUS	6.6500e-004	8.0600e-004
tblVehicleEF	OBUS	6.4300e-004	6.7100e-004
tblVehicleEF	OBUS	0.03	0.02
tblVehicleEF	OBUS	0.56	0.64
tblVehicleEF	OBUS	3.0500e-004	3.6000e-004
tblVehicleEF	OBUS	0.33	0.11
tblVehicleEF	OBUS	0.24	0.27
tblVehicleEF	OBUS	1.04	0.47
tblVehicleEF	SBUS	5.3980e-003	6.5080e-003
tblVehicleEF	SBUS	9.1740e-003	0.01
tblVehicleEF	SBUS	1.04	5.96

tblVehicleEF	SBUS	2.48	0.34
tblVehicleEF	SBUS	31.97	0.97
tblVehicleEF	SBUS	581.72	3,493.15
tblVehicleEF	SBUS	1,240.39	1,219.65
tblVehicleEF	SBUS	141.39	8.68
tblVehicleEF	SBUS	2.1420e-003	2.4430e-003
tblVehicleEF	SBUS	8.19	19.75
tblVehicleEF	SBUS	9.79	2.57
tblVehicleEF	SBUS	1.69	0.07
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	0.69	0.74
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.11	0.01
tblVehicleEF	SBUS	0.01	1.6500e-004
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	0.30	0.32
tblVehicleEF	SBUS	2.9270e-003	2.9280e-003
tblVehicleEF	SBUS	0.10	0.01
tblVehicleEF	SBUS	8.2950e-003	1.5200e-004
tblVehicleEF	SBUS	0.03	1.7160e-003
tblVehicleEF	SBUS	0.32	4.0270e-003
tblVehicleEF	SBUS	0.12	0.71
tblVehicleEF	SBUS	9.5410e-003	8.6900e-004
tblVehicleEF	SBUS	0.29	0.08
tblVehicleEF	SBUS	1.86	0.03
tblVehicleEF	SBUS	2.92	0.05
tblVehicleEF	SBUS	5.6340e-003	0.03
tblVehicleEF	SBUS	0.01	0.01

tblVehicleEF	SBUS	2.0280e-003	1.0400e-004
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	0.32	0.13
tblVehicleEF	SBUS	0.13	0.16
tblVehicleEF	SBUS	9.5410e-003	7.1150e-003
tblVehicleEF	SBUS	0.33	0.27
tblVehicleEF	SBUS	1.86	1.25
tblVehicleEF	SBUS	3.14	1.11
tblVehicleEF	UBUS	4.76	2.98
tblVehicleEF	UBUS	13.02	10.32
tblVehicleEF	UBUS	2,075.44	1,885.93
tblVehicleEF	UBUS	34.09	151.48
tblVehicleEF	UBUS	1.4970e-003	3.8900e-004
tblVehicleEF	UBUS	14.24	3.12
tblVehicleEF	UBUS	1.58	1.63
tblVehicleEF	UBUS	0.65	0.48
tblVehicleEF	UBUS	8.0000e-003	0.01
tblVehicleEF	UBUS	0.24	0.05
tblVehicleEF	UBUS	7.4700e-004	1.5000e-003
tblVehicleEF	UBUS	0.28	0.21
tblVehicleEF	UBUS	2.0000e-003	3.0000e-003
tblVehicleEF	UBUS	0.22	0.05
tblVehicleEF	UBUS	6.9400e-004	1.3790e-003
tblVehicleEF	UBUS	4.5190e-003	0.02
tblVehicleEF	UBUS	0.10	0.08
tblVehicleEF	UBUS	2.1440e-003	0.01
tblVehicleEF	UBUS	0.82	0.18
tblVehicleEF	UBUS	0.76	0.76

tblVehicleEF	UBUS	0.93	0.92
tblVehicleEF	UBUS	0.02	0.02
tblVehicleEF	UBUS	5.7900e-004	1.7050e-003
tblVehicleEF	UBUS	4.5190e-003	4.2640e-003
tblVehicleEF	UBUS	0.10	0.09
tblVehicleEF	UBUS	2.1440e-003	2.1660e-003
tblVehicleEF	UBUS	0.92	0.61
tblVehicleEF	UBUS	0.76	1.02
tblVehicleEF	UBUS	1.00	0.91
tblVehicleTrips	ST_TR	7.16	5.85
tblVehicleTrips	ST_TR	1.59	0.00
tblVehicleTrips	ST_TR	71.07	54.51
tblVehicleTrips	ST_TR	2.37	1.47
tblVehicleTrips	ST_TR	1.90	1.39
tblVehicleTrips	SU_TR	6.07	4.96
tblVehicleTrips	SU_TR	1.59	0.00
tblVehicleTrips	SU_TR	56.36	43.23
tblVehicleTrips	SU_TR	0.98	0.61
tblVehicleTrips	SU_TR	1.11	0.81
tblVehicleTrips	WD_TR	6.59	5.38
tblVehicleTrips	WD_TR	1.59	0.00
tblVehicleTrips	WD_TR	57.24	43.90
tblVehicleTrips	WD_TR	11.01	6.83
tblVehicleTrips	WD_TR	8.11	5.93
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00

tblWater	AerobicPercent	87.46	100.00
tblWater	AerobicPercent	87.46	100.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWoodstoves	NumberCatalytic	7.60	0.00
tblWoodstoves	NumberNoncatalytic	7.60	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017					1.9451	0.3773	2.3224	0.7232	0.3495	1.0727						
2018					2.4600	0.4291	2.8891	1.1457	0.3949	1.5406						
2019					2.8438	0.2982	3.1420	0.7660	0.2785	1.0445						
2020					2.8546	0.2638	3.1184	0.7689	0.2463	1.0152						
2021					2.8439	0.2310	3.0749	0.7661	0.2156	0.9817						
2022					2.8331	0.2061	3.0392	0.7632	0.1923	0.9555						
2023					2.8332	0.1876	3.0209	0.7632	0.1750	0.9382						
2024					2.8552	0.1760	3.0312	0.7692	0.1640	0.9332						
2025					2.8444	0.1625	3.0069	0.7663	0.1513	0.9176						
2026					2.8445	0.1614	3.0059	0.7663	0.1503	0.9166						
2027					2.8446	0.1616	3.0063	0.7664	0.1505	0.9169						
2028					1.7941	0.1250	1.9191	0.4833	0.1162	0.5995						
2029					0.3282	0.0281	0.3563	0.0873	0.0263	0.1136						
Total					**32.1247**	**2.8077**	**34.9324**	**9.3350**	**2.6108**	**11.9457**						

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017					1.9451	0.0341	1.9792	0.7232	0.0331	0.7563						
2018					2.4600	0.0338	2.4939	1.1457	0.0336	1.1792						
2019					2.8438	0.1201	2.9639	0.7660	0.1123	0.8783						
2020					2.8546	0.1118	2.9664	0.7689	0.1047	0.8736						
2021					2.8439	0.1041	2.9479	0.7661	0.0975	0.8636						
2022					2.8331	0.1027	2.9358	0.7632	0.0962	0.8594						
2023					2.8332	0.1010	2.9343	0.7632	0.0947	0.8580						
2024					2.8552	0.1021	2.9573	0.7692	0.0958	0.8649						
2025					2.8444	0.1021	2.9465	0.7663	0.0958	0.8620						
2026					2.8445	0.1010	2.9456	0.7663	0.0948	0.8611						
2027					2.8446	0.1013	2.9459	0.7664	0.0950	0.8614						
2028					1.7941	0.0688	1.8629	0.4833	0.0648	0.5482						
2029					0.3282	8.3400e-003	0.3365	0.0873	8.1700e-003	0.0954						
Total					**32.1247**	**1.0913**	**33.2160**	**9.3350**	**1.0264**	**10.3614**						

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**61.13**	**4.91**	**0.00**	**60.69**	**13.26**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area						0.0650	0.0650		0.0650	0.0650						
Energy						0.1307	0.1307		0.1307	0.1307						
Mobile					17.3465	0.1029	17.4494	4.6386	0.0956	4.7342						
Waste						0.0000	0.0000		0.0000	0.0000						
Water						0.0000	0.0000		0.0000	0.0000						
Total					**17.3465**	**0.2986**	**17.6451**	**4.6386**	**0.2912**	**4.9299**						

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area						0.0650	0.0650		0.0650	0.0650						
Energy						0.1307	0.1307		0.1307	0.1307						
Mobile					17.3465	0.1029	17.4494	4.6386	0.0956	4.7342						
Waste						0.0000	0.0000		0.0000	0.0000						
Water						0.0000	0.0000		0.0000	0.0000						
Total					**17.3465**	**0.2986**	**17.6451**	**4.6386**	**0.2912**	**4.9299**						

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2017	8/16/2017	5	163	
2	Site Preparation	Site Preparation	8/17/2017	1/1/2018	5	98	
3	Grading	Grading	1/2/2018	12/19/2018	5	252	
4	Building Construction	Building Construction	12/20/2018	8/17/2028	5	2521	
5	Paving	Paving	8/18/2028	4/25/2029	5	179	
6	Architectural Coating	Architectural Coating	4/26/2029	12/31/2029	5	178	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 749.7

Acres of Paving: 0

Residential Indoor: 3,078,000; Residential Outdoor: 1,026,000; Non-Residential Indoor: 2,648,010; Non-Residential Outdoor: 882,670 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	9.50	81	0.73
Demolition	Excavators	3	9.50	162	0.38
Demolition	Rubber Tired Dozers	2	9.50	255	0.40
Site Preparation	Rubber Tired Dozers	3	9.50	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	9.50	97	0.37
Grading	Excavators	2	9.50	162	0.38
Grading	Graders	1	9.50	174	0.41
Grading	Rubber Tired Dozers	1	9.50	255	0.40
Grading	Scrapers	2	9.50	361	0.48
Grading	Tractors/Loaders/Backhoes	2	9.50	97	0.37
Building Construction	Cranes	1	8.30	226	0.29
Building Construction	Forklifts	3	9.50	89	0.20
Building Construction	Generator Sets	1	9.50	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	8.30	97	0.37
Building Construction	Welders	1	9.50	46	0.45
Paving	Pavers	2	9.50	125	0.42
Paving	Paving Equipment	2	9.50	130	0.36
Paving	Rollers	2	9.50	80	0.38
Architectural Coating	Air Compressors	1	7.10	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	7,499.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	1,991.00	569.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	398.00	0.00	0.00	12.40	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Clean Paved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.8115	0.0000	0.8115	0.1229	0.0000	0.1229						
Off-Road						0.2057	0.2057		0.1916	0.1916						
Total					**0.8115**	**0.2057**	**1.0171**	**0.1229**	**0.1916**	**0.3145**						

3.2 Demolition - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0634	0.0129	0.0762	0.0174	0.0118	0.0292						
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker					0.0111	9.0000e-005	0.0112	2.9600e-003	8.0000e-005	3.0400e-003						
Total					**0.0745**	**0.0130**	**0.0875**	**0.0204**	**0.0119**	**0.0323**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.8115	0.0000	0.8115	0.1229	0.0000	0.1229						
Off-Road						0.0128	0.0128		0.0128	0.0128						
Total					**0.8115**	**0.0128**	**0.8243**	**0.1229**	**0.0128**	**0.1357**						

3.2 Demolition - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0634	0.0129	0.0762	0.0174	0.0118	0.0292						
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker					0.0111	9.0000e-005	0.0112	2.9600e-003	8.0000e-005	3.0400e-003						
Total					**0.0745**	**0.0130**	**0.0875**	**0.0204**	**0.0119**	**0.0323**						

3.3 Site Preparation - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0512	0.0000	1.0512	0.5778	0.0000	0.5778						
Off-Road						0.1586	0.1586		0.1459	0.1459						
Total					**1.0512**	**0.1586**	**1.2099**	**0.5778**	**0.1459**	**0.7238**						

3.3 Site Preparation - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker					7.9500e-003	6.0000e-005	8.0100e-003	2.1100e-003	6.0000e-005	2.1700e-003						
Total					**7.9500e-003**	**6.0000e-005**	**8.0100e-003**	**2.1100e-003**	**6.0000e-005**	**2.1700e-003**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0512	0.0000	1.0512	0.5778	0.0000	0.5778						
Off-Road						8.3000e-003	8.3000e-003		8.3000e-003	8.3000e-003						
Total					**1.0512**	**8.3000e-003**	**1.0595**	**0.5778**	**8.3000e-003**	**0.5861**						

3.3 Site Preparation - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker					7.9500e-003	6.0000e-005	8.0100e-003	2.1100e-003	6.0000e-005	2.1700e-003						
Total					**7.9500e-003**	**6.0000e-005**	**8.0100e-003**	**2.1100e-003**	**6.0000e-005**	**2.1700e-003**						

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0512	0.0000	1.0512	0.5778	0.0000	0.5778						
Off-Road						1.4000e-003	1.4000e-003		1.2900e-003	1.2900e-003						
Total					**1.0512**	**1.4000e-003**	**1.0526**	**0.5778**	**1.2900e-003**	**0.5791**						

3.3 Site Preparation - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker					8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005						
Total					**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.0512	0.0000	1.0512	0.5778	0.0000	0.5778						
Off-Road						9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005						
Total					**1.0512**	**9.0000e-005**	**1.0513**	**0.5778**	**9.0000e-005**	**0.5779**						

3.3 Site Preparation - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker					8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005						
Total					**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**						

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.2986	0.0000	1.2986	0.5382	0.0000	0.5382						
Off-Road						0.4172	0.4172		0.3838	0.3838						
Total					**1.2986**	**0.4172**	**1.7157**	**0.5382**	**0.3838**	**0.9220**						

3.4 Grading - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker					0.0229	1.7000e-004	0.0231	6.1000e-003	1.6000e-004	6.2600e-003						
Total					**0.0229**	**1.7000e-004**	**0.0231**	**6.1000e-003**	**1.6000e-004**	**6.2600e-003**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.2986	0.0000	1.2986	0.5382	0.0000	0.5382						
Off-Road						0.0297	0.0297		0.0297	0.0297						
Total					**1.2986**	**0.0297**	**1.3283**	**0.5382**	**0.0297**	**0.5679**						

3.4 Grading - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker					0.0229	1.7000e-004	0.0231	6.1000e-003	1.6000e-004	6.2600e-003						
Total					**0.0229**	**1.7000e-004**	**0.0231**	**6.1000e-003**	**1.6000e-004**	**6.2600e-003**						

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						7.0900e-003	7.0900e-003		6.6700e-003	6.6700e-003						
Total						**7.0900e-003**	**7.0900e-003**		**6.6700e-003**	**6.6700e-003**						

3.5 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.0147	2.7000e-003	0.0174	4.2000e-003	2.4800e-003	6.6800e-003						
Worker					0.0725	5.4000e-004	0.0731	0.0193	5.0000e-004	0.0198						
Total					**0.0872**	**3.2400e-003**	**0.0904**	**0.0235**	**2.9800e-003**	**0.0265**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						6.4000e-004	6.4000e-004		6.4000e-004	6.4000e-004						
Total						**6.4000e-004**	**6.4000e-004**		**6.4000e-004**	**6.4000e-004**						

3.5 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.0147	2.7000e-003	0.0174	4.2000e-003	2.4800e-003	6.6800e-003						
Worker					0.0725	5.4000e-004	0.0731	0.0193	5.0000e-004	0.0198						
Total					**0.0872**	**3.2400e-003**	**0.0904**	**0.0235**	**2.9800e-003**	**0.0265**						

3.5 Building Construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.1990	0.1990		0.1871	0.1871						
Total						**0.1990**	**0.1990**		**0.1871**	**0.1871**						

3.5 Building Construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4782	0.0818	0.5600	0.1369	0.0753	0.2122						
Worker					2.3656	0.0174	2.3830	0.6291	0.0161	0.6452						
Total					**2.8438**	**0.0992**	**2.9430**	**0.7660**	**0.0914**	**0.8574**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0209	0.0209		0.0209	0.0209						
Total						**0.0209**	**0.0209**		**0.0209**	**0.0209**						

3.5 Building Construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4782	0.0818	0.5600	0.1369	0.0753	0.2122						
Worker					2.3656	0.0174	2.3830	0.6291	0.0161	0.6452						
Total					**2.8438**	**0.0992**	**2.9430**	**0.7660**	**0.0914**	**0.8574**						

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.1730	0.1730		0.1627	0.1627						
Total						**0.1730**	**0.1730**		**0.1627**	**0.1627**						

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4800	0.0735	0.5535	0.1374	0.0677	0.2051						
Worker					2.3747	0.0172	2.3919	0.6315	0.0160	0.6475						
Total					**2.8547**	**0.0908**	**2.9454**	**0.7689**	**0.0836**	**0.8526**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0210	0.0210		0.0210	0.0210						
Total						**0.0210**	**0.0210**		**0.0210**	**0.0210**						

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4800	0.0735	0.5535	0.1374	0.0677	0.2051						
Worker					2.3747	0.0172	2.3919	0.6315	0.0160	0.6475						
Total					**2.8547**	**0.0908**	**2.9454**	**0.7689**	**0.0836**	**0.8526**						

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.1479	0.1479		0.1390	0.1390						
Total						**0.1479**	**0.1479**		**0.1390**	**0.1390**						

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4783	0.0660	0.5443	0.1370	0.0607	0.1977						
Worker					2.3656	0.0171	2.3827	0.6291	0.0159	0.6450						
Total					**2.8439**	**0.0831**	**2.9270**	**0.7661**	**0.0766**	**0.8427**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0209	0.0209		0.0209	0.0209						
Total						**0.0209**	**0.0209**		**0.0209**	**0.0209**						

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4783	0.0660	0.5443	0.1370	0.0607	0.1977						
Worker					2.3656	0.0171	2.3827	0.6291	0.0159	0.6450						
Total					**2.8439**	**0.0831**	**2.9270**	**0.7661**	**0.0766**	**0.8427**						

3.5 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.1243	0.1243		0.1170	0.1170						
Total						**0.1243**	**0.1243**		**0.1170**	**0.1170**						

3.5 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4766	0.0648	0.5413	0.1365	0.0596	0.1961						
Worker					2.3566	0.0170	2.3736	0.6267	0.0158	0.6425						
Total					**2.8331**	**0.0818**	**2.9149**	**0.7632**	**0.0754**	**0.8386**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0209	0.0209		0.0209	0.0209						
Total						**0.0209**	**0.0209**		**0.0209**	**0.0209**						

3.5 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4766	0.0648	0.5413	0.1365	0.0596	0.1961						
Worker					2.3566	0.0170	2.3736	0.6267	0.0158	0.6425						
Total					**2.8331**	**0.0818**	**2.9149**	**0.7632**	**0.0754**	**0.8386**						

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.1075	0.1075		0.1011	0.1011						
Total						**0.1075**	**0.1075**		**0.1011**	**0.1011**						

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4767	0.0632	0.5398	0.1365	0.0581	0.1946						
Worker					2.3566	0.0170	2.3736	0.6267	0.0158	0.6425						
Total					**2.8332**	**0.0802**	**2.9134**	**0.7632**	**0.0739**	**0.8371**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0209	0.0209		0.0209	0.0209						
Total						**0.0209**	**0.0209**		**0.0209**	**0.0209**						

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4767	0.0632	0.5398	0.1365	0.0581	0.1946						
Worker					2.3566	0.0170	2.3736	0.6267	0.0158	0.6425						
Total					**2.8332**	**0.0802**	**2.9134**	**0.7632**	**0.0739**	**0.8371**						

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0949	0.0949		0.0893	0.0893						
Total						**0.0949**	**0.0949**		**0.0893**	**0.0893**						

3.5 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4805	0.0640	0.5445	0.1376	0.0589	0.1965						
Worker					2.3747	0.0171	2.3918	0.6315	0.0159	0.6474						
Total					**2.8552**	**0.0811**	**2.9363**	**0.7692**	**0.0748**	**0.8439**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0210	0.0210		0.0210	0.0210						
Total						**0.0210**	**0.0210**		**0.0210**	**0.0210**						

3.5 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4805	0.0640	0.5445	0.1376	0.0589	0.1965						
Worker					2.3747	0.0171	2.3918	0.6315	0.0159	0.6474						
Total					**2.8552**	**0.0811**	**2.9363**	**0.7692**	**0.0748**	**0.8439**						

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0813	0.0813		0.0765	0.0765						
Total						**0.0813**	**0.0813**		**0.0765**	**0.0765**						

3.5 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4788	0.0641	0.5428	0.1372	0.0589	0.1961						
Worker					2.3656	0.0171	2.3828	0.6291	0.0159	0.6450						
Total					**2.8444**	**0.0812**	**2.9256**	**0.7663**	**0.0748**	**0.8411**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0209	0.0209		0.0209	0.0209						
Total						**0.0209**	**0.0209**		**0.0209**	**0.0209**						

3.5 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4788	0.0641	0.5428	0.1372	0.0589	0.1961						
Worker					2.3656	0.0171	2.3828	0.6291	0.0159	0.6450						
Total					**2.8444**	**0.0812**	**2.9256**	**0.7663**	**0.0748**	**0.8411**						

3.5 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0813	0.0813		0.0765	0.0765						
Total						**0.0813**	**0.0813**		**0.0765**	**0.0765**						

3.5 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4789	0.0629	0.5418	0.1372	0.0578	0.1951						
Worker					2.3656	0.0172	2.3829	0.6291	0.0160	0.6451						
Total					**2.8445**	**0.0801**	**2.9246**	**0.7663**	**0.0738**	**0.8401**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0209	0.0209		0.0209	0.0209						
Total						**0.0209**	**0.0209**		**0.0209**	**0.0209**						

3.5 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4789	0.0629	0.5418	0.1372	0.0578	0.1951						
Worker					2.3656	0.0172	2.3829	0.6291	0.0160	0.6451						
Total					**2.8445**	**0.0801**	**2.9246**	**0.7663**	**0.0738**	**0.8401**						

3.5 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0813	0.0813		0.0765	0.0765						
Total						**0.0813**	**0.0813**		**0.0765**	**0.0765**						

3.5 Building Construction - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4790	0.0630	0.5420	0.1373	0.0580	0.1952						
Worker					2.3656	0.0173	2.3829	0.6291	0.0161	0.6452						
Total					**2.8446**	**0.0803**	**2.9250**	**0.7664**	**0.0740**	**0.8404**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0209	0.0209		0.0209	0.0209						
Total						**0.0209**	**0.0209**		**0.0209**	**0.0209**						

3.5 Building Construction - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.4790	0.0630	0.5420	0.1373	0.0580	0.1952						
Worker					2.3656	0.0173	2.3829	0.6291	0.0161	0.6452						
Total					**2.8446**	**0.0803**	**2.9250**	**0.7664**	**0.0740**	**0.8404**						

3.5 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0511	0.0511		0.0481	0.0481						
Total						**0.0511**	**0.0511**		**0.0481**	**0.0481**						

3.5 Building Construction - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.3011	0.0395	0.3406	0.0863	0.0364	0.1227						
Worker					1.4865	0.0109	1.4974	0.3953	0.0101	0.4054						
Total					**1.7875**	**0.0505**	**1.8380**	**0.4816**	**0.0465**	**0.5281**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0132	0.0132		0.0132	0.0132						
Total						**0.0132**	**0.0132**		**0.0132**	**0.0132**						

3.5 Building Construction - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.3011	0.0395	0.3406	0.0863	0.0364	0.1227						
Worker					1.4865	0.0109	1.4974	0.3953	0.0101	0.4054						
Total					**1.7875**	**0.0505**	**1.8380**	**0.4816**	**0.0465**	**0.5281**						

3.6 Paving - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0234	0.0234		0.0216	0.0216						
Paving						0.0000	0.0000		0.0000	0.0000						
Total						**0.0234**	**0.0234**		**0.0216**	**0.0216**						

3.6 Paving - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker					6.5600e-003	5.0000e-005	6.6000e-003	1.7400e-003	4.0000e-005	1.7900e-003						
Total					**6.5600e-003**	**5.0000e-005**	**6.6000e-003**	**1.7400e-003**	**4.0000e-005**	**1.7900e-003**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						5.1100e-003	5.1100e-003		5.1100e-003	5.1100e-003						
Paving						0.0000	0.0000		0.0000	0.0000						
Total						**5.1100e-003**	**5.1100e-003**		**5.1100e-003**	**5.1100e-003**						

3.6 Paving - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker					6.5600e-003	5.0000e-005	6.6000e-003	1.7400e-003	4.0000e-005	1.7900e-003						
Total					**6.5600e-003**	**5.0000e-005**	**6.6000e-003**	**1.7400e-003**	**4.0000e-005**	**1.7900e-003**						

3.6 Paving - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						0.0203	0.0203		0.0186	0.0186						
Paving						0.0000	0.0000		0.0000	0.0000						
Total						**0.0203**	**0.0203**		**0.0186**	**0.0186**						

3.6 Paving - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker					5.6700e-003	4.0000e-005	5.7100e-003	1.5100e-003	4.0000e-005	1.5500e-003						
Total					**5.6700e-003**	**4.0000e-005**	**5.7100e-003**	**1.5100e-003**	**4.0000e-005**	**1.5500e-003**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road						4.4200e-003	4.4200e-003		4.4200e-003	4.4200e-003						
Paving						0.0000	0.0000		0.0000	0.0000						
Total						**4.4200e-003**	**4.4200e-003**		**4.4200e-003**	**4.4200e-003**						

3.6 Paving - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker					5.6700e-003	4.0000e-005	5.7100e-003	1.5100e-003	4.0000e-005	1.5500e-003						
Total					**5.6700e-003**	**4.0000e-005**	**5.7100e-003**	**1.5100e-003**	**4.0000e-005**	**1.5500e-003**						

3.7 Architectural Coating - 2029

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating						0.0000	0.0000		0.0000	0.0000						
Off-Road						5.4200e-003	5.4200e-003		5.4200e-003	5.4200e-003						
Total						**5.4200e-003**	**5.4200e-003**		**5.4200e-003**	**5.4200e-003**						

3.7 Architectural Coating - 2029

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker					0.3225	2.3800e-003	0.3249	0.0858	2.2100e-003	0.0880						
Total					**0.3225**	**2.3800e-003**	**0.3249**	**0.0858**	**2.2100e-003**	**0.0880**						

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating						0.0000	0.0000		0.0000	0.0000						
Off-Road						1.5000e-003	1.5000e-003		1.5000e-003	1.5000e-003						
Total						**1.5000e-003**	**1.5000e-003**		**1.5000e-003**	**1.5000e-003**						

3.7 Architectural Coating - 2029

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker					0.3225	2.3800e-003	0.3249	0.0858	2.2100e-003	0.0880						
Total					**0.3225**	**2.3800e-003**	**0.3249**	**0.0858**	**2.2100e-003**	**0.0880**						

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated					17.3465	0.1029	17.4494	4.6386	0.0956	4.7342						
Unmitigated					17.3465	0.1029	17.4494	4.6386	0.0956	4.7342						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	8,177.60	8,892.00	7539.20	18,279,634	18,279,634
City Park	0.00	0.00	0.00		
Free-Standing Discount Store	8,341.00	10,356.90	8213.70	13,426,489	13,426,489
General Office Building	4,337.05	933.45	387.35	7,854,110	7,854,110
Parking Lot	0.00	0.00	0.00		
Research & Development	3,765.55	882.65	514.35	7,241,175	7,241,175
Total	24,621.20	21,065.00	16,654.60	46,801,408	46,801,408

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	12.40	4.30	5.40	26.10	29.10	44.80	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Free-Standing Discount Store	9.50	7.30	7.30	12.20	68.80	19.00	47.5	35.5	17
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.615666	0.034738	0.173074	0.111547	0.013802	0.004566	0.008754	0.006650	0.000627	0.000389	0.024637	0.002443	0.002743

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000						
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000						
NaturalGas Mitigated						0.1307	0.1307		0.1307	0.1307						
NaturalGas Unmitigated						0.1307	0.1307		0.1307	0.1307						

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0						0.0000	0.0000		0.0000	0.0000						
Free-Standing Discount Store	672600						2.5100e-003	2.5100e-003		2.5100e-003	2.5100e-003						
General Office Building	9.1186e+006						0.0340	0.0340		0.0340	0.0340						
Parking Lot	0						0.0000	0.0000		0.0000	0.0000						
Research & Development	1.26365e+007						0.0471	0.0471		0.0471	0.0471						
Apartments Mid Rise	1.26426e+007						0.0471	0.0471		0.0471	0.0471						
Total							**0.1307**	**0.1307**		**0.1307**	**0.1307**						

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0						0.0000	0.0000		0.0000	0.0000						
Free-Standing Discount Store	672600						2.5100e-003	2.5100e-003		2.5100e-003	2.5100e-003						
General Office Building	9.1186e+006						0.0340	0.0340		0.0340	0.0340						
Parking Lot	0						0.0000	0.0000		0.0000	0.0000						
Research & Development	1.26365e+007						0.0471	0.0471		0.0471	0.0471						
Apartments Mid Rise	1.26426e+007						0.0471	0.0471		0.0471	0.0471						
Total							**0.1307**	**0.1307**		**0.1307**	**0.1307**						

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	5.30006e +006				
City Park	0				
Free-Standing Discount Store	2.0045e +006				
General Office Building	7.57555e +006				
Parking Lot	651200				
Research & Development	4.8895e +006				
Total					

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	5.30006e +006				
City Park	0				
Free-Standing Discount Store	2.0045e +006				
General Office Building	7.57555e +006				
Parking Lot	651200				
Research & Development	4.8895e +006				
Total					

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated						0.0650	0.0650		0.0650	0.0650						
Unmitigated						0.0650	0.0650		0.0650	0.0650						

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating						0.0000	0.0000		0.0000	0.0000						
Consumer Products						0.0000	0.0000		0.0000	0.0000						
Hearth						3.5200e-003	3.5200e-003		3.4800e-003	3.4800e-003						
Landscaping						0.0615	0.0615		0.0615	0.0615						
Total						**0.0650**	**0.0650**		**0.0650**	**0.0650**						

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating						0.0000	0.0000		0.0000	0.0000						
Consumer Products						0.0000	0.0000		0.0000	0.0000						
Hearth						3.5200e-003	3.5200e-003		3.4800e-003	3.4800e-003						
Landscaping						0.0615	0.0615		0.0615	0.0615						
Total						**0.0650**	**0.0650**		**0.0650**	**0.0650**						

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated				
Unmitigated				

7.2 Water by Land Use

Unmitigated

	Indoor/ Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	99.0341 / 62.4346				
City Park	0 / 7.74463				
Free-Standing Discount Store	14.0738 / 8.62586				
General Office Building	112.861 / 69.1728				
Parking Lot	0 / 0				
Research & Development	312.226 / 0				
Total					

7.2 Water by Land Use

Mitigated

	Indoor/ Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	99.0341 / 62.4346				
City Park	0 / 7.74463				
Free-Standing Discount Store	14.0738 / 8.62586				
General Office Building	112.861 / 69.1728				
Parking Lot	0 / 0				
Research & Development	312.226 / 0				
Total					

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated				
Unmitigated				

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	699.2				
City Park	0.56				
Free-Standing Discount Store	817.13				
General Office Building	590.55				
Parking Lot	0				
Research & Development	48.26				
Total					

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	137.043				
City Park	0.10976				
Free-Standing Discount Store	160.157				
General Office Building	115.748				
Parking Lot	0				
Research & Development	9.45896				
Total					

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Attachment C

Exposure Reduction Measures

The following provides background information on air quality exposure reduction measures to address localized impacts related to diesel particulate matter (DPM) emissions from roadways such as I-580.[1]

Residential Setback from Roadways: Limit residential units located within the set distance of 500 feet to I-580. Avoiding residential development within 500 feet of a major roadway is an effective strategy for reducing exposure to DPM and fine particulate matter ($PM_{2.5}$) and/or cancer risk from a roadway. Research findings indicate that roadways generally influence air quality within a few hundred feet – about 500 to 600 feet downwind from the vicinity of heavily traveled roadways or along corridors with significant truck traffic. This distance will vary by location and time of day or year, prevailing meteorology, topography, nearby land use, traffic patterns, as well as the individual pollutant.[2]

Minimum Efficiency Reporting Value Filters: Installation of an air filtration system can reduce cancer risks, health impacts and DPM exposure for residents and other sensitive populations in buildings that are in close proximity to major roadways. Air filtration devices should be rated Minimum Efficiency Reporting Value (MERV)-13 or higher. MERV-13 air filters are considered high efficiency filters able to remove 80 percent of $PM_{2.5}$ from indoor air.[3] MERV-13 air filters may reduce concentrations of DPM from mobile sources by approximately 53 percent and cancer risk by 42 percent. As part of implementing this measure, an ongoing maintenance plan for the building's air filtration system would be required.

Air filtration protects residents and other sensitive receptors from exposure to pollutants by reducing the pollutant concentration in indoor air circulated from outdoor air. Air filtration places a control on a building's mechanical ventilation system that filters particles from the air. The effectiveness of a filter depends on its (1) efficiency to remove particles from passing air; (2) a ventilation system's air flow rate; and (3) the path the clean air follows after it leaves the filter. To ensure adequate health protection to sensitive receptors, a ventilation system should meet the following minimal design standards:

- A MERV-13, or higher, rating that represents a minimum of 80 percent efficiency to capture fine particulates;

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[1] Metropolitan Transportation Commission and Association of Bay Area Governments. *Plan Bay Area Environmental Impact Report*. April 2013. http://planbayarea.org/pdf/Draft_EIR_Chapters/Appendix_E_Air_Quality_Methodology_032713.pdf

[2] US Environmental Protection Agency. *Near Roadway Air Pollution and Health: Frequently Asked Questions*. August 2014. http://www3.epa.gov/otaq/documents/nearroadway/420f14044.pdf

[3] US Environmental Protection Agency. *Residential Air Cleaners.* http://www.epa.gov/iaq/pubs/residair.html

- At least one air exchange(s) per hour of fresh outside filtered air;
- At least four air exchange(s) / hour recirculation; and
- At least 0.25 air exchange(s) per hour in unfiltered infiltration.[4]

The effectiveness of air filtration is highly variable and based upon a building's design and maintenance. For example, the presence of operable windows, the placement of the air intakes, operation and maintenance of the ventilation system, and proper sealings will impact the effectiveness of air filtration and thus residents' exposure to DPM from nearby sources of emissions.

The California Air Resources Board (CARB) recently studied the effectiveness of air filtration, along with other mitigation measures, as a strategy to reduce exposure to nearby traffic pollution.[5] The study found that the use of air filtration tends to be relatively effective. The study notes that air filtration could be especially effective in residences with consideration to California's requirement that new homes have mechanical ventilation systems installed.

Installation of MERV-13 filters in residential units represents a feasible option that is recommended by a number of entities. The City and County of San Francisco requires MERV-13 filters be installed in residential buildings located in air quality hot spots as defined by San Francisco's Health Code Article 38.[6] In addition, the American Society of Heating, Refrigerating, and Air Conditioning Engineers, recommends, in their green building guide, that a minimum of MERV-13 rated air filtration be required in building locations where the air quality is designated to be in non-attainment with the National Ambient Air Quality Standards for $PM_{2.5}$.[7] The United States Green Building Council requires that new construction be equipped with a MERV-13 or higher rated air filter in new construction for buildings and homes to receive air filtration green building credit points.[8]

Phase Residential Development: Phase residential developments located within the setback distance of 500 feet from I-580 until 2023, or as late as feasible. In 2008, CARB adopted a regulation that requires diesel trucks to retrofit or replace their engines so that by 2023, nearly all trucks would have a 2010 or newer model year engine. Therefore, DPM emissions from diesel

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[4] San Francisco Department of Public Health. *Assessment and Mitigation of Air Pollutant Health Effects from Intra-Urban Roadways: Guidance for Land Use Planning and Environmental Review*. May 2008. http://www.gsweventcenter.com/Draft_SEIR_References%5C2008_0501_SFDPH.pdf

[5] California Air Resources Board. *Status of Research on Potential Mitigation Concepts to Reduce Exposure to Nearby Traffic Pollution*. August 2012. http://www.arb.ca.gov/research/health/traff-eff/research%20status%20-reducing%20exposure%20to%20traffic%20pollution.pdf

[6] City and County of San Francisco. *Green Building Requirements Summary and Verification Form*. http://sfdbi.org/sites/sfdbi.org/files/migrated/FileCenter/Documents/Permit_Review_Services/Green_Building_Requirements/LEED_component_columns.pdf

[7] ASHRAE Journal's Guide to Standard 189.1. *Balancing Environmental Responsibility, Resource Efficiency and Occupant Comfort*. June 2010. https://www.ashrae.org/resources--publications/bookstore/standard-189-1

[8] LEED for New Construction Rating System. http://new.usgbc.org/leed/rating-systems

trucks will decline by approximately 80 percent by 2023. This measure allows proposed projects to avoid exposing sensitive receptors to high levels of DPM from heavy duty trucks on roadways. As CARB's On-Road Heavy Duty Diesel Vehicles Regulation[9] gets implemented, DPM emissions will decrease over time, which will reduce cancer risk near major roadways.

Site Layout: Design buildings and sites to limit exposure from sources of TAC emissions. Locate operable windows, balconies, and building air intakes as far away as is feasible from emission sources.

Building design can be an important factor in improving indoor air quality, especially when considering the location of the air intake for air ventilation. In general, $PM_{2.5}$ concentrations decrease with distance and with building height, therefore air intake locations should be located farthest away from emission sources as possible to provide the cleanest ventilation to building occupants.

Operable windows and balconies should be installed away from I-580 and other sources of air pollution. Similarly, if mechanical ventilation is installed, the proposed project should consider installing inoperable windows in the direction of I-580. This strategy will reduce the possibility of higher polluted air from entering the building and also increases the efficiency and performance standard of the mechanical filter.

Tree Planting: Plant trees and/or vegetation between sensitive receptors and I-580. Large, evergreen trees (those with foliage year-round) with long-life spans work best in trapping $PM_{2.5}$. In addition, trees with branches and leaves that have a sticky surface and trees with a fine, complex foliage structure that allow significant in-canopy airflow also perform well. Specific tree recommendations include: Pine (*Pinus nigra* var. *maritima*), Cypress (X *Cupressocyparis leylandii*), Hybrid popular (*Populus deltoids X trichocarpa*), and Redwoods *(Sequoia sempervirens*) Planting certain trees can be an effective strategy for reducing exposure to air pollution. With certain trees, fine particulates become trapped and filtered by the leaves, stems, and twigs of the trees. Trapped pollution particles are eventually washed to the ground by rainfall. Research supports a reduction in particulate matter concentration ranging from 0.5 to 5 percent from planting trees near a source of $PM_{2.5}$.

In addition to the type of tree, the placement of the trees, relative to major roadways, and how densely they are planted are important considerations in using trees as a strategy to reduce air pollution exposure. The $PM_{2.5}$ removal effectiveness of trees is greatest when the trees are planted closest to the edge of the roadway or stationary source, for this is where pollution concentrations are highest. Beyond 500 feet, concentrations begin to diminish considerably, thereby diminishing the need for or effectiveness of tree planting as a strategy. Ideally, trees should be planted within 500 feet from a roadway to be considered an effective strategy. In

[9] The regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Newer heavier trucks and buses must meet PM filter requirements beginning January 1, 2012. Lighter and older heavier trucks must be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent. http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm

regards to density, trees should be planted so that they are grouped as close together as possible to ensure a rather dense collection of tree stands. The denser the trees, the more effective the foliage, trunks and canopies will be in collecting particulate matter.

Noise Barrier: The presence of a noise barrier often leads to pollutant concentration reductions behind the barrier during meteorological conditions with winds directionally from the road. $PM_{2.5}$ concentrations generally decreased between 15 and 50 percent behind the barrier. However, conditions may also occur when pollutant concentrations are greater behind the barrier than when no barrier is present. These results imply that the presence of a noise barrier can lead to higher pollutant concentrations during certain wind conditions. In addition, results suggested that the presence of mature trees in addition to the barrier further lowered $PM_{2.5}$ concentrations.[10]

[10] Atmospheric Environment. *Impacts of Noise Barriers on Near-road Air Quality.* May 2008. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.174.3359&rep=rep1&type=pdf

Appendix C

Special-Status Species and Biology Supporting Information

ESA

TABLE C-1
SPECIAL-STATUS AND OTHERWISE PROTECTED SPECIES CONSIDERED IN EVALUATION OF THE RICHMOND BAY SPECIFIC PLAN AND SUB-AREA-4 DEVELOPMENT PROJECT

Common Name *Scientific Name*	Listing Status USFWS/ CDFW/Other	General Habitat	Potential for Species Occurrence Within Study Area
		Species Listed or Proposed for Listing	
Plants			
Pallid manzanita *Arctostaphylos pallida*	FT/CE/1B.1	Broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub. Requires fire for reproduction. 185-465 m. February – March	**Absent.** Suitable habitat not found onsite. Project area is outside species' known distribution.
Tiburon mariposa-lily *Calochortus tiburonensis*	FT/CT/1B.2	Valley grasslands. Affinity to serpentine soils. 50-150 m. March – June	**Absent.** No serpentine present in study area, and outside species' known distribution. Known occurrence more than five miles west of site on Tiburon Peninsula.
Tiburon paintbrush *Castilleja affinis* var. *neglecta*	FE/CT/1B.2	Open serpentine grassland slopes. 60-400 m. April – June	**Low.** Two known occurrences on the Tiburon Peninsula over five miles away from the project site, on Tiburon Peninsula.
Soft salty bird's-beak *Chloropyron molle* ssp. *molle*	FE/CR/1B.2	Found in coastal salt marsh with *Distichlis, Salicornia, Frankenia*, etc. 0-3m. July – November	**Low.** Nearest extant occurrences near eastern San Pablo Bay, over 10 miles north of Study Area.
Robust spineflower *Chorizanthe robusta* var. *robusta*	FE/--/1B.1	Cismontane woodland, coastal dunes, coastal scrub, sandy terraces and bluffs or in loose sand. 3-120 m. April – September	**Absent.** Suitable habitat not found onsite. Local occurrences are historical and species is thought to be extirpated from Study Area.
Santa Cruz tarplant *Holocarpha macradenia*	FT/CE/1B.1	Coastal prairie, valley and foothill grassland. Found on light, sandy soil or sandy clay; often with non-natives. 10-260 m. June – October	**Low.** Available habitat very disturbed. Most occurrences observed in Wildcat Canyon Regional Park approximately three miles east of Study Area.
Beach layia *Layia carnosa*	FE/CE/1B.1	On sparsely vegetated, semi-stabilized coastal dunes and coastal scrub. 0-60 m. March – July	**Low.** Suitable habitat not found in Study Area. Only local occurrence thought to be extirpated.
White-rayed pentachaeta *Pentachaeta bellidiflora*	FE/CE/1B.1	Open, dry, rocky slopes and grassy areas, usually on serpentine. 35 – 620 m. March – May	**Low**. Suitable habitat not found in Study Area. Project area is outside species' known distribution. Nearest occurrence to project site on San Quentin Peninsula.
Adobe sanicle *Sanicula maritima*	--/CR/1B.1	Meadows and seeps, valley and foothill grassland, chaparral, coastal prairie. Found on moist clay or ultramafic soils. 30-240 m. February – May	**Absent.** Suitable habitat not found onsite. Local occurrences are historical and species is thought to be extirpated from Plan Area.

TABLE C-1 (Continued)
SPECIAL-STATUS AND OTHERWISE PROTECTED SPECIES CONSIDERED IN EVALUATION OF THE RICHMOND BAY SPECIFIC PLAN AND SUB-AREA-4 DEVELOPMENT PROJECT

Common Name *Scientific Name*	Listing Status USFWS/ CDFW/Other	General Habitat	Potential for Species Occurrence Within Study Area
		Other Special-Status Species	
Plants (cont.)			
Most beautiful jewelflower *Streptanthus albidus* ssp. *peramoenus*	--/--/1B.2	Chaparral, valley and foothill grassland, cismontane woodland in serpentine outcrops, on ridges and slopes. 95-100 m.	**Low.** No suitable habitat.
Tiburon jewelflower *Streptanthus niger*	FE/CE/1B.1	Shallow, rocky serpentine slopes of valley and foothill grassland	**Low.** Known occurrences limited to particular area in Marin County. Suitable habitat not found onsite.
California seablite *Suaeda californica*	FE/--/1B.1	Margins of coastal salt marshes and swamps. 0-5 m.	**Low.** Nearest occurrence is transplanted population in East Shore State Park. Suitable habitat found in Meeker Slough, Stege Marsh, and Hoffman Marsh.
Showy rancheria clover *Trifolium amoenum*	FE/--/1B.1	Coastal bluff scrub and valley and foothill grassland (sometimes serpentinite). 5-415 m. April – June	**Absent.** No suitable habitat present. Only occurrence known to be extirpated and Plan Area is outside species' known distribution.
Fish			
Green sturgeon *Acipenser medirostris*	FT/--	Spends majority of life in ocean waters near shore, estuaries, and bays, spawns in fresh water rivers.	**Moderate.** Spawns upstream in Sacramento River, but is not known to spawn in San Francisco Bay. Travels through San Francisco Bay and may occasionally be present in waters directly west of Study Area.
Tidewater goby *Eucyclogobius newberryi*	FE/CSC	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego Co. to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	**Low.** Suitable habitat not found in the Study Area.
Coho salmon - Central California Coast ESU *Oncorhynchus kisutch*	FT/CE	Central and northern California coastal rivers and streams.	**Low**. Migrating individuals may occasionally move through SF Bay waters west of the Study Area. No spawning habitat available and NMFS have classified this species extirpated from Bay.
Steelhead - Central California Coastal DPS *Oncorhynchus mykiss irideus*	FT/--	Spawns and rears in coastal streams between the Russian River and Aptos Creek, as well as drainages tributary to San Francisco Bay, where gravelly substrate and shaded riparian habitat occurs.	**Low**. Migrating individuals may occasionally move through SF Bay waters west of the Study Area but would be incidental. No spawning habitat available but Bay waters may provide juvenile rearing habitat.

TABLE C-1 (Continued)
SPECIAL-STATUS SPECIES CONSIDERED IN EVALUATION OF THE RICHMOND BAY SPECIFIC PLAN AND SUB-AREA-4 DEVELOPMENT PROJECT

Common Name *Scientific Name*	Listing Status USFWS/ CDFW/Other	General Habitat	Potential for Species Occurrence Within Study Area
Species Listed or Proposed for Listing (cont.)			
Fish (cont.)			
Steelhead - Central Valley DPS *Oncorhynchus mykiss irideus*	FT/CT	The Central Valley steelhead DPS is thought to have occurred historically from the McCloud River and other northern tributaries to Tulare Lake and the Kings River in the southern San Joaquin Valley. The species remains widely distributed throughout the Sacramento River basin.	**Low**. Migrating individuals may occasionally move through SF Bay waters west of the Study Area. No spawning habitat available but Bay waters may provide juvenile rearing habitat.
Chinook salmon – Central Valley spring run ESU *Oncorhynchus tshawytscha*	FT/CT	Spawns and rears in Sacramento River and tributaries where gravelly substrate and shaded riparian habitat occurs.	**Low.** Migrating individuals may occasionally move through SF Bay waters west of the Study Area. No spawning habitat available but Bay waters may provide juvenile rearing habitat.
Chinook salmon – Sacramento River winter run ESU *Oncorhynchus tshawytscha*	FE/CT	Spawning and rearing restricted to Sacramento River basin, migrate through San Francisco Bay and Sacramento-San Joaquin Delta, require clean, cold water and gravel beds for spawning.	**Low.** Migrating individuals may occasionally move through SF Bay waters west of the Study Area. No spawning habitat available but Bay waters may provide juvenile rearing habitat.
Longfin smelt *Spirinchus thaleichthys*	FC/CT	Found throughout the nearshore coastal waters and open waters of San Francisco Bay-Delta including the river channels and sloughs of the Delta. Spawns in the Delta.	**Moderate.** No freshwater habitat available for spawning within the Study Area but larvae and dispersing and foraging juveniles and young adults may be present year-round.
Eulachon *Thaleichthys pacificus*	FT/CSC	Ocean waters from Northern California to southwest Alaska and into the southeastern Bering Sea. Spawn in freshwater streams within this range.	**Low.** No spawning habitat available but species may migrate through Bay waters infrequently.
Amphibians and Reptiles			
Alameda whipsnake *Masticophis lateralis euryxanthus*	FT/CT	Restricted to valley-foothill hardwood habitat of the coast ranges between Monterey and north San Francisco Bay. Inhabits south-facing slopes and ravines where shrubs form a vegetative mosaic with oak trees and grasses.	**Absent.** Suitable habitat not found onsite.
Foothill-yellow legged frog *Rana boylii*	--/CSC	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats.	**Absent.** Suitable habitat not found in Study Area. Nearest occurrence in Moraga Creek, over 10 miles SE of Study Area.
California red-legged frog *Rana draytonii*	FT/CSC/--	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to aestivation habitat.	**Low.** Nearest occurrence located 5 miles from Study Area, near San Pablo Dam. Study Area remains isolated from higher-quality habitat and known occurrences.
California tiger salamander *Ambystoma californiense*	FT/CT	Central Valley DPS listed as threatened. Santa Barbara and Sonoma Counties DPS listed as endangered. Needs underground refuges, especially ground squirrel burrows and vernal pools or other seasonal water sources for breeding	**Absent.** Nearest species occurrence in Alameda, over five miles south of Study Area, presumed to be extirpated.

TABLE C-1 (Continued)
SPECIAL-STATUS AND OTHERWISE PROTECTED SPECIES CONSIDERED IN EVALUATION OF THE RICHMOND BAY SPECIFIC PLAN AND SUB-AREA-4 DEVELOPMENT PROJECT

Common Name *Scientific Name*	Listing Status USFWS/ CDFW/Other	General Habitat	Potential for Species Occurrence Within Study Area
Birds			
Tricolored blackbird *Agelaius tricolor*	BCC/CSC	Highly colonial species and largely endemic to California. Requires open fresh water with protected nesting substrate and foraging area.	**Low (Unlikely to nest).** Suitable habitat may be found within upper and lower lagoon in Sub-Area 4; however, extensive tule habitat needed for the species is considered low quality and remains isolated.
Golden eagle *Aquila chrysaetos*	BCC/FP, WL	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons and large trees in open areas provide nesting habitat.	**Absent (No nesting potential).** Suitable habitat not found with Study Area.
Short-eared owl *Asio flammeus*	--/SSC	Species found in fresh- and salt-water swamp lands with tule patches or tall grass needed for nesting and daytime seclusion. Nests on dry ground in depression concealed with vegetation.	**Low (Unlikely to nest).** Suitable foraging habitat found in Sub-Area 4; however, high-level of disturbance in Study Area deters species from being present.
Western snowy plover *Charadrius alexandrinus nivosus*	FT/CSC	Sandy beaches, salt pond levees and shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.	**Low (No nesting potential).** Suitable habitat not found in Study Area.
White-tailed kite *Elanus leucurus*	--/FP	Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	**Moderate (Potential to nest).** Species may forage and nest within the Study Area. Nesting documented on Brooks Island and south of the Study Area in the Berkeley Harbor.
Willow flycatcher *Empidonax traillii*	BCC/CE	Moist shrubby areas near standing or running water.	**Low (No nesting potential)**. Suitable foraging and nesting habitat is not present in coastal scrub near tidal wetlands of the Study Area as this area is dominated by coyote brush. Species has been infrequently observed in the vicinity of the Study Area including Meeker Slough though not documented as recently nesting in Contra Costa County (Glover, 2009).
American peregrine falcon *Falco peregrinus anatum*	DL/DL&FPS	Woodlands, coastal habitats, riparian areas, coastal and inland waters, human made structures that may be used as nest or temporary perch sites.	**Moderate (Unlikely to nest).** Suitable foraging habitat is present within the Study Area where this species is frequently observed. Species is documented in Meeker Slough. Nesting is not documented in the Study Area.
Bald eagle *Haliaeetus leucocephalus*	DL/CE	Nests in large, old-growth, or dominant live tree w/ open branches, especially ponderosa pine. Roosts communally in winter within 1 mile of water.	**Low (No nesting potential).** Suitable habitat not present in Study Area; may occur on a transient basis.

TABLE C-1 (Continued)
SPECIAL-STATUS SPECIES CONSIDERED IN EVALUATION OF THE RICHMOND BAY SPECIFIC PLAN AND SUB-AREA-4 DEVELOPMENT PROJECT

Common Name *Scientific Name*	Listing Status USFWS/ CDFW/Other	General Habitat	Potential for Species Occurrence Within Study Area
Species Listed or Proposed for Listing (cont.)			
Birds (*cont.*)			
California black rail *Laterallus jamaicensis coturniculus*	BCC/CT&FP/--	Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that does not fluctuate during the year and dense vegetation for nesting habitat.	**Moderate (Unlikely to nest).** Nearest occurrence in Emeryville marsh and has the potential to inhabit upper and lower lagoon in Sub-Area 4. Nesting is not documented within the Study Area.
Suisun song sparrow Melospiza melodia maxillaris	BCC/CSC	Resident of brackish-water marshes surrounding Suisun Bay and inhabits cattails, tules, and other sedges and Salicornia. Also borders sloughs.	**Low (Unlikely to nest).** Although suitable nesting and foraging habitat for this species occurs in Study Area, nearest occurrence of species is near Carquinez Strait, over 10 miles from Study Area.
Long-billed curlew *Numenius americanus*	BCC/WL/--	Resides in high plains, rangeland. In winter, also cultivated land, tideflats, and saltmarshes. Breeding habitat is mostly native dry grassland and sagebrush prairie. In migration and winter often in farm fields, marshes, coastal mudflats, in addition to grasslands.	**Low (No nesting potential).** Suitable habitat in the Study Area unlikely to be affected by the Specific Plan or Project. No CNDDB occurrences recorded in 9-Quad search.
California brown pelican *Pelicanus occidentalis californicus*	DL/DL&FPS	Nests on protected islets near freshwater lakes and marine waters.	**Low (No nesting potential).** May forage and roost west of Stege Marsh; however, outside impact of Plan Area.
California Ridgway's rail (=California clapper) *Rallus obsoletus*	FE/CE&FP	Salt-water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs.	**High (Potential to nest).** Suitable habitat found in Meeker Slough, Stege Marsh, and Hoffman Marsh of the Study Area.
Bank swallow *Riparia riparia*	--/CT	Colonial nester that requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	**Low (No nesting potential).** Suitable nesting substrate not present within the Study Area.
California least tern *Sternula antillarum browni*	FE/CE&FP	Nests along the coast from San Francisco Bay south to northern Baja California. Colonial breeder on bare or sparsely vegetated, flat substrates: sand beaches, alkali flats, landfills, or paved areas.	**Low (No potential to nest).** May occur over the Study Area on a transient basis. Nearest nesting colony located on Alameda Island.
Mammals			
Salt-marsh harvest mouse *Reithrodontomys raviventris*	FE/CE&FP	Only in the saline emergent wetlands of San Francisco Bay and its tributaries. Found primarily in pickleweed (*Salicornia* spp.). Does not burrow, builds loosely organized nests. Requires higher areas for flood escape.	**Moderate.** Fragmented suitable habitat found in Study Area. Only occurrence within Richmond is historical. Nearest extant occurrence in Emeryville.
Other Special-Status Species			
Plants			
Bent-flowered fiddleneck *Amsinckia lunaris*	--/--/1B.2	Cismontane woodland, valley and foothill grassland. 50-500 m.	**Absent.** Suitable habitat not found onsite.

TABLE C-1 (Continued)
SPECIAL-STATUS AND OTHERWISE PROTECTED SPECIES CONSIDERED IN EVALUATION OF THE RICHMOND BAY SPECIFIC PLAN AND SUB-AREA-4 DEVELOPMENT PROJECT

Common Name *Scientific Name*	Listing Status USFWS/ CDFW/Other	General Habitat	Potential for Species Occurrence Within Study Area
Alkali milk-vetch *Astragalus tener* var. *tener*	--/--/1B.2	Alkali playa and flats, valley, annual, and foothill grassland, vernal pools, low ground, and flooded lands. 1-170 m.	**Low.** Suitable habitat not found onsite.
Round-leaved filaree *California macrophylla*	--/--/1B.1	Cismontane woodland, valley and foothill grassland. Clay soils. 15-1,200 m.	**Absent.** Suitable habitat not found onsite. Only occurrence documented is historical in Berkeley.
Coastal bluff morning-glory *Calystegia purpurata* ssp. *saxicola*	--/--/1B.2	Coastal dunes and coastal scrub. 15-105 m.	**Absent.** Suitable habitat not found onsite. Study Area is outside species' known historical distribution.
Bristly sedge *Carex comosa*	--/--/2B.1	Marshes and swamps, lake margins, wet places. 5-1005 m.	**Low.** Suitable habitat not found onsite. Study Area is outside species' known historical distribution.
Congdon's tarplant *Centromadia parryi* ssp. *congdonii*	--/--/1B.1	Alkaline soils in valley and foothill grassland.	**Low.** Only occurrence in vicinity of Study Area is extirpated and located 2 miles north of Benicia.
Point Reyes bird's-beak *Chloropyron maritimus* ssp. *palustris*	--/--/1B.2	Coastal salt marsh usually with *Salicornia*, *Distichlis*, *Jaumea*, *Spartina*, etc. 0-15 m.	**Low.** Extant population can be found in restored SF wetland. All other occurrences near the vicinity of the Study Area are historical or extirpated.
San Francisco Bay spineflower *Chorizanthe cuspidata* var. *cuspidata*	--/--/1B.2	Coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub, on sandy soil on terraces and slopes. 5-550 m.	**Absent.** Suitable habitat not found onsite. Local occurrences are historical and species is thought to be extirpated from Study Area.
Other Special-Status Species			
Plants (cont.)			
Round-headed Chinese-houses *Collinsia corymbosa*	--/--/1B.2	Found in coastal dunes, 0-20 m.	**Absent.** Historical occurrence in SF. Suitable habitat not found in the Study Area.
San Francisco collinsia *Collinsia multicolor*	--/--/1B.2	On decomposed shale (mudstone) mixed with humus; sometimes on serpentine. 30-250 m.	**Low.** Only recent and extant occurrence is located on Angel Island. Suitable habitat not found in the Study Area.
Western leatherwood *Dirca occidentalis*	--/--/1B.2	Broadleaf upland forest, chaparral, closed-cone coniferous forest, cismontane woodland, north coast coniferous forest, riparian for and woodland. on brushy slopes, mesic sites; mostly in mixed evergreen and foothill woodland communities. 30-550 m.	**Low.** Suitable habitat not found in the Study Area.
Tiburon buckwheat *Eriogonum luteolum* var. *caninum*	--/--/1B.2	Chaparral, valley and foothill grassland, cismontane woodland, coastal prairie. Found on serpentine soils; sandy to gravelly sites. 0-700 m.	**Low.** Suitable habitat found within coastal prairie community within RBC; however, suitable habitat not present in Plan Area and nearest occurrence is in Tiburon, over 6 miles from Study Area.

TABLE C-1 (Continued)
SPECIAL-STATUS SPECIES CONSIDERED IN EVALUATION OF THE RICHMOND BAY SPECIFIC PLAN AND SUB-AREA-4 DEVELOPMENT PROJECT

Common Name *Scientific Name*	Listing Status USFWS/ CDFW/Other	General Habitat	Potential for Species Occurrence Within Study Area
San Joaquin spearscale *Extriplex joaquinana*	--/--/1B.2	In seasonal alkali wetlands or alkali sink scrub with Distichlis spicata, Frankenia, etc. 1-835 m.	**Low.** Only occurrence is historical in vicinity of Study Area.
Fragrant fritillary *Fritillaria liliacea*	--/--/1B.2	Coastal scrub, valley and foothill grassland, coastal prairie. Often on serpentine; usually on clay soils, in grassland. 3-410 m. February - April	**Low.** Local occurrence observed in Pt.Richmond; however, suitable habitat not found in Study Area and species is considered extripated.
Blue coast gilia *Gilia capitata* ssp. *chamissonis*	--/--/1B.1	Coastal dunes, coastal scrub. 2-200 m.	**Absent.** Suitable habitat not found in Study Area.
Grindelia hirsutula var. *maritima* San Francisco gumplant	--/--/3.2	Coastal scrub, coastal bluff scrub, and valley and foothill grassland in sandy or serpentine slopes and sea bluffs. 12-305 m	**Absent.** Suitable habitat not found in the Study Area.
Diablo helianthella *Helianthella castanea*	--/--/1B.2	Broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Usually in chaparral/oak woodland interface in rocky, azonal soils. Often in partial shade. 25-1,150 m.	**Absent.** Suitable habitat not found onsite.
White seaside tarplant *Hemizonia congesta* ssp. *congesta*	--/--/1B.2	Coastal scrub, valley and foothill grassland, on grassy valleys and hills, often in fallow fields. 25-200 m.	**Absent.** Suitable habitat not found in project area. Study Area outside species' range.
Marin western flax *Hesperolinon congestum*	FT/CT/1B.1	Chaparral and grassland, usually on serpentine barrens. April – July	**Absent.** No suitable habitat present. Study Area outside species' range.
Water star-grass *Heteranthera dubia*	--/--/2B.2	Wetland and riparian areas. July – August	**Absent.** No suitable habitat present.
Loma Prieta hoita *Hoita strobilina*	--/--/1B.1	Chaparral, cismontane woodland, riparian woodland. Serpentine and mesic sites.	**Absent.** Suitable habitat not found in Study Area—no serpentine soils.
		Other Special-Status Species (cont.)	
Plants (cont.)			
Kellogg's horkelia *Horkelia cuneata* ssp. *sericea*	--/--/1B.1	Openings in closed-cone coniferous forest, coastal scrub, chaparral, old dunes, coastal sandhills. 10-200 m.	**Absent.** Suitable habitat not found in project area. Nearest occurrence recorded on San Pablo Ridge.
Rose leptosiphon *Leptosiphon rosaceus*	--/--/1B.1	Coastal bluff scrub. 0-100 m.	**Absent.** Suitable habitat not found in the Study Area.
Choris' popcorn-flower *Plagiobothrys chorisianus* var. *chorisianus*	--/--/1B.2	Mesic sites in chaparral, coastal scrub, coastal prairie. 15-100 m.	**Absent.** Suitable habitat not found in Study Area.
Hairless popcornflower *Plagiobothrys glaber*	--/--/1A	Coastal salt marshes and alkaline meadows. March – May	**Absent.** Suitable habitat not found in the Study Area and local occurrences are historical.
Marin knotweed *Polygonum marinense*	--/--/3.1	Coastal salt marsh and coastal wetland and riparian areas. May – August	**Absent.** Suitable habitat not found in the Study Area.

TABLE C-1 (Continued)
SPECIAL-STATUS AND OTHERWISE PROTECTED SPECIES CONSIDERED IN EVALUATION OF THE RICHMOND BAY SPECIFIC PLAN AND SUB-AREA-4 DEVELOPMENT PROJECT

Common Name *Scientific Name*	Listing Status USFWS/ CDFW/Other	General Habitat	Potential for Species Occurrence Within Study Area
San Francisco campion *Silene verecunda* ssp. *verecunda*	--/--1B.2	Often on mudstone or shale in coastal scrub, valley and foothill grassland, coastal bluff scrub, chaparral, or coastal prairie. 30-645 m	**Low.** Nearest occurrence in SF Presidio. Although limited coastal prairie habitat found in Study Area, no suitable habitat in Plan Area.
Santa Cruz microseris *Stebbinsoseris decipiens*	--/--/1B.2	Open areas in loose or disturbed soil, usually derived from sandstone, shale or serpentine, on seaward slopes. 10-500 m	**Absent.** Only occurrence in vicinity is historical and no suitable habitat is found in the Study Area.
Suisun Marsh aster *Symphyotrichum lentum*	--/--/1B.2	Freshwater wetlands and marshes and brackish marshes. Most often seen along sloughs with common reed, bulrush, blackberry, cattails, etc. 0-3 m. May – November	**Low.** Only observance in Point Molate, over 3.5 miles north of Study Area; suitable habitat present in Meeker Slough, Stege Marsh, and Hoffman Marsh.
Saline clover *Trifolium hydrophilum*	--/--/1B.2	Marshes and swamps, valley and foothill grassland, vernal pools. Mesic, alkaline sites. 0-300 m.	**Low.** All local recorded occurrences of species are historical. Suitable habitat not found onsite.
Coastal triquetrella *Triquetrella californica*	--/--/1B.2	On soil in coastal bluff and coastal scrub.	**Absent.** No suitable habitat present.
Invertebrates			
Opler's longhorn moth *Adela oplerella*	--/*	From Marin Co & the Oakland area on the inner coast ranges south to Santa Clara Co. One record from Santa Cruz Co.	**Absent.** No suitable habitat present.
Sandy beach tiger beetle *Cicindela hirticollis gravida*	--/*	Inhabits areas adjacent to non-brackish water along the coast of California from San Francisco Bay to northern Mexico. Clean, dry, light-colored sand in the upper zone. Subterranean larvae prefer moist sand not affected by wave action.	**Absent.** Historical occurrence. Suitable habitat not found onsite.
Monarch butterfly *Danaus plexippus*	--/*	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	**Present.** May occur in the project site on a transient basis. Suitable habitat for wintering monarch aggregates found within RBC site.
Bridges' coast range shoulderband *Helminthoglypta nickliniana bridgesi*	--/*	Inhabits open hillsides of Alameda and Contra Costa counties. Tends to colonize under tall grasses and weeds.	**Absent.** Suitable habitat not found in Study Area.
Lee's micro-blind harvestman *Microcina leei*	--/*	Xeric habitats in the San Francisco Bay region. Found beneath sandstone rocks in open oak grassland.	**Absent.** Suitable habitat not found in Study Area.
San Francisco Bay Area leaf-cutter bee *Trachusa gummifera*	--/*	Unknown.	**Low.** While exact habitat requirements of this species are unknown, there are no records of this species from the project area, and essentially no native habitat there.

TABLE C-1 (Continued)
SPECIAL-STATUS SPECIES CONSIDERED IN EVALUATION OF THE RICHMOND BAY SPECIFIC PLAN AND SUB-AREA-4 DEVELOPMENT PROJECT

Common Name *Scientific Name*	Listing Status USFWS/ CDFW/Other	General Habitat	Potential for Species Occurrence Within Study Area
		Other Special-Status Species (cont.)	
Invertebrates (cont)			
Mimic tryonia (=California brackishwater snail) *Tryonia imitator*	--/*	Inhabits coastal lagoons, estuaries and salt marshes, from Sonoma County south to San Diego County. Found only in permanently submerged areas in a variety of sediment types; able to withstand a wide range of salinities.	**Absent.** Suitable habitat not found in Study Area.
Fish			
Sacramento perch *Archoplites interruptus*	--/CSC	Historically found in the sloughs, slow-moving rivers, and lakes of the Central Valley. Prefers warm water. Aquatic vegetation is essential for young. Tolerates wide range of water conditions.	**Absent.** Not expected to occur in Study Area waters.
Pacific herring *Clupea pallasii*	MSFCMA	S.F. Bay is a major spawning ground for species. Preferred spawning substrate is eelgrass and algae but will also use pier pilings, riprap, and other rigid, smooth structures within Bay waters.	**Low.** This species spawns in San Francisco Bay, however, not expected to occur in Study Area waters.
Chinook salmon Central Valley ESU -fall/late fall run *Oncorhynchus tshawytscha*	--/CSC	Spawning and rearing restricted to Sacramento River basin. Migrate through San Francisco Bay and Sacramento-San Joaquin Delta, require clean, cold water and gravel beds for spawning.	**Low.** Could travel through waters directly west of Study Area during migration. No spawning habitat available in Study Area.
Amphibians and Reptiles			
Western pond turtle *Emys marmorata*	--/CSC	Aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches with aquatic vegetation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat for egg-laying.	**Moderate.** May frequent ponds, drainages, riparian areas, brackish wetlands. Suitable habitat present in Study Area.
Birds			
Cooper's hawk *Accipiter cooperi*	--/CDFW WL&3503.5	Woodland, chiefly of open, interrupted or marginal type. Nest sites are mainly in riparian growths of deciduous trees but also relatively common in urban areas.	**Moderate (Potential to nest).** Marginal foraging and nesting habitat found in Study Area; species could nest in mature trees within Study Area.
Great egret *Ardea alba*	--/* (rookery site)	Nest colonially in groves of trees. Rookery sites located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes.	**Moderate (Unlikely to nest).** Local occurrence observed in San Rafael Bay, approximately nine miles north of Study Area. Potential to forage within the Study Area; no known rookeries within the Study Area.
Great blue heron *Ardea herodias*	--/* (rookery site)	Colonial nester in tall trees, cliff sides, and sequestered spots on marshes. Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows.	**Moderate (Unlikely to nest).** Suitable foraging habitat found within Meeker Slough, Stege Marsh, and Hoffman Marsh; no known rookeries within the Study Areas.
Short-eared owl *Asio flammeus*	--/CSC	Found in swamp lands, both fresh and salt; lowland meadows; irrigated alfalfa fields.	**Low (Unlikely to nest).** Nearest species occurrence is historical in Wildcat Creek, north of the Study Area by over 2.5 miles. Suitable foraging habitat occurs within the Study Area though human presence deters nesting.

TABLE C-1 (Continued)
SPECIAL-STATUS AND OTHERWISE PROTECTED SPECIES CONSIDERED IN EVALUATION OF THE RICHMOND BAY SPECIFIC PLAN AND SUB-AREA-4 DEVELOPMENT PROJECT

Common Name *Scientific Name*	Listing Status USFWS/ CDFW/Other	General Habitat	Potential for Species Occurrence Within Study Area
		Other Special-Status Species (cont.)	
Birds (*cont.*)			
Burrowing owl *Athene cunicularia*	BCC/CSC	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	**Moderate (Unlikely to nest).** Species documented less than a ¼ mile SW of Montgomery & 48th Ave., within the Study Area. Likely to winter within the Study Area only as nesting is not previously documented.
Red-tailed hawk *Buteo jamaicensis*	--/3503.5	Usually nests in large trees, often in woodland or riparian deciduous habitats. Also known to nest in urban parks and neighborhoods. Forages over open grasslands and scrublands.	**Present (Potential to nest).** Species is ubiquitous throughout the region. May occur in the Study Area on a transient basis.
Red-shouldered hawk *Buteo lineatus*	--/3503.5	Nests in large trees, often in woodland or riparian deciduous habitats. Forages over open grasslands and woodlands.	**Low (Unlikely to nest).** Relatively common throughout the East Bay area. May occur in the Study Area while foraging though unlikely to nest as typically requires dense stands of trees.
Northern harrier *Circus cyaneus*	--/CSC	Coastal salt and fresh-water marsh. Nests and forages in grasslands. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.	**Moderate (Potential to nest).** Nearest occurrence of species is near Berkeley Yacht Club, less than 3 miles from Study Area. Suitable foraging and nesting habitat in marshlands of Study Area.
Snowy egret *Egretta thula*	--/* (rookery site)	Colonial nester, with nest sites situated in protected beds of dense tules. Rookery sites situated close to foraging areas: marshes, tidal-flats, streams, wet meadows, and borders of lakes.	**Present (Unlikely to nest).** Species observed foraging in Stege Marsh (ESA, 2015). Nearest rookery documented on Brooks Island; no known rookeries within the Plan Area.
American kestrel *Falco sparverius*	--/3503.5	Frequents generally open grasslands, pastures, and fields; primarily a cavity nester in large trees near open areas.	**Moderate (Potential to nest).** Suitable foraging and nesting habitat is present in the Study Area.
Saltmarsh common yellowthroat *Geothlypis trichas sinuosa*	BCC/CSC	Resident of the San Francisco Bay region, in fresh and salt water marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	**Moderate (Potential to nest).** Suitable habitat found in Meeker Slough Stege Marsh, and Hoffman Marsh the project area; however, nearest known occurrence of species is located near Bay Bridge Toll Plaza.
Caspian tern *Hydroprogne caspia*	BCC/* (nesting colony)	Nests on sandy or gravely beaches and shell banks in small colonies inland and along the coast. Inland fresh-water lakes and marshes; also, brackish or salt waters of estuaries and bays.	**Present (Unlikely to nest).** No suitable nesting habitat in the Study Area; however, known to nest on Brooks Island west of the Study Area and forage in San Francisco Bay. Likely to occur in the Study Area on a transient basis.

TABLE C-1 (Continued)
SPECIAL-STATUS SPECIES CONSIDERED IN EVALUATION OF THE RICHMOND BAY SPECIFIC PLAN AND SUB-AREA-4 DEVELOPMENT PROJECT

Common Name *Scientific Name*	Listing Status USFWS/ CDFW/Other	General Habitat	Potential for Species Occurrence Within Study Area
		Other Special-Status Species (cont.)	
Birds (cont.)			
Loggerhead shrike *Lanius ludovicianus*	BCC/CSC	Occurs in semi-open country with utility posts, wires, and trees to perch on. Nests in bushes and trees.	**Low (Unlikely to nest).** May occur in the Study Area on a transient basis. Documented south of the Plan Area in open space areas along the Berkeley shoreline.
California gull *Larus californicus*	--/* (nesting colony)	Breeds primarily at lakes and marshes in interior western North America from Canada south to eastern California and Colorado. Birds that breed inland are migratory, most moving to the Pacific coast in winter. More recently, the species has been breeding in large numbers at the salt ponds of south San Francisco Bay. They nest in colonies, sometimes with other bird species. One abandoned nest documented in 2000 on Brooks Island among Caspian tern nests.	**Moderate (Unlikely to nest).** Fairly common gull observed along the East Bay shoreline which may occur in the Study Area while foraging, loafing, or on the wing.
Alameda song sparrow *Melospiza melodia pusillula*	BCC/CSC	Resident of salt marshes bordering central eastern San Francisco Bay. Inhabits pickleweed marshes; nests low in *Grindelia* (high enough to escape high tides) and in pickleweed.	**High (Potential to nest).** Suitable habitat found in marshlands within Study Area. Species reported in Study Area (CNDDB, 2015) and commonly along Richmond Bay shoreline.
San Pablo song sparrow *Melospiza melodia samuelis*	BCC/CSC	Resident of salt marshes bordering San Pablo Bay. Inhabits pickleweed marshes; nests low in *Grindelia* bushes (high enough to escape high tides) and in pickleweed.	**Low (Unlikely to nest).** Suitable habitat found in Meeker Slough, Stege Marsh, and Hoffman Marsh. Nearest recent occurrence observed in north Richmond, approximately 4 miles north from Study Area. No recent occurrences documented in this part of Richmond. Possibly present on a transient basis during migratory or dispersal periods.
Black-crowned night heron *Nycticorax nycticorax*	--/* (rookery site)	Colonial nester, usually in trees, occasionally in tule patches. Rookery sites located adjacent to foraging areas: lake margins, mud-bordered bays, marshy spots.	**High (Unlikely to nest).** Nearest rookeries located on Brooks Island and could forage or nest in the Study Area.
Double-crested cormorant *Phalacrocorax auritus*	--/* (rookery site)	Colonial nester on coastal cliffs, offshore islands, and along lake margins in the interior of the state. Nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins.	**Present (Unlikely to nest).** Forages in waters around Study Area. Rookeries on Richmond-San Rafael and Bay Bridges; however, no known rookeries in Study Area.
Osprey *Pandion haliaetus*	--/WL	Inhabits bays, fresh-water lakes, and larger streams. Builds large nests in tree-tops within 15 miles of good fish-producing body of water.	**High (Unlikely to nest).** Species likely to forage within the Bay waters of the Study Area. Nesting documented north of the Study Area.
Black skimmer *Rynchops niger*	BCC/CSC	Nests on gravel bars, low islets, and sandy beaches, in unvegetated sites.	**Low (No nesting potential).** Fairly common on Bay waters but few observations off the Richmond shoreline. Transient individuals may forage in the waters offsite. Not expected to nest in the project area.

TABLE C-1 (Continued)
SPECIAL-STATUS AND OTHERWISE PROTECTED SPECIES CONSIDERED IN EVALUATION OF THE RICHMOND BAY SPECIFIC PLAN AND SUB-AREA-4 DEVELOPMENT PROJECT

Common Name *Scientific Name*	Listing Status USFWS/ CDFW/Other	General Habitat	Potential for Species Occurrence Within Study Area
Yellow-headed blackbird *Xanthocephalus xanthocephalus*	--/CSC	Nests in freshwater emergent wetlands with dense vegetation and deep water, often along borders of lakes or ponds. Nests only where large insects are abundant, nesting timed with maximum emergence of aquatic insects.	**Low (No nesting potential).** Few observations in the Study Area from the McLaughlin Eastshore State Park.
Mammals			
Pallid bat *Antrozous pallidus*	--/CSC/ WBWG-H	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	**Moderate.** Habitat generally unsuitable for this species, although may migrate through the Study Area. Nearest occurrence of species is in El Cerrito; however, is considered historical.
Townsend's big-eared bat *Corynorhinus townsendii*	--/CSC/ WBWG-H	Mesic sites. Roosts in caves and open, hanging from walls and ceilings. Very sensitive to human disturbance.	**Low.** Documented occurrences of this species roosting in Berkeley Hills; however, suitable habitat not found in Study Area due to high levels of human disturbance.
Silver-haired bat *Lasionycteris noctivagans*	--/*/WBWG-M	Primarily a coastal and montane forest dweller. Roosts in hollow trees, beneath exfoliating bark, abandoned woodpecker holes and rarely under rocks. Needs drinking water.	**Low.** Habitat generally unsuitable for this species, although may migrate through the Study Area.
Hoary bat *Lasiurus cinereus*	--/*/WBWG-M	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths.	**Moderate.** May roost in trees onsite, particularly during migration periods in spring and fall.
San Pablo vole *Microtus californicus sanpabloensis*	--/CSC	Salt marshes of San Pablo Creek, on the south shore of San Pablo Bay. Constructs burrow in soft soil. Feeds on grasses, sedges and herbs. Forms a network of runways leading from the burrow.	**Low.** Suitable habitat not found onsite. Nearest occurrence in Wildcat Creek mouth approximately 3 miles north of Study Area, although, this record is historical.
Big free-tailed bat *Nyctinomops macrotis*	--/CSC/ WBWG-M	Low-lying arid areas in southern California. Needs high cliffs or rocky outcrops for roosting sites. Feeds principally on large moths.	**Absent.** Suitable habitat not found onsite.
Pacific harbor seal *Phoca vitulina*	MMPA/--	Coastal waters, and throughout Bay-Delta.	**Low.** Species is known to occur in the Central Bay, may infrequently forage near Study Area.
Alameda Island mole *Scapanus latimanus parvus*	--/CSC	Only known from 18 historical collections on Alameda Island. Found in a variety of habitats, especially annual and perennial grasslands. Prefers moist, friable soils. Avoids flooded soils.	**Absent.** Suitable habitat not found onsite.
Salt-marsh wandering shrew *Sorex vagrans halicoetes*	--/CSC	Salt marshes of the south arm of San Francisco Bay. Found at medium to high marsh 6-8 ft above sea level where abundant driftwood is scattered among pickleweed.	**Moderate.** Nearest CNDDB occurrences are historical and occur over 3 miles north of the Study Area in San Pablo salt marsh; however, project area could provide suitable habitat.
California sea lion *Zalophus californianus*	MMPA/--	Coastal waters, and throughout Bay-Delta	**Low.** Species is known to occur in the Central Bay, may infrequently forage west of Study Area waters; though, haulout and pupping areas are not present.

TABLE C-1 (Continued)
SPECIAL-STATUS SPECIES CONSIDERED IN EVALUATION OF THE RICHMOND BAY SPECIFIC PLAN AND SUB-AREA-4 DEVELOPMENT PROJECT

Common Name *Scientific Name*	Listing Status USFWS/ CDFW/Other	General Habitat	Potential for Species Occurrence Within Study Area
Pacific harbor porpoise *Phocaena phocaena*	MMPA/--	Coastal waters and San Francisco Bay.	**Low.** Known to occur in the Central Bay, may infrequently forage near project area.

STATUS CODES

Federal (U.S. Fish and Wildlife Service [USFWS]):
FE = Listed as Endangered (in danger of extinction) by the federal government.
FT = Listed as Threatened (likely to become Endangered within the foreseeable future) by the federal government.
DL - Delisted
MSFCMA = Magnuson-Stevens Fishery Conservation and Management Act
MMPA = Marine Mammal Protection Act

State (California Department of Fish and Wildlife [CDFW]):
CE = Listed as Endangered by the State of California.
CT = Listed as Threatened by the State of California.
CR = Listed as Rare by the State of California (plants only)
DL = Delisted
CSC = California Species of Special Concern.
FP = Fully Protected
WL = Watch List
3503.5 = Protection for species of Falconiformes (hawks) and Strigiformes (owls).
*Special animal—listed on CDFW's Special Animals List.

California Native Plant Society (CNPS):
List 1A=Plants presumed extinct in California.
List 1B=Plants rare, Threatened, or Endangered in California and elsewhere.
List 2= Plants rare, Threatened, or Endangered in California but more common elsewhere.

An extension reflecting the level of threat to each species is appended to each rarity category as follows:
.1 – Seriously endangered in California.
.2 – Fairly endangered in California.
.3 – Not very endangered in California.

Western Bay Working Group (WBWG):
WBWGH = High priority; Species that are imperiled or at a high risk of imperilment.
WBWGM = Medium priority; Species that warrant a closer evaluation due to potential imperilment.

SOURCE:
California Department of Fish and Wildlife (CDFW). 2015. California Natural Diversity Database (CNDDB) for 7.5-minute topographic quadrangles Richmond, Oakland West, San Quentin, Benicia, Briones Valley, Oakland East, Petaluma Point, San Francisco North Commercial Version, Accessed December 2015.

CNPS, Rare Plant Program. 2015. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. Website http://www.rareplants.cnps.org, Accessed December, 2015.

Glover, 2009. Breeding Bird Atlas of Contra Costa County. Mount Diablo Audubon Society, Walnut Creek, California, 2009.

Appendix D
Cultural Resources Supporting Information



NATIVE AMERICAN HERITAGE COMMISSION
1550 HARBOR BLVD., SUITE 100
WEST SACRAMENTO, CA 95691
916-373-3710
Fax (916-373-5471

November 30, 2015

Heidi Koenig
ESA
1425 N. McDowell Blvd. Ste 200
Petaluma, CA 94954

Sent by Email: hkoenig@esassoc.com
Number of Pages: 2

RE: Richmond Bay Specific Plan and Sub-Area 4 Development project, Contra Costa County

Dear Ms. Koenig

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 373-3713.

Sincerely,

Lyta Winston for

Debbie Pilas-Treadway
Environmental Specialist III

Native American Contact
Contra Costa County
November 25, 2015

Jakki Kehl
720 North 2nd Street
Patterson , CA 95363
jakkikehl@gmail.com
510-701-3975

Ohlone/Costanoan

Muwekma Ohlone Indian Tribe of the SF Bay Area
Rosemary Cambra, Chairperson
P.O. Box 360791
Milpitas , CA 95036
muwekma@muwekma.org
(408) 314-1898
(510) 581-5194

Ohlone / Costanoan

Katherine Erolinda Perez
P.O. Box 717
Linden , CA 95236
canutes@verizon.net
(209) 887-3415

Ohlone/Costanoan
Northern Valley Yokuts
Bay Miwok

The Ohlone Indian Tribe
Andrew Galvan
P.O. Box 3152
Fremont , CA 94539
chochenyo@AOL.com
(510) 882-0527 Cell

(510) 687-9393 Fax

Ohlone/Costanoan
Bay Miwok
Plains Miwok
Patwin

Linda G. Yamane
1585 Mira Mar Ave
Seaside , CA 93955
rumsien123@yahoo.com
(831) 394-5915

Ohlone/Costanaon

Trina Marine Ruano Family
Ramona Garibay, Representative
30940 Watkins Street
Union City , CA 94587
soaprootmo@comcast.net
(510) 972-0645

Ohlone/Costanoan
Bay Miwok
Plains Miwok
Patwin

Amah MutsunTribal Band of Mission San Juan Bautista
Irenne Zwierlein, Chairperson
789 Canada Road
Woodside , CA 94062
amahmutsuntribal@gmail.com
(650) 400-4806 Cell

(650) 332-1526 Fax

Ohlone/Costanoan

Indian Canyon Mutsun Band of Costanoan
Ann Marie Sayers, Chairperson
P.O. Box 28
Hollister , CA 95024
ams@indiancanyon.org
(831) 637-4238

Ohlone/Costanoan

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Richmond Bay Specific Plan and Sub-Area 4 Development project, Contra Costa County.

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code
Other Listings
Review Code Reviewer Date

Page 1 **of** 2 *__Resource Name or #:__ 1336 S 49th St

P1. Other Identifier: 1336 S 49th St

***P2. Location:** ☐ **Not for Publication** ■ **Unrestricted** ***a. County:** Contra Costa

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad:** Richmond **Date:** 1980 **T** ; **R** ; **¼ of** **¼ of Sec** ; M.D. **B.M.**

c. Address: 1336 S 49th St City: Richmond Zip: 94804

d. UTM: Zone: 10 ; mE/ mN (G.P.S.)

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation:

APN 5600320278

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

1336 S 49th Street consists of a single-story industrial/ office building in an industrial neighborhood. The building has a rectangular footprint, and consists of concrete block cladding and a flat roof. The building is divided into five office/ industrial spaces with similar layouts and ornamentation. Fenestration on each unit consists of modern metal roll-up garage doors and a flush metal primary entrance asymmetrically flanked by large, single pane shop windows. Concrete pilasters divide each bay of windows and doors. A modern corrugated metal warehouse addition provides additional storage on the northern elevation.

***P3b. Resource Attributes:** HP8. Industial building

***P4. Resources Present:** ■Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing



P5b. Description of Photo: view facing northeast

***P6. Date Constructed/Age and Sources: 1970** ■Historic ☐Prehistoric ☐Both

***P7. Owner and Address:**
Mary Peckham
2640 Fox Cir
Walnut Creek, CA 94596

***P8. Recorded by:**
Katherine Anderson | ESA
2600 Capitol Ave, Ste 200
Sacramento CA 95816

***P9. Date Recorded:** 12/ 12/ 15

***P10. Survey Type:** Intensive

***P11. Report Citation:** ESA, Richmond South Shoreline Specific Plan Environmental Impact Report, December 2015.

***Attachments:** ☐NONE ☐Location Map ☐Sketch Map ☐Continuation Sheet ■Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code
Other Listings
Review Code Reviewer Date

Page 1 **of** 2 *__Resource Name or #:__ 1376 S 50th St

P1. Other Identifier: 1376 S 50th St

***P2. Location:** ☐ **Not for Publication** ■ **Unrestricted** ***a. County:** Contra Costa

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad:** Richmond **Date:** 1980 **T** ; **R** ; **¼ of** **¼ of Sec** ; M.D. **B.M.**

c. Address: 1376 S 50th St City: Richmond Zip: 94804

d. UTM: Zone: 10 ; mE/ mN (G.P.S.)

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation:

APN 5600330483

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

1376 S 50th St consists of a two-story industrial/ office building in an industrial neighborhood. The building has an irregular footprint, and consists of concrete block cladding and a flat roof. The building is divided into two office/ industrial spaces with similar ornamentation. Fenestration on each unit consists of modern metal roll-up garage doors and a flush metal primary entrance, with small square block windows arranged along the first and second floors. A metal awning lines tops the second story roofline on the primary elevation.

***P3b. Resource Attributes:** HP8. Industial building

***P4. Resources Present:** ■Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing



P5b. Description of Photo: view facing northwest

***P6. Date Constructed/Age and Sources: 1970** ■Historic ☐Prehistoric ☐Both

***P7. Owner and Address:**
Oliver & Co
1376 S 50th St
Richmond, CA 94804

***P8. Recorded by:**
Katherine Anderson | ESA
2600 Capitol Ave, Ste 200
Sacramento CA 95816

***P9. Date Recorded:** 12/ 12/ 15

***P10. Survey Type:** Intensive

***P11. Report Citation:** ESA, Richmond South Shoreline Specific Plan Environmental Impact Report, December 2015.

***Attachments:** ☐NONE ☐Location Map ☐Sketch Map ☐Continuation Sheet ■Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code
Other Listings
Review Code Reviewer Date

 ***Resource Name or #:** 4925 Seaport Ave

P1. Other Identifier: 4925 Seaport Ave

***P2. Location:** ☐ **Not for Publication** ■ **Unrestricted** ***a. County:** Contra Costa

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad:** Richmond **Date:** 1980 **T** ; **R** ; **¼ of** **¼ of Sec** ; M.D. **B.M.**

c. Address: 4925 Seaport Ave City: Richmond Zip: 94804

d. UTM: Zone: 10 ; mE/ mN (G.P.S.)

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation:

APN 5600320211

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

4925 Seaport Avenue consists of a three-story combination warhouse and office building in an industrial neighborhood. The office component of the building encompasses the southwestern end of the building, and consists of concrete block cladding and a flat roof. Fenestration consists of modern metal and glass panel doors, multi-pane industrial sash windows, and smaller fixed four light windows on the second and third floors. A metal exterior stairway flanks the western side of the building. The northern warehouse component of the building has a gable roof and corrugated metal cladding on the exterior walls and roof. Oversize sliding warehouse doors are located on the north and south ends of the western and eastern elevations or the warehouse.

***P3b. Resource Attributes:** HP6. 1-3 story commercial building ; HP8. Industial building

***P4. Resources Present:** ■Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing



P5b. Description of Photo: view facing northwest

***P6. Date Constructed/Age and Sources: 1957** ■Historic ☐Prehistoric ☐Both

***P7. Owner and Address:**
Larry Pyle
4925 Seaport Ave
Richmond CA

***P8. Recorded by:**
Katherine Anderson | ESA
2600 Capitol Ave, Ste 200
Sacramento CA 95816

***P9. Date Recorded:** 12/ 12/ 15

***P10. Survey Type:** Intensive

***P11. Report Citation:** ESA, Richmond South Shoreline Specific Plan Environmental Impact Report, December 2015.

***Attachments:** ☐NONE ☐Location Map ☐Sketch Map ☐Continuation Sheet ■Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code
Other Listings
Review Code Reviewer Date

 *__Resource Name or #:__ 5000 Seaport Ave

P1. Other Identifier: 5000 Seaport Ave
***P2. Location:** ☐ **Not for Publication** ■ **Unrestricted** ***a. County:** Contra Costa
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** Richmond **Date:** 1980 **T** ; **R** ; **¼ of** **¼ of Sec** ; M.D. **B.M.**
c. Address: 5000 Seaport Ave City: Richmond Zip: 94804
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation:
APN 5600230287

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
5000 Seaport Avenue consists of a single-story office building and industrial warehouse in an industrial neighborhood. The office component of the building sits on the northeast corner of an industrial lot, and consists of brick and corrugated vinyl cladding and a shallow gable roof. Fenestration consists of aluminum and glass panel doors, large aluminum frame shop windows, and aluminum frame sliding windows. The warehouse component of the building sits on the southern end of the parcel, with a rectangular footprint, corrugated vinyl siding and a shallow gable roof with a vinyl pediment. Fenestration on the warehouse includes glass/ metal panel doors, steel roll up garage doors (6), and similar aluminum frame sliding windows as on the office building.

***P3b. Resource Attributes:** HP6. 1-3 story commercial building; HP8. Industrial Building
***P4. Resources Present:** ■Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing



P5b. Description of Photo: view facing northwest

***P6. Date Constructed/Age and Sources: 1968** ■Historic ☐Prehistoric ☐Both

***P7. Owner and Address:**
Allied Propane Service
5000 Seaport Ave
Richmond CA

***P8. Recorded by:**
Katherine Anderson | ESA
2600 Capitol Ave, Ste 200
Sacramento CA 95816

***P9. Date Recorded:** 12/ 12/ 15
***P10. Survey Type:** Intensive

***P11. Report Citation:** ESA, Richmond South Shoreline Specific Plan Environmental Impact Report, December 2015.

***Attachments:** ☐NONE ☐Location Map ☐Sketch Map ☐Continuation Sheet ■Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code
Other Listings
Review Code Reviewer Date

 *__Resource Name or #:__ 5021 Seaport Ave

P1. Other Identifier: 5021 Seaport Ave
***P2. Location:** ☐ **Not for Publication** ■ **Unrestricted** ***a. County:** Contra Costa
and (P2b and P2c or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad:** Richmond **Date:** 1980 **T** ; **R** ; **¼ of** **¼ of Sec** ; M.D. **B.M.**
c. Address: 5021 Seaport Ave City: Richmond Zip: 94804
d. UTM: Zone: 10 ; mE/ mN (G.P.S.)
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation:
APN 5600330285

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
5021 Seaport Avenue consists of a single-story office building and industrial warehouse in an industrial neighborhood. The building has a rectangular plan, and consists of concrete block construction with a flat roof andmetal awnings which project from the southeast corner. Fenestration consists of metal and glass panel doors, metal roll up garage doors on the eastern and southern elevations, and small aluminum frame sliding windows.

***P3b. Resource Attributes:** HP8. Industrial Building
***P4. Resources Present:** ■Building ☐Structure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)

P5a. Photo or Drawing



P5b. Description of Photo: view facing northwest

***P6. Date Constructed/Age and Sources: 1965** ■Historic ☐Prehistoric ☐Both

***P7. Owner and Address:**
Christian Doving
11 Marina Way
San Rafael CA

***P8. Recorded by:**
Katherine Anderson | ESA
2600 Capitol Ave, Ste 200
Sacramento CA 95816

***P9. Date Recorded:** 12/ 12/ 15
***P10. Survey Type:** Intensive

***P11. Report Citation:** ESA, Richmond South Shoreline Specific Plan Environmental Impact Report, December 2015.

***Attachments:** ☐NONE ☐Location Map ☐Sketch Map ☐Continuation Sheet ■Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code** 6Y

***Resource Name or #** 1336 S 49th St

B1. Historic Name: none
B2. Common Name: none
B3. Original Use: office/ industrial
B4. Present Use: office/ industrial

***B5. Architectural Style:** Modern

***B6. Construction History:**
1970 original warehouse construction
ca 1997 building renovation and northern addition

***B7. Moved?** ■No ☐Yes ☐Unknown **Date:** **Original Location:**

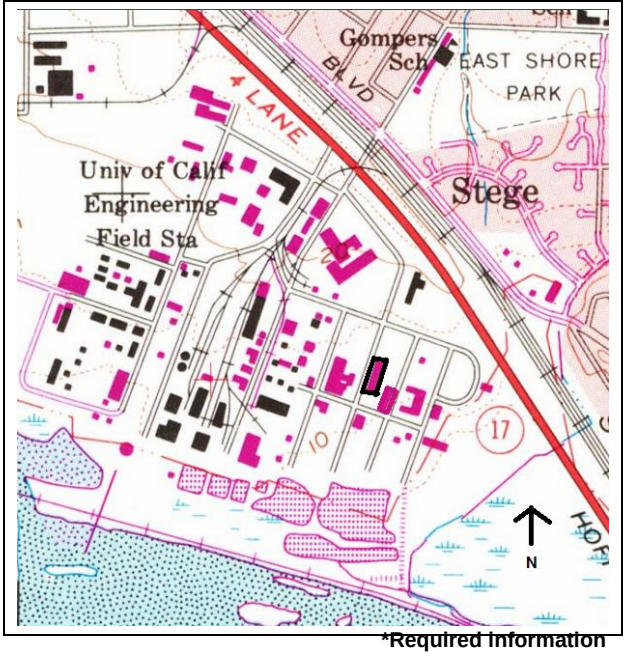
***B8. Related Features:**
none

B9a. Architect: unknown
b. Builder: unknown

***B10. Significance: Theme:** n/ a
Area: n/ a
Period of Significance: n/ a
Property Type: n/ a
Applicable Criteria: n/ a

Since its inception, the City of Richmond has been a terminal port where its growing network of national railroads met deep water channels to the sea. The arrival of the Southern Pacific Railroad in 1878 primed western Contra Costa County for an industrial and economic boom. The arrival of the Santa Fe railroad (1899–1900), the startup of Standard Oil and its industrial waterfront (1901–1902), and the founding of the municipality of Richmond (1905) were also pivotal developments in the Richmond waterfront. Review of historic topographic maps indicate that the immediate vicinity has been subject to development, resulting from the presence of the Southern Pacific Railroad and the Stauffer Chemical Company which opened in 1897. Significant development associated with the SCC occurred around 1915, with a railroad spur paralleling 47th Avenue promoting industrial development. In 1950, the University of California at Berkeley opened its Engineering Field Station to the west of the project site. County assessor data indicates that the building at 1336 S 49th St was constructed as an industrial office building in 1970. Review of historic aerial maps determined that the southern office addition was constructed circa 1997.

Archival review indicates that 1336 S 49th St dates to the mid/ late-twentieth century growth and industrial development of the City of Richmond, although this association does not rise to a level of significance required for listing in the state or national registers (Criterion A/ 1). Research did not identify any direct or unique associations between the buildings and important individuals (Criterion B/ 2). The industrial office building does not reflect distinctive characteristics of a type, period, region or method of construction, and would not be considered exemplary of the Modern architectural style (Criterion C/ 3). The industrial office building consisted of a concrete block, flat roof structure that underwent exterior modifications during a 1997 enovation and addition. Finally, the building does not appear to possess the potential to yield, information important to the prehistory or history (Criterion D/ 4). Visual inspection of the building indicate that significant modern alterations of the structure have occurred, resulting in the loss of the building's physical integrity. The property does not retain sufficient physical integrity of materials, workmanship, design, or setting to convey its historically significant associations with the mid- twentieth industrial development in Richmond. As such, the building does not possess the significance necessary to meet the criteria for listing in the NRHP or CRHR.



B11. Additional Resource Attributes:

***B12. References:**
B13. Remarks:

***B14. Evaluator:** Katherine Anderson | ESA

***Date of Evaluation:** 12/ 22/ 15

(This space reserved for official comments.)

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code** 6Y

***Resource Name or #** 1376 S 50th St

B1. Historic Name: none
B2. Common Name: none
B3. Original Use: office/ industrial
B4. Present Use: office/ industrial

***B5. Architectural Style:** Modern

***B6. Construction History:**
1970 original construction
2010 building renovation and addition

***B7. Moved?** ■No ☐Yes ☐Unknown **Date:** **Original Location:**

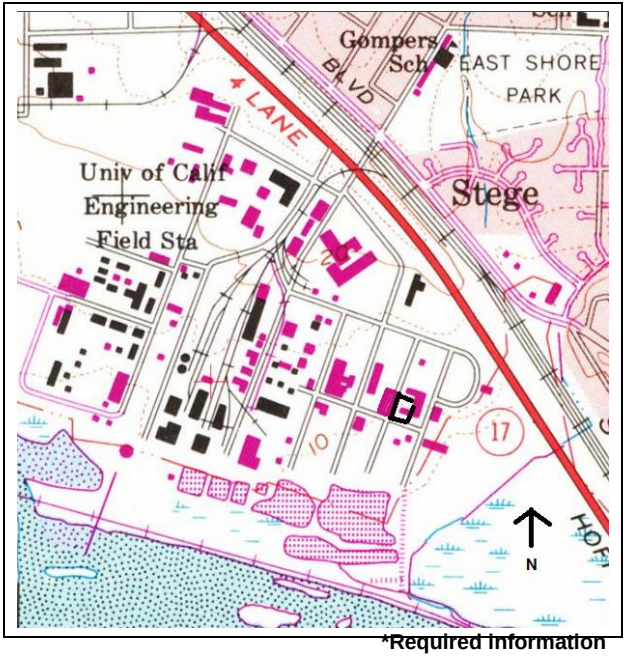
***B8. Related Features:**
none

B9a. Architect: unknown
b. Builder: unknown

***B10. Significance: Theme:** n/ a
Area: n/ a
Period of Significance: n/ a
Property Type: n/ a
Applicable Criteria: n/ a

Since its inception, the City of Richmond has been a terminal port where its growing network of national railroads met deep water channels to the sea. The arrival of the Southern Pacific Railroad in 1878 primed western Contra Costa County for an industrial and economic boom. The arrival of the Santa Fe railroad (1899–1900), the startup of Standard Oil and its industrial waterfront (1901–1902), and the founding of the municipality of Richmond (1905) were also pivotal developments in the Richmond waterfront. Review of historic topographic maps indicate that the immediate vicinity has been subject to development, resulting from the presence of the Southern Pacific Railroad and the Stauffer Chemical Company which opened in 1897. Significant development associated with the SCC occurred around 1915, with a railroad spur paralleling 47th Avenue promoting industrial development. In 1950, the University of California at Berkeley opened its Engineering Field Station to the west of the project site. County assessor data indicates that the building at 1376 S 50th St was constructed as an industrial building in 1970. Review of historic aerial maps and City records determined that the the building was renovated extensively in 2010.

Archival review indicates that 1376 S 50th St dates to the mid/ late-twentieth century growth and industrial development of the City of Richmond, although this association does not rise to a level of significance required for listing in the state or national registers (Criterion A/ 1). Research did not identify any direct or unique associations between the buildings and important individuals (Criterion B/ 2). The industrial office building does not reflect distinctive characteristics of a type, period, region or method of construction, and would not be considered exemplary of the Modern architectural style (Criterion C/ 3). The industrial office building consisted of a two story concrete block, flat roof structure that underwent exterior modifications and an addition during a 2010 renovation. Finally, the building does not appear to possess the potential to yield, information important to the prehistory or history (Criterion D/ 4). Visual inspection of the building indicate that significant modern alterations of the structure have occurred, resulting in the loss of the building's physical integrity. The property does not retain sufficient physical integrity of materials, workmanship, design, or setting to convey its historically significant associations with the mid- twentieth industrial development in Richmond. As such, the building does not possess the significance necessary to meet the criteria for listing in the NRHP or CRHR.



B11. Additional Resource Attributes: (List attributes and codes) HP8. Industrial Building

***B12. References:**

B13. Remarks:

***B14. Evaluator:** Katherine Anderson | ESA

(This space reserved for official comments.)

Primary # _____
HRI# _____

BUILDING, STRUCTURE, AND OBJECT RECORD

Resource Name or #* (Assigned by recorder)_____

***Date of Evaluation:** 12/ 22/ 15

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code** 6Y

***Resource Name or #** 4925 Seaport Ave

B1. Historic Name: none
B2. Common Name: none
B3. Original Use: warehouse
B4. Present Use: office/ warehouse

***B5. Architectural Style:** Modern

***B6. Construction History:**
1957 original warehouse construction
c. 1980 southern office addition

***B7. Moved?** ■No ☐Yes ☐Unknown **Date:** **Original Location:**

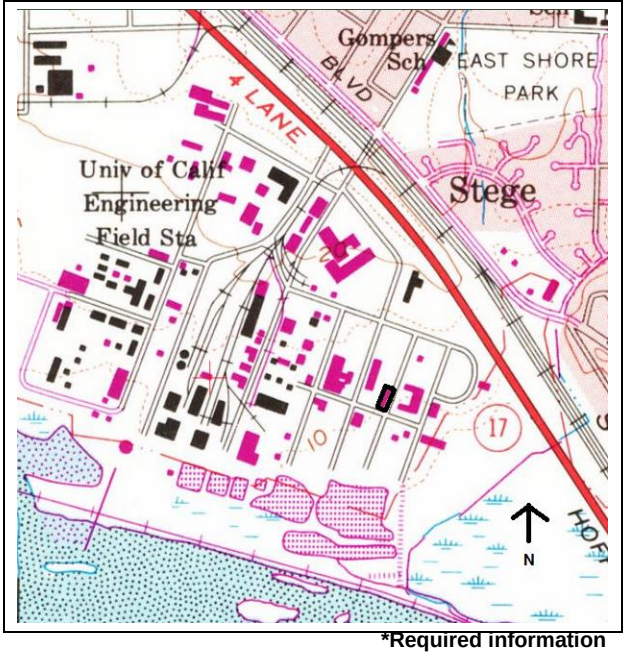
***B8. Related Features:**
none

B9a. Architect: unknown
b. Builder: unknown

***B10. Significance: Theme:** n/ a
Area: n/ a
Period of Significance: n/ a
Property Type: n/ a
Applicable Criteria: n/ a

Since its inception, the City of Richmond has been a terminal port where its growing network of national railroads met deep water channels to the sea. The arrival of the Southern Pacific Railroad in 1878 primed western Contra Costa County for an industrial and economic boom. The arrival of the Santa Fe railroad (1899–1900), the startup of Standard Oil and its industrial waterfront (1901–1902), and the founding of the municipality of Richmond (1905) were also pivotal developments in the Richmond waterfront. Review of historic topographic maps indicate that the immediate vicinity has been subject to development, resulting from the presence of the Southern Pacific Railroad and the Stauffer Chemical Company which opened in 1897. Significant development associated with the SCC occurred around 1915, with a railroad spur paralleling 47th Avenue promoting industrial development. In 1950, the University of California at Berkeley opened its Engineering Field Station to the west of the project site. County assessor data indicates that the building at 4925 Seaport Ave was constructed as an industrial warehouse in 1957. Review of historic aerial maps determined that the southern office addition was constructed in c. 1980.

Archival review indicates that 4925 Seaport Ave dates to the mid-twentieth century growth and industrial development of the City of Richmond, although this association does not rise to a level of significance required for listing in the state or national registers (Criterion A/ 1). Research did not identify any direct or unique associations between the buildings and important individuals (Criterion B/ 2). The industrial building does not reflect distinctive characteristics of a type, period, region or method of construction, and would not be considered exemplary of the Modern architectural style (Criterion C/ 3). The warehouse building consisted of a corrugated metal clad, gable roof structure. The 1980s office addition provided significant alteration to the original structure. Finally, the building does not appear to possess the potential to yield, information important to the prehistory or history (Criterion D/ 4). Visual inspection of the building indicate that significant modern alterations of the structure have occurred, including the office addition, resulting in the loss of the building's physical integrity. The property does not retain sufficient physical integrity of materials, workmanship, design, or setting to convey its historically significant associations with the mid-twentieth industrial development in Richmond. As such, the building does not possess the significance necessary to meet the criteria for listing in the NRHP or CRHR.



B11. Additional Resource Attributes: (List attributes and codes) HP8. Industrial Building

***B12. References:**

B13. Remarks:

(This space reserved for official comments.)

Primary # _____
HRI# _____

BUILDING, STRUCTURE, AND OBJECT RECORD

Resource Name or #* (Assigned by recorder)_____

***B14. Evaluator:** Katherine Anderson | ESA

***Date of Evaluation:** 12/ 22/ 15

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code** 6Y

***Resource Name or #** 5000 Seaport Ave

B1. Historic Name: none
B2. Common Name: none
B3. Original Use: office
B4. Present Use: office/ warehouse

***B5. Architectural Style:** Modern

***B6. Construction History:**
1968 original construction
c. 1985 warehouse addition

***B7. Moved?** ■No ☐Yes ☐Unknown **Date:** **Original Location:**

***B8. Related Features:**
none

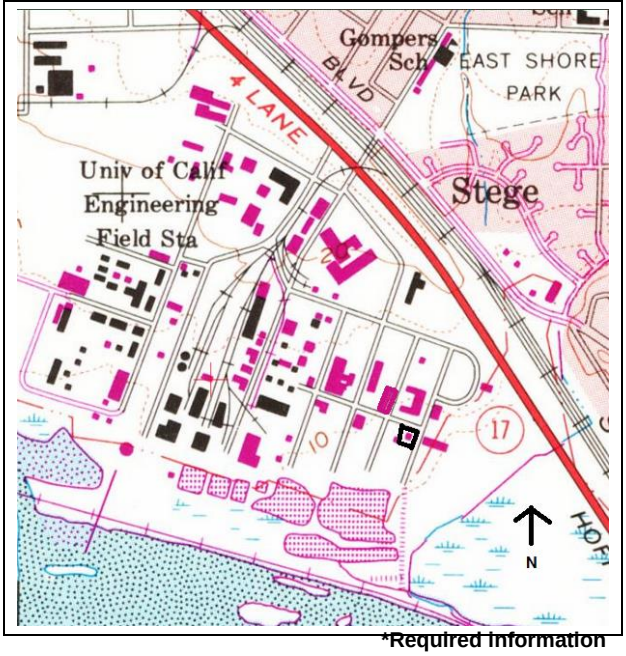
B9a. Architect: unknown
b. Builder: unknown

***B10. Significance: Theme:** n/ a
Area: n/ a
Period of Significance: n/ a
Property Type: n/ a
Applicable Criteria: n/ a

Since its inception, the City of Richmond has been a terminal port where its growing network of national railroads met deep water channels to the sea. The arrival of the Southern Pacific Railroad in 1878 primed western Contra Costa County for an industrial and economic boom. The arrival of the Santa Fe railroad (1899–1900), the startup of Standard Oil and its industrial waterfront (1901–1902), and the founding of the municipality of Richmond (1905) were also pivotal developments in the Richmond waterfront. Review of historic topographic maps indicate that the immediate vicinity has been subject to development, resulting from the presence of the Southern Pacific Railroad and the Stauffer Chemical Company which opened in 1897. Significant development associated with the SCC occurred around 1915, with a railroad spur paralleling 47th Avenue promoting industrial development. In 1950, the University of California at Berkeley opened its Engineering Field Station to the west of the project site. County assessor data indicates that the building at 5000 Seaport Ave was constructed as an industrial office building in 1968. Review of historic aerial maps determined that the southern warehouse was added c. 1985.

Archival review indicates that 5000 Seaport Ave dates to the mid-twentieth century growth and industrial development of the City of Richmond, although this association does not rise to a level of significance required for listing in the state or national registers (Criterion A/ 1). Research did not identify any direct or unique associations between the buildings and important individuals (Criterion B/ 2). The industrial building does not reflect distinctive characteristics of a type, period, region or method of construction, and would not be considered exemplary of the Modern architectural style (Criterion C/ 3). Finally, the building does not appear to possess the potential to yield, information important to the prehistory or history (Criterion D/ 4). The warehouse addition in c. 1985 greatly reduced the building's physical integrity. The property does not retain sufficient physical integrity of materials, workmanship, design, or setting to convey its historically significant associations with the mid-twentieth industrial development in Richmond. As such, the building does not possess the significance necessary to meet the criteria for listing in the NRHP or CRHR.

B11. Additional Resource Attributes: (List attributes and codes) HP8. Industrial Building



***B12. References:**

B13. Remarks:

***B14. Evaluator:** Katherine Anderson | ESA

***Date of Evaluation:** 12/ 22/ 15

(This space reserved for official comments.)

BUILDING, STRUCTURE, AND OBJECT RECORD

***NRHP Status Code** 6Y

***Resource Name or #** 5021 Seaport Ave

B1. Historic Name: none
B2. Common Name: none
B3. Original Use: office
B4. Present Use: office/ warehouse

***B5. Architectural Style:** Modern

***B6. Construction History:**
1965 original construction

***B7. Moved?** ■No ☐Yes ☐Unknown **Date:** **Original Location:**

***B8. Related Features:**
none

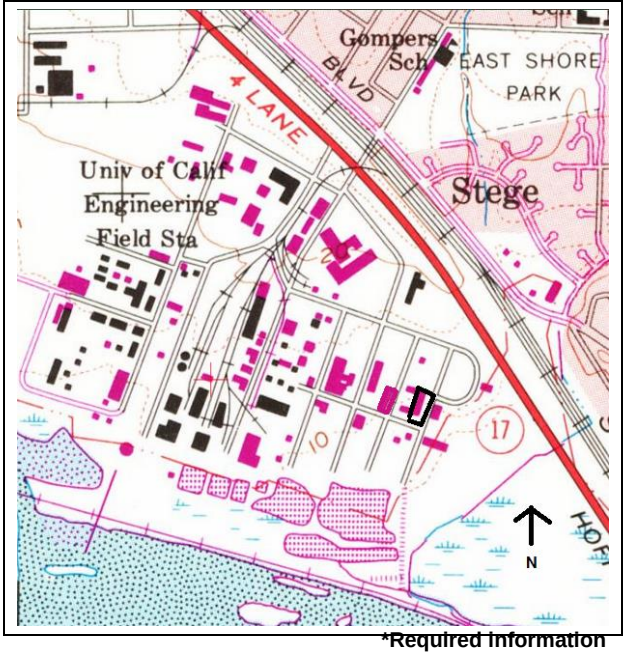
B9a. Architect: unknown
b. Builder: unknown

***B10. Significance: Theme:** n/ a
Area: n/ a
Period of Significance: n/ a
Property Type: n/ a
Applicable Criteria: n/ a

Since its inception, the City of Richmond has been a terminal port where its growing network of national railroads met deep water channels to the sea. The arrival of the Southern Pacific Railroad in 1878 primed western Contra Costa County for an industrial and economic boom. The arrival of the Santa Fe railroad (1899–1900), the startup of Standard Oil and its industrial waterfront (1901–1902), and the founding of the municipality of Richmond (1905) were also pivotal developments in the Richmond waterfront. Review of historic topographic maps indicate that the immediate vicinity has been subject to development, resulting from the presence of the Southern Pacific Railroad and the Stauffer Chemical Company which opened in 1897. Significant development associated with the SCC occurred around 1915, with a railroad spur paralleling 47th Avenue promoting industrial development. In 1950, the University of California at Berkeley opened its Engineering Field Station to the west of the project site. County assessor data indicates that the building at 5021 Seaport Ave was constructed as an industrial office building in 1965.

Archival review indicates that 5021 Seaport Ave dates to the mid-twentieth century growth and industrial development of the City of Richmond, although this association does not rise to a level of significance required for listing in the state or national registers (Criterion A/ 1). Research did not identify any direct or unique associations between the buildings and important individuals (Criterion B/ 2). The industrial building does not reflect distinctive characteristics of a type, period, region or method of construction, nor would it be considered exemplary of the Modern architectural style (Criterion C/ 3). Finally, the building does not appear to possess the potential to yield, information important to the prehistory or history (Criterion D/ 4). Visual inspection of the building indicates some alterations to the structure, including modern doors and windows infilled with brick, resulting in some reduction in the building's physical integrity. The property does not retain sufficient physical integrity of materials, workmanship, design, or setting to convey its historically significant associations with the mid-twentieth industrial development in Richmond. As such, the building does not possess the significance necessary to meet the criteria for listing in the NRHP or CRHR.

B11. Additional Resource Attributes: (List attributes and codes) HP8. Industrial Building



***B12. References:**

B13. Remarks:

***B14. Evaluator:** Katherine Anderson | ESA

***Date of Evaluation:** 12/ 22/ 15

(This space reserved for official comments.)

Appendix E

Transportation and Traffic Technical Reports

ESA

FEHR PEERS

TECHNICAL TRANSPORTATION APPENDIX

RICHMOND BAY SPECIFIC PLAN EIR

May 2016

OK14-0039

Appendix E-1: Volume Figures

Appendix E-2: New Intersection Count Data

Appendix E-3: Existing Conditions – Intersection LOS Calculations

Appendix E-4: Signal Warrant Calculations

Appendix E-5: Freeway LOS Calculations

Appendix E-6: Study Assumptions Memo

Appendix E-7: Existing Plus Specific Plan Conditions – Intersection LOS Calculations

Appendix E-8: 2040 No Project Conditions – Intersection LOS Calculations

Appendix E-9: 2040 Plus Specific Plan Conditions – Intersection LOS Calculations

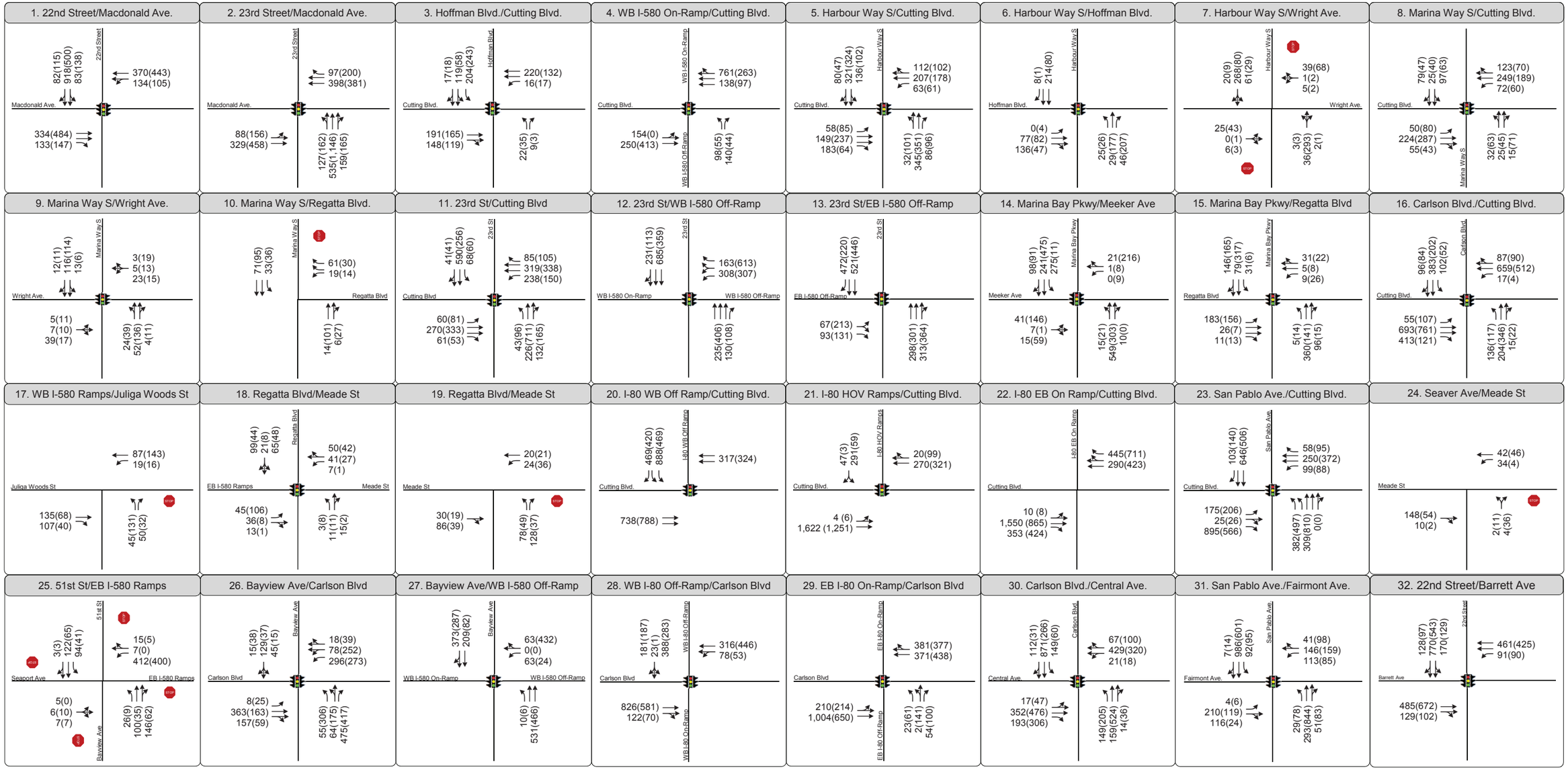
Appendix E-10: 2040 Plus Specific Plan and SRTCP Conditions – Intersection LOS

Calculations Appendix E-11: Existing Plus Sub-Area 4 Project Conditions – Intersection LOS

Calculations Appendix E-12: 2040 No Sub-Area 4 Conditions – Intersection LOS Calculations

Appendix E-1
Volume Figures

FEHR PEERS



LEGEND

XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

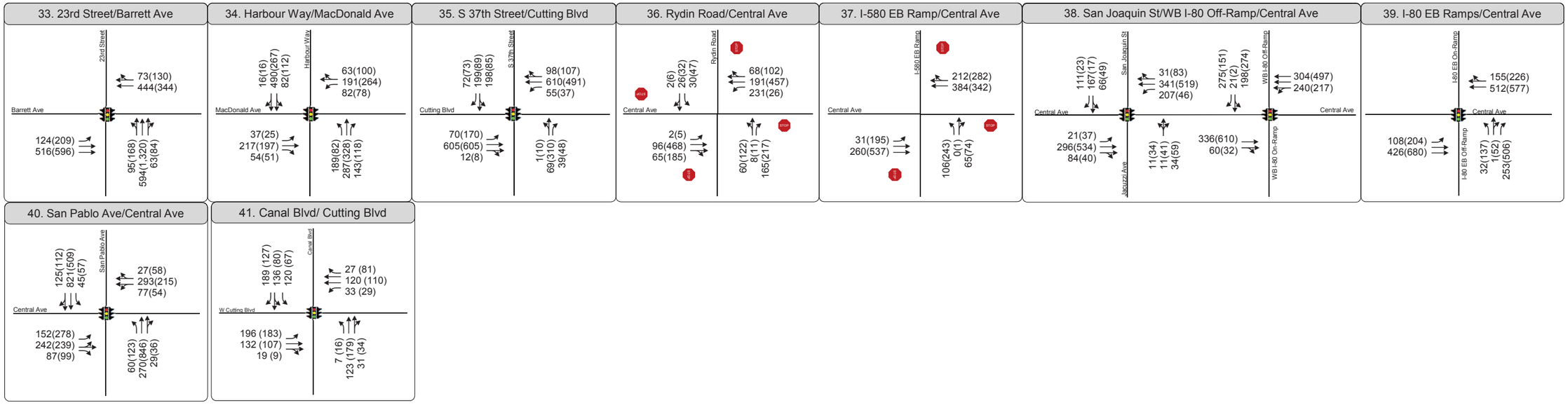
Stop Sign

Figure A-1

Peak Hour Traffic Volumes, Intersection Controls and Lane Configurations - Existing Conditions

FEHR PEERS

Source: OK15_0039_FigA-1_Ex_Vol



LEGEND

XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

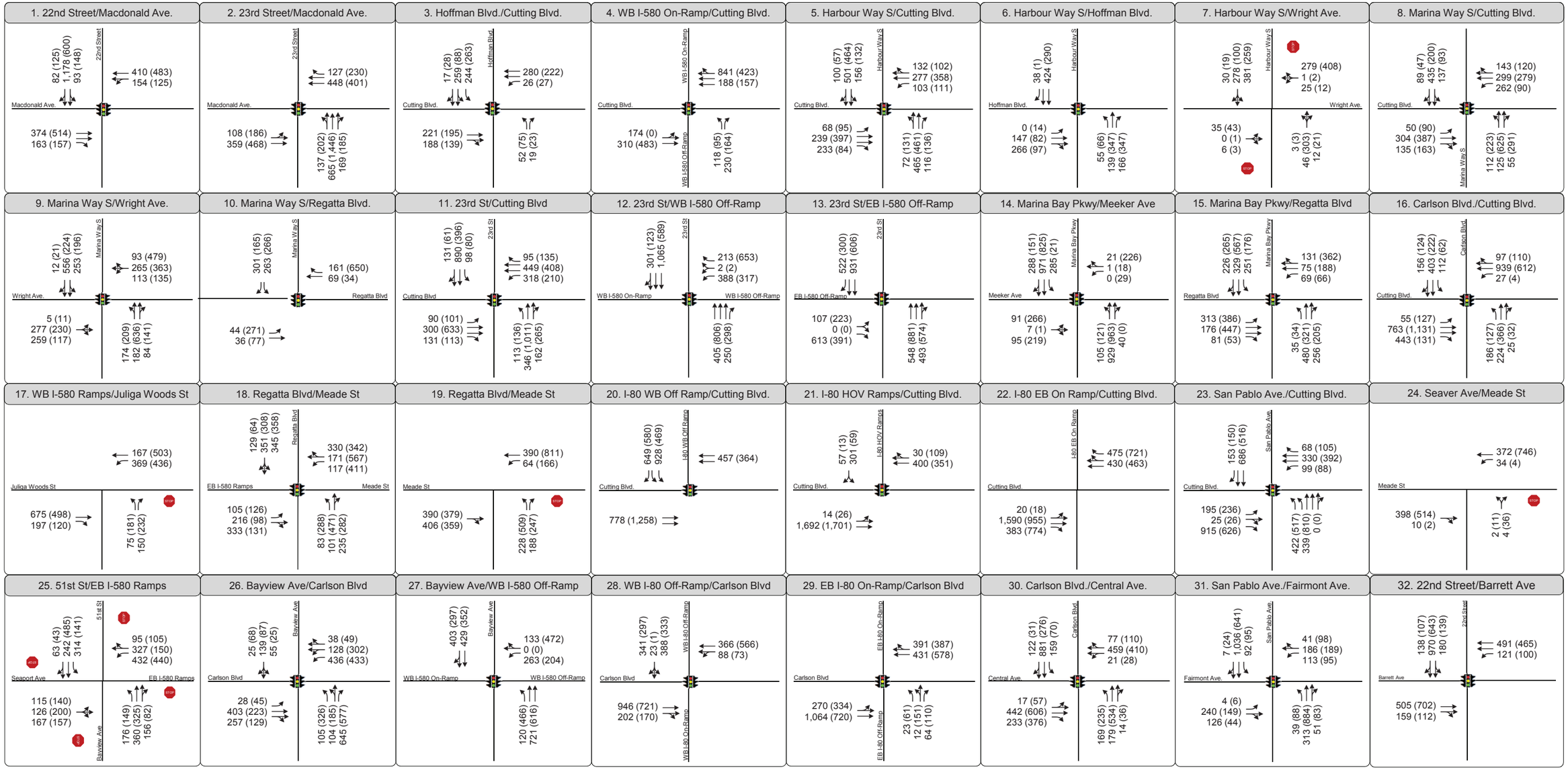
Stop Sign

Figure A-1

Peak Hour Traffic Volumes, Intersection Controls and Lane Configurations - Existing Conditions

FEHR PEERS

Source: OK15_0039_FigA-1_Ex_Vol



LEGEND

XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

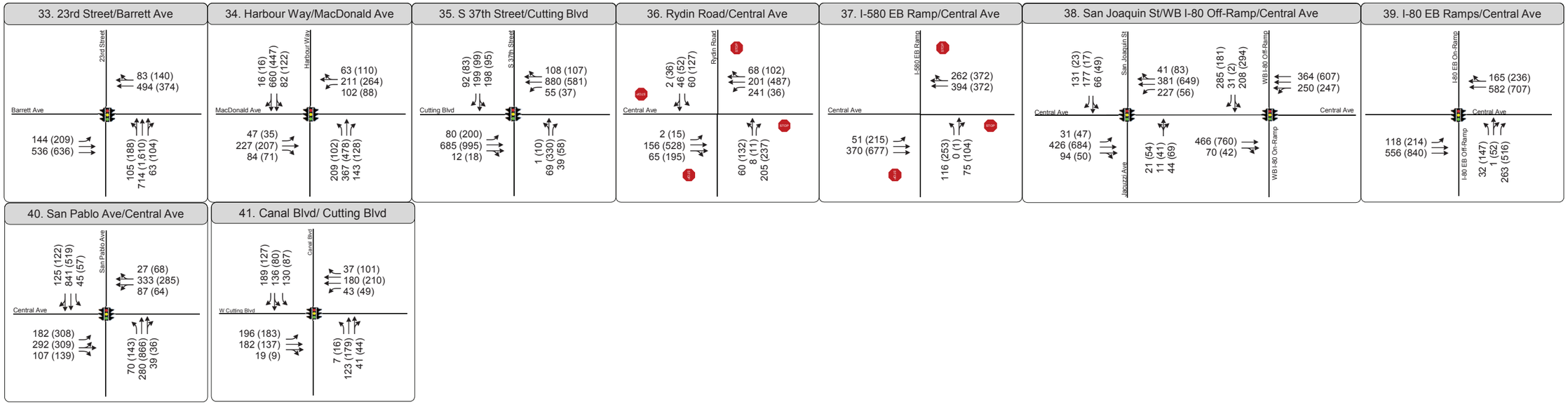
Stop Sign

Figure A-2

Peak Hour Traffic Volumes, Intersection Controls and Lane Configurations - Existing Plus Specific Plan Conditions

FEHR PEERS

Source: OK15_0039_FigA-1_Ex_Vol



LEGEND

XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

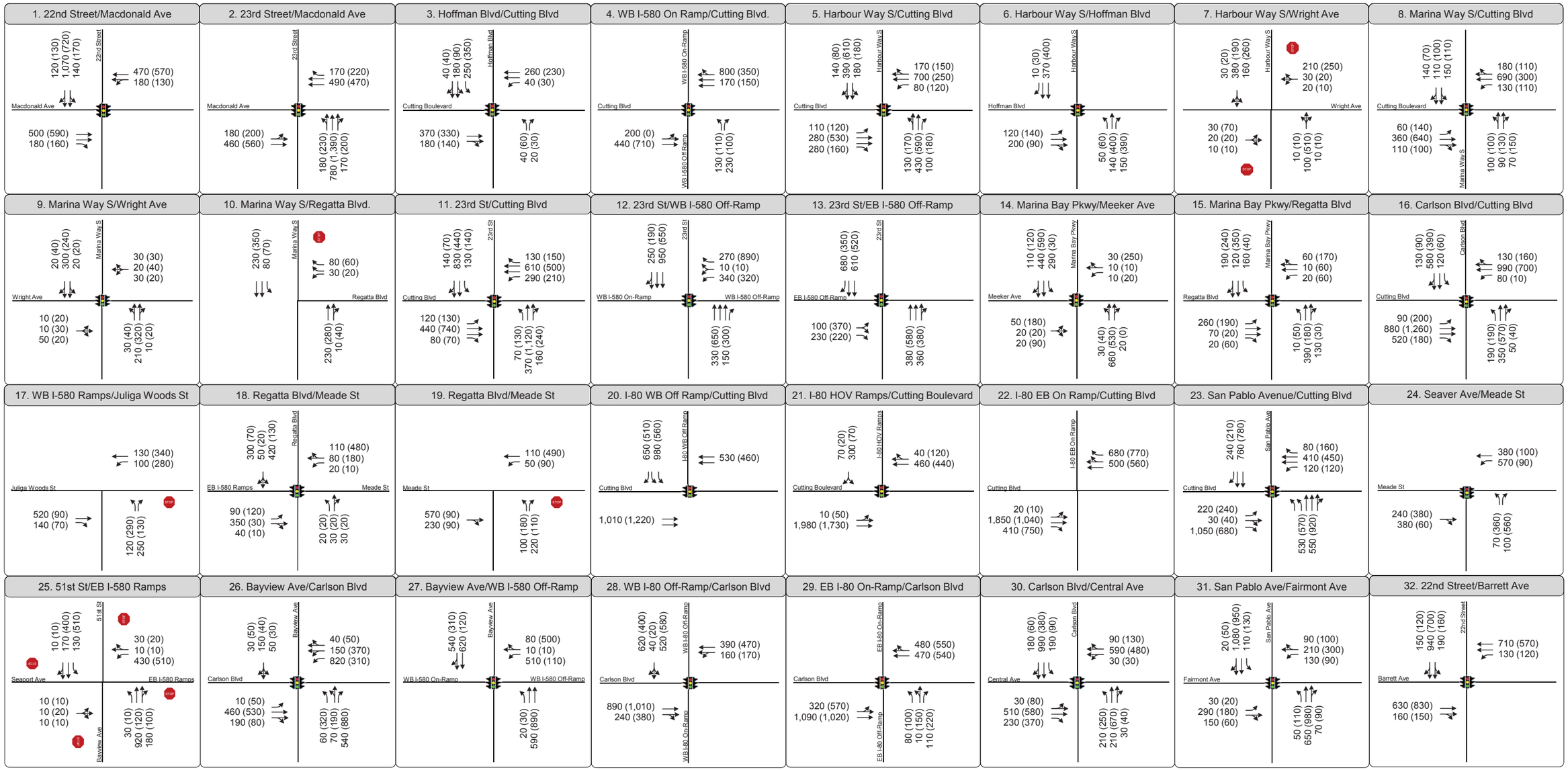
Stop Sign

Figure A-2

Peak Hour Traffic Volumes, Intersection Controls and Lane Configurations - Existing Plus Specific Plan Conditions

FEHR PEERS

Source: OK15_0039_FigA-1_Ex_Vol



LEGEND

XX (YY) AM (PM) Peak Hour Traffic Volumes

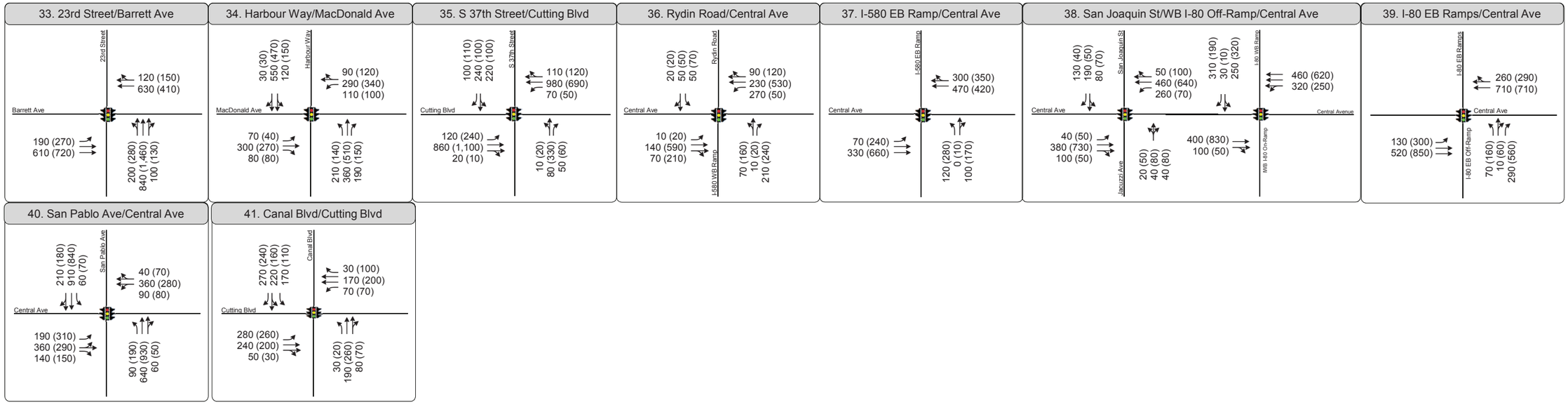
Signalized Intersection

Stop Sign

Figure A-3

Peak Hour Traffic Volumes, Intersection Controls and Lane Configurations - 2040 No Project Conditions

FEHR PEERS



LEGEND

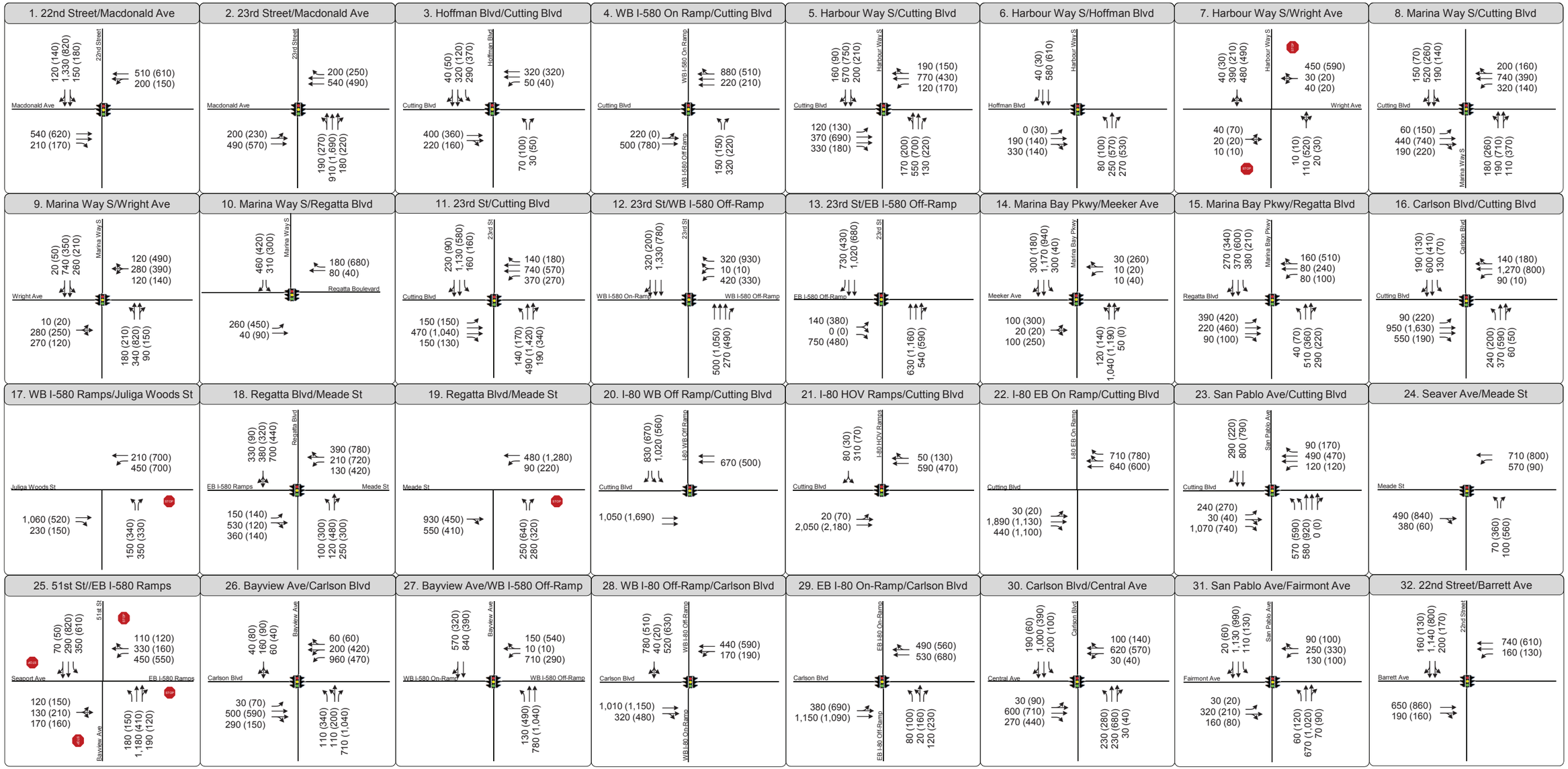
XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

Stop Sign

Figure A-3

Peak Hour Traffic Volumes, Intersection Controls and Lane Configurations - 2040 No Project Conditions



LEGEND

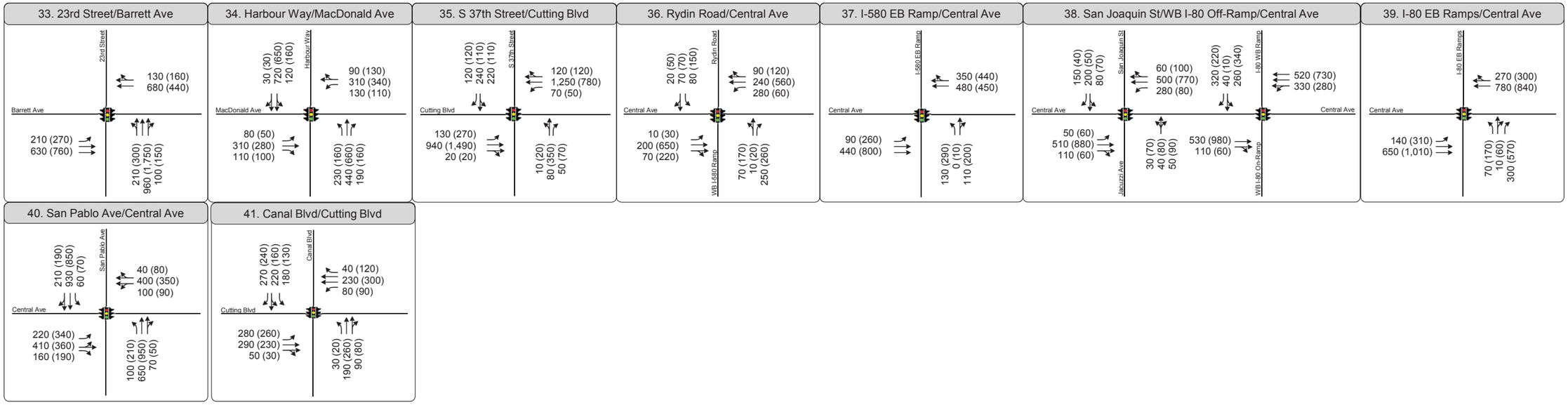
XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

Stop Sign

Figure A-4

Peak Hour Traffic Volumes, Intersection Controls and Lane Configurations - 2040 Plus Specific Plan Conditions



LEGEND

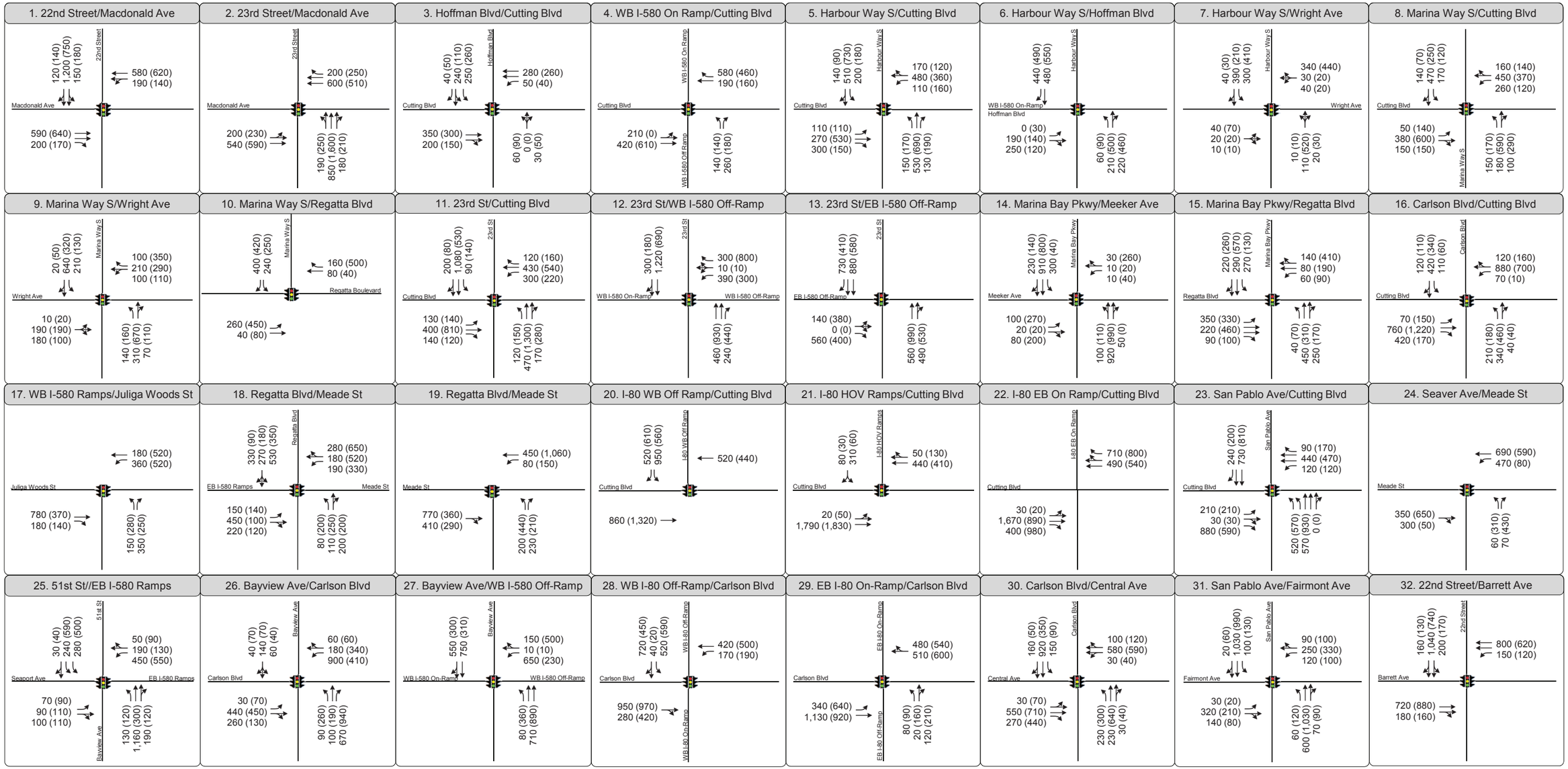
XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

Stop Sign

Figure A-4

Peak Hour Traffic Volumes, Intersection Controls and Lane Configurations - 2040 Plus Specific Plan Conditions



LEGEND

XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

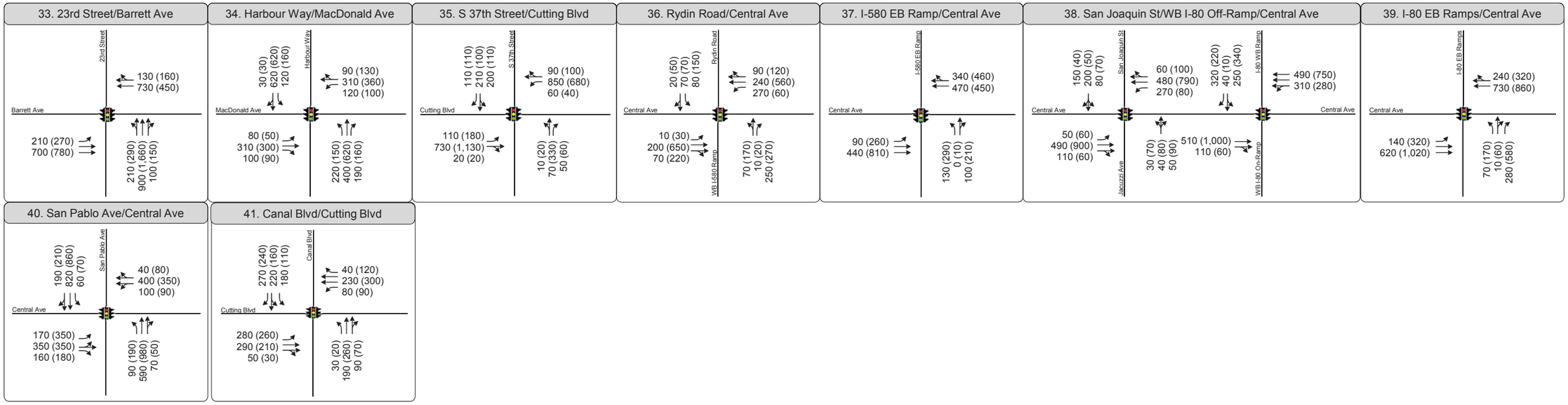
Stop Sign

Roundabout

Figure A-5

Peak Hour Traffic Volumes, Intersection Controls and Lane Configurations - 2040 Plus Specific Plan and SRTCP Conditions

FEHR PEERS



LEGEND

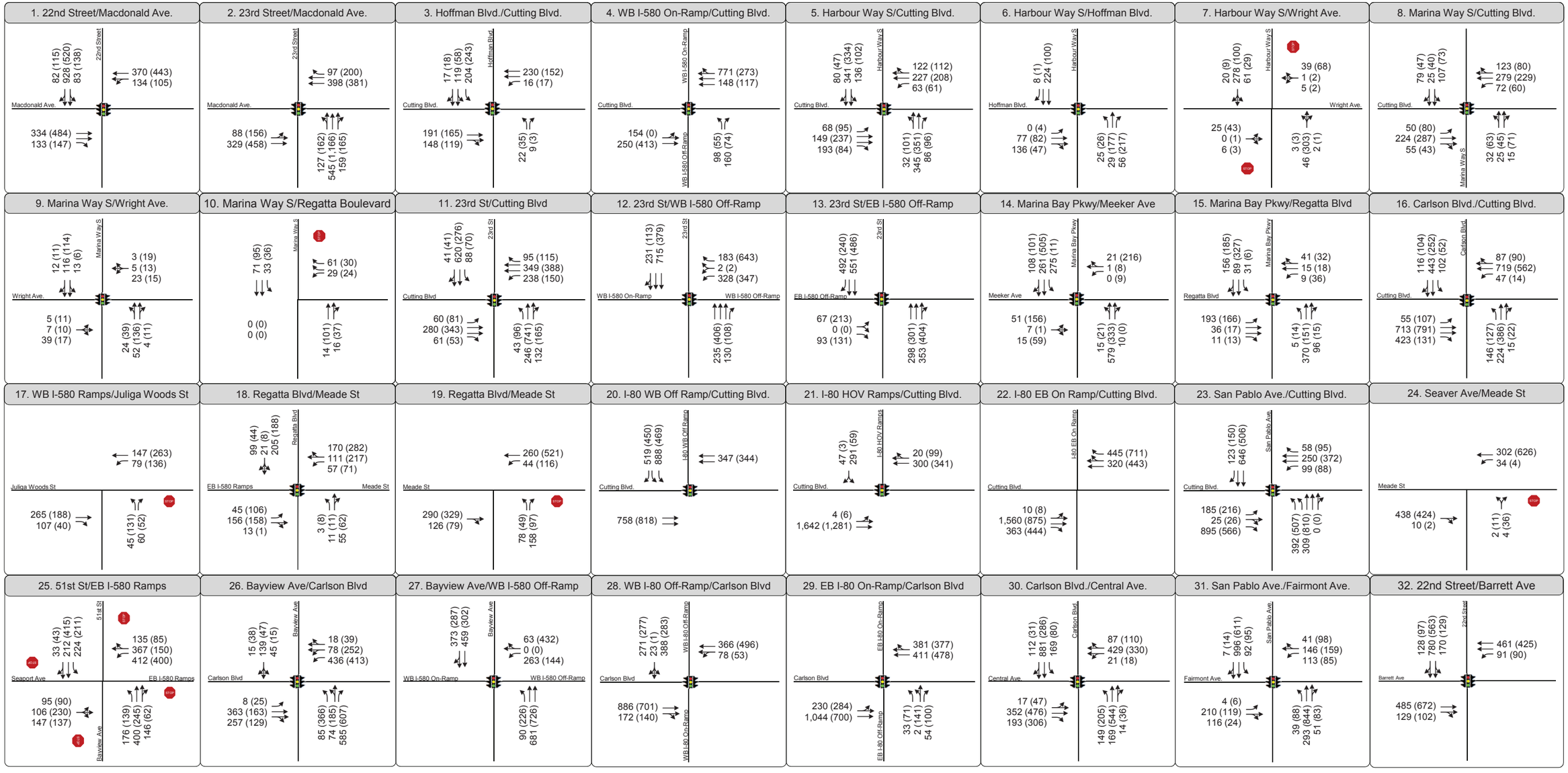
XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

Stop Sign

Figure A-5

Peak Hour Traffic Volumes, Intersection Controls and Lane Configurations - 2040 Plus Specific Plan and SRTCP Conditions



LEGEND

XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

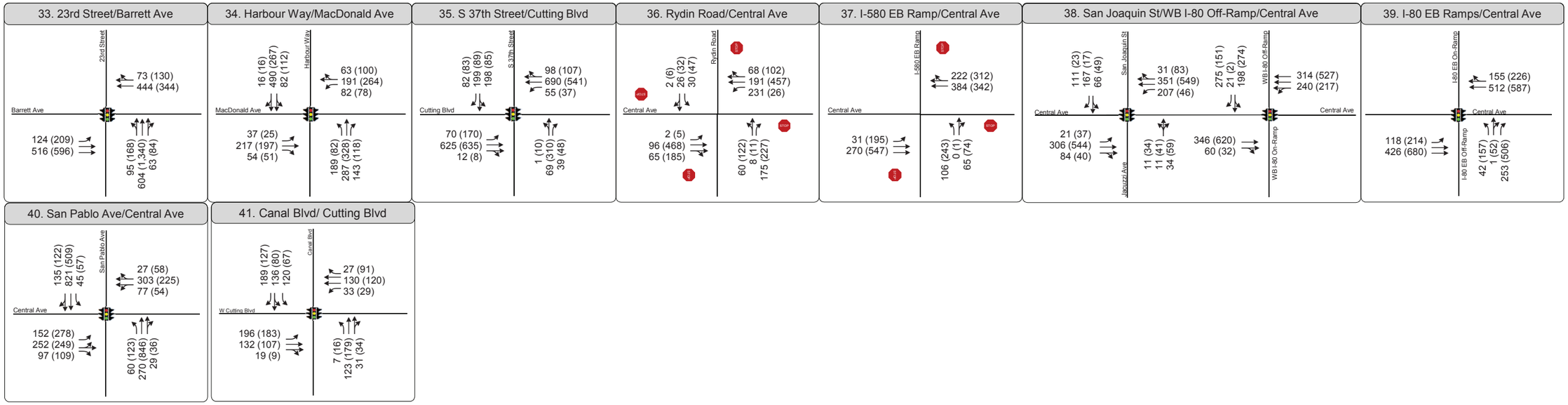
Stop Sign

Figure A-6

Peak Hour Traffic Volumes, Intersection Controls and Lane Configurations - Existing Plus Sub-Area 4 Project Conditions

FEHR PEERS

Source: OK15_0039_FigA-1_Ex_Vol



LEGEND

XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

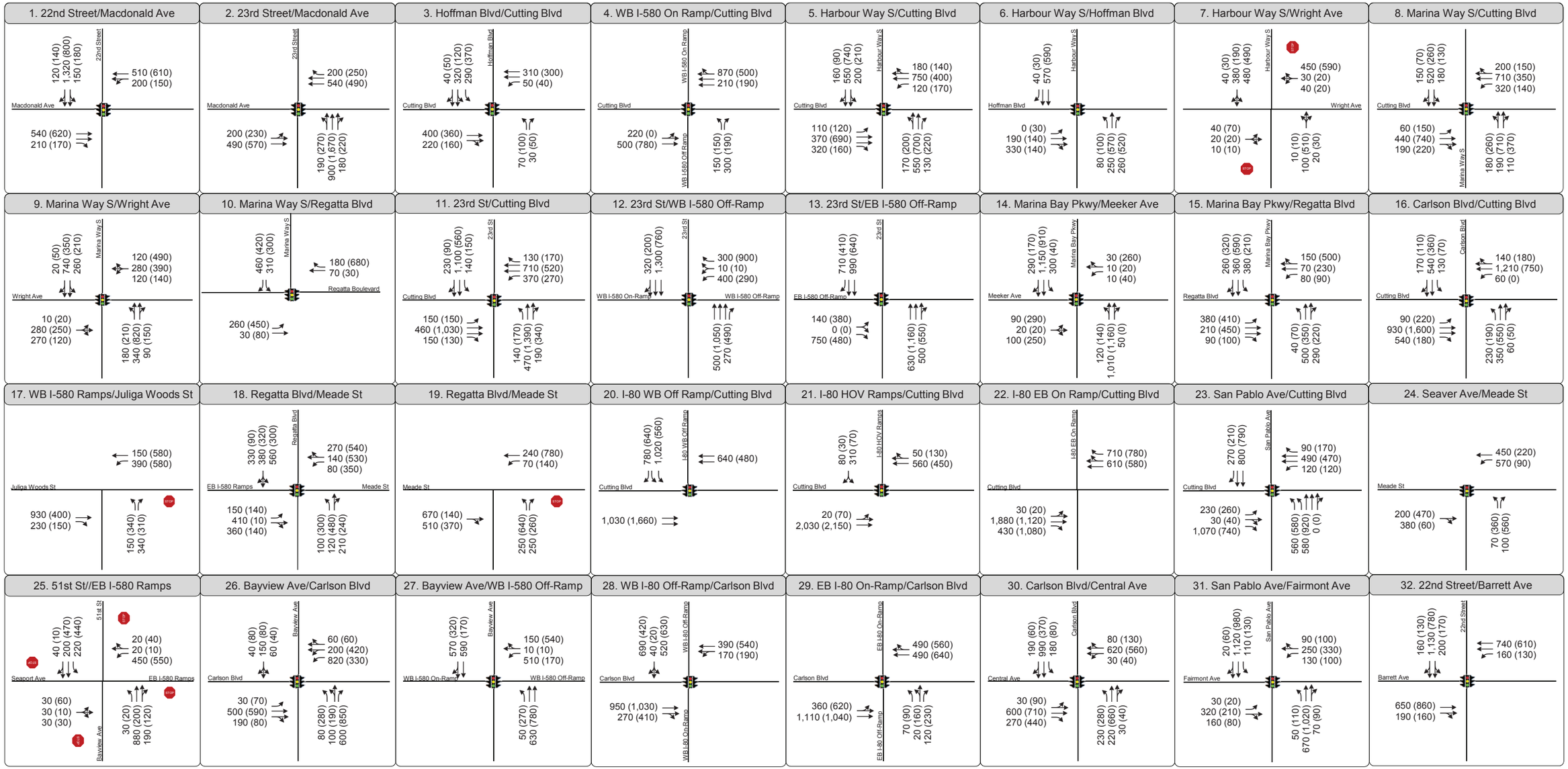
Stop Sign

Figure A-6

Peak Hour Traffic Volumes, Intersection Controls and Lane Configurations - Existing Plus Sub-Area 4 Project Conditions

FEHR PEERS

Source: OK15_0039_FigA-1_Ex_Vol



LEGEND

XX (YY) AM (PM) Peak Hour Traffic Volumes

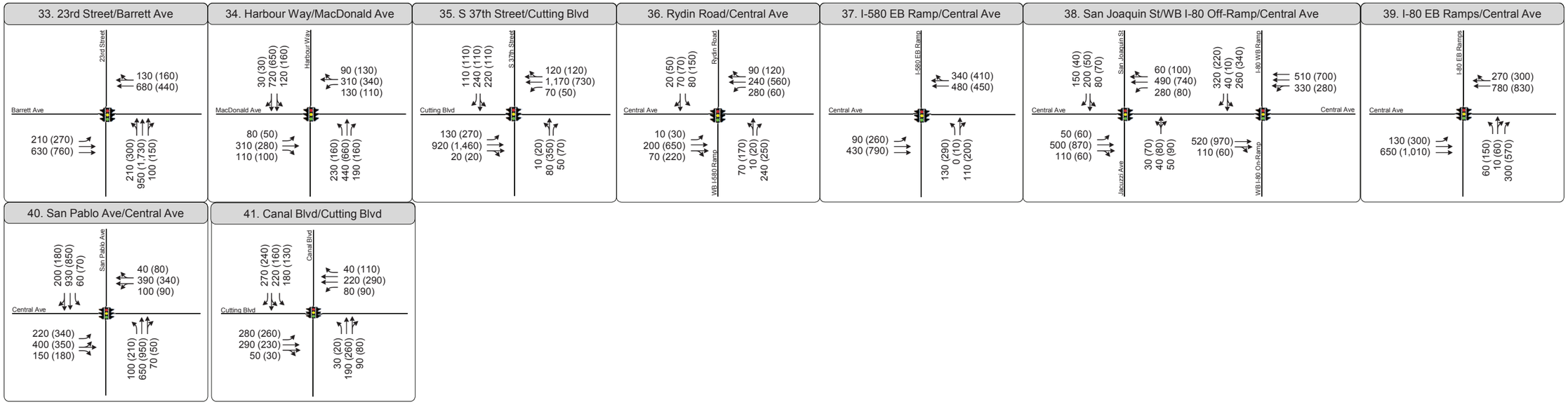
Signalized Intersection

Stop Sign

Figure A-7

Peak Hour Traffic Volumes, Intersection Controls and Lane Configurations - 2040 No Sub-Area 4 Project Conditions

FEHR PEERS



LEGEND

XX (YY) AM (PM) Peak Hour Traffic Volumes

Signalized Intersection

Stop Sign

Figure A-7

Peak Hour Traffic Volumes, Intersection Controls and Lane Configurations - 2040 No Sub-Area 4 Project Conditions

Appendix E-2
New Intersection Count Data

FEHR PEERS

ALL TRAFFIC DATA

City of Richmond
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7779-009 22nd Street-Macdonald Avenue.ppd
Date : 11/18/2014

Unshifted Count = All Vehicles

	22nd Street Southbound					Macdonald Avenue Westbound					22nd Street Northbound					Macdonald Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	15	286	17	0	318	31	62	0	0	93	0	0	0	0	0	0	50	19	0	69	480	0
07:15	13	260	15	0	288	28	49	0	0	77	0	0	0	0	0	0	54	21	0	75	440	0
07:30	7	268	17	0	292	24	37	0	0	61	0	0	0	0	0	0	56	31	0	87	440	0
07:45	14	247	18	0	279	30	74	0	0	104	0	0	0	0	0	0	68	35	0	103	486	0
Total	49	1061	67	0	1177	113	222	0	0	335	0	0	0	0	0	0	228	106	0	334	1846	0
08:00	23	232	21	0	276	30	86	0	0	116	0	0	0	0	0	0	81	43	0	124	516	0
08:15	20	230	20	0	270	45	105	0	0	150	0	0	0	0	0	0	101	29	0	130	550	0
08:30	25	209	23	0	257	29	105	0	0	134	0	0	0	0	0	0	79	26	0	105	496	0
08:45	21	179	26	0	226	23	101	0	0	124	0	0	0	0	0	0	69	27	0	96	446	0
Total	89	850	90	0	1029	127	397	0	0	524	0	0	0	0	0	0	330	125	0	455	2008	0
16:00	30	128	33	0	191	22	102	0	0	124	0	0	0	0	0	0	104	28	0	132	447	0
16:15	21	115	36	0	172	32	121	0	0	153	0	0	0	0	0	0	104	30	0	134	459	0
16:30	21	117	30	0	168	17	114	0	0	131	0	0	0	0	0	0	118	28	0	146	445	0
16:45	40	119	33	0	192	19	126	0	0	145	0	0	0	0	0	0	115	33	0	148	485	0
Total	112	479	132	0	723	90	463	0	0	553	0	0	0	0	0	0	441	119	0	560	1836	0
17:00	31	135	28	0	194	30	96	0	0	126	0	0	0	0	0	0	124	40	0	164	484	0
17:15	37	125	30	0	192	24	105	0	0	129	0	0	0	0	0	0	119	45	0	164	485	0
17:30	30	121	24	0	175	32	116	0	0	148	0	0	0	0	0	0	126	29	0	155	478	0
17:45	34	135	31	0	200	30	106	0	0	136	0	0	0	0	0	0	112	32	0	144	480	0
Total	132	516	113	0	761	116	423	0	0	539	0	0	0	0	0	0	481	146	0	627	1927	0
Grand Total	382	2906	402	0	3690	446	1505	0	0	1951	0	0	0	0	0	0	1480	496	0	1976	7617	0
Apprch %	10.4%	78.8%	10.9%	0.0%		22.9%	77.1%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	74.9%	25.1%	0.0%			
Total %	5.0%	38.2%	5.3%	0.0%	48.4%	5.9%	19.8%	0.0%	0.0%	25.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	19.4%	6.5%	0.0%	25.9%	100.0%	

ALL TRAFFIC DATA

City of Richmond
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7779-009 22nd Street-Macdonald Avenue.ppd
Date : 11/18/2014

Unshifted Count = All Vehicles

AM PEAK HOUR	22nd Street Southbound					Macdonald Avenue Westbound					22nd Street Northbound					Macdonald Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
07:45	14	247	18	0	279	30	74	0	0	104	0	0	0	0	0	0	68	35	0	103	486
08:00	23	232	21	0	276	30	86	0	0	116	0	0	0	0	0	0	81	43	0	124	516
08:15	20	230	20	0	270	45	105	0	0	150	0	0	0	0	0	0	101	29	0	130	550
08:30	25	209	23	0	257	29	105	0	0	134	0	0	0	0	0	0	79	26	0	105	496
Total Volume	82	918	82	0	1082	134	370	0	0	504	0	0	0	0	0	0	329	133	0	462	2048
% App Total	7.6%	84.8%	7.6%	0.0%		26.6%	73.4%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	71.2%	28.8%	0.0%		
PHF	.820	.929	.891	.000	.970	.744	.881	.000	.000	.840	.000	.000	.000	.000	.000	.000	.814	.773	.000	.888	.931

PM PEAK HOUR	22nd Street Southbound					Macdonald Avenue Westbound					22nd Street Northbound					Macdonald Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	40	119	33	0	192	19	126	0	0	145	0	0	0	0	0	0	115	33	0	148	485
17:00	31	135	28	0	194	30	96	0	0	126	0	0	0	0	0	0	124	40	0	164	484
17:15	37	125	30	0	192	24	105	0	0	129	0	0	0	0	0	0	119	45	0	164	485
17:30	30	121	24	0	175	32	116	0	0	148	0	0	0	0	0	0	126	29	0	155	478
Total Volume	138	500	115	0	753	105	443	0	0	548	0	0	0	0	0	0	484	147	0	631	1932
% App Total	18.3%	66.4%	15.3%	0.0%		19.2%	80.8%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	76.7%	23.3%	0.0%		
PHF	.863	.926	.871	.000	.970	.820	.879	.000	.000	.926	.000	.000	.000	.000	.000	.000	.960	.817	.000	.962	.996

ALL TRAFFIC DATA

City of Richmond
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7779-010 23rd Street-Macdonald Avenue.ppd
Date : 11/18/2014

Unshifted Count = All Vehicles

	23rd Street Southbound					Macdonald Avenue Westbound					23rd Street Northbound					Macdonald Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	0	0	0	0	0	0	69	6	0	75	24	58	11	0	93	19	41	0	0	60	228	0
07:15	0	0	0	0	0	0	61	8	0	69	16	79	17	0	112	18	48	0	0	66	247	0
07:30	0	0	0	0	0	0	49	11	0	60	15	77	21	0	113	19	47	0	0	66	239	0
07:45	0	0	0	0	0	0	77	17	0	94	27	148	24	0	199	16	64	0	0	80	373	0
Total	0	0	0	0	0	0	256	42	0	298	82	362	73	0	517	72	200	0	0	272	1087	0
08:00	0	0	0	0	0	0	93	13	0	106	25	142	50	0	217	19	84	0	0	103	426	0
08:15	0	0	0	0	0	0	118	25	0	143	30	155	46	0	231	20	98	0	0	118	492	0
08:30	0	0	0	0	0	0	90	26	0	116	42	129	37	0	208	20	86	0	0	106	430	0
08:45	0	0	0	0	0	0	97	33	0	130	30	109	26	0	165	29	61	0	0	90	385	0
Total	0	0	0	0	0	0	398	97	0	495	127	535	159	0	821	88	329	0	0	417	1733	0
16:00	0	0	0	0	0	0	90	42	0	132	36	255	50	0	341	32	94	0	0	126	599	0
16:15	0	0	0	0	0	0	107	50	0	157	41	268	34	0	343	34	87	0	0	121	621	0
16:30	0	0	0	0	0	0	99	45	0	144	38	258	35	0	331	36	98	0	0	134	609	0
16:45	0	0	0	0	0	0	102	52	0	154	43	297	41	0	381	44	104	0	0	148	683	0
Total	0	0	0	0	0	0	398	189	0	587	158	1078	160	0	1396	146	383	0	0	529	2512	0
17:00	0	0	0	0	0	0	85	53	0	138	39	290	45	0	374	38	127	0	0	165	677	0
17:15	0	0	0	0	0	0	93	46	0	139	36	287	37	0	360	37	112	0	0	149	648	0
17:30	0	0	0	0	0	0	101	49	0	150	44	272	42	0	358	37	115	0	0	152	660	0
17:45	0	0	0	0	0	0	87	55	0	142	44	269	44	0	357	47	102	0	0	149	648	0
Total	0	0	0	0	0	0	366	203	0	569	163	1118	168	0	1449	159	456	0	0	615	2633	0
Grand Total	0	0	0	0	0	0	1418	531	0	1949	530	3093	560	0	4183	465	1368	0	0	1833	7965	0
Apprch %	0.0%	0.0%	0.0%	0.0%		0.0%	72.8%	27.2%	0.0%		12.7%	73.9%	13.4%	0.0%		25.4%	74.6%	0.0%	0.0%			
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	17.8%	6.7%	0.0%	24.5%	6.7%	38.8%	7.0%	0.0%	52.5%	5.8%	17.2%	0.0%	0.0%	23.0%	100.0%	

ALL TRAFFIC DATA

City of Richmond
(916) 771-8700
orders@atdtraffic.com

All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

File Name : 14-7779-010 23rd Street-Macdonald Avenue.ppd
Date : 11/18/2014

Unshifted Count = All Vehicles

AM PEAK HOUR	23rd Street Southbound					Macdonald Avenue Westbound					23rd Street Northbound					Macdonald Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
08:00	0	0	0	0	0	0	93	13	0	106	25	142	50	0	217	19	84	0	0	103	426
08:15	0	0	0	0	0	0	118	25	0	143	30	155	46	0	231	20	98	0	0	118	492
08:30	0	0	0	0	0	0	90	26	0	116	42	129	37	0	208	20	86	0	0	106	430
08:45	0	0	0	0	0	0	97	33	0	130	30	109	26	0	165	29	61	0	0	90	385
Total Volume	0	0	0	0	0	0	398	97	0	495	127	535	159	0	821	88	329	0	0	417	1733
% App Total	0.0%	0.0%	0.0%	0.0%		0.0%	80.4%	19.6%	0.0%		15.5%	65.2%	19.4%	0.0%		21.1%	78.9%	0.0%	0.0%		
PHF	.000	.000	.000	.000	.000	.000	.843	.735	.000	.865	.756	.863	.795	.000	.889	.759	.839	.000	.000	.883	.881

PM PEAK HOUR	23rd Street Southbound					Macdonald Avenue Westbound					23rd Street Northbound					Macdonald Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	0	0	0	0	0	0	102	52	0	154	43	297	41	0	381	44	104	0	0	148	683
17:00	0	0	0	0	0	0	85	53	0	138	39	290	45	0	374	38	127	0	0	165	677
17:15	0	0	0	0	0	0	93	46	0	139	36	287	37	0	360	37	112	0	0	149	648
17:30	0	0	0	0	0	0	101	49	0	150	44	272	42	0	358	37	115	0	0	152	660
Total Volume	0	0	0	0	0	0	381	200	0	581	162	1146	165	0	1473	156	458	0	0	614	2668
% App Total	0.0%	0.0%	0.0%	0.0%		0.0%	65.6%	34.4%	0.0%		11.0%	77.8%	11.2%	0.0%		25.4%	74.6%	0.0%	0.0%		
PHF	.000	.000	.000	.000	.000	.000	.934	.943	.000	.943	.920	.965	.917	.000	.967	.886	.902	.000	.000	.930	.977

ALL TRAFFIC DATA

City of Richmond
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7779-008 Hoffman Boulevard-I1-580 EB Off-Ramp-Cutti
Date : 11/18/2014

Unshifted Count = All Vehicles

	I1-580 EB Off-Ramp Southbound					Cutting Boulevard Westbound					Hoffman Boulevard Northbound					Cutting Boulevard Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	51	22	3	0	76	2	32	0	1	35	5	0	0	0	5	0	24	38	0	62	178	1
07:15	46	32	11	0	89	2	44	0	0	46	6	0	0	0	6	0	25	38	0	63	204	0
07:30	79	20	5	0	104	3	43	0	0	46	0	0	2	0	2	0	26	36	0	62	214	0
07:45	45	32	5	0	82	2	48	0	0	50	2	0	0	0	2	0	38	39	0	77	211	0
Total	221	106	24	0	351	9	167	0	1	177	13	0	2	0	15	0	113	151	0	264	807	1
08:00	45	34	6	0	85	4	57	0	0	61	5	0	3	0	8	0	45	42	0	87	241	0
08:15	42	30	5	0	77	4	60	0	0	64	5	0	2	0	7	0	59	39	0	98	246	0
08:30	55	25	2	0	82	3	55	0	0	58	7	0	1	0	8	0	60	34	0	94	242	0
08:45	62	30	4	0	96	5	48	0	0	53	5	0	3	0	8	0	27	33	0	60	217	0
Total	204	119	17	0	340	16	220	0	0	236	22	0	9	0	31	0	191	148	0	339	946	0
16:00	40	20	3	0	63	4	41	0	0	45	7	0	1	0	8	0	35	34	0	69	185	0
16:15	48	14	4	0	66	6	31	0	0	37	10	0	1	0	11	0	28	31	0	59	173	0
16:30	56	19	9	0	84	3	39	0	0	42	13	0	0	0	13	0	48	36	0	84	223	0
16:45	72	13	3	0	88	3	31	0	0	34	7	0	0	0	7	0	41	21	0	62	191	0
Total	216	66	19	0	301	16	142	0	0	158	37	0	2	0	39	0	152	122	0	274	772	0
17:00	67	12	2	0	81	4	31	0	1	36	5	0	2	0	7	0	48	31	0	79	203	1
17:15	47	19	4	0	70	5	29	0	0	34	10	0	3	0	13	0	37	14	0	51	168	0
17:30	52	11	3	0	66	1	30	0	0	31	3	0	3	0	6	0	26	25	0	51	154	0
17:45	60	11	4	0	75	3	28	0	0	31	1	0	0	0	1	0	23	20	0	43	150	0
Total	226	53	13	0	292	13	118	0	1	132	19	0	8	0	27	0	134	90	0	224	675	1
Grand Total	867	344	73	0	1284	54	647	0	2	703	91	0	21	0	112	0	590	511	0	1101	3200	2
Apprch %	67.5%	26.8%	5.7%	0.0%		7.7%	92.0%	0.0%	0.3%		81.3%	0.0%	18.8%	0.0%		0.0%	53.6%	46.4%	0.0%			
Total %	27.1%	10.8%	2.3%	0.0%	40.1%	1.7%	20.2%	0.0%	0.1%	22.0%	2.8%	0.0%	0.7%	0.0%	3.5%	0.0%	18.4%	16.0%	0.0%	34.4%	100.0%	

ALL TRAFFIC DATA

City of Richmond
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7779-008 Hoffman Boulevard-I1-580 EB Off-Ramp-Cutti
Date : 11/18/2014

Unshifted Count = All Vehicles

AM PEAK HOUR	I1-580 EB Off-Ramp Southbound					Cutting Boulevard Westbound					Hoffman Boulevard Northbound					Cutting Boulevard Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
08:00	45	34	6	0	85	4	57	0	0	61	5	0	3	0	8	0	45	42	0	87	241
08:15	42	30	5	0	77	4	60	0	0	64	5	0	2	0	7	0	59	39	0	98	246
08:30	55	25	2	0	82	3	55	0	0	58	7	0	1	0	8	0	60	34	0	94	242
08:45	62	30	4	0	96	5	48	0	0	53	5	0	3	0	8	0	27	33	0	60	217
Total Volume	204	119	17	0	340	16	220	0	0	236	22	0	9	0	31	0	191	148	0	339	946
% App Total	60.0%	35.0%	5.0%	0.0%		6.8%	93.2%	0.0%	0.0%		71.0%	0.0%	29.0%	0.0%		0.0%	56.3%	43.7%	0.0%		
PHF	.823	.875	.708	.000	.885	.800	.917	.000	.000	.922	.786	.000	.750	.000	.969	.000	.796	.881	.000	.865	.961

PM PEAK HOUR	I1-580 EB Off-Ramp Southbound					Cutting Boulevard Westbound					Hoffman Boulevard Northbound					Cutting Boulevard Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	48	14	4	0	66	6	31	0	0	37	10	0	1	0	11	0	28	31	0	59	173
16:30	56	19	9	0	84	3	39	0	0	42	13	0	0	0	13	0	48	36	0	84	223
16:45	72	13	3	0	88	3	31	0	0	34	7	0	0	0	7	0	41	21	0	62	191
17:00	67	12	2	0	81	4	31	0	1	36	5	0	2	0	7	0	48	31	0	79	203
Total Volume	243	58	18	0	319	16	132	0	1	149	35	0	3	0	38	0	165	119	0	284	790
% App Total	76.2%	18.2%	5.6%	0.0%		10.7%	88.6%	0.0%	0.7%		92.1%	0.0%	7.9%	0.0%		0.0%	58.1%	41.9%	0.0%		
PHF	.844	.763	.500	.000	.906	.667	.846	.000	.250	.887	.673	.000	.375	.000	.731	.000	.859	.826	.000	.845	.886

ALL TRAFFIC DATA

City of Richmond
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7779-007 I-580 WB Ramps-Cutting Boulevard.ppd
Date : 11/18/2014

Unshifted Count = All Vehicles

	I-580 WB On-Ramp Southbound					Cutting Boulevard Westbound					I-580 WB Off-Ramp Northbound					Cutting Boulevard Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	0	0	0	0	0	0	26	224	0	250	11	0	35	0	46	28	40	0	0	68	364	0
07:15	0	0	0	0	0	0	20	231	0	251	27	0	28	0	55	44	38	0	0	82	388	0
07:30	0	0	0	0	0	0	25	173	0	198	19	0	34	0	53	39	63	0	0	102	353	0
07:45	0	0	0	0	0	0	34	133	0	167	18	0	43	0	61	18	59	0	0	77	305	0
Total	0	0	0	0	0	0	105	761	0	866	75	0	140	0	215	129	200	0	0	329	1410	0
08:00	0	0	0	0	0	0	36	119	0	155	23	0	27	0	50	25	70	0	0	95	300	0
08:15	0	0	0	0	0	0	49	113	0	162	16	0	52	0	68	25	73	0	0	98	328	0
08:30	0	0	0	0	0	0	35	106	0	141	22	0	41	0	63	17	96	0	0	113	317	0
08:45	0	0	0	0	0	0	39	100	1	140	19	0	43	0	62	19	76	0	0	95	297	1
Total	0	0	0	0	0	0	159	438	1	598	80	0	163	0	243	86	315	0	0	401	1242	1
16:00	0	0	0	0	0	0	25	64	0	89	17	0	15	0	32	1	73	0	0	74	195	0
16:15	0	0	0	0	0	0	22	60	0	82	18	0	9	0	27	1	79	0	0	80	189	0
16:30	0	0	0	0	0	0	31	61	0	92	10	0	8	0	18	0	108	0	0	108	218	0
16:45	0	0	0	0	0	0	18	57	0	75	17	0	7	0	24	1	104	0	0	105	204	0
Total	0	0	0	0	0	0	96	242	0	338	62	0	39	0	101	3	364	0	0	367	806	0
17:00	0	0	0	0	0	0	26	85	0	111	10	0	20	0	30	2	122	0	0	124	265	0
17:15	0	0	0	0	0	0	21	61	0	82	12	1	6	0	19	1	86	0	0	87	188	0
17:30	0	0	0	0	0	0	20	71	1	92	10	0	15	0	25	0	75	0	0	75	192	1
17:45	0	0	0	0	0	0	22	46	0	68	12	0	11	0	23	3	78	0	0	81	172	0
Total	0	0	0	0	0	0	89	263	1	353	44	1	52	0	97	6	361	0	0	367	817	1
Grand Total	0	0	0	0	0	0	449	1704	2	2155	261	1	394	0	656	224	1240	0	0	1464	4275	2
Apprch %	0.0%	0.0%	0.0%	0.0%		0.0%	20.8%	79.1%	0.1%		39.8%	0.2%	60.1%	0.0%		15.3%	84.7%	0.0%	0.0%			
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	10.5%	39.9%	0.0%	50.4%	6.1%	0.0%	9.2%	0.0%	15.3%	5.2%	29.0%	0.0%	0.0%	34.2%	100.0%	

ALL TRAFFIC DATA

City of Richmond
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7779-007 I-580 WB Ramps-Cutting Boulevard.ppd
Date : 11/18/2014

Unshifted Count = All Vehicles

AM PEAK HOUR	I-580 WB On-Ramp Southbound					Cutting Boulevard Westbound					I-580 WB Off-Ramp Northbound					Cutting Boulevard Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:00 to 08:00																					
Peak Hour For Entire Intersection Begins at 07:00																					
07:00	0	0	0	0	0	0	26	224	0	250	11	0	35	0	46	28	40	0	0	68	364
07:15	0	0	0	0	0	0	20	231	0	251	27	0	28	0	55	44	38	0	0	82	388
07:30	0	0	0	0	0	0	25	173	0	198	19	0	34	0	53	39	63	0	0	102	353
07:45	0	0	0	0	0	0	34	133	0	167	18	0	43	0	61	18	59	0	0	77	305
Total Volume	0	0	0	0	0	0	105	761	0	866	75	0	140	0	215	129	200	0	0	329	1410
% App Total	0.0%	0.0%	0.0%	0.0%		0.0%	12.1%	87.9%	0.0%		34.9%	0.0%	65.1%	0.0%		39.2%	60.8%	0.0%	0.0%		
PHF	.000	.000	.000	.000	.000	.000	.772	.824	.000	.863	.694	.000	.814	.000	.881	.733	.794	.000	.000	.806	.909

PM PEAK HOUR	I-580 WB On-Ramp Southbound					Cutting Boulevard Westbound					I-580 WB Off-Ramp Northbound					Cutting Boulevard Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	0	0	0	0	0	0	22	60	0	82	18	0	9	0	27	1	79	0	0	80	189
16:30	0	0	0	0	0	0	31	61	0	92	10	0	8	0	18	0	108	0	0	108	218
16:45	0	0	0	0	0	0	18	57	0	75	17	0	7	0	24	1	104	0	0	105	204
17:00	0	0	0	0	0	0	26	85	0	111	10	0	20	0	30	2	122	0	0	124	265
Total Volume	0	0	0	0	0	0	97	263	0	360	55	0	44	0	99	4	413	0	0	417	876
% App Total	0.0%	0.0%	0.0%	0.0%		0.0%	26.9%	73.1%	0.0%		55.6%	0.0%	44.4%	0.0%		1.0%	99.0%	0.0%	0.0%		
PHF	.000	.000	.000	.000	.000	.000	.782	.774	.000	.811	.764	.000	.550	.000	.825	.500	.846	.000	.000	.841	.826

ALL TRAFFIC DATA

City of Richmond
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7779-006 Carlson Boulevard-Cutting Boulevard.ppd
Date : 11/18/2014

Unshifted Count = All Vehicles

	Carlson Boulevard Southbound					Cutting Boulevard Westbound					Carlson Boulevard Northbound					Cutting Boulevard Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	6	48	34	0	88	0	150	5	1	156	7	15	4	0	26	8	67	17	0	92	362	1
07:15	4	87	41	0	132	4	147	5	0	156	11	26	1	1	39	7	96	22	0	125	452	1
07:30	8	132	19	0	159	5	130	4	1	140	9	17	0	1	27	7	129	61	0	197	523	2
07:45	6	129	16	0	151	4	124	17	1	146	33	47	2	0	82	17	148	87	0	252	631	1
Total	24	396	110	0	530	13	551	31	3	598	60	105	7	2	174	39	440	187	0	666	1968	5
08:00	32	113	27	0	172	3	156	23	0	182	31	55	5	0	91	14	169	111	0	294	739	0
08:15	42	76	27	0	145	5	172	23	0	200	39	58	4	0	101	11	191	108	0	310	756	0
08:30	22	65	26	0	113	4	207	24	0	235	33	44	4	0	81	13	185	107	0	305	734	0
08:45	13	67	19	0	99	4	115	13	0	132	18	40	2	0	60	12	151	155	0	318	609	0
Total	109	321	99	0	529	16	650	83	0	749	121	197	15	0	333	50	696	481	0	1227	2838	0
16:00	10	31	13	0	54	1	140	26	0	167	33	92	6	0	131	28	199	38	0	265	617	0
16:15	10	44	16	0	70	0	113	23	1	137	24	87	2	1	114	24	177	33	0	234	555	2
16:30	17	37	19	0	73	1	131	26	0	158	32	85	5	0	122	31	182	33	0	246	599	0
16:45	9	43	18	0	70	0	141	20	0	161	26	79	3	0	108	25	179	26	0	230	569	0
Total	46	155	66	0	267	2	525	95	1	623	115	343	16	1	475	108	737	130	0	975	2340	2
17:00	13	78	19	0	110	2	107	18	0	127	25	82	7	1	115	26	185	32	0	243	595	1
17:15	13	44	28	0	85	1	133	26	0	160	32	100	7	1	140	25	215	30	0	270	655	1
17:30	9	43	21	0	73	1	118	22	0	141	25	94	4	0	123	35	194	24	0	253	590	0
17:45	10	59	22	0	91	3	127	18	0	148	24	75	1	1	101	30	158	36	0	224	564	1
Total	45	224	90	0	359	7	485	84	0	576	106	351	19	3	479	116	752	122	0	990	2404	3
Grand Total	224	1096	365	0	1685	38	2211	293	4	2546	402	996	57	6	1461	313	2625	920	0	3858	9550	10
Apprch %	13.3%	65.0%	21.7%	0.0%		1.5%	86.8%	11.5%	0.2%		27.5%	68.2%	3.9%	0.4%		8.1%	68.0%	23.8%	0.0%			
Total %	2.3%	11.5%	3.8%	0.0%	17.6%	0.4%	23.2%	3.1%	0.0%	26.7%	4.2%	10.4%	0.6%	0.1%	15.3%	3.3%	27.5%	9.6%	0.0%	40.4%	100.0%	

ALL TRAFFIC DATA

City of Richmond
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7779-006 Carlson Boulevard-Cutting Boulevard.ppd
Date : 11/18/2014

Unshifted Count = All Vehicles

AM PEAK HOUR	Carlson Boulevard Southbound					Cutting Boulevard Westbound					Carlson Boulevard Northbound					Cutting Boulevard Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
07:45	6	129	16	0	151	4	124	17	1	146	33	47	2	0	82	17	148	87	0	252	631
08:00	32	113	27	0	172	3	156	23	0	182	31	55	5	0	91	14	169	111	0	294	739
08:15	42	76	27	0	145	5	172	23	0	200	39	58	4	0	101	11	191	108	0	310	756
08:30	22	65	26	0	113	4	207	24	0	235	33	44	4	0	81	13	185	107	0	305	734
Total Volume	102	383	96	0	581	16	659	87	1	763	136	204	15	0	355	55	693	413	0	1161	2860
% App Total	17.6%	65.9%	16.5%	0.0%		2.1%	86.4%	11.4%	0.1%		38.3%	57.5%	4.2%	0.0%		4.7%	59.7%	35.6%	0.0%		
PHF	.607	.742	.889	.000	.844	.800	.796	.906	.250	.812	.872	.879	.750	.000	.879	.809	.907	.930	.000	.936	.946

PM PEAK HOUR	Carlson Boulevard Southbound					Cutting Boulevard Westbound					Carlson Boulevard Northbound					Cutting Boulevard Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	17	37	19	0	73	1	131	26	0	158	32	85	5	0	122	31	182	33	0	246	599
16:45	9	43	18	0	70	0	141	20	0	161	26	79	3	0	108	25	179	26	0	230	569
17:00	13	78	19	0	110	2	107	18	0	127	25	82	7	1	115	26	185	32	0	243	595
17:15	13	44	28	0	85	1	133	26	0	160	32	100	7	1	140	25	215	30	0	270	655
Total Volume	52	202	84	0	338	4	512	90	0	606	115	346	22	2	485	107	761	121	0	989	2418
% App Total	15.4%	59.8%	24.9%	0.0%		0.7%	84.5%	14.9%	0.0%		23.7%	71.3%	4.5%	0.4%		10.8%	76.9%	12.2%	0.0%		
PHF	.765	.647	.750	.000	.768	.500	.908	.865	.000	.941	.898	.865	.786	.500	.866	.863	.885	.917	.000	.916	.923

ALL TRAFFIC DATA

City of Richmond
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7779-005 I-80 WB Off-Ramp-Cutting Boulevard.ppd
Date : 11/18/2014

Unshifted Count = All Vehicles

	I-80 WB Off-Ramp Southbound					Cutting Boulevard Westbound					Northbound					Cutting Boulevard Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	278	0	132	0	410	0	54	0	0	54	0	0	0	0	0	0	104	0	0	104	568	0
07:15	261	0	128	0	389	0	47	0	0	47	0	0	0	0	0	0	132	0	0	132	568	0
07:30	262	0	120	0	382	0	74	0	0	74	0	0	0	0	0	0	159	0	0	159	615	0
07:45	174	0	109	0	283	0	81	0	0	81	0	0	0	0	0	0	183	0	0	183	547	0
Total	975	0	489	0	1464	0	256	0	0	256	0	0	0	0	0	0	578	0	0	578	2298	0
08:00	222	0	122	0	344	0	92	0	0	92	0	0	0	0	0	0	202	0	0	202	638	0
08:15	230	0	118	0	348	0	81	0	0	81	0	0	0	0	0	0	188	0	0	188	617	0
08:30	193	0	131	0	324	0	80	0	0	80	0	0	0	0	0	0	165	0	0	165	569	0
08:45	188	0	106	0	294	0	54	0	0	54	0	0	0	0	0	0	196	0	0	196	544	0
Total	833	0	477	0	1310	0	307	0	0	307	0	0	0	0	0	0	751	0	0	751	2368	0
16:00	132	0	95	0	227	0	81	0	0	81	0	0	0	0	0	0	200	0	0	200	508	0
16:15	107	0	80	0	187	0	77	0	0	77	0	0	0	0	0	0	215	0	0	215	479	0
16:30	111	0	106	0	217	0	100	0	0	100	0	0	0	0	0	0	180	0	0	180	497	0
16:45	130	0	103	0	233	0	87	0	0	87	0	0	0	0	0	0	192	0	0	192	512	0
Total	480	0	384	0	864	0	345	0	0	345	0	0	0	0	0	0	787	0	0	787	1996	0
17:00	105	0	100	0	205	0	80	0	0	80	0	0	0	0	0	0	200	0	0	200	485	0
17:15	112	0	100	0	212	0	71	0	0	71	0	0	0	0	0	0	184	0	0	184	467	0
17:30	122	0	117	0	239	0	83	0	0	83	0	0	0	0	0	0	212	0	1	213	535	1
17:45	115	0	73	0	188	0	81	0	0	81	0	0	0	0	0	0	171	0	0	171	440	0
Total	454	0	390	0	844	0	315	0	0	315	0	0	0	0	0	0	767	0	1	768	1927	1
Grand Total	2742	0	1740	0	4482	0	1223	0	0	1223	0	0	0	0	0	0	2883	0	1	2884	8589	1
Apprch %	61.2%	0.0%	38.8%	0.0%		0.0%	100.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	100.0%	0.0%	0.0%			
Total %	31.9%	0.0%	20.3%	0.0%	52.2%	0.0%	14.2%	0.0%	0.0%	14.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	33.6%	0.0%	0.0%	33.6%	100.0%	

ALL TRAFFIC DATA

City of Richmond
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7779-005 I-80 WB Off-Ramp-Cutting Boulevard.ppd
Date : 11/18/2014

Unshifted Count = All Vehicles

AM PEAK HOUR	I-80 WB Off-Ramp Southbound					Cutting Boulevard Westbound					Northbound					Cutting Boulevard Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
07:30	262	0	120	0	382	0	74	0	0	74	0	0	0	0	0	0	159	0	0	159	615
07:45	174	0	109	0	283	0	81	0	0	81	0	0	0	0	0	0	183	0	0	183	547
08:00	222	0	122	0	344	0	92	0	0	92	0	0	0	0	0	0	202	0	0	202	638
08:15	230	0	118	0	348	0	81	0	0	81	0	0	0	0	0	0	188	0	0	188	617
Total Volume	888	0	469	0	1357	0	328	0	0	328	0	0	0	0	0	0	732	0	0	732	2417
% App Total	65.4%	0.0%	34.6%	0.0%		0.0%	100.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	100.0%	0.0%	0.0%		
PHF	.847	.000	.961	.000	.888	.000	.891	.000	.000	.891	.000	.000	.000	.000	.000	.000	.906	.000	.000	.906	.947

PM PEAK HOUR	I-80 WB Off-Ramp Southbound					Cutting Boulevard Westbound					Northbound					Cutting Boulevard Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	130	0	103	0	233	0	87	0	0	87	0	0	0	0	0	0	192	0	0	192	512
17:00	105	0	100	0	205	0	80	0	0	80	0	0	0	0	0	0	200	0	0	200	485
17:15	112	0	100	0	212	0	71	0	0	71	0	0	0	0	0	0	184	0	0	184	467
17:30	122	0	117	0	239	0	83	0	0	83	0	0	0	0	0	0	212	0	1	213	535
Total Volume	469	0	420	0	889	0	321	0	0	321	0	0	0	0	0	0	788	0	1	789	1999
% App Total	52.8%	0.0%	47.2%	0.0%		0.0%	100.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	99.9%	0.0%	0.1%		
PHF	.902	.000	.897	.000	.930	.000	.922	.000	.000	.922	.000	.000	.000	.000	.000	.000	.929	.000	.250	.926	.934

ALL TRAFFIC DATA

City of Richmond
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7779-011 I-80 Ramps-Cutting Boulevard.ppd
Date : 11/18/2014

Unshifted Count = All Vehicles

	I-80 Ramps Southbound					Cutting Boulevard Westbound					Northbound					Cutting Boulevard Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	48	0	13	0	61	0	41	5	0	46	0	0	0	0	0	0	386	0	0	386	493	0
07:15	65	0	7	0	72	0	39	4	0	43	0	0	0	0	0	0	389	0	0	389	504	0
07:30	61	0	10	0	71	0	62	8	0	70	0	0	0	0	0	1	424	0	0	425	566	0
07:45	95	0	10	0	105	0	73	4	0	77	0	0	0	0	0	1	358	0	0	359	541	0
Total	269	0	40	0	309	0	215	21	0	236	0	0	0	0	0	2	1557	0	0	1559	2104	0
08:00	82	0	15	0	97	0	75	4	0	79	0	0	0	0	0	1	418	0	0	419	595	0
08:15	53	0	12	0	65	0	72	6	0	78	0	0	0	0	0	1	422	0	0	423	566	0
08:30	46	0	11	0	57	0	68	8	0	76	0	0	0	0	0	0	354	0	0	354	487	0
08:45	32	0	4	0	36	0	50	4	0	54	0	0	0	0	0	1	376	0	0	377	467	0
Total	213	0	42	0	255	0	265	22	0	287	0	0	0	0	0	3	1570	0	0	1573	2115	0
16:00	17	0	0	0	17	0	82	22	0	104	0	0	0	0	0	0	332	0	0	332	453	0
16:15	10	0	0	0	10	0	76	18	0	94	0	0	0	0	0	0	316	0	0	316	420	0
16:30	16	0	1	0	17	0	98	20	0	118	0	0	0	0	0	1	283	0	0	284	419	0
16:45	13	0	0	0	13	0	87	19	0	106	0	0	0	0	0	1	322	0	0	323	442	0
Total	56	0	1	0	57	0	343	79	0	422	0	0	0	0	0	2	1253	0	0	1255	1734	0
17:00	15	0	1	0	16	0	85	26	0	111	0	0	0	0	0	1	302	0	0	303	430	0
17:15	16	0	1	0	17	0	71	28	0	99	0	0	0	0	0	1	292	0	0	293	409	0
17:30	15	0	1	0	16	0	78	26	0	104	0	0	0	0	0	3	335	0	0	338	458	0
17:45	11	0	1	0	12	0	80	20	0	100	0	0	0	0	0	0	287	0	0	287	399	0
Total	57	0	4	0	61	0	314	100	0	414	0	0	0	0	0	5	1216	0	0	1221	1696	0
Grand Total	595	0	87	0	682	0	1137	222	0	1359	0	0	0	0	0	12	5596	0	0	5608	7649	0
Apprch %	87.2%	0.0%	12.8%	0.0%		0.0%	83.7%	16.3%	0.0%		0.0%	0.0%	0.0%	0.0%		0.2%	99.8%	0.0%	0.0%			
Total %	7.8%	0.0%	1.1%	0.0%	8.9%	0.0%	14.9%	2.9%	0.0%	17.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	73.2%	0.0%	0.0%	73.3%	100.0%	

ALL TRAFFIC DATA

City of Richmond
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7779-011 I-80 Ramps-Cutting Boulevard.ppd
Date : 11/18/2014

Unshifted Count = All Vehicles

AM PEAK HOUR	I-80 Ramps Southbound					Cutting Boulevard Westbound					Northbound					Cutting Boulevard Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
07:30	61	0	10	0	71	0	62	8	0	70	0	0	0	0	0	1	424	0	0	425	566
07:45	95	0	10	0	105	0	73	4	0	77	0	0	0	0	0	1	358	0	0	359	541
08:00	82	0	15	0	97	0	75	4	0	79	0	0	0	0	0	1	418	0	0	419	595
08:15	53	0	12	0	65	0	72	6	0	78	0	0	0	0	0	1	422	0	0	423	566
Total Volume	291	0	47	0	338	0	282	22	0	304	0	0	0	0	0	4	1622	0	0	1626	2268
% App Total	86.1%	0.0%	13.9%	0.0%		0.0%	92.8%	7.2%	0.0%		0.0%	0.0%	0.0%	0.0%		0.2%	99.8%	0.0%	0.0%		
PHF	.766	.000	.783	.000	.805	.000	.940	.688	.000	.962	.000	.000	.000	.000	.000	1.000	.956	.000	.000	.956	.953

PM PEAK HOUR	I-80 Ramps Southbound					Cutting Boulevard Westbound					Northbound					Cutting Boulevard Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:45 to 17:45																					
Peak Hour For Entire Intersection Begins at 16:45																					
16:45	13	0	0	0	13	0	87	19	0	106	0	0	0	0	0	1	322	0	0	323	442
17:00	15	0	1	0	16	0	85	26	0	111	0	0	0	0	0	1	302	0	0	303	430
17:15	16	0	1	0	17	0	71	28	0	99	0	0	0	0	0	1	292	0	0	293	409
17:30	15	0	1	0	16	0	78	26	0	104	0	0	0	0	0	3	335	0	0	338	458
Total Volume	59	0	3	0	62	0	321	99	0	420	0	0	0	0	0	6	1251	0	0	1257	1739
% App Total	95.2%	0.0%	4.8%	0.0%		0.0%	76.4%	23.6%	0.0%		0.0%	0.0%	0.0%	0.0%		0.5%	99.5%	0.0%	0.0%		
PHF	.922	.000	.750	.000	.912	.000	.922	.884	.000	.946	.000	.000	.000	.000	.000	.500	.934	.000	.000	.930	.949

ALL TRAFFIC DATA

City of Richmond
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7779-004 I-80 EB Ramps-Cutting Boulevard.ppd
Date : 11/18/2014

Unshifted Count = All Vehicles

	I-80 EB On-Ramp Southbound					Cutting Boulevard Westbound					I-80 EB On-Ramp Northbound					Cutting Boulevard Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	0	0	0	0	0	0	51	58	0	109	0	0	0	0	0	2	372	55	0	429	538	0
07:15	0	0	0	0	0	0	46	89	0	135	0	0	0	0	0	0	403	51	0	454	589	0
07:30	0	0	0	0	0	0	63	102	0	165	0	0	0	0	0	2	409	73	0	484	649	0
07:45	0	0	0	0	0	0	70	115	0	185	0	0	0	0	0	1	373	84	0	458	643	0
Total	0	0	0	0	0	0	230	364	0	594	0	0	0	0	0	5	1557	263	0	1825	2419	0
08:00	0	0	0	0	0	0	84	113	0	197	0	0	0	0	0	3	400	103	0	506	703	0
08:15	0	0	0	0	0	0	75	115	0	190	0	0	0	0	0	4	367	93	0	464	654	0
08:30	0	0	0	0	0	0	78	87	0	165	0	0	0	0	0	1	311	77	0	389	554	0
08:45	0	0	0	0	0	0	53	92	0	145	0	0	0	0	0	1	316	95	0	412	557	0
Total	0	0	0	0	0	0	290	407	0	697	0	0	0	0	0	9	1394	368	0	1771	2468	0
16:00	0	0	0	0	0	0	104	180	0	284	0	0	0	0	0	1	239	106	0	346	630	0
16:15	0	0	0	0	0	0	95	177	0	272	0	0	0	0	0	1	195	129	0	325	597	0
16:30	0	0	0	0	0	0	117	192	0	309	0	0	0	0	0	4	201	94	0	299	608	0
16:45	0	0	0	0	0	0	107	162	0	269	0	0	0	0	0	2	230	95	0	327	596	0
Total	0	0	0	0	0	0	423	711	0	1134	0	0	0	0	0	8	865	424	0	1297	2431	0
17:00	0	0	0	0	0	0	109	166	0	275	0	0	0	0	0	1	198	119	0	318	593	0
17:15	0	0	0	0	0	0	99	152	0	251	0	0	0	0	0	4	210	99	0	313	564	0
17:30	0	0	0	0	0	0	104	219	0	323	0	0	0	0	0	0	217	120	0	337	660	0
17:45	0	0	0	0	0	0	98	167	0	265	0	0	0	0	0	2	203	88	0	293	558	0
Total	0	0	0	0	0	0	410	704	0	1114	0	0	0	0	0	7	828	426	0	1261	2375	0
Grand Total	0	0	0	0	0	0	1353	2186	0	3539	0	0	0	0	0	29	4644	1481	0	6154	9693	0
Apprch %	0.0%	0.0%	0.0%	0.0%		0.0%	38.2%	61.8%	0.0%		0.0%	0.0%	0.0%	0.0%		0.5%	75.5%	24.1%	0.0%			
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	14.0%	22.6%	0.0%	36.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	47.9%	15.3%	0.0%	63.5%	100.0%	

ALL TRAFFIC DATA

City of Richmond
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7779-004 I-80 EB Ramps-Cutting Boulevard.ppd
Date : 11/18/2014

Unshifted Count = All Vehicles

AM PEAK HOUR	I-80 EB On-Ramp Southbound					Cutting Boulevard Westbound					I-80 EB On-Ramp Northbound					Cutting Boulevard Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
07:30	0	0	0	0	0	0	63	102	0	165	0	0	0	0	0	2	409	73	0	484	649
07:45	0	0	0	0	0	0	70	115	0	185	0	0	0	0	0	1	373	84	0	458	643
08:00	0	0	0	0	0	0	84	113	0	197	0	0	0	0	0	3	400	103	0	506	703
08:15	0	0	0	0	0	0	75	115	0	190	0	0	0	0	0	4	367	93	0	464	654
Total Volume	0	0	0	0	0	0	292	445	0	737	0	0	0	0	0	10	1549	353	0	1912	2649
% App Total	0.0%	0.0%	0.0%	0.0%		0.0%	39.6%	60.4%	0.0%		0.0%	0.0%	0.0%	0.0%		0.5%	81.0%	18.5%	0.0%		
PHF	.000	.000	.000	.000	.000	.000	.869	.967	.000	.935	.000	.000	.000	.000	.000	.625	.947	.857	.000	.945	.942

PM PEAK HOUR	I-80 EB On-Ramp Southbound					Cutting Boulevard Westbound					I-80 EB On-Ramp Northbound					Cutting Boulevard Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:00 to 17:00																					
Peak Hour For Entire Intersection Begins at 16:00																					
16:00	0	0	0	0	0	0	104	180	0	284	0	0	0	0	0	1	239	106	0	346	630
16:15	0	0	0	0	0	0	95	177	0	272	0	0	0	0	0	1	195	129	0	325	597
16:30	0	0	0	0	0	0	117	192	0	309	0	0	0	0	0	4	201	94	0	299	608
16:45	0	0	0	0	0	0	107	162	0	269	0	0	0	0	0	2	230	95	0	327	596
Total Volume	0	0	0	0	0	0	423	711	0	1134	0	0	0	0	0	8	865	424	0	1297	2431
% App Total	0.0%	0.0%	0.0%	0.0%		0.0%	37.3%	62.7%	0.0%		0.0%	0.0%	0.0%	0.0%		0.6%	66.7%	32.7%	0.0%		
PHF	.000	.000	.000	.000	.000	.000	.904	.926	.000	.917	.000	.000	.000	.000	.000	.500	.905	.822	.000	.937	.965

ALL TRAFFIC DATA

City of Richmond
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7779-003 San Pablo Avenue-Cutting Boulevard.ppd
Date : 11/18/2014

Unshifted Count = All Vehicles

	San Pablo Avenue Southbound					Cutting Boulevard Westbound					San Pablo Avenue Northbound					Cutting Boulevard Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	0	108	17	0	125	15	35	8	0	58	49	48	0	0	97	36	7	269	0	312	592	0
07:15	0	125	17	0	142	29	60	14	0	103	48	38	0	0	86	49	7	256	0	312	643	0
07:30	0	202	32	0	234	23	64	12	0	99	72	65	0	0	137	48	2	233	0	283	753	0
07:45	0	167	19	0	186	19	65	23	0	107	88	63	0	0	151	37	5	201	0	243	687	0
Total	0	602	85	0	687	86	224	57	0	367	257	214	0	0	471	170	21	959	0	1150	2675	0
08:00	0	136	34	0	170	31	63	8	0	102	105	102	0	0	207	36	9	251	0	296	775	0
08:15	0	141	18	0	159	26	58	15	0	99	112	79	0	0	191	54	9	210	0	273	722	0
08:30	0	144	29	0	173	25	52	19	0	96	81	94	0	0	175	55	5	166	0	226	670	0
08:45	0	97	23	0	120	32	71	16	0	119	63	88	0	0	151	51	10	223	0	284	674	0
Total	0	518	104	0	622	114	244	58	0	416	361	363	0	0	724	196	33	850	0	1079	2841	0
16:00	0	116	27	0	143	22	92	21	0	135	128	172	0	0	300	67	7	155	0	229	807	0
16:15	0	135	39	0	174	17	89	21	0	127	124	199	0	0	323	51	6	132	0	189	813	0
16:30	0	124	38	0	162	25	102	29	0	156	134	206	0	0	340	45	7	126	0	178	836	0
16:45	0	131	36	0	167	24	89	24	0	137	111	233	0	0	344	43	6	153	0	202	850	0
Total	0	506	140	0	646	88	372	95	0	555	497	810	0	0	1307	206	26	566	0	798	3306	0
17:00	0	120	39	0	159	21	89	17	0	127	104	187	0	0	291	42	5	132	0	179	756	0
17:15	0	111	29	0	140	23	79	24	0	126	119	228	0	0	347	41	5	140	0	186	799	0
17:30	0	130	32	0	162	29	140	15	0	184	125	224	0	0	349	51	6	135	0	192	887	0
17:45	0	114	28	0	142	23	94	23	0	140	107	222	0	0	329	41	7	134	0	182	793	0
Total	0	475	128	0	603	96	402	79	0	577	455	861	0	0	1316	175	23	541	0	739	3235	0
Grand Total	0	2101	457	0	2558	384	1242	289	0	1915	1570	2248	0	0	3818	747	103	2916	0	3766	12057	0
Apprch %	0.0%	82.1%	17.9%	0.0%		20.1%	64.9%	15.1%	0.0%		41.1%	58.9%	0.0%	0.0%		19.8%	2.7%	77.4%	0.0%			
Total %	0.0%	17.4%	3.8%	0.0%	21.2%	3.2%	10.3%	2.4%	0.0%	15.9%	13.0%	18.6%	0.0%	0.0%	31.7%	6.2%	0.9%	24.2%	0.0%	31.2%	100.0%	

ALL TRAFFIC DATA

City of Richmond
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7779-003 San Pablo Avenue-Cutting Boulevard.ppd
Date : 11/18/2014

Unshifted Count = All Vehicles

AM PEAK HOUR	San Pablo Avenue Southbound					Cutting Boulevard Westbound					San Pablo Avenue Northbound					Cutting Boulevard Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
07:30	0	202	32	0	234	23	64	12	0	99	72	65	0	0	137	48	2	233	0	283	753
07:45	0	167	19	0	186	19	65	23	0	107	88	63	0	0	151	37	5	201	0	243	687
08:00	0	136	34	0	170	31	63	8	0	102	105	102	0	0	207	36	9	251	0	296	775
08:15	0	141	18	0	159	26	58	15	0	99	112	79	0	0	191	54	9	210	0	273	722
Total Volume	0	646	103	0	749	99	250	58	0	407	377	309	0	0	686	175	25	895	0	1095	2937
% App Total	0.0%	86.2%	13.8%	0.0%		24.3%	61.4%	14.3%	0.0%		55.0%	45.0%	0.0%	0.0%		16.0%	2.3%	81.7%	0.0%		
PHF	.000	.800	.757	.000	.800	.798	.962	.630	.000	.951	.842	.757	.000	.000	.829	.810	.694	.891	.000	.925	.947

PM PEAK HOUR	San Pablo Avenue Southbound					Cutting Boulevard Westbound					San Pablo Avenue Northbound					Cutting Boulevard Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:00 to 17:00																					
Peak Hour For Entire Intersection Begins at 16:00																					
16:00	0	116	27	0	143	22	92	21	0	135	128	172	0	0	300	67	7	155	0	229	807
16:15	0	135	39	0	174	17	89	21	0	127	124	199	0	0	323	51	6	132	0	189	813
16:30	0	124	38	0	162	25	102	29	0	156	134	206	0	0	340	45	7	126	0	178	836
16:45	0	131	36	0	167	24	89	24	0	137	111	233	0	0	344	43	6	153	0	202	850
Total Volume	0	506	140	0	646	88	372	95	0	555	497	810	0	0	1307	206	26	566	0	798	3306
% App Total	0.0%	78.3%	21.7%	0.0%		15.9%	67.0%	17.1%	0.0%		38.0%	62.0%	0.0%	0.0%		25.8%	3.3%	70.9%	0.0%		
PHF	.000	.937	.897	.000	.928	.880	.912	.819	.000	.889	.927	.869	.000	.000	.950	.769	.929	.913	.000	.871	.972

ALL TRAFFIC DATA

City of Richmond
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7779-001 Carlson Boulevard-Central Avenue.ppd
Date : 11/18/2014

Unshifted Count = All Vehicles

	Carlson Boulevard Southbound					Central Avenue Westbound					Carlson Boulevard Northbound					Central Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	15	90	12	0	117	0	66	7	1	74	17	10	0	0	27	0	61	39	0	100	318	1
07:15	22	162	12	1	197	3	77	5	1	86	31	24	3	0	58	7	61	43	0	111	452	2
07:30	26	253	24	1	304	2	78	17	0	97	24	27	1	0	52	4	70	47	0	121	574	1
07:45	41	216	16	1	274	4	103	14	0	121	26	27	1	0	54	6	106	50	0	162	611	1
Total	104	721	64	3	892	9	324	43	2	378	98	88	5	0	191	17	298	179	0	494	1955	5
08:00	39	228	28	0	295	3	114	18	2	137	34	46	1	0	81	4	103	48	0	155	668	2
08:15	39	226	31	2	298	5	96	21	0	122	47	40	4	0	91	3	69	45	0	117	628	2
08:30	25	201	37	2	265	6	116	14	1	137	42	46	8	0	96	4	74	50	0	128	626	3
08:45	38	191	25	2	256	0	95	6	0	101	38	44	2	0	84	5	71	56	0	132	573	2
Total	141	846	121	6	1114	14	421	59	3	497	161	176	15	0	352	16	317	199	0	532	2495	9
16:00	15	71	9	0	95	5	93	28	0	126	53	103	10	1	167	13	135	67	0	215	603	1
16:15	12	50	2	1	65	0	70	18	1	89	39	116	5	0	160	11	121	72	0	204	518	2
16:30	15	70	6	1	92	0	84	18	0	102	43	119	6	1	169	19	137	89	0	245	608	2
16:45	11	76	4	0	91	2	80	20	0	102	44	111	8	0	163	14	107	85	0	206	562	0
Total	53	267	21	2	343	7	327	84	1	419	179	449	29	2	659	57	500	313	0	870	2291	5
17:00	11	71	9	2	93	5	66	23	1	95	60	150	13	0	223	9	98	74	0	181	592	3
17:15	18	73	9	1	101	3	90	27	1	121	48	129	5	0	182	15	139	62	0	216	620	2
17:30	11	56	6	2	75	4	86	29	0	119	47	118	8	0	173	10	112	82	0	204	571	2
17:45	14	66	7	1	88	2	78	21	2	103	50	127	10	0	187	13	127	88	0	228	606	3
Total	54	266	31	6	357	14	320	100	4	438	205	524	36	0	765	47	476	306	0	829	2389	10
Grand Total	352	2100	237	17	2706	44	1392	286	10	1732	643	1237	85	2	1967	137	1591	997	0	2725	9130	29
Apprch %	13.0%	77.6%	8.8%	0.6%		2.5%	80.4%	16.5%	0.6%		32.7%	62.9%	4.3%	0.1%		5.0%	58.4%	36.6%	0.0%			
Total %	3.9%	23.0%	2.6%	0.2%	29.6%	0.5%	15.2%	3.1%	0.1%	19.0%	7.0%	13.5%	0.9%	0.0%	21.5%	1.5%	17.4%	10.9%	0.0%	29.8%	100.0%	

ALL TRAFFIC DATA

City of Richmond
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7779-001 Carlson Boulevard-Central Avenue.ppd
Date : 11/18/2014

Unshifted Count = All Vehicles

AM PEAK HOUR	Carlson Boulevard Southbound					Central Avenue Westbound					Carlson Boulevard Northbound					Central Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
07:45	41	216	16	1	274	4	103	14	0	121	26	27	1	0	54	6	106	50	0	162	611
08:00	39	228	28	0	295	3	114	18	2	137	34	46	1	0	81	4	103	48	0	155	668
08:15	39	226	31	2	298	5	96	21	0	122	47	40	4	0	91	3	69	45	0	117	628
08:30	25	201	37	2	265	6	116	14	1	137	42	46	8	0	96	4	74	50	0	128	626
Total Volume	144	871	112	5	1132	18	429	67	3	517	149	159	14	0	322	17	352	193	0	562	2533
% App Total	12.7%	76.9%	9.9%	0.4%		3.5%	83.0%	13.0%	0.6%		46.3%	49.4%	4.3%	0.0%		3.0%	62.6%	34.3%	0.0%		
PHF	.878	.955	.757	.625	.950	.750	.925	.798	.375	.943	.793	.864	.438	.000	.839	.708	.830	.965	.000	.867	.948

PM PEAK HOUR	Carlson Boulevard Southbound					Central Avenue Westbound					Carlson Boulevard Northbound					Central Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	11	71	9	2	93	5	66	23	1	95	60	150	13	0	223	9	98	74	0	181	592
17:15	18	73	9	1	101	3	90	27	1	121	48	129	5	0	182	15	139	62	0	216	620
17:30	11	56	6	2	75	4	86	29	0	119	47	118	8	0	173	10	112	82	0	204	571
17:45	14	66	7	1	88	2	78	21	2	103	50	127	10	0	187	13	127	88	0	228	606
Total Volume	54	266	31	6	357	14	320	100	4	438	205	524	36	0	765	47	476	306	0	829	2389
% App Total	15.1%	74.5%	8.7%	1.7%		3.2%	73.1%	22.8%	0.9%		26.8%	68.5%	4.7%	0.0%		5.7%	57.4%	36.9%	0.0%		
PHF	.750	.911	.861	.750	.884	.700	.889	.862	.500	.905	.854	.873	.692	.000	.858	.783	.856	.869	.000	.909	.963

ALL TRAFFIC DATA

City of Richmond
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7779-002 San Pablo Avenue-Fairmount Avenue.ppd
Date : 11/18/2014

Unshifted Count = All Vehicles

	San Pablo Avenue Southbound					Fairmount Avenue Westbound					San Pablo Avenue Northbound					Fairmount Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturn Total
07:00	6	142	0	0	148	12	12	3	0	27	0	33	18	0	51	0	7	1	0	8	234	0
07:15	7	239	1	1	248	23	25	8	0	56	0	39	13	1	53	0	29	9	0	38	395	2
07:30	17	278	2	1	298	20	24	8	0	52	7	53	18	0	78	0	44	29	0	73	501	1
07:45	18	267	1	0	286	27	17	6	0	50	9	75	13	0	97	0	58	35	0	93	526	0
Total	48	926	4	2	980	82	78	25	0	185	16	200	62	1	279	0	138	74	0	212	1656	3
08:00	17	249	2	0	268	38	39	12	0	89	5	74	13	0	92	1	51	27	0	79	528	0
08:15	34	244	1	1	280	25	43	9	0	77	2	60	11	1	74	0	50	24	0	74	505	2
08:30	21	226	3	1	251	23	47	14	0	84	10	84	14	2	110	3	51	30	0	84	529	3
08:45	24	225	1	2	252	35	31	8	0	74	4	82	19	1	106	2	51	16	0	69	501	3
Total	96	944	7	4	1051	121	160	43	0	324	21	300	57	4	382	6	203	97	0	306	2063	8
16:00	24	136	1	7	168	24	39	24	0	87	15	197	20	2	234	2	27	7	0	36	525	9
16:15	18	137	7	4	166	14	28	28	0	70	17	236	21	0	274	1	26	5	0	32	542	4
16:30	20	157	1	2	180	24	40	31	0	95	18	205	17	5	245	2	35	4	0	41	561	7
16:45	26	159	3	1	189	25	40	21	0	86	18	195	22	3	238	1	32	7	0	40	553	4
Total	88	589	12	14	703	87	147	104	0	338	68	833	80	10	991	6	120	23	0	149	2181	24
17:00	21	148	3	3	175	22	51	18	0	91	17	208	23	0	248	2	26	8	0	36	550	3
17:15	12	135	5	0	152	27	37	29	0	93	18	200	21	1	240	2	30	8	0	40	525	1
17:30	21	142	1	3	167	28	33	23	0	84	12	218	23	5	258	4	34	4	0	42	551	8
17:45	17	127	1	4	149	34	54	21	0	109	17	205	19	1	242	2	28	9	0	39	539	5
Total	71	552	10	10	643	111	175	91	0	377	64	831	86	7	988	10	118	29	0	157	2165	17
Grand Total	303	3011	33	30	3377	401	560	263	0	1224	169	2164	285	22	2640	22	579	223	0	824	8065	52
Apprch %	9.0%	89.2%	1.0%	0.9%		32.8%	45.8%	21.5%	0.0%		6.4%	82.0%	10.8%	0.8%		2.7%	70.3%	27.1%	0.0%			
Total %	3.8%	37.3%	0.4%	0.4%	41.9%	5.0%	6.9%	3.3%	0.0%	15.2%	2.1%	26.8%	3.5%	0.3%	32.7%	0.3%	7.2%	2.8%	0.0%	10.2%	100.0%	

ALL TRAFFIC DATA

City of Richmond
All Vehicles on Unshifted
Peds & Bikes on Bank 1
Heavy Trucks on Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 14-7779-002 San Pablo Avenue-Fairmount Avenue.ppd
Date : 11/18/2014

Unshifted Count = All Vehicles

AM PEAK HOUR	San Pablo Avenue Southbound					Fairmount Avenue Westbound					San Pablo Avenue Northbound					Fairmount Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
07:45	18	267	1	0	286	27	17	6	0	50	9	75	13	0	97	0	58	35	0	93	526
08:00	17	249	2	0	268	38	39	12	0	89	5	74	13	0	92	1	51	27	0	79	528
08:15	34	244	1	1	280	25	43	9	0	77	2	60	11	1	74	0	50	24	0	74	505
08:30	21	226	3	1	251	23	47	14	0	84	10	84	14	2	110	3	51	30	0	84	529
Total Volume	90	986	7	2	1085	113	146	41	0	300	26	293	51	3	373	4	210	116	0	330	2088
% App Total	8.3%	90.9%	0.6%	0.2%		37.7%	48.7%	13.7%	0.0%		7.0%	78.6%	13.7%	0.8%		1.2%	63.6%	35.2%	0.0%		
PHF	.662	.923	.583	.500	.948	.743	.777	.732	.000	.843	.650	.872	.911	.375	.848	.333	.905	.829	.000	.887	.987

PM PEAK HOUR	San Pablo Avenue Southbound					Fairmount Avenue Westbound					San Pablo Avenue Northbound					Fairmount Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	18	137	7	4	166	14	28	28	0	70	17	236	21	0	274	1	26	5	0	32	542
16:30	20	157	1	2	180	24	40	31	0	95	18	205	17	5	245	2	35	4	0	41	561
16:45	26	159	3	1	189	25	40	21	0	86	18	195	22	3	238	1	32	7	0	40	553
17:00	21	148	3	3	175	22	51	18	0	91	17	208	23	0	248	2	26	8	0	36	550
Total Volume	85	601	14	10	710	85	159	98	0	342	70	844	83	8	1005	6	119	24	0	149	2206
% App Total	12.0%	84.6%	2.0%	1.4%		24.9%	46.5%	28.7%	0.0%		7.0%	84.0%	8.3%	0.8%		4.0%	79.9%	16.1%	0.0%		
PHF	.817	.945	.500	.625	.939	.850	.779	.790	.000	.900	.972	.894	.902	.400	.917	.750	.850	.750	.000	.909	.983

ALL TRAFFIC DATA

City of Richmond
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 16-7080-032 22nd Street & Barrett Avenue
Date : 2/11/2016

Unshifted Count = All Vehicles & Uturns

	22nd Street Southbound					Barrett Avenue Westbound					22nd Street Northbound					Barrett Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	28	199	18	0	245	15	72	0	0	87	0	0	0	0	0	0	65	24	0	89	421	0
7:15	30	210	23	0	263	13	66	0	0	79	0	0	0	0	0	0	69	30	0	99	441	0
7:30	43	216	27	0	286	12	80	0	0	92	0	0	0	0	0	0	126	33	0	159	537	0
7:45	41	209	37	0	287	26	100	0	0	126	0	0	0	0	0	0	127	31	0	158	571	0
Total	142	834	105	0	1081	66	318	0	0	384	0	0	0	0	0	0	387	118	0	505	1970	0
8:00	39	192	34	0	265	18	110	0	0	128	0	0	0	0	0	0	140	34	0	174	567	0
8:15	47	197	28	0	272	25	128	0	0	153	0	0	0	0	0	0	111	33	0	144	569	0
8:30	43	172	29	0	244	22	123	0	0	145	0	0	0	0	0	0	107	31	0	138	527	0
8:45	31	164	30	0	225	25	102	0	0	127	0	0	0	0	0	0	96	21	0	117	469	0
Total	160	725	121	0	1006	90	463	0	0	553	0	0	0	0	0	0	454	119	0	573	2132	0
16:00	35	129	25	0	189	21	121	0	0	142	0	0	0	0	0	0	138	24	0	162	493	0
16:15	21	137	28	0	186	25	103	0	0	128	0	0	0	0	0	0	163	28	0	191	505	0
16:30	35	113	16	0	164	23	129	0	0	152	0	0	0	0	0	0	203	36	0	239	555	0
16:45	42	137	23	0	202	26	99	0	0	125	0	0	0	0	0	0	175	31	0	206	533	0
Total	133	516	92	0	741	95	452	0	0	547	0	0	0	0	0	0	679	119	0	798	2086	0
17:00	26	131	22	0	179	15	115	0	0	130	0	0	0	0	0	0	156	30	0	186	495	0
17:15	31	147	30	0	208	26	99	0	0	125	0	0	0	0	0	0	165	17	0	182	515	0
17:30	30	128	22	0	180	23	112	0	0	135	0	0	0	0	0	0	176	24	0	200	515	0
17:45	45	153	29	0	227	32	109	0	0	141	0	0	0	0	0	0	142	22	0	164	532	0
Total	132	559	103	0	794	96	435	0	0	531	0	0	0	0	0	0	639	93	0	732	2057	0
Grand Total	567	2634	421	0	3622	347	1668	0	0	2015	0	0	0	0	0	0	2159	449	0	2608	8245	0
Apprch %	15.7%	72.7%	11.6%	0.0%		17.2%	82.8%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	82.8%	17.2%	0.0%			
Total %	6.9%	31.9%	5.1%	0.0%	43.9%	4.2%	20.2%	0.0%	0.0%	24.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	26.2%	5.4%	0.0%	31.6%	100.0%	

AM PEAK HOUR	22nd Street Southbound					Barrett Avenue Westbound					22nd Street Northbound					Barrett Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:30 to 08:30																					
Peak Hour For Entire Intersection Begins at 07:30																					
7:30	43	216	27	0	286	12	80	0	0	92	0	0	0	0	0	0	126	33	0	159	537
7:45	41	209	37	0	287	26	100	0	0	126	0	0	0	0	0	0	127	31	0	158	571
8:00	39	192	34	0	265	18	110	0	0	128	0	0	0	0	0	0	140	34	0	174	567
8:15	47	197	28	0	272	25	128	0	0	153	0	0	0	0	0	0	111	33	0	144	569
Total Volume	170	814	126	0	1110	81	418	0	0	499	0	0	0	0	0	0	504	131	0	635	2244
% App Total	15.3%	73.3%	11.4%	0.0%		16.2%	83.8%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	79.4%	20.6%	0.0%		
PHF	.904	.942	.851	.000	.967	.779	.816	.000	.000	.815	.000	.000	.000	.000	.000	.000	.900	.963	.000	.912	.982

PM PEAK HOUR	22nd Street Southbound					Barrett Avenue Westbound					22nd Street Northbound					Barrett Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:00 to 17:00																					
Peak Hour For Entire Intersection Begins at 16:00																					
16:00	35	129	25	0	189	21	121	0	0	142	0	0	0	0	0	0	138	24	0	162	493
16:15	21	137	28	0	186	25	103	0	0	128	0	0	0	0	0	0	163	28	0	191	505
16:30	35	113	16	0	164	23	129	0	0	152	0	0	0	0	0	0	203	36	0	239	555
16:45	42	137	23	0	202	26	99	0	0	125	0	0	0	0	0	0	175	31	0	206	533
Total Volume	133	516	92	0	741	95	452	0	0	547	0	0	0	0	0	0	679	119	0	798	2086
% App Total	17.9%	69.6%	12.4%	0.0%		17.4%	82.6%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%		0.0%	85.1%	14.9%	0.0%		
PHF	.792	.942	.821	.000	.917	.913	.876	.000	.000	.900	.000	.000	.000	.000	.000	.000	.836	.826	.000	.835	.940

ALL TRAFFIC DATA

City of Richmond
(916) 771-8700
orders@atdtraffic.com

All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

File Name : 16-7080-033 23rd Street & Barrett Avenue
Date : 2/11/2016

Unshifted Count = All Vehicles & Uturns

	23rd Street Southbound					Barrett Avenue Westbound					23rd Street Northbound					Barrett Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	0	0	0	0	0	0	64	11	0	75	11	70	6	0	87	13	68	0	0	81	243	0
7:15	0	0	0	0	0	0	59	4	0	63	15	91	3	0	109	14	74	0	1	89	261	1
7:30	0	0	0	0	0	0	73	11	0	84	13	92	18	0	123	29	136	0	0	165	372	0
7:45	0	0	0	0	0	0	94	15	0	109	27	126	17	0	170	26	140	0	0	166	445	0
Total	0	0	0	0	0	0	290	41	0	331	66	379	44	0	489	82	418	0	1	501	1321	1
8:00	0	0	0	0	0	0	105	19	0	124	21	163	17	0	201	34	145	0	0	179	504	0
8:15	0	0	0	0	0	0	120	22	0	142	22	158	14	0	194	32	117	0	0	149	485	0
8:30	0	0	0	0	0	0	125	17	0	142	25	147	15	0	187	32	114	0	0	146	475	0
8:45	0	0	0	0	0	0	90	17	0	107	25	137	15	0	177	27	94	0	0	121	405	0
Total	0	0	0	0	0	0	440	75	0	515	93	605	61	0	759	125	470	0	0	595	1869	0
16:00	0	0	0	0	0	0	92	36	0	128	45	274	15	0	334	40	127	0	0	167	629	0
16:15	0	0	0	0	0	0	93	25	0	118	35	329	28	0	392	39	151	0	0	190	700	0
16:30	0	0	0	0	0	0	105	34	0	139	43	295	41	0	379	54	164	0	0	218	736	0
16:45	0	0	0	0	0	0	83	37	0	120	45	317	19	0	381	56	167	0	0	223	724	0
Total	0	0	0	0	0	0	373	132	0	505	168	1215	103	0	1486	189	609	0	0	798	2789	0
17:00	0	0	0	0	0	0	89	32	0	121	36	346	23	0	405	54	139	0	0	193	719	0
17:15	0	0	0	0	0	0	81	32	0	113	42	342	23	0	407	48	148	0	0	196	716	0
17:30	0	0	0	0	0	0	91	29	0	120	45	315	19	0	379	51	142	0	0	193	692	0
17:45	0	0	0	0	0	0	92	53	0	145	39	304	34	0	377	47	146	0	0	193	715	0
Total	0	0	0	0	0	0	353	146	0	499	162	1307	99	0	1568	200	575	0	0	775	2842	0
Grand Total	0	0	0	0	0	0	1456	394	0	1850	489	3506	307	0	4302	596	2072	0	1	2669	8821	1
Apprch %	0.0%	0.0%	0.0%	0.0%		0.0%	78.7%	21.3%	0.0%		11.4%	81.5%	7.1%	0.0%		22.3%	77.6%	0.0%	0.0%			
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	16.5%	4.5%	0.0%	21.0%	5.5%	39.7%	3.5%	0.0%	48.8%	6.8%	23.5%	0.0%	0.0%	30.3%	100.0%	

AM PEAK HOUR	23rd Street Southbound					Barrett Avenue Westbound					23rd Street Northbound					Barrett Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	0	0	0	0	0	0	94	15	0	109	27	126	17	0	170	26	140	0	0	166	445
8:00	0	0	0	0	0	0	105	19	0	124	21	163	17	0	201	34	145	0	0	179	504
8:15	0	0	0	0	0	0	120	22	0	142	22	158	14	0	194	32	117	0	0	149	485
8:30	0	0	0	0	0	0	125	17	0	142	25	147	15	0	187	32	114	0	0	146	475
Total Volume	0	0	0	0	0	0	444	73	0	517	95	594	63	0	752	124	516	0	0	640	1909
% App Total	0.0%	0.0%	0.0%	0.0%		0.0%	85.9%	14.1%	0.0%		12.6%	79.0%	8.4%	0.0%		19.4%	80.6%	0.0%	0.0%		
PHF	.000	.000	.000	.000	.000	.000	.888	.830	.000	.910	.880	.911	.926	.000	.935	.912	.890	.000	.000	.894	.947

PM PEAK HOUR	23rd Street Southbound					Barrett Avenue Westbound					23rd Street Northbound					Barrett Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:30 to 17:30																					
Peak Hour For Entire Intersection Begins at 16:30																					
16:30	0	0	0	0	0	0	105	34	0	139	43	295	41	0	379	54	164	0	0	218	736
16:45	0	0	0	0	0	0	83	37	0	120	45	317	19	0	381	56	167	0	0	223	724
17:00	0	0	0	0	0	0	89	32	0	121	36	346	23	0	405	54	139	0	0	193	719
17:15	0	0	0	0	0	0	81	32	0	113	42	342	23	0	407	48	148	0	0	196	716
Total Volume	0	0	0	0	0	0	358	135	0	493	166	1300	106	0	1572	212	618	0	0	830	2895
% App Total	0.0%	0.0%	0.0%	0.0%		0.0%	72.6%	27.4%	0.0%		10.6%	82.7%	6.7%	0.0%		25.5%	74.5%	0.0%	0.0%		
PHF	.000	.000	.000	.000	.000	.000	.852	.912	.000	.887	.922	.939	.646	.000	.966	.946	.925	.000	.000	.930	.983

ALL TRAFFIC DATA

City of Richmond
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 16-7080-034 Harbour Way & Macdonald Avenue
Date : 2/11/2016

Unshifted Count = All Vehicles & Uturns

	Harbour Way Southbound					Macdonald Avenue Westbound					Harbour Way Northbound					Macdonald Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	11	127	2	0	140	13	24	6	0	43	19	31	20	0	70	3	38	26	0	67	320	0
7:15	14	134	1	0	149	5	30	9	0	44	17	41	21	0	79	0	40	27	0	67	339	0
7:30	17	145	1	0	163	9	24	11	0	44	18	34	17	0	69	4	40	12	0	56	332	0
7:45	21	124	1	0	146	14	36	19	0	69	32	58	25	0	115	3	52	11	0	66	396	0
Total	63	530	5	0	598	41	114	45	0	200	86	164	83	0	333	10	170	76	0	256	1387	0
8:00	22	128	7	0	157	29	47	17	0	93	39	85	33	0	157	9	65	19	0	93	500	0
8:15	16	132	6	0	154	21	53	12	0	86	56	71	43	0	170	15	60	13	0	88	498	0
8:30	23	106	2	0	131	18	55	15	0	88	62	73	42	0	177	10	40	11	0	61	457	0
8:45	25	65	3	0	93	15	46	16	0	77	41	46	23	0	110	7	60	9	0	76	356	0
Total	86	431	18	0	535	83	201	60	0	344	198	275	141	0	614	41	225	52	0	318	1811	0
16:00	24	85	6	0	115	10	67	17	0	94	21	72	27	0	120	7	38	9	0	54	383	0
16:15	39	72	2	0	113	23	74	22	0	119	17	72	32	0	121	5	48	8	0	61	414	0
16:30	29	88	8	0	125	19	58	29	0	106	22	86	22	0	130	8	61	8	0	77	438	0
16:45	30	81	2	0	113	13	69	28	0	110	20	75	24	0	119	7	56	14	0	77	419	0
Total	122	326	18	0	466	65	268	96	0	429	80	305	105	0	490	27	203	39	0	269	1654	0
17:00	29	72	6	0	107	19	69	27	0	115	17	88	34	0	139	3	46	11	0	60	421	0
17:15	22	60	3	0	85	24	62	20	0	106	17	78	34	0	129	11	46	15	0	72	392	0
17:30	31	54	5	0	90	22	64	25	0	111	28	87	26	0	141	4	49	11	0	64	406	0
17:45	30	86	7	0	123	19	76	33	0	128	21	90	32	0	143	7	50	14	0	71	465	0
Total	112	272	21	0	405	84	271	105	0	460	83	343	126	0	552	25	191	51	0	267	1684	0
Grand Total	383	1559	62	0	2004	273	854	306	0	1433	447	1087	455	0	1989	103	789	218	0	1110	6536	0
Apprch %	19.1%	77.8%	3.1%	0.0%		19.1%	59.6%	21.4%	0.0%		22.5%	54.7%	22.9%	0.0%		9.3%	71.1%	19.6%	0.0%			
Total %	5.9%	23.9%	0.9%	0.0%	30.7%	4.2%	13.1%	4.7%	0.0%	21.9%	6.8%	16.6%	7.0%	0.0%	30.4%	1.6%	12.1%	3.3%	0.0%	17.0%	100.0%	

AM PEAK HOUR	Harbour Way Southbound					Macdonald Avenue Westbound					Harbour Way Northbound					Macdonald Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	21	124	1	0	146	14	36	19	0	69	32	58	25	0	115	3	52	11	0	66	396
8:00	22	128	7	0	157	29	47	17	0	93	39	85	33	0	157	9	65	19	0	93	500
8:15	16	132	6	0	154	21	53	12	0	86	56	71	43	0	170	15	60	13	0	88	498
8:30	23	106	2	0	131	18	55	15	0	88	62	73	42	0	177	10	40	11	0	61	457
Total Volume	82	490	16	0	588	82	191	63	0	336	189	287	143	0	619	37	217	54	0	308	1851
% App Total	13.9%	83.3%	2.7%	0.0%		24.4%	56.8%	18.8%	0.0%		30.5%	46.4%	23.1%	0.0%		12.0%	70.5%	17.5%	0.0%		
PHF	.891	.928	.571	.000	.936	.707	.868	.829	.000	.903	.762	.844	.831	.000	.874	.617	.835	.711	.000	.828	.926

PM PEAK HOUR	Harbour Way Southbound					Macdonald Avenue Westbound					Harbour Way Northbound					Macdonald Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 16:15 to 17:15																					
Peak Hour For Entire Intersection Begins at 16:15																					
16:15	39	72	2	0	113	23	74	22	0	119	17	72	32	0	121	5	48	8	0	61	414
16:30	29	88	8	0	125	19	58	29	0	106	22	86	22	0	130	8	61	8	0	77	438
16:45	30	81	2	0	113	13	69	28	0	110	20	75	24	0	119	7	56	14	0	77	419
17:00	29	72	6	0	107	19	69	27	0	115	17	88	34	0	139	3	46	11	0	60	421
Total Volume	127	313	18	0	458	74	270	106	0	450	76	321	112	0	509	23	211	41	0	275	1692
% App Total	27.7%	68.3%	3.9%	0.0%		16.4%	60.0%	23.6%	0.0%		14.9%	63.1%	22.0%	0.0%		8.4%	76.7%	14.9%	0.0%		
PHF	.814	.889	.563	.000	.916	.804	.912	.914	.000	.945	.864	.912	.824	.000	.915	.719	.865	.732	.000	.893	.966

ALL TRAFFIC DATA

City of Richmond
(916) 771-8700
orders@atdtraffic.com

All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

File Name : 16-7080-035 37th Street & Cutting Boulevard
Date : 2/11/2016

Unshifted Count = All Vehicles & Uturns

	37th Street Southbound					Cutting Boulevard Westbound					37th Street Northbound					Cutting Boulevard Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	14	33	15	0	62	13	136	5	0	154	1	5	7	0	13	11	68	1	0	80	309	0
7:15	24	53	28	0	105	8	104	9	1	122	2	8	4	0	14	7	67	2	0	76	317	1
7:30	42	51	16	0	109	15	134	14	0	163	0	8	9	0	17	12	118	0	0	130	419	0
7:45	68	58	16	0	142	10	142	21	2	175	0	19	12	0	31	10	169	2	0	181	529	2
Total	148	195	75	0	418	46	516	49	3	614	3	40	32	0	75	40	422	5	0	467	1574	3
8:00	47	39	12	0	98	12	152	27	2	193	0	23	12	0	35	20	180	5	1	206	532	3
8:15	56	42	22	0	120	12	178	30	3	223	1	16	13	0	30	24	138	3	0	165	538	3
8:30	27	60	22	0	109	11	138	20	3	172	0	11	2	0	13	15	118	2	0	135	429	3
8:45	9	41	20	0	70	13	120	19	0	152	0	12	5	0	17	15	101	1	0	117	356	0
Total	139	182	76	0	397	48	588	96	8	740	1	62	32	0	95	74	537	11	1	623	1855	9
16:00	20	19	14	0	53	5	130	27	2	164	1	70	10	0	81	30	152	3	0	185	483	2
16:15	23	23	14	0	60	6	115	26	2	149	1	60	17	0	78	38	149	2	1	190	477	3
16:30	11	23	13	0	47	11	130	20	1	162	3	68	17	0	88	35	146	2	0	183	480	1
16:45	16	29	15	0	60	5	110	27	0	142	3	72	15	0	90	46	155	1	0	202	494	0
Total	70	94	56	0	220	27	485	100	5	617	8	270	59	0	337	149	602	8	1	760	1934	6
17:00	17	20	21	0	58	11	134	20	0	165	2	74	13	0	89	43	167	3	0	213	525	0
17:15	24	24	19	0	67	13	126	34	1	174	1	92	6	0	99	41	146	4	0	191	531	1
17:30	28	16	18	0	62	6	121	26	1	154	4	72	14	0	90	40	137	0	0	177	483	1
17:45	17	15	17	0	49	9	120	35	3	167	3	94	22	0	119	30	131	3	1	165	500	4
Total	86	75	75	0	236	39	501	115	5	660	10	332	55	0	397	154	581	10	1	746	2039	6
Grand Total	443	546	282	0	1271	160	2090	360	21	2631	22	704	178	0	904	417	2142	34	3	2596	7402	24
Apprch %	34.9%	43.0%	22.2%	0.0%		6.1%	79.4%	13.7%	0.8%		2.4%	77.9%	19.7%	0.0%		16.1%	82.5%	1.3%	0.1%			
Total %	6.0%	7.4%	3.8%	0.0%	17.2%	2.2%	28.2%	4.9%	0.3%	35.5%	0.3%	9.5%	2.4%	0.0%	12.2%	5.6%	28.9%	0.5%	0.0%	35.1%	100.0%	

AM PEAK HOUR	37th Street Southbound					Cutting Boulevard Westbound					37th Street Northbound					Cutting Boulevard Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	68	58	16	0	142	10	142	21	2	175	0	19	12	0	31	10	169	2	0	181	529
8:00	47	39	12	0	98	12	152	27	2	193	0	23	12	0	35	20	180	5	1	206	532
8:15	56	42	22	0	120	12	178	30	3	223	1	16	13	0	30	24	138	3	0	165	538
8:30	27	60	22	0	109	11	138	20	3	172	0	11	2	0	13	15	118	2	0	135	429
Total Volume	198	199	72	0	469	45	610	98	10	763	1	69	39	0	109	69	605	12	1	687	2028
% App Total	42.2%	42.4%	15.4%	0.0%		5.9%	79.9%	12.8%	1.3%		0.9%	63.3%	35.8%	0.0%		10.0%	88.1%	1.7%	0.1%		
PHF	.728	.829	.818	.000	.826	.938	.857	.817	.833	.855	.250	.750	.750	.000	.779	.719	.840	.600	.250	.834	.942

PM PEAK HOUR	37th Street Southbound					Cutting Boulevard Westbound					37th Street Northbound					Cutting Boulevard Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	17	20	21	0	58	11	134	20	0	165	2	74	13	0	89	43	167	3	0	213	525
17:15	24	24	19	0	67	13	126	34	1	174	1	92	6	0	99	41	146	4	0	191	531
17:30	28	16	18	0	62	6	121	26	1	154	4	72	14	0	90	40	137	0	0	177	483
17:45	17	15	17	0	49	9	120	35	3	167	3	94	22	0	119	30	131	3	1	165	500
Total Volume	86	75	75	0	236	39	501	115	5	660	10	332	55	0	397	154	581	10	1	746	2039
% App Total	36.4%	31.8%	31.8%	0.0%		5.9%	75.9%	17.4%	0.8%		2.5%	83.6%	13.9%	0.0%		20.6%	77.9%	1.3%	0.1%		
PHF	.768	.781	.893	.000	.881	.750	.935	.821	.417	.948	.625	.883	.625	.000	.834	.895	.870	.625	.250	.876	.960

ALL TRAFFIC DATA

City of Richmond
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 16-7080-036 I-580 EB Ramps & Central Avenue
Date : 2/11/2016

Unshifted Count = All Vehicles & Uturns

	I-580 EB Ramps Southbound					Central Avenue Westbound					I-580 EB Ramps Northbound					Central Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	3	11	1	0	15	50	23	21	0	94	3	1	48	5	57	0	11	11	0	22	188	5
7:15	2	8	1	0	11	77	30	10	0	117	4	2	45	8	59	0	16	10	0	26	213	8
7:30	24	12	1	0	37	64	26	20	0	110	7	0	30	5	42	1	15	11	0	27	216	5
7:45	9	9	1	0	19	61	34	22	2	119	10	0	29	6	45	2	13	10	0	25	208	8
Total	38	40	4	0	82	252	113	73	2	440	24	3	152	24	203	3	55	42	0	100	825	26
8:00	8	3	1	0	12	52	53	17	0	122	14	2	31	1	48	0	21	20	0	41	223	1
8:15	4	6	0	0	10	54	47	17	0	118	11	4	43	7	65	0	32	17	0	49	242	7
8:30	9	8	0	0	17	62	57	12	0	131	10	2	62	1	75	0	30	18	0	48	271	1
8:45	8	5	0	0	13	49	47	30	0	126	6	1	70	5	82	1	34	10	0	45	266	5
Total	29	22	1	0	52	217	204	76	0	497	41	9	206	14	270	1	117	65	0	183	1002	14
16:00	12	7	1	0	20	8	109	16	0	133	33	2	35	0	70	2	113	49	0	164	387	0
16:15	13	4	0	0	17	5	122	12	5	144	30	4	53	0	87	1	105	50	0	156	404	5
16:30	11	12	2	0	25	6	112	13	1	132	26	5	62	0	93	1	115	60	1	177	427	2
16:45	11	7	2	0	20	1	120	16	3	140	34	1	55	1	91	1	120	46	0	167	418	4
Total	47	30	5	0	82	20	463	57	9	549	123	12	205	1	341	5	453	205	1	664	1636	11
17:00	14	6	1	0	21	10	101	24	1	136	31	3	45	1	80	0	112	61	0	173	410	2
17:15	14	11	0	0	25	2	107	28	1	138	20	1	65	0	86	3	114	50	0	167	416	1
17:30	7	8	3	0	18	7	123	33	1	164	35	6	49	0	90	1	116	28	0	145	417	1
17:45	25	19	0	0	44	8	111	35	0	154	23	5	64	0	92	1	114	42	0	157	447	0
Total	60	44	4	0	108	27	442	120	3	592	109	15	223	1	348	5	456	181	0	642	1690	4
Grand Total	174	136	14	0	324	516	1222	326	14	2078	297	39	786	40	1162	14	1081	493	1	1589	5153	55
Apprch %	53.7%	42.0%	4.3%	0.0%		24.8%	58.8%	15.7%	0.7%		25.6%	3.4%	67.6%	3.4%		0.9%	68.0%	31.0%	0.1%			
Total %	3.4%	2.6%	0.3%	0.0%	6.3%	10.0%	23.7%	6.3%	0.3%	40.3%	5.8%	0.8%	15.3%	0.8%	22.5%	0.3%	21.0%	9.6%	0.0%	30.8%	100.0%	

AM PEAK HOUR	I-580 EB Ramps Southbound					Central Avenue Westbound					I-580 EB Ramps Northbound					Central Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	8	3	1	0	12	52	53	17	0	122	14	2	31	1	48	0	21	20	0	41	223
8:15	4	6	0	0	10	54	47	17	0	118	11	4	43	7	65	0	32	17	0	49	242
8:30	9	8	0	0	17	62	57	12	0	131	10	2	62	1	75	0	30	18	0	48	271
8:45	8	5	0	0	13	49	47	30	0	126	6	1	70	5	82	1	34	10	0	45	266
Total Volume	29	22	1	0	52	217	204	76	0	497	41	9	206	14	270	1	117	65	0	183	1002
% App Total	55.8%	42.3%	1.9%	0.0%		43.7%	41.0%	15.3%	0.0%		15.2%	3.3%	76.3%	5.2%		0.5%	63.9%	35.5%	0.0%		
PHF	.806	.688	.250	.000	.765	.875	.895	.633	.000	.948	.732	.563	.736	.500	.823	.250	.860	.813	.000	.934	.924

PM PEAK HOUR	I-580 EB Ramps Southbound					Central Avenue Westbound					I-580 EB Ramps Northbound					Central Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	14	6	1	0	21	10	101	24	1	136	31	3	45	1	80	0	112	61	0	173	410
17:15	14	11	0	0	25	2	107	28	1	138	20	1	65	0	86	3	114	50	0	167	416
17:30	7	8	3	0	18	7	123	33	1	164	35	6	49	0	90	1	116	28	0	145	417
17:45	25	19	0	0	44	8	111	35	0	154	23	5	64	0	92	1	114	42	0	157	447
Total Volume	60	44	4	0	108	27	442	120	3	592	109	15	223	1	348	5	456	181	0	642	1690
% App Total	55.6%	40.7%	3.7%	0.0%		4.6%	74.7%	20.3%	0.5%		31.3%	4.3%	64.1%	0.3%		0.8%	71.0%	28.2%	0.0%		
PHF	.600	.579	.333	.000	.614	.675	.898	.857	.750	.902	.779	.625	.858	.250	.946	.417	.983	.742	.000	.928	.945

ALL TRAFFIC DATA

City of Richmond
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 16-7080-037 I-580 WB Ramps & Central Avenue
Date : 2/11/2016

Unshifted Count = All Vehicles & Uturns

	I-580 WB Ramps Southbound					Central Avenue Westbound					I-580 WB Ramps Northbound					Central Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	0	0	0	0	0	0	83	32	0	115	18	0	12	0	30	3	58	0	0	61	206	0
7:15	0	0	0	0	0	0	87	33	0	120	22	1	20	0	43	8	56	0	0	64	227	0
7:30	0	0	0	0	0	0	89	27	1	117	23	0	8	0	31	8	61	0	0	69	217	1
7:45	0	0	0	0	0	0	96	47	1	144	19	0	23	0	42	7	45	0	0	52	238	1
Total	0	0	0	0	0	0	355	139	2	496	82	1	63	0	146	26	220	0	0	246	888	2
8:00	0	0	0	0	0	0	96	46	1	143	30	0	17	0	47	7	54	0	0	61	251	1
8:15	0	0	0	0	0	0	93	60	0	153	23	0	8	0	31	12	66	0	0	78	262	0
8:30	0	0	0	0	0	0	99	59	0	158	34	0	17	0	51	6	95	0	0	101	310	0
8:45	0	0	0	0	0	0	93	52	2	147	31	0	15	0	46	9	102	0	0	111	304	2
Total	0	0	0	0	0	0	381	217	3	601	118	0	57	0	175	34	317	0	0	351	1127	3
16:00	0	0	0	0	0	0	89	57	0	146	46	0	27	0	73	40	121	0	0	161	380	0
16:15	0	0	0	0	0	0	87	54	1	142	54	0	18	0	72	41	138	0	0	179	393	1
16:30	0	0	0	0	0	0	83	63	0	146	50	0	12	0	62	37	149	0	0	186	394	0
16:45	0	0	0	0	0	0	74	52	0	126	61	0	17	0	78	56	134	0	0	190	394	0
Total	0	0	0	0	0	0	333	226	1	560	211	0	74	0	285	174	542	0	0	716	1561	1
17:00	0	0	0	0	0	0	80	74	0	154	61	1	21	0	83	44	126	0	0	170	407	0
17:15	0	0	0	0	0	0	78	80	0	158	58	0	19	0	77	45	154	0	0	199	434	0
17:30	0	0	0	0	0	0	110	76	0	186	63	0	17	0	80	50	123	0	0	173	439	0
17:45	0	0	0	0	0	0	93	80	0	173	57	1	9	0	67	42	155	0	0	197	437	0
Total	0	0	0	0	0	0	361	310	0	671	239	2	66	0	307	181	558	0	0	739	1717	0
Grand Total	0	0	0	0	0	0	1430	892	6	2328	650	3	260	0	913	415	1637	0	0	2052	5293	6
Apprch %	0.0%	0.0%	0.0%	0.0%		0.0%	61.4%	38.3%	0.3%		71.2%	0.3%	28.5%	0.0%		20.2%	79.8%	0.0%	0.0%			
Total %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	27.0%	16.9%	0.1%	44.0%	12.3%	0.1%	4.9%	0.0%	17.2%	7.8%	30.9%	0.0%	0.0%	38.8%	100.0%	

AM PEAK HOUR	I-580 WB Ramps Southbound					Central Avenue Westbound					I-580 WB Ramps Northbound					Central Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 08:00 to 09:00																					
Peak Hour For Entire Intersection Begins at 08:00																					
8:00	0	0	0	0	0	0	96	46	1	143	30	0	17	0	47	7	54	0	0	61	251
8:15	0	0	0	0	0	0	93	60	0	153	23	0	8	0	31	12	66	0	0	78	262
8:30	0	0	0	0	0	0	99	59	0	158	34	0	17	0	51	6	95	0	0	101	310
8:45	0	0	0	0	0	0	93	52	2	147	31	0	15	0	46	9	102	0	0	111	304
Total Volume	0	0	0	0	0	0	381	217	3	601	118	0	57	0	175	34	317	0	0	351	1127
% App Total	0.0%	0.0%	0.0%	0.0%		0.0%	63.4%	36.1%	0.5%		67.4%	0.0%	32.6%	0.0%		9.7%	90.3%	0.0%	0.0%		
PHF	.000	.000	.000	.000	.000	.000	.962	.904	.375	.951	.868	.000	.838	.000	.858	.708	.777	.000	.000	.791	.909

PM PEAK HOUR	I-580 WB Ramps Southbound					Central Avenue Westbound					I-580 WB Ramps Northbound					Central Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	0	0	0	0	0	0	80	74	0	154	61	1	21	0	83	44	126	0	0	170	407
17:15	0	0	0	0	0	0	78	80	0	158	58	0	19	0	77	45	154	0	0	199	434
17:30	0	0	0	0	0	0	110	76	0	186	63	0	17	0	80	50	123	0	0	173	439
17:45	0	0	0	0	0	0	93	80	0	173	57	1	9	0	67	42	155	0	0	197	437
Total Volume	0	0	0	0	0	0	361	310	0	671	239	2	66	0	307	181	558	0	0	739	1717
% App Total	0.0%	0.0%	0.0%	0.0%		0.0%	53.8%	46.2%	0.0%		77.9%	0.7%	21.5%	0.0%		24.5%	75.5%	0.0%	0.0%		
PHF	.000	.000	.000	.000	.000	.000	.820	.969	.000	.902	.948	.500	.786	.000	.925	.905	.900	.000	.000	.928	.978

ALL TRAFFIC DATA

City of Richmond
All Vehicles & Uturns On Unshifted
Bikes & Peds On Bank 1
Heavy Trucks On Bank 2

(916) 771-8700
orders@atdtraffic.com

File Name : 16-7080-040 San Pablo Avenue & Central Avenue
Date : 2/11/2016

Unshifted Count = All Vehicles & Uturns

	San Pablo Avenue Southbound					Central Avenue Westbound					San Pablo Avenue Northbound					Central Avenue Eastbound						
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total	Uturns Total
7:00	7	125	21	0	153	4	46	8	0	58	9	21	2	0	32	13	39	9	0	61	304	0
7:15	7	216	17	0	240	12	32	1	0	45	6	27	5	2	40	14	44	15	0	73	398	2
7:30	10	246	21	2	279	10	42	6	0	58	9	37	6	2	54	24	60	23	0	107	498	4
7:45	13	225	21	0	259	24	75	3	0	102	14	56	9	2	81	40	83	26	0	149	591	2
Total	37	812	80	2	931	50	195	18	0	263	38	141	22	6	207	91	226	73	0	390	1791	8
8:00	13	213	30	1	257	17	73	9	0	99	21	75	3	1	100	40	53	20	0	113	569	2
8:15	10	192	42	5	249	20	73	11	0	104	10	78	9	1	98	38	56	19	0	113	564	6
8:30	3	191	32	0	226	16	72	4	0	92	11	61	8	0	80	34	50	22	0	106	504	0
8:45	5	209	35	2	251	13	48	15	0	76	21	76	6	1	104	42	61	21	0	124	555	3
Total	31	805	139	8	983	66	266	39	0	371	63	290	26	3	382	154	220	82	0	456	2192	11
16:00	6	116	35	1	158	13	51	11	0	75	36	188	6	4	234	83	58	20	0	161	628	5
16:15	12	130	27	5	174	11	41	13	0	65	38	205	18	2	263	65	41	19	0	125	627	7
16:30	13	135	47	2	197	11	45	16	0	72	33	180	14	4	231	60	54	17	0	131	631	6
16:45	15	129	22	1	167	12	47	16	0	75	31	179	10	0	220	63	55	24	0	142	604	1
Total	46	510	131	9	696	47	184	56	0	287	138	752	48	10	948	271	208	80	0	559	2490	19
17:00	14	137	24	2	177	14	55	12	0	81	24	219	8	2	253	88	69	21	0	178	689	4
17:15	9	139	39	2	189	14	49	13	0	76	29	223	7	1	260	52	61	33	0	146	671	3
17:30	9	104	27	5	145	14	64	17	0	95	33	225	11	3	272	75	54	21	0	150	662	8
17:45	19	120	33	6	178	10	48	17	0	75	29	199	10	5	243	81	63	14	0	158	654	11
Total	51	500	123	15	689	52	216	59	0	327	115	866	36	11	1028	296	247	89	0	632	2676	26
Grand Total	165	2627	473	34	3299	215	861	172	0	1248	354	2049	132	30	2565	812	901	324	0	2037	9149	64
Apprch %	5.0%	79.6%	14.3%	1.0%		17.2%	69.0%	13.8%	0.0%		13.8%	79.9%	5.1%	1.2%		39.9%	44.2%	15.9%	0.0%			
Total %	1.8%	28.7%	5.2%	0.4%	36.1%	2.3%	9.4%	1.9%	0.0%	13.6%	3.9%	22.4%	1.4%	0.3%	28.0%	8.9%	9.8%	3.5%	0.0%	22.3%	100.0%	

AM PEAK HOUR	San Pablo Avenue Southbound					Central Avenue Westbound					San Pablo Avenue Northbound					Central Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 07:45 to 08:45																					
Peak Hour For Entire Intersection Begins at 07:45																					
7:45	13	225	21	0	259	24	75	3	0	102	14	56	9	2	81	40	83	26	0	149	591
8:00	13	213	30	1	257	17	73	9	0	99	21	75	3	1	100	40	53	20	0	113	569
8:15	10	192	42	5	249	20	73	11	0	104	10	78	9	1	98	38	56	19	0	113	564
8:30	3	191	32	0	226	16	72	4	0	92	11	61	8	0	80	34	50	22	0	106	504
Total Volume	39	821	125	6	991	77	293	27	0	397	56	270	29	4	359	152	242	87	0	481	2228
% App Total	3.9%	82.8%	12.6%	0.6%		19.4%	73.8%	6.8%	0.0%		15.6%	75.2%	8.1%	1.1%		31.6%	50.3%	18.1%	0.0%		
PHF	.750	.912	.744	.300	.957	.802	.977	.614	.000	.954	.667	.865	.806	.500	.898	.950	.729	.837	.000	.807	.942

PM PEAK HOUR	San Pablo Avenue Southbound					Central Avenue Westbound					San Pablo Avenue Northbound					Central Avenue Eastbound					
START TIME	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	LEFT	THRU	RIGHT	UTURNS	APP.TOTAL	Total
Peak Hour Analysis From 17:00 to 18:00																					
Peak Hour For Entire Intersection Begins at 17:00																					
17:00	14	137	24	2	177	14	55	12	0	81	24	219	8	2	253	88	69	21	0	178	689
17:15	9	139	39	2	189	14	49	13	0	76	29	223	7	1	260	52	61	33	0	146	671
17:30	9	104	27	5	145	14	64	17	0	95	33	225	11	3	272	75	54	21	0	150	662
17:45	19	120	33	6	178	10	48	17	0	75	29	199	10	5	243	81	63	14	0	158	654
Total Volume	51	500	123	15	689	52	216	59	0	327	115	866	36	11	1028	296	247	89	0	632	2676
% App Total	7.4%	72.6%	17.9%	2.2%		15.9%	66.1%	18.0%	0.0%		11.2%	84.2%	3.5%	1.1%		46.8%	39.1%	14.1%	0.0%		
PHF	.671	.899	.788	.625	.911	.929	.844	.868	.000	.861	.871	.962	.818	.550	.945	.841	.895	.674	.000	.888	.971

Appendix E-3
Existing Conditions
Intersection LOS Calculations

FEHR PEERS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	334	133	134	370	0	0	0	0	83	918	82
Number	3	8	18	7	4	14				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	0.99		1.00				1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1900	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	359	95	144	398	0				89	987	79
Adj No. of Lanes	0	2	1	0	2	0				0	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93				0.93	0.93	0.93
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1122	487	253	685	0				153	1771	149
Arrive On Green	0.00	0.32	0.32	0.32	0.32	0.00				0.57	0.57	0.57
Sat Flow, veh/h	0	3632	1536	504	2245	0				270	3127	263
Grp Volume(v), veh/h	0	359	95	257	285	0				611	0	544
Grp Sat Flow(s),veh/h/ln	0	1770	1536	1054	1610	0				1849	0	1810
Q Serve(g_s), s	0.0	4.6	2.7	9.4	8.8	0.0				12.8	0.0	11.2
Cycle Q Clear(g_c), s	0.0	4.6	2.7	14.1	8.8	0.0				12.8	0.0	11.2
Prop In Lane	0.00		1.00	0.56		0.00				0.15		0.15
Lane Grp Cap(c), veh/h	0	1122	487	428	510	0				1047	0	1025
V/C Ratio(X)	0.00	0.32	0.20	0.60	0.56	0.00				0.58	0.00	0.53
Avail Cap(c_a), veh/h	0	1445	627	536	658	0				1047	0	1025
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.95	0.95	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	15.6	14.9	19.3	17.0	0.0				8.4	0.0	8.1
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.5	0.3	0.0				2.4	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.3	1.1	3.9	3.9	0.0				7.1	0.0	6.0
LnGrp Delay(d),s/veh	0.0	15.6	15.0	19.8	17.3	0.0				10.8	0.0	10.0
LnGrp LOS		B	B	B	B					B		B
Approach Vol, veh/h		454			542						1155	
Approach Delay, s/veh		15.5			18.5						10.4	
Approach LOS		B			B						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		37.5		22.5				22.5
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		28.5		24.5				24.5
Max Q Clear Time (g_c+I1), s		14.8		16.1				6.6
Green Ext Time (p_c), s		4.6		3.0				4.2

Intersection Summary	
HCM 2010 Ctrl Delay	13.5
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	484	147	105	443	0	0	0	0	138	500	115
Number	3	8	18	7	4	14				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00				1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1881	1881	1900	1881	0				1900	1881	1900
Adj Flow Rate, veh/h	0	484	102	105	443	0				138	500	107
Adj No. of Lanes	0	2	1	0	2	0				0	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Percent Heavy Veh, %	0	1	1	1	1	0				0	1	0
Cap, veh/h	0	1155	504	186	769	0				366	1388	311
Arrive On Green	0.00	0.32	0.32	0.32	0.32	0.00				0.57	0.57	0.57
Sat Flow, veh/h	0	3668	1558	339	2465	0				641	2431	545
Grp Volume(v), veh/h	0	484	102	259	289	0				398	0	347
Grp Sat Flow(s),veh/h/ln	0	1787	1558	1092	1626	0				1849	0	1769
Q Serve(g_s), s	0.0	7.0	3.1	8.0	9.7	0.0				7.8	0.0	6.9
Cycle Q Clear(g_c), s	0.0	7.0	3.1	15.0	9.7	0.0				7.8	0.0	6.9
Prop In Lane	0.00		1.00	0.41		0.00				0.35		0.31
Lane Grp Cap(c), veh/h	0	1155	504	430	526	0				1055	0	1010
V/C Ratio(X)	0.00	0.42	0.20	0.60	0.55	0.00				0.38	0.00	0.34
Avail Cap(c_a), veh/h	0	1652	720	603	752	0				1055	0	1010
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.96	0.96	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	17.5	16.2	20.3	18.4	0.0				7.7	0.0	7.6
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.5	0.3	0.0				1.0	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.4	1.3	4.3	4.4	0.0				4.2	0.0	3.6
LnGrp Delay(d),s/veh	0.0	17.6	16.2	20.8	18.7	0.0				8.8	0.0	8.5
LnGrp LOS		B	B	C	B					A		A
Approach Vol, veh/h		586			548						745	
Approach Delay, s/veh		17.3			19.7						8.6	
Approach LOS		B			B						A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		41.2		24.8				24.8
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		28.5		30.5				30.5
Max Q Clear Time (g_c+I1), s		9.8		17.0				9.0
Green Ext Time (p_c), s		3.0		4.3				5.1

Intersection Summary	
HCM 2010 Ctrl Delay	14.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	88	329	0	0	398	97	127	535	159	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	0.98		1.00	1.00		0.94	1.00		0.97			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1863	1900	1863	1900			
Adj Flow Rate, veh/h	100	374	0	0	452	41	144	608	107			
Adj No. of Lanes	0	2	0	0	2	1	0	3	0			
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	339	1067	0	0	1450	611	296	1336	239			
Arrive On Green	0.41	0.41	0.00	0.00	0.41	0.41	0.36	0.36	0.36			
Sat Flow, veh/h	413	2689	0	0	3632	1490	828	3740	670			
Grp Volume(v), veh/h	241	233	0	0	452	41	317	267	275			
Grp Sat Flow(s),veh/h/ln	1407	1610	0	0	1770	1490	1821	1695	1722			
Q Serve(g_s), s	0.0	3.0	0.0	0.0	2.6	0.5	4.1	3.6	3.7			
Cycle Q Clear(g_c), s	2.6	3.0	0.0	0.0	2.6	0.5	4.1	3.6	3.7			
Prop In Lane	0.41		0.00	0.00		1.00	0.45		0.39			
Lane Grp Cap(c), veh/h	746	660	0	0	1450	611	651	606	615			
V/C Ratio(X)	0.32	0.35	0.00	0.00	0.31	0.07	0.49	0.44	0.45			
Avail Cap(c_a), veh/h	1497	1607	0	0	3533	1487	1818	1692	1719			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	6.0	6.1	0.0	0.0	6.0	5.4	7.5	7.4	7.4			
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.2	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.4	1.3	0.0	0.0	1.3	0.2	2.1	1.7	1.7			
LnGrp Delay(d),s/veh	6.1	6.2	0.0	0.0	6.0	5.4	7.7	7.6	7.6			
LnGrp LOS	A	A			A	A	A	A	A			
Approach Vol, veh/h		474			493			859				
Approach Delay, s/veh		6.2			6.0			7.6				
Approach LOS		A			A			A				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		14.2		15.8				15.8
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		30.0		30.0				30.0
Max Q Clear Time (g_c+I1), s		6.1		4.6				5.0
Green Ext Time (p_c), s		3.6		4.5				4.5

Intersection Summary	
HCM 2010 Ctrl Delay	6.8
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	156	458	0	0	381	200	162	1146	165	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	0.98		1.00	1.00		0.93	1.00		0.98			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1881	0	0	1881	1881	1900	1881	1900			
Adj Flow Rate, veh/h	159	467	0	0	389	142	165	1169	102			
Adj No. of Lanes	0	2	0	0	2	1	0	3	0			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	1	1	0	0	1	1	0	1	0			
Cap, veh/h	340	917	0	0	1463	611	247	1871	168			
Arrive On Green	0.41	0.41	0.00	0.00	0.41	0.41	0.43	0.43	0.43			
Sat Flow, veh/h	512	2326	0	0	3668	1492	580	4391	394			
Grp Volume(v), veh/h	293	333	0	0	389	142	527	443	466			
Grp Sat Flow(s),veh/h/ln	1126	1626	0	0	1787	1492	1852	1712	1801			
Q Serve(g_s), s	6.0	6.5	0.0	0.0	3.1	2.6	9.7	8.5	8.5			
Cycle Q Clear(g_c), s	9.0	6.5	0.0	0.0	3.1	2.6	9.7	8.5	8.5			
Prop In Lane	0.54		0.00	0.00		1.00	0.31		0.22			
Lane Grp Cap(c), veh/h	592	666	0	0	1463	611	789	729	767			
V/C Ratio(X)	0.50	0.50	0.00	0.00	0.27	0.23	0.67	0.61	0.61			
Avail Cap(c_a), veh/h	930	1147	0	0	2520	1052	1306	1207	1270			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	10.0	9.3	0.0	0.0	8.3	8.2	9.8	9.5	9.5			
Incr Delay (d2), s/veh	0.2	0.2	0.0	0.0	0.0	0.1	0.4	0.3	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.7	2.9	0.0	0.0	1.5	1.1	4.9	4.0	4.2			
LnGrp Delay(d),s/veh	10.2	9.5	0.0	0.0	8.4	8.3	10.2	9.8	9.7			
LnGrp LOS	B	A			A	A	B	A	A			
Approach Vol, veh/h		626			531			1436				
Approach Delay, s/veh		9.9			8.3			9.9				
Approach LOS		A			A			A				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		21.6		20.9				20.9
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		30.0		30.0				30.0
Max Q Clear Time (g_c+I1), s		11.7		5.1				11.0
Green Ext Time (p_c), s		6.3		5.5				5.1

Intersection Summary	
HCM 2010 Ctrl Delay	9.6
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	191	148	16	220	0	22	0	9	204	119	17
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1792	1900	1792	1792	0	1792	0	1792	1792	1792	1900
Adj Flow Rate, veh/h	0	199	53	17	229	0	23	0	0	237	89	13
Adj No. of Lanes	0	2	0	1	2	0	1	0	1	2	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	6	6	6	6	0	6	0	6	6	6	6
Cap, veh/h	0	1071	278	83	1918	0	0	0	0	491	220	32
Arrive On Green	0.00	0.40	0.40	0.05	0.56	0.00	0.00	0.00	0.00	0.14	0.14	0.14
Sat Flow, veh/h	0	2759	692	1707	3495	0		0		3414	1530	223
Grp Volume(v), veh/h	0	125	127	17	229	0		0.0		237	0	102
Grp Sat Flow(s),veh/h/ln	0	1703	1659	1707	1703	0				1707	0	1753
Q Serve(g_s), s	0.0	1.5	1.5	0.3	1.0	0.0				2.0	0.0	1.6
Cycle Q Clear(g_c), s	0.0	1.5	1.5	0.3	1.0	0.0				2.0	0.0	1.6
Prop In Lane	0.00		0.42	1.00		0.00				1.00		0.13
Lane Grp Cap(c), veh/h	0	683	665	83	1918	0				491	0	252
V/C Ratio(X)	0.00	0.18	0.19	0.21	0.12	0.00				0.48	0.00	0.40
Avail Cap(c_a), veh/h	0	1773	1727	1444	3545	0				2888	0	1483
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.0	6.0	14.1	3.1	0.0				12.1	0.0	12.0
Incr Delay (d2), s/veh	0.0	0.1	0.2	0.5	0.0	0.0				0.3	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.7	0.7	0.1	0.5	0.0				0.9	0.0	0.8
LnGrp Delay(d),s/veh	0.0	6.1	6.1	14.5	3.2	0.0				12.4	0.0	12.3
LnGrp LOS		A	A	B	A					B		B
Approach Vol, veh/h		252			246						339	
Approach Delay, s/veh		6.1			4.0						12.4	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		22.3			5.0	17.3		8.4
Change Period (Y+Rc), s		5.0			3.5	5.0		4.0
Max Green Setting (Gmax), s		32.0			26.0	32.0		26.0
Max Q Clear Time (g_c+I1), s		3.0			2.3	3.5		4.0
Green Ext Time (p_c), s		3.2			0.0	3.2		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	8.0
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	165	119	17	132	0	35	0	3	243	58	18
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1810	1900	1810	1810	0	1810	0	1810	1810	1810	1900
Adj Flow Rate, veh/h	0	185	25	19	148	0	39	0	-7	273	65	14
Adj No. of Lanes	0	2	0	1	2	0	1	0	1	2	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	5	5	5	5	0	5	0	5	5	5	5
Cap, veh/h	0	1201	160	92	1925	0	0	0	0	524	220	47
Arrive On Green	0.00	0.39	0.39	0.05	0.56	0.00	0.00	0.00	0.00	0.15	0.15	0.15
Sat Flow, veh/h	0	3135	405	1723	3529	0		0		3447	1444	311
Grp Volume(v), veh/h	0	103	107	19	148	0		0.0		273	0	79
Grp Sat Flow(s),veh/h/ln	0	1719	1731	1723	1719	0				1723	0	1755
Q Serve(g_s), s	0.0	1.2	1.2	0.3	0.6	0.0				2.3	0.0	1.2
Cycle Q Clear(g_c), s	0.0	1.2	1.2	0.3	0.6	0.0				2.3	0.0	1.2
Prop In Lane	0.00		0.23	1.00		0.00				1.00		0.18
Lane Grp Cap(c), veh/h	0	678	683	92	1925	0				524	0	267
V/C Ratio(X)	0.00	0.15	0.16	0.21	0.08	0.00				0.52	0.00	0.30
Avail Cap(c_a), veh/h	0	1760	1771	1433	3519	0				2866	0	1459
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.1	6.1	14.2	3.2	0.0				12.2	0.0	11.8
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.4	0.0	0.0				0.3	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.6	0.6	0.2	0.3	0.0				1.1	0.0	0.6
LnGrp Delay(d),s/veh	0.0	6.2	6.2	14.6	3.2	0.0				12.5	0.0	12.0
LnGrp LOS		A	A	B	A					B		B
Approach Vol, veh/h		210			167						352	
Approach Delay, s/veh		6.2			4.5						12.4	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		22.5			5.2	17.3		8.8
Change Period (Y+Rc), s		5.0			3.5	5.0		4.0
Max Green Setting (Gmax), s		32.0			26.0	32.0		26.0
Max Q Clear Time (g_c+I1), s		2.6			2.3	3.2		4.3
Green Ext Time (p_c), s		2.3			0.0	2.3		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	8.8
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	154	250	0	0	138	761	98	0	140	0	0	0
Number	1	6	16	5	2	12	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1827	0	0	1827	1900	1827	0	1827			
Adj Flow Rate, veh/h	169	275	0	0	152	344	108	0	28			
Adj No. of Lanes	0	2	0	0	3	0	1	0	1			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	4	4	0	0	4	4	4	0	4			
Cap, veh/h	506	944	0	0	1806	825	374	0	334			
Arrive On Green	0.54	0.54	0.00	0.00	0.54	0.54	0.21	0.00	0.21			
Sat Flow, veh/h	605	1821	0	0	3489	1520	1740	0	1553			
Grp Volume(v), veh/h	203	241	0	0	152	344	108	0	28			
Grp Sat Flow(s),veh/h/ln	763	1579	0	0	1663	1520	1740	0	1553			
Q Serve(g_s), s	4.9	3.1	0.0	0.0	0.8	5.0	1.9	0.0	0.5			
Cycle Q Clear(g_c), s	9.9	3.1	0.0	0.0	0.8	5.0	1.9	0.0	0.5			
Prop In Lane	0.83		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	592	858	0	0	1806	825	374	0	334			
V/C Ratio(X)	0.34	0.28	0.00	0.00	0.08	0.42	0.29	0.00	0.08			
Avail Cap(c_a), veh/h	872	1316	0	0	2949	1348	1309	0	1168			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	7.2	4.6	0.0	0.0	4.1	5.0	12.2	0.0	11.7			
Incr Delay (d2), s/veh	0.5	0.3	0.0	0.0	0.0	0.5	0.2	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.5	1.3	0.0	0.0	0.4	2.1	0.9	0.0	0.2			
LnGrp Delay(d),s/veh	7.7	4.8	0.0	0.0	4.1	5.5	12.4	0.0	11.7			
LnGrp LOS	A	A			A	A	B		B			
Approach Vol, veh/h		444			496			136				
Approach Delay, s/veh		6.2			5.1			12.2				
Approach LOS		A			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		24.2		13.0		24.2		
Change Period (Y+Rc), s		4.0		5.0		4.0		
Max Green Setting (Gmax), s		33.0		28.0		31.0		
Max Q Clear Time (g_c+I1), s		7.0		3.9		11.9		
Green Ext Time (p_c), s		9.7		0.1		8.3		

Intersection Summary	
HCM 2010 Ctrl Delay	6.4
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	413	0	0	97	263	55	0	44	0	0	0
Number	1	6	16	5	2	12	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1845	0	0	1845	1900	1845	0	1845			
Adj Flow Rate, veh/h	0	498	0	0	117	-223	66	0	-86			
Adj No. of Lanes	0	2	0	0	3	0	1	0	1			
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83			
Percent Heavy Veh, %	0	3	0	0	3	3	3	0	3			
Cap, veh/h	0	1377	0	0	1661	739	502	0	448			
Arrive On Green	0.00	0.39	0.00	0.00	0.39	0.00	0.29	0.00	0.00			
Sat Flow, veh/h	0	3689	0	0	5368	0	1757	0	1568			
Grp Volume(v), veh/h	0	498	0	0	-106	-223	66	0	-86			
Grp Sat Flow(s),veh/h/ln	0	1752	0	0	1679	1568	1757	0	1568			
Q Serve(g_s), s	0.0	2.8	0.0	0.0	1.3	0.0	0.8	0.0	0.0			
Cycle Q Clear(g_c), s	0.0	2.8	0.0	0.0	1.3	0.0	0.8	0.0	0.0			
Prop In Lane	0.00		0.00	0.00		0.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	1377	0	0	0	0	502	0	448			
V/C Ratio(X)	0.00	0.36	0.00	0.00	0.00	0.00	0.13	0.00	-0.19			
Avail Cap(c_a), veh/h	0	3880	0	0	0	0	1757	0	1568			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	0.0	6.0	0.0	0.0	0.0	0.0	7.4	0.0	0.0			
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	1.4	0.0	0.0	0.0	0.0	0.4	0.0	0.0			
LnGrp Delay(d),s/veh	0.0	6.2	0.0	0.0	0.0	0.0	7.5	0.0	0.0			
LnGrp LOS		A					A					
Approach Vol, veh/h		498			-329			-20				
Approach Delay, s/veh		6.2			0.0			-24.6				
Approach LOS		A			A			A				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		15.0		13.0		15.0		
Change Period (Y+Rc), s		4.0		5.0		4.0		
Max Green Setting (Gmax), s		33.0		28.0		31.0		
Max Q Clear Time (g_c+I1), s		0.0		2.8		4.8		
Green Ext Time (p_c), s		0.0		0.0		4.7		

Intersection Summary	
HCM 2010 Ctrl Delay	24.2
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	58	149	183	63	207	112	32	345	86	136	321	80
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1900	1900	1827	1827	1900	1827	1900
Adj Flow Rate, veh/h	62	159	76	67	220	65	34	367	9	145	341	70
Adj No. of Lanes	1	2	1	1	2	0	0	2	1	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	79	1619	713	86	1248	359	43	483	227	176	435	93
Arrive On Green	0.05	0.47	0.47	0.03	0.32	0.32	0.15	0.15	0.15	0.20	0.20	0.20
Sat Flow, veh/h	1740	3471	1530	1740	2653	763	287	3261	1534	880	2179	465
Grp Volume(v), veh/h	62	159	76	67	142	143	215	186	9	294	0	262
Grp Sat Flow(s),veh/h/ln	1740	1736	1530	1740	1736	1681	1813	1736	1534	1783	0	1740
Q Serve(g_s), s	3.9	2.8	3.1	4.2	6.5	6.8	12.6	11.3	0.6	17.4	0.0	15.6
Cycle Q Clear(g_c), s	3.9	2.8	3.1	4.2	6.5	6.8	12.6	11.3	0.6	17.4	0.0	15.6
Prop In Lane	1.00		1.00	1.00		0.45	0.16		1.00	0.49		0.27
Lane Grp Cap(c), veh/h	79	1619	713	86	816	790	269	257	227	356	0	347
V/C Ratio(X)	0.78	0.10	0.11	0.78	0.17	0.18	0.80	0.73	0.04	0.83	0.00	0.75
Avail Cap(c_a), veh/h	166	1619	713	277	816	790	404	387	342	494	0	482
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.91	0.99	0.99	0.99	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.0	16.4	16.5	52.6	22.2	22.3	45.3	44.7	40.1	42.2	0.0	41.5
Incr Delay (d2), s/veh	5.6	0.1	0.3	5.6	0.5	0.5	3.5	1.5	0.0	5.7	0.0	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	1.4	1.3	2.2	3.2	3.3	6.6	5.5	0.2	9.1	0.0	7.7
LnGrp Delay(d),s/veh	57.6	16.5	16.8	58.1	22.6	22.8	48.8	46.2	40.2	47.9	0.0	44.0
LnGrp LOS	E	B	B	E	C	C	D	D	D	D		D
Approach Vol, veh/h		297			352			410			556	
Approach Delay, s/veh		25.2			29.5			47.4			46.0	
Approach LOS		C			C			D			D	

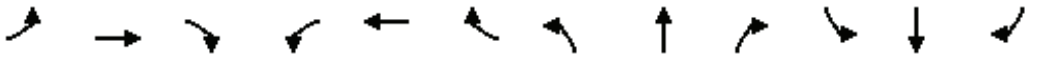
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.9	55.8		25.5	8.5	56.2		19.8
Change Period (Y+Rc), s	3.5	4.5		3.5	3.5	4.5		3.5
Max Green Setting (Gmax), s	17.5	22.5		30.5	10.5	29.5		24.5
Max Q Clear Time (g_c+I1), s	6.2	5.1		19.4	5.9	8.8		14.6
Green Ext Time (p_c), s	0.0	3.6		1.9	0.0	3.9		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	38.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	85	237	64	61	178	102	101	351	96	102	324	47
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1900	1900	1827	1827	1900	1827	1900
Adj Flow Rate, veh/h	90	252	-51	65	189	55	107	373	20	109	345	35
Adj No. of Lanes	1	2	1	1	2	0	0	2	1	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	113	1610	720	84	1190	336	128	475	262	137	459	48
Arrive On Green	0.06	0.46	0.00	0.03	0.30	0.30	0.17	0.17	0.17	0.18	0.18	0.18
Sat Flow, veh/h	1740	3471	1553	1740	2663	752	749	2776	1534	760	2538	268
Grp Volume(v), veh/h	90	252	-51	65	121	123	256	224	20	257	0	232
Grp Sat Flow(s),veh/h/ln	1740	1736	1553	1740	1736	1679	1789	1736	1534	1789	0	1776
Q Serve(g_s), s	5.6	4.6	0.0	4.1	5.6	5.9	15.2	13.5	1.2	15.1	0.0	13.6
Cycle Q Clear(g_c), s	5.6	4.6	0.0	4.1	5.6	5.9	15.2	13.5	1.2	15.1	0.0	13.6
Prop In Lane	1.00		1.00	1.00		0.45	0.42		1.00	0.42		0.15
Lane Grp Cap(c), veh/h	113	1610	720	84	775	750	306	297	262	324	0	321
V/C Ratio(X)	0.80	0.16	-0.07	0.78	0.16	0.16	0.84	0.76	0.08	0.79	0.00	0.72
Avail Cap(c_a), veh/h	166	1610	720	277	775	750	399	387	342	496	0	492
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.7	17.1	0.0	52.6	23.3	23.4	44.1	43.4	38.3	43.1	0.0	42.5
Incr Delay (d2), s/veh	8.6	0.2	0.0	5.7	0.4	0.5	9.0	4.1	0.0	2.3	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	2.2	0.0	2.1	2.8	2.8	8.3	6.8	0.5	7.7	0.0	6.8
LnGrp Delay(d),s/veh	59.3	17.3	0.0	58.4	23.7	23.9	53.1	47.6	38.3	45.4	0.0	43.6
LnGrp LOS	E	B		E	C	C	D	D	D	D		D
Approach Vol, veh/h		291			309			500			489	
Approach Delay, s/veh		33.3			31.1			50.0			44.6	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.8	55.5		23.4	10.6	53.7		22.3
Change Period (Y+Rc), s	3.5	4.5		3.5	3.5	4.5		3.5
Max Green Setting (Gmax), s	17.5	22.5		30.5	10.5	29.5		24.5
Max Q Clear Time (g_c+I1), s	6.1	6.6		17.1	7.6	7.9		17.2
Green Ext Time (p_c), s	0.0	3.5		1.8	0.0	4.0		1.1

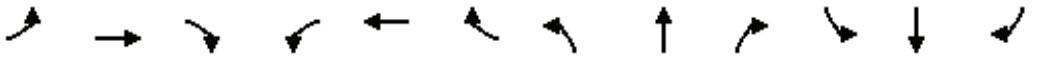
Intersection Summary	
HCM 2010 Ctrl Delay	41.6
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	77	136	0	0	0	25	29	46	0	214	8
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900				1827	1827	1827	0	1827	1827
Adj Flow Rate, veh/h	0	87	18				28	33	24	0	240	2
Adj No. of Lanes	1	2	0				1	1	1	0	2	1
Peak Hour Factor	0.89	0.89	0.89				0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	4	4	4				4	4	4	0	4	4
Cap, veh/h	157	259	52				50	880	748	0	827	370
Arrive On Green	0.00	0.09	0.09				0.03	0.48	0.48	0.00	0.24	0.24
Sat Flow, veh/h	1740	2880	580				1740	1827	1553	0	3563	1553
Grp Volume(v), veh/h	0	51	54				28	33	24	0	240	2
Grp Sat Flow(s),veh/h/ln	1740	1736	1725				1740	1827	1553	0	1736	1553
Q Serve(g_s), s	0.0	0.5	0.5				0.3	0.2	0.2	0.0	1.1	0.0
Cycle Q Clear(g_c), s	0.0	0.5	0.5				0.3	0.2	0.2	0.0	1.1	0.0
Prop In Lane	1.00		0.34				1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	157	156	155				50	880	748	0	827	370
V/C Ratio(X)	0.00	0.33	0.35				0.56	0.04	0.03	0.00	0.29	0.01
Avail Cap(c_a), veh/h	2889	2882	2864				466	2544	2163	0	3161	1414
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00				1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	8.0	8.0				8.9	2.6	2.5	0.0	5.8	5.4
Incr Delay (d2), s/veh	0.0	1.2	1.3				9.2	0.0	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.3				0.3	0.1	0.1	0.0	0.5	0.0
LnGrp Delay(d),s/veh	0.0	9.2	9.3				18.2	2.6	2.6	0.0	6.0	5.4
LnGrp LOS		A	A				B	A	A		A	A
Approach Vol, veh/h		105						85			242	
Approach Delay, s/veh		9.2						7.7			6.0	
Approach LOS		A						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		13.0		5.7	4.5	8.4		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		26.0		31.0	5.0	17.0		
Max Q Clear Time (g_c+I1), s		2.2		2.5	2.3	3.1		
Green Ext Time (p_c), s		1.7		0.5	0.0	1.4		

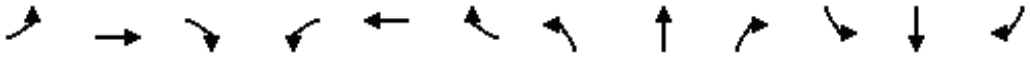
Intersection Summary	
HCM 2010 Ctrl Delay	7.1
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	82	47	0	0	0	26	177	207	0	80	1
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900				1827	1827	1827	0	1827	1827
Adj Flow Rate, veh/h	5	96	-86				31	208	215	0	94	-6
Adj No. of Lanes	1	2	0				1	1	1	0	2	1
Peak Hour Factor	0.85	0.85	0.85				0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	4	4	4				4	4	4	0	4	4
Cap, veh/h	28	56	7363				56	961	815	0	919	411
Arrive On Green	0.02	0.02	0.00				0.03	0.53	0.53	0.00	0.26	0.00
Sat Flow, veh/h	1740	3563	0				1740	1827	1550	0	3563	1553
Grp Volume(v), veh/h	5	10	0				31	208	215	0	94	-6
Grp Sat Flow(s),veh/h/ln	1740	1736	0				1740	1827	1550	0	1736	1553
Q Serve(g_s), s	0.0	0.0	0.0				0.3	1.1	1.3	0.0	0.4	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0				0.3	1.1	1.3	0.0	0.4	0.0
Prop In Lane	1.00		0.00				1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	28	56	0				56	961	815	0	919	411
V/C Ratio(X)	0.18	0.18	0.00				0.56	0.22	0.26	0.00	0.10	-0.01
Avail Cap(c_a), veh/h	3088	6161	0				498	2720	2308	0	3379	1511
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00				1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	8.5	8.5	0.0				8.3	2.2	2.3	0.0	4.9	0.0
Incr Delay (d2), s/veh	3.0	1.5	0.0				8.4	0.1	0.2	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0				0.3	0.5	0.6	0.0	0.2	0.0
LnGrp Delay(d),s/veh	11.5	10.0	0.0				16.8	2.3	2.4	0.0	4.9	0.0
LnGrp LOS	B	A					B	A	A		A	
Approach Vol, veh/h		15						454			88	
Approach Delay, s/veh		10.5						3.4			5.2	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		13.2		4.3	4.6	8.6		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		26.0		31.0	5.0	17.0		
Max Q Clear Time (g_c+I1), s		3.3		2.0	2.3	2.4		
Green Ext Time (p_c), s		2.4		0.0	0.0	2.1		

Intersection Summary	
HCM 2010 Ctrl Delay	3.9
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	25	0	6	5	1	39	3	36	2	61	268	20
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	29	0	7	6	1	46	4	42	2	72	315	24
Pedestrians					1							
Lane Width (ft)					12.0							
Walking Speed (ft/s)					4.0							
Percent Blockage					0							
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											499	
pX, platoon unblocked	0.96	0.96	0.96	0.96	0.96		0.96					
vC, conflicting volume	568	523	327	529	534	45	339			46		
vC1, stage 1 conf vol	471	471		52	52							
vC2, stage 2 conf vol	97	53		478	482							
vCu, unblocked vol	528	482	277	488	493	45	289			46		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	100	99	99	100	95	100			95		
cM capacity (veh/h)	524	514	726	521	506	1019	1210			1548		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	36	53	48	411
Volume Left	29	6	4	72
Volume Right	7	46	2	24
cSH	553	903	1210	1548
Volume to Capacity	0.07	0.06	0.00	0.05
Queue Length 95th (ft)	5	5	0	4
Control Delay (s)	12.0	9.2	0.6	1.7
Lane LOS	B	A	A	A
Approach Delay (s)	12.0	9.2	0.6	1.7
Approach LOS	B	A		

Intersection Summary				
Average Delay	3.0			
Intersection Capacity Utilization	40.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	43	1	3	2	2	68	3	293	1	29	80	9
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	51	1	4	2	2	80	4	345	1	34	94	11
Pedestrians		1			1			1				
Lane Width (ft)		12.0			12.0			12.0				
Walking Speed (ft/s)		4.0			4.0			4.0				
Percent Blockage		0			0			0				
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											499	
pX, platoon unblocked												
vC, conflicting volume	602	523	101	526	527	346	106			347		
vC1, stage 1 conf vol	169	169		353	353							
vC2, stage 2 conf vol	434	354		173	174							
vCu, unblocked vol	602	523	101	526	527	346	106			347		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	89	100	100	100	100	88	100			97		
cM capacity (veh/h)	470	555	947	603	573	692	1472			1200		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	55	85	349	139
Volume Left	51	2	4	34
Volume Right	4	80	1	11
cSH	487	685	1472	1200
Volume to Capacity	0.11	0.12	0.00	0.03
Queue Length 95th (ft)	10	11	0	2
Control Delay (s)	13.3	11.0	0.1	2.2
Lane LOS	B	B	A	A
Approach Delay (s)	13.3	11.0	0.1	2.2
Approach LOS	B	B		

Intersection Summary				
Average Delay	3.2			
Intersection Capacity Utilization	41.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	224	55	72	249	123	32	25	15	97	25	79
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		1.00	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	59	264	57	85	293	123	38	29	0	114	29	0
Adj No. of Lanes	1	2	0	1	2	0	0	2	0	0	2	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	805	2303	489	902	1939	794	230	221	0	230	221	0
Arrive On Green	1.00	1.00	1.00	0.79	0.79	0.79	0.14	0.14	0.00	0.14	0.14	0.00
Sat Flow, veh/h	966	2898	615	1053	2440	999	1200	1695	0	1200	1695	0
Grp Volume(v), veh/h	59	159	162	85	210	206	38	29	0	114	29	0
Grp Sat Flow(s),veh/h/ln	966	1770	1744	1053	1770	1670	1200	1610	0	1200	1610	0
Q Serve(g_s), s	0.3	0.0	0.0	2.0	3.0	3.2	2.8	1.7	0.0	8.9	1.7	0.0
Cycle Q Clear(g_c), s	3.4	0.0	0.0	2.0	3.0	3.2	4.5	1.7	0.0	10.6	1.7	0.0
Prop In Lane	1.00		0.35	1.00		0.60	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	805	1406	1386	902	1406	1327	230	221	0	230	221	0
V/C Ratio(X)	0.07	0.11	0.12	0.09	0.15	0.15	0.17	0.13	0.00	0.50	0.13	0.00
Avail Cap(c_a), veh/h	805	1406	1386	902	1406	1327	673	747	0	673	747	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.1	0.0	0.0	2.5	2.6	2.6	43.7	41.7	0.0	46.4	41.7	0.0
Incr Delay (d2), s/veh	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.0	0.6	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.1	0.6	1.5	1.5	1.1	0.8	0.0	3.4	0.8	0.0
LnGrp Delay(d),s/veh	0.2	0.2	0.2	2.7	2.9	2.9	43.8	41.8	0.0	47.0	41.8	0.0
LnGrp LOS	A	A	A	A	A	A	D	D		D	D	
Approach Vol, veh/h		380			501			67			143	
Approach Delay, s/veh		0.2			2.8			42.9			45.9	
Approach LOS		A			A			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		90.9		19.1		90.9		19.1
Change Period (Y+Rc), s		3.5		4.0		3.5		4.0
Max Green Setting (Gmax), s		51.5		51.0		51.5		51.0
Max Q Clear Time (g_c+I1), s		5.4		12.6		5.2		6.5
Green Ext Time (p_c), s		5.8		0.8		5.8		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	10.0
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	80	287	43	60	189	70	63	45	71	63	40	47
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.97		0.96	0.98		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	85	305	39	64	201	54	67	48	60	67	43	-34
Adj No. of Lanes	1	2	0	1	2	0	0	2	0	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	954	2553	323	900	2239	586	172	109	138	613	1943	0
Arrive On Green	1.00	1.00	1.00	0.81	0.81	0.81	0.12	0.12	0.12	0.12	0.12	0.00
Sat Flow, veh/h	1120	3156	400	1032	2769	725	947	883	1119	748	1695	0
Grp Volume(v), veh/h	85	170	174	64	127	128	98	0	77	67	9	0
Grp Sat Flow(s),veh/h/ln	1120	1770	1786	1032	1770	1724	1512	0	1437	748	1610	0
Q Serve(g_s), s	0.2	0.0	0.0	1.4	1.6	1.7	5.6	0.0	5.5	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.9	0.0	0.0	1.4	1.6	1.7	6.6	0.0	5.5	0.0	0.0	0.0
Prop In Lane	1.00		0.22	1.00		0.42	0.68		0.78	1.00		0.00
Lane Grp Cap(c), veh/h	954	1431	1445	900	1431	1394	241	0	177	0	0	0
V/C Ratio(X)	0.09	0.12	0.12	0.07	0.09	0.09	0.41	0.00	0.44	0.00	0.00	0.00
Avail Cap(c_a), veh/h	954	1431	1445	900	1431	1394	748	0	666	0	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.99	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	2.1	2.2	2.2	45.1	0.0	44.7	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.2	0.2	0.2	0.1	0.1	0.4	0.0	0.6	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.1	0.4	0.8	0.8	2.8	0.0	2.2	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.2	0.2	0.2	2.3	2.3	2.3	45.5	0.0	45.3	0.0	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D		D			
Approach Vol, veh/h		429			319			175			76	
Approach Delay, s/veh		0.2			2.3			45.4			0.0	
Approach LOS		A			A			D			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		92.5		17.5		92.5		17.5
Change Period (Y+Rc), s		3.5		4.0		3.5		4.0
Max Green Setting (Gmax), s		51.5		51.0		51.5		51.0
Max Q Clear Time (g_c+I1), s		3.9		2.0		3.7		8.6
Green Ext Time (p_c), s		4.6		1.2		4.6		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	8.8
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	7	39	23	5	3	24	52	4	13	116	12
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1827	1900	1900	1827	1900	1900	1827	1900	1900	1827	1900
Adj Flow Rate, veh/h	6	8	0	27	6	0	28	61	4	15	136	9
Adj No. of Lanes	0	1	0	0	1	0	0	2	0	0	2	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	182	41	0	245	11	0	723	1598	110	273	2192	142
Arrive On Green	0.04	0.04	0.00	0.04	0.04	0.00	0.74	0.74	0.74	0.74	0.74	0.74
Sat Flow, veh/h	726	968	0	1224	272	0	756	2169	149	201	2975	193
Grp Volume(v), veh/h	14	0	0	33	0	0	49	0	44	84	0	76
Grp Sat Flow(s),veh/h/ln	1694	0	0	1496	0	0	1442	0	1632	1746	0	1623
Q Serve(g_s), s	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.4
Cycle Q Clear(g_c), s	0.3	0.0	0.0	0.7	0.0	0.0	0.2	0.0	0.2	0.4	0.0	0.4
Prop In Lane	0.43		0.00	0.82		0.00	0.57		0.09	0.18		0.12
Lane Grp Cap(c), veh/h	223	0	0	256	0	0	1229	0	1202	1411	0	1196
V/C Ratio(X)	0.06	0.00	0.00	0.13	0.00	0.00	0.04	0.00	0.04	0.06	0.00	0.06
Avail Cap(c_a), veh/h	1407	0	0	1319	0	0	1480	0	1491	1713	0	1483
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.7	0.0	0.0	15.9	0.0	0.0	1.2	0.0	1.2	1.2	0.0	1.2
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	0.3	0.0	0.0	0.1	0.0	0.1	0.2	0.0	0.2
LnGrp Delay(d),s/veh	15.8	0.0	0.0	16.1	0.0	0.0	1.2	0.0	1.2	1.2	0.0	1.3
LnGrp LOS	B			B			A		A	A		A
Approach Vol, veh/h		14			33			93			160	
Approach Delay, s/veh		15.8			16.1			1.2			1.3	
Approach LOS		B			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		29.0		4.9		29.0		4.9
Change Period (Y+Rc), s		4.0		3.5		4.0		3.5
Max Green Setting (Gmax), s		31.0		26.5		31.0		26.5
Max Q Clear Time (g_c+I1), s		2.2		2.3		2.4		2.7
Green Ext Time (p_c), s		1.4		0.2		1.4		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	3.6
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	10	17	15	13	19	39	136	11	6	114	11
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1827	1900	1900	1827	1900	1900	1827	1900	1900	1827	1900
Adj Flow Rate, veh/h	13	11	-25	17	15	19	45	156	12	7	131	8
Adj No. of Lanes	0	1	0	0	1	0	0	2	0	0	2	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	0	0	0	164	21	26	548	1795	140	167	2318	138
Arrive On Green	0.04	0.04	0.00	0.04	0.04	0.04	0.73	0.73	0.73	0.73	0.73	0.73
Sat Flow, veh/h	-58010	-49086	111557	520	458	581	544	2443	191	71	3155	188
Grp Volume(v), veh/h	0	0	0	51	0	0	111	0	102	77	0	69
Grp Sat Flow(s),veh/h/ln	0	0	0	1559	0	0	1555	0	1623	1789	0	1624
Q Serve(g_s), s	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.4
Cycle Q Clear(g_c), s	0.0	0.0	0.0	1.1	0.0	0.0	0.6	0.0	0.6	0.4	0.0	0.4
Prop In Lane	-13.00		25.00	0.33		0.37	0.41		0.12	0.09		0.12
Lane Grp Cap(c), veh/h	0	0	0	211	0	0	1291	0	1192	1430	0	1193
V/C Ratio(X)	0.00	0.00	0.00	0.24	0.00	0.00	0.09	0.00	0.09	0.05	0.00	0.06
Avail Cap(c_a), veh/h	0	0	0	1355	0	0	1559	0	1479	1737	0	1480
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	16.0	0.0	0.0	1.3	0.0	1.3	1.3	0.0	1.3
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.5	0.0	0.0	0.3	0.0	0.3	0.2	0.0	0.2
LnGrp Delay(d),s/veh	0.0	0.0	0.0	16.6	0.0	0.0	1.3	0.0	1.3	1.3	0.0	1.3
LnGrp LOS				B			A		A	A		A
Approach Vol, veh/h		0			51			213			146	
Approach Delay, s/veh		0.0			16.6			1.3			1.3	
Approach LOS					B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		29.0		5.0		29.0		5.0
Change Period (Y+Rc), s		4.0		3.5		4.0		3.5
Max Green Setting (Gmax), s		31.0		26.5		31.0		26.5
Max Q Clear Time (g_c+I1), s		2.6		0.0		2.4		3.1
Green Ext Time (p_c), s		2.1		0.0		2.1		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	3.2
HCM 2010 LOS	A



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	19	61	14	6	33	71
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	21	67	15	7	36	78
Pedestrians	3					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	133	14			25	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	133	14			25	
tC, single (s)	6.9	7.0			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	94			98	
cM capacity (veh/h)	820	1053			1569	

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	21	34	34	10	12	36	39	39
Volume Left	21	0	0	0	0	36	0	0
Volume Right	0	34	34	0	7	0	0	0
cSH	820	1053	1053	1700	1700	1569	1700	1700
Volume to Capacity	0.03	0.03	0.03	0.01	0.01	0.02	0.02	0.02
Queue Length 95th (ft)	2	2	2	0	0	2	0	0
Control Delay (s)	9.5	8.5	8.5	0.0	0.0	7.3	0.0	0.0
Lane LOS	A	A	A			A		
Approach Delay (s)	8.8			0.0		2.3		
Approach LOS	A							

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	18.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	14	30	101	27	36	95
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	16	35	119	32	42	112
Pedestrians	2					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	277	77			153	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	277	77			153	
tC, single (s)	6.9	7.0			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	96			97	
cM capacity (veh/h)	662	960			1409	

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	16	18	18	79	71	42	56	56
Volume Left	16	0	0	0	0	42	0	0
Volume Right	0	18	18	0	32	0	0	0
cSH	662	960	960	1700	1700	1409	1700	1700
Volume to Capacity	0.02	0.02	0.02	0.05	0.04	0.03	0.03	0.03
Queue Length 95th (ft)	2	1	1	0	0	2	0	0
Control Delay (s)	10.6	8.8	8.8	0.0	0.0	7.6	0.0	0.0
Lane LOS	B	A	A			A		
Approach Delay (s)	9.4			0.0		2.1		
Approach LOS	A							

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	21.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	60	270	61	238	319	85	43	226	132	68	590	41
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1827	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	66	297	10	262	351	26	47	248	69	75	648	41
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	83	889	392	318	1236	540	64	750	204	95	981	62
Arrive On Green	0.05	0.26	0.26	0.18	0.36	0.36	0.04	0.28	0.28	0.05	0.30	0.30
Sat Flow, veh/h	1740	3471	1529	1740	3471	1515	1740	2695	734	1740	3312	209
Grp Volume(v), veh/h	66	297	10	262	351	26	47	158	159	75	339	350
Grp Sat Flow(s),veh/h/ln	1740	1736	1529	1740	1736	1515	1740	1736	1694	1740	1736	1786
Q Serve(g_s), s	2.1	4.0	0.3	8.3	4.1	0.6	1.5	4.1	4.3	2.4	9.7	9.8
Cycle Q Clear(g_c), s	2.1	4.0	0.3	8.3	4.1	0.6	1.5	4.1	4.3	2.4	9.7	9.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.43	1.00		0.12
Lane Grp Cap(c), veh/h	83	889	392	318	1236	540	64	483	471	95	514	529
V/C Ratio(X)	0.80	0.33	0.03	0.82	0.28	0.05	0.73	0.33	0.34	0.79	0.66	0.66
Avail Cap(c_a), veh/h	611	1949	859	763	2132	931	458	914	892	611	1066	1097
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.9	17.2	15.9	22.4	13.1	12.0	27.2	16.3	16.4	26.6	17.5	17.6
Incr Delay (d2), s/veh	6.3	0.3	0.0	2.1	0.2	0.1	5.9	0.1	0.2	5.3	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	1.9	0.1	4.1	2.0	0.3	0.8	2.0	2.0	1.3	4.7	4.8
LnGrp Delay(d),s/veh	33.2	17.6	15.9	24.5	13.3	12.1	33.1	16.5	16.5	31.9	18.1	18.1
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		373			639			364			764	
Approach Delay, s/veh		20.3			17.9			18.6			19.4	
Approach LOS		C			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.4	18.6	5.1	19.9	7.7	24.3	6.1	18.9
Change Period (Y+Rc), s	3.0	4.0	3.0	3.0	5.0	4.0	3.0	3.0
Max Green Setting (Gmax), s	25.0	32.0	15.0	35.0	20.0	35.0	20.0	30.0
Max Q Clear Time (g_c+I1), s	10.3	6.0	3.5	11.8	4.1	6.1	4.4	6.3
Green Ext Time (p_c), s	0.3	6.3	0.0	4.6	0.1	6.5	0.1	4.6

Intersection Summary	
HCM 2010 Ctrl Delay	19.0
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	81	333	53	150	338	105	96	711	165	60	256	41
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	90	370	1	167	376	49	107	790	106	67	284	42
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	117	953	417	213	1027	451	139	1087	146	86	984	144
Arrive On Green	0.07	0.27	0.27	0.12	0.29	0.29	0.08	0.35	0.35	0.05	0.32	0.32
Sat Flow, veh/h	1774	3539	1550	1774	3539	1555	1774	3127	419	1774	3097	453
Grp Volume(v), veh/h	90	370	1	167	376	49	107	447	449	67	161	165
Grp Sat Flow(s),veh/h/ln	1774	1770	1550	1774	1770	1555	1774	1770	1776	1774	1770	1781
Q Serve(g_s), s	3.0	5.2	0.0	5.5	5.1	1.4	3.6	13.3	13.3	2.3	4.1	4.2
Cycle Q Clear(g_c), s	3.0	5.2	0.0	5.5	5.1	1.4	3.6	13.3	13.3	2.3	4.1	4.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		0.25
Lane Grp Cap(c), veh/h	117	953	417	213	1027	451	139	615	617	86	562	566
V/C Ratio(X)	0.77	0.39	0.00	0.78	0.37	0.11	0.77	0.73	0.73	0.78	0.29	0.29
Avail Cap(c_a), veh/h	587	1874	821	734	2050	901	440	878	882	587	1025	1031
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.8	18.0	16.2	25.8	17.0	15.7	27.3	17.2	17.2	28.4	15.5	15.5
Incr Delay (d2), s/veh	4.0	0.4	0.0	2.4	0.3	0.1	3.4	0.7	0.7	5.8	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	2.6	0.0	2.8	2.5	0.6	1.9	6.6	6.6	1.2	2.0	2.1
LnGrp Delay(d),s/veh	31.8	18.4	16.2	28.2	17.3	15.9	30.8	18.0	18.0	34.2	15.6	15.6
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		461			592			1003			393	
Approach Delay, s/veh		21.0			20.3			19.3			18.8	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.3	20.3	7.7	22.2	9.0	21.5	5.9	24.0
Change Period (Y+Rc), s	3.0	4.0	3.0	3.0	5.0	4.0	3.0	3.0
Max Green Setting (Gmax), s	25.0	32.0	15.0	35.0	20.0	35.0	20.0	30.0
Max Q Clear Time (g_c+I1), s	7.5	7.2	5.6	6.2	5.0	7.1	4.3	15.3
Green Ext Time (p_c), s	0.2	7.3	0.1	6.2	0.1	7.7	0.1	5.0

Intersection Summary	
HCM 2010 Ctrl Delay	19.8
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	308	2	163	0	235	130	0	685	231
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1845	1845	1845	0	1845	1845	0	1845	1900
Adj Flow Rate, veh/h				347	0	39	0	250	0	0	729	157
Adj No. of Lanes				2	0	1	0	3	1	0	3	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				3	3	3	0	3	3	0	3	3
Cap, veh/h				726	0	323	0	2455	764	0	2019	429
Arrive On Green				0.21	0.00	0.21	0.00	0.49	0.00	0.00	0.49	0.49
Sat Flow, veh/h				3514	0	1566	0	5202	1568	0	4307	881
Grp Volume(v), veh/h				347	0	39	0	250	0	0	589	297
Grp Sat Flow(s),veh/h/ln				1757	0	1566	0	1679	1568	0	1679	1665
Q Serve(g_s), s				2.3	0.0	0.5	0.0	0.7	0.0	0.0	2.9	2.9
Cycle Q Clear(g_c), s				2.3	0.0	0.5	0.0	0.7	0.0	0.0	2.9	2.9
Prop In Lane				1.00		1.00	0.00		1.00	0.00		0.53
Lane Grp Cap(c), veh/h				726	0	323	0	2455	764	0	1637	812
V/C Ratio(X)				0.48	0.00	0.12	0.00	0.10	0.00	0.00	0.36	0.37
Avail Cap(c_a), veh/h				4299	0	1916	0	4814	1499	0	3209	1592
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				9.1	0.0	8.4	0.0	3.6	0.0	0.0	4.2	4.2
Incr Delay (d2), s/veh				0.5	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.1	0.0	0.2	0.0	0.3	0.0	0.0	1.3	1.4
LnGrp Delay(d),s/veh				9.6	0.0	8.6	0.0	3.6	0.0	0.0	4.3	4.5
LnGrp LOS				A		A		A			A	A
Approach Vol, veh/h					386			250			886	
Approach Delay, s/veh					9.5			3.6			4.4	
Approach LOS					A			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		16.7				16.7		9.4
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		25.0				25.0		32.0
Max Q Clear Time (g_c+I1), s		2.7				4.9		4.3
Green Ext Time (p_c), s		8.2				7.8		1.4

Intersection Summary	
HCM 2010 Ctrl Delay	5.5
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	307	2	613	0	406	108	0	359	113
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1881	1881	1881	0	1881	1881	0	1881	1900
Adj Flow Rate, veh/h				219	0	655	0	432	0	0	382	31
Adj No. of Lanes				1	0	2	0	3	1	0	3	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				1	1	1	0	1	1	0	1	1
Cap, veh/h				658	0	1174	0	1754	546	0	1656	133
Arrive On Green				0.37	0.00	0.37	0.00	0.34	0.00	0.00	0.34	0.34
Sat Flow, veh/h				1792	0	3198	0	5305	1599	0	5018	388
Grp Volume(v), veh/h				219	0	655	0	432	0	0	268	145
Grp Sat Flow(s),veh/h/ln				1792	0	1599	0	1712	1599	0	1712	1813
Q Serve(g_s), s				2.4	0.0	4.5	0.0	1.7	0.0	0.0	1.5	1.6
Cycle Q Clear(g_c), s				2.4	0.0	4.5	0.0	1.7	0.0	0.0	1.5	1.6
Prop In Lane				1.00		1.00	0.00		1.00	0.00		0.21
Lane Grp Cap(c), veh/h				658	0	1174	0	1754	546	0	1169	619
V/C Ratio(X)				0.33	0.00	0.56	0.00	0.25	0.00	0.00	0.23	0.23
Avail Cap(c_a), veh/h				2089	0	3729	0	4678	1457	0	3119	1651
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				6.3	0.0	6.9	0.0	6.5	0.0	0.0	6.5	6.5
Incr Delay (d2), s/veh				0.3	0.0	0.4	0.0	0.1	0.0	0.0	0.1	0.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.2	0.0	2.0	0.0	0.8	0.0	0.0	0.7	0.8
LnGrp Delay(d),s/veh				6.6	0.0	7.3	0.0	6.6	0.0	0.0	6.6	6.7
LnGrp LOS				A		A		A			A	A
Approach Vol, veh/h					874			432			413	
Approach Delay, s/veh					7.1			6.6			6.6	
Approach LOS					A			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		13.4				13.4		14.1
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		25.0				25.0		32.0
Max Q Clear Time (g_c+I1), s		3.7				3.6		6.5
Green Ext Time (p_c), s		5.7				5.7		3.6

Intersection Summary	
HCM 2010 Ctrl Delay	6.9
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	67	0	93	0	0	0	0	298	313	0	521	472
Number	3	8	18				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845				0	1845	1900	0	1845	1845
Adj Flow Rate, veh/h	76	0	33				0	339	0	0	592	0
Adj No. of Lanes	0	1	1				0	3	0	0	2	1
Peak Hour Factor	0.88	0.88	0.88				0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3				0	3	3	0	3	3
Cap, veh/h	156	0	140				0	2715	0	0	1889	845
Arrive On Green	0.09	0.00	0.09				0.00	0.54	0.00	0.00	0.54	0.00
Sat Flow, veh/h	1757	0	1568				0	5368	0	0	3597	1568
Grp Volume(v), veh/h	76	0	33				0	339	0	0	592	0
Grp Sat Flow(s),veh/h/ln	1757	0	1568				0	1679	0	0	1752	1568
Q Serve(g_s), s	0.9	0.0	0.4				0.0	0.7	0.0	0.0	2.0	0.0
Cycle Q Clear(g_c), s	0.9	0.0	0.4				0.0	0.7	0.0	0.0	2.0	0.0
Prop In Lane	1.00		1.00				0.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	156	0	140				0	2715	0	0	1889	845
V/C Ratio(X)	0.49	0.00	0.24				0.00	0.12	0.00	0.00	0.31	0.00
Avail Cap(c_a), veh/h	2450	0	2187				0	8663	0	0	6029	2697
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	9.3	0.0	9.1				0.0	2.4	0.0	0.0	2.7	0.0
Incr Delay (d2), s/veh	2.3	0.0	0.9				0.0	0.0	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.2				0.0	0.3	0.0	0.0	0.9	0.0
LnGrp Delay(d),s/veh	11.7	0.0	10.0				0.0	2.5	0.0	0.0	2.8	0.0
LnGrp LOS	B		A					A			A	
Approach Vol, veh/h		109						339			592	
Approach Delay, s/veh		11.1						2.5			2.8	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		15.6				15.6		5.9
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		37.0				37.0		30.0
Max Q Clear Time (g_c+I1), s		2.7				4.0		2.9
Green Ext Time (p_c), s		7.6				7.5		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	3.6
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	213	0	131	0	0	0	0	301	364	0	446	220
Number	3	8	18				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863				0	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	248	0	78				0	350	0	0	519	0
Adj No. of Lanes	0	1	1				0	3	0	0	2	1
Peak Hour Factor	0.86	0.86	0.86				0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2				0	2	2	0	2	2
Cap, veh/h	427	0	381				0	2276	0	0	1584	709
Arrive On Green	0.24	0.00	0.24				0.00	0.45	0.00	0.00	0.45	0.00
Sat Flow, veh/h	1774	0	1583				0	5421	0	0	3632	1583
Grp Volume(v), veh/h	248	0	78				0	350	0	0	519	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1695	0	0	1770	1583
Q Serve(g_s), s	3.2	0.0	1.0				0.0	1.0	0.0	0.0	2.4	0.0
Cycle Q Clear(g_c), s	3.2	0.0	1.0				0.0	1.0	0.0	0.0	2.4	0.0
Prop In Lane	1.00		1.00				0.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	427	0	381				0	2276	0	0	1584	709
V/C Ratio(X)	0.58	0.00	0.20				0.00	0.15	0.00	0.00	0.33	0.00
Avail Cap(c_a), veh/h	2075	0	1852				0	7335	0	0	5105	2284
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	8.6	0.0	7.8				0.0	4.2	0.0	0.0	4.6	0.0
Incr Delay (d2), s/veh	1.3	0.0	0.3				0.0	0.0	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.5				0.0	0.5	0.0	0.0	1.2	0.0
LnGrp Delay(d),s/veh	9.9	0.0	8.0				0.0	4.2	0.0	0.0	4.7	0.0
LnGrp LOS	A		A					A			A	
Approach Vol, veh/h		326						350			519	
Approach Delay, s/veh		9.4						4.2			4.7	
Approach LOS		A						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		15.5				15.5		10.2
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		37.0				37.0		30.0
Max Q Clear Time (g_c+I1), s		3.0				4.4		5.2
Green Ext Time (p_c), s		6.9				6.9		1.7

Intersection Summary	
HCM 2010 Ctrl Delay	5.9
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	41	7	15	0	1	21	15	549	10	275	241	98
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1827	1900	1827	1827	1900	1900	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	57	10	6	0	1	0	21	762	13	382	335	105
Adj No. of Lanes	0	1	0	1	1	0	0	2	0	1	2	0
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	73	13	8	35	37	0	94	1107	19	414	1704	525
Arrive On Green	0.05	0.05	0.05	0.00	0.02	0.00	0.33	0.33	0.33	0.24	0.66	0.66
Sat Flow, veh/h	1353	237	142	1740	1827	0	37	3349	56	1740	2600	800
Grp Volume(v), veh/h	73	0	0	0	1	0	415	0	381	382	222	218
Grp Sat Flow(s),veh/h/ln	1732	0	0	1740	1827	0	1791	0	1652	1740	1736	1664
Q Serve(g_s), s	1.9	0.0	0.0	0.0	0.0	0.0	0.3	0.0	9.2	9.9	2.3	2.4
Cycle Q Clear(g_c), s	1.9	0.0	0.0	0.0	0.0	0.0	9.1	0.0	9.2	9.9	2.3	2.4
Prop In Lane	0.78		0.08	1.00		0.00	0.05		0.03	1.00		0.48
Lane Grp Cap(c), veh/h	93	0	0	35	37	0	674	0	546	414	1138	1091
V/C Ratio(X)	0.78	0.00	0.00	0.00	0.03	0.00	0.62	0.00	0.70	0.92	0.19	0.20
Avail Cap(c_a), veh/h	788	0	0	1695	1780	0	871	0	733	414	1138	1091
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.6	0.0	0.0	0.0	22.2	0.0	13.4	0.0	13.4	17.2	3.1	3.2
Incr Delay (d2), s/veh	5.3	0.0	0.0	0.0	0.1	0.0	1.3	0.0	2.5	25.4	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	0.0	0.0	0.0	0.0	0.0	4.7	0.0	4.5	7.6	1.1	1.1
LnGrp Delay(d),s/veh	26.8	0.0	0.0	0.0	22.3	0.0	14.7	0.0	15.9	42.6	3.3	3.3
LnGrp LOS	C				C		B		B	D	A	A
Approach Vol, veh/h		73			1			796			822	
Approach Delay, s/veh		26.8			22.3			15.3			21.6	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	15.0	19.8		4.9		34.8		6.5
Change Period (Y+Rc), s	4.0	4.5		4.0		4.5		4.0
Max Green Setting (Gmax), s	11.0	20.5		45.0		23.0		21.0
Max Q Clear Time (g_c+I1), s	11.9	11.2		2.0		4.4		3.9
Green Ext Time (p_c), s	0.0	4.0		0.0		10.2		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	18.8
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	146	1	59	9	8	216	21	303	0	11	475	91
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1900	1845	1845	1900	1900	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	172	1	56	11	9	229	25	356	-1	13	559	81
Adj No. of Lanes	0	1	0	1	1	0	0	2	0	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	225	1	73	378	13	321	40	578	0	23	1063	154
Arrive On Green	0.18	0.18	0.18	0.21	0.21	0.21	0.25	0.25	0.00	0.01	0.35	0.35
Sat Flow, veh/h	1280	7	417	1757	59	1492	97	3293	0	1757	3065	443
Grp Volume(v), veh/h	229	0	0	11	0	238	202	178	0	13	319	321
Grp Sat Flow(s),veh/h/ln	1705	0	0	1757	0	1551	1712	1595	0	1757	1752	1755
Q Serve(g_s), s	6.1	0.0	0.0	0.2	0.0	6.8	0.0	0.0	0.0	0.4	6.9	7.0
Cycle Q Clear(g_c), s	6.1	0.0	0.0	0.2	0.0	6.8	0.0	0.0	0.0	0.4	6.9	7.0
Prop In Lane	0.75		0.24	1.00		0.96	0.12		0.00	1.00		0.25
Lane Grp Cap(c), veh/h	300	0	0	378	0	333	0	0	0	23	608	609
V/C Ratio(X)	0.76	0.00	0.00	0.03	0.00	0.71	0.00	0.00	0.00	0.56	0.52	0.53
Avail Cap(c_a), veh/h	752	0	0	1660	0	1466	0	0	0	406	846	848
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.7	0.0	0.0	14.8	0.0	17.3	0.0	0.0	0.0	23.4	12.4	12.4
Incr Delay (d2), s/veh	1.5	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	7.5	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	0.0	0.1	0.0	2.9	0.0	0.0	0.0	0.2	3.4	3.5
LnGrp Delay(d),s/veh	20.2	0.0	0.0	14.8	0.0	18.4	0.0	0.0	0.0	30.9	13.4	13.4
LnGrp LOS	C			B		B				C	B	B
Approach Vol, veh/h		229			249			380			653	
Approach Delay, s/veh		20.2			18.2			0.0			13.8	
Approach LOS		C			B			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	4.6	16.4		14.2		21.0		12.4
Change Period (Y+Rc), s	4.0	4.5		4.0		4.5		4.0
Max Green Setting (Gmax), s	11.0	20.5		45.0		23.0		21.0
Max Q Clear Time (g_c+I1), s	2.4	2.0		8.8		9.0		8.1
Green Ext Time (p_c), s	0.0	8.7		1.1		7.3		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	12.0
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	183	26	11	9	5	31	5	360	96	31	79	146
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	232	33	0	11	6	0	6	456	90	39	100	0
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	214	576	258	21	191	0	12	939	184	44	1194	0
Arrive On Green	0.12	0.16	0.00	0.01	0.05	0.00	0.01	0.32	0.32	0.02	0.34	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3632	0	1774	2945	577	1774	3632	0
Grp Volume(v), veh/h	232	33	0	11	6	0	6	273	273	39	100	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	0	1774	1770	1752	1774	1770	0
Q Serve(g_s), s	4.0	0.3	0.0	0.2	0.1	0.0	0.1	4.1	4.2	0.7	0.6	0.0
Cycle Q Clear(g_c), s	4.0	0.3	0.0	0.2	0.1	0.0	0.1	4.1	4.2	0.7	0.6	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.33	1.00		0.00
Lane Grp Cap(c), veh/h	214	576	258	21	191	0	12	565	559	44	1194	0
V/C Ratio(X)	1.09	0.06	0.00	0.53	0.03	0.00	0.52	0.48	0.49	0.88	0.08	0.00
Avail Cap(c_a), veh/h	214	4156	1859	214	4156	0	214	1652	1635	214	3303	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	14.6	11.7	0.0	16.3	14.9	0.0	16.4	9.1	9.1	16.1	7.5	0.0
Incr Delay (d2), s/veh	86.4	0.0	0.0	19.7	0.1	0.0	32.1	0.6	0.7	38.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	0.1	0.0	0.2	0.0	0.0	0.2	2.1	2.1	0.8	0.3	0.0
LnGrp Delay(d),s/veh	101.0	11.8	0.0	36.0	15.0	0.0	48.5	9.7	9.8	54.8	7.5	0.0
LnGrp LOS	F	B		D	B		D	A	A	D	A	
Approach Vol, veh/h		265			17			552			139	
Approach Delay, s/veh		89.9			28.6			10.2			20.8	
Approach LOS		F			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.8	14.6	4.4	9.4	4.2	15.2	8.0	5.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	31.0	4.0	39.0	4.0	31.0	4.0	39.0
Max Q Clear Time (g_c+I1), s	2.7	6.2	2.2	2.3	2.1	2.6	6.0	2.1
Green Ext Time (p_c), s	0.0	4.4	0.0	0.2	0.0	4.6	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	33.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	156	7	13	26	8	22	14	141	15	6	317	165
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	164	7	0	27	8	-10	15	148	-10	6	334	0
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	207	365	163	48	24	657	28	1089	0	6	1045	0
Arrive On Green	0.12	0.10	0.00	0.03	0.01	0.00	0.02	0.31	0.00	0.00	0.30	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3632	0	1774	3632	0	1774	3632	0
Grp Volume(v), veh/h	164	7	0	27	-2	-10	15	138	0	6	334	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	0	1774	1770	0
Q Serve(g_s), s	2.6	0.1	0.0	0.4	0.0	0.0	0.2	0.8	0.0	0.1	2.1	0.0
Cycle Q Clear(g_c), s	2.6	0.1	0.0	0.4	0.0	0.0	0.2	0.8	0.0	0.1	2.1	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	207	365	163	48	24	0	28	1089	0	6	1045	0
V/C Ratio(X)	0.79	0.02	0.00	0.56	-0.08	0.00	0.54	0.13	0.00	0.97	0.32	0.00
Avail Cap(c_a), veh/h	248	4820	2156	248	2410	0	248	3831	0	248	3831	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.3	11.5	0.0	13.8	0.0	0.0	14.0	7.1	0.0	14.3	7.9	0.0
Incr Delay (d2), s/veh	13.7	0.0	0.0	10.0	0.0	0.0	15.2	0.1	0.0	158.5	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0	0.3	0.0	0.0	0.2	0.4	0.0	0.3	1.0	0.0
LnGrp Delay(d),s/veh	26.0	11.6	0.0	23.8	0.0	0.0	29.1	7.2	0.0	172.8	8.0	0.0
LnGrp LOS	C	B		C			C	A		F	A	
Approach Vol, veh/h		171			15			153			340	
Approach Delay, s/veh		25.4			42.8			9.3			10.9	
Approach LOS		C			D			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.1	12.8	4.8	7.0	4.4	12.5	7.3	4.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	31.0	4.0	39.0	4.0	31.0	4.0	39.0
Max Q Clear Time (g_c+I1), s	2.1	2.8	2.4	2.1	2.2	4.1	4.6	0.0
Green Ext Time (p_c), s	0.0	3.4	0.0	0.0	0.0	3.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	14.9
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	55	693	413	17	659	87	136	204	15	102	383	96
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	58	729	301	18	694	84	143	215	10	107	403	76
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	368	1979	859	311	1772	214	175	845	39	135	663	124
Arrive On Green	0.56	0.56	0.56	0.56	0.56	0.56	0.10	0.25	0.25	0.08	0.22	0.22
Sat Flow, veh/h	689	3539	1536	544	3169	383	1774	3441	159	1774	2973	556
Grp Volume(v), veh/h	58	729	301	18	387	391	143	110	115	107	238	241
Grp Sat Flow(s),veh/h/ln	689	1770	1536	544	1770	1782	1774	1770	1830	1774	1770	1759
Q Serve(g_s), s	5.5	12.0	11.3	2.0	13.0	13.0	8.3	5.3	5.3	6.2	12.7	12.9
Cycle Q Clear(g_c), s	18.4	12.0	11.3	14.0	13.0	13.0	8.3	5.3	5.3	6.2	12.7	12.9
Prop In Lane	1.00		1.00	1.00		0.21	1.00		0.09	1.00		0.32
Lane Grp Cap(c), veh/h	368	1979	859	311	990	997	175	435	449	135	395	392
V/C Ratio(X)	0.16	0.37	0.35	0.06	0.39	0.39	0.82	0.25	0.26	0.79	0.60	0.61
Avail Cap(c_a), veh/h	368	1979	859	311	990	997	329	615	636	279	565	561
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.3	12.8	12.7	16.7	13.1	13.1	46.4	31.9	31.9	47.7	36.6	36.7
Incr Delay (d2), s/veh	0.9	0.5	1.1	0.4	1.2	1.2	9.0	1.1	1.1	9.9	5.3	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	6.0	5.1	0.3	6.6	6.7	4.5	2.7	2.8	3.4	6.8	6.9
LnGrp Delay(d),s/veh	19.2	13.4	13.8	17.1	14.2	14.2	55.3	33.0	33.0	57.6	41.9	42.2
LnGrp LOS	B	B	B	B	B	B	E	C	C	E	D	D
Approach Vol, veh/h		1088			796			368			586	
Approach Delay, s/veh		13.8			14.3			41.7			44.9	
Approach LOS		B			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		63.2	13.9	27.9		63.2	11.5	30.3
Change Period (Y+Rc), s		4.5	3.5	4.5		4.5	3.5	4.5
Max Green Setting (Gmax), s		39.5	19.5	33.5		39.5	16.5	36.5
Max Q Clear Time (g_c+I1), s		20.4	10.3	14.9		16.0	8.2	7.3
Green Ext Time (p_c), s		17.3	0.2	8.5		21.0	0.1	10.9

Intersection Summary	
HCM 2010 Ctrl Delay	24.0
HCM 2010 LOS	C

Notes

User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	107	761	121	4	512	90	117	346	22	52	202	84
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	116	827	-6	4	557	89	127	376	17	57	220	65
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	482	2190	980	399	1887	300	156	750	34	73	461	132
Arrive On Green	0.62	0.62	0.00	0.62	0.62	0.62	0.09	0.22	0.22	0.04	0.17	0.17
Sat Flow, veh/h	772	3505	1568	656	3019	481	1757	3412	154	1757	2670	766
Grp Volume(v), veh/h	116	827	-6	4	323	323	127	193	200	57	142	143
Grp Sat Flow(s),veh/h/ln	772	1752	1568	656	1752	1747	1757	1752	1813	1757	1752	1684
Q Serve(g_s), s	9.0	12.7	0.0	0.3	9.3	9.4	7.8	10.6	10.7	3.5	8.0	8.4
Cycle Q Clear(g_c), s	18.3	12.7	0.0	13.1	9.3	9.4	7.8	10.6	10.7	3.5	8.0	8.4
Prop In Lane	1.00		1.00	1.00		0.28	1.00		0.08	1.00		0.46
Lane Grp Cap(c), veh/h	482	2190	980	399	1095	1092	156	385	398	73	303	291
V/C Ratio(X)	0.24	0.38	-0.01	0.01	0.29	0.30	0.81	0.50	0.50	0.78	0.47	0.49
Avail Cap(c_a), veh/h	482	2190	980	399	1095	1092	279	581	602	184	486	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.7	10.1	0.0	13.3	9.5	9.5	49.2	37.6	37.7	52.2	41.0	41.1
Incr Delay (d2), s/veh	1.2	0.5	0.0	0.0	0.7	0.7	9.8	3.6	3.5	15.9	4.1	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	6.2	0.0	0.1	4.7	4.7	4.2	5.5	5.7	2.0	4.3	4.3
LnGrp Delay(d),s/veh	14.9	10.6	0.0	13.4	10.2	10.2	59.0	41.2	41.2	68.1	45.0	45.7
LnGrp LOS	B	B		B	B	B	E	D	D	E	D	D
Approach Vol, veh/h		937			650			520			342	
Approach Delay, s/veh		11.2			10.2			45.6			49.2	
Approach LOS		B			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		73.2	13.3	23.5		73.2	8.1	28.7
Change Period (Y+Rc), s		4.5	3.5	4.5		4.5	3.5	4.5
Max Green Setting (Gmax), s		49.5	17.5	30.5		49.5	11.5	36.5
Max Q Clear Time (g_c+I1), s		20.3	9.8	10.4		15.1	5.5	12.7
Green Ext Time (p_c), s		23.7	0.2	8.6		27.2	0.0	9.4

Intersection Summary	
HCM 2010 Ctrl Delay	23.5
HCM 2010 LOS	C

Notes

User approved ignoring U-Turning movement.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	135	107	19	87	45	50
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	150	119	21	97	50	56
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						19
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1062		
pX, platoon unblocked						
vC, conflicting volume			269		289	150
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			269		289	150
tC, single (s)			4.2		6.5	6.3
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.4
p0 queue free %			98		93	94
cM capacity (veh/h)			1250		673	876

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	150	119	21	97	106
Volume Left	0	0	21	0	50
Volume Right	0	119	0	0	56
cSH	1700	1700	1250	1700	1422
Volume to Capacity	0.09	0.07	0.02	0.06	0.07
Queue Length 95th (ft)	0	0	1	0	6
Control Delay (s)	0.0	0.0	7.9	0.0	10.0
Lane LOS			A		B
Approach Delay (s)	0.0		1.4		10.0
Approach LOS					B

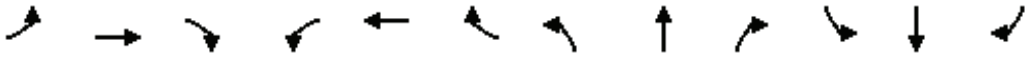
Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	23.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	68	40	16	143	131	32
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	75	44	18	157	144	35
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						19
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1062		
pX, platoon unblocked						
vC, conflicting volume			119		267	75
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			119		267	75
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		80	96
cM capacity (veh/h)			1457		709	981

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	75	44	18	157	179
Volume Left	0	0	18	0	144
Volume Right	0	44	0	0	35
cSH	1700	1700	1457	1700	882
Volume to Capacity	0.04	0.03	0.01	0.09	0.20
Queue Length 95th (ft)	0	0	1	0	19
Control Delay (s)	0.0	0.0	7.5	0.0	10.9
Lane LOS			A		B
Approach Delay (s)	0.0		0.8		10.9
Approach LOS					B

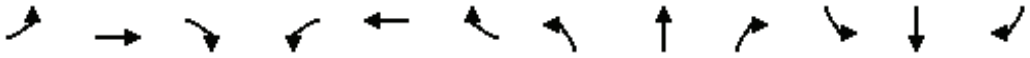
Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	21.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	36	13	7	41	50	3	11	15	65	21	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frt	1.00	0.96		1.00	0.92		1.00	0.91			0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)	1556	1573		1556	1503		1556	1471			1492	
Flt Permitted	0.95	1.00		0.95	1.00		0.74	1.00			0.88	
Satd. Flow (perm)	1556	1573		1556	1503		1206	1471			1330	
Peak-hour factor, PHF	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Adj. Flow (vph)	59	47	17	9	54	66	4	14	20	86	28	130
RTOR Reduction (vph)	0	13	0	0	55	0	0	14	0	0	64	0
Lane Group Flow (vph)	59	51	0	9	65	0	4	20	0	0	180	0
Confl. Peds. (#/hr)									2	2		
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	16%	16%	16%	16%	16%	16%	16%	16%	16%	16%	16%	16%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	1.9	5.7		0.8	4.6		8.5	8.5			8.5	
Effective Green, g (s)	1.9	5.7		0.8	4.6		8.5	8.5			8.5	
Actuated g/C Ratio	0.07	0.21		0.03	0.17		0.31	0.31			0.31	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	109	332		46	256		379	463			418	
v/s Ratio Prot	c0.04	0.03		0.01	c0.04			0.01				
v/s Ratio Perm							0.00				c0.14	
v/c Ratio	0.54	0.15		0.20	0.25		0.01	0.04			0.43	
Uniform Delay, d1	12.1	8.7		12.8	9.7		6.4	6.4			7.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	5.4	0.2		2.1	0.5		0.0	0.0			0.7	
Delay (s)	17.5	8.9		14.9	10.2		6.4	6.5			8.1	
Level of Service	B	A		B	B		A	A			A	
Approach Delay (s)		13.0			10.6			6.5			8.1	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	27.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	106	8	1	1	27	42	8	11	2	48	8	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frt	1.00	0.98		1.00	0.91		1.00	0.98			0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)	1626	1686		1626	1556		1626	1669			1572	
Flt Permitted	0.95	1.00		0.95	1.00		0.98	1.00			0.84	
Satd. Flow (perm)	1626	1686		1626	1556		1670	1669			1352	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	120	9	1	1	31	48	9	12	2	55	9	50
RTOR Reduction (vph)	0	1	0	0	42	0	0	2	0	0	41	0
Lane Group Flow (vph)	120	9	0	1	37	0	9	12	0	0	73	0
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	3.6	5.6		0.8	2.8		4.1	4.1			4.1	
Effective Green, g (s)	3.6	5.6		0.8	2.8		4.1	4.1			4.1	
Actuated g/C Ratio	0.16	0.25		0.04	0.12		0.18	0.18			0.18	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	260	419		57	193		304	304			246	
v/s Ratio Prot	c0.07	c0.01		0.00	c0.02			0.01				
v/s Ratio Perm							0.01				c0.05	
v/c Ratio	0.46	0.02		0.02	0.19		0.03	0.04			0.30	
Uniform Delay, d1	8.6	6.4		10.5	8.8		7.6	7.6			8.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	1.3	0.0		0.1	0.5		0.0	0.1			0.7	
Delay (s)	9.9	6.4		10.6	9.3		7.6	7.6			8.6	
Level of Service	A	A		B	A		A	A			A	
Approach Delay (s)		9.6			9.3			7.6			8.6	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	22.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	31.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	30	86	24	20	78	128
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	35	101	28	24	92	151
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						3
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	337					
pX, platoon unblocked						
vC, conflicting volume			35		166	86
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			35		166	86
tC, single (s)			4.2		6.5	6.3
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.4
p0 queue free %			98		88	84
cM capacity (veh/h)			1514		787	946

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	136	28	24	242
Volume Left	0	28	0	92
Volume Right	101	0	0	151
cSH	1700	1514	1700	1522
Volume to Capacity	0.08	0.02	0.01	0.16
Queue Length 95th (ft)	0	1	0	14
Control Delay (s)	0.0	7.4	0.0	9.8
Lane LOS		A		A
Approach Delay (s)	0.0	4.0		9.8
Approach LOS				A

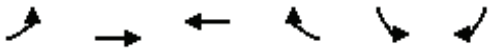
Intersection Summary			
Average Delay	6.0		
Intersection Capacity Utilization	21.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	19	39	36	21	49	37
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69
Hourly flow rate (vph)	28	57	52	30	71	54
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						3
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	337					
pX, platoon unblocked						
vC, conflicting volume			28		191	56
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			28		191	56
tC, single (s)			4.2		6.5	6.3
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.4
p0 queue free %			97		91	95
cM capacity (veh/h)			1530		752	986

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	84	52	30	125
Volume Left	0	52	0	71
Volume Right	57	0	0	54
cSH	1700	1530	1700	1319
Volume to Capacity	0.05	0.03	0.02	0.09
Queue Length 95th (ft)	0	3	0	8
Control Delay (s)	0.0	7.4	0.0	9.7
Lane LOS		A		A
Approach Delay (s)	0.0	4.7		9.7
Approach LOS				A

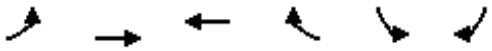
Intersection Summary			
Average Delay	5.5		
Intersection Capacity Utilization	18.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	738	317	0	888	469
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	0	777	334	0	935	251
Adj No. of Lanes	0	2	2	0	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1852	1852	0	1125	517
Arrive On Green	0.00	0.52	0.17	0.00	0.33	0.33
Sat Flow, veh/h	0	3725	3725	0	3442	1583
Grp Volume(v), veh/h	0	777	334	0	935	251
Grp Sat Flow(s),veh/h/ln	0	1770	1770	0	1721	1583
Q Serve(g_s), s	0.0	8.0	4.8	0.0	15.1	7.6
Cycle Q Clear(g_c), s	0.0	8.0	4.8	0.0	15.1	7.6
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1852	1852	0	1125	517
V/C Ratio(X)	0.00	0.42	0.18	0.00	0.83	0.49
Avail Cap(c_a), veh/h	0	1852	1852	0	1319	607
HCM Platoon Ratio	1.00	1.00	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	8.7	13.8	0.0	18.7	16.2
Incr Delay (d2), s/veh	0.0	0.7	0.2	0.0	4.1	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.1	2.4	0.0	7.8	3.4
LnGrp Delay(d),s/veh	0.0	9.4	14.0	0.0	22.7	16.9
LnGrp LOS		A	B		C	B
Approach Vol, veh/h		777	334		1186	
Approach Delay, s/veh		9.4	14.0		21.5	
Approach LOS		A	B		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		36.4		23.6		36.4		
Change Period (Y+Rc), s		5.0		4.0		5.0		
Max Green Setting (Gmax), s		28.0		23.0		28.0		
Max Q Clear Time (g_c+I1), s		10.0		17.1		6.8		
Green Ext Time (p_c), s		7.4		2.5		8.0		

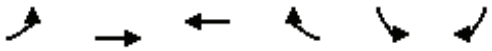
Intersection Summary	
HCM 2010 Ctrl Delay	16.3
HCM 2010 LOS	B



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	788	324	0	469	420
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1881	1881	0	1881	1881
Adj Flow Rate, veh/h	0	847	348	0	504	204
Adj No. of Lanes	0	2	2	0	2	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	1	1	0	1	1
Cap, veh/h	0	2310	2310	0	708	326
Arrive On Green	0.00	0.65	1.00	0.00	0.20	0.20
Sat Flow, veh/h	0	3762	3762	0	3476	1599
Grp Volume(v), veh/h	0	847	348	0	504	204
Grp Sat Flow(s),veh/h/ln	0	1787	1787	0	1738	1599
Q Serve(g_s), s	0.0	6.6	0.0	0.0	8.1	7.0
Cycle Q Clear(g_c), s	0.0	6.6	0.0	0.0	8.1	7.0
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	2310	2310	0	708	326
V/C Ratio(X)	0.00	0.37	0.15	0.00	0.71	0.63
Avail Cap(c_a), veh/h	0	2310	2310	0	1274	586
HCM Platoon Ratio	1.00	1.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.99	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	4.9	0.0	0.0	22.3	21.8
Incr Delay (d2), s/veh	0.0	0.5	0.1	0.0	1.3	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.3	0.0	0.0	4.0	3.2
LnGrp Delay(d),s/veh	0.0	5.4	0.1	0.0	23.6	23.8
LnGrp LOS		A	A		C	C
Approach Vol, veh/h		847	348		708	
Approach Delay, s/veh		5.4	0.1		23.7	
Approach LOS		A	A		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		43.8		16.2		43.8		
Change Period (Y+Rc), s		5.0		4.0		5.0		
Max Green Setting (Gmax), s		29.0		22.0		29.0		
Max Q Clear Time (g_c+I1), s		8.6		10.1		2.0		
Green Ext Time (p_c), s		8.5		2.1		9.6		

Intersection Summary	
HCM 2010 Ctrl Delay	11.2
HCM 2010 LOS	B



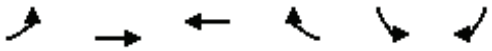
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	4	1622	270	20	291	47
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99			0.95	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1900	1845	1900
Adj Flow Rate, veh/h	4	1707	284	13	306	38
Adj No. of Lanes	0	2	2	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	0	0
Cap, veh/h	61	2193	2173	99	351	44
Arrive On Green	0.85	0.85	0.21	0.21	0.23	0.23
Sat Flow, veh/h	1	3521	3498	155	1538	191
Grp Volume(v), veh/h	918	793	145	152	345	0
Grp Sat Flow(s),veh/h/ln	1844	1595	1752	1808	1734	0
Q Serve(g_s), s	0.0	13.3	4.0	4.1	11.5	0.0
Cycle Q Clear(g_c), s	13.3	13.3	4.0	4.1	11.5	0.0
Prop In Lane	0.00			0.09	0.89	0.11
Lane Grp Cap(c), veh/h	1237	1018	1118	1154	396	0
V/C Ratio(X)	0.74	0.78	0.13	0.13	0.87	0.00
Avail Cap(c_a), veh/h	1237	1018	1118	1154	520	0
HCM Platoon Ratio	1.33	1.33	0.33	0.33	1.00	1.00
Upstream Filter(I)	0.75	0.75	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	2.6	2.6	10.2	10.2	22.3	0.0
Incr Delay (d2), s/veh	3.0	4.5	0.2	0.2	9.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	6.6	2.0	2.1	6.6	0.0
LnGrp Delay(d),s/veh	5.7	7.1	10.4	10.4	32.2	0.0
LnGrp LOS	A	A	B	B	C	
Approach Vol, veh/h		1711	297		345	
Approach Delay, s/veh		6.4	10.4		32.2	
Approach LOS		A	B		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		42.3		17.7		42.3		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		34.0		18.0		34.0		
Max Q Clear Time (g_c+I1), s		15.3		13.5		6.1		
Green Ext Time (p_c), s		13.7		0.3		18.3		

Intersection Summary	
HCM 2010 Ctrl Delay	10.7
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	6	1251	321	99	59	3
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1900	1845	1900
Adj Flow Rate, veh/h	6	1317	338	96	62	-8
Adj No. of Lanes	0	2	2	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	0	0
Cap, veh/h	63	3205	2502	697	450	0
Arrive On Green	1.00	1.00	0.63	0.63	0.00	0.00
Sat Flow, veh/h	3	3517	2772	747	2018	-260
Grp Volume(v), veh/h	709	614	219	215	0	0
Grp Sat Flow(s),veh/h/ln	1842	1595	1752	1675	0	0
Q Serve(g_s), s	0.0	0.0	3.1	3.2	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	3.1	3.2	0.0	0.0
Prop In Lane	0.01			0.45	1.13	-0.15
Lane Grp Cap(c), veh/h	1779	1488	1636	1563	0	0
V/C Ratio(X)	0.40	0.41	0.13	0.14	0.00	0.00
Avail Cap(c_a), veh/h	1779	1488	1636	1563	0	0
HCM Platoon Ratio	2.00	2.00	0.67	0.67	1.00	1.00
Upstream Filter(I)	0.89	0.89	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	1.3	1.3	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.7	0.2	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.3	1.5	1.5	0.0	0.0
LnGrp Delay(d),s/veh	0.6	0.7	1.5	1.5	0.0	0.0
LnGrp LOS	A	A	A	A		
Approach Vol, veh/h		1323	434		0	
Approach Delay, s/veh		0.7	1.5		0.0	
Approach LOS		A	A			

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		60.0		0.0		60.0		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		37.0		15.0		37.0		
Max Q Clear Time (g_c+I1), s		2.0		0.0		5.2		
Green Ext Time (p_c), s		16.6		0.0		15.9		

Intersection Summary	
HCM 2010 Ctrl Delay	0.9
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	175	25	895	99	250	58	382	309	0	0	646	103
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.80	1.00		0.92	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	0	1845	1845
Adj Flow Rate, veh/h	184	0	674	104	263	8	402	325	0	0	680	68
Adj No. of Lanes	1	0	2	1	2	1	2	3	0	0	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	242	0	777	377	752	309	470	2802	0	0	1379	604
Arrive On Green	0.14	0.00	0.14	0.21	0.21	0.21	0.14	0.56	0.00	0.00	0.39	0.39
Sat Flow, veh/h	1757	0	2508	1757	3505	1439	3408	5202	0	0	3597	1534
Grp Volume(v), veh/h	184	0	674	104	263	8	402	325	0	0	680	68
Grp Sat Flow(s),veh/h/ln	1757	0	1254	1757	1752	1439	1704	1679	0	0	1752	1534
Q Serve(g_s), s	12.1	0.0	16.5	5.9	7.6	0.5	13.8	3.7	0.0	0.0	17.5	3.4
Cycle Q Clear(g_c), s	12.1	0.0	16.5	5.9	7.6	0.5	13.8	3.7	0.0	0.0	17.5	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	242	0	777	377	752	309	470	2802	0	0	1379	604
V/C Ratio(X)	0.76	0.00	0.87	0.28	0.35	0.03	0.86	0.12	0.00	0.00	0.49	0.11
Avail Cap(c_a), veh/h	242	0	777	527	1051	432	596	2802	0	0	1379	604
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	49.9	0.0	42.4	39.3	40.0	37.2	50.6	12.6	0.0	0.0	27.4	23.1
Incr Delay (d2), s/veh	13.3	0.0	10.2	0.4	0.3	0.0	9.7	0.1	0.0	0.0	1.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	0.0	11.8	2.9	3.7	0.2	7.2	1.7	0.0	0.0	8.7	1.5
LnGrp Delay(d),s/veh	63.1	0.0	52.6	39.7	40.3	37.3	60.2	12.7	0.0	0.0	28.7	23.5
LnGrp LOS	E		D	D	D	D	E	B			C	C
Approach Vol, veh/h		858			375			727			748	
Approach Delay, s/veh		54.9			40.1			39.0			28.2	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		70.8		20.0	19.5	51.2		29.2
Change Period (Y+Rc), s		4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s		56.5		16.5	21.0	32.5		36.0
Max Q Clear Time (g_c+I1), s		5.7		18.5	15.8	19.5		9.6
Green Ext Time (p_c), s		9.2		0.0	0.7	5.8		2.0

Intersection Summary	
HCM 2010 Ctrl Delay	41.2
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	206	26	566	88	372	95	497	810	0	0	506	140
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.72	1.00		0.90	1.00		1.00	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	0	1845	1845
Adj Flow Rate, veh/h	212	0	323	91	384	46	512	835	0	0	522	105
Adj No. of Lanes	1	0	2	1	2	1	2	3	0	0	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	239	0	829	438	874	354	568	2634	0	0	1162	493
Arrive On Green	0.14	0.00	0.14	0.25	0.25	0.25	0.17	0.52	0.00	0.00	0.33	0.33
Sat Flow, veh/h	1757	0	2257	1757	3505	1419	3408	5202	0	0	3597	1489
Grp Volume(v), veh/h	212	0	323	91	384	46	512	835	0	0	522	105
Grp Sat Flow(s),veh/h/ln	1757	0	1128	1757	1752	1419	1704	1679	0	0	1752	1489
Q Serve(g_s), s	14.2	0.0	14.0	4.9	11.1	3.0	17.7	11.4	0.0	0.0	14.0	6.1
Cycle Q Clear(g_c), s	14.2	0.0	14.0	4.9	11.1	3.0	17.7	11.4	0.0	0.0	14.0	6.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	239	0	829	438	874	354	568	2634	0	0	1162	493
V/C Ratio(X)	0.89	0.00	0.39	0.21	0.44	0.13	0.90	0.32	0.00	0.00	0.45	0.21
Avail Cap(c_a), veh/h	242	0	833	527	1051	426	596	2634	0	0	1162	493
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	50.9	0.0	34.1	35.6	38.0	34.9	49.0	16.4	0.0	0.0	31.5	28.9
Incr Delay (d2), s/veh	30.2	0.0	0.3	0.2	0.3	0.2	16.5	0.3	0.0	0.0	1.3	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	0.0	4.4	2.4	5.4	1.2	9.6	5.3	0.0	0.0	7.0	2.6
LnGrp Delay(d),s/veh	81.1	0.0	34.4	35.9	38.3	35.1	65.6	16.7	0.0	0.0	32.8	29.8
LnGrp LOS	F		C	D	D	D	E	B			C	C
Approach Vol, veh/h		535			521			1347			627	
Approach Delay, s/veh		52.9			37.6			35.3			32.3	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		66.8		19.8	23.0	43.8		33.4
Change Period (Y+Rc), s		4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s		56.5		16.5	21.0	32.5		36.0
Max Q Clear Time (g_c+I1), s		13.4		16.2	19.7	16.0		13.1
Green Ext Time (p_c), s		13.7		0.1	0.3	8.9		3.0

Intersection Summary	
HCM 2010 Ctrl Delay	38.2
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	148	10	34	42	2	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	174	12	40	49	2	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			186		309	180
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			186		309	180
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		100	99
cM capacity (veh/h)			1371		657	855

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	186	40	49	7
Volume Left	0	40	0	2
Volume Right	12	0	0	5
cSH	1700	1371	1700	777
Volume to Capacity	0.11	0.03	0.03	0.01
Queue Length 95th (ft)	0	2	0	1
Control Delay (s)	0.0	7.7	0.0	9.7
Lane LOS		A		A
Approach Delay (s)	0.0	3.4		9.7
Approach LOS				A

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	25.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	54	2	4	46	11	36
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	69	3	5	59	14	46
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			72		140	71
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			72		140	71
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		98	95
cM capacity (veh/h)			1528		850	992

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	72	5	59	60
Volume Left	0	5	0	14
Volume Right	3	0	0	46
cSH	1700	1528	1700	955
Volume to Capacity	0.04	0.00	0.03	0.06
Queue Length 95th (ft)	0	0	0	5
Control Delay (s)	0.0	7.4	0.0	9.0
Lane LOS		A		A
Approach Delay (s)	0.0	0.6		9.0
Approach LOS				A

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	27.6
Intersection LOS	D

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	5	6	7	0	412	7	15	0	26	100	146
Peak Hour Factor	0.92	0.88	0.88	0.88	0.92	0.88	0.88	0.88	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	4	4	4	2	4	4	4	2	4	4	4
Mvmt Flow	0	6	7	8	0	468	8	17	0	30	114	166
Number of Lanes	0	0	1	0	0	1	1	0	0	1	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	1	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	3	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	3	3	2
HCM Control Delay	11	45.1	13
HCM LOS	B	E	B

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	28%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	19%	33%	0%	32%	0%	100%	93%
Vol Right, %	0%	0%	81%	39%	0%	68%	0%	0%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	26	67	179	18	412	22	94	81	44
LT Vol	26	0	0	5	412	0	94	0	0
Through Vol	0	67	33	6	0	7	0	81	41
RT Vol	0	0	146	7	0	15	0	0	3
Lane Flow Rate	30	76	204	20	468	25	107	92	50
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.065	0.156	0.388	0.045	0.909	0.042	0.239	0.194	0.103
Departure Headway (Hd)	7.948	7.434	6.848	7.873	7.097	6.119	8.056	7.542	7.492
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	453	485	528	456	515	589	448	478	480
Service Time	5.661	5.147	4.561	5.602	4.797	3.819	5.772	5.257	5.207
HCM Lane V/C Ratio	0.066	0.157	0.386	0.044	0.909	0.042	0.239	0.192	0.104
HCM Control Delay	11.2	11.5	13.8	11	47	9.1	13.3	12.1	11.1
HCM Lane LOS	B	B	B	B	E	A	B	B	B
HCM 95th-tile Q	0.2	0.5	1.8	0.1	10.6	0.1	0.9	0.7	0.3

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	94	122	3
Peak Hour Factor	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	4	4	4
Mvmt Flow	0	107	139	3
Number of Lanes	0	1	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	3
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	12.4
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	20
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	0	10	7	0	400	0	5	0	9	35	62
Peak Hour Factor	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	12	8	0	471	0	6	0	11	41	73
Number of Lanes	0	0	1	0	0	1	1	0	0	1	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	1	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	3	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	3	3	2
HCM Control Delay	9.2	25.8	9.8
HCM LOS	A	D	A

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	0%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	16%	59%	0%	0%	0%	100%	88%
Vol Right, %	0%	0%	84%	41%	0%	100%	0%	0%	12%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	9	23	74	17	400	5	41	43	25
LT Vol	9	0	0	0	400	0	41	0	0
Through Vol	0	23	12	10	0	0	0	43	22
RT Vol	0	0	62	7	0	5	0	0	3
Lane Flow Rate	11	27	87	20	471	6	48	51	29
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.021	0.051	0.145	0.035	0.774	0.008	0.095	0.093	0.052
Departure Headway (Hd)	7.134	6.624	6.023	6.256	5.921	4.723	7.104	6.594	6.507
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	502	541	595	572	612	759	505	543	550
Service Time	4.874	4.364	3.763	3.996	3.64	2.442	4.844	4.334	4.247
HCM Lane V/C Ratio	0.022	0.05	0.146	0.035	0.77	0.008	0.095	0.094	0.053
HCM Control Delay	10	9.7	9.8	9.2	26	7.5	10.6	10	9.6
HCM Lane LOS	A	A	A	A	D	A	B	A	A
HCM 95th-tile Q	0.1	0.2	0.5	0.1	7.2	0	0.3	0.3	0.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	41	65	3
Peak Hour Factor	0.92	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	48	76	4
Number of Lanes	0	1	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	3
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	10.1
HCM LOS	B

Lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	8	363	157	296	78	18	55	64	475	45	129	15
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1900	1845	1900
Adj Flow Rate, veh/h	9	403	121	329	87	13	61	71	44	50	143	14
Adj No. of Lanes	1	2	0	2	1	0	1	1	1	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	407	615	182	573	255	38	160	168	142	68	195	19
Arrive On Green	0.23	0.23	0.23	0.16	0.16	0.16	0.09	0.09	0.09	0.16	0.16	0.16
Sat Flow, veh/h	1757	2656	788	3514	1563	234	1757	1845	1558	435	1243	122
Grp Volume(v), veh/h	9	264	260	329	0	100	61	71	44	207	0	0
Grp Sat Flow(s),veh/h/ln	1757	1752	1692	1757	0	1796	1757	1845	1558	1799	0	0
Q Serve(g_s), s	0.2	6.1	6.2	3.9	0.0	2.2	1.5	1.6	1.2	4.9	0.0	0.0
Cycle Q Clear(g_c), s	0.2	6.1	6.2	3.9	0.0	2.2	1.5	1.6	1.2	4.9	0.0	0.0
Prop In Lane	1.00		0.47	1.00		0.13	1.00		1.00	0.24		0.07
Lane Grp Cap(c), veh/h	407	406	392	573	0	293	160	168	142	283	0	0
V/C Ratio(X)	0.02	0.65	0.66	0.57	0.00	0.34	0.38	0.42	0.31	0.73	0.00	0.00
Avail Cap(c_a), veh/h	667	665	642	1412	0	722	1098	1153	974	643	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.3	15.6	15.6	17.3	0.0	16.6	19.2	19.2	19.0	18.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.8	1.9	0.9	0.0	0.7	1.5	1.7	1.2	3.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	3.1	3.1	1.9	0.0	1.1	0.8	0.9	0.5	2.7	0.0	0.0
LnGrp Delay(d),s/veh	13.3	17.3	17.6	18.2	0.0	17.3	20.7	20.9	20.3	21.6	0.0	0.0
LnGrp LOS	B	B	B	B		B	C	C	C	C		
Approach Vol, veh/h		533			429			176			207	
Approach Delay, s/veh		17.4			18.0			20.7			21.6	
Approach LOS		B			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		8.1		14.4		11.0		11.3
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		28.0		17.0		16.0		18.0
Max Q Clear Time (g_c+I1), s		3.6		8.2		6.9		5.9
Green Ext Time (p_c), s		0.6		2.1		0.7		1.4

Intersection Summary	
HCM 2010 Ctrl Delay	18.7
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

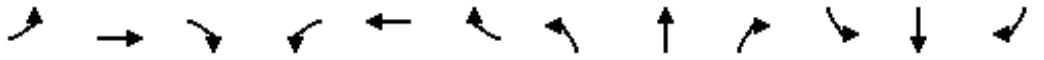
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	25	163	59	273	252	39	306	175	417	15	37	38
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1881	1881	1881	1900	1881	1900
Adj Flow Rate, veh/h	26	168	12	192	385	34	248	274	-19	15	38	36
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	0	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	186	351	25	372	708	62	425	446	379	20	50	47
Arrive On Green	0.10	0.10	0.10	0.21	0.21	0.21	0.24	0.24	0.00	0.07	0.07	0.07
Sat Flow, veh/h	1792	3386	240	1792	3410	300	1792	1881	1599	291	737	698
Grp Volume(v), veh/h	26	88	92	192	212	207	248	274	-19	89	0	0
Grp Sat Flow(s),veh/h/ln	1792	1787	1839	1792	1881	1828	1792	1881	1599	1726	0	0
Q Serve(g_s), s	0.5	1.9	2.0	4.0	4.2	4.2	5.1	5.4	0.0	2.1	0.0	0.0
Cycle Q Clear(g_c), s	0.5	1.9	2.0	4.0	4.2	4.2	5.1	5.4	0.0	2.1	0.0	0.0
Prop In Lane	1.00		0.13	1.00		0.16	1.00		1.00	0.17		0.40
Lane Grp Cap(c), veh/h	186	185	190	372	390	379	425	446	379	117	0	0
V/C Ratio(X)	0.14	0.48	0.48	0.52	0.54	0.55	0.58	0.61	-0.05	0.76	0.00	0.00
Avail Cap(c_a), veh/h	731	729	750	774	813	790	1204	1264	1075	663	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.0	17.6	17.6	14.7	14.7	14.8	14.1	14.2	0.0	19.1	0.0	0.0
Incr Delay (d2), s/veh	0.3	1.9	1.9	1.1	1.2	1.2	1.3	1.4	0.0	9.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.1	1.1	2.0	2.3	2.3	2.6	3.0	0.0	1.3	0.0	0.0
LnGrp Delay(d),s/veh	17.3	19.5	19.5	15.8	15.9	16.0	15.3	15.6	0.0	28.8	0.0	0.0
LnGrp LOS	B	B	B	B	B	B	B	B		C		
Approach Vol, veh/h		206			611			503			89	
Approach Delay, s/veh		19.2			15.9			16.0			28.8	
Approach LOS		B			B			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		13.9		8.3		6.8		12.6
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		28.0		17.0		16.0		18.0
Max Q Clear Time (g_c+I1), s		7.4		4.0		4.1		6.2
Green Ext Time (p_c), s		2.3		0.8		0.3		2.4

Intersection Summary	
HCM 2010 Ctrl Delay	17.3
HCM 2010 LOS	B

Notes

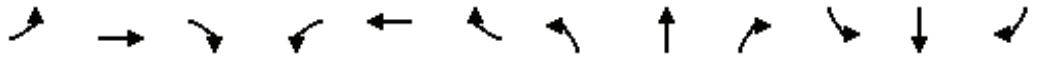
User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	63	0	63	10	531	0	0	209	373
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1827	1827	1900	1827	1827	0	0	1827	1900
Adj Flow Rate, veh/h				72	0	0	11	603	0	0	238	0
Adj No. of Lanes				1	1	0	1	2	0	0	2	0
Peak Hour Factor				0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %				4	4	4	4	4	0	0	4	4
Cap, veh/h				111	117	0	21	2064	0	0	1430	0
Arrive On Green				0.06	0.00	0.00	0.01	0.59	0.00	0.00	0.41	0.00
Sat Flow, veh/h				1740	1827	0	1740	3563	0	0	3654	0
Grp Volume(v), veh/h				72	0	0	11	603	0	0	238	0
Grp Sat Flow(s),veh/h/ln				1740	1827	0	1740	1736	0	0	1736	0
Q Serve(g_s), s				0.9	0.0	0.0	0.1	2.0	0.0	0.0	1.0	0.0
Cycle Q Clear(g_c), s				0.9	0.0	0.0	0.1	2.0	0.0	0.0	1.0	0.0
Prop In Lane				1.00		0.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				111	117	0	21	2064	0	0	1430	0
V/C Ratio(X)				0.65	0.00	0.00	0.54	0.29	0.00	0.00	0.17	0.00
Avail Cap(c_a), veh/h				1188	1248	0	297	4445	0	0	5631	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				10.7	0.0	0.0	11.5	2.3	0.0	0.0	4.3	0.0
Incr Delay (d2), s/veh				6.2	0.0	0.0	20.0	0.1	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.6	0.0	0.0	0.2	0.9	0.0	0.0	0.5	0.0
LnGrp Delay(d),s/veh				16.9	0.0	0.0	31.5	2.4	0.0	0.0	4.4	0.0
LnGrp LOS				B			C	A			A	
Approach Vol, veh/h					72			614			238	
Approach Delay, s/veh					16.9			2.9			4.4	
Approach LOS					B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		17.9			4.3	13.7		5.5
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		30.0			4.0	38.0		16.0
Max Q Clear Time (g_c+I1), s		4.0			2.1	3.0		2.9
Green Ext Time (p_c), s		6.2			0.0	6.7		0.1

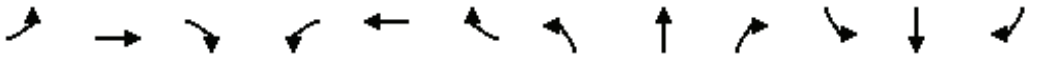
Intersection Summary	
HCM 2010 Ctrl Delay	4.4
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	24	0	432	6	466	0	0	82	287
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1881	1881	1900	1881	1881	0	0	1881	1900
Adj Flow Rate, veh/h				25	0	389	6	491	0	0	86	0
Adj No. of Lanes				1	1	0	1	2	0	0	2	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				1	1	1	1	1	0	0	1	1
Cap, veh/h				597	0	533	12	1346	0	0	804	0
Arrive On Green				0.33	0.00	0.33	0.01	0.38	0.00	0.00	0.22	0.00
Sat Flow, veh/h				1792	0	1599	1792	3668	0	0	3762	0
Grp Volume(v), veh/h				25	0	389	6	491	0	0	86	0
Grp Sat Flow(s),veh/h/ln				1792	0	1599	1792	1787	0	0	1787	0
Q Serve(g_s), s				0.3	0.0	5.9	0.1	2.7	0.0	0.0	0.5	0.0
Cycle Q Clear(g_c), s				0.3	0.0	5.9	0.1	2.7	0.0	0.0	0.5	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				597	0	533	12	1346	0	0	804	0
V/C Ratio(X)				0.04	0.00	0.73	0.51	0.36	0.00	0.00	0.11	0.00
Avail Cap(c_a), veh/h				1041	0	929	260	3893	0	0	2855	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				6.2	0.0	8.1	13.6	6.2	0.0	0.0	8.5	0.0
Incr Delay (d2), s/veh				0.0	0.0	1.9	30.9	0.2	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.1	0.0	2.8	0.1	1.3	0.0	0.0	0.3	0.0
LnGrp Delay(d),s/veh				6.2	0.0	10.0	44.5	6.4	0.0	0.0	8.5	0.0
LnGrp LOS				A		B	D	A			A	
Approach Vol, veh/h					414			497			86	
Approach Delay, s/veh					9.8			6.8			8.5	
Approach LOS					A			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		14.4			4.2	10.2		13.2
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		30.0			4.0	22.0		16.0
Max Q Clear Time (g_c+I1), s		4.7			2.1	2.5		7.9
Green Ext Time (p_c), s		4.0			0.0	3.7		1.7

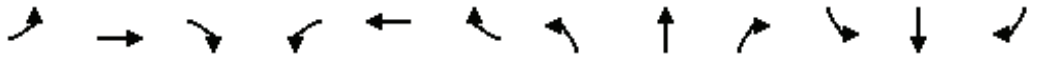
Intersection Summary	
HCM 2010 Ctrl Delay	8.2
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	826	122	78	316	0	0	0	0	388	23	181
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1900	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	898	104	85	343	0				422	25	181
Adj No. of Lanes	0	2	0	0	2	0				0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1568	182	199	961	0				464	28	199
Arrive On Green	0.00	0.49	0.49	0.98	0.98	0.00				0.40	0.40	0.40
Sat Flow, veh/h	0	3288	370	258	2042	0				1154	68	495
Grp Volume(v), veh/h	0	497	505	167	261	0				628	0	0
Grp Sat Flow(s),veh/h/ln	0	1770	1795	605	1610	0				1718	0	0
Q Serve(g_s), s	0.0	14.9	14.9	8.4	0.3	0.0				25.8	0.0	0.0
Cycle Q Clear(g_c), s	0.0	14.9	14.9	23.3	0.3	0.0				25.8	0.0	0.0
Prop In Lane	0.00		0.21	0.51		0.00				0.67		0.29
Lane Grp Cap(c), veh/h	0	869	881	369	791	0				691	0	0
V/C Ratio(X)	0.00	0.57	0.57	0.45	0.33	0.00				0.91	0.00	0.00
Avail Cap(c_a), veh/h	0	1203	1221	531	1095	0				691	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.94	0.94	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	13.5	13.5	4.1	0.3	0.0				21.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.6	0.8	0.2	0.0				18.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.3	7.4	1.8	0.1	0.0				15.7	0.0	0.0
LnGrp Delay(d),s/veh	0.0	14.1	14.1	4.9	0.6	0.0				39.1	0.0	0.0
LnGrp LOS		B	B	A	A					D		
Approach Vol, veh/h		1002			428						628	
Approach Delay, s/veh		14.1			2.3						39.1	
Approach LOS		B			A						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				40.8		34.2		40.8
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				51.0		16.0		51.0
Max Q Clear Time (g_c+I1), s				16.9		27.8		25.3
Green Ext Time (p_c), s				13.0		0.0		11.5

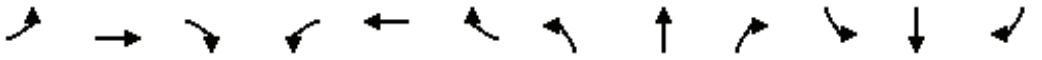
Intersection Summary	
HCM 2010 Ctrl Delay	19.3
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	581	70	53	446	0	0	0	0	283	1	187
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1881	1900	1900	1881	0				1900	1881	1900
Adj Flow Rate, veh/h	0	605	45	55	465	0				295	1	179
Adj No. of Lanes	0	2	0	0	2	0				0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	1	1	1	1	0				0	1	0
Cap, veh/h	0	1104	82	114	914	0				602	2	365
Arrive On Green	0.00	0.33	0.33	0.65	0.65	0.00				0.57	0.57	0.57
Sat Flow, veh/h	0	3466	250	170	2877	0				1064	4	646
Grp Volume(v), veh/h	0	320	330	259	261	0				475	0	0
Grp Sat Flow(s),veh/h/ln	0	1787	1835	1335	1626	0				1714	0	0
Q Serve(g_s), s	0.0	11.0	11.0	2.2	6.1	0.0				12.5	0.0	0.0
Cycle Q Clear(g_c), s	0.0	11.0	11.0	13.3	6.1	0.0				12.5	0.0	0.0
Prop In Lane	0.00		0.14	0.21		0.00				0.62		0.38
Lane Grp Cap(c), veh/h	0	585	601	495	533	0				970	0	0
V/C Ratio(X)	0.00	0.55	0.55	0.52	0.49	0.00				0.49	0.00	0.00
Avail Cap(c_a), veh/h	0	1215	1248	1007	1106	0				970	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.93	0.93	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	20.7	20.7	9.9	9.8	0.0				9.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.8	0.8	0.8	0.7	0.0				1.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.6	5.7	2.6	2.8	0.0				6.3	0.0	0.0
LnGrp Delay(d),s/veh	0.0	21.5	21.5	10.7	10.4	0.0				11.5	0.0	0.0
LnGrp LOS		C	C	B	B					B		
Approach Vol, veh/h		650			520						475	
Approach Delay, s/veh		21.5			10.5						11.5	
Approach LOS		C			B						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				28.6		46.4		28.6
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				51.0		16.0		51.0
Max Q Clear Time (g_c+I1), s				13.0		14.5		15.3
Green Ext Time (p_c), s				9.3		0.5		9.2

Intersection Summary	
HCM 2010 Ctrl Delay	15.1
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	210	1004	0	0	371	381	23	2	54	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	236	1128	0	0	417	277	27	0	7			
Adj No. of Lanes	0	2	0	0	2	0	2	0	1			
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	317	1444	0	0	1299	854	903	0	403			
Arrive On Green	1.00	1.00	0.00	0.00	0.64	0.64	0.25	0.00	0.25			
Sat Flow, veh/h	392	2345	0	0	2127	1338	3548	0	1581			
Grp Volume(v), veh/h	604	760	0	0	362	332	27	0	7			
Grp Sat Flow(s),veh/h/ln	1042	1610	0	0	1770	1602	1774	0	1581			
Q Serve(g_s), s	24.8	0.0	0.0	0.0	7.0	7.1	0.4	0.0	0.2			
Cycle Q Clear(g_c), s	31.9	0.0	0.0	0.0	7.0	7.1	0.4	0.0	0.2			
Prop In Lane	0.39		0.00	0.00		0.83	1.00		1.00			
Lane Grp Cap(c), veh/h	732	1029	0	0	1130	1023	903	0	403			
V/C Ratio(X)	0.82	0.74	0.00	0.00	0.32	0.32	0.03	0.00	0.02			
Avail Cap(c_a), veh/h	796	1117	0	0	1227	1111	903	0	403			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.70	0.70	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	1.9	0.0	0.0	0.0	6.2	6.2	21.0	0.0	20.9			
Incr Delay (d2), s/veh	4.7	1.7	0.0	0.0	0.2	0.2	0.1	0.0	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	7.5	0.5	0.0	0.0	3.4	3.1	0.2	0.0	0.1			
LnGrp Delay(d),s/veh	6.7	1.7	0.0	0.0	6.3	6.4	21.1	0.0	21.0			
LnGrp LOS	A	A			A	A	C		C			
Approach Vol, veh/h		1364			694			34				
Approach Delay, s/veh		3.9			6.3			21.0				
Approach LOS		A			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		23.1		51.9				51.9
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		15.0		52.0				52.0
Max Q Clear Time (g_c+I1), s		2.4		33.9				9.1
Green Ext Time (p_c), s		0.0		14.0				25.9

Intersection Summary	
HCM 2010 Ctrl Delay	5.0
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	214	650	0	0	438	377	61	141	100	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1881	0	0	1881	1900	1881	1881	1881			
Adj Flow Rate, veh/h	223	677	0	0	456	253	64	147	54			
Adj No. of Lanes	0	2	0	0	2	0	1	1	1			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	1	1	0	0	1	1	1	1	1			
Cap, veh/h	337	1073	0	0	1217	670	616	646	549			
Arrive On Green	1.00	1.00	0.00	0.00	0.55	0.55	0.34	0.34	0.34			
Sat Flow, veh/h	471	2038	0	0	2308	1219	1792	1881	1599			
Grp Volume(v), veh/h	358	542	0	0	368	341	64	147	54			
Grp Sat Flow(s),veh/h/ln	798	1626	0	0	1787	1645	1792	1881	1599			
Q Serve(g_s), s	16.6	0.0	0.0	0.0	8.7	8.8	1.8	4.2	1.7			
Cycle Q Clear(g_c), s	25.4	0.0	0.0	0.0	8.7	8.8	1.8	4.2	1.7			
Prop In Lane	0.62		0.00	0.00		0.74	1.00		1.00			
Lane Grp Cap(c), veh/h	516	894	0	0	982	904	616	646	549			
V/C Ratio(X)	0.69	0.61	0.00	0.00	0.37	0.38	0.10	0.23	0.10			
Avail Cap(c_a), veh/h	655	1128	0	0	1239	1141	616	646	549			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.70	0.70	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	2.4	0.0	0.0	0.0	9.6	9.6	16.8	17.5	16.7			
Incr Delay (d2), s/veh	1.6	0.5	0.0	0.0	0.2	0.3	0.3	0.8	0.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.2	0.1	0.0	0.0	4.4	4.0	1.0	2.3	0.8			
LnGrp Delay(d),s/veh	3.9	0.5	0.0	0.0	9.8	9.9	17.1	18.3	17.1			
LnGrp LOS	A	A			A	A	B	B	B			
Approach Vol, veh/h		900			709			265				
Approach Delay, s/veh		1.8			9.8			17.8				
Approach LOS		A			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		29.8		45.2				45.2
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		15.0		52.0				52.0
Max Q Clear Time (g_c+I1), s		6.2		27.4				10.8
Green Ext Time (p_c), s		0.7		13.8				17.9

Intersection Summary	
HCM 2010 Ctrl Delay	7.1
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	17	352	193	21	429	67	149	159	14	149	871	112
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	0.99		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1900	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	18	371	104	22	452	58	157	167	8	157	917	111
Adj No. of Lanes	0	2	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	77	1447	679	71	1301	164	187	1144	54	188	1056	128
Arrive On Green	0.45	0.45	0.45	0.45	0.45	0.45	0.11	0.34	0.34	0.11	0.34	0.34
Sat Flow, veh/h	91	3247	1524	78	2920	367	1757	3401	162	1757	3136	380
Grp Volume(v), veh/h	205	184	104	279	0	253	157	86	89	157	512	516
Grp Sat Flow(s),veh/h/ln	1744	1595	1524	1763	0	1602	1757	1752	1811	1757	1752	1763
Q Serve(g_s), s	0.0	7.8	4.4	0.0	0.0	11.2	9.5	3.7	3.7	9.5	29.6	29.6
Cycle Q Clear(g_c), s	7.5	7.8	4.4	10.7	0.0	11.2	9.5	3.7	3.7	9.5	29.6	29.6
Prop In Lane	0.09		1.00	0.08		0.23	1.00		0.09	1.00		0.22
Lane Grp Cap(c), veh/h	813	711	679	822	0	714	187	590	609	188	590	594
V/C Ratio(X)	0.25	0.26	0.15	0.34	0.00	0.35	0.84	0.15	0.15	0.84	0.87	0.87
Avail Cap(c_a), veh/h	813	711	679	822	0	714	342	590	609	423	633	637
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.00	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.7	18.8	17.8	19.6	0.0	19.7	47.3	25.0	25.0	47.3	33.6	33.6
Incr Delay (d2), s/veh	0.7	0.9	0.5	0.1	0.0	0.1	3.8	0.2	0.2	3.8	12.3	12.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	3.6	1.9	5.5	0.0	4.9	4.8	1.8	1.9	4.8	16.2	16.3
LnGrp Delay(d),s/veh	19.4	19.6	18.3	19.7	0.0	19.8	51.2	25.2	25.2	51.1	45.8	45.8
LnGrp LOS	B	B	B	B		B	D	C	C	D	D	D
Approach Vol, veh/h		493			532			332			1185	
Approach Delay, s/veh		19.3			19.7			37.5			46.5	
Approach LOS		B			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.5	40.4		52.1	15.5	40.3		52.1
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	21.0	39.0		36.0	26.0	34.0		36.0
Max Q Clear Time (g_c+I1), s	11.5	31.6		9.8	11.5	5.7		13.2
Green Ext Time (p_c), s	0.1	4.8		9.6	0.2	13.0		9.0

Intersection Summary	
HCM 2010 Ctrl Delay	34.4
HCM 2010 LOS	C

Notes

User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	47	476	306	18	320	100	205	524	36	60	266	31
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	1.00		0.97	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1881	1881	1900	1881	1900	1881	1881	1900	1881	1881	1900
Adj Flow Rate, veh/h	49	496	221	19	333	92	214	546	31	62	277	25
Adj No. of Lanes	0	2	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	176	1719	883	86	1436	389	242	939	53	81	607	54
Arrive On Green	0.57	0.57	0.57	0.57	0.57	0.57	0.13	0.27	0.27	0.04	0.18	0.18
Sat Flow, veh/h	245	3029	1556	92	2531	685	1792	3431	194	1792	3307	296
Grp Volume(v), veh/h	276	269	221	233	0	211	214	284	293	62	149	153
Grp Sat Flow(s),veh/h/ln	1648	1626	1556	1739	0	1569	1792	1787	1839	1792	1787	1816
Q Serve(g_s), s	0.0	9.8	8.2	0.0	0.0	7.6	13.4	15.6	15.7	3.9	8.4	8.6
Cycle Q Clear(g_c), s	8.5	9.8	8.2	7.0	0.0	7.6	13.4	15.6	15.7	3.9	8.4	8.6
Prop In Lane	0.18		1.00	0.08		0.44	1.00		0.11	1.00		0.16
Lane Grp Cap(c), veh/h	972	923	883	1021	0	890	242	489	503	81	328	333
V/C Ratio(X)	0.28	0.29	0.25	0.23	0.00	0.24	0.89	0.58	0.58	0.77	0.45	0.46
Avail Cap(c_a), veh/h	972	923	883	1021	0	890	251	489	503	456	674	685
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.00	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.5	12.8	12.4	12.2	0.0	12.3	48.4	35.8	35.8	53.9	41.4	41.5
Incr Delay (d2), s/veh	0.7	0.8	0.7	0.0	0.0	0.1	27.3	2.1	2.1	5.7	1.4	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	4.5	3.7	3.6	0.0	3.3	8.4	8.0	8.3	2.1	4.3	4.4
LnGrp Delay(d),s/veh	13.2	13.6	13.1	12.2	0.0	12.4	75.7	37.9	37.9	59.5	42.8	42.9
LnGrp LOS	B	B	B	B		B	E	D	D	E	D	D
Approach Vol, veh/h		766			444			791			364	
Approach Delay, s/veh		13.3			12.3			48.1			45.7	
Approach LOS		B			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	19.4	25.9		68.7	9.1	36.2		68.7
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0
Max Green Setting (Gmax), s	16.0	43.0		42.0	29.0	30.0		42.0
Max Q Clear Time (g_c+I1), s	15.4	10.6		11.8	5.9	17.7		9.6
Green Ext Time (p_c), s	0.0	6.5		12.0	0.1	5.6		12.4

Intersection Summary	
HCM 2010 Ctrl Delay	29.7
HCM 2010 LOS	C

Notes

User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	210	116	113	146	41	29	293	51	92	986	7
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.96	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	4	212	99	114	147	33	29	296	39	93	996	6
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	20	281	131	173	474	106	95	1381	180	153	1704	10
Arrive On Green	0.01	0.24	0.24	0.10	0.33	0.33	0.05	0.44	0.44	0.06	0.32	0.32
Sat Flow, veh/h	1757	1166	544	1757	1446	325	1757	3109	405	1757	3571	22
Grp Volume(v), veh/h	4	0	311	114	0	180	29	165	170	93	489	513
Grp Sat Flow(s),veh/h/ln	1757	0	1710	1757	0	1770	1757	1752	1762	1757	1752	1840
Q Serve(g_s), s	0.2	0.0	18.2	6.8	0.0	8.2	1.7	6.3	6.4	5.6	25.2	25.2
Cycle Q Clear(g_c), s	0.2	0.0	18.2	6.8	0.0	8.2	1.7	6.3	6.4	5.6	25.2	25.2
Prop In Lane	1.00		0.32	1.00		0.18	1.00		0.23	1.00		0.01
Lane Grp Cap(c), veh/h	20	0	412	173	0	580	95	778	782	153	836	878
V/C Ratio(X)	0.20	0.00	0.76	0.66	0.00	0.31	0.31	0.21	0.22	0.61	0.58	0.58
Avail Cap(c_a), veh/h	195	0	412	195	0	580	195	778	782	195	836	878
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.76	0.76	0.76
Uniform Delay (d), s/veh	52.9	0.0	38.1	46.9	0.0	27.2	49.2	18.4	18.5	49.1	27.8	27.8
Incr Delay (d2), s/veh	1.8	0.0	12.2	4.6	0.0	1.4	0.7	0.6	0.6	1.1	2.3	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	10.0	3.5	0.0	4.2	0.8	3.2	3.2	2.8	12.7	13.3
LnGrp Delay(d),s/veh	54.6	0.0	50.2	51.5	0.0	28.6	49.8	19.0	19.1	50.2	30.0	29.9
LnGrp LOS	D		D	D		C	D	B	B	D	C	C
Approach Vol, veh/h		315			294			364			1095	
Approach Delay, s/veh		50.3			37.5			21.5			31.7	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	55.5	13.6	30.0	12.4	52.0	4.2	39.4
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	12.0	44.0	12.0	26.0	12.0	44.0	12.0	26.0
Max Q Clear Time (g_c+I1), s	3.7	27.2	8.8	20.2	7.6	8.4	2.2	10.2
Green Ext Time (p_c), s	0.0	10.3	0.0	1.1	0.0	16.0	0.0	1.8

Intersection Summary	
HCM 2010 Ctrl Delay	33.6
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	6	119	24	85	159	98	78	844	83	95	601	14
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.95	1.00		0.96	1.00		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	6	121	6	87	162	92	80	861	72	97	613	13
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	30	431	21	160	349	198	143	1507	126	148	1629	35
Arrive On Green	0.02	0.25	0.25	0.09	0.32	0.32	0.08	0.46	0.46	0.17	0.92	0.92
Sat Flow, veh/h	1774	1753	87	1774	1093	621	1774	3294	275	1774	3538	75
Grp Volume(v), veh/h	6	0	127	87	0	254	80	463	470	97	306	320
Grp Sat Flow(s),veh/h/ln	1774	0	1840	1774	0	1714	1774	1770	1800	1774	1770	1843
Q Serve(g_s), s	0.4	0.0	6.4	5.3	0.0	13.5	4.9	21.9	21.9	5.8	2.4	2.4
Cycle Q Clear(g_c), s	0.4	0.0	6.4	5.3	0.0	13.5	4.9	21.9	21.9	5.8	2.4	2.4
Prop In Lane	1.00		0.05	1.00		0.36	1.00		0.15	1.00		0.04
Lane Grp Cap(c), veh/h	30	0	452	160	0	547	143	810	824	148	815	849
V/C Ratio(X)	0.20	0.00	0.28	0.54	0.00	0.46	0.56	0.57	0.57	0.65	0.38	0.38
Avail Cap(c_a), veh/h	187	0	452	187	0	547	171	810	824	171	815	849
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92
Uniform Delay (d), s/veh	55.3	0.0	34.8	49.6	0.0	31.0	50.4	22.7	22.7	45.9	2.5	2.5
Incr Delay (d2), s/veh	1.2	0.0	1.5	1.1	0.0	2.8	1.3	2.9	2.9	4.2	1.2	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	3.4	2.7	0.0	6.8	2.5	11.3	11.5	3.0	1.3	1.3
LnGrp Delay(d),s/veh	56.5	0.0	36.4	50.7	0.0	33.8	51.7	25.6	25.6	50.1	3.7	3.7
LnGrp LOS	E		D	D		C	D	C	C	D	A	A
Approach Vol, veh/h		133			341			1013			723	
Approach Delay, s/veh		37.3			38.1			27.7			9.9	
Approach LOS		D			D			C			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.2	56.5	13.3	32.0	12.5	56.2	4.9	40.4
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	11.0	49.0	12.0	28.0	11.0	49.0	12.0	28.0
Max Q Clear Time (g_c+I1), s	6.9	4.4	7.3	8.4	7.8	23.9	2.4	15.5
Green Ext Time (p_c), s	0.0	21.2	0.0	1.4	0.0	15.4	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	24.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	485	129	91	461	0	0	0	0	170	770	128
Number	7	4	14	3	8	18				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	0.99		1.00				1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1881	1900	1881	1881	0				1900	1881	1900
Adj Flow Rate, veh/h	0	495	104	93	470	0				173	786	117
Adj No. of Lanes	0	2	0	1	2	0				0	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	1	1	1	1	0				0	1	0
Cap, veh/h	0	1146	239	389	1406	0				227	1082	169
Arrive On Green	0.00	0.39	0.39	0.39	0.39	0.00				0.41	0.41	0.41
Sat Flow, veh/h	0	3006	607	815	3668	0				560	2667	416
Grp Volume(v), veh/h	0	302	297	93	470	0				573	0	503
Grp Sat Flow(s),veh/h/ln	0	1787	1732	815	1787	0				1853	0	1790
Q Serve(g_s), s	0.0	5.2	5.3	4.0	3.9	0.0				11.2	0.0	9.8
Cycle Q Clear(g_c), s	0.0	5.2	5.3	9.3	3.9	0.0				11.2	0.0	9.8
Prop In Lane	0.00		0.35	1.00		0.00				0.30		0.23
Lane Grp Cap(c), veh/h	0	703	682	389	1406	0				752	0	726
V/C Ratio(X)	0.00	0.43	0.44	0.24	0.33	0.00				0.76	0.00	0.69
Avail Cap(c_a), veh/h	0	1456	1412	732	2913	0				919	0	888
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	9.4	9.4	12.8	9.0	0.0				10.8	0.0	10.4
Incr Delay (d2), s/veh	0.0	0.2	0.2	0.1	0.1	0.0				2.3	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.6	2.5	0.9	1.9	0.0				6.2	0.0	5.0
LnGrp Delay(d),s/veh	0.0	9.5	9.6	12.9	9.0	0.0				13.1	0.0	11.5
LnGrp LOS		A	A	B	A					B		B
Approach Vol, veh/h		599			563						1076	
Approach Delay, s/veh		9.5			9.7						12.4	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		21.7		20.7				20.7
Change Period (Y+Rc), s		4.5		4.0				4.0
Max Green Setting (Gmax), s		21.0		34.5				34.5
Max Q Clear Time (g_c+I1), s		13.2		7.3				11.3
Green Ext Time (p_c), s		3.3		5.6				5.4

Intersection Summary	
HCM 2010 Ctrl Delay	10.9
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	672	102	90	425	0	0	0	0	129	543	97
Number	7	4	14	3	8	18				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	0.99		1.00				1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1881	1900	1881	1881	0				1900	1881	1900
Adj Flow Rate, veh/h	0	693	83	93	438	0				133	560	82
Adj No. of Lanes	0	2	0	1	2	0				0	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	1	1	1	1	0				0	1	0
Cap, veh/h	0	1475	176	398	1650	0				195	859	132
Arrive On Green	0.00	0.46	0.46	0.46	0.46	0.00				0.32	0.32	0.32
Sat Flow, veh/h	0	3290	382	695	3668	0				599	2646	405
Grp Volume(v), veh/h	0	387	389	93	438	0				411	0	364
Grp Sat Flow(s),veh/h/ln	0	1787	1791	695	1787	0				1851	0	1799
Q Serve(g_s), s	0.0	5.9	5.9	4.2	3.0	0.0				7.7	0.0	6.8
Cycle Q Clear(g_c), s	0.0	5.9	5.9	10.2	3.0	0.0				7.7	0.0	6.8
Prop In Lane	0.00		0.21	1.00		0.00				0.32		0.23
Lane Grp Cap(c), veh/h	0	825	827	398	1650	0				601	0	584
V/C Ratio(X)	0.00	0.47	0.47	0.23	0.27	0.00				0.68	0.00	0.62
Avail Cap(c_a), veh/h	0	1550	1553	680	3100	0				977	0	950
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	7.4	7.4	10.9	6.6	0.0				11.7	0.0	11.4
Incr Delay (d2), s/veh	0.0	0.2	0.2	0.1	0.0	0.0				0.5	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.9	3.0	0.8	1.5	0.0				4.0	0.0	3.4
LnGrp Delay(d),s/veh	0.0	7.5	7.5	11.0	6.6	0.0				12.2	0.0	11.8
LnGrp LOS		A	A	B	A					B		B
Approach Vol, veh/h		776			531						775	
Approach Delay, s/veh		7.5			7.4						12.0	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		17.4		22.4				22.4
Change Period (Y+Rc), s		4.5		4.0				4.0
Max Green Setting (Gmax), s		21.0		34.5				34.5
Max Q Clear Time (g_c+I1), s		9.7		7.9				12.2
Green Ext Time (p_c), s		2.8		6.5				6.2

Intersection Summary	
HCM 2010 Ctrl Delay	9.1
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	124	516	0	0	444	73	95	594	63	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.95	1.00		0.96			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1900	1863	1900			
Adj Flow Rate, veh/h	131	543	0	0	467	59	100	625	51			
Adj No. of Lanes	1	2	0	0	2	0	0	3	0			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	247	1731	0	0	795	100	204	1363	114			
Arrive On Green	0.14	0.49	0.00	0.00	0.25	0.25	0.32	0.32	0.32			
Sat Flow, veh/h	1774	3632	0	0	3237	395	644	4303	359			
Grp Volume(v), veh/h	131	543	0	0	262	264	284	239	253			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1769	1831	1695	1780			
Q Serve(g_s), s	2.5	3.3	0.0	0.0	4.7	4.7	4.5	4.0	4.1			
Cycle Q Clear(g_c), s	2.5	3.3	0.0	0.0	4.7	4.7	4.5	4.0	4.1			
Prop In Lane	1.00		0.00	0.00		0.22	0.35		0.20			
Lane Grp Cap(c), veh/h	247	1731	0	0	448	448	580	537	564			
V/C Ratio(X)	0.53	0.31	0.00	0.00	0.58	0.59	0.49	0.44	0.45			
Avail Cap(c_a), veh/h	984	2012	0	0	1006	1006	1269	1175	1234			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	14.4	5.6	0.0	0.0	11.8	11.8	10.0	9.8	9.8			
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.0	0.5	0.5	0.2	0.2	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.2	1.6	0.0	0.0	2.3	2.3	2.3	1.9	2.0			
LnGrp Delay(d),s/veh	15.1	5.6	0.0	0.0	12.3	12.3	10.2	10.0	10.0			
LnGrp LOS	B	A			B	B	B	B	B			
Approach Vol, veh/h		674			526			776				
Approach Delay, s/veh		7.4			12.3			10.1				
Approach LOS		A			B			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		14.9	8.5	12.6				21.1
Change Period (Y+Rc), s		3.5	3.5	3.5				3.5
Max Green Setting (Gmax), s		25.0	20.0	20.5				20.5
Max Q Clear Time (g_c+I1), s		6.5	4.5	6.7				5.3
Green Ext Time (p_c), s		3.2	2.4	1.8				2.4

Intersection Summary	
HCM 2010 Ctrl Delay	9.8
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	209	596	0	0	344	130	168	1320	84	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.95	1.00		0.97			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1881	1881	0	0	1881	1900	1900	1881	1900			
Adj Flow Rate, veh/h	213	608	0	0	351	76	171	1347	79			
Adj No. of Lanes	1	2	0	0	2	0	0	3	0			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	1	1	0	0	1	1	0	1	0			
Cap, veh/h	292	1555	0	0	580	124	228	1921	116			
Arrive On Green	0.16	0.43	0.00	0.00	0.20	0.20	0.42	0.42	0.42			
Sat Flow, veh/h	1792	3668	0	0	2995	619	543	4569	276			
Grp Volume(v), veh/h	213	608	0	0	214	213	584	491	522			
Grp Sat Flow(s),veh/h/ln	1792	1787	0	0	1787	1733	1854	1712	1822			
Q Serve(g_s), s	5.5	5.6	0.0	0.0	5.3	5.4	12.9	11.3	11.3			
Cycle Q Clear(g_c), s	5.5	5.6	0.0	0.0	5.3	5.4	12.9	11.3	11.3			
Prop In Lane	1.00		0.00	0.00		0.36	0.29		0.15			
Lane Grp Cap(c), veh/h	292	1555	0	0	357	346	780	720	766			
V/C Ratio(X)	0.73	0.39	0.00	0.00	0.60	0.61	0.75	0.68	0.68			
Avail Cap(c_a), veh/h	740	1555	0	0	757	733	957	884	940			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	19.3	9.3	0.0	0.0	17.6	17.7	11.9	11.4	11.4			
Incr Delay (d2), s/veh	1.3	0.1	0.0	0.0	0.6	0.7	1.9	1.0	0.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.8	2.7	0.0	0.0	2.6	2.7	6.9	5.4	5.7			
LnGrp Delay(d),s/veh	20.6	9.4	0.0	0.0	18.2	18.3	13.8	12.4	12.3			
LnGrp LOS	C	A			B	B	B	B	B			
Approach Vol, veh/h		821			427			1597				
Approach Delay, s/veh		12.3			18.3			12.9				
Approach LOS		B			B			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		23.9	11.4	13.2				24.6
Change Period (Y+Rc), s		3.5	3.5	3.5				3.5
Max Green Setting (Gmax), s		25.0	20.0	20.5				20.5
Max Q Clear Time (g_c+I1), s		14.9	7.5	7.4				7.6
Green Ext Time (p_c), s		5.5	1.0	1.4				2.6

Intersection Summary	
HCM 2010 Ctrl Delay	13.5
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	37	217	54	82	191	63	189	287	143	82	490	16
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.96	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1900	1845	1900
Adj Flow Rate, veh/h	40	233	10	88	205	58	203	309	80	88	527	16
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	0	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	67	397	316	115	332	94	436	458	369	131	828	26
Arrive On Green	0.04	0.22	0.22	0.07	0.24	0.24	0.25	0.25	0.25	0.27	0.27	0.27
Sat Flow, veh/h	1757	1845	1467	1757	1369	387	1757	1845	1486	485	3060	97
Grp Volume(v), veh/h	40	233	10	88	0	263	203	309	80	330	0	301
Grp Sat Flow(s),veh/h/ln	1757	1845	1467	1757	0	1756	1757	1845	1486	1820	0	1822
Q Serve(g_s), s	1.6	8.3	0.4	3.6	0.0	9.8	7.2	11.1	3.1	11.8	0.0	10.6
Cycle Q Clear(g_c), s	1.6	8.3	0.4	3.6	0.0	9.8	7.2	11.1	3.1	11.8	0.0	10.6
Prop In Lane	1.00		1.00	1.00		0.22	1.00		1.00	0.27		0.05
Lane Grp Cap(c), veh/h	67	397	316	115	0	426	436	458	369	492	0	493
V/C Ratio(X)	0.60	0.59	0.03	0.76	0.00	0.62	0.47	0.68	0.22	0.67	0.00	0.61
Avail Cap(c_a), veh/h	360	756	601	360	0	719	720	756	609	746	0	746
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.7	25.8	22.7	33.7	0.0	24.7	23.4	24.9	21.9	23.8	0.0	23.3
Incr Delay (d2), s/veh	9.9	1.7	0.0	11.9	0.0	1.8	0.9	2.1	0.4	1.9	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	4.4	0.2	2.1	0.0	5.0	3.6	5.8	1.3	6.2	0.0	5.5
LnGrp Delay(d),s/veh	44.6	27.5	22.8	45.6	0.0	26.5	24.3	27.0	22.2	25.7	0.0	24.8
LnGrp LOS	D	C	C	D		C	C	C	C	C		C
Approach Vol, veh/h		283			351			592			631	
Approach Delay, s/veh		29.7			31.2			25.4			25.3	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.4	19.9		21.7	6.4	21.9		23.3
Change Period (Y+Rc), s	3.6	4.1		3.5	3.6	4.1		3.5
Max Green Setting (Gmax), s	15.0	30.0		30.0	15.0	30.0		30.0
Max Q Clear Time (g_c+I1), s	5.6	10.3		13.1	3.6	11.8		13.8
Green Ext Time (p_c), s	0.2	3.7		3.2	0.1	3.6		4.4

Intersection Summary	
HCM 2010 Ctrl Delay	27.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	25	197	51	78	264	100	82	328	118	112	267	16
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.97	1.00		0.95	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	26	203	13	80	272	93	85	338	65	115	275	14
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	0	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	51	473	376	105	374	128	476	500	403	187	477	25
Arrive On Green	0.03	0.25	0.25	0.06	0.28	0.28	0.27	0.27	0.27	0.19	0.19	0.19
Sat Flow, veh/h	1774	1863	1482	1774	1316	450	1774	1863	1502	990	2525	133
Grp Volume(v), veh/h	26	203	13	80	0	365	85	338	65	211	0	193
Grp Sat Flow(s),veh/h/ln	1774	1863	1482	1774	0	1766	1774	1863	1502	1813	0	1835
Q Serve(g_s), s	0.9	5.8	0.4	2.8	0.0	12.0	2.4	10.4	2.1	6.8	0.0	6.1
Cycle Q Clear(g_c), s	0.9	5.8	0.4	2.8	0.0	12.0	2.4	10.4	2.1	6.8	0.0	6.1
Prop In Lane	1.00		1.00	1.00		0.25	1.00		1.00	0.55		0.07
Lane Grp Cap(c), veh/h	51	473	376	105	0	502	476	500	403	342	0	346
V/C Ratio(X)	0.51	0.43	0.03	0.76	0.00	0.73	0.18	0.68	0.16	0.62	0.00	0.56
Avail Cap(c_a), veh/h	415	872	694	415	0	827	831	872	703	849	0	859
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.7	20.0	18.0	29.7	0.0	20.7	18.0	20.9	17.9	23.9	0.0	23.6
Incr Delay (d2), s/veh	9.0	0.7	0.0	12.7	0.0	2.4	0.2	1.9	0.2	2.2	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.1	0.2	1.8	0.0	6.1	1.2	5.6	0.9	3.6	0.0	3.3
LnGrp Delay(d),s/veh	39.7	20.8	18.0	42.4	0.0	23.1	18.2	22.9	18.1	26.0	0.0	25.3
LnGrp LOS	D	C	B	D		C	B	C	B	C		C
Approach Vol, veh/h		242			445			488			404	
Approach Delay, s/veh		22.6			26.6			21.4			25.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.4	20.4		20.7	5.5	22.3		15.6
Change Period (Y+Rc), s	3.6	4.1		3.5	3.6	4.1		3.5
Max Green Setting (Gmax), s	15.0	30.0		30.0	15.0	30.0		30.0
Max Q Clear Time (g_c+I1), s	4.8	7.8		12.4	2.9	14.0		8.8
Green Ext Time (p_c), s	0.1	4.6		3.0	0.0	4.0		2.9

Intersection Summary	
HCM 2010 Ctrl Delay	24.2
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	605	12	55	610	98	1	69	39	198	199	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00	0.98		1.00	0.99
Flpb, ped/bikes	0.98	1.00		0.98	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.98			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		0.98	1.00
Satd. Flow (prot)	1715	3489		1718	3389			1843	1536		1794	1547
Flt Permitted	0.31	1.00		0.36	1.00			1.00	1.00		0.80	1.00
Satd. Flow (perm)	565	3489		646	3389			1839	1536		1479	1547
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	74	644	13	59	649	104	1	73	41	211	212	77
RTOR Reduction (vph)	0	1	0	0	9	0	0	0	27	0	0	27
Lane Group Flow (vph)	74	656	0	59	744	0	0	74	14	0	423	50
Confl. Peds. (#/hr)	36		28	28		36	1		8	8		1
Confl. Bikes (#/hr)			3						3			1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	60.1	60.1		60.1	60.1			36.9	36.9		36.9	36.9
Effective Green, g (s)	60.1	60.1		60.1	60.1			36.9	36.9		36.9	36.9
Actuated g/C Ratio	0.57	0.57		0.57	0.57			0.35	0.35		0.35	0.35
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	2.0		2.0	2.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	323	1997		369	1939			646	539		519	543
v/s Ratio Prot		0.19			c0.22							
v/s Ratio Perm	0.13			0.09				0.04	0.01		c0.29	0.03
v/c Ratio	0.23	0.33		0.16	0.38			0.11	0.03		0.82	0.09
Uniform Delay, d1	11.0	11.8		10.6	12.3			23.0	22.3		30.9	22.8
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	1.6	0.4		0.9	0.6			0.1	0.0		9.5	0.1
Delay (s)	12.7	12.3		11.5	12.9			23.1	22.3		40.5	22.9
Level of Service	B	B		B	B			C	C		D	C
Approach Delay (s)		12.3			12.8			22.8			37.8	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	605	8	37	491	107	10	310	48	85	89	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00	0.98		1.00	0.98
Flpb, ped/bikes	0.98	1.00		0.99	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.97			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		0.98	1.00
Satd. Flow (prot)	1742	3531		1755	3405			1860	1549		1814	1558
Flt Permitted	0.39	1.00		0.39	1.00			0.99	1.00		0.36	1.00
Satd. Flow (perm)	724	3531		716	3405			1845	1549		677	1558
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	177	630	8	39	511	111	10	323	50	89	93	76
RTOR Reduction (vph)	0	0	0	0	9	0	0	0	27	0	0	57
Lane Group Flow (vph)	177	638	0	39	613	0	0	333	23	0	182	19
Confl. Peds. (#/hr)	19		10	10		19	2		8	8		2
Confl. Bikes (#/hr)			5			8						2
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	74.8	74.8		74.8	74.8			27.2	27.2		27.2	27.2
Effective Green, g (s)	74.8	74.8		74.8	74.8			27.2	27.2		27.2	27.2
Actuated g/C Ratio	0.68	0.68		0.68	0.68			0.25	0.25		0.25	0.25
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	2.0		2.0	2.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	492	2401		486	2315			456	383		167	385
v/s Ratio Prot		0.18			0.18							
v/s Ratio Perm	c0.24			0.05				0.18	0.01		c0.27	0.01
v/c Ratio	0.36	0.27		0.08	0.26			0.73	0.06		1.09	0.05
Uniform Delay, d1	7.5	6.9		6.0	6.9			38.0	31.6		41.4	31.5
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	2.0	0.3		0.3	0.3			5.9	0.1		95.7	0.1
Delay (s)	9.5	7.1		6.3	7.1			44.0	31.7		137.1	31.6
Level of Service	A	A		A	A			D	C		F	C
Approach Delay (s)		7.7			7.1			42.4			106.0	
Approach LOS		A			A			D			F	

Intersection Summary			
HCM 2000 Control Delay	25.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Intersection Delay, s/veh	12.6
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	2	96	65	0	231	191	68	0	60	8	165
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	0	2	110	75	0	266	220	78	0	69	9	190
Number of Lanes	0	1	2	0	0	1	2	0	0	0	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	3	3	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	3
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	3
HCM Control Delay	11.1	13.5	12
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	88%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	12%	0%	0%	100%	33%	0%	100%	48%	0%	93%
Vol Right, %	0%	100%	0%	0%	67%	0%	0%	52%	0%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	68	165	2	64	97	231	127	132	30	28
LT Vol	60	0	2	0	0	231	0	0	30	0
Through Vol	8	0	0	64	32	0	127	64	0	26
RT Vol	0	165	0	0	65	0	0	68	0	2
Lane Flow Rate	78	190	2	74	111	266	146	151	34	32
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.161	0.33	0.005	0.145	0.205	0.503	0.257	0.25	0.076	0.066
Departure Headway (Hd)	7.401	6.258	7.609	7.101	6.624	6.821	6.315	5.949	7.976	7.422
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	483	571	468	502	539	528	566	601	447	480
Service Time	5.171	4.028	5.389	4.881	4.404	4.58	4.074	3.708	5.766	5.212
HCM Lane V/C Ratio	0.161	0.333	0.004	0.147	0.206	0.504	0.258	0.251	0.076	0.067
HCM Control Delay	11.6	12.1	10.4	11.1	11.1	16.3	11.3	10.7	11.4	10.7
HCM Lane LOS	B	B	B	B	B	C	B	B	B	B
HCM 95th-tile Q	0.6	1.4	0	0.5	0.8	2.8	1	1	0.2	0.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	30	26	2
Peak Hour Factor	0.87	0.87	0.87	0.87
Heavy Vehicles, %	6	6	6	6
Mvmt Flow	0	34	30	2
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	3
Conflicting Approach Right	EB
Conflicting Lanes Right	3
HCM Control Delay	11.1
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	24.9
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	5	468	185	0	26	457	102	0	122	11	217
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	473	187	0	26	462	103	0	123	11	219
Number of Lanes	0	1	2	0	0	1	2	0	0	0	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	3	3	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	3
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	3
HCM Control Delay	29.8	25	18.3
HCM LOS	D	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	92%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	8%	0%	0%	100%	46%	0%	100%	60%	0%	84%
Vol Right, %	0%	100%	0%	0%	54%	0%	0%	40%	0%	16%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	133	217	5	312	341	26	305	254	47	38
LT Vol	122	0	5	0	0	26	0	0	47	0
Through Vol	11	0	0	312	156	0	305	152	0	32
RT Vol	0	217	0	0	185	0	0	102	0	6
Lane Flow Rate	134	219	5	315	344	26	308	257	47	38
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.352	0.502	0.012	0.717	0.746	0.065	0.711	0.573	0.139	0.105
Departure Headway (Hd)	9.427	8.252	8.825	8.311	7.921	8.929	8.436	8.147	10.514	9.888
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	384	438	408	438	458	403	431	447	343	364
Service Time	7.134	5.959	6.525	6.011	5.621	6.651	6.136	5.847	8.23	7.605
HCM Lane V/C Ratio	0.349	0.5	0.012	0.719	0.751	0.065	0.715	0.575	0.137	0.104
HCM Control Delay	17.2	19	11.6	29.4	30.4	12.3	29.3	21.2	14.9	13.8
HCM Lane LOS	C	C	B	D	D	B	D	C	B	B
HCM 95th-tile Q	1.6	2.7	0	5.6	6.2	0.2	5.5	3.5	0.5	0.3

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	47	32	6
Peak Hour Factor	0.99	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	47	32	6
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	3
Conflicting Approach Right	EB
Conflicting Lanes Right	3
HCM Control Delay	14.4
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	14.4
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	31	260	0	0	0	384	212	0	106	0	65
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	0	36	302	0	0	0	447	247	0	123	0	76
Number of Lanes	0	1	2	0	0	0	2	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	3	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	3
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	10.8	16.7	12.3
HCM LOS	B	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2
Vol Left, %	100%	0%	100%	0%	0%	0%	0%
Vol Thru, %	0%	0%	0%	100%	100%	100%	38%
Vol Right, %	0%	100%	0%	0%	0%	0%	62%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	106	65	31	130	130	256	340
LT Vol	106	0	31	0	0	0	0
Through Vol	0	0	0	130	130	256	128
RT Vol	0	65	0	0	0	0	212
Lane Flow Rate	123	76	36	151	151	298	395
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	0.267	0.138	0.074	0.288	0.211	0.51	0.629
Departure Headway (Hd)	7.801	6.589	7.354	6.847	5.035	6.17	5.728
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	460	542	486	523	707	583	629
Service Time	5.572	4.36	5.12	4.612	2.8	3.923	3.481
HCM Lane V/C Ratio	0.267	0.14	0.074	0.289	0.214	0.511	0.628
HCM Control Delay	13.4	10.4	10.7	12.4	9.2	15.2	17.8
HCM Lane LOS	B	B	B	B	A	C	C
HCM 95th-tile Q	1.1	0.5	0.2	1.2	0.8	2.9	4.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	0	0	0
Peak Hour Factor	0.86	0.86	0.86	0.86
Heavy Vehicles, %	5	5	5	5
Mvmt Flow	0	0	0	0
Number of Lanes	0	0	0	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	

Lane

Intersection	
Intersection Delay, s/veh	25.8
Intersection LOS	D

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	195	537	0	0	0	342	282	0	243	1	74
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	205	565	0	0	0	360	297	0	256	1	78
Number of Lanes	0	1	2	0	0	0	2	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	3	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	3
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	18.7	34.7	24.9
HCM LOS	C	D	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2
Vol Left, %	100%	0%	100%	0%	0%	0%	0%
Vol Thru, %	0%	1%	0%	100%	100%	100%	29%
Vol Right, %	0%	99%	0%	0%	0%	0%	71%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	243	75	195	269	269	228	396
LT Vol	243	0	195	0	0	0	0
Through Vol	0	1	0	269	269	228	114
RT Vol	0	74	0	0	0	0	282
Lane Flow Rate	256	79	205	283	283	240	417
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	0.662	0.178	0.48	0.621	0.481	0.536	0.872
Departure Headway (Hd)	9.323	8.105	8.422	7.909	6.128	8.047	7.534
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	386	441	427	455	585	446	479
Service Time	7.118	5.899	6.195	5.681	3.9	5.827	5.313
HCM Lane V/C Ratio	0.663	0.179	0.48	0.622	0.484	0.538	0.871
HCM Control Delay	28.7	12.7	18.8	22.9	14.5	19.8	43.3
HCM Lane LOS	D	B	C	C	B	C	E
HCM 95th-tile Q	4.6	0.6	2.5	4.1	2.6	3.1	9.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	0	0	0
Number of Lanes	0	0	0	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	

Lane



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	296	84	207	341	31	11	11	34	66	167	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0		3.0	4.0			2.0			2.0	2.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00			1.00			1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.97		1.00	0.99			0.92			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	1.00
Satd. Flow (prot)	1687	3240		1687	3325			1613			1751	1488
Flt Permitted	0.95	1.00		0.95	1.00			0.95			0.91	1.00
Satd. Flow (perm)	1687	3240		1687	3325			1540			1611	1488
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	22	308	88	216	355	32	11	11	35	69	174	116
RTOR Reduction (vph)	0	26	0	0	6	0	0	0	0	0	0	90
Lane Group Flow (vph)	22	370	0	216	381	0	0	57	0	0	243	26
Confl. Peds. (#/hr)			3			5						2
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1 3	3 6			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	2.0	24.1		36.8	58.9			20.1			20.1	20.1
Effective Green, g (s)	2.0	24.1		32.8	58.9			20.1			20.1	20.1
Actuated g/C Ratio	0.02	0.27		0.36	0.65			0.22			0.22	0.22
Clearance Time (s)	3.0	4.0						2.0			2.0	2.0
Vehicle Extension (s)	3.0	3.0						3.0			3.0	3.0
Lane Grp Cap (vph)	37	867		614	2176			343			359	332
v/s Ratio Prot	0.01	c0.11		c0.13	0.11							
v/s Ratio Perm								0.04			c0.15	0.02
v/c Ratio	0.59	0.43		0.35	0.18			0.17			0.68	0.08
Uniform Delay, d1	43.6	27.2		20.9	6.1			28.2			32.0	27.6
Progression Factor	1.00	1.00		0.54	0.02			1.00			1.00	1.00
Incremental Delay, d2	23.1	1.5		0.3	0.0			0.2			5.0	0.1
Delay (s)	66.7	28.8		11.6	0.2			28.4			37.0	27.7
Level of Service	E	C		B	A			C			D	C
Approach Delay (s)		30.8			4.3			28.4			34.0	
Approach LOS		C			A			C			C	

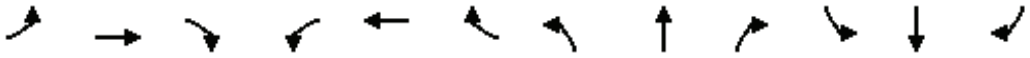
Intersection Summary			
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	534	40	46	519	83	34	41	59	49	17	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0		3.0	2.5			3.5			3.5	3.5
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.99		1.00	0.98			0.94			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.96	1.00
Satd. Flow (prot)	1770	3494		1770	3456			1731			1796	1558
Flt Permitted	0.95	1.00		0.95	1.00			0.90			0.43	1.00
Satd. Flow (perm)	1770	3494		1770	3456			1575			808	1558
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	39	556	42	48	541	86	35	43	61	51	18	24
RTOR Reduction (vph)	0	4	0	0	12	0	0	0	0	0	0	22
Lane Group Flow (vph)	39	594	0	48	615	0	0	139	0	0	69	2
Confl. Peds. (#/hr)			4			4						3
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1 3	3 6			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	3.0	44.3		35.7	77.0			9.5			9.5	9.5
Effective Green, g (s)	3.0	44.3		33.2	77.0			9.5			9.5	9.5
Actuated g/C Ratio	0.03	0.44		0.33	0.77			0.10			0.10	0.10
Clearance Time (s)	3.0	4.0						3.5			3.5	3.5
Vehicle Extension (s)	3.0	3.0						3.0			3.0	3.0
Lane Grp Cap (vph)	53	1547		587	2661			149			76	148
v/s Ratio Prot	c0.02	c0.17		0.03	c0.18							
v/s Ratio Perm								c0.09			0.09	0.00
v/c Ratio	0.74	0.38		0.08	0.23			0.93			0.91	0.02
Uniform Delay, d1	48.1	18.7		22.9	3.2			44.9			44.8	41.0
Progression Factor	1.00	1.00		0.58	0.18			1.00			1.00	1.00
Incremental Delay, d2	41.0	0.7		0.1	0.0			53.7			71.8	0.0
Delay (s)	89.1	19.4		13.4	0.6			98.6			116.6	41.1
Level of Service	F	B		B	A			F			F	D
Approach Delay (s)		23.7			1.5			98.6			97.1	
Approach LOS		C			A			F			F	

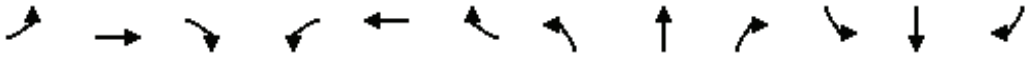
Intersection Summary			
HCM 2000 Control Delay	25.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	45.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	108	426	0	0	512	155	32	1	253	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Lane Util. Factor	1.00	0.95			*1.00		1.00	0.95	0.95			
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Frt	1.00	1.00			0.97		1.00	0.85	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	1719	3438			3473		1719	1463	1461			
Flt Permitted	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	1719	3438			3473		1719	1463	1461			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	112	444	0	0	533	161	33	1	264	0	0	0
RTOR Reduction (vph)	0	0	0	0	25	0	0	121	121	0	0	0
Lane Group Flow (vph)	112	444	0	0	669	0	33	12	11	0	0	0
Confl. Peds. (#/hr)			4	4		8						
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	9.8	75.0			62.2		7.5	7.5	7.5			
Effective Green, g (s)	9.8	75.0			62.2		7.5	7.5	7.5			
Actuated g/C Ratio	0.11	0.83			0.69		0.08	0.08	0.08			
Clearance Time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	187	2865			2400		143	121	121			
v/s Ratio Prot	c0.07	0.13			c0.19			0.01				
v/s Ratio Perm							c0.02		0.01			
v/c Ratio	0.60	0.15			0.28		0.23	0.10	0.09			
Uniform Delay, d1	38.2	1.4			5.3		38.6	38.1	38.1			
Progression Factor	0.61	0.43			1.00		1.00	1.00	1.00			
Incremental Delay, d2	5.0	0.1			0.3		0.8	0.4	0.3			
Delay (s)	28.4	0.7			5.6		39.4	38.5	38.4			
Level of Service	C	A			A		D	D	D			
Approach Delay (s)		6.3			5.6			38.6			0.0	
Approach LOS		A			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	12.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	40.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	204	680	0	0	577	226	137	52	506	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Lane Util. Factor	1.00	0.95			0.95		1.00	0.95	0.95			
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Frt	1.00	1.00			0.96		1.00	0.88	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	1770	3539			3362		1770	1553	1504			
Flt Permitted	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	1770	3539			3362		1770	1553	1504			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	212	708	0	0	601	235	143	54	527	0	0	0
RTOR Reduction (vph)	0	0	0	0	35	0	0	161	257	0	0	0
Lane Group Flow (vph)	212	708	0	0	801	0	143	135	29	0	0	0
Confl. Peds. (#/hr)	10		5	5		10						
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	17.2	82.5			62.3		10.0	10.0	10.0			
Effective Green, g (s)	17.2	82.5			62.3		10.0	10.0	10.0			
Actuated g/C Ratio	0.17	0.82			0.62		0.10	0.10	0.10			
Clearance Time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	304	2919			2094		177	155	150			
v/s Ratio Prot	c0.12	0.20			c0.24			c0.09				
v/s Ratio Perm							0.08		0.02			
v/c Ratio	0.70	0.24			0.38		0.81	0.87	0.19			
Uniform Delay, d1	39.0	1.9			9.3		44.1	44.4	41.3			
Progression Factor	0.73	1.24			1.00		1.00	1.00	1.00			
Incremental Delay, d2	6.5	0.2			0.5		23.0	37.6	0.6			
Delay (s)	34.9	2.5			9.9		67.0	81.9	41.9			
Level of Service	C	A			A		E	F	D			
Approach Delay (s)		10.0			9.9			63.2			0.0	
Approach LOS		B			A			E			A	

Intersection Summary			
HCM 2000 Control Delay	25.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	152	242	87	77	293	27	60	270	29	45	821	125
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.92	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	162	257	31	82	312	23	64	287	24	48	873	121
Adj No. of Lanes	1	1	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	192	631	506	0	674	49	139	1587	132	124	1472	204
Arrive On Green	0.04	0.11	0.11	0.00	0.20	0.20	0.03	0.16	0.16	0.07	0.48	0.48
Sat Flow, veh/h	1757	1845	1480	0	3290	241	1757	3267	271	1757	3085	428
Grp Volume(v), veh/h	162	257	31	0	165	170	64	153	158	48	496	498
Grp Sat Flow(s),veh/h/ln	1757	1845	1480	0	1752	1778	1757	1752	1786	1757	1752	1760
Q Serve(g_s), s	9.9	14.0	2.0	0.0	8.9	9.1	3.9	8.1	8.3	2.8	22.3	22.3
Cycle Q Clear(g_c), s	9.9	14.0	2.0	0.0	8.9	9.1	3.9	8.1	8.3	2.8	22.3	22.3
Prop In Lane	1.00		1.00	0.00		0.14	1.00		0.15	1.00		0.24
Lane Grp Cap(c), veh/h	192	631	506	0	359	364	139	851	867	124	836	840
V/C Ratio(X)	0.84	0.41	0.06	0.00	0.46	0.47	0.46	0.18	0.18	0.39	0.59	0.59
Avail Cap(c_a), veh/h	195	631	506	0	422	428	195	851	867	195	836	840
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.91	0.00	1.00	1.00	0.98	0.98	0.98	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.1	37.7	32.4	0.0	37.7	37.8	50.3	26.7	26.8	47.9	20.6	20.6
Incr Delay (d2), s/veh	23.6	0.1	0.0	0.0	0.3	0.3	0.9	0.5	0.5	0.7	3.1	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	7.2	0.8	0.0	4.3	4.5	1.9	4.1	4.2	1.4	11.5	11.5
LnGrp Delay(d),s/veh	74.7	37.9	32.4	0.0	38.0	38.1	51.2	27.2	27.3	48.7	23.7	23.7
LnGrp LOS	E	D	C		D	D	D	C	C	D	C	C
Approach Vol, veh/h		450			335			375			1042	
Approach Delay, s/veh		50.8			38.1			31.3			24.8	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	56.4	0.0	40.9	11.5	55.5	14.8	26.1
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	12.0	44.0	12.0	26.0	12.0	44.0	12.0	26.0
Max Q Clear Time (g_c+I1), s	4.8	10.3	0.0	16.0	5.9	24.3	11.9	11.1
Green Ext Time (p_c), s	0.0	15.3	0.0	1.9	0.0	11.3	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	33.2
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	278	239	99	54	215	58	123	846	36	57	509	112
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.92	1.00		0.94	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	272	281	36	57	226	42	129	891	35	60	536	101
Adj No. of Lanes	1	1	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	187	620	499	0	594	107	154	1717	67	132	1433	269
Arrive On Green	0.03	0.11	0.11	0.00	0.20	0.20	0.17	0.99	0.99	0.07	0.48	0.48
Sat Flow, veh/h	1774	1863	1499	0	2947	534	1774	3462	136	1774	2961	555
Grp Volume(v), veh/h	272	281	36	0	133	135	129	455	471	60	319	318
Grp Sat Flow(s),veh/h/ln	1774	1863	1499	0	1770	1711	1774	1770	1829	1774	1770	1747
Q Serve(g_s), s	12.0	16.1	2.5	0.0	7.4	7.8	8.0	0.5	0.5	3.7	13.0	13.1
Cycle Q Clear(g_c), s	12.0	16.1	2.5	0.0	7.4	7.8	8.0	0.5	0.5	3.7	13.0	13.1
Prop In Lane	1.00		1.00	0.00		0.31	1.00		0.07	1.00		0.32
Lane Grp Cap(c), veh/h	187	620	499	0	356	345	154	878	907	132	856	845
V/C Ratio(X)	1.46	0.45	0.07	0.00	0.37	0.39	0.84	0.52	0.52	0.45	0.37	0.38
Avail Cap(c_a), veh/h	187	620	499	0	435	420	171	878	907	171	856	845
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	0.00	1.00	1.00	0.74	0.74	0.74	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.0	41.0	34.9	0.0	39.3	39.5	46.4	0.2	0.2	50.5	18.5	18.6
Incr Delay (d2), s/veh	230.8	0.2	0.0	0.0	0.2	0.3	19.6	1.6	1.6	0.9	1.2	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.9	8.4	1.0	0.0	3.7	3.7	4.8	0.5	0.5	1.8	6.6	6.6
LnGrp Delay(d),s/veh	285.8	41.2	35.0	0.0	39.6	39.7	66.0	1.9	1.8	51.4	19.8	19.8
LnGrp LOS	F	D	C		D	D	E	A	A	D	B	B
Approach Vol, veh/h		589			268			1055			697	
Approach Delay, s/veh		153.8			39.6			9.7			22.5	
Approach LOS		F			D			A			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.5	60.5	0.0	42.0	12.9	59.2	15.0	27.0
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	11.0	49.0	12.0	28.0	11.0	49.0	12.0	28.0
Max Q Clear Time (g_c+I1), s	5.7	2.5	0.0	18.1	10.0	15.1	14.0	9.8
Green Ext Time (p_c), s	0.0	21.7	0.0	1.7	0.0	18.5	0.0	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	48.7
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	196	132	19	33	120	27	7	123	31	120	136	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1787	3507		1770	3539	1583	1128	2182		1340	1404	1245
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1787	3507		1770	3539	1583	1128	2182		1340	1404	1245
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	228	153	22	38	140	31	8	143	36	140	158	220
RTOR Reduction (vph)	0	10	0	0	0	26	0	23	0	0	0	171
Lane Group Flow (vph)	228	165	0	38	140	5	8	156	0	126	172	49
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	60%	60%	60%	28%	28%	28%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases						2						8
Actuated Green, G (s)	14.5	22.1		3.9	11.5	11.5	11.4	11.4		15.9	15.9	15.9
Effective Green, g (s)	14.5	22.1		3.9	11.5	11.5	11.4	11.4		15.9	15.9	15.9
Actuated g/C Ratio	0.20	0.31		0.06	0.16	0.16	0.16	0.16		0.22	0.22	0.22
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Vehicle Extension (s)	2.0	4.0		2.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Grp Cap (vph)	365	1094		97	574	257	181	351		300	315	279
v/s Ratio Prot	c0.13	0.05		0.02	c0.04		0.01	c0.07		0.09	c0.12	
v/s Ratio Perm						0.00						0.04
v/c Ratio	0.62	0.15		0.39	0.24	0.02	0.04	0.45		0.42	0.55	0.18
Uniform Delay, d1	25.7	17.6		32.3	25.9	24.9	25.1	26.8		23.5	24.3	22.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.4	0.1		1.0	0.3	0.0	0.1	1.2		1.3	2.4	0.4
Delay (s)	28.1	17.7		33.3	26.2	25.0	25.2	28.1		24.8	26.7	22.6
Level of Service	C	B		C	C	C	C	C		C	C	C
Approach Delay (s)		23.5			27.3			28.0			24.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	70.8	Sum of lost time (s)	17.5
Intersection Capacity Utilization	40.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	183	107	9	29	110	81	16	179	34	67	80	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3498		1770	3539	1583	1530	2980		1618	1697	1503
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3498		1770	3539	1583	1530	2980		1618	1697	1503
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	201	118	10	32	121	89	18	197	37	74	88	140
RTOR Reduction (vph)	0	5	0	0	0	73	0	15	0	0	0	117
Lane Group Flow (vph)	201	123	0	32	121	16	18	219	0	67	95	23
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	18%	18%	18%	6%	6%	6%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases						2						8
Actuated Green, G (s)	12.5	21.7		2.4	11.6	11.6	10.9	10.9		10.1	10.1	10.1
Effective Green, g (s)	12.5	21.7		2.4	11.6	11.6	10.9	10.9		10.1	10.1	10.1
Actuated g/C Ratio	0.20	0.35		0.04	0.19	0.19	0.17	0.17		0.16	0.16	0.16
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Vehicle Extension (s)	2.0	4.0		2.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Grp Cap (vph)	353	1212		67	655	293	266	518		261	273	242
v/s Ratio Prot	c0.11	0.04		0.02	c0.03		0.01	c0.07		0.04	c0.06	
v/s Ratio Perm						0.01						0.02
v/c Ratio	0.57	0.10		0.48	0.18	0.06	0.07	0.42		0.26	0.35	0.09
Uniform Delay, d1	22.6	13.8		29.5	21.5	21.0	21.6	23.0		23.0	23.3	22.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.3	0.1		1.9	0.2	0.1	0.1	0.8		0.7	1.1	0.2
Delay (s)	23.9	13.9		31.4	21.7	21.1	21.8	23.8		23.7	24.4	22.6
Level of Service	C	B		C	C	C	C	C		C	C	C
Approach Delay (s)		20.0			22.8			23.7			23.4	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	62.6	Sum of lost time (s)	17.5
Intersection Capacity Utilization	37.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	336	60	240	304	0	0	0	0	198	21	275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			3.0						4.0	4.0
Lane Util. Factor		0.95			*1.00						1.00	1.00
Frpb, ped/bikes		0.99			1.00						1.00	1.00
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.98			1.00						1.00	0.85
Flt Protected		1.00			0.98						0.96	1.00
Satd. Flow (prot)		3310			5261						1715	1524
Flt Permitted		1.00			0.70						0.96	1.00
Satd. Flow (perm)		3310			3753						1715	1524
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	350	62	250	317	0	0	0	0	206	22	286
RTOR Reduction (vph)	0	14	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	398	0	0	567	0	0	0	0	0	228	286
Confl. Peds. (#/hr)			6			5						
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Turn Type		NA		Prot	NA					Split	NA	Perm
Protected Phases		2 4		1	1 6					3	3	
Permitted Phases												3
Actuated Green, G (s)		48.2			31.9						23.0	23.0
Effective Green, g (s)		48.2			31.9						23.0	23.0
Actuated g/C Ratio		0.54			0.35						0.26	0.26
Clearance Time (s)											4.0	4.0
Vehicle Extension (s)											3.0	3.0
Lane Grp Cap (vph)		1772			1494						438	389
v/s Ratio Prot		c0.12			c0.04						0.13	
v/s Ratio Perm					c0.09							c0.19
v/c Ratio		0.22			1.34dl						0.52	0.74
Uniform Delay, d1		11.0			21.7						28.8	30.7
Progression Factor		0.05			1.06						1.00	1.00
Incremental Delay, d2		0.1			0.2						1.1	7.1
Delay (s)		0.6			23.2						29.9	37.8
Level of Service		A			C						C	D
Approach Delay (s)		0.6			23.2			0.0			34.3	
Approach LOS		A			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	610	32	217	497	0	0	0	0	274	2	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			3.0						2.5	2.5
Lane Util. Factor		0.95			0.91						1.00	1.00
Frpb, ped/bikes		1.00			1.00						1.00	1.00
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.99			1.00						1.00	0.85
Flt Protected		1.00			0.99						0.95	1.00
Satd. Flow (prot)		3506			5009						1775	1583
Flt Permitted		1.00			0.66						0.95	1.00
Satd. Flow (perm)		3506			3381						1775	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	635	33	226	518	0	0	0	0	285	2	157
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	665	0	0	744	0	0	0	0	0	287	157
Confl. Peds. (#/hr)			6			8						
Turn Type		NA		Prot	NA					Split	NA	Perm
Protected Phases		2 4		1	1 6					3	3	
Permitted Phases												3
Actuated Green, G (s)		57.8			57.0						17.5	17.5
Effective Green, g (s)		57.8			57.0						17.5	17.5
Actuated g/C Ratio		0.58			0.57						0.18	0.18
Clearance Time (s)											2.5	2.5
Vehicle Extension (s)											3.0	3.0
Lane Grp Cap (vph)		2026			2182						310	277
v/s Ratio Prot		c0.19			c0.05						c0.16	
v/s Ratio Perm					c0.14							0.10
v/c Ratio		0.33			0.34						0.93	0.57
Uniform Delay, d1		11.0			11.5						40.6	37.8
Progression Factor		0.18			1.03						1.00	1.00
Incremental Delay, d2		0.1			0.1						32.2	2.7
Delay (s)		2.0			11.9						72.8	40.4
Level of Service		A			B						E	D
Approach Delay (s)		2.0			11.9			0.0			61.3	
Approach LOS		A			B			A			E	

Intersection Summary			
HCM 2000 Control Delay	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Appendix E-4
Signal Warrant Calculations

FEHR PEERS

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Sheet No 1 of 1

Project RBSP
Scenario Existing
Peak Hour PM

Major Street 51st/Bay View
Minor Street Seaport/I-580 Ramps

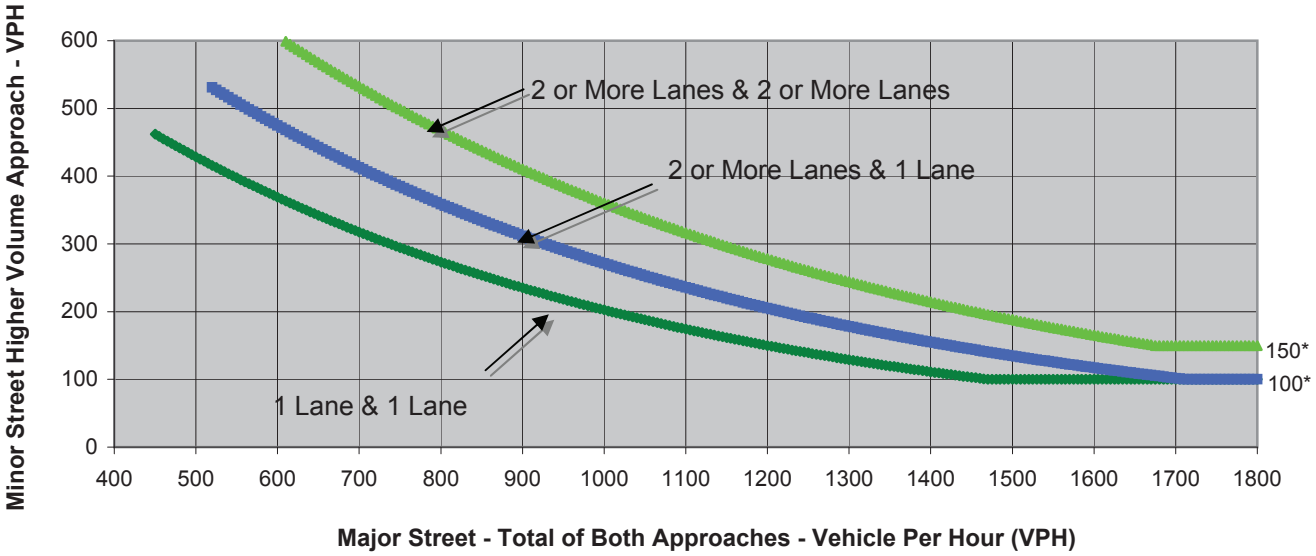
Turn Movement Volumes

	NB	SB	EB	WB
Left	9	41	0	400
Through	35	65	10	0
Right	62	3	7	5
Total	106	109	17	405

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices* , Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	51st/Bay View	Seaport/I-580 Ramps	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**215**	**405**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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Sheet No 1 of 1

Project RBSP
Scenario Existing
Peak Hour PM

Major Street Central Ave
Minor Street Rydin/I-580 Ramps

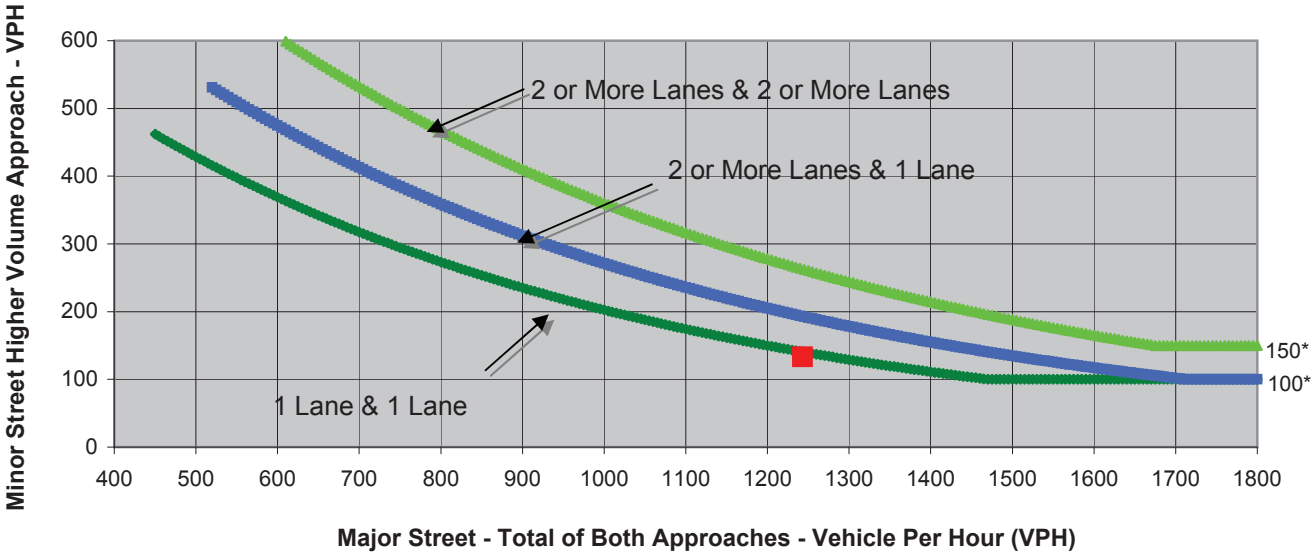
Turn Movement Volumes

	NB	SB	EB	WB
Left	122	47	5	26
Through	11	32	468	457
Right			185	102
Total	133	79	658	585

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices* , Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Central Ave	Rydin/I-580 Ramps	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,243**	**133**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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Sheet No 1 of 1

Project RBSP
Scenario Existing
Peak Hour PM

Major Street Central Ave
Minor Street I-580 EB Ramps

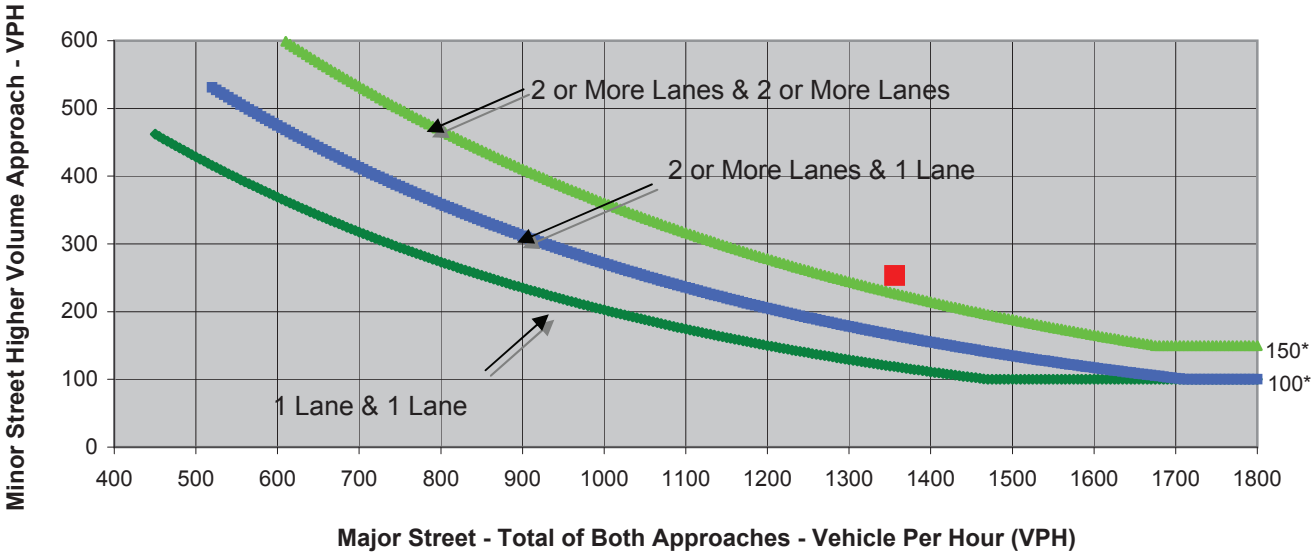
Turn Movement Volumes

	NB	SB	EB	WB
Left	243	0	195	0
Through	10	0	537	342
Right			0	282
Total	253	0	732	624

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices* , Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Central Ave	I-580 EB Ramps	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,356**	**253**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR & PEERS

Sheet No 1 of 1

Project RBSP
Scenario Existing Plus Specific Plan
Peak Hour PM

Major Street Harbour Way South
Minor Street Wright Avenue

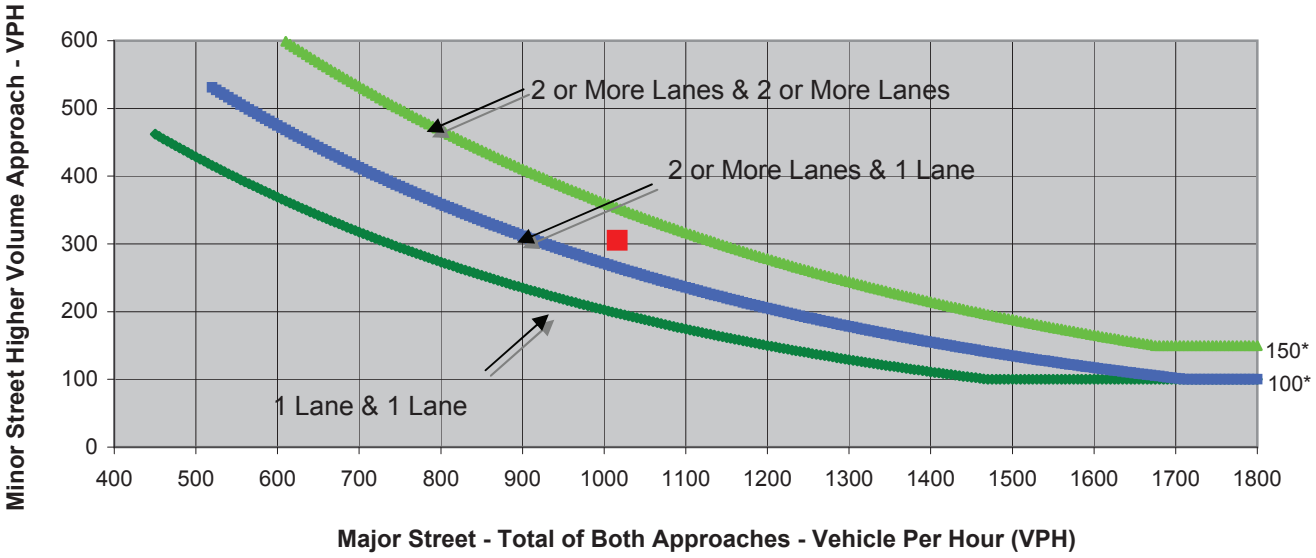
Turn Movement Volumes

	NB	SB	EB	WB
Left	3	381	43	279
Through	303	278	1	1
Right	21	30	3	25
Total	327	689	47	305

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices* , Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Harbour Way South	Wright Avenue	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**1,016**	**305**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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Sheet No 1 of 1

Major Street	Juliga Woods St
Minor Street	WB I-580
Project	RBSP
Scenario	Existing Plus Specific Plan
Peak Hour	PM

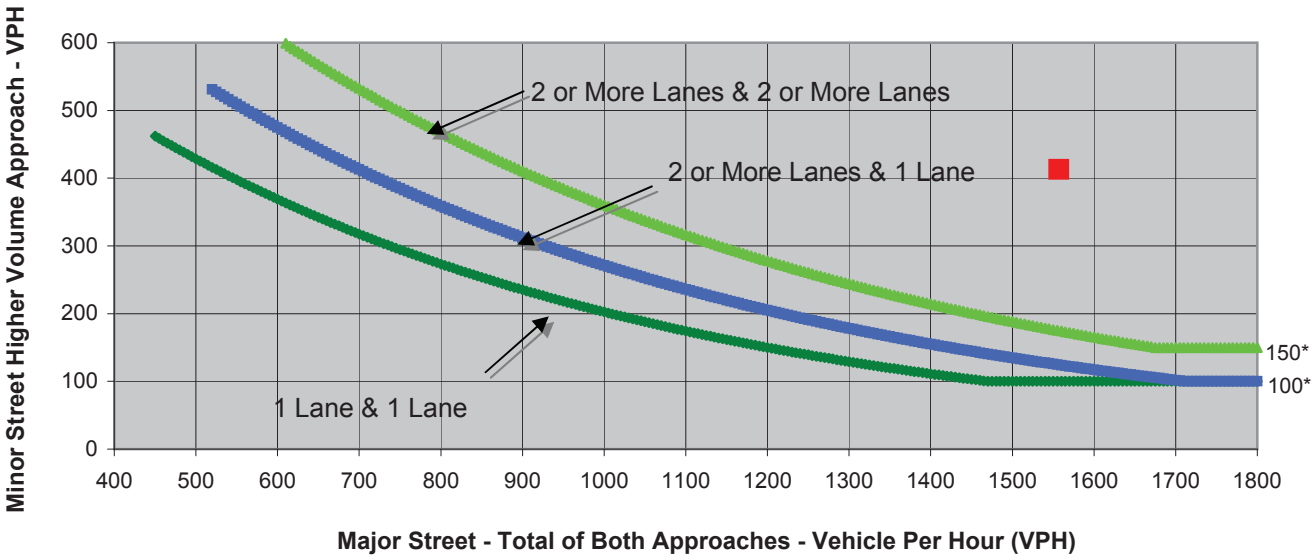
Turn Movement Volumes

	NB	SB	EB	WB
Left	181		0	503
Through	0		498	436
Right	232		120	0
Total	413	0	618	939

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices* , Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Juliga Woods St	WB I-580	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**1,557**	**413**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR & PEERS

Sheet No 1 of 1

Major Street	Meade St
Minor Street	Regatta Blvd

Project	RBSP
Scenario	Existing Plus Specific Plan
Peak Hour	PM

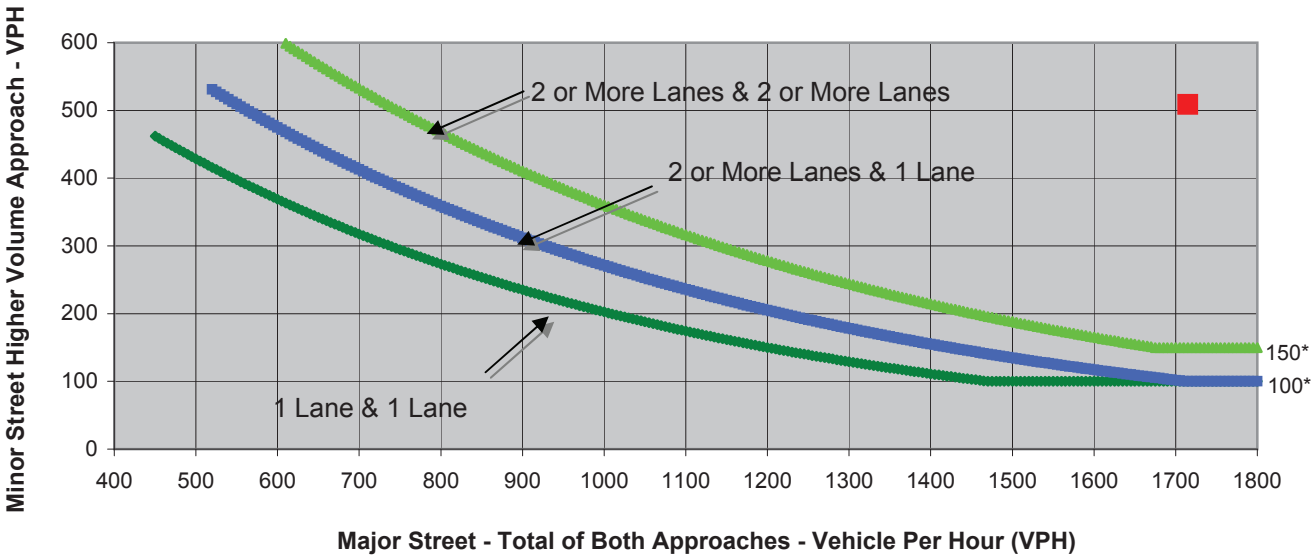
Turn Movement Volumes

	NB	SB	EB	WB
Left	509		0	166
Through	0		379	811
Right	0		359	0
Total	509	0	738	977

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices* , Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Meade St	Regatta Blvd	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**1,715**	**509**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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Sheet No 1 of 1

Project RBSP
Scenario Existing Plus Specific Plan
Peak Hour PM

Major Street 51st/Bay View
Minor Street Seaport/I-580 Ramps

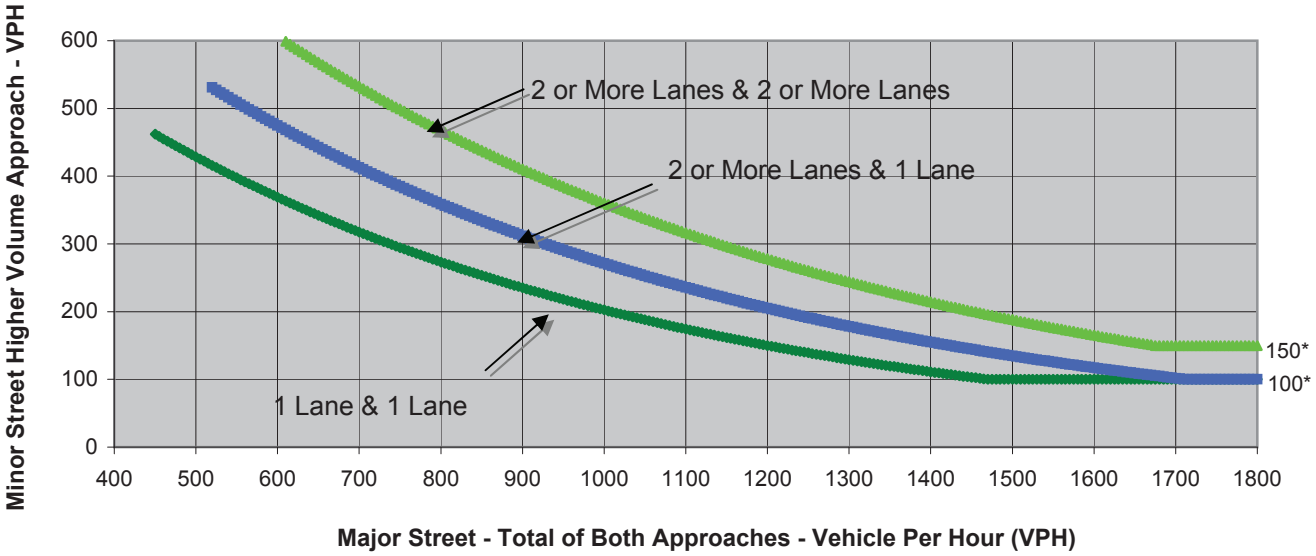
Turn Movement Volumes

	NB	SB	EB	WB
Left	149	141	140	440
Through	325	485	200	150
Right	82	43	157	105
Total	556	669	497	695

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices* , Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	51st/Bay View	Seaport/I-580 Ramps	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,225**	**695**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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Sheet No 1 of 1

Major Street	Central Ave
Minor Street	Rydin/I-580 Ramps
Project	RBSP
Scenario	Existing Plus Specific Plan
Peak Hour	PM

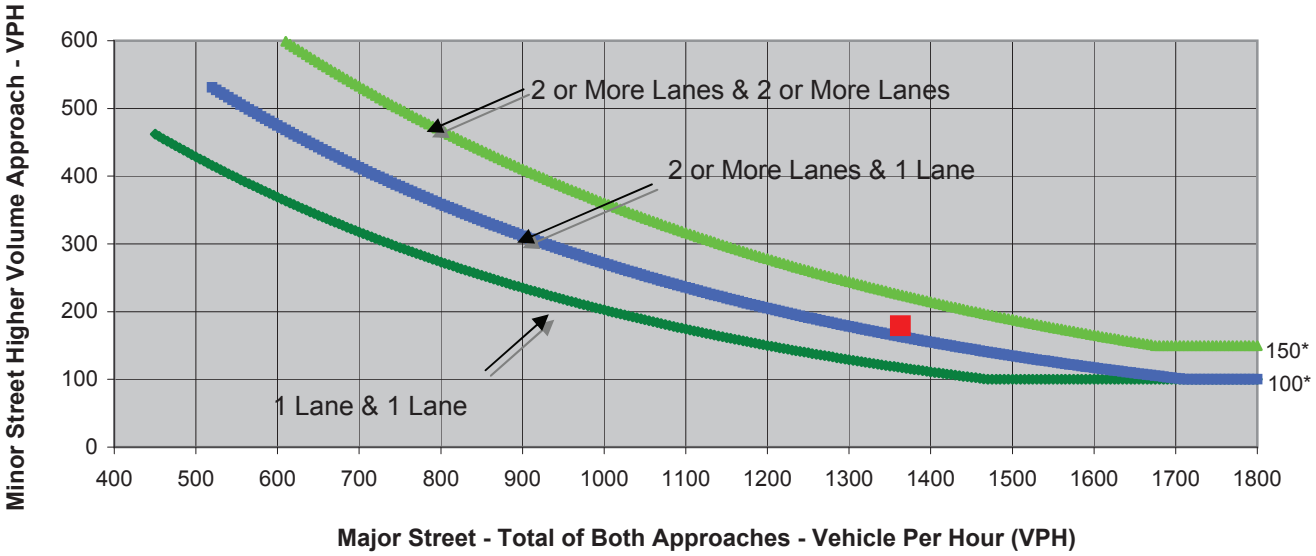
Turn Movement Volumes

	NB	SB	EB	WB
Left	132	127	15	36
Through	11	52	528	487
Right			195	102
Total	143	179	738	625

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices* , Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Central Ave	Rydin/I-580 Ramps	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,363**	**179**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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Sheet No 1 of 1

Project RBSP
Scenario 2040 Plus Specific Plan
Peak Hour PM

Major Street Harbour Way South
Minor Street Wright Avenue

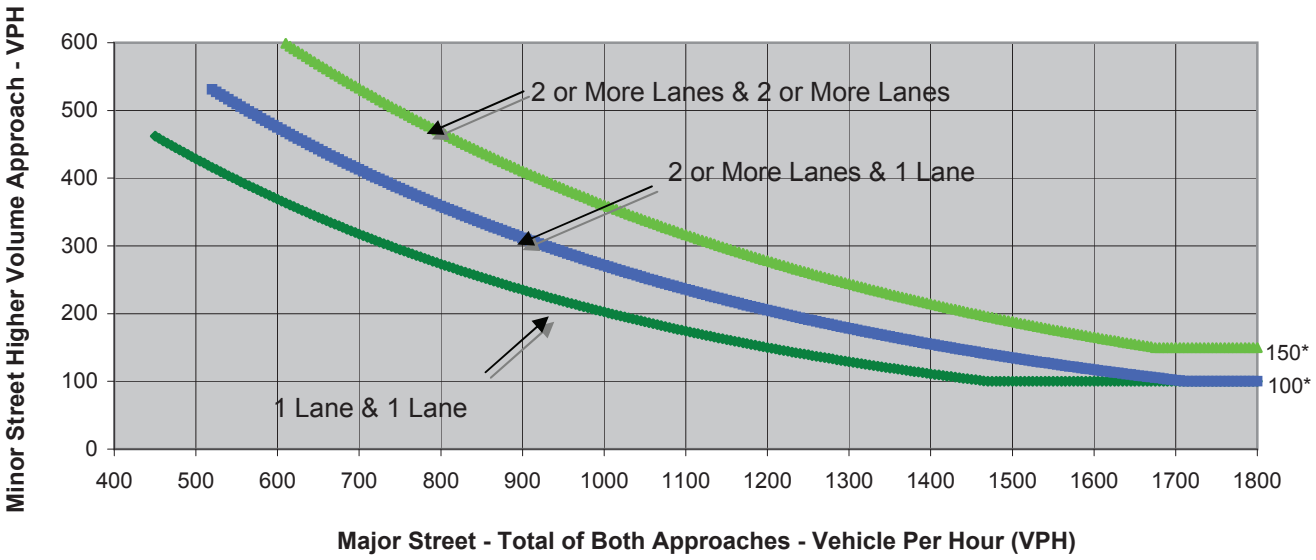
Turn Movement Volumes

	NB	SB	EB	WB
Left	10	490	70	20
Through	520	210	20	20
Right	30	30	10	590
Total	560	730	100	630

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices* , Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Harbour Way South	Wright Avenue	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**1,290**	**630**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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Sheet No 1 of 1

Project RBSP
Scenario 2040 Plus Specific Plan
Peak Hour PM

Major Street Marina Way South
Minor Street Regatta Blvd

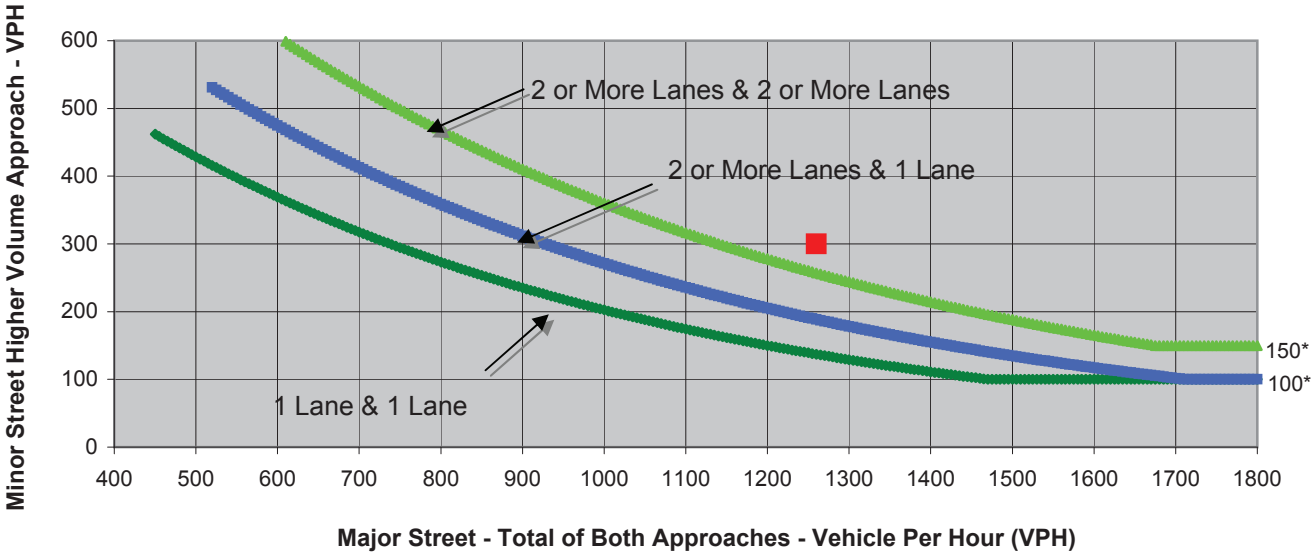
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	300	450	0
Through	0	0	90	40
Right	0	0	0	680
Total	0	300	540	720

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices* , Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Marina Way South	Regatta Blvd	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**1,260**	**300**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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Sheet No 1 of 1

Project RBSP
Scenario 2040 Plus Specific Plan
Peak Hour PM

Major Street Juliga Woods St
Minor Street WB I-580

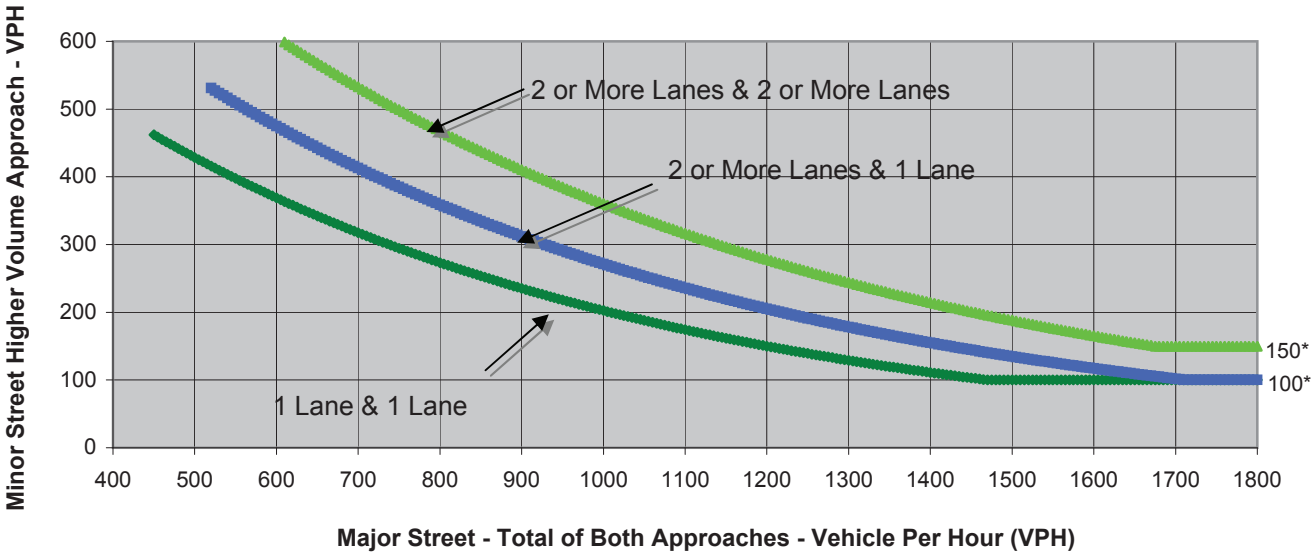
Turn Movement Volumes

	NB	SB	EB	WB
Left	340		0	700
Through	0		520	700
Right	330		150	0
Total	670	0	670	1,400

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices* , Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Juliga Woods St	WB I-580	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**2,070**	**670**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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Sheet No 1 of 1

Major Street	Meade St
Minor Street	Regatta Blvd

Project	RBSP
Scenario	2040 Plus Specific Plan
Peak Hour	PM

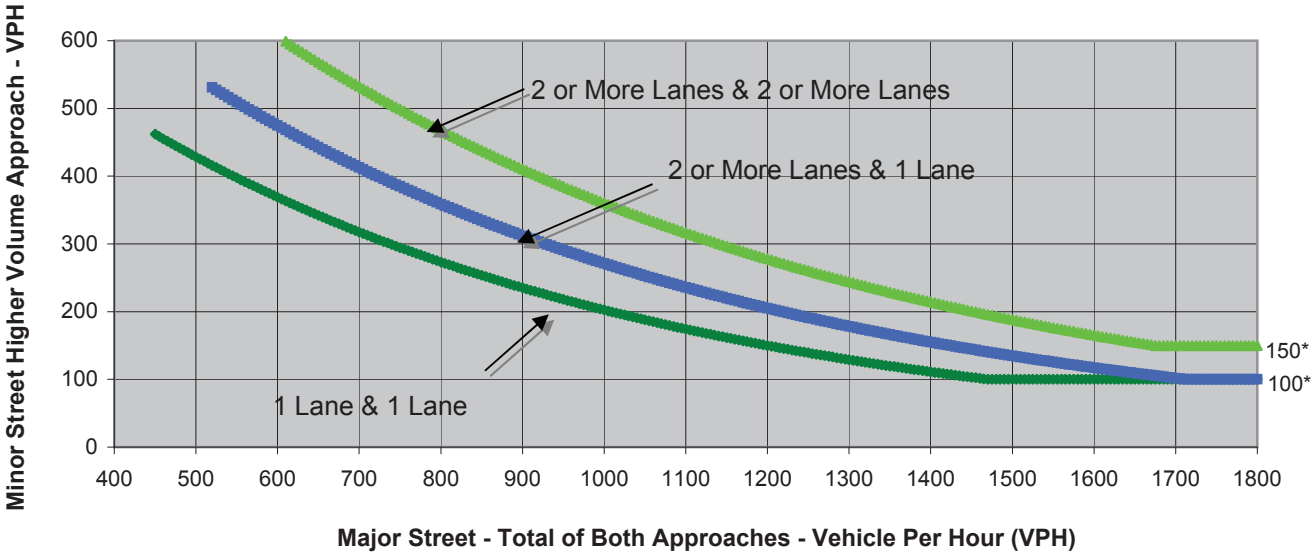
Turn Movement Volumes

	NB	SB	EB	WB
Left	640		0	220
Through	0		450	1,280
Right	0		410	0
Total	640	0	860	1,500

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices* , Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Meade St	Regatta Blvd	
Number of Approach Lanes	**1**	**1**	**YES**
Traffic Volume (VPH) *	**2,360**	**640**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR & PEERS

Sheet No 1 of 1

Major Street	51st/Bay View
Minor Street	Seaport/I-580 Ramps
Project	RBSP
Scenario	2040 Plus Specific Plan
Peak Hour	PM

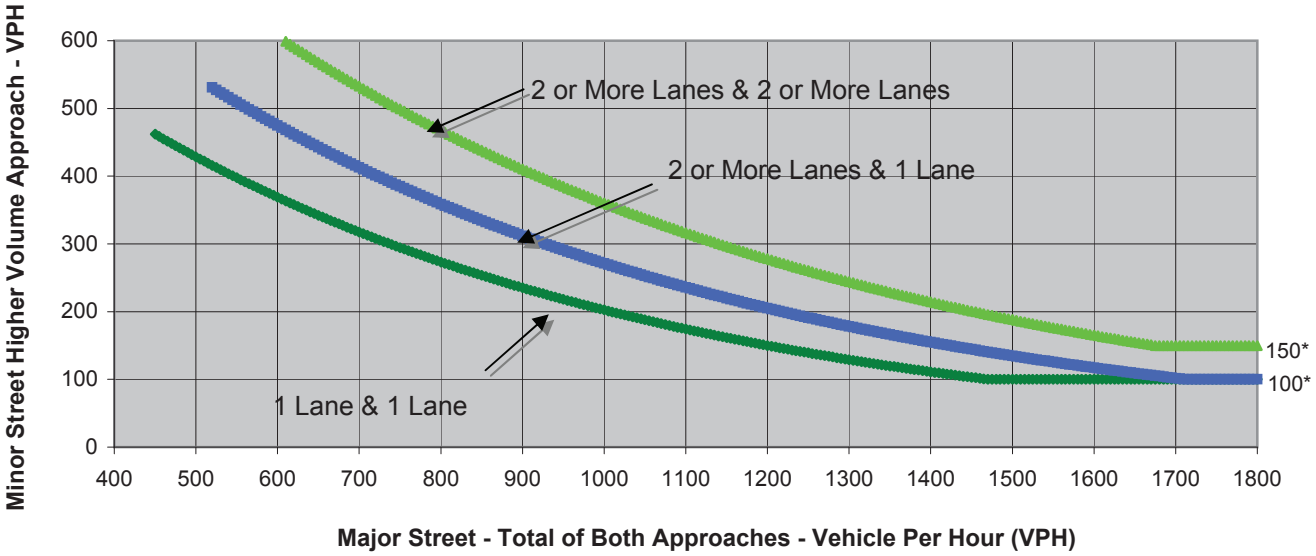
Turn Movement Volumes

	NB	SB	EB	WB
Left	150	610	150	550
Through	410	820	210	160
Right	120	150	160	120
Total	680	1,580	520	830

Major Street Direction

x	North/South
	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices* , Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	51st/Bay View	Seaport/I-580 Ramps	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**2,260**	**830**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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Sheet No 1 of 1

Major Street	Juliga Woods St
Minor Street	WB I-580
Project	RBSP
Scenario	Existing Plus SA4 Project
Peak Hour	PM

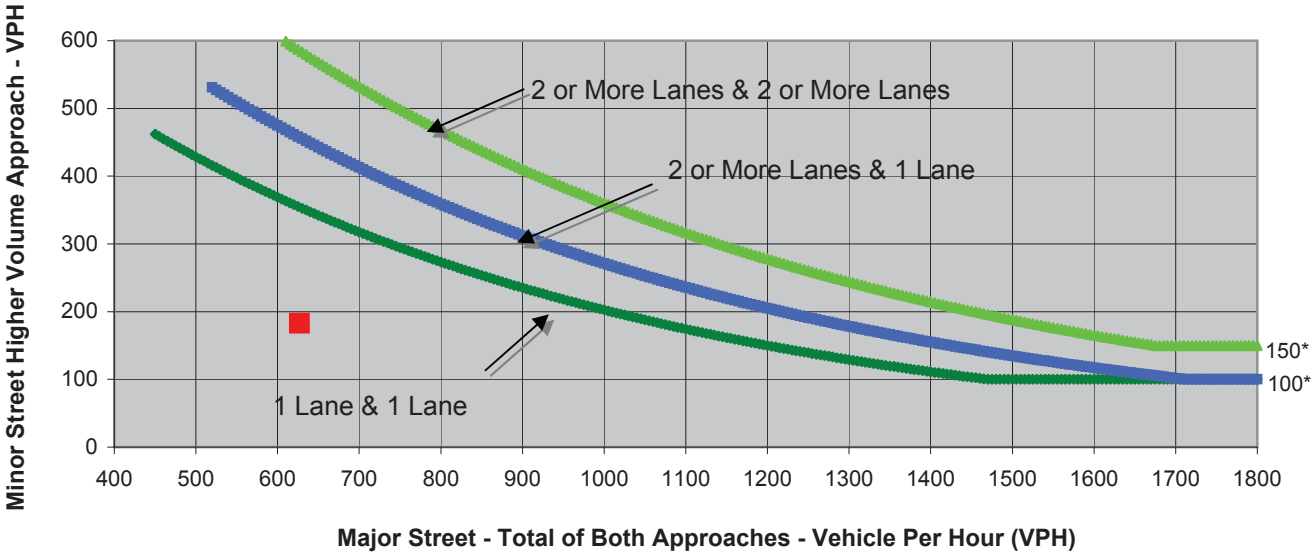
Turn Movement Volumes

	NB	SB	EB	WB
Left	131		0	136
Through	0		188	263
Right	52		40	0
Total	183	0	228	399

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices* , Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Juliga Woods St	WB I-580	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**627**	**183**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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Sheet No 1 of 1

Project RBSP
Scenario Existing Plus SA4 Project
Peak Hour PM

Major Street Meade St
Minor Street Regatta Blvd

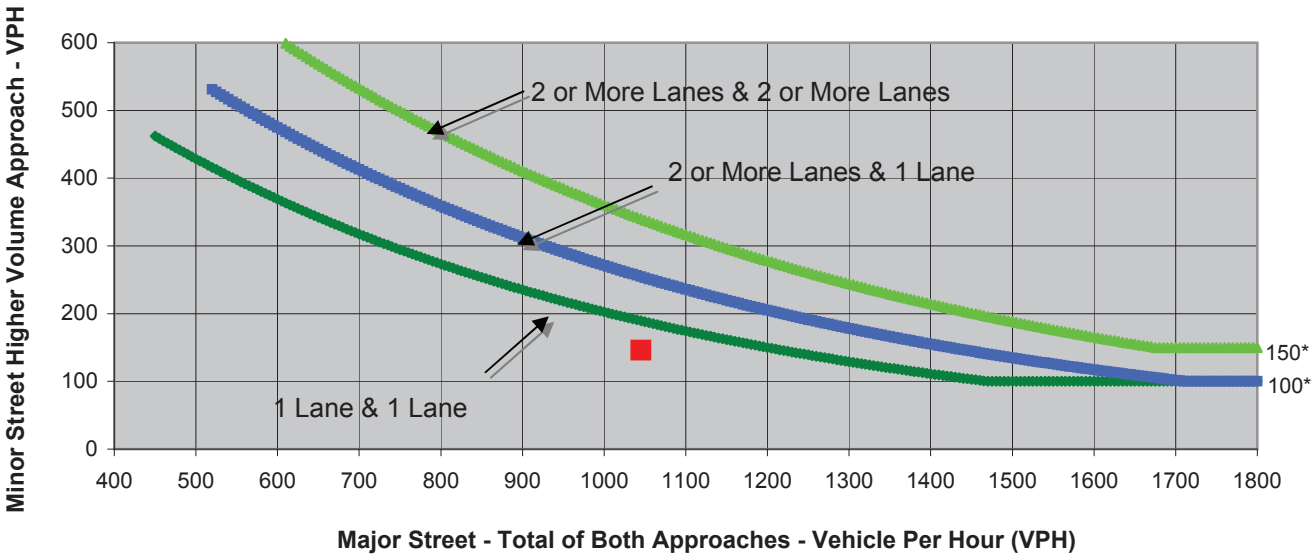
Turn Movement Volumes

	NB	SB	EB	WB
Left	49		0	116
Through	0		329	521
Right	97		79	0
Total	146	0	408	637

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices* , Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Meade St	Regatta Blvd	
Number of Approach Lanes	**1**	**1**	**NO**
Traffic Volume (VPH) *	**1,045**	**146**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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Sheet No 1 of 1

Project RBSP
Scenario Existing Plus SA4 Project
Peak Hour PM

Major Street 51st/Bay View
Minor Street Seaport/I-580 Ramps

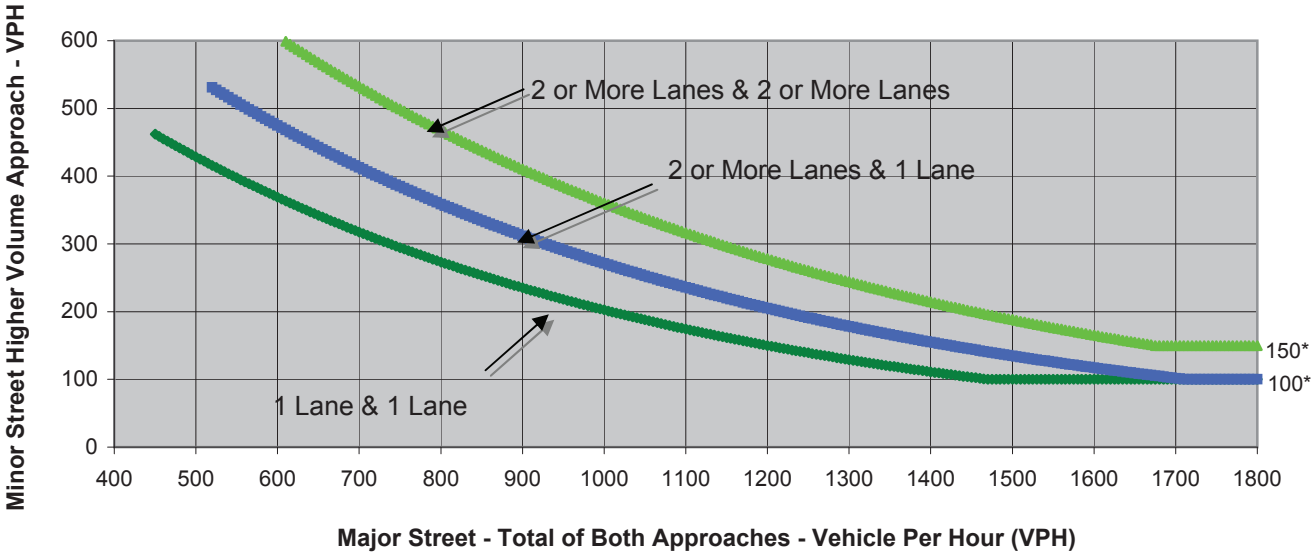
Turn Movement Volumes

	NB	SB	EB	WB
Left	139	211	90	400
Through	245	415	230	150
Right	62	43	137	85
Total	446	669	457	635

Major Street Direction

x North/South
East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices* , Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	51st/Bay View	Seaport/I-580 Ramps	
Number of Approach Lanes	**2**	**1**	**YES**
Traffic Volume (VPH) *	**1,115**	**635**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

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Sheet No 1 of 1

Project RBSP
Scenario Existing Plus SA4 Project
Peak Hour PM

Major Street Central Ave
Minor Street Rydin/I-580 Ramps

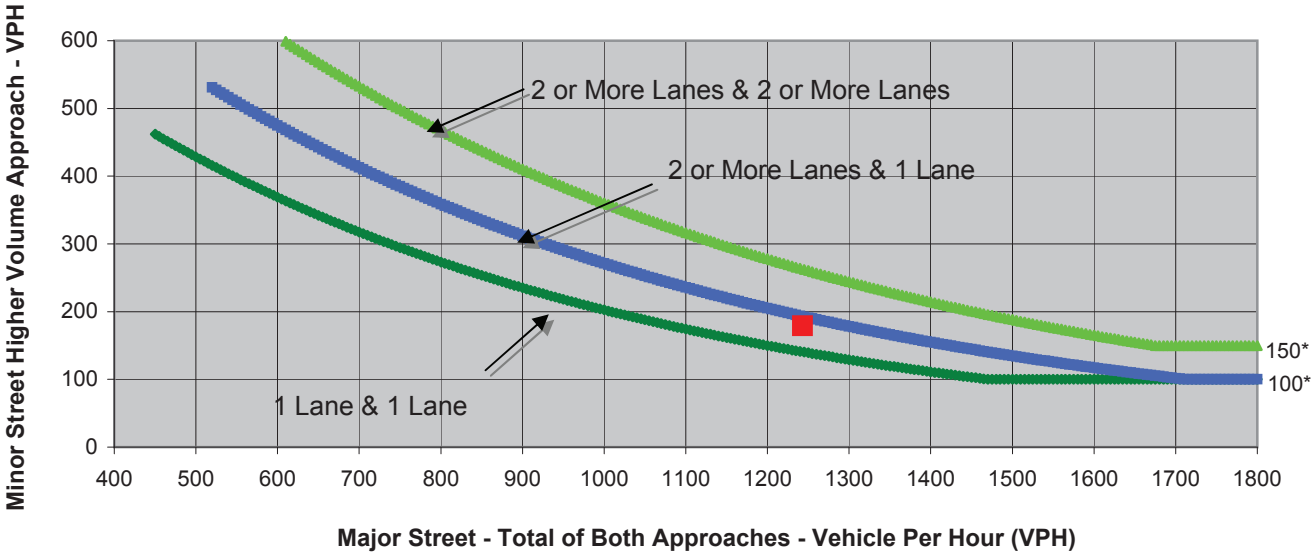
Turn Movement Volumes

	NB	SB	EB	WB
Left	122	127	5	26
Through	11	52	468	457
Right			185	102
Total	133	179	658	585

Major Street Direction

	North/South
x	East/West

Figure 4C-3. Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices* , Caltrans, 2012

	Major Street	Minor Street	Warrant Met
	Central Ave	Rydin/I-580 Ramps	
Number of Approach Lanes	**2**	**1**	**NO**
Traffic Volume (VPH) *	**1,243**	**179**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

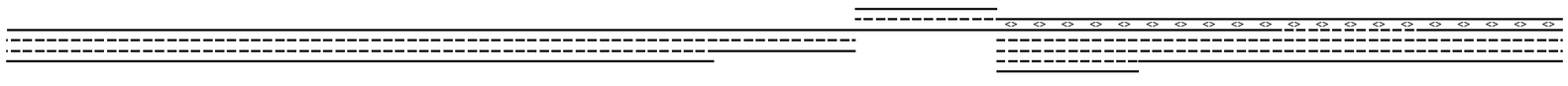
Appendix E-5
Freeway LOS Calculations

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Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

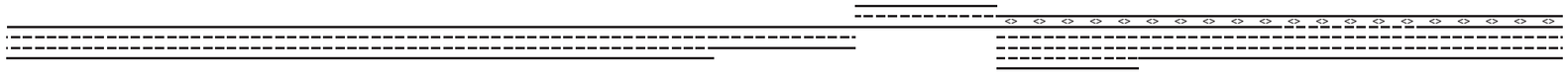
<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Freeway Segment											
Type	Basic	Basic	Basic	Basic	Basic	Basic		Basic	Basic	Basic	Basic
Length (ft)											
Accel Length											
Decel Length											
Mainline Volume	2,202	2,330	2,955	2,999	2,811	2,900		5,200	3,120	2,880	3,534
On Ramp Volume											
Off Ramp Volume											
Express Lane Volume								1,000	780	720	884
EL On Ramp Volume											
EL Off Ramp Volume											
Flow Rate in Entering General Purpose Lanes (GP)											
Volume (vph)	2,202	2,330	2,955	2,999	2,811	2,900		4,200	2,340	2,160	2,651
PHF	0.96	0.96	0.96	0.96	0.96	0.96		0.96	0.96	0.96	0.96
Lanes	3	3	3	3	3	2		4	3	3	3
Terrain	Level	Level	Level	Level	Level	Level		Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Truck & Bus %	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%		4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2		1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971	0.971	0.971		0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Flow (pcph)	2,363	2,500	3,170	3,218	3,016	3,111		4,463	2,486	2,295	2,816
Flow (pcphpl)	788	833	1,057	1,073	1,005	1,556		1,116	829	765	939
Free Flow Speed in Entering GP Lanes											
Lane Width (ft)	12	12	12	12	12	12		12	12	12	12
Shoulder Width	5	5	5	5	5	5		5	5	5	5
TRD											
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
f_{LC}	0.1	0.1	0.1	0.1	0.1	0.6		0.2	0.1	0.1	0.1
Calculated FFS	75.3	75.3	75.3	75.3	75.3	74.8		75.2	75.3	75.3	75.3
Measured FFS											
FFS Curve	70	70	70	70	70	70		70	70	70	70
Operations in Entering GP Lanes											
Capacity (pcph)	7,200	7,200	7,200	7,200	7,200	4,800		9,600	7,200	7,200	7,200
v/c ratio	0.33	0.35	0.44	0.45	0.42	0.65		0.46	0.35	0.32	0.39
Speed (mph)	70.0	70.0	70.0	70.0	70.0	68.5		70.0	70.0	70.0	70.0
Density (pcphpl)	11.3	11.9	15.1	15.3	14.4	22.7		15.9	11.8	10.9	13.4
LOS	B	B	B	B	B	C		B	B	A	B
Operations for Segment GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

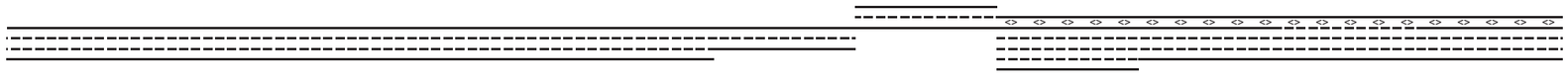
<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Speed (mph)											
Density (pcphpl)											
LOS											
Operations for Exiting GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											
Speed (mph)											
Density (pcphpl)											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

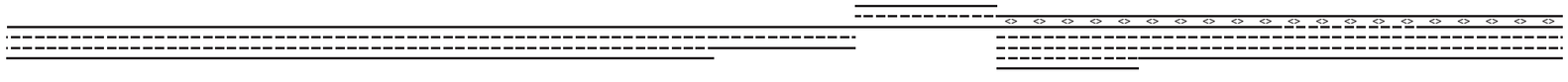
<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Flow Rate in Express Lanes											
Volume (vph)								1,000	780	720	884
PHF								0.96	0.96	0.96	0.96
Lanes								1	1	1	1
Terrain								Level	Level	Level	Level
Grade %								0.0%	0.0%	0.0%	0.0%
Grade Length (mi)								0.00	0.00	0.00	0.00
Truck & Bus %								4.0%	4.0%	4.0%	4.0%
RV %								0.0%	0.0%	0.0%	0.0%
E_T							1.5	1.5	1.5	1.5	1.5
E_R							1.2	1.2	1.2	1.2	1.2
f_{HV}							0.962	0.980	0.980	0.980	0.980
f_P								1.00	1.00	1.00	1.00
Flow (pcph)								1,063	829	765	939
Flow Rate (pcphpl)								1,063	829	765	939
Operations in Express Lanes											
FFS								70	70	70	70
Capacity (pcph)								1,750	1,750	1,750	1,750
v/c ratio								0.61	0.47	0.44	0.54
On Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
On Ramp Roadway Operations											
Ramp Type											
Ramp Speed (mph)											
Ramp Capacity (pcph)											
Ramp v/c ratio											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

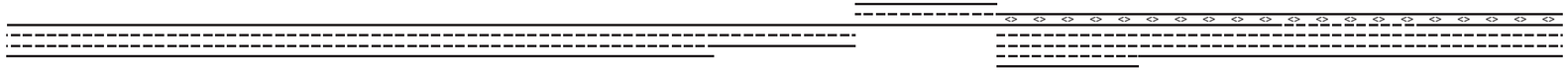
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Off Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
Off Ramp Roadway Operations											
Ramp Type											
Ramp Speed											
Ramp Capacity (pcph)											
Ramp v/c ratio											
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps											
Up Type											
Up Distance											
Up Flow (pcph)											
Down Type											
Down Distance											
Down Flow (pcph)											
Merge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FM} (Eqn 13-3)											
P_{FM} (Eqn 13-4)											
P_{FM} (Eqn 13-5)											
P_{FM}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
v_{R12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave



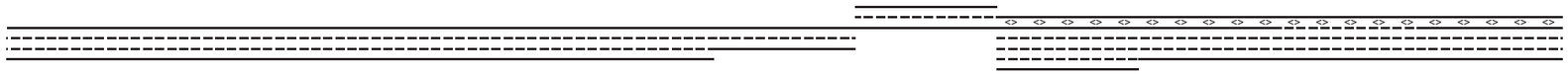
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<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



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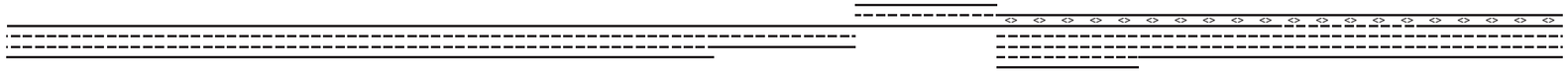
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Diverge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FD} (Eqn 13-9)											
P_{FD} (Eqn 13-10)											
P_{FD} (Eqn 13-11)											
P_{FD}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											
On Ramp to Off Ramp Flow Rate for Weave Segments											
On to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to Off Flow (pcph)											
On Ramp to Mainline Flow Rate for Weave Segments											
On to ML Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to ML Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



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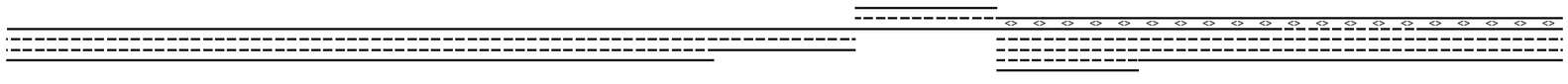
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Mainline to Off Ramp Flow Rate for Weave Segments											
ML to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
ML to Off Flow (pcph)											
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segm											
GP to GP Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
GP to GP Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



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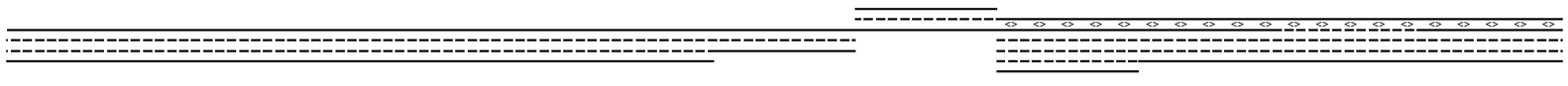
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Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Weave Segment Operations											
Type											
Length											
Segment Lanes											
Weave Lanes											
Weave Flow (pcph)											
Non-Weave Flow											
Segment Flow											
Max Weave Length											
Length Check											
Ideal Weave Capacity											
f_{HV}											
f_P											
Capacity Condition 1											
Capacity Condition 2											
v/c ratio											
Interchange Density											
Lane Changes On to ML											
Lane Changes ML to Off											
Lane Changes On to Off											
Min Lane Change Rate											
Weave LC Rate											
Non-Weave LC Rate 1											
Non-Weave LC Rate 2											
Non-Weave LC Rate 3											
Segment LC Rate											
Weave Intensity Factor											
Weave Speed											
Non-Weave Speed											
Segment Speed											
Density											
LOS											
Leisch Method for Weaving											
Balanced?											
Weaving GP Lanes											
Weaving Length											
Summarize Segment Operations											
Segment v/c ratio	0.33	0.35	0.44	0.45	0.42	0.65		0.46	0.35	0.32	0.39
Segment Density	11.3	11.9	15.1	15.3	14.4	22.7		15.9	11.8	10.9	13.4
Segment LOS	B	B	B	B	B	C		B	B	A	B
Over Capacity											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



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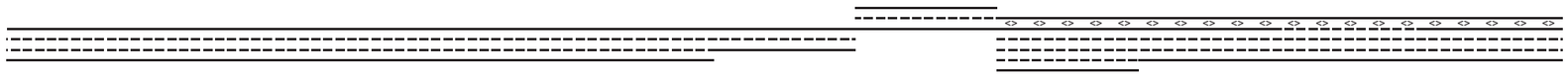
<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Freeway Segment											
Type	Basic	Basic	Basic	Basic	Basic	Basic		Basic	Basic	Basic	Basic
Length (ft)											
Accel Length											
Decel Length											
Mainline Volume	3,522	3,279	3,389	3,358	3,101	2,800		6,468	4,960	4,320	5,676
On Ramp Volume											
Off Ramp Volume											
Express Lane Volume								1,232	1,240	1,080	1,419
EL On Ramp Volume											
EL Off Ramp Volume											
Flow Rate in Entering General Purpose Lanes (GP)											
Volume (vph)	3,522	3,279	3,389	3,358	3,101	2,800		5,236	3,720	3,240	4,257
PHF	0.96	0.96	0.96	0.96	0.96	0.96		0.96	0.96	0.96	0.96
Lanes	3	3	3	3	3	2		4	3	3	3
Terrain	Level	Level	Level	Level	Level	Level		Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Truck & Bus %	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%		4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2		1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971	0.971	0.971		0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Flow (pcph)	3,779	3,518	3,636	3,603	3,327	3,004		5,563	3,953	3,443	4,523
Flow (pcphpl)	1,260	1,173	1,212	1,201	1,109	1,502		1,391	1,318	1,148	1,508
Free Flow Speed in Entering GP Lanes											
Lane Width (ft)	12	12	12	12	12	12		12	12	12	12
Shoulder Width	5	5	5	5	5	5		5	5	5	5
TRD											
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
f_{LC}	0.1	0.1	0.1	0.1	0.1	0.6		0.2	0.1	0.1	0.1
Calculated FFS	75.3	75.3	75.3	75.3	75.3	74.8		75.2	75.3	75.3	75.3
Measured FFS											
FFS Curve	70	70	70	70	70	70		70	70	70	70
Operations in Entering GP Lanes											
Capacity (pcph)	7,200	7,200	7,200	7,200	7,200	4,800		9,600	7,200	7,200	7,200
v/c ratio	0.52	0.49	0.51	0.50	0.46	0.63		0.58	0.55	0.48	0.63
Speed (mph)	70.0	70.0	70.0	70.0	70.0	68.9		69.6	69.8	70.0	68.9
Density (pcphpl)	18.0	16.8	17.3	17.2	15.8	21.8		20.0	18.9	16.4	21.9
LOS	C	B	B	B	B	C		C	C	B	C
Operations for Segment GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



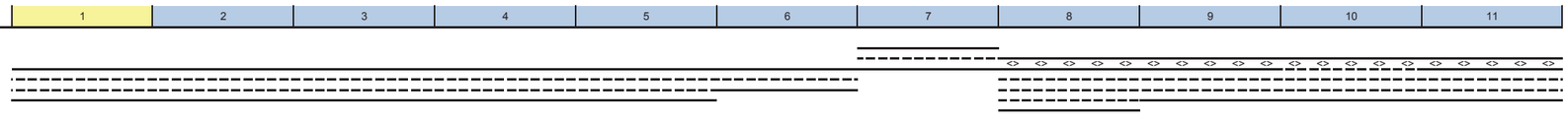
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Speed (mph)											
Density (pcphpl)											
LOS											
Operations for Exiting GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											
Speed (mph)											
Density (pcphpl)											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing
Time Period: AM



Key

<> Express Lane (HOV)

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Flow Rate in Express Lanes											
Volume (vph)								1,232	1,240	1,080	1,419
PHF								0.96	0.96	0.96	0.96
Lanes								1	1	1	1
Terrain								Level	Level	Level	Level
Grade %								0.0%	0.0%	0.0%	0.0%
Grade Length (mi)								0.00	0.00	0.00	0.00
Truck & Bus %								4.0%	4.0%	4.0%	4.0%
RV %								0.0%	0.0%	0.0%	0.0%
E_T							1.5	1.5	1.5	1.5	1.5
E_R							1.2	1.2	1.2	1.2	1.2
f_{HV}							0.962	0.980	0.980	0.980	0.980
f_P								1.00	1.00	1.00	1.00
Flow (pcph)								1,309	1,318	1,148	1,508
Flow Rate (pcphpl)								1,309	1,318	1,148	1,508
Operations in Express Lanes											
FFS								70	70	70	70
Capacity (pcph)								1,750	1,750	1,750	1,750
v/c ratio								0.75	0.75	0.66	0.86
On Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
On Ramp Roadway Operations											
Ramp Type											
Ramp Speed (mph)											
Ramp Capacity (pcph)											
Ramp v/c ratio											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing
Time Period: AM

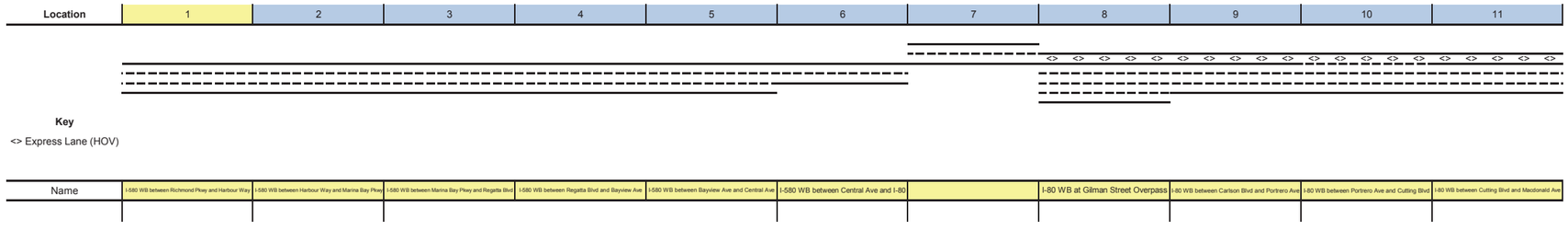
Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Off Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
Off Ramp Roadway Operations											
Ramp Type											
Ramp Speed											
Ramp Capacity (pcph)											
Ramp v/c ratio											
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps											
Up Type											
Up Distance											
Up Flow (pcph)											
Down Type											
Down Distance											
Down Flow (pcph)											
Merge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FM} (Eqn 13-3)											
P_{FM} (Eqn 13-4)											
P_{FM} (Eqn 13-5)											
P_{FM}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
v_{R12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											

Key

<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

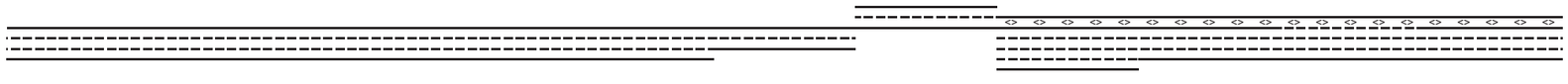
Alternative: Existing
Time Period: AM



Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

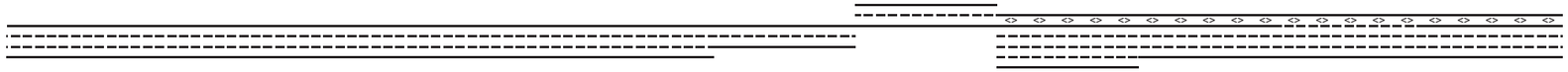
<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Diverge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FD} (Eqn 13-9)											
P_{FD} (Eqn 13-10)											
P_{FD} (Eqn 13-11)											
P_{FD}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											
On Ramp to Off Ramp Flow Rate for Weave Segments											
On to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to Off Flow (pcph)											
On Ramp to Mainline Flow Rate for Weave Segments											
On to ML Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to ML Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Mainline to Off Ramp Flow Rate for Weave Segments											
ML to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
ML to Off Flow (pcph)											
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segm											
GP to GP Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
GP to GP Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Weave Segment Operations											
Type											
Length											
Segment Lanes											
Weave Lanes											
Weave Flow (pcph)											
Non-Weave Flow											
Segment Flow											
Max Weave Length											
Length Check											
Ideal Weave Capacity											
f_{HV}											
f_P											
Capacity Condition 1											
Capacity Condition 2											
v/c ratio											
Interchange Density											
Lane Changes On to ML											
Lane Changes ML to Off											
Lane Changes On to Off											
Min Lane Change Rate											
Weave LC Rate											
Non-Weave LC Rate 1											
Non-Weave LC Rate 2											
Non-Weave LC Rate 3											
Segment LC Rate											
Weave Intensity Factor											
Weave Speed											
Non-Weave Speed											
Segment Speed											
Density											
LOS											
Leisch Method for Weaving											
Balanced?											
Weaving GP Lanes											
Weaving Length											
Summarize Segment Operations											
Segment v/c ratio	0.52	0.49	0.51	0.50	0.46	0.63		0.58	0.55	0.48	0.63
Segment Density	18.0	16.8	17.3	17.2	15.8	21.8		20.0	18.9	16.4	21.9
Segment LOS	C	B	B	B	B	C		C	C	B	C
Over Capacity											

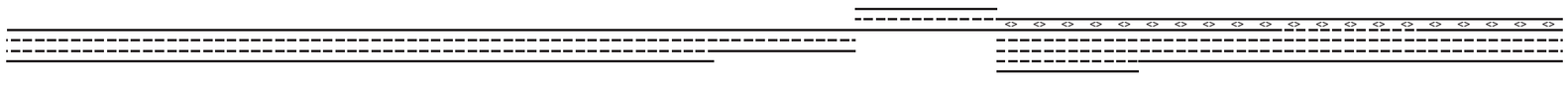
Key

<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



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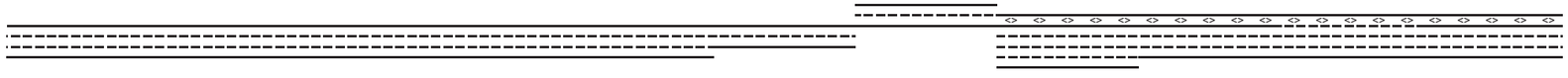
<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Freeway Segment											
Type	Basic	Basic	Basic	Basic	Basic	Basic		Basic	Basic	Basic	Basic
Length (ft)											
Accel Length											
Decel Length											
Mainline Volume	2,476	2,814	3,054	2,999	2,707	2,600		6,300	4,800	4,400	5,387
On Ramp Volume											
Off Ramp Volume											
Express Lane Volume								1,200	1,200	1,100	1,347
EL On Ramp Volume											
EL Off Ramp Volume											
Flow Rate in Entering General Purpose Lanes (GP)											
Volume (vph)	2,476	2,814	3,054	2,999	2,707	2,600		5,100	3,600	3,300	4,040
PHF	0.96	0.96	0.96	0.96	0.96	0.96		0.96	0.96	0.96	0.96
Lanes	3	3	3	3	3	2		4	3	3	3
Terrain	Level	Level	Level	Level	Level	Level		Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Truck & Bus %	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%		4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2		1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971	0.971	0.971		0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Flow (pcph)	2,657	3,019	3,277	3,218	2,904	2,790		5,419	3,825	3,506	4,293
Flow (pcphpl)	886	1,006	1,092	1,073	968	1,395		1,355	1,275	1,169	1,431
Free Flow Speed in Entering GP Lanes											
Lane Width (ft)	12	12	12	12	12	12		12	12	12	12
Shoulder Width	5	5	5	5	5	5		5	5	5	5
TRD											
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
f_{LC}	0.1	0.1	0.1	0.1	0.1	0.6		0.2	0.1	0.1	0.1
Calculated FFS	75.3	75.3	75.3	75.3	75.3	74.8		75.2	75.3	75.3	75.3
Measured FFS											
FFS Curve	70	70	70	70	70	70		70	70	70	70
Operations in Entering GP Lanes											
Capacity (pcph)	7,200	7,200	7,200	7,200	7,200	4,800		9,600	7,200	7,200	7,200
v/c ratio	0.37	0.42	0.46	0.45	0.40	0.58		0.56	0.53	0.49	0.60
Speed (mph)	70.0	70.0	70.0	70.0	70.0	69.6		69.7	69.9	70.0	69.4
Density (pcphpl)	12.7	14.4	15.6	15.3	13.8	20.1		19.4	18.2	16.7	20.6
LOS	B	B	B	B	B	C		C	C	B	C
Operations for Segment GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

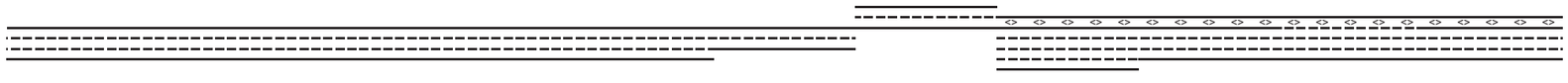
<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Speed (mph)											
Density (pcphpl)											
LOS											
Operations for Exiting GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											
Speed (mph)											
Density (pcphpl)											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



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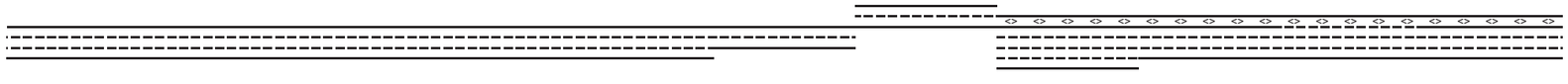
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Flow Rate in Express Lanes											
Volume (vph)								1,200	1,200	1,100	1,347
PHF								0.96	0.96	0.96	0.96
Lanes								1	1	1	1
Terrain								Level	Level	Level	Level
Grade %								0.0%	0.0%	0.0%	0.0%
Grade Length (mi)								0.00	0.00	0.00	0.00
Truck & Bus %								4.0%	4.0%	4.0%	4.0%
RV %								0.0%	0.0%	0.0%	0.0%
E_T							1.5	1.5	1.5	1.5	1.5
E_R							1.2	1.2	1.2	1.2	1.2
f_{HV}							0.962	0.980	0.980	0.980	0.980
f_P								1.00	1.00	1.00	1.00
Flow (pcph)								1,275	1,275	1,169	1,431
Flow Rate (pcphpl)								1,275	1,275	1,169	1,431
Operations in Express Lanes											
FFS								70	70	70	70
Capacity (pcph)								1,750	1,750	1,750	1,750
v/c ratio								0.73	0.73	0.67	0.82
On Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
On Ramp Roadway Operations											
Ramp Type											
Ramp Speed (mph)											
Ramp Capacity (pcph)											
Ramp v/c ratio											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



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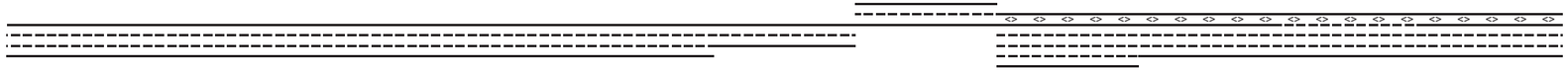
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Off Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
Off Ramp Roadway Operations											
Ramp Type											
Ramp Speed											
Ramp Capacity (pcph)											
Ramp v/c ratio											
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps											
Up Type											
Up Distance											
Up Flow (pcph)											
Down Type											
Down Distance											
Down Flow (pcph)											
Merge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FM} (Eqn 13-3)											
P_{FM} (Eqn 13-4)											
P_{FM} (Eqn 13-5)											
P_{FM}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
v_{R12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave



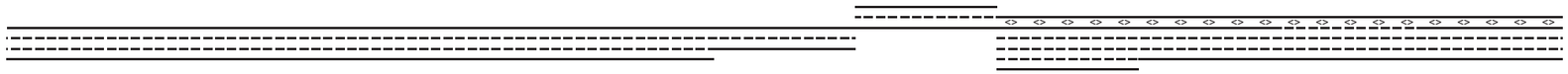
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Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing
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Location	1	2	3	4	5	6	7	8	9	10	11



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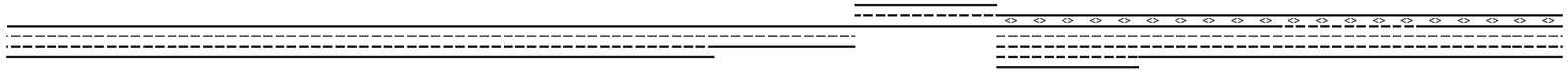
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Diverge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FD} (Eqn 13-9)											
P_{FD} (Eqn 13-10)											
P_{FD} (Eqn 13-11)											
P_{FD}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											
On Ramp to Off Ramp Flow Rate for Weave Segments											
On to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to Off Flow (pcph)											
On Ramp to Mainline Flow Rate for Weave Segments											
On to ML Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to ML Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



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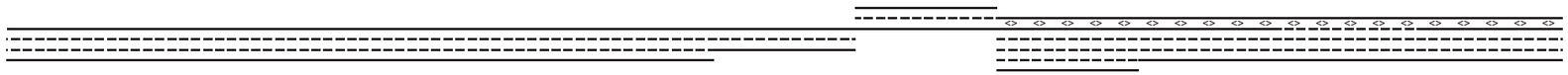
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Mainline to Off Ramp Flow Rate for Weave Segments											
ML to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
ML to Off Flow (pcph)											
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segm											
GP to GP Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
GP to GP Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

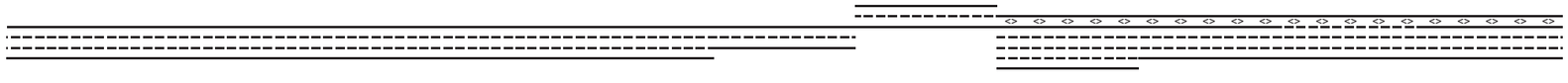
<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Weave Segment Operations											
Type											
Length											
Segment Lanes											
Weave Lanes											
Weave Flow (pcph)											
Non-Weave Flow											
Segment Flow											
Max Weave Length											
Length Check											
Ideal Weave Capacity											
f_{HV}											
f_P											
Capacity Condition 1											
Capacity Condition 2											
v/c ratio											
Interchange Density											
Lane Changes On to ML											
Lane Changes ML to Off											
Lane Changes On to Off											
Min Lane Change Rate											
Weave LC Rate											
Non-Weave LC Rate 1											
Non-Weave LC Rate 2											
Non-Weave LC Rate 3											
Segment LC Rate											
Weave Intensity Factor											
Weave Speed											
Non-Weave Speed											
Segment Speed											
Density											
LOS											
Leisch Method for Weaving											
Balanced?											
Weaving GP Lanes											
Weaving Length											
Summarize Segment Operations											
Segment v/c ratio	0.37	0.42	0.46	0.45	0.40	0.58		0.56	0.53	0.49	0.60
Segment Density	12.7	14.4	15.6	15.3	13.8	20.1		19.4	18.2	16.7	20.6
Segment LOS	B	B	B	B	B	C		C	C	B	C
Over Capacity											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Freeway Segment											
Type	Basic	Basic	Basic	Basic	Basic	Basic		Basic	Basic	Basic	Basic
Length (ft)											
Accel Length											
Decel Length											
Mainline Volume	2,729	2,932	3,631	3,738	3,901	3,400		4,704	3,520	3,120	3,881
On Ramp Volume											
Off Ramp Volume											
Express Lane Volume								896	880	780	970
EL On Ramp Volume											
EL Off Ramp Volume											
Flow Rate in Entering General Purpose Lanes (GP)											
Volume (vph)	2,729	2,932	3,631	3,738	3,901	3,400		3,808	2,640	2,340	2,911
PHF	0.96	0.96	0.96	0.96	0.96	0.96		0.96	0.96	0.96	0.96
Lanes	3	3	3	3	3	2		4	3	3	3
Terrain	Level	Level	Level	Level	Level	Level		Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Truck & Bus %	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%		4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2		1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971	0.971	0.971		0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Flow (pcph)	2,928	3,146	3,896	4,011	4,185	3,648		4,046	2,805	2,486	3,093
Flow (pcphpl)	976	1,049	1,299	1,337	1,395	1,824		1,012	935	829	1,031
Free Flow Speed in Entering GP Lanes											
Lane Width (ft)	12	12	12	12	12	12		12	12	12	12
Shoulder Width	5	5	5	5	5	5		5	5	5	5
TRD											
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
f_{LC}	0.1	0.1	0.1	0.1	0.1	0.6		0.2	0.1	0.1	0.1
Calculated FFS	75.3	75.3	75.3	75.3	75.3	74.8		75.2	75.3	75.3	75.3
Measured FFS											
FFS Curve	70	70	70	70	70	70		70	70	70	70
Operations in Entering GP Lanes											
Capacity (pcph)	7,200	7,200	7,200	7,200	7,200	4,800		9,600	7,200	7,200	7,200
v/c ratio	0.41	0.44	0.54	0.56	0.58	0.76		0.42	0.39	0.35	0.43
Speed (mph)	70.0	70.0	69.9	69.8	69.6	65.5		70.0	70.0	70.0	70.0
Density (pcphpl)	13.9	15.0	18.6	19.2	20.1	27.9		14.5	13.4	11.8	14.7
LOS	B	B	C	C	C	D		B	B	B	B
Operations for Segment GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Speed (mph)											
Density (pcphpl)											
LOS											
Operations for Exiting GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											
Speed (mph)											
Density (pcphpl)											
LOS											

Key

<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Flow Rate in Express Lanes											
Volume (vph)								896	880	780	970
PHF								0.96	0.96	0.96	0.96
Lanes								1	1	1	1
Terrain								Level	Level	Level	Level
Grade %								0.0%	0.0%	0.0%	0.0%
Grade Length (mi)								0.00	0.00	0.00	0.00
Truck & Bus %								4.0%	4.0%	4.0%	4.0%
RV %								0.0%	0.0%	0.0%	0.0%
E_T							1.5	1.5	1.5	1.5	1.5
E_R							1.2	1.2	1.2	1.2	1.2
f_{HV}							0.962	0.980	0.980	0.980	0.980
f_P								1.00	1.00	1.00	1.00
Flow (pcph)								952	935	829	1,031
Flow Rate (pcphpl)								952	935	829	1,031
Operations in Express Lanes											
FFS								70	70	70	70
Capacity (pcph)								1,750	1,750	1,750	1,750
v/c ratio								0.54	0.53	0.47	0.59
On Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
On Ramp Roadway Operations											
Ramp Type											
Ramp Speed (mph)											
Ramp Capacity (pcph)											
Ramp v/c ratio											

Key

<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing
Time Period: PM

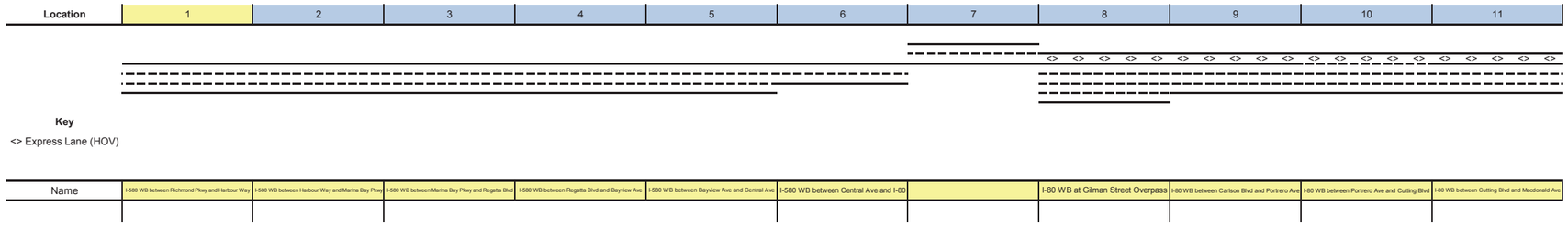
Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Off Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
Off Ramp Roadway Operations											
Ramp Type											
Ramp Speed											
Ramp Capacity (pcph)											
Ramp v/c ratio											
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps											
Up Type											
Up Distance											
Up Flow (pcph)											
Down Type											
Down Distance											
Down Flow (pcph)											
Merge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FM} (Eqn 13-3)											
P_{FM} (Eqn 13-4)											
P_{FM} (Eqn 13-5)											
P_{FM}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
v_{R12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											

Key

<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

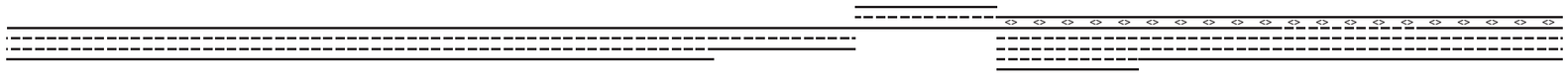
Alternative: Existing
Time Period: PM



Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

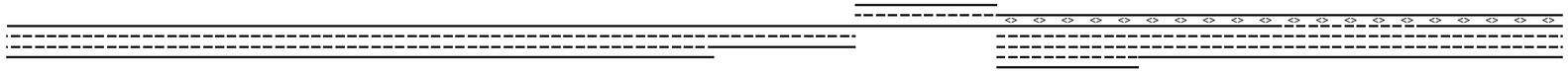
<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Diverge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FD} (Eqn 13-9)											
P_{FD} (Eqn 13-10)											
P_{FD} (Eqn 13-11)											
P_{FD}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											
On Ramp to Off Ramp Flow Rate for Weave Segments											
On to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to Off Flow (pcph)											
On Ramp to Mainline Flow Rate for Weave Segments											
On to ML Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to ML Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Mainline to Off Ramp Flow Rate for Weave Segments											
ML to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
ML to Off Flow (pcph)											
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segm											
GP to GP Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
GP to GP Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Weave Segment Operations											
Type											
Length											
Segment Lanes											
Weave Lanes											
Weave Flow (pcph)											
Non-Weave Flow											
Segment Flow											
Max Weave Length											
Length Check											
Ideal Weave Capacity											
f_{HV}											
f_P											
Capacity Condition 1											
Capacity Condition 2											
v/c ratio											
Interchange Density											
Lane Changes On to ML											
Lane Changes ML to Off											
Lane Changes On to Off											
Min Lane Change Rate											
Weave LC Rate											
Non-Weave LC Rate 1											
Non-Weave LC Rate 2											
Non-Weave LC Rate 3											
Segment LC Rate											
Weave Intensity Factor											
Weave Speed											
Non-Weave Speed											
Segment Speed											
Density											
LOS											
Leisch Method for Weaving											
Balanced?											
Weaving GP Lanes											
Weaving Length											
Summarize Segment Operations											
Segment v/c ratio	0.41	0.44	0.54	0.56	0.58	0.76		0.42	0.39	0.35	0.43
Segment Density	13.9	15.0	18.6	19.2	20.1	27.9		14.5	13.4	11.8	14.7
Segment LOS	B	B	C	C	C	D		B	B	B	B
Over Capacity											

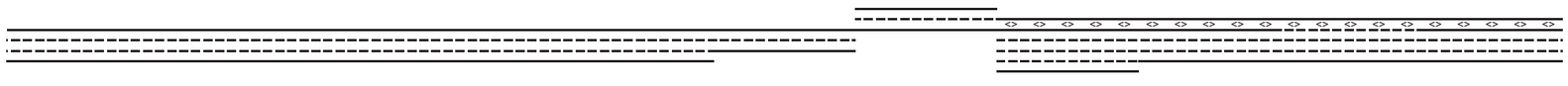
Key

<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing Plus Specific Plan
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Freeway Segment											
Type	Basic	Basic	Basic	Basic	Basic	Basic		Basic	Basic	Basic	Basic
Length (ft)											
Accel Length											
Decel Length											
Mainline Volume	3,142	3,310	3,605	3,379	3,121	3,200		5,519	3,160	2,920	3,630
On Ramp Volume											
Off Ramp Volume											
Express Lane Volume								1,051	790	730	908
EL On Ramp Volume											
EL Off Ramp Volume											
Flow Rate in Entering General Purpose Lanes (GP)											
Volume (vph)	3,142	3,310	3,605	3,379	3,121	3,200		4,468	2,370	2,190	2,723
PHF	0.96	0.96	0.96	0.96	0.96	0.96		0.96	0.96	0.96	0.96
Lanes	3	3	3	3	3	2		4	3	3	3
Terrain	Level	Level	Level	Level	Level	Level		Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Truck & Bus %	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%		4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2		1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971	0.971	0.971		0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Flow (pcph)	3,371	3,551	3,868	3,625	3,349	3,433		4,747	2,518	2,327	2,893
Flow (pcphpl)	1,124	1,184	1,289	1,208	1,116	1,717		1,187	839	776	964
Free Flow Speed in Entering GP Lanes											
Lane Width (ft)	12	12	12	12	12	12		12	12	12	12
Shoulder Width	5	5	5	5	5	5		5	5	5	5
TRD											
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
f_{LC}	0.1	0.1	0.1	0.1	0.1	0.6		0.2	0.1	0.1	0.1
Calculated FFS	75.3	75.3	75.3	75.3	75.3	74.8		75.2	75.3	75.3	75.3
Measured FFS											
FFS Curve	70	70	70	70	70	70		70	70	70	70
Operations in Entering GP Lanes											
Capacity (pcph)	7,200	7,200	7,200	7,200	7,200	4,800		9,600	7,200	7,200	7,200
v/c ratio	0.47	0.49	0.54	0.50	0.47	0.72		0.49	0.35	0.32	0.40
Speed (mph)	70.0	70.0	69.9	70.0	70.0	66.9		70.0	70.0	70.0	70.0
Density (pcphpl)	16.1	16.9	18.4	17.3	15.9	25.7		17.0	12.0	11.1	13.8
LOS	B	B	C	B	B	C		B	B	B	B
Operations for Segment GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing Plus Specific Plan
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Speed (mph)											
Density (pcphpl)											
LOS											
Operations for Exiting GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											
Speed (mph)											
Density (pcphpl)											
LOS											

Key

<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing Plus Specific Plan
Time Period: AM

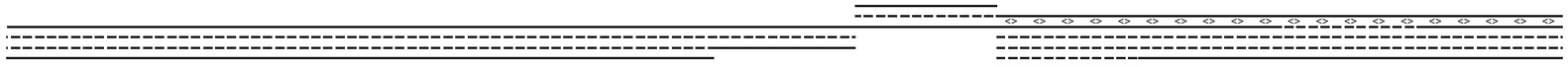
Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Flow Rate in Express Lanes											
Volume (vph)								1,051	790	730	908
PHF								0.96	0.96	0.96	0.96
Lanes								1	1	1	1
Terrain								Level	Level	Level	Level
Grade %								0.0%	0.0%	0.0%	0.0%
Grade Length (mi)								0.00	0.00	0.00	0.00
Truck & Bus %								4.0%	4.0%	4.0%	4.0%
RV %								0.0%	0.0%	0.0%	0.0%
E_T							1.5	1.5	1.5	1.5	1.5
E_R							1.2	1.2	1.2	1.2	1.2
f_{HV}							0.962	0.980	0.980	0.980	0.980
f_P								1.00	1.00	1.00	1.00
Flow (pcph)								1,117	839	776	964
Flow Rate (pcphpl)								1,117	839	776	964
Operations in Express Lanes											
FFS								70	70	70	70
Capacity (pcph)								1,750	1,750	1,750	1,750
v/c ratio								0.64	0.48	0.44	0.55
On Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
On Ramp Roadway Operations											
Ramp Type											
Ramp Speed (mph)											
Ramp Capacity (pcph)											
Ramp v/c ratio											

Key
<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing Plus Specific Plan
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



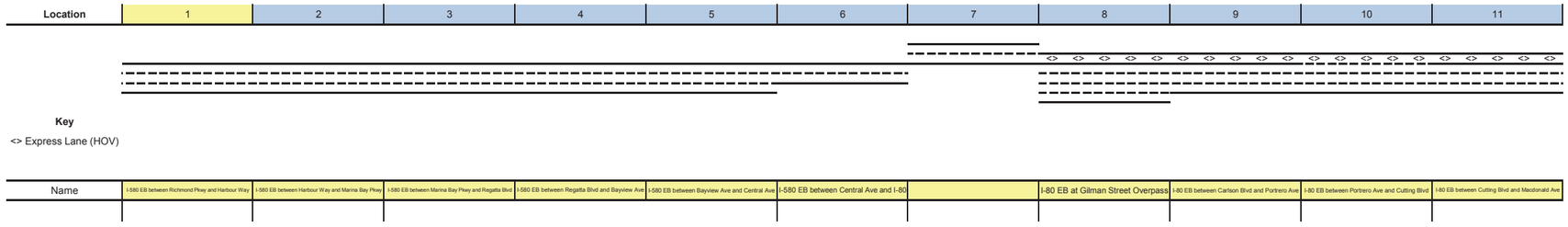
Key

<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Off Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
Off Ramp Roadway Operations											
Ramp Type											
Ramp Speed											
Ramp Capacity (pcph)											
Ramp v/c ratio											
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps											
Up Type											
Up Distance											
Up Flow (pcph)											
Down Type											
Down Distance											
Down Flow (pcph)											
Merge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FM} (Eqn 13-3)											
P_{FM} (Eqn 13-4)											
P_{FM} (Eqn 13-5)											
P_{FM}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
v_{R12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

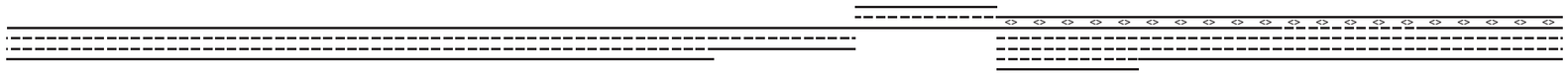
Alternative: Existing Plus Specific Plan
Time Period: AM



Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing Plus Specific Plan
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



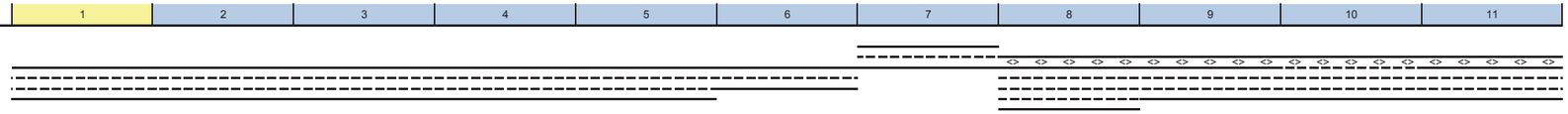
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<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Diverge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FD} (Eqn 13-9)											
P_{FD} (Eqn 13-10)											
P_{FD} (Eqn 13-11)											
P_{FD}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											
On Ramp to Off Ramp Flow Rate for Weave Segments											
On to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to Off Flow (pcph)											
On Ramp to Mainline Flow Rate for Weave Segments											
On to ML Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to ML Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing Plus Specific Plan
Time Period: AM



Key

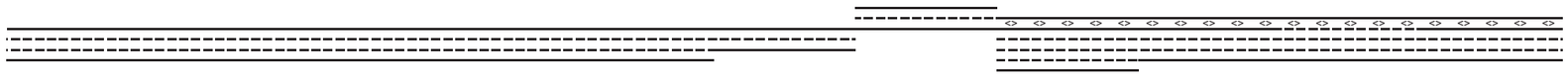
<> Express Lane (HOV)

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Mainline to Off Ramp Flow Rate for Weave Segments											
ML to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
ML to Off Flow (pcph)											
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segm											
GP to GP Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
GP to GP Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing Plus Specific Plan
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

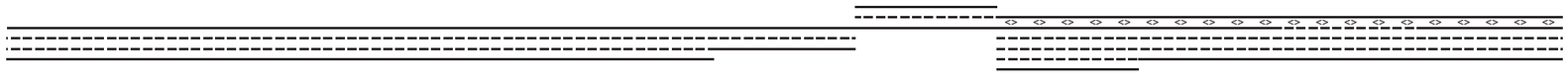
<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Weave Segment Operations											
Type											
Length											
Segment Lanes											
Weave Lanes											
Weave Flow (pcph)											
Non-Weave Flow											
Segment Flow											
Max Weave Length											
Length Check											
Ideal Weave Capacity											
f_{HV}											
f_P											
Capacity Condition 1											
Capacity Condition 2											
v/c ratio											
Interchange Density											
Lane Changes On to ML											
Lane Changes ML to Off											
Lane Changes On to Off											
Min Lane Change Rate											
Weave LC Rate											
Non-Weave LC Rate 1											
Non-Weave LC Rate 2											
Non-Weave LC Rate 3											
Segment LC Rate											
Weave Intensity Factor											
Weave Speed											
Non-Weave Speed											
Segment Speed											
Density											
LOS											
Leisch Method for Weaving											
Balanced?											
Weaving GP Lanes											
Weaving Length											
Summarize Segment Operations											
Segment v/c ratio	0.47	0.49	0.54	0.50	0.47	0.72		0.49	0.35	0.32	0.40
Segment Density	16.1	16.9	18.4	17.3	15.9	25.7		17.0	12.0	11.1	13.8
Segment LOS	B	B	C	B	B	C		B	B	B	B
Over Capacity											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing Plus Specific Plan
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Freeway Segment											
Type	Basic	Basic	Basic	Basic	Basic	Basic		Basic	Basic	Basic	Basic
Length (ft)											
Accel Length											
Decel Length											
Mainline Volume	4,262	4,109	4,159	3,818	3,691	3,250		6,644	5,000	4,360	5,908
On Ramp Volume											
Off Ramp Volume											
Express Lane Volume								1,266	1,250	1,090	1,477
EL On Ramp Volume											
EL Off Ramp Volume											
Flow Rate in Entering General Purpose Lanes (GP)											
Volume (vph)	4,262	4,109	4,159	3,818	3,691	3,250		5,379	3,750	3,270	4,431
PHF	0.96	0.96	0.96	0.96	0.96	0.96		0.96	0.96	0.96	0.96
Lanes	3	3	3	3	3	2		4	3	3	3
Terrain	Level	Level	Level	Level	Level	Level		Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Truck & Bus %	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%		4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2		1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971	0.971	0.971		0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Flow (pcph)	4,573	4,409	4,462	4,096	3,960	3,487		5,715	3,984	3,474	4,708
Flow (pcphpl)	1,524	1,470	1,487	1,365	1,320	1,743		1,429	1,328	1,158	1,569
Free Flow Speed in Entering GP Lanes											
Lane Width (ft)	12	12	12	12	12	12		12	12	12	12
Shoulder Width	5	5	5	5	5	5		5	5	5	5
TRD											
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
f_{LC}	0.1	0.1	0.1	0.1	0.1	0.6		0.2	0.1	0.1	0.1
Calculated FFS	75.3	75.3	75.3	75.3	75.3	74.8		75.2	75.3	75.3	75.3
Measured FFS											
FFS Curve	70	70	70	70	70	70		70	70	70	70
Operations in Entering GP Lanes											
Capacity (pcph)	7,200	7,200	7,200	7,200	7,200	4,800		9,600	7,200	7,200	7,200
v/c ratio	0.64	0.61	0.62	0.57	0.55	0.73		0.60	0.55	0.48	0.65
Speed (mph)	68.8	69.2	69.0	69.7	69.8	66.6		69.4	69.8	70.0	68.4
Density (pcphpl)	22.2	21.2	21.5	19.6	18.9	26.2		20.6	19.0	16.5	22.9
LOS	C	C	C	C	C	D		C	C	B	C
Operations for Segment GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing Plus Specific Plan
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Speed (mph)											
Density (pcphpl)											
LOS											
Operations for Exiting GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											
Speed (mph)											
Density (pcphpl)											
LOS											

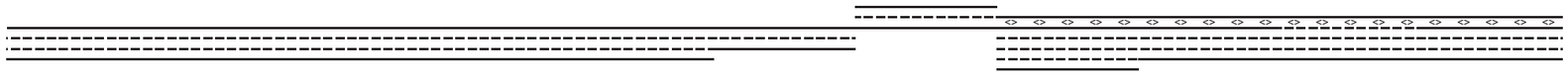
Key

<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing Plus Specific Plan
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Flow Rate in Express Lanes											
Volume (vph)								1,266	1,250	1,090	1,477
PHF								0.96	0.96	0.96	0.96
Lanes								1	1	1	1
Terrain								Level	Level	Level	Level
Grade %								0.0%	0.0%	0.0%	0.0%
Grade Length (mi)								0.00	0.00	0.00	0.00
Truck & Bus %								4.0%	4.0%	4.0%	4.0%
RV %								0.0%	0.0%	0.0%	0.0%
E_T							1.5	1.5	1.5	1.5	1.5
E_R							1.2	1.2	1.2	1.2	1.2
f_{HV}							0.962	0.980	0.980	0.980	0.980
f_P								1.00	1.00	1.00	1.00
Flow (pcph)								1,345	1,328	1,158	1,569
Flow Rate (pcphpl)								1,345	1,328	1,158	1,569
Operations in Express Lanes											
FFS								70	70	70	70
Capacity (pcph)								1,750	1,750	1,750	1,750
v/c ratio								0.77	0.76	0.66	0.90
On Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
On Ramp Roadway Operations											
Ramp Type											
Ramp Speed (mph)											
Ramp Capacity (pcph)											
Ramp v/c ratio											

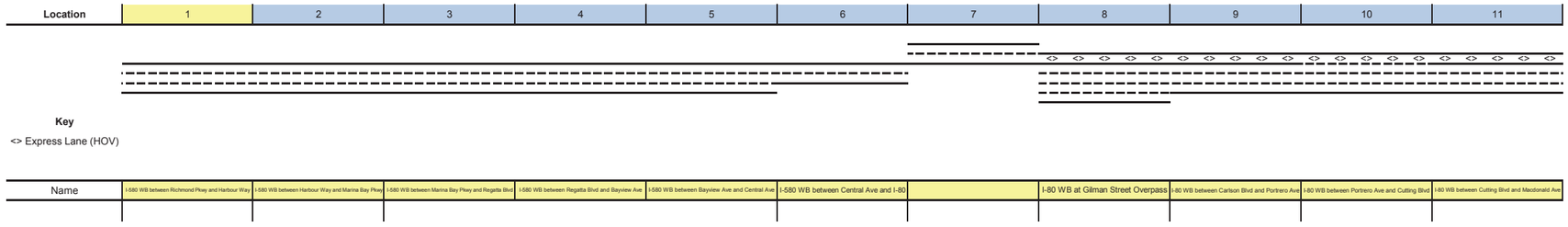
Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing Plus Specific Plan
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Off Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
Off Ramp Roadway Operations											
Ramp Type											
Ramp Speed											
Ramp Capacity (pcph)											
Ramp v/c ratio											
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps											
Up Type											
Up Distance											
Up Flow (pcph)											
Down Type											
Down Distance											
Down Flow (pcph)											
Merge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FM} (Eqn 13-3)											
P_{FM} (Eqn 13-4)											
P_{FM} (Eqn 13-5)											
P_{FM}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
v_{R12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing Plus Specific Plan
Time Period: AM



Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing Plus Specific Plan
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Diverge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FD} (Eqn 13-9)											
P_{FD} (Eqn 13-10)											
P_{FD} (Eqn 13-11)											
P_{FD}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											
On Ramp to Off Ramp Flow Rate for Weave Segments											
On to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to Off Flow (pcph)											
On Ramp to Mainline Flow Rate for Weave Segments											
On to ML Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to ML Flow (pcph)											

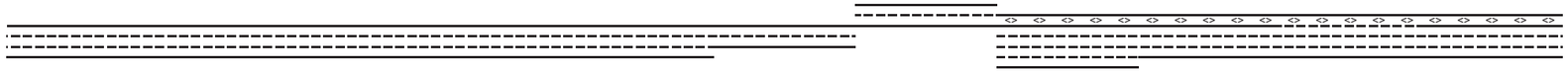
Key

<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing Plus Specific Plan
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

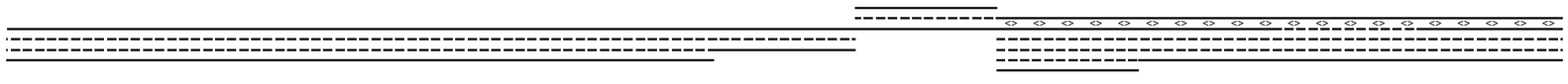
<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Mainline to Off Ramp Flow Rate for Weave Segments											
ML to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
ML to Off Flow (pcph)											
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segm											
GP to GP Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
GP to GP Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing Plus Specific Plan
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

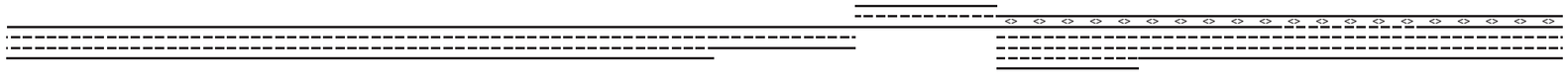
<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Weave Segment Operations											
Type											
Length											
Segment Lanes											
Weave Lanes											
Weave Flow (pcph)											
Non-Weave Flow											
Segment Flow											
Max Weave Length											
Length Check											
Ideal Weave Capacity											
f_{HV}											
f_P											
Capacity Condition 1											
Capacity Condition 2											
v/c ratio											
Interchange Density											
Lane Changes On to ML											
Lane Changes ML to Off											
Lane Changes On to Off											
Min Lane Change Rate											
Weave LC Rate											
Non-Weave LC Rate 1											
Non-Weave LC Rate 2											
Non-Weave LC Rate 3											
Segment LC Rate											
Weave Intensity Factor											
Weave Speed											
Non-Weave Speed											
Segment Speed											
Density											
LOS											
Leisch Method for Weaving											
Balanced?											
Weaving GP Lanes											
Weaving Length											
Summarize Segment Operations											
Segment v/c ratio	0.64	0.61	0.62	0.57	0.55	0.73		0.60	0.55	0.48	0.65
Segment Density	22.2	21.2	21.5	19.6	18.9	26.2		20.6	19.0	16.5	22.9
Segment LOS	C	C	C	C	C	D		C	C	B	C
Over Capacity											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing Plus Specific Plan
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Freeway Segment											
Type	Basic	Basic	Basic	Basic	Basic	Basic		Basic	Basic	Basic	Basic
Length (ft)											
Accel Length											
Decel Length											
Mainline Volume	3,276	3,694	3,954	4,049	3,777	3,680		6,493	4,832	4,424	5,707
On Ramp Volume											
Off Ramp Volume											
Express Lane Volume								1,237	1,208	1,106	1,427
EL On Ramp Volume											
EL Off Ramp Volume											
Flow Rate in Entering General Purpose Lanes (GP)											
Volume (vph)	3,276	3,694	3,954	4,049	3,777	3,680		5,256	3,624	3,318	4,280
PHF	0.96	0.96	0.96	0.96	0.96	0.96		0.96	0.96	0.96	0.96
Lanes	3	3	3	3	3	2		4	3	3	3
Terrain	Level	Level	Level	Level	Level	Level		Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Truck & Bus %	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%		4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2		1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971	0.971	0.971		0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Flow (pcph)	3,515	3,963	4,242	4,344	4,052	3,948		5,585	3,851	3,525	4,548
Flow (pcphpl)	1,172	1,321	1,414	1,448	1,351	1,974		1,396	1,284	1,175	1,516
Free Flow Speed in Entering GP Lanes											
Lane Width (ft)	12	12	12	12	12	12		12	12	12	12
Shoulder Width	5	5	5	5	5	5		5	5	5	5
TRD											
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
f_{LC}	0.1	0.1	0.1	0.1	0.1	0.6		0.2	0.1	0.1	0.1
Calculated FFS	75.3	75.3	75.3	75.3	75.3	74.8		75.2	75.3	75.3	75.3
Measured FFS											
FFS Curve	70	70	70	70	70	70		70	70	70	70
Operations in Entering GP Lanes											
Capacity (pcph)	7,200	7,200	7,200	7,200	7,200	4,800		9,600	7,200	7,200	7,200
v/c ratio	0.49	0.55	0.59	0.60	0.56	0.82		0.58	0.53	0.49	0.63
Speed (mph)	70.0	69.8	69.5	69.3	69.7	63.0		69.6	69.9	70.0	68.8
Density (pcphpl)	16.7	18.9	20.4	20.9	19.4	31.3		20.1	18.4	16.8	22.0
LOS	B	C	C	C	C	D		C	C	B	C
Operations for Segment GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing Plus Specific Plan
Time Period: PM

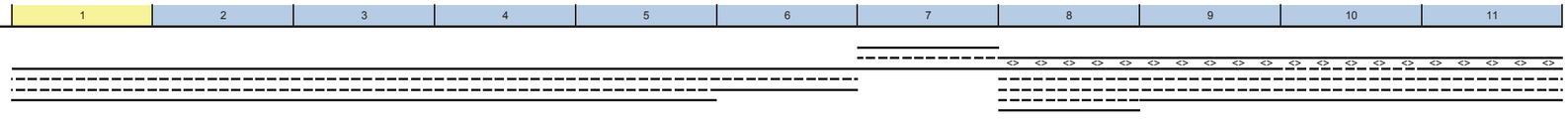
Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Speed (mph)											
Density (pcphpl)											
LOS											
Operations for Exiting GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											
Speed (mph)											
Density (pcphpl)											
LOS											

Key

<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing Plus Specific Plan
Time Period: PM



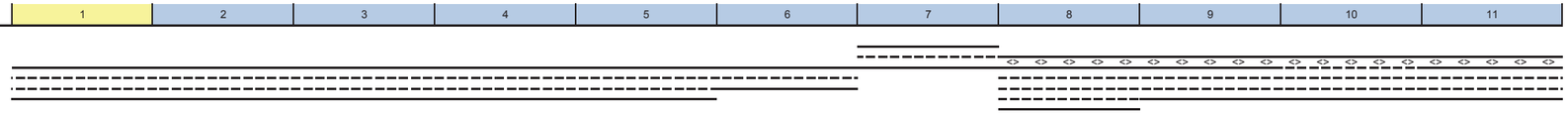
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<> Express Lane (HOV)

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Flow Rate in Express Lanes											
Volume (vph)								1,237	1,208	1,106	1,427
PHF								0.96	0.96	0.96	0.96
Lanes								1	1	1	1
Terrain								Level	Level	Level	Level
Grade %								0.0%	0.0%	0.0%	0.0%
Grade Length (mi)								0.00	0.00	0.00	0.00
Truck & Bus %								4.0%	4.0%	4.0%	4.0%
RV %								0.0%	0.0%	0.0%	0.0%
E_T							1.5	1.5	1.5	1.5	1.5
E_R							1.2	1.2	1.2	1.2	1.2
f_{HV}							0.962	0.980	0.980	0.980	0.980
f_P								1.00	1.00	1.00	1.00
Flow (pcph)								1,314	1,284	1,175	1,516
Flow Rate (pcphpl)								1,314	1,284	1,175	1,516
Operations in Express Lanes											
FFS								70	70	70	70
Capacity (pcph)								1,750	1,750	1,750	1,750
v/c ratio								0.75	0.73	0.67	0.87
On Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
On Ramp Roadway Operations											
Ramp Type											
Ramp Speed (mph)											
Ramp Capacity (pcph)											
Ramp v/c ratio											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing Plus Specific Plan
Time Period: PM



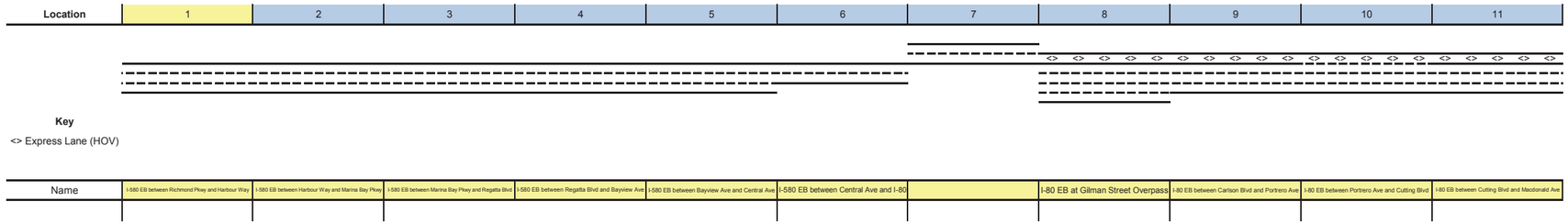
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<> Express Lane (HOV)

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Off Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
Off Ramp Roadway Operations											
Ramp Type											
Ramp Speed											
Ramp Capacity (pcph)											
Ramp v/c ratio											
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps											
Up Type											
Up Distance											
Up Flow (pcph)											
Down Type											
Down Distance											
Down Flow (pcph)											
Merge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FM} (Eqn 13-3)											
P_{FM} (Eqn 13-4)											
P_{FM} (Eqn 13-5)											
P_{FM}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
v_{R12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing Plus Specific Plan
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Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing Plus Specific Plan
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Diverge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FD} (Eqn 13-9)											
P_{FD} (Eqn 13-10)											
P_{FD} (Eqn 13-11)											
P_{FD}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											
On Ramp to Off Ramp Flow Rate for Weave Segments											
On to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to Off Flow (pcph)											
On Ramp to Mainline Flow Rate for Weave Segments											
On to ML Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to ML Flow (pcph)											

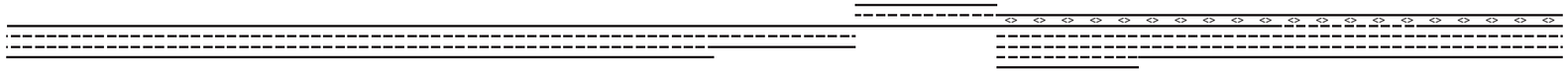
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<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing Plus Specific Plan
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



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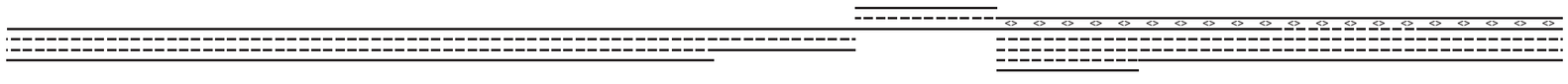
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Mainline to Off Ramp Flow Rate for Weave Segments											
ML to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
ML to Off Flow (pcph)											
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segm											
GP to GP Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
GP to GP Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing Plus Specific Plan
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



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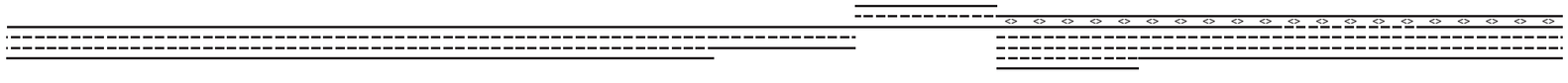
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Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Weave Segment Operations											
Type											
Length											
Segment Lanes											
Weave Lanes											
Weave Flow (pcph)											
Non-Weave Flow											
Segment Flow											
Max Weave Length											
Length Check											
Ideal Weave Capacity											
f_{HV}											
f_P											
Capacity Condition 1											
Capacity Condition 2											
v/c ratio											
Interchange Density											
Lane Changes On to ML											
Lane Changes ML to Off											
Lane Changes On to Off											
Min Lane Change Rate											
Weave LC Rate											
Non-Weave LC Rate 1											
Non-Weave LC Rate 2											
Non-Weave LC Rate 3											
Segment LC Rate											
Weave Intensity Factor											
Weave Speed											
Non-Weave Speed											
Segment Speed											
Density											
LOS											
Leisch Method for Weaving											
Balanced?											
Weaving GP Lanes											
Weaving Length											
Summarize Segment Operations											
Segment v/c ratio	0.49	0.55	0.59	0.60	0.56	0.82		0.58	0.53	0.49	0.63
Segment Density	16.7	18.9	20.4	20.9	19.4	31.3		20.1	18.4	16.8	22.0
Segment LOS	B	C	C	C	C	D		C	C	B	C
Over Capacity											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing Plus Specific Plan
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Freeway Segment											
Type	Basic	Basic	Basic	Basic	Basic	Basic		Basic	Basic	Basic	Basic
Length (ft)											
Accel Length											
Decel Length											
Mainline Volume	3,919	4,122	4,671	4,528	4,441	3,750		5,410	3,584	3,176	4,073
On Ramp Volume											
Off Ramp Volume											
Express Lane Volume								1,030	896	794	1,018
EL On Ramp Volume											
EL Off Ramp Volume											
Flow Rate in Entering General Purpose Lanes (GP)											
Volume (vph)	3,919	4,122	4,671	4,528	4,441	3,750		4,379	2,688	2,382	3,055
PHF	0.96	0.96	0.96	0.96	0.96	0.96		0.96	0.96	0.96	0.96
Lanes	3	3	3	3	3	2		4	3	3	3
Terrain	Level	Level	Level	Level	Level	Level		Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Truck & Bus %	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%		4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2		1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971	0.971	0.971		0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Flow (pcph)	4,205	4,423	5,012	4,858	4,765	4,023		4,653	2,856	2,531	3,246
Flow (pcphpl)	1,402	1,474	1,671	1,619	1,588	2,012		1,163	952	844	1,082
Free Flow Speed in Entering GP Lanes											
Lane Width (ft)	12	12	12	12	12	12		12	12	12	12
Shoulder Width	5	5	5	5	5	5		5	5	5	5
TRD											
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
f_{LC}	0.1	0.1	0.1	0.1	0.1	0.6		0.2	0.1	0.1	0.1
Calculated FFS	75.3	75.3	75.3	75.3	75.3	74.8		75.2	75.3	75.3	75.3
Measured FFS											
FFS Curve	70	70	70	70	70	70		70	70	70	70
Operations in Entering GP Lanes											
Capacity (pcph)	7,200	7,200	7,200	7,200	7,200	4,800		9,600	7,200	7,200	7,200
v/c ratio	0.58	0.61	0.70	0.67	0.66	0.84		0.48	0.40	0.35	0.45
Speed (mph)	69.5	69.1	67.4	68.0	68.3	62.4		70.0	70.0	70.0	70.0
Density (pcphpl)	20.2	21.3	24.8	23.8	23.3	32.3		16.6	13.6	12.1	15.5
LOS	C	C	C	C	C	D		B	B	B	B
Operations for Segment GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing Plus Specific Plan
Time Period: PM

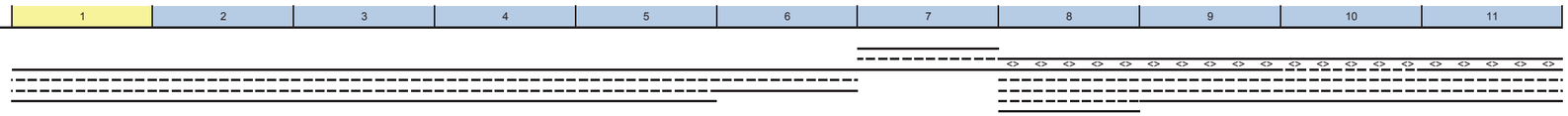
Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Speed (mph)											
Density (pcphpl)											
LOS											
Operations for Exiting GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											
Speed (mph)											
Density (pcphpl)											
LOS											

Key

<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing Plus Specific Plan
Time Period: PM



Key

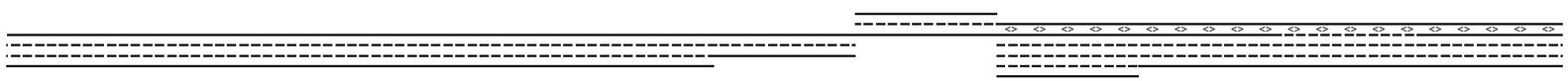
<> Express Lane (HOV)

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Flow Rate in Express Lanes											
Volume (vph)								1,030	896	794	1,018
PHF								0.96	0.96	0.96	0.96
Lanes								1	1	1	1
Terrain								Level	Level	Level	Level
Grade %								0.0%	0.0%	0.0%	0.0%
Grade Length (mi)								0.00	0.00	0.00	0.00
Truck & Bus %								4.0%	4.0%	4.0%	4.0%
RV %								0.0%	0.0%	0.0%	0.0%
E_T							1.5	1.5	1.5	1.5	1.5
E_R							1.2	1.2	1.2	1.2	1.2
f_{HV}							0.962	0.980	0.980	0.980	0.980
f_P								1.00	1.00	1.00	1.00
Flow (pcph)								1,095	952	844	1,082
Flow Rate (pcphpl)								1,095	952	844	1,082
Operations in Express Lanes											
FFS								70	70	70	70
Capacity (pcph)								1,750	1,750	1,750	1,750
v/c ratio								0.63	0.54	0.48	0.62
On Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
On Ramp Roadway Operations											
Ramp Type											
Ramp Speed (mph)											
Ramp Capacity (pcph)											
Ramp v/c ratio											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing Plus Specific Plan
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



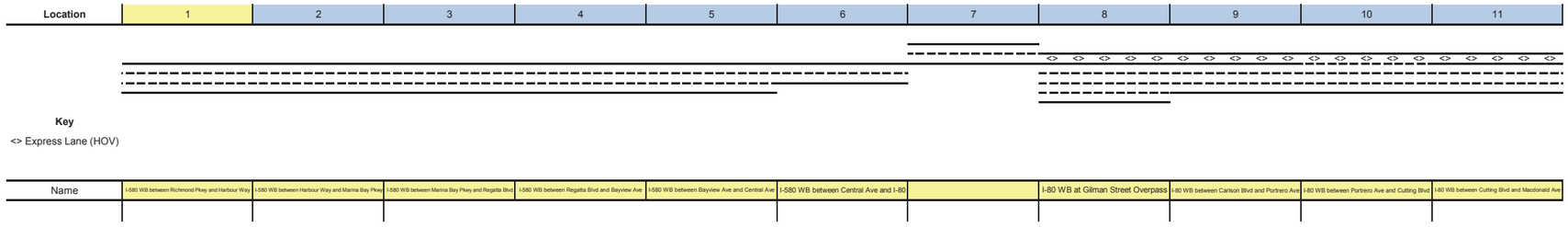
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<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Off Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
Off Ramp Roadway Operations											
Ramp Type											
Ramp Speed											
Ramp Capacity (pcph)											
Ramp v/c ratio											
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps											
Up Type											
Up Distance											
Up Flow (pcph)											
Down Type											
Down Distance											
Down Flow (pcph)											
Merge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FM} (Eqn 13-3)											
P_{FM} (Eqn 13-4)											
P_{FM} (Eqn 13-5)											
P_{FM}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
v_{R12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing Plus Specific Plan
Time Period: PM



Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing Plus Specific Plan
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Diverge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FD} (Eqn 13-9)											
P_{FD} (Eqn 13-10)											
P_{FD} (Eqn 13-11)											
P_{FD}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											
On Ramp to Off Ramp Flow Rate for Weave Segments											
On to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to Off Flow (pcph)											
On Ramp to Mainline Flow Rate for Weave Segments											
On to ML Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to ML Flow (pcph)											

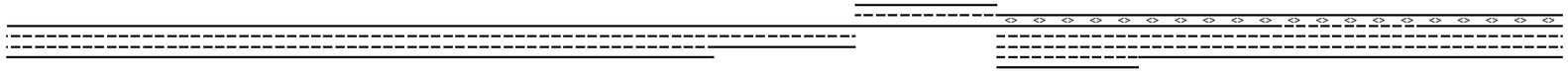
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<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing Plus Specific Plan
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



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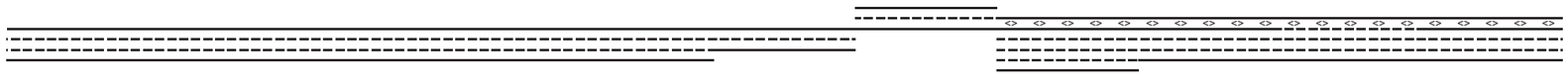
<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Mainline to Off Ramp Flow Rate for Weave Segments											
ML to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
ML to Off Flow (pcph)											
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segm											
GP to GP Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
GP to GP Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing Plus Specific Plan
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



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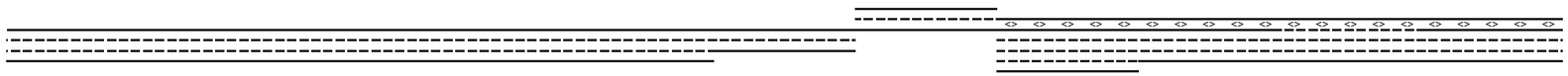
<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Weave Segment Operations											
Type											
Length											
Segment Lanes											
Weave Lanes											
Weave Flow (pcph)											
Non-Weave Flow											
Segment Flow											
Max Weave Length											
Length Check											
Ideal Weave Capacity											
f_{HV}											
f_P											
Capacity Condition 1											
Capacity Condition 2											
v/c ratio											
Interchange Density											
Lane Changes On to ML											
Lane Changes ML to Off											
Lane Changes On to Off											
Min Lane Change Rate											
Weave LC Rate											
Non-Weave LC Rate 1											
Non-Weave LC Rate 2											
Non-Weave LC Rate 3											
Segment LC Rate											
Weave Intensity Factor											
Weave Speed											
Non-Weave Speed											
Segment Speed											
Density											
LOS											
Leisch Method for Weaving											
Balanced?											
Weaving GP Lanes											
Weaving Length											
Summarize Segment Operations											
Segment v/c ratio	0.58	0.61	0.70	0.67	0.66	0.84		0.48	0.40	0.35	0.45
Segment Density	20.2	21.3	24.8	23.8	23.3	32.3		16.6	13.6	12.1	15.5
Segment LOS	C	C	C	C	C	D		B	B	B	B
Over Capacity											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 No Project
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



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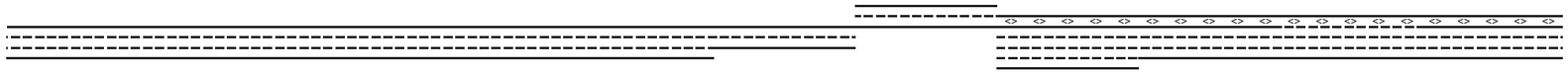
<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Freeway Segment											
Type	Basic	Basic	Basic	Basic	Basic	Basic		Basic	Basic	Basic	Basic
Length (ft)											
Accel Length											
Decel Length											
Mainline Volume	2,400	2,570	3,280	3,470	3,320	3,420		7,300	3,704	3,448	4,352
On Ramp Volume											
Off Ramp Volume											
Express Lane Volume								1,390	926	862	1,088
EL On Ramp Volume											
EL Off Ramp Volume											
Flow Rate in Entering General Purpose Lanes (GP)											
Volume (vph)	2,400	2,570	3,280	3,470	3,320	3,420		5,909	2,778	2,586	3,264
PHF	0.96	0.96	0.96	0.96	0.96	0.96		0.96	0.96	0.96	0.96
Lanes	3	3	3	3	3	2		4	3	3	3
Terrain	Level	Level	Level	Level	Level	Level		Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Truck & Bus %	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%		4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2		1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971	0.971	0.971		0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Flow (pcph)	2,575	2,757	3,519	3,723	3,562	3,669		6,279	2,952	2,748	3,468
Flow (pcphpl)	858	919	1,173	1,241	1,187	1,835		1,570	984	916	1,156
Free Flow Speed in Entering GP Lanes											
Lane Width (ft)	12	12	12	12	12	12		12	12	12	12
Shoulder Width	5	5	5	5	5	5		5	5	5	5
TRD											
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
f_{LC}	0.1	0.1	0.1	0.1	0.1	0.6		0.2	0.1	0.1	0.1
Calculated FFS	75.3	75.3	75.3	75.3	75.3	74.8		75.2	75.3	75.3	75.3
Measured FFS											
FFS Curve	70	70	70	70	70	70		70	70	70	70
Operations in Entering GP Lanes											
Capacity (pcph)	7,200	7,200	7,200	7,200	7,200	4,800		9,600	7,200	7,200	7,200
v/c ratio	0.36	0.38	0.49	0.52	0.49	0.76		0.65	0.41	0.38	0.48
Speed (mph)	70.0	70.0	70.0	70.0	70.0	65.3		68.4	70.0	70.0	70.0
Density (pcphpl)	12.3	13.1	16.8	17.7	17.0	28.1		22.9	14.1	13.1	16.5
LOS	B	B	B	B	B	D		C	B	B	B
Operations for Segment GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 No Project
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

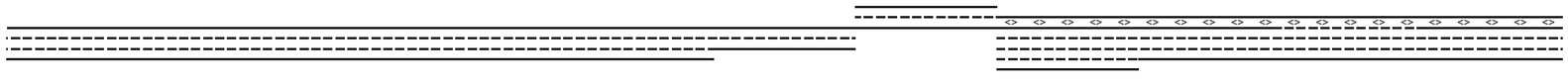
<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Speed (mph)											
Density (pcphpl)											
LOS											
Operations for Exiting GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											
Speed (mph)											
Density (pcphpl)											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 No Project
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Flow Rate in Express Lanes											
Volume (vph)								1,390	926	862	1,088
PHF								0.96	0.96	0.96	0.96
Lanes								1	1	1	1
Terrain								Level	Level	Level	Level
Grade %								0.0%	0.0%	0.0%	0.0%
Grade Length (mi)								0.00	0.00	0.00	0.00
Truck & Bus %								4.0%	4.0%	4.0%	4.0%
RV %								0.0%	0.0%	0.0%	0.0%
E_T							1.5	1.5	1.5	1.5	1.5
E_R							1.2	1.2	1.2	1.2	1.2
f_{HV}							0.962	0.980	0.980	0.980	0.980
f_P								1.00	1.00	1.00	1.00
Flow (pcph)								1,477	984	916	1,156
Flow Rate (pcphpl)								1,477	984	916	1,156
Operations in Express Lanes											
FFS								70	70	70	70
Capacity (pcph)								1,750	1,750	1,750	1,750
v/c ratio								0.84	0.56	0.52	0.66
On Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
On Ramp Roadway Operations											
Ramp Type											
Ramp Speed (mph)											
Ramp Capacity (pcph)											
Ramp v/c ratio											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 No Project
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Off Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
Off Ramp Roadway Operations											
Ramp Type											
Ramp Speed											
Ramp Capacity (pcph)											
Ramp v/c ratio											
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps											
Up Type											
Up Distance											
Up Flow (pcph)											
Down Type											
Down Distance											
Down Flow (pcph)											
Merge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FM} (Eqn 13-3)											
P_{FM} (Eqn 13-4)											
P_{FM} (Eqn 13-5)											
P_{FM}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
v_{R12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											

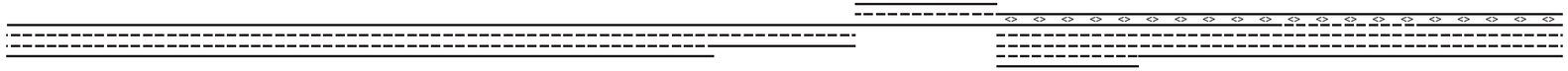
Key

<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 No Project
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave



Key

<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 No Project
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Diverge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FD} (Eqn 13-9)											
P_{FD} (Eqn 13-10)											
P_{FD} (Eqn 13-11)											
P_{FD}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											
On Ramp to Off Ramp Flow Rate for Weave Segments											
On to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to Off Flow (pcph)											
On Ramp to Mainline Flow Rate for Weave Segments											
On to ML Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to ML Flow (pcph)											

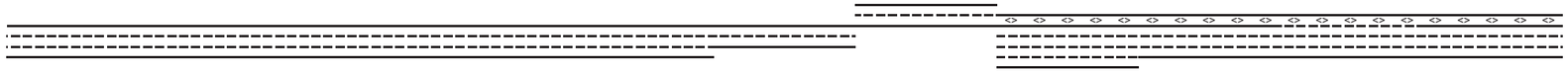
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<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 No Project
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

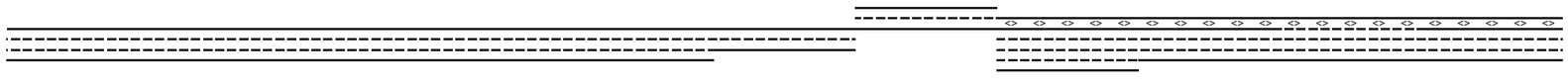
<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Mainline to Off Ramp Flow Rate for Weave Segments											
ML to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
ML to Off Flow (pcph)											
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segm											
GP to GP Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
GP to GP Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 No Project
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



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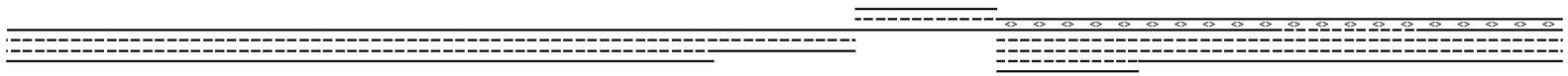
<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Weave Segment Operations											
Type											
Length											
Segment Lanes											
Weave Lanes											
Weave Flow (pcph)											
Non-Weave Flow											
Segment Flow											
Max Weave Length											
Length Check											
Ideal Weave Capacity											
f_{HV}											
f_P											
Capacity Condition 1											
Capacity Condition 2											
v/c ratio											
Interchange Density											
Lane Changes On to ML											
Lane Changes ML to Off											
Lane Changes On to Off											
Min Lane Change Rate											
Weave LC Rate											
Non-Weave LC Rate 1											
Non-Weave LC Rate 2											
Non-Weave LC Rate 3											
Segment LC Rate											
Weave Intensity Factor											
Weave Speed											
Non-Weave Speed											
Segment Speed											
Density											
LOS											
Leisch Method for Weaving											
Balanced?											
Weaving GP Lanes											
Weaving Length											
Summarize Segment Operations											
Segment v/c ratio	0.36	0.38	0.49	0.52	0.49	0.76		0.65	0.41	0.38	0.48
Segment Density	12.3	13.1	16.8	17.7	17.0	28.1		22.9	14.1	13.1	16.5
Segment LOS	B	B	B	B	B	D		C	B	B	B
Over Capacity											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 No Project
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

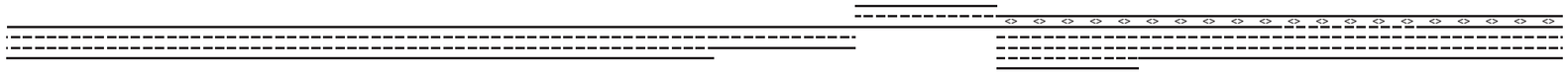
<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Freeway Segment											
Type	Basic	Basic	Basic	Basic	Basic	Basic		Basic	Basic	Basic	Basic
Length (ft)											
Accel Length											
Decel Length											
Mainline Volume	4,900	4,780	4,990	5,120	5,160	4,750		8,400	5,320	4,576	6,176
On Ramp Volume											
Off Ramp Volume											
Express Lane Volume								1,600	1,330	1,144	1,544
EL On Ramp Volume											
EL Off Ramp Volume											
Flow Rate in Entering General Purpose Lanes (GP)											
Volume (vph)	4,900	4,780	4,990	5,120	5,160	4,750		6,800	3,990	3,432	4,632
PHF	0.96	0.96	0.96	0.96	0.96	0.96		0.96	0.96	0.96	0.96
Lanes	3	3	3	3	3	2		4	3	3	3
Terrain	Level	Level	Level	Level	Level	Level		Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Truck & Bus %	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%		4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2		1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971	0.971	0.971		0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Flow (pcph)	5,257	5,129	5,354	5,493	5,536	5,096		7,225	4,239	3,647	4,922
Flow (pcphpl)	1,752	1,710	1,785	1,831	1,845	2,548		1,806	1,413	1,216	1,641
Free Flow Speed in Entering GP Lanes											
Lane Width (ft)	12	12	12	12	12	12		12	12	12	12
Shoulder Width	5	5	5	5	5	5		5	5	5	5
TRD											
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
f_{LC}	0.1	0.1	0.1	0.1	0.1	0.6		0.2	0.1	0.1	0.1
Calculated FFS	75.3	75.3	75.3	75.3	75.3	74.8		75.2	75.3	75.3	75.3
Measured FFS											
FFS Curve	70	70	70	70	70	70		70	70	70	70
Operations in Entering GP Lanes											
Capacity (pcph)	7,200	7,200	7,200	7,200	7,200	4,800		9,600	7,200	7,200	7,200
v/c ratio	0.73	0.71	0.74	0.76	0.77	1.06		0.75	0.59	0.51	0.68
Speed (mph)	66.5	67.0	66.0	65.4	65.2	-		65.7	69.5	70.0	67.7
Density (pcphpl)	26.4	25.5	27.0	28.0	28.3	-		27.5	20.3	17.4	24.2
LOS	D	C	D	D	D	F		D	C	B	C
Operations for Segment GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 No Project
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

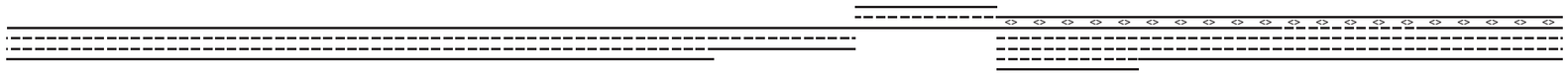
<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Speed (mph)											
Density (pcphpl)											
LOS											
Operations for Exiting GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											
Speed (mph)											
Density (pcphpl)											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 No Project
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Flow Rate in Express Lanes											
Volume (vph)								1,600	1,330	1,144	1,544
PHF								0.96	0.96	0.96	0.96
Lanes								1	1	1	1
Terrain								Level	Level	Level	Level
Grade %								0.0%	0.0%	0.0%	0.0%
Grade Length (mi)								0.00	0.00	0.00	0.00
Truck & Bus %								4.0%	4.0%	4.0%	4.0%
RV %								0.0%	0.0%	0.0%	0.0%
E_T							1.5	1.5	1.5	1.5	1.5
E_R							1.2	1.2	1.2	1.2	1.2
f_{HV}							0.962	0.980	0.980	0.980	0.980
f_P								1.00	1.00	1.00	1.00
Flow (pcph)								1,700	1,413	1,216	1,641
Flow Rate (pcphpl)								1,700	1,413	1,216	1,641
Operations in Express Lanes											
FFS								70	70	70	70
Capacity (pcph)								1,750	1,750	1,750	1,750
v/c ratio								0.97	0.81	0.69	0.94
On Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
On Ramp Roadway Operations											
Ramp Type											
Ramp Speed (mph)											
Ramp Capacity (pcph)											
Ramp v/c ratio											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 No Project
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Off Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
Off Ramp Roadway Operations											
Ramp Type											
Ramp Speed											
Ramp Capacity (pcph)											
Ramp v/c ratio											
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps											
Up Type											
Up Distance											
Up Flow (pcph)											
Down Type											
Down Distance											
Down Flow (pcph)											
Merge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FM} (Eqn 13-3)											
P_{FM} (Eqn 13-4)											
P_{FM} (Eqn 13-5)											
P_{FM}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
v_{R12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											

Key

<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 No Project
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave

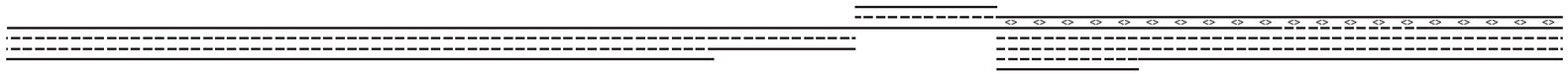
Key

<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 No Project
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

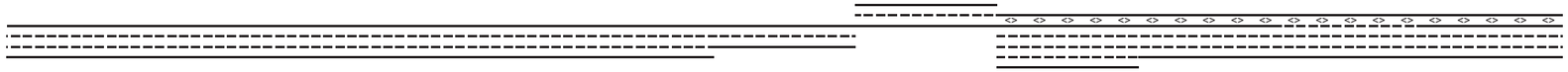
<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Diverge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FD} (Eqn 13-9)											
P_{FD} (Eqn 13-10)											
P_{FD} (Eqn 13-11)											
P_{FD}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											
On Ramp to Off Ramp Flow Rate for Weave Segments											
On to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to Off Flow (pcph)											
On Ramp to Mainline Flow Rate for Weave Segments											
On to ML Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to ML Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 No Project
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

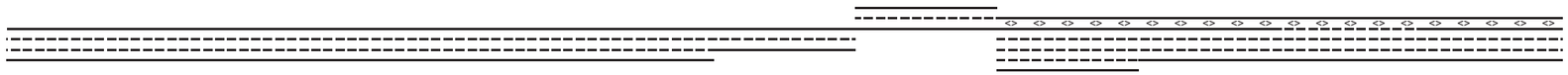
<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Mainline to Off Ramp Flow Rate for Weave Segments											
ML to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
ML to Off Flow (pcph)											
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segm											
GP to GP Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
GP to GP Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 No Project
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



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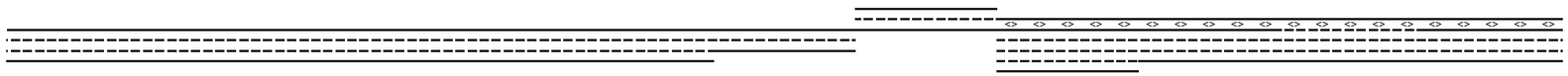
<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Weave Segment Operations											
Type											
Length											
Segment Lanes											
Weave Lanes											
Weave Flow (pcph)											
Non-Weave Flow											
Segment Flow											
Max Weave Length											
Length Check											
Ideal Weave Capacity											
f_{HV}											
f_P											
Capacity Condition 1											
Capacity Condition 2											
v/c ratio											
Interchange Density											
Lane Changes On to ML											
Lane Changes ML to Off											
Lane Changes On to Off											
Min Lane Change Rate											
Weave LC Rate											
Non-Weave LC Rate 1											
Non-Weave LC Rate 2											
Non-Weave LC Rate 3											
Segment LC Rate											
Weave Intensity Factor											
Weave Speed											
Non-Weave Speed											
Segment Speed											
Density											
LOS											
Leisch Method for Weaving											
Balanced?											
Weaving GP Lanes											
Weaving Length											
Summarize Segment Operations											
Segment v/c ratio	0.73	0.71	0.74	0.76	0.77	1.06		0.75	0.59	0.51	0.68
Segment Density	26.4	25.5	27.0	28.0	28.3	-		27.5	20.3	17.4	24.2
Segment LOS	D	C	D	D	D	F		D	C	B	C
Over Capacity						Entering GP Lanes					

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 No Project
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Freeway Segment											
Type	Basic	Basic	Basic	Basic	Basic	Basic		Basic	Basic	Basic	Basic
Length (ft)											
Accel Length											
Decel Length											
Mainline Volume	2,930	3,440	3,580	3,540	3,630	3,520		8,114	5,080	4,528	5,840
On Ramp Volume											
Off Ramp Volume											
Express Lane Volume								1,546	1,270	1,132	1,460
EL On Ramp Volume											
EL Off Ramp Volume											
Flow Rate in Entering General Purpose Lanes (GP)											
Volume (vph)	2,930	3,440	3,580	3,540	3,630	3,520		6,569	3,810	3,396	4,380
PHF	0.96	0.96	0.96	0.96	0.96	0.96		0.96	0.96	0.96	0.96
Lanes	3	3	3	3	3	2		4	3	3	3
Terrain	Level	Level	Level	Level	Level	Level		Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Truck & Bus %	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%		4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2		1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971	0.971	0.971		0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Flow (pcph)	3,144	3,691	3,841	3,798	3,895	3,777		6,979	4,048	3,608	4,654
Flow (pcphpl)	1,048	1,230	1,280	1,266	1,298	1,888		1,745	1,349	1,203	1,551
Free Flow Speed in Entering GP Lanes											
Lane Width (ft)	12	12	12	12	12	12		12	12	12	12
Shoulder Width	5	5	5	5	5	5		5	5	5	5
TRD											
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
f_{LC}	0.1	0.1	0.1	0.1	0.1	0.6		0.2	0.1	0.1	0.1
Calculated FFS	75.3	75.3	75.3	75.3	75.3	74.8		75.2	75.3	75.3	75.3
Measured FFS											
FFS Curve	70	70	70	70	70	70		70	70	70	70
Operations in Entering GP Lanes											
Capacity (pcph)	7,200	7,200	7,200	7,200	7,200	4,800		9,600	7,200	7,200	7,200
v/c ratio	0.44	0.51	0.53	0.53	0.54	0.79		0.73	0.56	0.50	0.65
Speed (mph)	70.0	70.0	69.9	69.9	69.9	64.5		66.6	69.7	70.0	68.6
Density (pcphpl)	15.0	17.6	18.3	18.1	18.6	29.3		26.2	19.3	17.2	22.6
LOS	B	B	C	C	C	D		D	C	B	C
Operations for Segment GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 No Project
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Speed (mph)											
Density (pcphpl)											
LOS											
Operations for Exiting GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											
Speed (mph)											
Density (pcphpl)											
LOS											

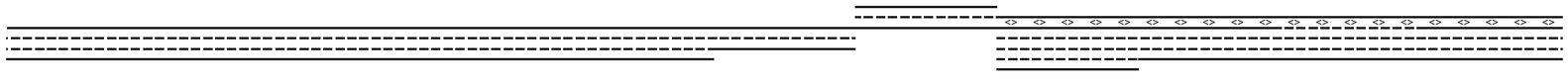
Key

<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 No Project
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Flow Rate in Express Lanes											
Volume (vph)								1,546	1,270	1,132	1,460
PHF								0.96	0.96	0.96	0.96
Lanes								1	1	1	1
Terrain								Level	Level	Level	Level
Grade %								0.0%	0.0%	0.0%	0.0%
Grade Length (mi)								0.00	0.00	0.00	0.00
Truck & Bus %								4.0%	4.0%	4.0%	4.0%
RV %								0.0%	0.0%	0.0%	0.0%
E_T							1.5	1.5	1.5	1.5	1.5
E_R							1.2	1.2	1.2	1.2	1.2
f_{HV}							0.962	0.980	0.980	0.980	0.980
f_P								1.00	1.00	1.00	1.00
Flow (pcph)								1,642	1,349	1,203	1,551
Flow Rate (pcphpl)								1,642	1,349	1,203	1,551
Operations in Express Lanes											
FFS								70	70	70	70
Capacity (pcph)								1,750	1,750	1,750	1,750
v/c ratio								0.94	0.77	0.69	0.89
On Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
On Ramp Roadway Operations											
Ramp Type											
Ramp Speed (mph)											
Ramp Capacity (pcph)											
Ramp v/c ratio											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 No Project
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Off Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
Off Ramp Roadway Operations											
Ramp Type											
Ramp Speed											
Ramp Capacity (pcph)											
Ramp v/c ratio											
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps											
Up Type											
Up Distance											
Up Flow (pcph)											
Down Type											
Down Distance											
Down Flow (pcph)											
Merge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FM} (Eqn 13-3)											
P_{FM} (Eqn 13-4)											
P_{FM} (Eqn 13-5)											
P_{FM}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
v_{R12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											

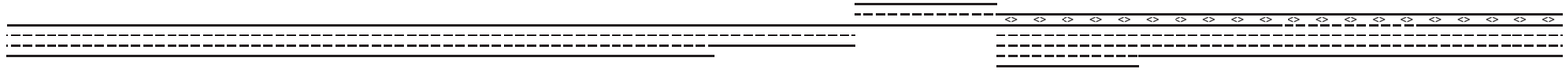
Key

<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 No Project
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave



Key

<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 No Project
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Diverge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FD} (Eqn 13-9)											
P_{FD} (Eqn 13-10)											
P_{FD} (Eqn 13-11)											
P_{FD}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											
On Ramp to Off Ramp Flow Rate for Weave Segments											
On to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to Off Flow (pcph)											
On Ramp to Mainline Flow Rate for Weave Segments											
On to ML Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to ML Flow (pcph)											

Key

<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 No Project
Time Period: PM

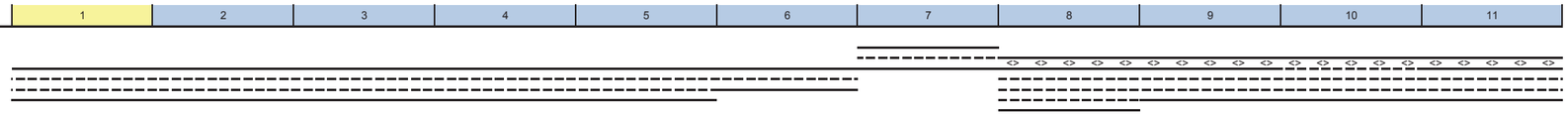
Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Mainline to Off Ramp Flow Rate for Weave Segments											
ML to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
ML to Off Flow (pcph)											
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segm											
GP to GP Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
GP to GP Flow (pcph)											

Key

<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 No Project
Time Period: PM



Key

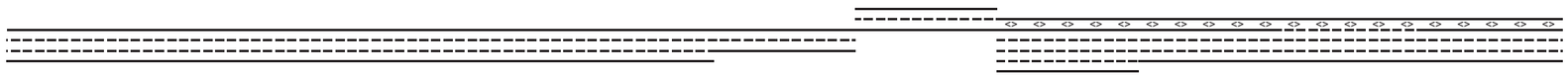
<> Express Lane (HOV)

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Weave Segment Operations											
Type											
Length											
Segment Lanes											
Weave Lanes											
Weave Flow (pcph)											
Non-Weave Flow											
Segment Flow											
Max Weave Length											
Length Check											
Ideal Weave Capacity											
f_{HV}											
f_P											
Capacity Condition 1											
Capacity Condition 2											
v/c ratio											
Interchange Density											
Lane Changes On to ML											
Lane Changes ML to Off											
Lane Changes On to Off											
Min Lane Change Rate											
Weave LC Rate											
Non-Weave LC Rate 1											
Non-Weave LC Rate 2											
Non-Weave LC Rate 3											
Segment LC Rate											
Weave Intensity Factor											
Weave Speed											
Non-Weave Speed											
Segment Speed											
Density											
LOS											
Leisch Method for Weaving											
Balanced?											
Weaving GP Lanes											
Weaving Length											
Summarize Segment Operations											
Segment v/c ratio	0.44	0.51	0.53	0.53	0.54	0.79		0.73	0.56	0.50	0.65
Segment Density	15.0	17.6	18.3	18.1	18.6	29.3		26.2	19.3	17.2	22.6
Segment LOS	B	B	C	C	C	D		D	C	B	C
Over Capacity											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 No Project
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Freeway Segment											
Type	Basic	Basic	Basic	Basic	Basic	Basic		Basic	Basic	Basic	Basic
Length (ft)											
Accel Length											
Decel Length											
Mainline Volume	3,770	4,150	4,870	4,940	5,220	4,670		6,770	4,080	3,672	4,600
On Ramp Volume											
Off Ramp Volume											
Express Lane Volume								1,290	1,020	918	1,150
EL On Ramp Volume											
EL Off Ramp Volume											
Flow Rate in Entering General Purpose Lanes (GP)											
Volume (vph)	3,770	4,150	4,870	4,940	5,220	4,670		5,481	3,060	2,754	3,450
PHF	0.96	0.96	0.96	0.96	0.96	0.96		0.96	0.96	0.96	0.96
Lanes	3	3	3	3	3	2		4	3	3	3
Terrain	Level	Level	Level	Level	Level	Level		Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Truck & Bus %	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%		4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2		1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971	0.971	0.971		0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Flow (pcph)	4,045	4,453	5,225	5,300	5,601	5,011		5,823	3,251	2,926	3,666
Flow (pcphpl)	1,348	1,484	1,742	1,767	1,867	2,505		1,456	1,084	975	1,222
Free Flow Speed in Entering GP Lanes											
Lane Width (ft)	12	12	12	12	12	12		12	12	12	12
Shoulder Width	5	5	5	5	5	5		5	5	5	5
TRD											
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
f_{LC}	0.1	0.1	0.1	0.1	0.1	0.6		0.2	0.1	0.1	0.1
Calculated FFS	75.3	75.3	75.3	75.3	75.3	74.8		75.2	75.3	75.3	75.3
Measured FFS											
FFS Curve	70	70	70	70	70	70		70	70	70	70
Operations in Entering GP Lanes											
Capacity (pcph)	7,200	7,200	7,200	7,200	7,200	4,800		9,600	7,200	7,200	7,200
v/c ratio	0.56	0.62	0.73	0.74	0.78	1.04		0.61	0.45	0.41	0.51
Speed (mph)	69.7	69.1	66.6	66.3	64.8	-		69.2	70.0	70.0	70.0
Density (pcphpl)	19.3	21.5	26.2	26.7	28.8	-		21.0	15.5	13.9	17.5
LOS	C	C	D	D	D	F		C	B	B	B
Operations for Segment GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 No Project
Time Period: PM

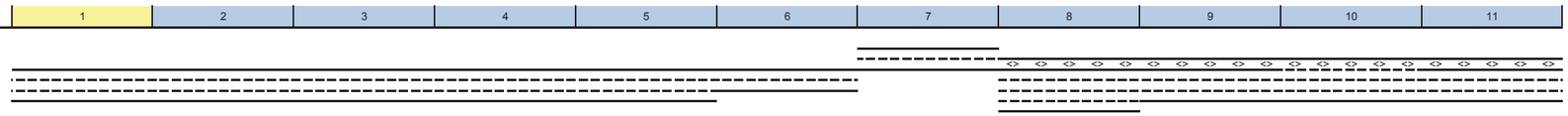
Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Speed (mph)											
Density (pcphpl)											
LOS											
Operations for Exiting GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											
Speed (mph)											
Density (pcphpl)											
LOS											

Key

<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 No Project
Time Period: PM



Key

<> Express Lane (HOV)

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Flow Rate in Express Lanes											
Volume (vph)								1,290	1,020	918	1,150
PHF								0.96	0.96	0.96	0.96
Lanes								1	1	1	1
Terrain								Level	Level	Level	Level
Grade %								0.0%	0.0%	0.0%	0.0%
Grade Length (mi)								0.00	0.00	0.00	0.00
Truck & Bus %								4.0%	4.0%	4.0%	4.0%
RV %								0.0%	0.0%	0.0%	0.0%
E_T							1.5	1.5	1.5	1.5	1.5
E_R							1.2	1.2	1.2	1.2	1.2
f_{HV}							0.962	0.980	0.980	0.980	0.980
f_P								1.00	1.00	1.00	1.00
Flow (pcph)								1,370	1,084	975	1,222
Flow Rate (pcphpl)								1,370	1,084	975	1,222
Operations in Express Lanes											
FFS								70	70	70	70
Capacity (pcph)								1,750	1,750	1,750	1,750
v/c ratio								0.78	0.62	0.56	0.70
On Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
On Ramp Roadway Operations											
Ramp Type											
Ramp Speed (mph)											
Ramp Capacity (pcph)											
Ramp v/c ratio											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 No Project
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Off Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
Off Ramp Roadway Operations											
Ramp Type											
Ramp Speed											
Ramp Capacity (pcph)											
Ramp v/c ratio											
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps											
Up Type											
Up Distance											
Up Flow (pcph)											
Down Type											
Down Distance											
Down Flow (pcph)											
Merge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FM} (Eqn 13-3)											
P_{FM} (Eqn 13-4)											
P_{FM} (Eqn 13-5)											
P_{FM}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
v_{R12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											

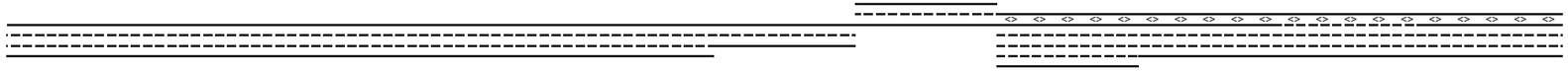
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<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 No Project
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave



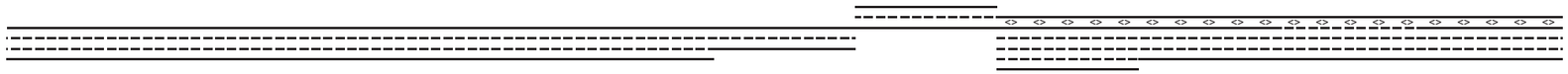
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<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 No Project
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

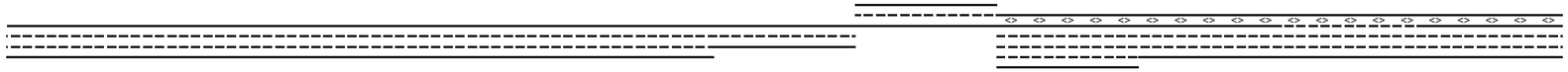
<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Diverge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FD} (Eqn 13-9)											
P_{FD} (Eqn 13-10)											
P_{FD} (Eqn 13-11)											
P_{FD}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											
On Ramp to Off Ramp Flow Rate for Weave Segments											
On to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to Off Flow (pcph)											
On Ramp to Mainline Flow Rate for Weave Segments											
On to ML Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to ML Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 No Project
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



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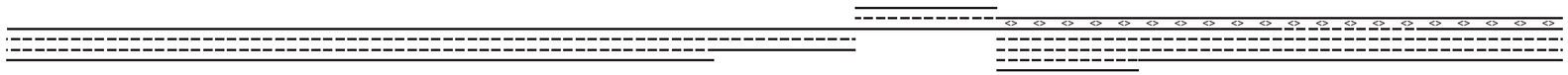
<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Mainline to Off Ramp Flow Rate for Weave Segments											
ML to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
ML to Off Flow (pcph)											
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segm											
GP to GP Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
GP to GP Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 No Project
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



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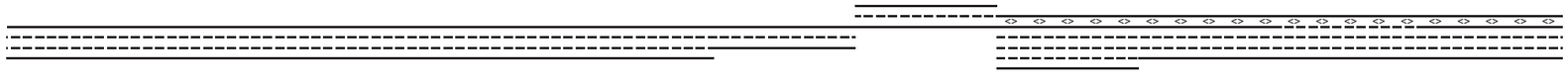
<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Weave Segment Operations											
Type											
Length											
Segment Lanes											
Weave Lanes											
Weave Flow (pcph)											
Non-Weave Flow											
Segment Flow											
Max Weave Length											
Length Check											
Ideal Weave Capacity											
f_{HV}											
f_P											
Capacity Condition 1											
Capacity Condition 2											
v/c ratio											
Interchange Density											
Lane Changes On to ML											
Lane Changes ML to Off											
Lane Changes On to Off											
Min Lane Change Rate											
Weave LC Rate											
Non-Weave LC Rate 1											
Non-Weave LC Rate 2											
Non-Weave LC Rate 3											
Segment LC Rate											
Weave Intensity Factor											
Weave Speed											
Non-Weave Speed											
Segment Speed											
Density											
LOS											
Leisch Method for Weaving											
Balanced?											
Weaving GP Lanes											
Weaving Length											
Summarize Segment Operations											
Segment v/c ratio	0.56	0.62	0.73	0.74	0.78	1.04		0.61	0.45	0.41	0.51
Segment Density	19.3	21.5	26.2	26.7	28.8	-		21.0	15.5	13.9	17.5
Segment LOS	C	C	D	D	D	F		C	B	B	B
Over Capacity						Entering GP Lanes					

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 Plus Specific Plan
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



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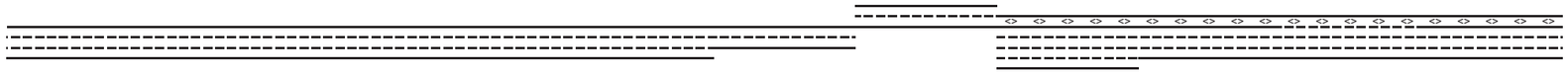
<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Freeway Segment											
Type	Basic	Basic	Basic	Basic	Basic	Basic		Basic	Basic	Basic	Basic
Length (ft)											
Accel Length											
Decel Length											
Mainline Volume	3,340	3,550	3,930	3,850	3,630	3,720		7,610	3,744	3,488	4,448
On Ramp Volume											
Off Ramp Volume											
Express Lane Volume								1,450	936	872	1,112
EL On Ramp Volume											
EL Off Ramp Volume											
Flow Rate in Entering General Purpose Lanes (GP)											
Volume (vph)	3,340	3,550	3,930	3,850	3,630	3,720		6,161	2,808	2,616	3,336
PHF	0.96	0.96	0.96	0.96	0.96	0.96		0.96	0.96	0.96	0.96
Lanes	3	3	3	3	3	2		4	3	3	3
Terrain	Level	Level	Level	Level	Level	Level		Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Truck & Bus %	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%		4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2		1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971	0.971	0.971		0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Flow (pcph)	3,584	3,809	4,217	4,131	3,895	3,991		6,546	2,984	2,780	3,545
Flow (pcphpl)	1,195	1,270	1,406	1,377	1,298	1,996		1,636	995	927	1,182
Free Flow Speed in Entering GP Lanes											
Lane Width (ft)	12	12	12	12	12	12		12	12	12	12
Shoulder Width	5	5	5	5	5	5		5	5	5	5
TRD											
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
f_{LC}	0.1	0.1	0.1	0.1	0.1	0.6		0.2	0.1	0.1	0.1
Calculated FFS	75.3	75.3	75.3	75.3	75.3	74.8		75.2	75.3	75.3	75.3
Measured FFS											
FFS Curve	70	70	70	70	70	70		70	70	70	70
Operations in Entering GP Lanes											
Capacity (pcph)	7,200	7,200	7,200	7,200	7,200	4,800		9,600	7,200	7,200	7,200
v/c ratio	0.50	0.53	0.59	0.57	0.54	0.83		0.68	0.41	0.39	0.49
Speed (mph)	70.0	69.9	69.5	69.6	69.9	62.7		67.8	70.0	70.0	70.0
Density (pcphpl)	17.1	18.2	20.2	19.8	18.6	31.9		24.1	14.2	13.2	16.9
LOS	B	C	C	C	C	D		C	B	B	B
Operations for Segment GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 Plus Specific Plan
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

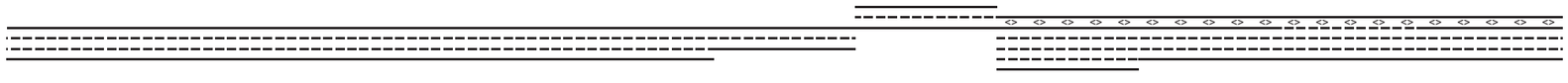
<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Speed (mph)											
Density (pcphpl)											
LOS											
Operations for Exiting GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											
Speed (mph)											
Density (pcphpl)											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 Plus Specific Plan
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



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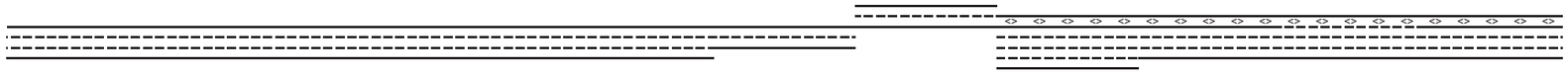
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Flow Rate in Express Lanes											
Volume (vph)								1,450	936	872	1,112
PHF								0.96	0.96	0.96	0.96
Lanes								1	1	1	1
Terrain								Level	Level	Level	Level
Grade %								0.0%	0.0%	0.0%	0.0%
Grade Length (mi)								0.00	0.00	0.00	0.00
Truck & Bus %								8.0%	8.0%	8.0%	8.0%
RV %								0.0%	0.0%	0.0%	0.0%
E_T							1.5	1.5	1.5	1.5	1.5
E_R							1.2	1.2	1.2	1.2	1.2
f_{HV}							0.962	0.962	0.962	0.962	0.962
f_P								1.00	1.00	1.00	1.00
Flow (pcph)								1,570	1,014	945	1,205
Flow Rate (pcphpl)								1,570	1,014	945	1,205
Operations in Express Lanes											
FFS								70	70	70	70
Capacity (pcph)								1,750	1,750	1,750	1,750
v/c ratio								0.90	0.58	0.54	0.69
On Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
On Ramp Roadway Operations											
Ramp Type											
Ramp Speed (mph)											
Ramp Capacity (pcph)											
Ramp v/c ratio											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 Plus Specific Plan
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



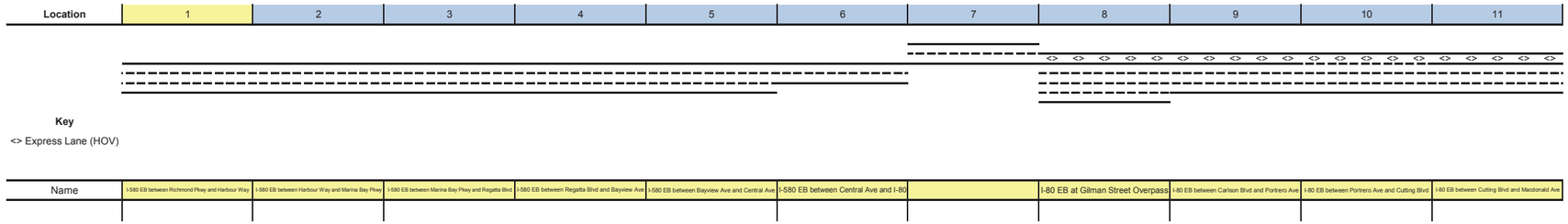
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<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Off Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
Off Ramp Roadway Operations											
Ramp Type											
Ramp Speed											
Ramp Capacity (pcph)											
Ramp v/c ratio											
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps											
Up Type											
Up Distance											
Up Flow (pcph)											
Down Type											
Down Distance											
Down Flow (pcph)											
Merge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FM} (Eqn 13-3)											
P_{FM} (Eqn 13-4)											
P_{FM} (Eqn 13-5)											
P_{FM}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
v_{R12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

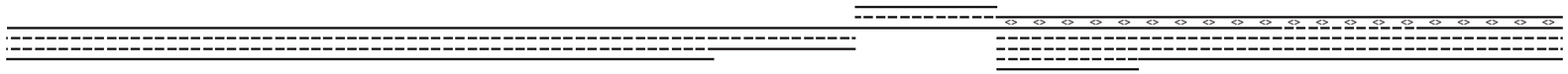
Alternative: 2040 Plus Specific Plan
Time Period: AM



Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 Plus Specific Plan
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

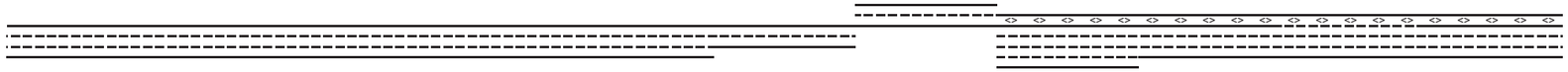
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Diverge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FD} (Eqn 13-9)											
P_{FD} (Eqn 13-10)											
P_{FD} (Eqn 13-11)											
P_{FD}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											
On Ramp to Off Ramp Flow Rate for Weave Segments											
On to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to Off Flow (pcph)											
On Ramp to Mainline Flow Rate for Weave Segments											
On to ML Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to ML Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 Plus Specific Plan
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



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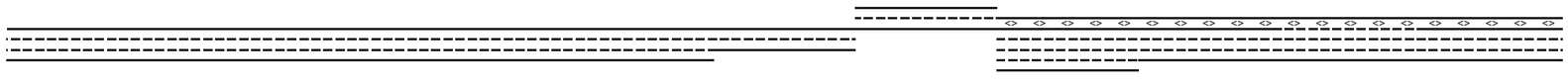
<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Mainline to Off Ramp Flow Rate for Weave Segments											
ML to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
ML to Off Flow (pcph)											
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segm											
GP to GP Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
GP to GP Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 Plus Specific Plan
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



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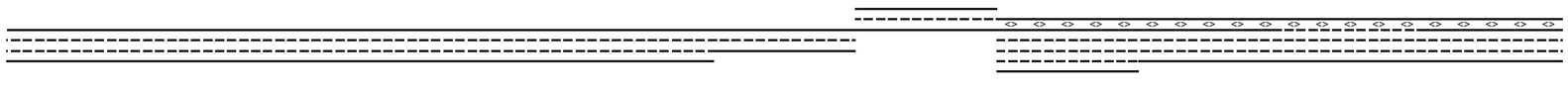
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Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Weave Segment Operations											
Type											
Length											
Segment Lanes											
Weave Lanes											
Weave Flow (pcph)											
Non-Weave Flow											
Segment Flow											
Max Weave Length											
Length Check											
Ideal Weave Capacity											
f_{HV}											
f_P											
Capacity Condition 1											
Capacity Condition 2											
v/c ratio											
Interchange Density											
Lane Changes On to ML											
Lane Changes ML to Off											
Lane Changes On to Off											
Min Lane Change Rate											
Weave LC Rate											
Non-Weave LC Rate 1											
Non-Weave LC Rate 2											
Non-Weave LC Rate 3											
Segment LC Rate											
Weave Intensity Factor											
Weave Speed											
Non-Weave Speed											
Segment Speed											
Density											
LOS											
Leisch Method for Weaving											
Balanced?											
Weaving GP Lanes											
Weaving Length											
Summarize Segment Operations											
Segment v/c ratio	0.50	0.53	0.59	0.57	0.54	0.83		0.68	0.41	0.39	0.49
Segment Density	17.1	18.2	20.2	19.8	18.6	31.9		24.1	14.2	13.2	16.9
Segment LOS	B	C	C	C	C	D		C	B	B	B
Over Capacity											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 Plus Specific Plan
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



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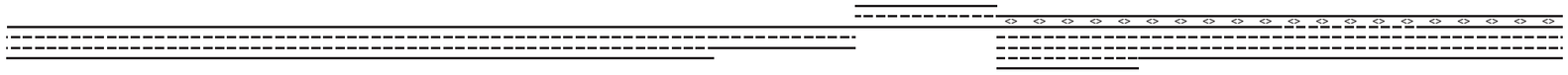
<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Freeway Segment											
Type	Basic	Basic	Basic	Basic	Basic	Basic		Basic	Basic	Basic	Basic
Length (ft)											
Accel Length											
Decel Length											
Mainline Volume	5,640	5,610	5,760	5,580	5,750	5,200		8,576	5,360	4,616	6,408
On Ramp Volume											
Off Ramp Volume											
Express Lane Volume								1,634	1,340	1,154	1,602
EL On Ramp Volume											
EL Off Ramp Volume											
Flow Rate in Entering General Purpose Lanes (GP)											
Volume (vph)	5,640	5,610	5,760	5,580	5,750	5,200		6,943	4,020	3,462	4,806
PHF	0.96	0.96	0.96	0.96	0.96	0.96		0.96	0.96	0.96	0.96
Lanes	3	3	3	3	3	2		4	3	3	3
Terrain	Level	Level	Level	Level	Level	Level		Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Truck & Bus %	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%		4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2		1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971	0.971	0.971		0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Flow (pcph)	6,051	6,019	6,180	5,987	6,169	5,579		7,377	4,271	3,678	5,106
Flow (pcphpl)	2,017	2,006	2,060	1,996	2,056	2,790		1,844	1,424	1,226	1,702
Free Flow Speed in Entering GP Lanes											
Lane Width (ft)	12	12	12	12	12	12		12	12	12	12
Shoulder Width	5	5	5	5	5	5		5	5	5	5
TRD											
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
f_{LC}	0.1	0.1	0.1	0.1	0.1	0.6		0.2	0.1	0.1	0.1
Calculated FFS	75.3	75.3	75.3	75.3	75.3	74.8		75.2	75.3	75.3	75.3
Measured FFS											
FFS Curve	70	70	70	70	70	70		70	70	70	70
Operations in Entering GP Lanes											
Capacity (pcph)	7,200	7,200	7,200	7,200	7,200	4,800		9,600	7,200	7,200	7,200
v/c ratio	0.84	0.84	0.86	0.83	0.86	1.16		0.77	0.59	0.51	0.71
Speed (mph)	62.3	62.5	61.4	62.7	61.5	-		65.2	69.4	70.0	67.1
Density (pcphpl)	32.4	32.1	33.5	31.9	33.4	-		28.3	20.5	17.5	25.4
LOS	D	D	D	D	D	F		D	C	B	C
Operations for Segment GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 Plus Specific Plan
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



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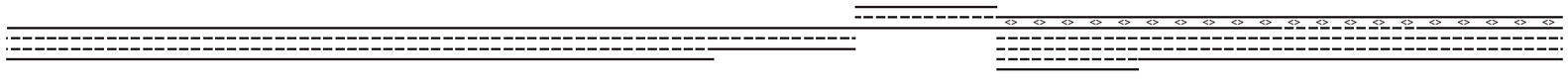
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Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Speed (mph)											
Density (pcphpl)											
LOS											
Operations for Exiting GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											
Speed (mph)											
Density (pcphpl)											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 Plus Specific Plan
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



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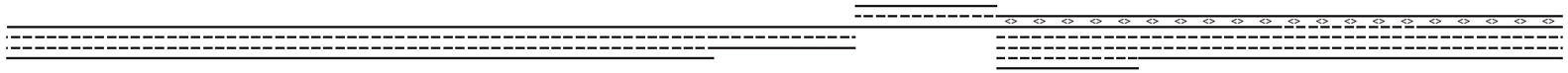
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Flow Rate in Express Lanes											
Volume (vph)								1,634	1,340	1,154	1,602
PHF								0.96	0.96	0.96	0.96
Lanes								1	1	1	1
Terrain								Level	Level	Level	Level
Grade %								0.0%	0.0%	0.0%	0.0%
Grade Length (mi)								0.00	0.00	0.00	0.00
Truck & Bus %								4.0%	4.0%	4.0%	4.0%
RV %								0.0%	0.0%	0.0%	0.0%
E_T							1.5	1.5	1.5	1.5	1.5
E_R							1.2	1.2	1.2	1.2	1.2
f_{HV}							0.962	0.980	0.980	0.980	0.980
f_P								1.00	1.00	1.00	1.00
Flow (pcph)								1,736	1,424	1,226	1,702
Flow Rate (pcphpl)								1,736	1,424	1,226	1,702
Operations in Express Lanes											
FFS								70	70	70	70
Capacity (pcph)								1,750	1,750	1,750	1,750
v/c ratio								0.99	0.81	0.70	0.97
On Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
On Ramp Roadway Operations											
Ramp Type											
Ramp Speed (mph)											
Ramp Capacity (pcph)											
Ramp v/c ratio											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 Plus Specific Plan
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Off Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
Off Ramp Roadway Operations											
Ramp Type											
Ramp Speed											
Ramp Capacity (pcph)											
Ramp v/c ratio											
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps											
Up Type											
Up Distance											
Up Flow (pcph)											
Down Type											
Down Distance											
Down Flow (pcph)											
Merge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FM} (Eqn 13-3)											
P_{FM} (Eqn 13-4)											
P_{FM} (Eqn 13-5)											
P_{FM}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
v_{R12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 Plus Specific Plan
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave

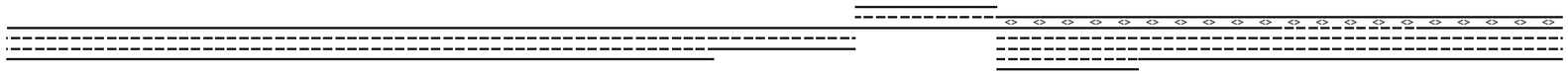
Key

<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 Plus Specific Plan
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

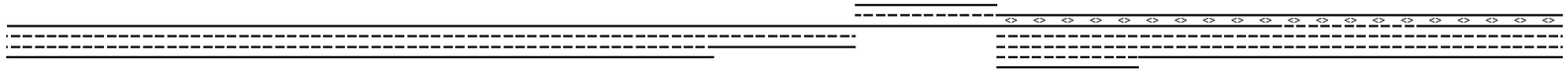
<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Diverge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FD} (Eqn 13-9)											
P_{FD} (Eqn 13-10)											
P_{FD} (Eqn 13-11)											
P_{FD}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											
On Ramp to Off Ramp Flow Rate for Weave Segments											
On to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to Off Flow (pcph)											
On Ramp to Mainline Flow Rate for Weave Segments											
On to ML Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to ML Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 Plus Specific Plan
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



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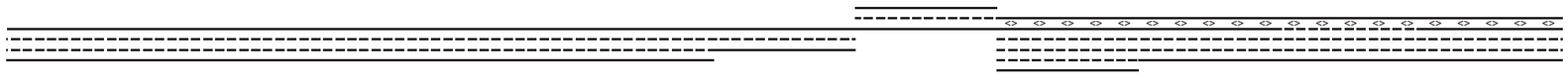
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Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Mainline to Off Ramp Flow Rate for Weave Segments											
ML to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
ML to Off Flow (pcph)											
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segm											
GP to GP Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
GP to GP Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 Plus Specific Plan
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



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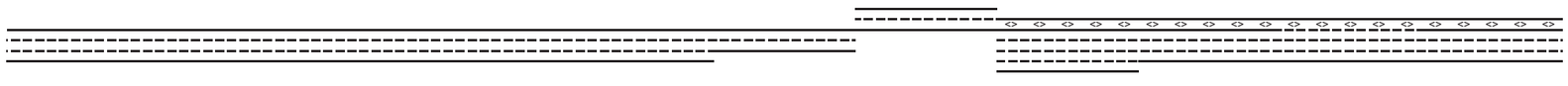
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Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Weave Segment Operations											
Type											
Length											
Segment Lanes											
Weave Lanes											
Weave Flow (pcph)											
Non-Weave Flow											
Segment Flow											
Max Weave Length											
Length Check											
Ideal Weave Capacity											
f_{HV}											
f_P											
Capacity Condition 1											
Capacity Condition 2											
v/c ratio											
Interchange Density											
Lane Changes On to ML											
Lane Changes ML to Off											
Lane Changes On to Off											
Min Lane Change Rate											
Weave LC Rate											
Non-Weave LC Rate 1											
Non-Weave LC Rate 2											
Non-Weave LC Rate 3											
Segment LC Rate											
Weave Intensity Factor											
Weave Speed											
Non-Weave Speed											
Segment Speed											
Density											
LOS											
Leisch Method for Weaving											
Balanced?											
Weaving GP Lanes											
Weaving Length											
Summarize Segment Operations											
Segment v/c ratio	0.84	0.84	0.86	0.83	0.86	1.16		0.77	0.59	0.51	0.71
Segment Density	32.4	32.1	33.5	31.9	33.4	-		28.3	20.5	17.5	25.4
Segment LOS	D	D	D	D	D	F		D	C	B	C
Over Capacity						Entering GP Lanes					

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 Plus Specific Plan
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



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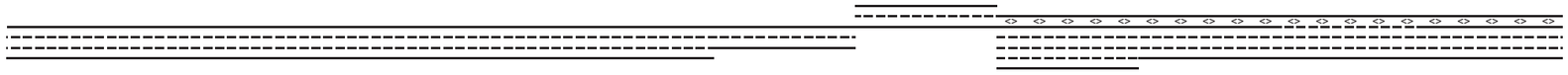
<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Freeway Segment											
Type	Basic	Basic	Basic	Basic	Basic	Basic		Basic	Basic	Basic	Basic
Length (ft)											
Accel Length											
Decel Length											
Mainline Volume	3,730	4,320	4,480	4,590	4,700	4,600		8,308	5,112	4,552	6,160
On Ramp Volume											
Off Ramp Volume											
Express Lane Volume								1,582	1,278	1,138	1,540
EL On Ramp Volume											
EL Off Ramp Volume											
Flow Rate in Entering General Purpose Lanes (GP)											
Volume (vph)	3,730	4,320	4,480	4,590	4,700	4,600		6,725	3,834	3,414	4,620
PHF	0.96	0.96	0.96	0.96	0.96	0.96		0.96	0.96	0.96	0.96
Lanes	3	3	3	3	3	2		4	3	3	3
Terrain	Level	Level	Level	Level	Level	Level		Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Truck & Bus %	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%		4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2		1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971	0.971	0.971		0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Flow (pcph)	4,002	4,635	4,807	4,925	5,043	4,935		7,146	4,074	3,627	4,909
Flow (pcphpl)	1,334	1,545	1,602	1,642	1,681	2,468		1,786	1,358	1,209	1,636
Free Flow Speed in Entering GP Lanes											
Lane Width (ft)	12	12	12	12	12	12		12	12	12	12
Shoulder Width	5	5	5	5	5	5		5	5	5	5
TRD											
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
f_{LC}	0.1	0.1	0.1	0.1	0.1	0.6		0.2	0.1	0.1	0.1
Calculated FFS	75.3	75.3	75.3	75.3	75.3	74.8		75.2	75.3	75.3	75.3
Measured FFS											
FFS Curve	70	70	70	70	70	70		70	70	70	70
Operations in Entering GP Lanes											
Capacity (pcph)	7,200	7,200	7,200	7,200	7,200	4,800		9,600	7,200	7,200	7,200
v/c ratio	0.56	0.64	0.67	0.68	0.70	1.03		0.74	0.57	0.50	0.68
Speed (mph)	69.8	68.6	68.1	67.7	67.3	-		66.0	69.7	70.0	67.8
Density (pcphpl)	19.1	22.5	23.5	24.2	25.0	-		27.1	19.5	17.3	24.1
LOS	C	C	C	C	C	F		D	C	B	C
Operations for Segment GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 Plus Specific Plan
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

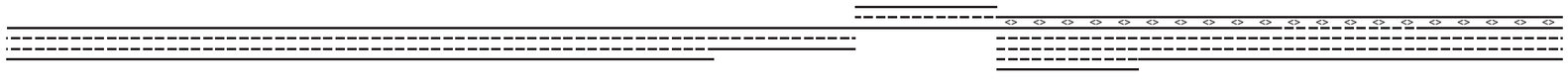
<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Speed (mph)											
Density (pcphpl)											
LOS											
Operations for Exiting GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											
Speed (mph)											
Density (pcphpl)											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 Plus Specific Plan
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



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<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Flow Rate in Express Lanes											
Volume (vph)								1,582	1,278	1,138	1,540
PHF								0.96	0.96	0.96	0.96
Lanes								1	1	1	1
Terrain								Level	Level	Level	Level
Grade %								0.0%	0.0%	0.0%	0.0%
Grade Length (mi)								0.00	0.00	0.00	0.00
Truck & Bus %								4.0%	4.0%	4.0%	4.0%
RV %								0.0%	0.0%	0.0%	0.0%
E_T							1.5	1.5	1.5	1.5	1.5
E_R							1.2	1.2	1.2	1.2	1.2
f_{HV}							0.962	0.980	0.980	0.980	0.980
f_P								1.00	1.00	1.00	1.00
Flow (pcph)								1,681	1,358	1,209	1,636
Flow Rate (pcphpl)								1,681	1,358	1,209	1,636
Operations in Express Lanes											
FFS								70	70	70	70
Capacity (pcph)								1,750	1,750	1,750	1,750
v/c ratio								0.96	0.78	0.69	0.94
On Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
On Ramp Roadway Operations											
Ramp Type											
Ramp Speed (mph)											
Ramp Capacity (pcph)											
Ramp v/c ratio											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 Plus Specific Plan
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Off Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
Off Ramp Roadway Operations											
Ramp Type											
Ramp Speed											
Ramp Capacity (pcph)											
Ramp v/c ratio											
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps											
Up Type											
Up Distance											
Up Flow (pcph)											
Down Type											
Down Distance											
Down Flow (pcph)											
Merge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FM} (Eqn 13-3)											
P_{FM} (Eqn 13-4)											
P_{FM} (Eqn 13-5)											
P_{FM}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
v_{R12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											

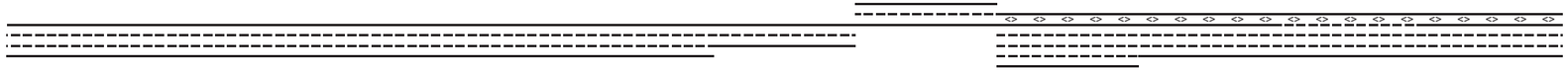
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<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 Plus Specific Plan
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave



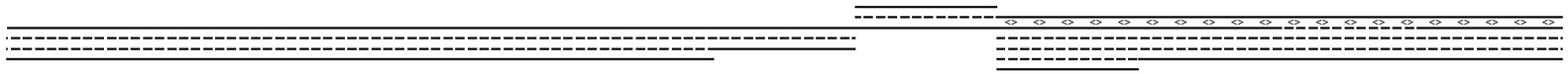
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Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 Plus Specific Plan
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



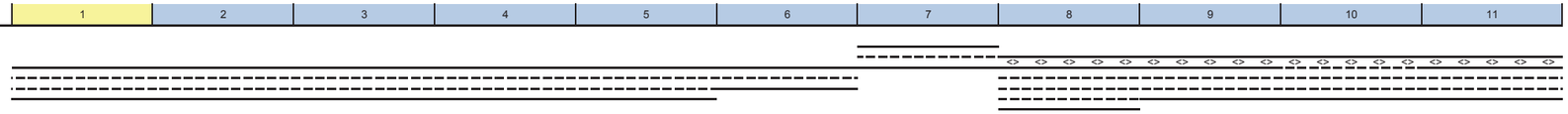
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Diverge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FD} (Eqn 13-9)											
P_{FD} (Eqn 13-10)											
P_{FD} (Eqn 13-11)											
P_{FD}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											
On Ramp to Off Ramp Flow Rate for Weave Segments											
On to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to Off Flow (pcph)											
On Ramp to Mainline Flow Rate for Weave Segments											
On to ML Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to ML Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 Plus Specific Plan
Time Period: PM



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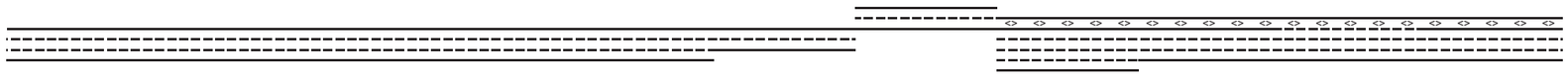
<> Express Lane (HOV)

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Mainline to Off Ramp Flow Rate for Weave Segments											
ML to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
ML to Off Flow (pcph)											
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segm											
GP to GP Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
GP to GP Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 Plus Specific Plan
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

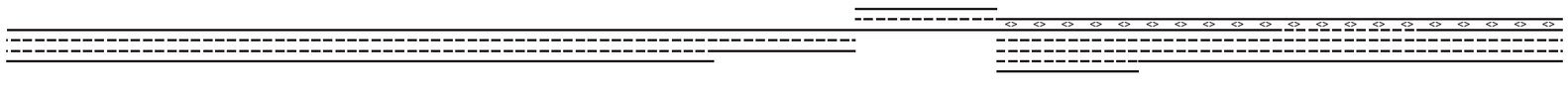
<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Weave Segment Operations											
Type											
Length											
Segment Lanes											
Weave Lanes											
Weave Flow (pcph)											
Non-Weave Flow											
Segment Flow											
Max Weave Length											
Length Check											
Ideal Weave Capacity											
f_{HV}											
f_P											
Capacity Condition 1											
Capacity Condition 2											
v/c ratio											
Interchange Density											
Lane Changes On to ML											
Lane Changes ML to Off											
Lane Changes On to Off											
Min Lane Change Rate											
Weave LC Rate											
Non-Weave LC Rate 1											
Non-Weave LC Rate 2											
Non-Weave LC Rate 3											
Segment LC Rate											
Weave Intensity Factor											
Weave Speed											
Non-Weave Speed											
Segment Speed											
Density											
LOS											
Leisch Method for Weaving											
Balanced?											
Weaving GP Lanes											
Weaving Length											
Summarize Segment Operations											
Segment v/c ratio	0.56	0.64	0.67	0.68	0.70	1.03		0.74	0.57	0.50	0.68
Segment Density	19.1	22.5	23.5	24.2	25.0	-		27.1	19.5	17.3	24.1
Segment LOS	C	C	C	C	C	F		D	C	B	C
Over Capacity						Entering GP Lanes					

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 Plus Specific Plan
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

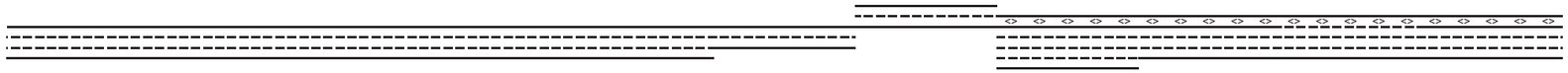
<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Freeway Segment											
Type	Basic	Basic	Basic	Basic	Basic	Basic		Basic	Basic	Basic	Basic
Length (ft)											
Accel Length											
Decel Length											
Mainline Volume	4,960	5,340	5,910	5,730	5,760	5,020		7,476	4,144	3,728	4,792
On Ramp Volume											
Off Ramp Volume											
Express Lane Volume								1,424	1,036	932	1,198
EL On Ramp Volume											
EL Off Ramp Volume											
Flow Rate in Entering General Purpose Lanes (GP)											
Volume (vph)	4,960	5,340	5,910	5,730	5,760	5,020		6,052	3,108	2,796	3,594
PHF	0.96	0.96	0.96	0.96	0.96	0.96		0.96	0.96	0.96	0.96
Lanes	3	3	3	3	3	2		4	3	3	3
Terrain	Level	Level	Level	Level	Level	Level		Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Truck & Bus %	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%		4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2		1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971	0.971	0.971		0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Flow (pcph)	5,322	5,729	6,341	6,148	6,180	5,386		6,430	3,302	2,971	3,819
Flow (pcphpl)	1,774	1,910	2,114	2,049	2,060	2,693		1,608	1,101	990	1,273
Free Flow Speed in Entering GP Lanes											
Lane Width (ft)	12	12	12	12	12	12		12	12	12	12
Shoulder Width	5	5	5	5	5	5		5	5	5	5
TRD											
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
f_{LC}	0.1	0.1	0.1	0.1	0.1	0.6		0.2	0.1	0.1	0.1
Calculated FFS	75.3	75.3	75.3	75.3	75.3	74.8		75.2	75.3	75.3	75.3
Measured FFS											
FFS Curve	70	70	70	70	70	70		70	70	70	70
Operations in Entering GP Lanes											
Capacity (pcph)	7,200	7,200	7,200	7,200	7,200	4,800		9,600	7,200	7,200	7,200
v/c ratio	0.74	0.80	0.88	0.85	0.86	1.12		0.67	0.46	0.41	0.53
Speed (mph)	66.2	64.2	60.3	61.6	61.4	-		68.1	70.0	70.0	69.9
Density (pcphpl)	26.8	29.8	35.0	33.2	33.5	-		23.6	15.7	14.1	18.2
LOS	D	D	E	D	D	F		C	B	B	C
Operations for Segment GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 Plus Specific Plan
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



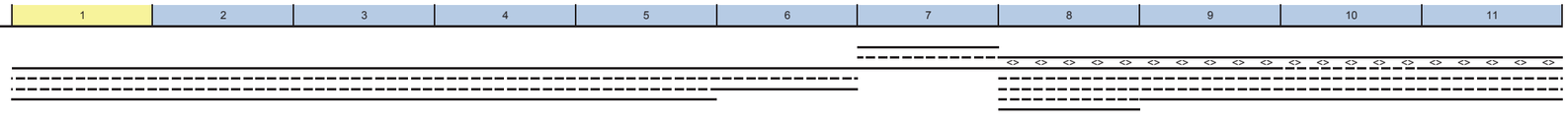
Key

<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Speed (mph)											
Density (pcphpl)											
LOS											
Operations for Exiting GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											
Speed (mph)											
Density (pcphpl)											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 Plus Specific Plan
Time Period: PM



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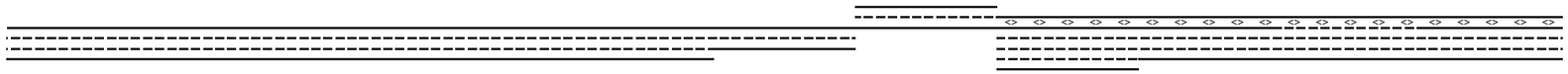
<> Express Lane (HOV)

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Flow Rate in Express Lanes											
Volume (vph)								1,424	1,036	932	1,198
PHF								0.96	0.96	0.96	0.96
Lanes								1	1	1	1
Terrain								Level	Level	Level	Level
Grade %								0.0%	0.0%	0.0%	0.0%
Grade Length (mi)								0.00	0.00	0.00	0.00
Truck & Bus %								4.0%	4.0%	4.0%	4.0%
RV %								0.0%	0.0%	0.0%	0.0%
E_T							1.5	1.5	1.5	1.5	1.5
E_R							1.2	1.2	1.2	1.2	1.2
f_{HV}							0.962	0.980	0.980	0.980	0.980
f_P								1.00	1.00	1.00	1.00
Flow (pcph)								1,513	1,101	990	1,273
Flow Rate (pcphpl)								1,513	1,101	990	1,273
Operations in Express Lanes											
FFS								70	70	70	70
Capacity (pcph)								1,750	1,750	1,750	1,750
v/c ratio								0.86	0.63	0.57	0.73
On Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
On Ramp Roadway Operations											
Ramp Type											
Ramp Speed (mph)											
Ramp Capacity (pcph)											
Ramp v/c ratio											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 Plus Specific Plan
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

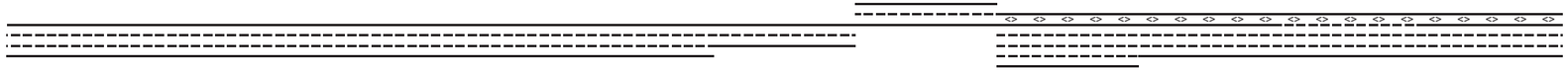
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Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Off Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
Off Ramp Roadway Operations											
Ramp Type											
Ramp Speed											
Ramp Capacity (pcph)											
Ramp v/c ratio											
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps											
Up Type											
Up Distance											
Up Flow (pcph)											
Down Type											
Down Distance											
Down Flow (pcph)											
Merge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FM} (Eqn 13-3)											
P_{FM} (Eqn 13-4)											
P_{FM} (Eqn 13-5)											
P_{FM}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
v_{R12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 Plus Specific Plan
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave



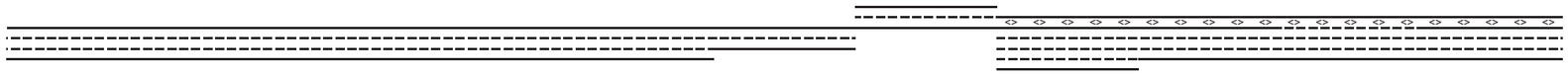
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<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 Plus Specific Plan
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



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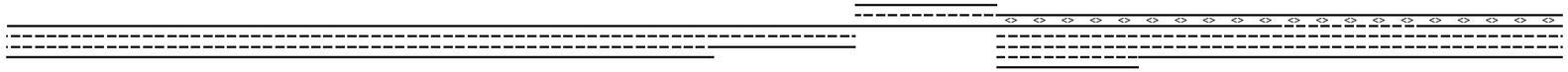
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Diverge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FD} (Eqn 13-9)											
P_{FD} (Eqn 13-10)											
P_{FD} (Eqn 13-11)											
P_{FD}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											
On Ramp to Off Ramp Flow Rate for Weave Segments											
On to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to Off Flow (pcph)											
On Ramp to Mainline Flow Rate for Weave Segments											
On to ML Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to ML Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 Plus Specific Plan
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



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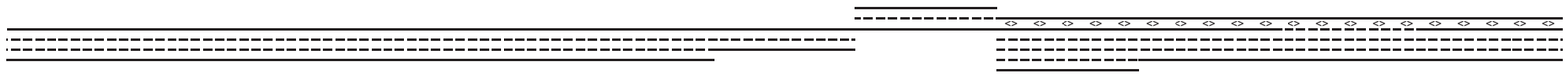
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Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Mainline to Off Ramp Flow Rate for Weave Segments											
ML to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
ML to Off Flow (pcph)											
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segm											
GP to GP Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
GP to GP Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 Plus Specific Plan
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



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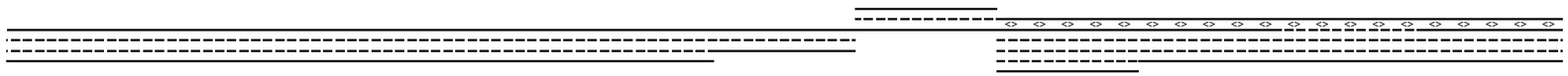
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Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Weave Segment Operations											
Type											
Length											
Segment Lanes											
Weave Lanes											
Weave Flow (pcph)											
Non-Weave Flow											
Segment Flow											
Max Weave Length											
Length Check											
Ideal Weave Capacity											
f_{HV}											
f_P											
Capacity Condition 1											
Capacity Condition 2											
v/c ratio											
Interchange Density											
Lane Changes On to ML											
Lane Changes ML to Off											
Lane Changes On to Off											
Min Lane Change Rate											
Weave LC Rate											
Non-Weave LC Rate 1											
Non-Weave LC Rate 2											
Non-Weave LC Rate 3											
Segment LC Rate											
Weave Intensity Factor											
Weave Speed											
Non-Weave Speed											
Segment Speed											
Density											
LOS											
Leisch Method for Weaving											
Balanced?											
Weaving GP Lanes											
Weaving Length											
Summarize Segment Operations											
Segment v/c ratio	0.74	0.80	0.88	0.85	0.86	1.12		0.67	0.46	0.41	0.53
Segment Density	26.8	29.8	35.0	33.2	33.5	-		23.6	15.7	14.1	18.2
Segment LOS	D	D	E	D	D	F		C	B	B	C
Over Capacity						Entering GP Lanes					

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 Plus Specific Plan and SRTCP
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



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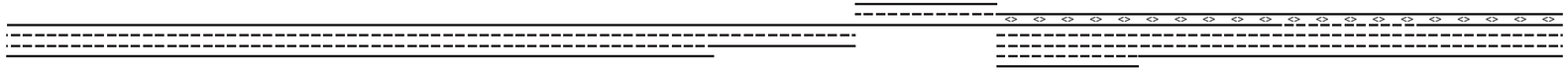
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Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Freeway Segment											
Type	Basic	Basic	Basic	Basic	Basic	Basic		Basic	Basic	Basic	Basic
Length (ft)											
Accel Length											
Decel Length											
Mainline Volume	3,150	3,460	3,980	4,020	3,890	3,970		7,484	3,688	3,432	4,360
On Ramp Volume											
Off Ramp Volume											
Express Lane Volume								1,426	922	858	1,090
EL On Ramp Volume											
EL Off Ramp Volume											
Flow Rate in Entering General Purpose Lanes (GP)											
Volume (vph)	3,150	3,460	3,980	4,020	3,890	3,970		6,059	2,766	2,574	3,270
PHF	0.96	0.96	0.96	0.96	0.96	0.96		0.96	0.96	0.96	0.96
Lanes	3	3	3	3	3	2		4	3	3	3
Terrain	Level	Level	Level	Level	Level	Level		Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Truck & Bus %	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%		4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2		1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971	0.971	0.971		0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Flow (pcph)	3,380	3,712	4,270	4,313	4,174	4,259		6,437	2,939	2,735	3,474
Flow (pcphpl)	1,127	1,237	1,423	1,438	1,391	2,130		1,609	980	912	1,158
Free Flow Speed in Entering GP Lanes											
Lane Width (ft)	12	12	12	12	12	12		12	12	12	12
Shoulder Width	5	5	5	5	5	5		5	5	5	5
TRD											
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
f_{LC}	0.1	0.1	0.1	0.1	0.1	0.6		0.2	0.1	0.1	0.1
Calculated FFS	75.3	75.3	75.3	75.3	75.3	74.8		75.2	75.3	75.3	75.3
Measured FFS											
FFS Curve	70	70	70	70	70	70		70	70	70	70
Operations in Entering GP Lanes											
Capacity (pcph)	7,200	7,200	7,200	7,200	7,200	4,800		9,600	7,200	7,200	7,200
v/c ratio	0.47	0.52	0.59	0.60	0.58	0.89		0.67	0.41	0.38	0.48
Speed (mph)	70.0	70.0	69.4	69.3	69.6	60.0		68.1	70.0	70.0	70.0
Density (pcphpl)	16.1	17.7	20.5	20.7	20.0	35.5		23.6	14.0	13.0	16.5
LOS	B	B	C	C	C	E		C	B	B	B
Operations for Segment GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 Plus Specific Plan and SRTCP
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

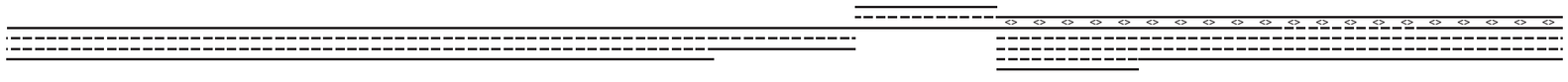
<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Speed (mph)											
Density (pcphpl)											
LOS											
Operations for Exiting GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											
Speed (mph)											
Density (pcphpl)											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 Plus Specific Plan and SRTCP
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



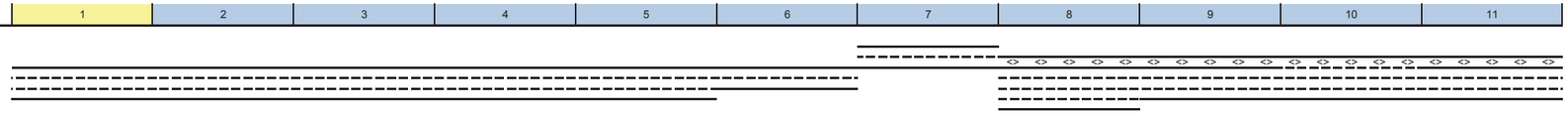
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<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Flow Rate in Express Lanes											
Volume (vph)								1,426	922	858	1,090
PHF								0.96	0.96	0.96	0.96
Lanes								1	1	1	1
Terrain								Level	Level	Level	Level
Grade %								0.0%	0.0%	0.0%	0.0%
Grade Length (mi)								0.00	0.00	0.00	0.00
Truck & Bus %								4.0%	4.0%	4.0%	4.0%
RV %								0.0%	0.0%	0.0%	0.0%
E_T							1.5	1.5	1.5	1.5	1.5
E_R							1.2	1.2	1.2	1.2	1.2
f_{HV}							0.962	0.980	0.980	0.980	0.980
f_P								1.00	1.00	1.00	1.00
Flow (pcph)								1,515	980	912	1,158
Flow Rate (pcphpl)								1,515	980	912	1,158
Operations in Express Lanes											
FFS								70	70	70	70
Capacity (pcph)								1,750	1,750	1,750	1,750
v/c ratio								0.87	0.56	0.52	0.66
On Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
On Ramp Roadway Operations											
Ramp Type											
Ramp Speed (mph)											
Ramp Capacity (pcph)											
Ramp v/c ratio											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 Plus Specific Plan and SRTCP
Time Period: AM



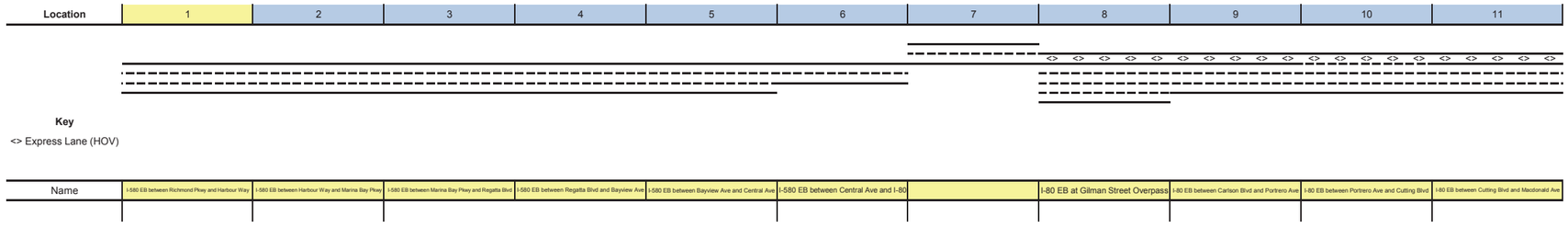
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<> Express Lane (HOV)

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Off Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
Off Ramp Roadway Operations											
Ramp Type											
Ramp Speed											
Ramp Capacity (pcph)											
Ramp v/c ratio											
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps											
Up Type											
Up Distance											
Up Flow (pcph)											
Down Type											
Down Distance											
Down Flow (pcph)											
Merge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FM} (Eqn 13-3)											
P_{FM} (Eqn 13-4)											
P_{FM} (Eqn 13-5)											
P_{FM}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
v_{R12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

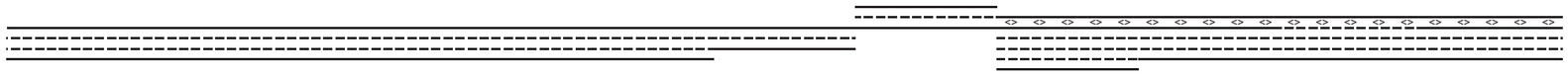
Alternative: 2040 Plus Specific Plan and SRTCP
Time Period: AM



Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 Plus Specific Plan and SRTCP
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

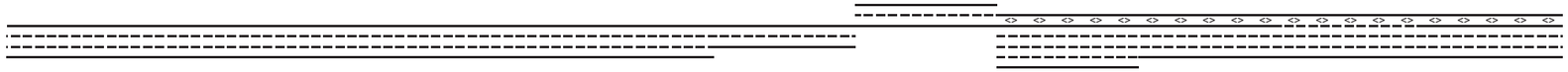
<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Diverge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FD} (Eqn 13-9)											
P_{FD} (Eqn 13-10)											
P_{FD} (Eqn 13-11)											
P_{FD}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											
On Ramp to Off Ramp Flow Rate for Weave Segments											
On to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to Off Flow (pcph)											
On Ramp to Mainline Flow Rate for Weave Segments											
On to ML Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to ML Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 Plus Specific Plan and SRTCP
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



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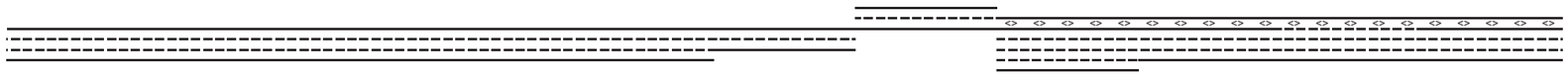
<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Mainline to Off Ramp Flow Rate for Weave Segments											
ML to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
ML to Off Flow (pcph)											
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segm											
GP to GP Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
GP to GP Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 Plus Specific Plan and SRTCP
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

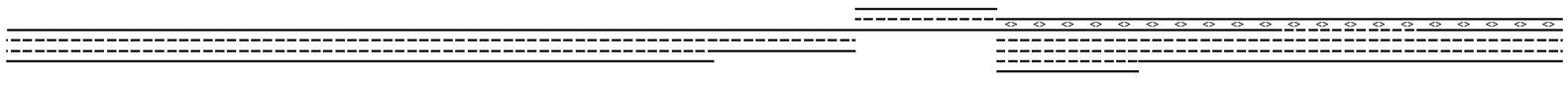
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Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Weave Segment Operations											
Type											
Length											
Segment Lanes											
Weave Lanes											
Weave Flow (pcph)											
Non-Weave Flow											
Segment Flow											
Max Weave Length											
Length Check											
Ideal Weave Capacity											
f_{HV}											
f_P											
Capacity Condition 1											
Capacity Condition 2											
v/c ratio											
Interchange Density											
Lane Changes On to ML											
Lane Changes ML to Off											
Lane Changes On to Off											
Min Lane Change Rate											
Weave LC Rate											
Non-Weave LC Rate 1											
Non-Weave LC Rate 2											
Non-Weave LC Rate 3											
Segment LC Rate											
Weave Intensity Factor											
Weave Speed											
Non-Weave Speed											
Segment Speed											
Density											
LOS											
Leisch Method for Weaving											
Balanced?											
Weaving GP Lanes											
Weaving Length											
Summarize Segment Operations											
Segment v/c ratio	0.47	0.52	0.59	0.60	0.58	0.89		0.67	0.41	0.38	0.48
Segment Density	16.1	17.7	20.5	20.7	20.0	35.5		23.6	14.0	13.0	16.5
Segment LOS	B	B	C	C	C	E		C	B	B	B
Over Capacity											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 Plus Specific Plan and SRTCP
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

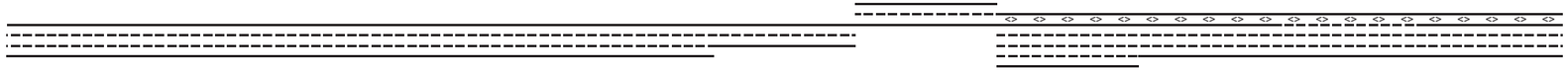
<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Freeway Segment											
Type	Basic	Basic	Basic	Basic	Basic	Basic		Basic	Basic	Basic	Basic
Length (ft)											
Accel Length											
Decel Length											
Mainline Volume	5,450	5,660	5,810	5,770	5,950	5,400		8,408	5,304	4,560	6,048
On Ramp Volume											
Off Ramp Volume											
Express Lane Volume								1,602	1,326	1,140	1,512
EL On Ramp Volume											
EL Off Ramp Volume											
Flow Rate in Entering General Purpose Lanes (GP)											
Volume (vph)	5,450	5,660	5,810	5,770	5,950	5,400		6,807	3,978	3,420	4,536
PHF	0.96	0.96	0.96	0.96	0.96	0.96		0.96	0.96	0.96	0.96
Lanes	3	3	3	3	3	2		4	3	3	3
Terrain	Level	Level	Level	Level	Level	Level		Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Truck & Bus %	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%		4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2		1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971	0.971	0.971		0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Flow (pcph)	5,847	6,073	6,234	6,191	6,384	5,794		7,232	4,227	3,634	4,820
Flow (pcphpl)	1,949	2,024	2,078	2,064	2,128	2,897		1,808	1,409	1,211	1,607
Free Flow Speed in Entering GP Lanes											
Lane Width (ft)	12	12	12	12	12	12		12	12	12	12
Shoulder Width	5	5	5	5	5	5		5	5	5	5
TRD											
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
f_{LC}	0.1	0.1	0.1	0.1	0.1	0.6		0.2	0.1	0.1	0.1
Calculated FFS	75.3	75.3	75.3	75.3	75.3	74.8		75.2	75.3	75.3	75.3
Measured FFS											
FFS Curve	70	70	70	70	70	70		70	70	70	70
Operations in Entering GP Lanes											
Capacity (pcph)	7,200	7,200	7,200	7,200	7,200	4,800		9,600	7,200	7,200	7,200
v/c ratio	0.81	0.84	0.87	0.86	0.89	1.21		0.75	0.59	0.50	0.67
Speed (mph)	63.5	62.1	61.1	61.3	60.0	-		65.7	69.5	70.0	68.1
Density (pcphpl)	30.7	32.6	34.0	33.6	35.5	-		27.5	20.3	17.3	23.6
LOS	D	D	D	D	E	F		D	C	B	C
Operations for Segment GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 Plus Specific Plan and SRTCP
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



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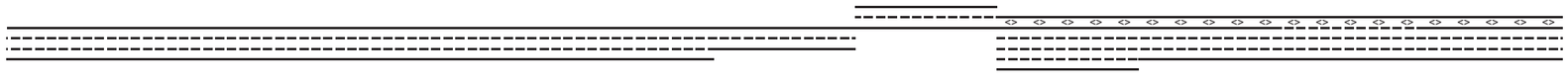
<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Speed (mph)											
Density (pcphpl)											
LOS											
Operations for Exiting GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											
Speed (mph)											
Density (pcphpl)											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 Plus Specific Plan and SRTCP
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

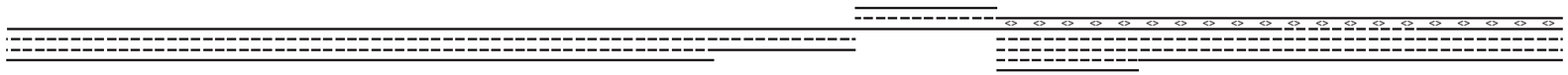
<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Flow Rate in Express Lanes											
Volume (vph)								1,602	1,326	1,140	1,512
PHF								0.96	0.96	0.96	0.96
Lanes								1	1	1	1
Terrain								Level	Level	Level	Level
Grade %								0.0%	0.0%	0.0%	0.0%
Grade Length (mi)								0.00	0.00	0.00	0.00
Truck & Bus %								4.0%	4.0%	4.0%	4.0%
RV %								0.0%	0.0%	0.0%	0.0%
E_T							1.5	1.5	1.5	1.5	1.5
E_R							1.2	1.2	1.2	1.2	1.2
f_{HV}							0.962	0.980	0.980	0.980	0.980
f_P								1.00	1.00	1.00	1.00
Flow (pcph)								1,702	1,409	1,211	1,607
Flow Rate (pcphpl)								1,702	1,409	1,211	1,607
Operations in Express Lanes											
FFS								70	70	70	70
Capacity (pcph)								1,750	1,750	1,750	1,750
v/c ratio								0.97	0.81	0.69	0.92
On Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
On Ramp Roadway Operations											
Ramp Type											
Ramp Speed (mph)											
Ramp Capacity (pcph)											
Ramp v/c ratio											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 Plus Specific Plan and SRTCP
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



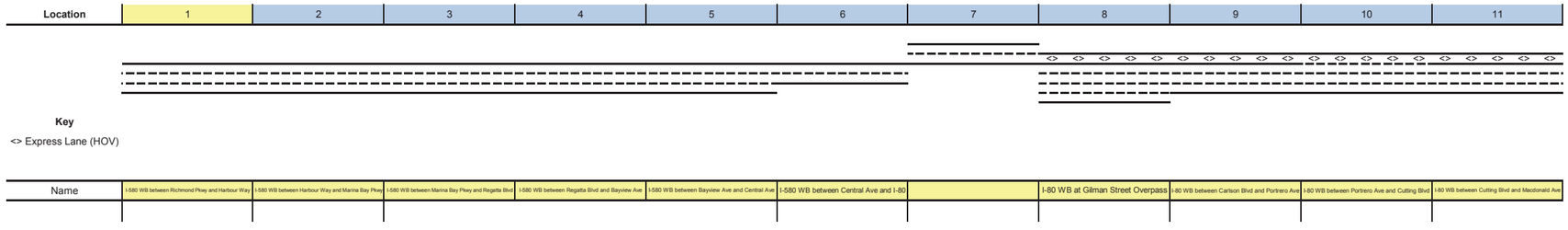
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<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Off Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
Off Ramp Roadway Operations											
Ramp Type											
Ramp Speed											
Ramp Capacity (pcph)											
Ramp v/c ratio											
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps											
Up Type											
Up Distance											
Up Flow (pcph)											
Down Type											
Down Distance											
Down Flow (pcph)											
Merge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FM} (Eqn 13-3)											
P_{FM} (Eqn 13-4)											
P_{FM} (Eqn 13-5)											
P_{FM}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
v_{R12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

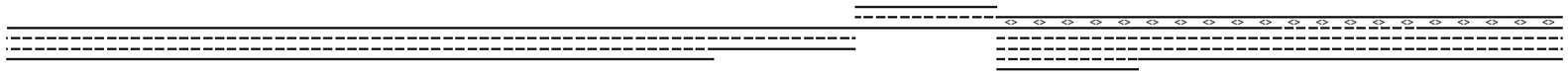
Alternative: 2040 Plus Specific Plan and SRTCP
Time Period: AM



Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 Plus Specific Plan and SRTCP
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



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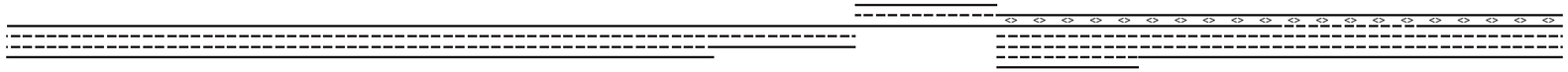
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Diverge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FD} (Eqn 13-9)											
P_{FD} (Eqn 13-10)											
P_{FD} (Eqn 13-11)											
P_{FD}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											
On Ramp to Off Ramp Flow Rate for Weave Segments											
On to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to Off Flow (pcph)											
On Ramp to Mainline Flow Rate for Weave Segments											
On to ML Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to ML Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 Plus Specific Plan and SRTCP
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



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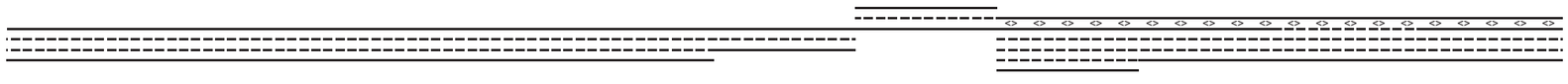
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Mainline to Off Ramp Flow Rate for Weave Segments											
ML to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
ML to Off Flow (pcph)											
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segm											
GP to GP Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
GP to GP Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 Plus Specific Plan and SRTCP
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



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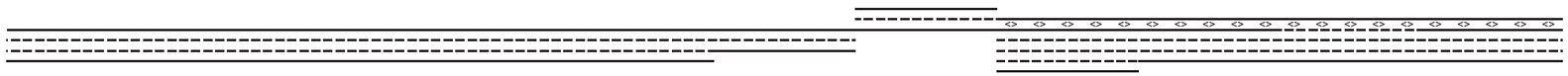
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Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Weave Segment Operations											
Type											
Length											
Segment Lanes											
Weave Lanes											
Weave Flow (pcph)											
Non-Weave Flow											
Segment Flow											
Max Weave Length											
Length Check											
Ideal Weave Capacity											
f_{HV}											
f_P											
Capacity Condition 1											
Capacity Condition 2											
v/c ratio											
Interchange Density											
Lane Changes On to ML											
Lane Changes ML to Off											
Lane Changes On to Off											
Min Lane Change Rate											
Weave LC Rate											
Non-Weave LC Rate 1											
Non-Weave LC Rate 2											
Non-Weave LC Rate 3											
Segment LC Rate											
Weave Intensity Factor											
Weave Speed											
Non-Weave Speed											
Segment Speed											
Density											
LOS											
Leisch Method for Weaving											
Balanced?											
Weaving GP Lanes											
Weaving Length											
Summarize Segment Operations											
Segment v/c ratio	0.81	0.84	0.87	0.86	0.89	1.21		0.75	0.59	0.50	0.67
Segment Density	30.7	32.6	34.0	33.6	35.5	-		27.5	20.3	17.3	23.6
Segment LOS	D	D	D	D	E	F		D	C	B	C
Over Capacity						Entering GP Lanes					

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 Plus Specific Plan and SRTCP
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



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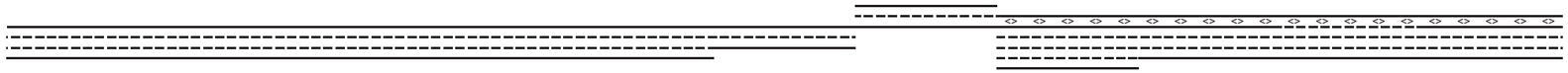
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Freeway Segment											
Type	Basic	Basic	Basic	Basic	Basic	Basic		Basic	Basic	Basic	Basic
Length (ft)											
Accel Length											
Decel Length											
Mainline Volume	4,040	4,710	4,870	4,900	4,860	4,750		8,140	5,072	4,432	5,960
On Ramp Volume											
Off Ramp Volume											
Express Lane Volume								1,550	1,268	1,108	1,490
EL On Ramp Volume											
EL Off Ramp Volume											
Flow Rate in Entering General Purpose Lanes (GP)											
Volume (vph)	4,040	4,710	4,870	4,900	4,860	4,750		6,589	3,804	3,324	4,470
PHF	0.96	0.96	0.96	0.96	0.96	0.96		0.96	0.96	0.96	0.96
Lanes	3	3	3	3	3	2		4	3	3	3
Terrain	Level	Level	Level	Level	Level	Level		Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Truck & Bus %	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%		4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2		1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971	0.971	0.971		0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Flow (pcph)	4,335	5,053	5,225	5,257	5,214	5,096		7,001	4,042	3,532	4,749
Flow (pcphpl)	1,445	1,684	1,742	1,752	1,738	2,548		1,750	1,347	1,177	1,583
Free Flow Speed in Entering GP Lanes											
Lane Width (ft)	12	12	12	12	12	12		12	12	12	12
Shoulder Width	5	5	5	5	5	5		5	5	5	5
TRD											
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
f_{LC}	0.1	0.1	0.1	0.1	0.1	0.6		0.2	0.1	0.1	0.1
Calculated FFS	75.3	75.3	75.3	75.3	75.3	74.8		75.2	75.3	75.3	75.3
Measured FFS											
FFS Curve	70	70	70	70	70	70		70	70	70	70
Operations in Entering GP Lanes											
Capacity (pcph)	7,200	7,200	7,200	7,200	7,200	4,800		9,600	7,200	7,200	7,200
v/c ratio	0.60	0.70	0.73	0.73	0.72	1.06		0.73	0.56	0.49	0.66
Speed (mph)	69.3	67.3	66.6	66.5	66.6	-		66.5	69.7	70.0	68.3
Density (pcphpl)	20.8	25.0	26.2	26.4	26.1	-		26.3	19.3	16.8	23.2
LOS	C	C	D	D	D	F		D	C	B	C
Operations for Segment GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 Plus Specific Plan and SRTCP
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



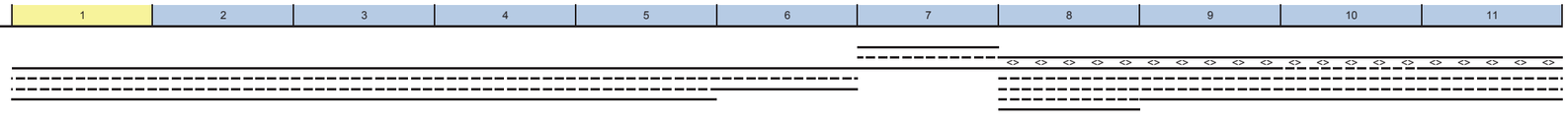
Key

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Speed (mph)											
Density (pcphpl)											
LOS											
Operations for Exiting GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											
Speed (mph)											
Density (pcphpl)											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 Plus Specific Plan and SRTCP
Time Period: PM



Key

<> Express Lane (HOV)

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Flow Rate in Express Lanes											
Volume (vph)								1,550	1,268	1,108	1,490
PHF								0.96	0.96	0.96	0.96
Lanes								1	1	1	1
Terrain								Level	Level	Level	Level
Grade %								0.0%	0.0%	0.0%	0.0%
Grade Length (mi)								0.00	0.00	0.00	0.00
Truck & Bus %								4.0%	4.0%	4.0%	4.0%
RV %								0.0%	0.0%	0.0%	0.0%
E_T							1.5	1.5	1.5	1.5	1.5
E_R							1.2	1.2	1.2	1.2	1.2
f_{HV}							0.962	0.980	0.980	0.980	0.980
f_P								1.00	1.00	1.00	1.00
Flow (pcph)								1,647	1,347	1,177	1,583
Flow Rate (pcphpl)								1,647	1,347	1,177	1,583
Operations in Express Lanes											
FFS								70	70	70	70
Capacity (pcph)								1,750	1,750	1,750	1,750
v/c ratio								0.94	0.77	0.67	0.90
On Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
On Ramp Roadway Operations											
Ramp Type											
Ramp Speed (mph)											
Ramp Capacity (pcph)											
Ramp v/c ratio											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 Plus Specific Plan and SRTCP
Time Period: PM

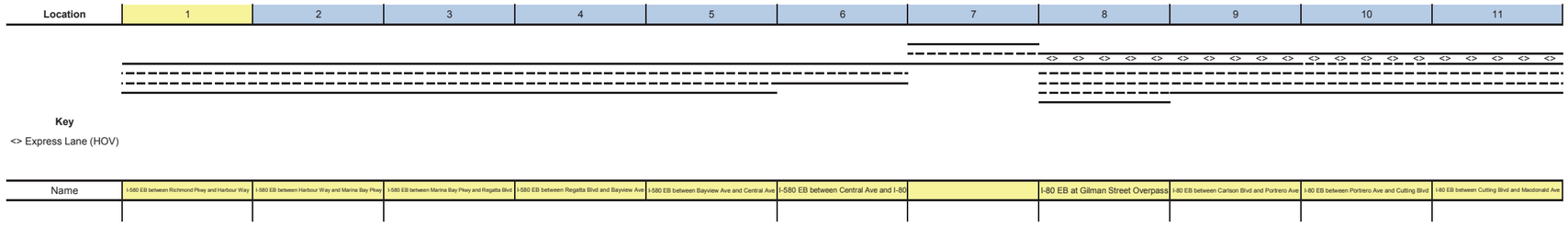
Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Off Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
Off Ramp Roadway Operations											
Ramp Type											
Ramp Speed											
Ramp Capacity (pcph)											
Ramp v/c ratio											
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps											
Up Type											
Up Distance											
Up Flow (pcph)											
Down Type											
Down Distance											
Down Flow (pcph)											
Merge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FM} (Eqn 13-3)											
P_{FM} (Eqn 13-4)											
P_{FM} (Eqn 13-5)											
P_{FM}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
v_{R12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											

Key

<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 Plus Specific Plan and SRTCP
Time Period: PM



Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

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Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Diverge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FD} (Eqn 13-9)											
P_{FD} (Eqn 13-10)											
P_{FD} (Eqn 13-11)											
P_{FD}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											
On Ramp to Off Ramp Flow Rate for Weave Segments											
On to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to Off Flow (pcph)											
On Ramp to Mainline Flow Rate for Weave Segments											
On to ML Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to ML Flow (pcph)											

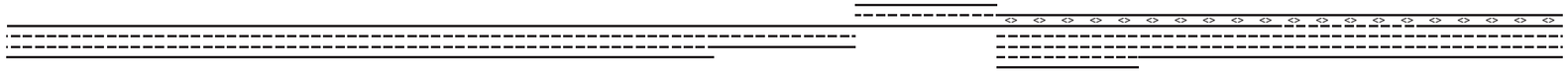
Key

<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 Plus Specific Plan and SRTCP
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

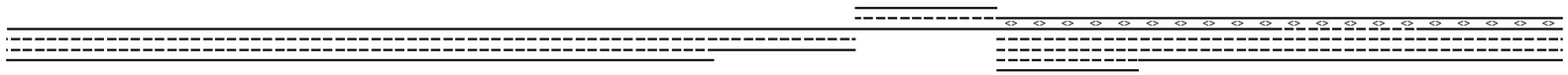
<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Mainline to Off Ramp Flow Rate for Weave Segments											
ML to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
ML to Off Flow (pcph)											
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segm											
GP to GP Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
GP to GP Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 Plus Specific Plan and SRTCP
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



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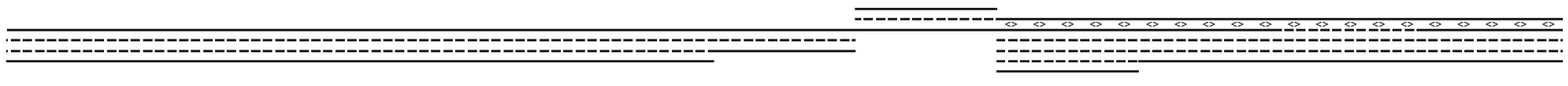
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Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Weave Segment Operations											
Type											
Length											
Segment Lanes											
Weave Lanes											
Weave Flow (pcph)											
Non-Weave Flow											
Segment Flow											
Max Weave Length											
Length Check											
Ideal Weave Capacity											
f_{HV}											
f_P											
Capacity Condition 1											
Capacity Condition 2											
v/c ratio											
Interchange Density											
Lane Changes On to ML											
Lane Changes ML to Off											
Lane Changes On to Off											
Min Lane Change Rate											
Weave LC Rate											
Non-Weave LC Rate 1											
Non-Weave LC Rate 2											
Non-Weave LC Rate 3											
Segment LC Rate											
Weave Intensity Factor											
Weave Speed											
Non-Weave Speed											
Segment Speed											
Density											
LOS											
Leisch Method for Weaving											
Balanced?											
Weaving GP Lanes											
Weaving Length											
Summarize Segment Operations											
Segment v/c ratio	0.60	0.70	0.73	0.73	0.72	1.06		0.73	0.56	0.49	0.66
Segment Density	20.8	25.0	26.2	26.4	26.1	-		26.3	19.3	16.8	23.2
Segment LOS	C	C	D	D	D	F		D	C	B	C
Over Capacity						Entering GP Lanes					

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 Plus Specific Plan and SRTCP
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



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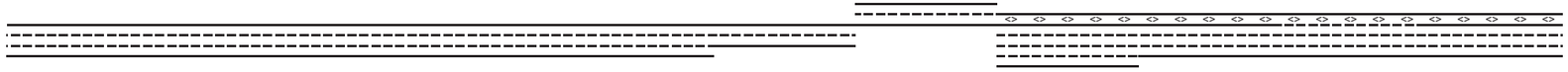
<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Freeway Segment											
Type	Basic	Basic	Basic	Basic	Basic	Basic		Basic	Basic	Basic	Basic
Length (ft)											
Accel Length											
Decel Length											
Mainline Volume	5,070	5,450	5,930	5,800	5,880	5,120		7,350	4,104	3,608	4,616
On Ramp Volume											
Off Ramp Volume											
Express Lane Volume								1,400	1,026	902	1,154
EL On Ramp Volume											
EL Off Ramp Volume											
Flow Rate in Entering General Purpose Lanes (GP)											
Volume (vph)	5,070	5,450	5,930	5,800	5,880	5,120		5,950	3,078	2,706	3,462
PHF	0.96	0.96	0.96	0.96	0.96	0.96		0.96	0.96	0.96	0.96
Lanes	3	3	3	3	3	2		4	3	3	3
Terrain	Level	Level	Level	Level	Level	Level		Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Truck & Bus %	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%		4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2		1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971	0.971	0.971		0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Flow (pcph)	5,440	5,847	6,362	6,223	6,309	5,493		6,322	3,270	2,875	3,678
Flow (pcphpl)	1,813	1,949	2,121	2,074	2,103	2,747		1,580	1,090	958	1,226
Free Flow Speed in Entering GP Lanes											
Lane Width (ft)	12	12	12	12	12	12		12	12	12	12
Shoulder Width	5	5	5	5	5	5		5	5	5	5
TRD											
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
f_{LC}	0.1	0.1	0.1	0.1	0.1	0.6		0.2	0.1	0.1	0.1
Calculated FFS	75.3	75.3	75.3	75.3	75.3	74.8		75.2	75.3	75.3	75.3
Measured FFS											
FFS Curve	70	70	70	70	70	70		70	70	70	70
Operations in Entering GP Lanes											
Capacity (pcph)	7,200	7,200	7,200	7,200	7,200	4,800		9,600	7,200	7,200	7,200
v/c ratio	0.76	0.81	0.88	0.86	0.88	1.14		0.66	0.45	0.40	0.51
Speed (mph)	65.6	63.5	60.2	61.1	60.5	-		68.3	70.0	70.0	70.0
Density (pcphpl)	27.6	30.7	35.2	33.9	34.7	-		23.1	15.6	13.7	17.5
LOS	D	D	E	D	D	F		C	B	B	B
Operations for Segment GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 Plus Specific Plan and SRTCP
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



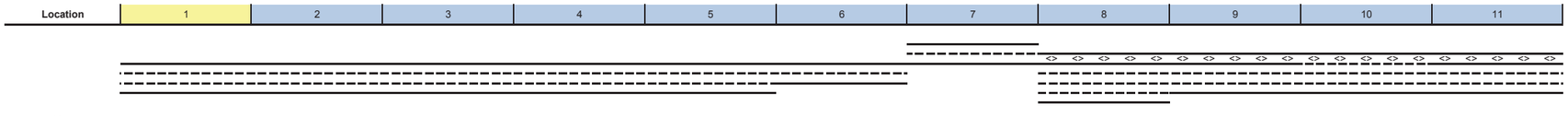
Key

<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Speed (mph)											
Density (pcphpl)											
LOS											
Operations for Exiting GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											
Speed (mph)											
Density (pcphpl)											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 Plus Specific Plan and SRTCP
Time Period: PM



Key

<> Express Lane (HOV)

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Flow Rate in Express Lanes											
Volume (vph)								1,400	1,026	902	1,154
PHF								0.96	0.96	0.96	0.96
Lanes								1	1	1	1
Terrain								Level	Level	Level	Level
Grade %								0.0%	0.0%	0.0%	0.0%
Grade Length (mi)								0.00	0.00	0.00	0.00
Truck & Bus %								4.0%	4.0%	4.0%	4.0%
RV %								0.0%	0.0%	0.0%	0.0%
E_T							1.5	1.5	1.5	1.5	1.5
E_R							1.2	1.2	1.2	1.2	1.2
f_{HV}							0.962	0.980	0.980	0.980	0.980
f_P								1.00	1.00	1.00	1.00
Flow (pcph)								1,488	1,090	958	1,226
Flow Rate (pcphpl)								1,488	1,090	958	1,226
Operations in Express Lanes											
FFS								70	70	70	70
Capacity (pcph)								1,750	1,750	1,750	1,750
v/c ratio								0.85	0.62	0.55	0.70
On Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
On Ramp Roadway Operations											
Ramp Type											
Ramp Speed (mph)											
Ramp Capacity (pcph)											
Ramp v/c ratio											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 Plus Specific Plan and SRTCP
Time Period: PM

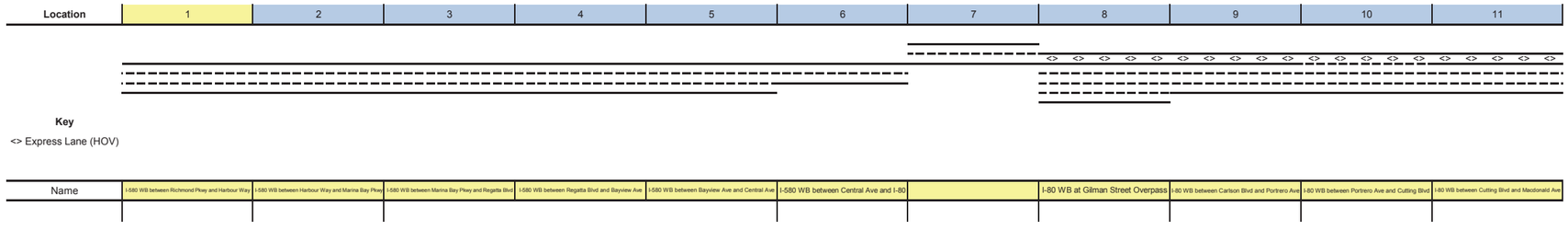
Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Off Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
Off Ramp Roadway Operations											
Ramp Type											
Ramp Speed											
Ramp Capacity (pcph)											
Ramp v/c ratio											
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps											
Up Type											
Up Distance											
Up Flow (pcph)											
Down Type											
Down Distance											
Down Flow (pcph)											
Merge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FM} (Eqn 13-3)											
P_{FM} (Eqn 13-4)											
P_{FM} (Eqn 13-5)											
P_{FM}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
v_{R12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											

Key

<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

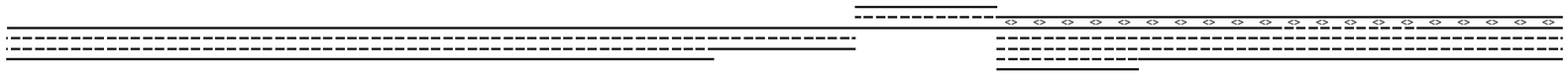
Alternative: 2040 Plus Specific Plan and SRTCP
Time Period: PM



Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 Plus Specific Plan and SRTCP
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



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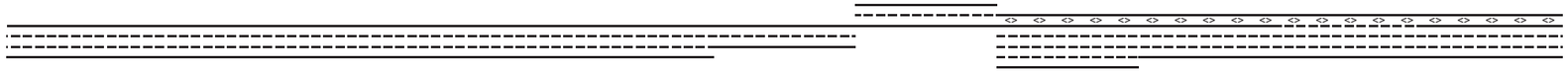
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Diverge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FD} (Eqn 13-9)											
P_{FD} (Eqn 13-10)											
P_{FD} (Eqn 13-11)											
P_{FD}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											
On Ramp to Off Ramp Flow Rate for Weave Segments											
On to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to Off Flow (pcph)											
On Ramp to Mainline Flow Rate for Weave Segments											
On to ML Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to ML Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 Plus Specific Plan and SRTCP
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



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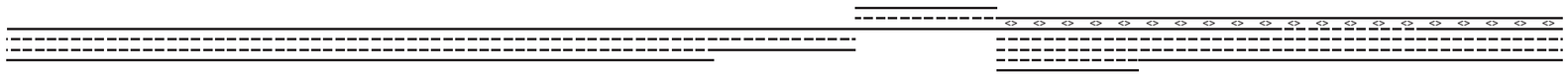
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Mainline to Off Ramp Flow Rate for Weave Segments											
ML to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
ML to Off Flow (pcph)											
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segm											
GP to GP Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
GP to GP Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 Plus Specific Plan and SRTCP
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



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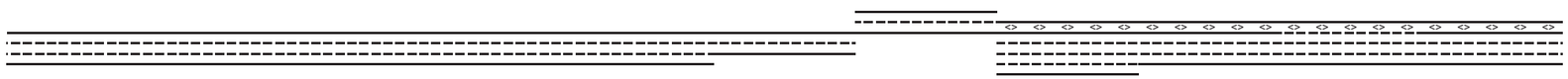
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Weave Segment Operations											
Type											
Length											
Segment Lanes											
Weave Lanes											
Weave Flow (pcph)											
Non-Weave Flow											
Segment Flow											
Max Weave Length											
Length Check											
Ideal Weave Capacity											
f_{HV}											
f_P											
Capacity Condition 1											
Capacity Condition 2											
v/c ratio											
Interchange Density											
Lane Changes On to ML											
Lane Changes ML to Off											
Lane Changes On to Off											
Min Lane Change Rate											
Weave LC Rate											
Non-Weave LC Rate 1											
Non-Weave LC Rate 2											
Non-Weave LC Rate 3											
Segment LC Rate											
Weave Intensity Factor											
Weave Speed											
Non-Weave Speed											
Segment Speed											
Density											
LOS											
Leisch Method for Weaving											
Balanced?											
Weaving GP Lanes											
Weaving Length											
Summarize Segment Operations											
Segment v/c ratio	0.76	0.81	0.88	0.86	0.88	1.14		0.66	0.45	0.40	0.51
Segment Density	27.6	30.7	35.2	33.9	34.7	-		23.1	15.6	13.7	17.5
Segment LOS	D	D	E	D	D	F		C	B	B	B
Over Capacity						Entering GP Lanes					

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing Plus Sub-Area 4
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Freeway Segment											
Type	Basic	Basic	Basic	Basic	Basic	Basic		Basic	Basic	Basic	Basic
Length (ft)											
Accel Length											
Decel Length											
Mainline Volume	2,580	2,750	3,440	3,310	3,070	3,170		5,359	3,128	2,888	3,544
On Ramp Volume											
Off Ramp Volume											
Express Lane Volume								1,021	782	722	886
EL On Ramp Volume											
EL Off Ramp Volume											
Flow Rate in Entering General Purpose Lanes (GP)											
Volume (vph)	2,580	2,750	3,440	3,310	3,070	3,170		4,338	2,346	2,166	2,658
PHF	0.96	0.96	0.96	0.96	0.96	0.96		0.96	0.96	0.96	0.96
Lanes	3	3	3	3	3	2		4	3	3	3
Terrain	Level	Level	Level	Level	Level	Level		Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Truck & Bus %	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%		4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2		1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971	0.971	0.971		0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Flow (pcph)	2,768	2,951	3,691	3,551	3,294	3,401		4,610	2,493	2,301	2,824
Flow (pcphpl)	923	984	1,230	1,184	1,098	1,701		1,152	831	767	941
Free Flow Speed in Entering GP Lanes											
Lane Width (ft)	12	12	12	12	12	12		12	12	12	12
Shoulder Width	5	5	5	5	5	5		5	5	5	5
TRD											
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
f_{LC}	0.1	0.1	0.1	0.1	0.1	0.6		0.2	0.1	0.1	0.1
Calculated FFS	75.3	75.3	75.3	75.3	75.3	74.8		75.2	75.3	75.3	75.3
Measured FFS											
FFS Curve	70	70	70	70	70	70		70	70	70	70
Operations in Entering GP Lanes											
Capacity (pcph)	7,200	7,200	7,200	7,200	7,200	4,800		9,600	7,200	7,200	7,200
v/c ratio	0.38	0.41	0.51	0.49	0.46	0.71		0.48	0.35	0.32	0.39
Speed (mph)	70.0	70.0	70.0	70.0	70.0	67.1		70.0	70.0	70.0	70.0
Density (pcphpl)	13.2	14.1	17.6	16.9	15.7	25.3		16.5	11.9	11.0	13.4
LOS	B	B	B	B	B	C		B	B	A	B
Operations for Segment GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing Plus Sub-Area 4
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Speed (mph)											
Density (pcphpl)											
LOS											
Operations for Exiting GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											
Speed (mph)											
Density (pcphpl)											
LOS											

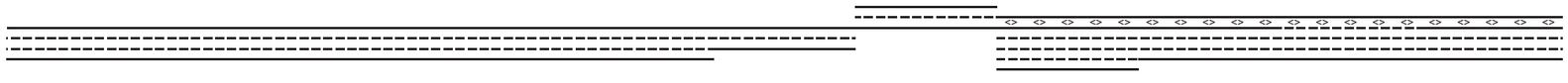
Key

<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing Plus Sub-Area 4
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



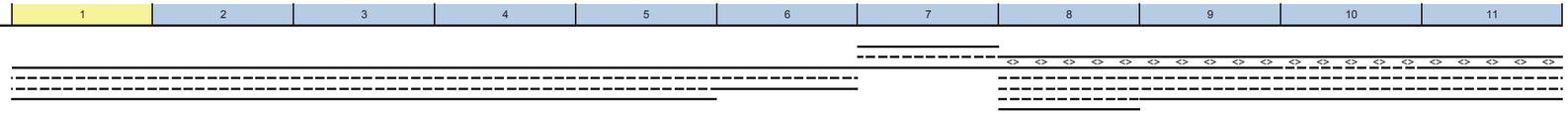
Key

<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Flow Rate in Express Lanes											
Volume (vph)								1,021	782	722	886
PHF								0.96	0.96	0.96	0.96
Lanes								1	1	1	1
Terrain								Level	Level	Level	Level
Grade %								0.0%	0.0%	0.0%	0.0%
Grade Length (mi)								0.00	0.00	0.00	0.00
Truck & Bus %								4.0%	4.0%	4.0%	4.0%
RV %								0.0%	0.0%	0.0%	0.0%
E_T							1.5	1.5	1.5	1.5	1.5
E_R							1.2	1.2	1.2	1.2	1.2
f_{HV}							0.962	0.980	0.980	0.980	0.980
f_P								1.00	1.00	1.00	1.00
Flow (pcph)								1,085	831	767	941
Flow Rate (pcphpl)								1,085	831	767	941
Operations in Express Lanes											
FFS								70	70	70	70
Capacity (pcph)								1,750	1,750	1,750	1,750
v/c ratio								0.62	0.47	0.44	0.54
On Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
On Ramp Roadway Operations											
Ramp Type											
Ramp Speed (mph)											
Ramp Capacity (pcph)											
Ramp v/c ratio											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing Plus Sub-Area 4
Time Period: AM



Key

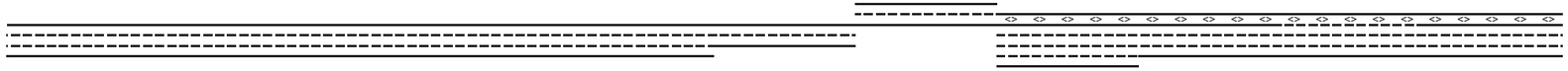
<> Express Lane (HOV)

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Off Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
Off Ramp Roadway Operations											
Ramp Type											
Ramp Speed											
Ramp Capacity (pcph)											
Ramp v/c ratio											
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps											
Up Type											
Up Distance											
Up Flow (pcph)											
Down Type											
Down Distance											
Down Flow (pcph)											
Merge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FM} (Eqn 13-3)											
P_{FM} (Eqn 13-4)											
P_{FM} (Eqn 13-5)											
P_{FM}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
v_{R12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing Plus Sub-Area 4
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave

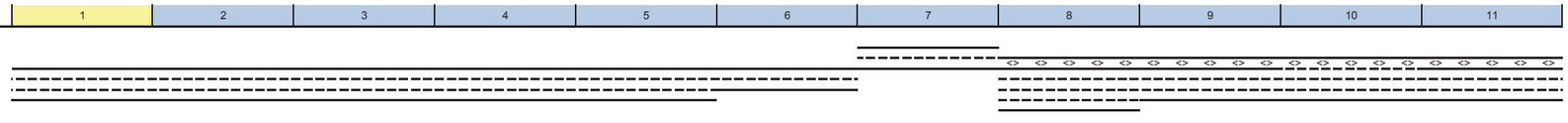


Key

<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing Plus Sub-Area 4
Time Period: AM



Key

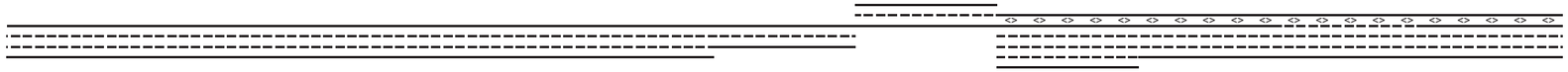
<> Express Lane (HOV)

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Diverge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FD} (Eqn 13-9)											
P_{FD} (Eqn 13-10)											
P_{FD} (Eqn 13-11)											
P_{FD}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											
On Ramp to Off Ramp Flow Rate for Weave Segments											
On to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to Off Flow (pcph)											
On Ramp to Mainline Flow Rate for Weave Segments											
On to ML Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to ML Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing Plus Sub-Area 4
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

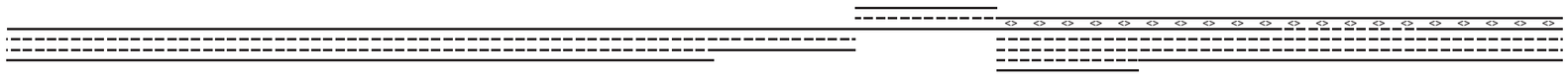
<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Mainline to Off Ramp Flow Rate for Weave Segments											
ML to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
ML to Off Flow (pcph)											
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segm											
GP to GP Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
GP to GP Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing Plus Sub-Area 4
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



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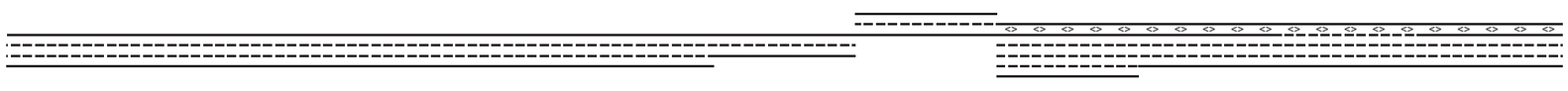
<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Weave Segment Operations											
Type											
Length											
Segment Lanes											
Weave Lanes											
Weave Flow (pcph)											
Non-Weave Flow											
Segment Flow											
Max Weave Length											
Length Check											
Ideal Weave Capacity											
f_{HV}											
f_P											
Capacity Condition 1											
Capacity Condition 2											
v/c ratio											
Interchange Density											
Lane Changes On to ML											
Lane Changes ML to Off											
Lane Changes On to Off											
Min Lane Change Rate											
Weave LC Rate											
Non-Weave LC Rate 1											
Non-Weave LC Rate 2											
Non-Weave LC Rate 3											
Segment LC Rate											
Weave Intensity Factor											
Weave Speed											
Non-Weave Speed											
Segment Speed											
Density											
LOS											
Leisch Method for Weaving											
Balanced?											
Weaving GP Lanes											
Weaving Length											
Summarize Segment Operations											
Segment v/c ratio	0.38	0.41	0.51	0.49	0.46	0.71		0.48	0.35	0.32	0.39
Segment Density	13.2	14.1	17.6	16.9	15.7	25.3		16.5	11.9	11.0	13.4
Segment LOS	B	B	B	B	B	C		B	B	A	B
Over Capacity											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing Plus Sub-Area 4
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



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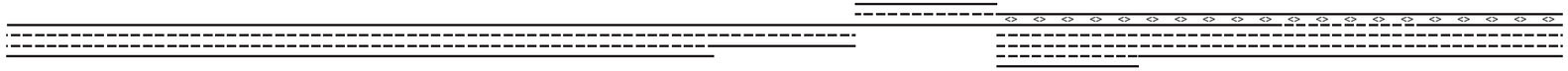
<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Freeway Segment											
Type	Basic	Basic	Basic	Basic	Basic	Basic		Basic	Basic	Basic	Basic
Length (ft)											
Accel Length											
Decel Length											
Mainline Volume	3,790	3,640	3,790	3,710	3,570	3,220		6,594	4,968	4,328	5,720
On Ramp Volume											
Off Ramp Volume											
Express Lane Volume								1,256	1,242	1,082	1,430
EL On Ramp Volume											
EL Off Ramp Volume											
Flow Rate in Entering General Purpose Lanes (GP)											
Volume (vph)	3,790	3,640	3,790	3,710	3,570	3,220		5,338	3,726	3,246	4,290
PHF	0.96	0.96	0.96	0.96	0.96	0.96		0.96	0.96	0.96	0.96
Lanes	3	3	3	3	3	2		4	3	3	3
Terrain	Level	Level	Level	Level	Level	Level		Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Truck & Bus %	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%		4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2		1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971	0.971	0.971		0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Flow (pcph)	4,066	3,905	4,066	3,981	3,830	3,455		5,672	3,959	3,449	4,558
Flow (pcphpl)	1,355	1,302	1,355	1,327	1,277	1,727		1,418	1,320	1,150	1,519
Free Flow Speed in Entering GP Lanes											
Lane Width (ft)	12	12	12	12	12	12		12	12	12	12
Shoulder Width	5	5	5	5	5	5		5	5	5	5
TRD											
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
f_{LC}	0.1	0.1	0.1	0.1	0.1	0.6		0.2	0.1	0.1	0.1
Calculated FFS	75.3	75.3	75.3	75.3	75.3	74.8		75.2	75.3	75.3	75.3
Measured FFS											
FFS Curve	70	70	70	70	70	70		70	70	70	70
Operations in Entering GP Lanes											
Capacity (pcph)	7,200	7,200	7,200	7,200	7,200	4,800		9,600	7,200	7,200	7,200
v/c ratio	0.56	0.54	0.56	0.55	0.53	0.72		0.59	0.55	0.48	0.63
Speed (mph)	69.7	69.9	69.7	69.8	69.9	66.8		69.4	69.8	70.0	68.8
Density (pcphpl)	19.4	18.6	19.4	19.0	18.3	25.9		20.4	18.9	16.4	22.1
LOS	C	C	C	C	C	C		C	C	B	C
Operations for Segment GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing Plus Sub-Area 4
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



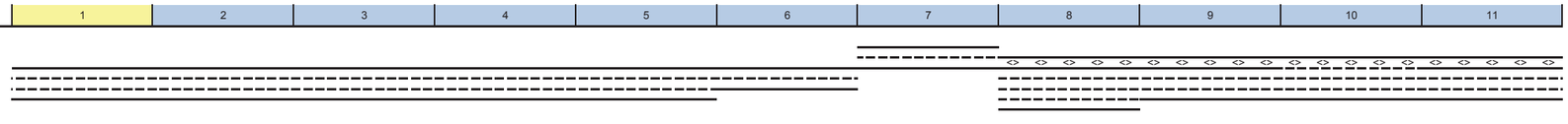
Key

<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Speed (mph)											
Density (pcphpl)											
LOS											
Operations for Exiting GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											
Speed (mph)											
Density (pcphpl)											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing Plus Sub-Area 4
Time Period: AM



Key

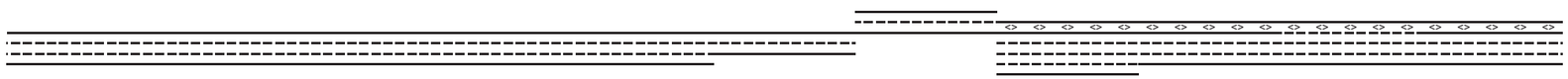
<> Express Lane (HOV)

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Flow Rate in Express Lanes											
Volume (vph)								1,256	1,242	1,082	1,430
PHF								0.96	0.96	0.96	0.96
Lanes								1	1	1	1
Terrain								Level	Level	Level	Level
Grade %								0.0%	0.0%	0.0%	0.0%
Grade Length (mi)								0.00	0.00	0.00	0.00
Truck & Bus %								4.0%	4.0%	4.0%	4.0%
RV %								0.0%	0.0%	0.0%	0.0%
E_T							1.5	1.5	1.5	1.5	1.5
E_R							1.2	1.2	1.2	1.2	1.2
f_{HV}							0.962	0.980	0.980	0.980	0.980
f_P								1.00	1.00	1.00	1.00
Flow (pcph)								1,335	1,320	1,150	1,519
Flow Rate (pcphpl)								1,335	1,320	1,150	1,519
Operations in Express Lanes											
FFS								70	70	70	70
Capacity (pcph)								1,750	1,750	1,750	1,750
v/c ratio								0.76	0.75	0.66	0.87
On Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
On Ramp Roadway Operations											
Ramp Type											
Ramp Speed (mph)											
Ramp Capacity (pcph)											
Ramp v/c ratio											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing Plus Sub-Area 4
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



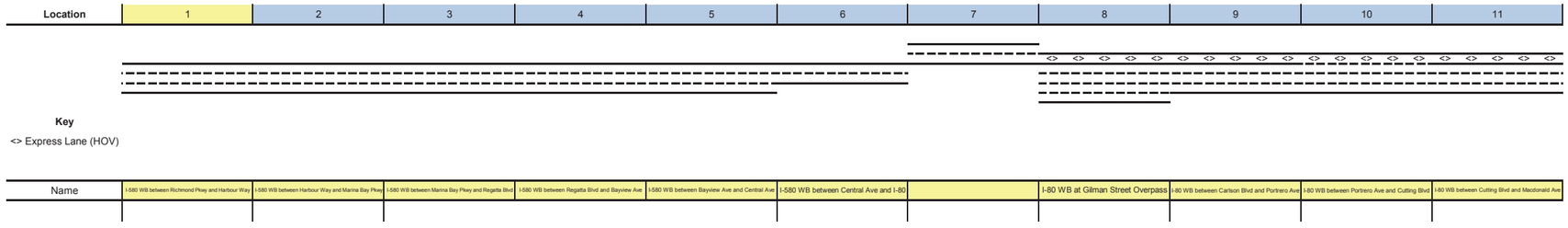
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<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Off Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
Off Ramp Roadway Operations											
Ramp Type											
Ramp Speed											
Ramp Capacity (pcph)											
Ramp v/c ratio											
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps											
Up Type											
Up Distance											
Up Flow (pcph)											
Down Type											
Down Distance											
Down Flow (pcph)											
Merge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FM} (Eqn 13-3)											
P_{FM} (Eqn 13-4)											
P_{FM} (Eqn 13-5)											
P_{FM}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
v_{R12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											

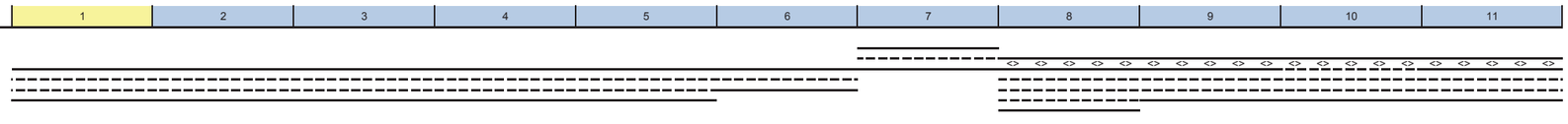
Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing Plus Sub-Area 4
Time Period: AM



Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing Plus Sub-Area 4
Time Period: AM



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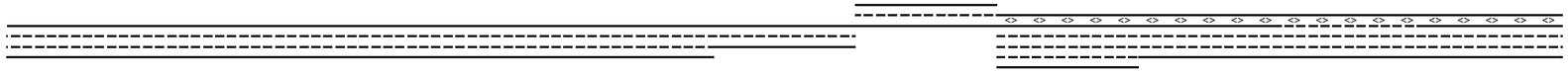
<> Express Lane (HOV)

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Diverge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FD} (Eqn 13-9)											
P_{FD} (Eqn 13-10)											
P_{FD} (Eqn 13-11)											
P_{FD}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											
On Ramp to Off Ramp Flow Rate for Weave Segments											
On to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to Off Flow (pcph)											
On Ramp to Mainline Flow Rate for Weave Segments											
On to ML Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to ML Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing Plus Sub-Area 4
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



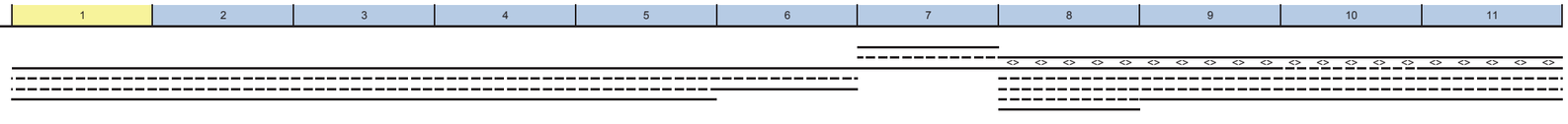
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<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Mainline to Off Ramp Flow Rate for Weave Segments											
ML to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
ML to Off Flow (pcph)											
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segm											
GP to GP Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
GP to GP Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing Plus Sub-Area 4
Time Period: AM



Key

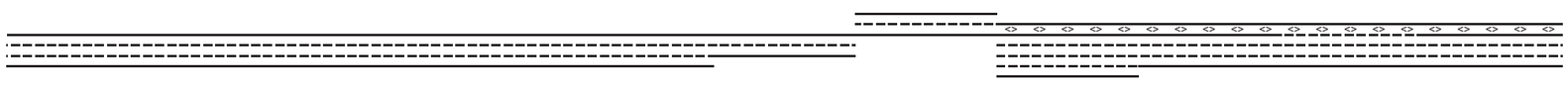
<> Express Lane (HOV)

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Weave Segment Operations											
Type											
Length											
Segment Lanes											
Weave Lanes											
Weave Flow (pcph)											
Non-Weave Flow											
Segment Flow											
Max Weave Length											
Length Check											
Ideal Weave Capacity											
f_{HV}											
f_P											
Capacity Condition 1											
Capacity Condition 2											
v/c ratio											
Interchange Density											
Lane Changes On to ML											
Lane Changes ML to Off											
Lane Changes On to Off											
Min Lane Change Rate											
Weave LC Rate											
Non-Weave LC Rate 1											
Non-Weave LC Rate 2											
Non-Weave LC Rate 3											
Segment LC Rate											
Weave Intensity Factor											
Weave Speed											
Non-Weave Speed											
Segment Speed											
Density											
LOS											
Leisch Method for Weaving											
Balanced?											
Weaving GP Lanes											
Weaving Length											
Summarize Segment Operations											
Segment v/c ratio	0.56	0.54	0.56	0.55	0.53	0.72		0.59	0.55	0.48	0.63
Segment Density	19.4	18.6	19.4	19.0	18.3	25.9		20.4	18.9	16.4	22.1
Segment LOS	C	C	C	C	C	C		C	C	B	C
Over Capacity											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing Plus Sub-Area 4
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

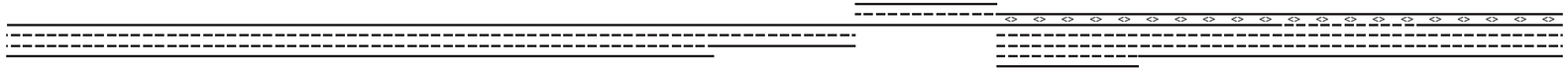
<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Freeway Segment											
Type	Basic	Basic	Basic	Basic	Basic	Basic		Basic	Basic	Basic	Basic
Length (ft)											
Accel Length											
Decel Length											
Mainline Volume	3,060	3,440	3,760	3,900	3,630	3,570		6,426	4,808	4,408	5,400
On Ramp Volume											
Off Ramp Volume											
Express Lane Volume								1,224	1,202	1,102	1,350
EL On Ramp Volume											
EL Off Ramp Volume											
Flow Rate in Entering General Purpose Lanes (GP)											
Volume (vph)	3,060	3,440	3,760	3,900	3,630	3,570		5,202	3,606	3,306	4,050
PHF	0.96	0.96	0.96	0.96	0.96	0.96		0.96	0.96	0.96	0.96
Lanes	3	3	3	3	3	2		4	3	3	3
Terrain	Level	Level	Level	Level	Level	Level		Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Truck & Bus %	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%		4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2		1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971	0.971	0.971		0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Flow (pcph)	3,283	3,691	4,034	4,184	3,895	3,830		5,527	3,831	3,513	4,303
Flow (pcphpl)	1,094	1,230	1,345	1,395	1,298	1,915		1,382	1,277	1,171	1,434
Free Flow Speed in Entering GP Lanes											
Lane Width (ft)	12	12	12	12	12	12		12	12	12	12
Shoulder Width	5	5	5	5	5	5		5	5	5	5
TRD											
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
f_{LC}	0.1	0.1	0.1	0.1	0.1	0.6		0.2	0.1	0.1	0.1
Calculated FFS	75.3	75.3	75.3	75.3	75.3	74.8		75.2	75.3	75.3	75.3
Measured FFS											
FFS Curve	70	70	70	70	70	70		70	70	70	70
Operations in Entering GP Lanes											
Capacity (pcph)	7,200	7,200	7,200	7,200	7,200	4,800		9,600	7,200	7,200	7,200
v/c ratio	0.46	0.51	0.56	0.58	0.54	0.80		0.58	0.53	0.49	0.60
Speed (mph)	70.0	70.0	69.8	69.6	69.9	64.1		69.6	69.9	70.0	69.4
Density (pcphpl)	15.6	17.6	19.3	20.1	18.6	29.9		19.8	18.3	16.7	20.7
LOS	B	B	C	C	C	D		C	C	B	C
Operations for Segment GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing Plus Sub-Area 4
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



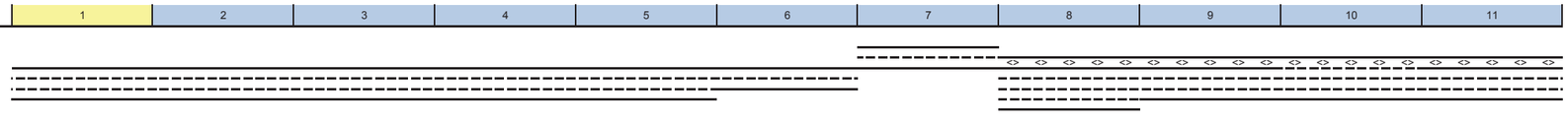
Key

<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Speed (mph)											
Density (pcphpl)											
LOS											
Operations for Exiting GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											
Speed (mph)											
Density (pcphpl)											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing Plus Sub-Area 4
Time Period: PM



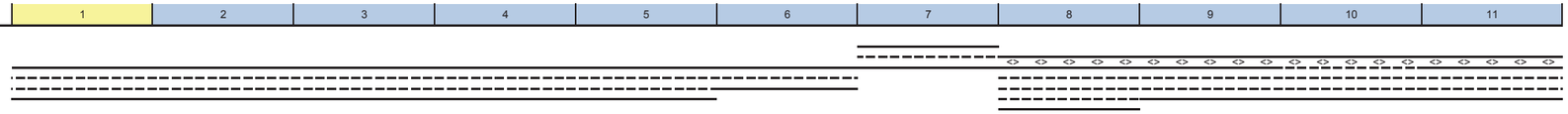
Key

<> Express Lane (HOV)

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Flow Rate in Express Lanes											
Volume (vph)								1,224	1,202	1,102	1,350
PHF								0.96	0.96	0.96	0.96
Lanes								1	1	1	1
Terrain								Level	Level	Level	Level
Grade %								0.0%	0.0%	0.0%	0.0%
Grade Length (mi)								0.00	0.00	0.00	0.00
Truck & Bus %								4.0%	4.0%	4.0%	4.0%
RV %								0.0%	0.0%	0.0%	0.0%
E_T							1.5	1.5	1.5	1.5	1.5
E_R							1.2	1.2	1.2	1.2	1.2
f_{HV}							0.962	0.980	0.980	0.980	0.980
f_P								1.00	1.00	1.00	1.00
Flow (pcph)								1,301	1,277	1,171	1,434
Flow Rate (pcphpl)								1,301	1,277	1,171	1,434
Operations in Express Lanes											
FFS								70	70	70	70
Capacity (pcph)								1,750	1,750	1,750	1,750
v/c ratio								0.74	0.73	0.67	0.82
On Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
On Ramp Roadway Operations											
Ramp Type											
Ramp Speed (mph)											
Ramp Capacity (pcph)											
Ramp v/c ratio											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing Plus Sub-Area 4
Time Period: PM



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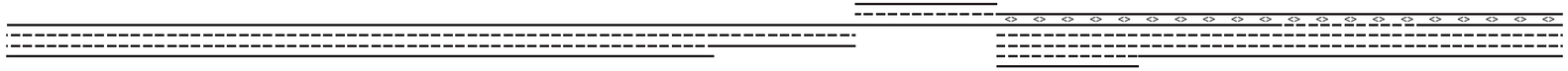
<> Express Lane (HOV)

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Off Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
Off Ramp Roadway Operations											
Ramp Type											
Ramp Speed											
Ramp Capacity (pcph)											
Ramp v/c ratio											
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps											
Up Type											
Up Distance											
Up Flow (pcph)											
Down Type											
Down Distance											
Down Flow (pcph)											
Merge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FM} (Eqn 13-3)											
P_{FM} (Eqn 13-4)											
P_{FM} (Eqn 13-5)											
P_{FM}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
v_{R12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing Plus Sub-Area 4
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave

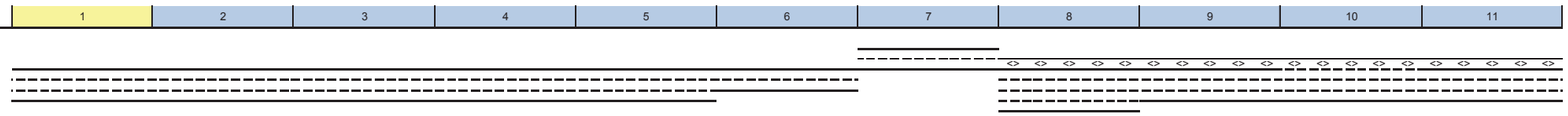


Key

<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing Plus Sub-Area 4
Time Period: PM



Key

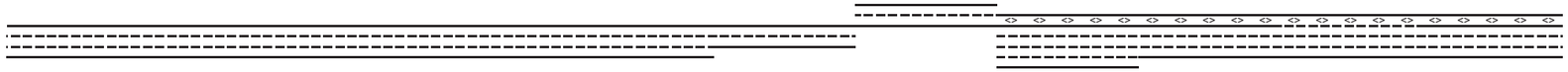
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Location	1	2	3	4	5	6	7	8	9	10	11
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Diverge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FD} (Eqn 13-9)											
P_{FD} (Eqn 13-10)											
P_{FD} (Eqn 13-11)											
P_{FD}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											
On Ramp to Off Ramp Flow Rate for Weave Segments											
On to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to Off Flow (pcph)											
On Ramp to Mainline Flow Rate for Weave Segments											
On to ML Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to ML Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing Plus Sub-Area 4
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



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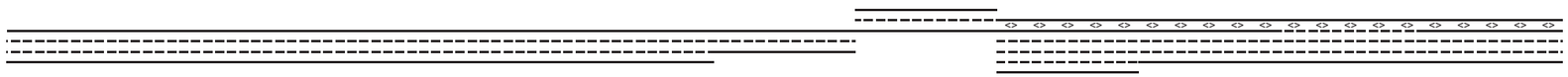
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Mainline to Off Ramp Flow Rate for Weave Segments											
ML to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
ML to Off Flow (pcph)											
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segm											
GP to GP Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
GP to GP Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: Existing Plus Sub-Area 4
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



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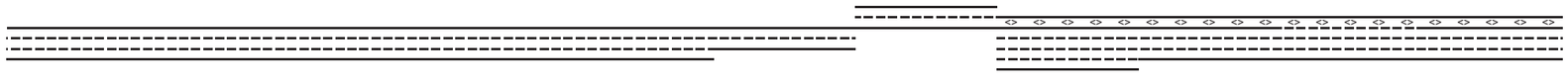
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Weave Segment Operations											
Type											
Length											
Segment Lanes											
Weave Lanes											
Weave Flow (pcph)											
Non-Weave Flow											
Segment Flow											
Max Weave Length											
Length Check											
Ideal Weave Capacity											
f_{HV}											
f_P											
Capacity Condition 1											
Capacity Condition 2											
v/c ratio											
Interchange Density											
Lane Changes On to ML											
Lane Changes ML to Off											
Lane Changes On to Off											
Min Lane Change Rate											
Weave LC Rate											
Non-Weave LC Rate 1											
Non-Weave LC Rate 2											
Non-Weave LC Rate 3											
Segment LC Rate											
Weave Intensity Factor											
Weave Speed											
Non-Weave Speed											
Segment Speed											
Density											
LOS											
Leisch Method for Weaving											
Balanced?											
Weaving GP Lanes											
Weaving Length											
Summarize Segment Operations											
Segment v/c ratio	0.46	0.51	0.56	0.58	0.54	0.80		0.58	0.53	0.49	0.60
Segment Density	15.6	17.6	19.3	20.1	18.6	29.9		19.8	18.3	16.7	20.7
Segment LOS	B	B	C	C	C	D		C	C	B	C
Over Capacity											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing Plus Sub-Area 4
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



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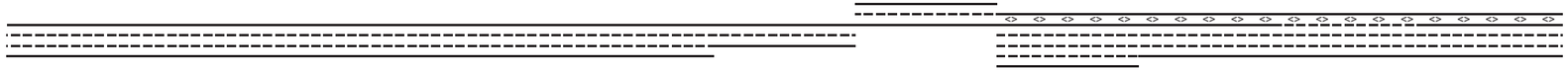
<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Freeway Segment											
Type	Basic	Basic	Basic	Basic	Basic	Basic		Basic	Basic	Basic	Basic
Length (ft)											
Accel Length											
Decel Length											
Mainline Volume	3,230	3,450	4,220	4,230	4,290	3,730		5,032	3,528	3,128	3,904
On Ramp Volume											
Off Ramp Volume											
Express Lane Volume								958	882	782	976
EL On Ramp Volume											
EL Off Ramp Volume											
Flow Rate in Entering General Purpose Lanes (GP)											
Volume (vph)	3,230	3,450	4,220	4,230	4,290	3,730		4,073	2,646	2,346	2,928
PHF	0.96	0.96	0.96	0.96	0.96	0.96		0.96	0.96	0.96	0.96
Lanes	3	3	3	3	3	2		4	3	3	3
Terrain	Level	Level	Level	Level	Level	Level		Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Truck & Bus %	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%		4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2		1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971	0.971	0.971		0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Flow (pcph)	3,466	3,702	4,528	4,538	4,603	4,002		4,328	2,811	2,493	3,111
Flow (pcphpl)	1,155	1,234	1,509	1,513	1,534	2,001		1,082	937	831	1,037
Free Flow Speed in Entering GP Lanes											
Lane Width (ft)	12	12	12	12	12	12		12	12	12	12
Shoulder Width	5	5	5	5	5	5		5	5	5	5
TRD											
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
f_{LC}	0.1	0.1	0.1	0.1	0.1	0.6		0.2	0.1	0.1	0.1
Calculated FFS	75.3	75.3	75.3	75.3	75.3	74.8		75.2	75.3	75.3	75.3
Measured FFS											
FFS Curve	70	70	70	70	70	70		70	70	70	70
Operations in Entering GP Lanes											
Capacity (pcph)	7,200	7,200	7,200	7,200	7,200	4,800		9,600	7,200	7,200	7,200
v/c ratio	0.48	0.51	0.63	0.63	0.64	0.83		0.45	0.39	0.35	0.43
Speed (mph)	70.0	70.0	68.9	68.9	68.7	62.6		70.0	70.0	70.0	70.0
Density (pcphpl)	16.5	17.6	21.9	22.0	22.3	32.0		15.5	13.4	11.9	14.8
LOS	B	B	C	C	C	D		B	B	B	B
Operations for Segment GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing Plus Sub-Area 4
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



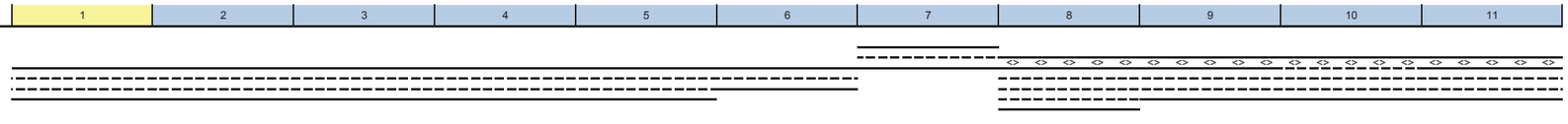
Key

<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Speed (mph)											
Density (pcphpl)											
LOS											
Operations for Exiting GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											
Speed (mph)											
Density (pcphpl)											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing Plus Sub-Area 4
Time Period: PM



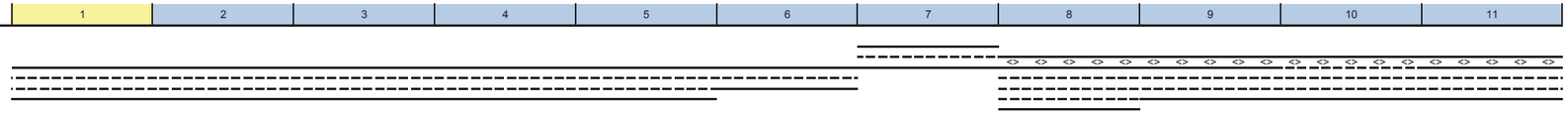
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Location	1	2	3	4	5	6	7	8	9	10	11
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Flow Rate in Express Lanes											
Volume (vph)								958	882	782	976
PHF								0.96	0.96	0.96	0.96
Lanes								1	1	1	1
Terrain								Level	Level	Level	Level
Grade %								0.0%	0.0%	0.0%	0.0%
Grade Length (mi)								0.00	0.00	0.00	0.00
Truck & Bus %								4.0%	4.0%	4.0%	4.0%
RV %								0.0%	0.0%	0.0%	0.0%
E_T							1.5	1.5	1.5	1.5	1.5
E_R							1.2	1.2	1.2	1.2	1.2
f_{HV}							0.962	0.980	0.980	0.980	0.980
f_P								1.00	1.00	1.00	1.00
Flow (pcph)								1,018	937	831	1,037
Flow Rate (pcphpl)								1,018	937	831	1,037
Operations in Express Lanes											
FFS								70	70	70	70
Capacity (pcph)								1,750	1,750	1,750	1,750
v/c ratio								0.58	0.54	0.47	0.59
On Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
On Ramp Roadway Operations											
Ramp Type											
Ramp Speed (mph)											
Ramp Capacity (pcph)											
Ramp v/c ratio											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing Plus Sub-Area 4
Time Period: PM



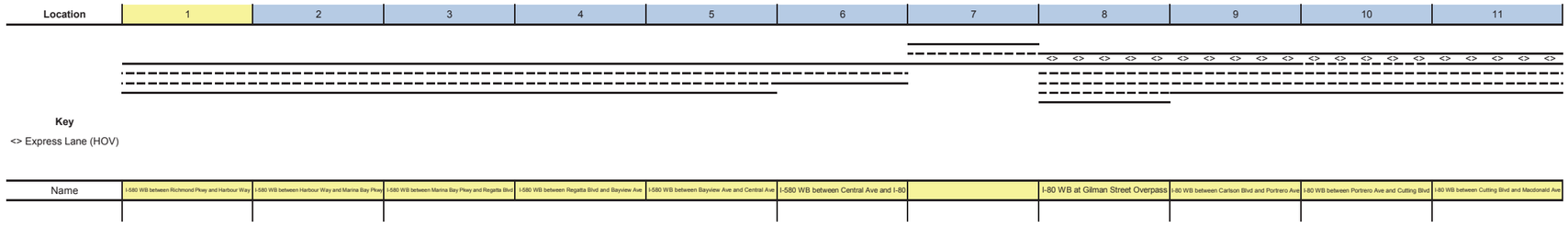
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Location	1	2	3	4	5	6	7	8	9	10	11
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Off Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
Off Ramp Roadway Operations											
Ramp Type											
Ramp Speed											
Ramp Capacity (pcph)											
Ramp v/c ratio											
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps											
Up Type											
Up Distance											
Up Flow (pcph)											
Down Type											
Down Distance											
Down Flow (pcph)											
Merge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FM} (Eqn 13-3)											
P_{FM} (Eqn 13-4)											
P_{FM} (Eqn 13-5)											
P_{FM}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
v_{R12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

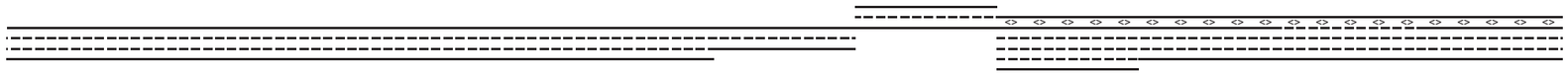
Alternative: Existing Plus Sub-Area 4
Time Period: PM



Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing Plus Sub-Area 4
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



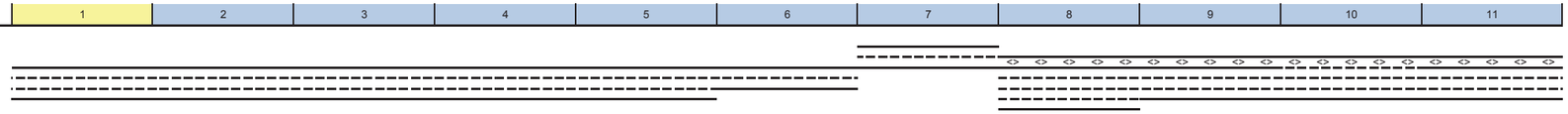
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Diverge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FD} (Eqn 13-9)											
P_{FD} (Eqn 13-10)											
P_{FD} (Eqn 13-11)											
P_{FD}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											
On Ramp to Off Ramp Flow Rate for Weave Segments											
On to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to Off Flow (pcph)											
On Ramp to Mainline Flow Rate for Weave Segments											
On to ML Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to ML Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing Plus Sub-Area 4
Time Period: PM



Key

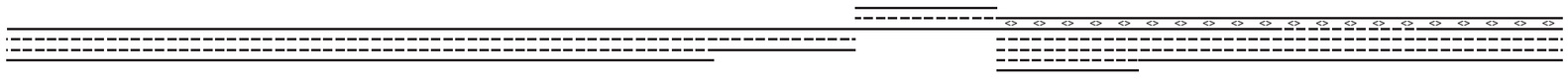
<> Express Lane (HOV)

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Mainline to Off Ramp Flow Rate for Weave Segments											
ML to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
ML to Off Flow (pcph)											
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segm											
GP to GP Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
GP to GP Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: Existing Plus Sub-Area 4
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



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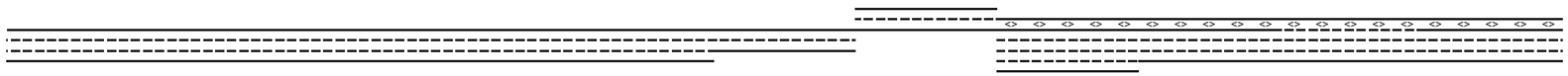
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Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Weave Segment Operations											
Type											
Length											
Segment Lanes											
Weave Lanes											
Weave Flow (pcph)											
Non-Weave Flow											
Segment Flow											
Max Weave Length											
Length Check											
Ideal Weave Capacity											
f_{HV}											
f_P											
Capacity Condition 1											
Capacity Condition 2											
v/c ratio											
Interchange Density											
Lane Changes On to ML											
Lane Changes ML to Off											
Lane Changes On to Off											
Min Lane Change Rate											
Weave LC Rate											
Non-Weave LC Rate 1											
Non-Weave LC Rate 2											
Non-Weave LC Rate 3											
Segment LC Rate											
Weave Intensity Factor											
Weave Speed											
Non-Weave Speed											
Segment Speed											
Density											
LOS											
Leisch Method for Weaving											
Balanced?											
Weaving GP Lanes											
Weaving Length											
Summarize Segment Operations											
Segment v/c ratio	0.48	0.51	0.63	0.63	0.64	0.83		0.45	0.39	0.35	0.43
Segment Density	16.5	17.6	21.9	22.0	22.3	32.0		15.5	13.4	11.9	14.8
Segment LOS	B	B	C	C	C	D		B	B	B	B
Over Capacity											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 No Sub-Area 4 Project
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

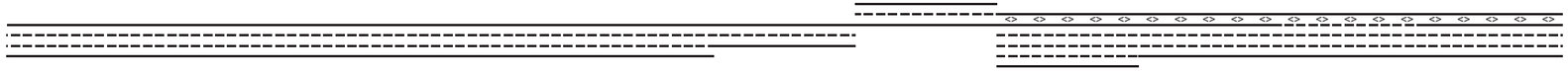
<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Freeway Segment											
Type	Basic	Basic	Basic	Basic	Basic	Basic		Basic	Basic	Basic	Basic
Length (ft)											
Accel Length											
Decel Length											
Mainline Volume	2,960	3,130	3,450	3,540	3,370	3,450		7,459	3,736	3,480	4,440
On Ramp Volume											
Off Ramp Volume											
Express Lane Volume								1,421	934	870	1,110
EL On Ramp Volume											
EL Off Ramp Volume											
Flow Rate in Entering General Purpose Lanes (GP)											
Volume (vph)	2,960	3,130	3,450	3,540	3,370	3,450		6,038	2,802	2,610	3,330
PHF	0.96	0.96	0.96	0.96	0.96	0.96		0.96	0.96	0.96	0.96
Lanes	3	3	3	3	3	2		4	3	3	3
Terrain	Level	Level	Level	Level	Level	Level		Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Truck & Bus %	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%		4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2		1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971	0.971	0.971		0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Flow (pcph)	3,176	3,358	3,702	3,798	3,616	3,702		6,416	2,977	2,773	3,538
Flow (pcphpl)	1,059	1,119	1,234	1,266	1,205	1,851		1,604	992	924	1,179
Free Flow Speed in Entering GP Lanes											
Lane Width (ft)	12	12	12	12	12	12		12	12	12	12
Shoulder Width	5	5	5	5	5	5		5	5	5	5
TRD											
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
f_{LC}	0.1	0.1	0.1	0.1	0.1	0.6		0.2	0.1	0.1	0.1
Calculated FFS	75.3	75.3	75.3	75.3	75.3	74.8		75.2	75.3	75.3	75.3
Measured FFS											
FFS Curve	70	70	70	70	70	70		70	70	70	70
Operations in Entering GP Lanes											
Capacity (pcph)	7,200	7,200	7,200	7,200	7,200	4,800		9,600	7,200	7,200	7,200
v/c ratio	0.44	0.47	0.51	0.53	0.50	0.77		0.67	0.41	0.39	0.49
Speed (mph)	70.0	70.0	70.0	69.9	70.0	65.1		68.1	70.0	70.0	70.0
Density (pcphpl)	15.1	16.0	17.6	18.1	17.2	28.4		23.6	14.2	13.2	16.8
LOS	B	B	B	C	B	D		C	B	B	B
Operations for Segment GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 No Sub-Area 4 Project
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Speed (mph)											
Density (pcphpl)											
LOS											
Operations for Exiting GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											
Speed (mph)											
Density (pcphpl)											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

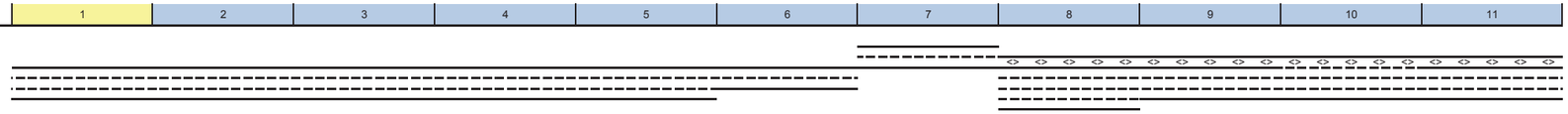
Alternative: 2040 No Sub-Area 4 Project
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Flow Rate in Express Lanes											
Volume (vph)								1,421	934	870	1,110
PHF								0.96	0.96	0.96	0.96
Lanes								1	1	1	1
Terrain								Level	Level	Level	Level
Grade %								0.0%	0.0%	0.0%	0.0%
Grade Length (mi)								0.00	0.00	0.00	0.00
Truck & Bus %								8.0%	8.0%	8.0%	8.0%
RV %								0.0%	0.0%	0.0%	0.0%
E_T							1.5	1.5	1.5	1.5	1.5
E_R							1.2	1.2	1.2	1.2	1.2
f_{HV}							0.962	0.962	0.962	0.962	0.962
f_P								1.00	1.00	1.00	1.00
Flow (pcph)								1,539	1,012	943	1,203
Flow Rate (pcphpl)								1,539	1,012	943	1,203
Operations in Express Lanes											
FFS								70	70	70	70
Capacity (pcph)								1,750	1,750	1,750	1,750
v/c ratio								0.88	0.58	0.54	0.69
On Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
On Ramp Roadway Operations											
Ramp Type											
Ramp Speed (mph)											
Ramp Capacity (pcph)											
Ramp v/c ratio											

Key
<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 No Sub-Area 4 Project
Time Period: AM



Key

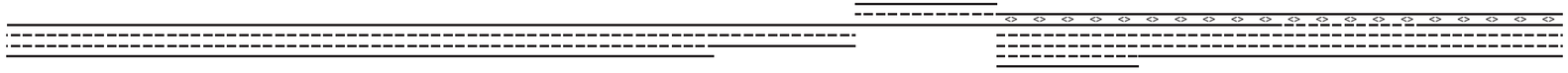
<> Express Lane (HOV)

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Off Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
Off Ramp Roadway Operations											
Ramp Type											
Ramp Speed											
Ramp Capacity (pcph)											
Ramp v/c ratio											
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps											
Up Type											
Up Distance											
Up Flow (pcph)											
Down Type											
Down Distance											
Down Flow (pcph)											
Merge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FM} (Eqn 13-3)											
P_{FM} (Eqn 13-4)											
P_{FM} (Eqn 13-5)											
P_{FM}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
v_{R12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 No Sub-Area 4 Project
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave



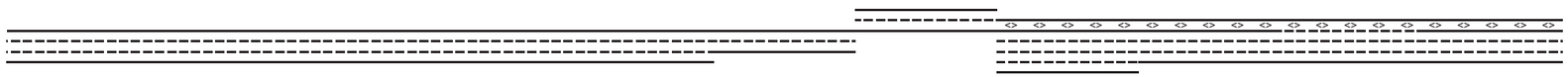
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<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 No Sub-Area 4 Project
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



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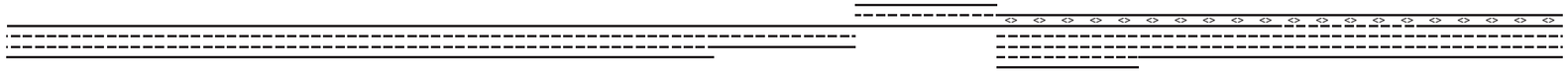
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Diverge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FD} (Eqn 13-9)											
P_{FD} (Eqn 13-10)											
P_{FD} (Eqn 13-11)											
P_{FD}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											
On Ramp to Off Ramp Flow Rate for Weave Segments											
On to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to Off Flow (pcph)											
On Ramp to Mainline Flow Rate for Weave Segments											
On to ML Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to ML Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 No Sub-Area 4 Project
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



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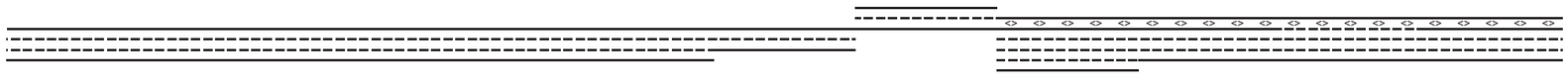
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Mainline to Off Ramp Flow Rate for Weave Segments											
ML to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
ML to Off Flow (pcph)											
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segm											
GP to GP Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
GP to GP Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 No Sub-Area 4 Project
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



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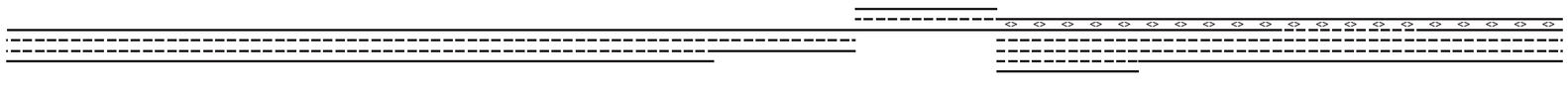
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Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Weave Segment Operations											
Type											
Length											
Segment Lanes											
Weave Lanes											
Weave Flow (pcph)											
Non-Weave Flow											
Segment Flow											
Max Weave Length											
Length Check											
Ideal Weave Capacity											
f_{HV}											
f_P											
Capacity Condition 1											
Capacity Condition 2											
v/c ratio											
Interchange Density											
Lane Changes On to ML											
Lane Changes ML to Off											
Lane Changes On to Off											
Min Lane Change Rate											
Weave LC Rate											
Non-Weave LC Rate 1											
Non-Weave LC Rate 2											
Non-Weave LC Rate 3											
Segment LC Rate											
Weave Intensity Factor											
Weave Speed											
Non-Weave Speed											
Segment Speed											
Density											
LOS											
Leisch Method for Weaving											
Balanced?											
Weaving GP Lanes											
Weaving Length											
Summarize Segment Operations											
Segment v/c ratio	0.44	0.47	0.51	0.53	0.50	0.77		0.67	0.41	0.39	0.49
Segment Density	15.1	16.0	17.6	18.1	17.2	28.4		23.6	14.2	13.2	16.8
Segment LOS	B	B	B	C	B	D		C	B	B	B
Over Capacity											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 No Sub-Area 4
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Freeway Segment											
Type	Basic	Basic	Basic	Basic	Basic	Basic		Basic	Basic	Basic	Basic
Length (ft)											
Accel Length											
Decel Length											
Mainline Volume	5,370	5,250	5,360	5,230	5,280	4,780		8,450	5,352	4,608	6,368
On Ramp Volume											
Off Ramp Volume											
Express Lane Volume								1,610	1,338	1,152	1,592
EL On Ramp Volume											
EL Off Ramp Volume											
Flow Rate in Entering General Purpose Lanes (GP)											
Volume (vph)	5,370	5,250	5,360	5,230	5,280	4,780		6,841	4,014	3,456	4,776
PHF	0.96	0.96	0.96	0.96	0.96	0.96		0.96	0.96	0.96	0.96
Lanes	3	3	3	3	3	2		4	3	3	3
Terrain	Level	Level	Level	Level	Level	Level		Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Truck & Bus %	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%		4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2		1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971	0.971	0.971		0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Flow (pcph)	5,762	5,633	5,751	5,611	5,665	5,129		7,268	4,265	3,672	5,075
Flow (pcphpl)	1,921	1,878	1,917	1,870	1,888	2,564		1,817	1,422	1,224	1,692
Free Flow Speed in Entering GP Lanes											
Lane Width (ft)	12	12	12	12	12	12		12	12	12	12
Shoulder Width	5	5	5	5	5	5		5	5	5	5
TRD											
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
f_{LC}	0.1	0.1	0.1	0.1	0.1	0.6		0.2	0.1	0.1	0.1
Calculated FFS	75.3	75.3	75.3	75.3	75.3	74.8		75.2	75.3	75.3	75.3
Measured FFS											
FFS Curve	70	70	70	70	70	70		70	70	70	70
Operations in Entering GP Lanes											
Capacity (pcph)	7,200	7,200	7,200	7,200	7,200	4,800		9,600	7,200	7,200	7,200
v/c ratio	0.80	0.78	0.80	0.78	0.79	1.07		0.76	0.59	0.51	0.70
Speed (mph)	64.0	64.7	64.0	64.8	64.5	-		65.6	69.4	70.0	67.2
Density (pcphpl)	30.0	29.0	29.9	28.9	29.3	-		27.7	20.5	17.5	25.2
LOS	D	D	D	D	D	F		D	C	B	C
Operations for Segment GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 No Sub-Area 4
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Speed (mph)											
Density (pcphpl)											
LOS											
Operations for Exiting GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											
Speed (mph)											
Density (pcphpl)											
LOS											

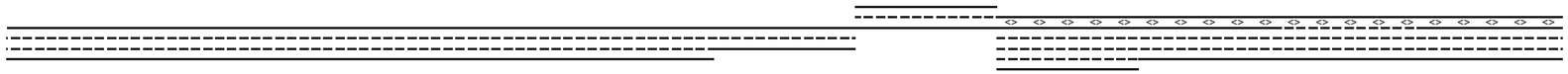
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<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 No Sub-Area 4
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

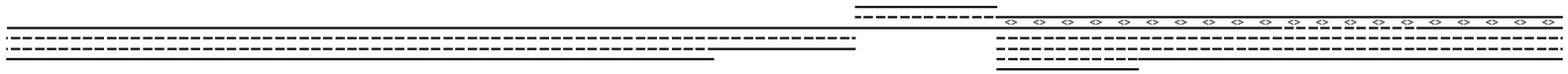
<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Flow Rate in Express Lanes											
Volume (vph)								1,610	1,338	1,152	1,592
PHF								0.96	0.96	0.96	0.96
Lanes								1	1	1	1
Terrain								Level	Level	Level	Level
Grade %								0.0%	0.0%	0.0%	0.0%
Grade Length (mi)								0.00	0.00	0.00	0.00
Truck & Bus %								4.0%	4.0%	4.0%	4.0%
RV %								0.0%	0.0%	0.0%	0.0%
E_T							1.5	1.5	1.5	1.5	1.5
E_R							1.2	1.2	1.2	1.2	1.2
f_{HV}							0.962	0.980	0.980	0.980	0.980
f_P								1.00	1.00	1.00	1.00
Flow (pcph)								1,710	1,422	1,224	1,692
Flow Rate (pcphpl)								1,710	1,422	1,224	1,692
Operations in Express Lanes											
FFS								70	70	70	70
Capacity (pcph)								1,750	1,750	1,750	1,750
v/c ratio								0.98	0.81	0.70	0.97
On Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
On Ramp Roadway Operations											
Ramp Type											
Ramp Speed (mph)											
Ramp Capacity (pcph)											
Ramp v/c ratio											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 No Sub-Area 4
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Off Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
Off Ramp Roadway Operations											
Ramp Type											
Ramp Speed											
Ramp Capacity (pcph)											
Ramp v/c ratio											
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps											
Up Type											
Up Distance											
Up Flow (pcph)											
Down Type											
Down Distance											
Down Flow (pcph)											
Merge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FM} (Eqn 13-3)											
P_{FM} (Eqn 13-4)											
P_{FM} (Eqn 13-5)											
P_{FM}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
v_{R12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 No Sub-Area 4
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave

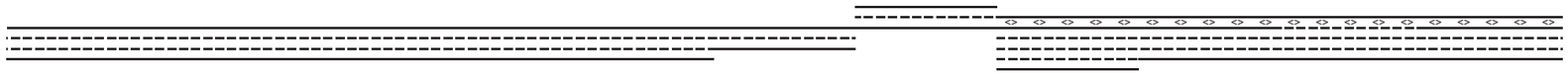
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<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 No Sub-Area 4
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Diverge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FD} (Eqn 13-9)											
P_{FD} (Eqn 13-10)											
P_{FD} (Eqn 13-11)											
P_{FD}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											
On Ramp to Off Ramp Flow Rate for Weave Segments											
On to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to Off Flow (pcph)											
On Ramp to Mainline Flow Rate for Weave Segments											
On to ML Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to ML Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 No Sub-Area 4
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Mainline to Off Ramp Flow Rate for Weave Segments											
ML to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
ML to Off Flow (pcph)											
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segm											
GP to GP Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
GP to GP Flow (pcph)											

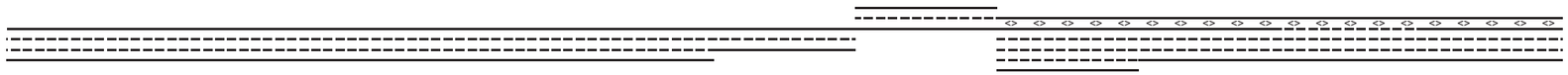
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<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 No Sub-Area 4
Time Period: AM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

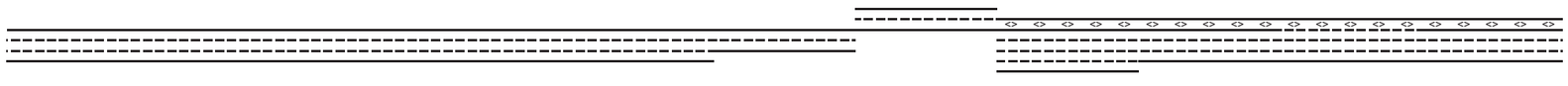
<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Weave Segment Operations											
Type											
Length											
Segment Lanes											
Weave Lanes											
Weave Flow (pcph)											
Non-Weave Flow											
Segment Flow											
Max Weave Length											
Length Check											
Ideal Weave Capacity											
f_{HV}											
f_P											
Capacity Condition 1											
Capacity Condition 2											
v/c ratio											
Interchange Density											
Lane Changes On to ML											
Lane Changes ML to Off											
Lane Changes On to Off											
Min Lane Change Rate											
Weave LC Rate											
Non-Weave LC Rate 1											
Non-Weave LC Rate 2											
Non-Weave LC Rate 3											
Segment LC Rate											
Weave Intensity Factor											
Weave Speed											
Non-Weave Speed											
Segment Speed											
Density											
LOS											
Leisch Method for Weaving											
Balanced?											
Weaving GP Lanes											
Weaving Length											
Summarize Segment Operations											
Segment v/c ratio	0.80	0.78	0.80	0.78	0.79	1.07		0.76	0.59	0.51	0.70
Segment Density	30.0	29.0	29.9	28.9	29.3	-		27.7	20.5	17.5	25.2
Segment LOS	D	D	D	D	D	F		D	C	B	C
Over Capacity						Entering GP Lanes					

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 No Sub-Area 4 Project
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



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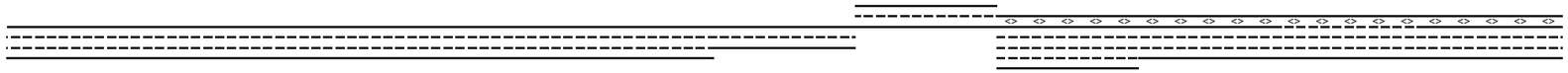
<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Freeway Segment											
Type	Basic	Basic	Basic	Basic	Basic	Basic		Basic	Basic	Basic	Basic
Length (ft)											
Accel Length											
Decel Length											
Mainline Volume	3,150	3,690	3,770	3,690	3,780	3,630		8,182	5,104	4,544	6,144
On Ramp Volume											
Off Ramp Volume											
Express Lane Volume								1,558	1,276	1,136	1,536
EL On Ramp Volume											
EL Off Ramp Volume											
Flow Rate in Entering General Purpose Lanes (GP)											
Volume (vph)	3,150	3,690	3,770	3,690	3,780	3,630		6,623	3,828	3,408	4,608
PHF	0.96	0.96	0.96	0.96	0.96	0.96		0.96	0.96	0.96	0.96
Lanes	3	3	3	3	3	2		4	3	3	3
Terrain	Level	Level	Level	Level	Level	Level		Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Truck & Bus %	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%		4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2		1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971	0.971	0.971		0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Flow (pcph)	3,380	3,959	4,045	3,959	4,056	3,895		7,037	4,067	3,621	4,896
Flow (pcphpl)	1,127	1,320	1,348	1,320	1,352	1,947		1,759	1,356	1,207	1,632
Free Flow Speed in Entering GP Lanes											
Lane Width (ft)	12	12	12	12	12	12		12	12	12	12
Shoulder Width	5	5	5	5	5	5		5	5	5	5
TRD											
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
f_{LC}	0.1	0.1	0.1	0.1	0.1	0.6		0.2	0.1	0.1	0.1
Calculated FFS	75.3	75.3	75.3	75.3	75.3	74.8		75.2	75.3	75.3	75.3
Measured FFS											
FFS Curve	70	70	70	70	70	70		70	70	70	70
Operations in Entering GP Lanes											
Capacity (pcph)	7,200	7,200	7,200	7,200	7,200	4,800		9,600	7,200	7,200	7,200
v/c ratio	0.47	0.55	0.56	0.55	0.56	0.81		0.73	0.56	0.50	0.68
Speed (mph)	70.0	69.8	69.7	69.8	69.7	63.5		66.4	69.7	70.0	67.8
Density (pcphpl)	16.1	18.9	19.3	18.9	19.4	30.7		26.5	19.4	17.2	24.1
LOS	B	C	C	C	C	D		D	C	B	C
Operations for Segment GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 No Sub-Area 4 Project
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



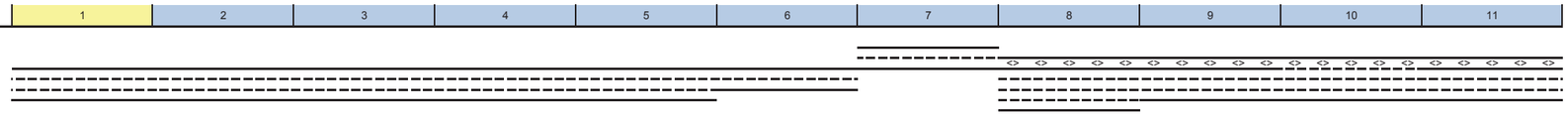
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<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Speed (mph)											
Density (pcphpl)											
LOS											
Operations for Exiting GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											
Speed (mph)											
Density (pcphpl)											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 No Sub-Area 4 Project
Time Period: PM



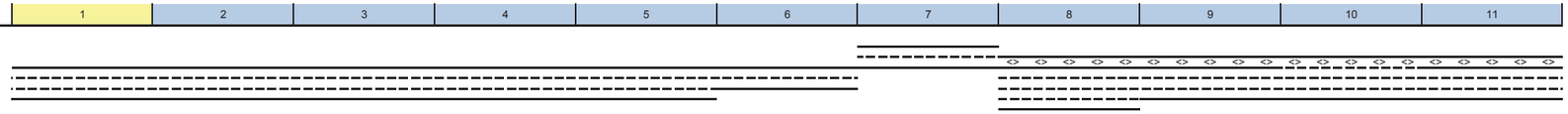
Key

<> Express Lane (HOV)

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Flow Rate in Express Lanes											
Volume (vph)								1,558	1,276	1,136	1,536
PHF								0.96	0.96	0.96	0.96
Lanes								1	1	1	1
Terrain								Level	Level	Level	Level
Grade %								0.0%	0.0%	0.0%	0.0%
Grade Length (mi)								0.00	0.00	0.00	0.00
Truck & Bus %								4.0%	4.0%	4.0%	4.0%
RV %								0.0%	0.0%	0.0%	0.0%
E_T							1.5	1.5	1.5	1.5	1.5
E_R							1.2	1.2	1.2	1.2	1.2
f_{HV}							0.962	0.980	0.980	0.980	0.980
f_P								1.00	1.00	1.00	1.00
Flow (pcph)								1,656	1,356	1,207	1,632
Flow Rate (pcphpl)								1,656	1,356	1,207	1,632
Operations in Express Lanes											
FFS								70	70	70	70
Capacity (pcph)								1,750	1,750	1,750	1,750
v/c ratio								0.95	0.77	0.69	0.93
On Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
On Ramp Roadway Operations											
Ramp Type											
Ramp Speed (mph)											
Ramp Capacity (pcph)											
Ramp v/c ratio											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 No Sub-Area 4 Project
Time Period: PM



Key

<> Express Lane (HOV)

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Off Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
Off Ramp Roadway Operations											
Ramp Type											
Ramp Speed											
Ramp Capacity (pcph)											
Ramp v/c ratio											
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps											
Up Type											
Up Distance											
Up Flow (pcph)											
Down Type											
Down Distance											
Down Flow (pcph)											
Merge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FM} (Eqn 13-3)											
P_{FM} (Eqn 13-4)											
P_{FM} (Eqn 13-5)											
P_{FM}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
v_{R12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 No Sub-Area 4 Project
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave

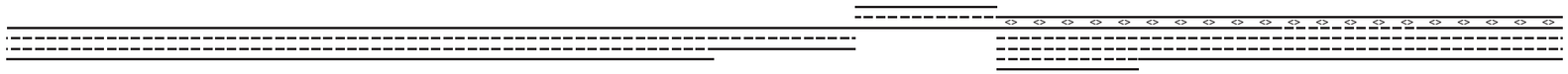
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<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 No Sub-Area 4 Project
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



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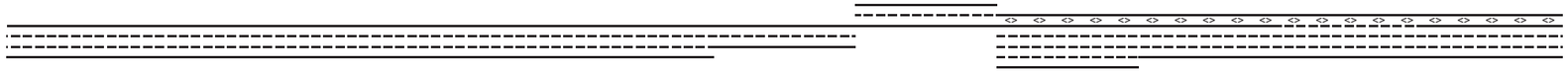
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Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Diverge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FD} (Eqn 13-9)											
P_{FD} (Eqn 13-10)											
P_{FD} (Eqn 13-11)											
P_{FD}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											
On Ramp to Off Ramp Flow Rate for Weave Segments											
On to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to Off Flow (pcph)											
On Ramp to Mainline Flow Rate for Weave Segments											
On to ML Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to ML Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 No Sub-Area 4 Project
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



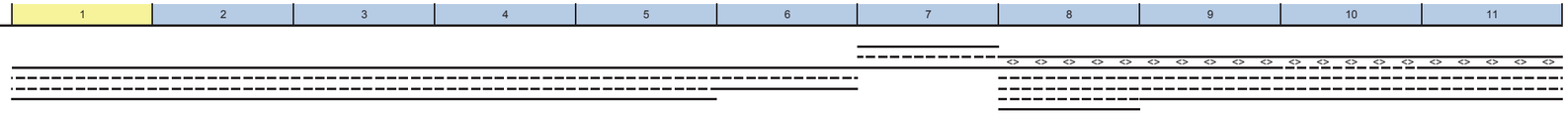
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<> Express Lane (HOV)

Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Mainline to Off Ramp Flow Rate for Weave Segments											
ML to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
ML to Off Flow (pcph)											
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segm											
GP to GP Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
GP to GP Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 EB, I-80 EB

Alternative: 2040 No Sub-Area 4 Project
Time Period: PM



Key

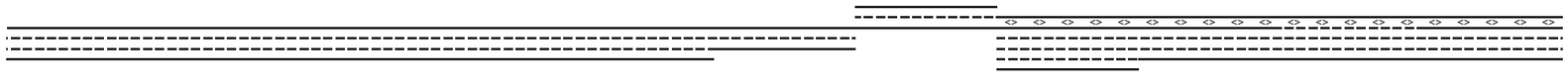
<> Express Lane (HOV)

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 EB between Richmond Pkwy and Harbour Way	I-580 EB between Harbour Way and Marina Bay Pkwy	I-580 EB between Marina Bay Pkwy and Regatta Blvd	I-580 EB between Regatta Blvd and Bayview Ave	I-580 EB between Bayview Ave and Central Ave	I-580 EB between Central Ave and I-80		I-80 EB at Gilman Street Overpass	I-80 EB between Carlson Blvd and Portrero Ave	I-80 EB between Portrero Ave and Cutting Blvd	I-80 EB between Cutting Blvd and Macdonald Ave
Weave Segment Operations											
Type											
Length											
Segment Lanes											
Weave Lanes											
Weave Flow (pcph)											
Non-Weave Flow											
Segment Flow											
Max Weave Length											
Length Check											
Ideal Weave Capacity											
f_{HV}											
f_P											
Capacity Condition 1											
Capacity Condition 2											
v/c ratio											
Interchange Density											
Lane Changes On to ML											
Lane Changes ML to Off											
Lane Changes On to Off											
Min Lane Change Rate											
Weave LC Rate											
Non-Weave LC Rate 1											
Non-Weave LC Rate 2											
Non-Weave LC Rate 3											
Segment LC Rate											
Weave Intensity Factor											
Weave Speed											
Non-Weave Speed											
Segment Speed											
Density											
LOS											
Leisch Method for Weaving											
Balanced?											
Weaving GP Lanes											
Weaving Length											
Summarize Segment Operations											
Segment v/c ratio	0.47	0.55	0.56	0.55	0.56	0.81		0.73	0.56	0.50	0.68
Segment Density	16.1	18.9	19.3	18.9	19.4	30.7		26.5	19.4	17.2	24.1
Segment LOS	B	C	C	C	C	D		D	C	B	C
Over Capacity											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 No Sub-Area 4
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Freeway Segment											
Type	Basic	Basic	Basic	Basic	Basic	Basic		Basic	Basic	Basic	Basic
Length (ft)											
Accel Length											
Decel Length											
Mainline Volume	4,460	4,820	5,320	5,240	5,370	4,690		7,148	4,136	3,720	4,768
On Ramp Volume											
Off Ramp Volume											
Express Lane Volume								1,362	1,034	930	1,192
EL On Ramp Volume											
EL Off Ramp Volume											
Flow Rate in Entering General Purpose Lanes (GP)											
Volume (vph)	4,460	4,820	5,320	5,240	5,370	4,690		5,787	3,102	2,790	3,576
PHF	0.96	0.96	0.96	0.96	0.96	0.96		0.96	0.96	0.96	0.96
Lanes	3	3	3	3	3	2		4	3	3	3
Terrain	Level	Level	Level	Level	Level	Level		Level	Level	Level	Level
Grade %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
Grade Length (mi)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
Truck & Bus %	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%		4.0%	4.0%	4.0%	4.0%
RV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
E_T	1.5	1.5	1.5	1.5	1.5	1.5		1.5	1.5	1.5	1.5
E_R	1.2	1.2	1.2	1.2	1.2	1.2		1.2	1.2	1.2	1.2
f_{HV}	0.971	0.971	0.971	0.971	0.971	0.971		0.980	0.980	0.980	0.980
f_P	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Flow (pcph)	4,785	5,171	5,708	5,622	5,762	5,032		6,148	3,296	2,964	3,800
Flow (pcphpl)	1,595	1,724	1,903	1,874	1,921	2,516		1,537	1,099	988	1,267
Free Flow Speed in Entering GP Lanes											
Lane Width (ft)	12	12	12	12	12	12		12	12	12	12
Shoulder Width	5	5	5	5	5	5		5	5	5	5
TRD											
f_{LW}	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
f_{LC}	0.1	0.1	0.1	0.1	0.1	0.6		0.2	0.1	0.1	0.1
Calculated FFS	75.3	75.3	75.3	75.3	75.3	74.8		75.2	75.3	75.3	75.3
Measured FFS											
FFS Curve	70	70	70	70	70	70		70	70	70	70
Operations in Entering GP Lanes											
Capacity (pcph)	7,200	7,200	7,200	7,200	7,200	4,800		9,600	7,200	7,200	7,200
v/c ratio	0.66	0.72	0.79	0.78	0.80	1.05		0.64	0.46	0.41	0.53
Speed (mph)	68.2	66.8	64.3	64.7	64.0	-		68.7	70.0	70.0	69.9
Density (pcphpl)	23.4	25.8	29.6	29.0	30.0	-		22.4	15.7	14.1	18.1
LOS	C	C	D	D	D	F		C	B	B	C
Operations for Segment GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 No Sub-Area 4
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Speed (mph)											
Density (pcphpl)											
LOS											
Operations for Exiting GP Lanes											
Flow (pcph)											
Lanes	3	3	3	3	3	2		4	3	3	3
Capacity (pcph)											
v/c ratio											
Flow Rate (pcphpl)											
Speed (mph)											
Density (pcphpl)											
LOS											

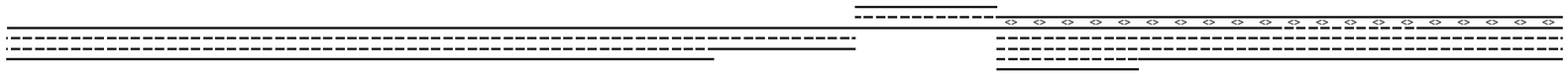
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<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 No Sub-Area 4
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



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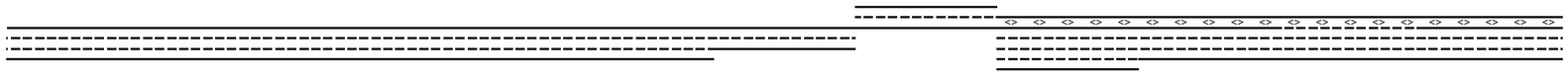
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Flow Rate in Express Lanes											
Volume (vph)								1,362	1,034	930	1,192
PHF								0.96	0.96	0.96	0.96
Lanes								1	1	1	1
Terrain								Level	Level	Level	Level
Grade %								0.0%	0.0%	0.0%	0.0%
Grade Length (mi)								0.00	0.00	0.00	0.00
Truck & Bus %								4.0%	4.0%	4.0%	4.0%
RV %								0.0%	0.0%	0.0%	0.0%
E_T							1.5	1.5	1.5	1.5	1.5
E_R							1.2	1.2	1.2	1.2	1.2
f_{HV}							0.962	0.980	0.980	0.980	0.980
f_P								1.00	1.00	1.00	1.00
Flow (pcph)								1,447	1,099	988	1,267
Flow Rate (pcphpl)								1,447	1,099	988	1,267
Operations in Express Lanes											
FFS								70	70	70	70
Capacity (pcph)								1,750	1,750	1,750	1,750
v/c ratio								0.83	0.63	0.56	0.72
On Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
On Ramp Roadway Operations											
Ramp Type											
Ramp Speed (mph)											
Ramp Capacity (pcph)											
Ramp v/c ratio											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 No Sub-Area 4
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



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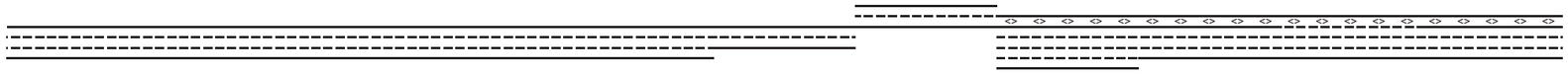
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Off Ramp Flow Rate											
Volume (vph)											
PHF											
Lanes											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
Flow (pcph)											
Flow Rate (pcphpl)											
Off Ramp Roadway Operations											
Ramp Type											
Ramp Speed											
Ramp Capacity (pcph)											
Ramp v/c ratio											
Adjacent Ramp for Three-Lane Mainline Segments with One-Lane Ramps											
Up Type											
Up Distance											
Up Flow (pcph)											
Down Type											
Down Distance											
Down Flow (pcph)											
Merge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FM} (Eqn 13-3)											
P_{FM} (Eqn 13-4)											
P_{FM} (Eqn 13-5)											
P_{FM}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
v_{R12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 No Sub-Area 4
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave



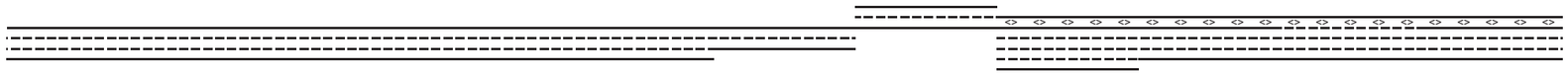
Key

<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 No Sub-Area 4
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11



Key

<> Express Lane (HOV)

Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Diverge Influence Area Operations											
Effective v_P (pcph)											
Up Ramp L_{EQ}											
Down Ramp L_{EQ}											
P_{FD} (Eqn 13-9)											
P_{FD} (Eqn 13-10)											
P_{FD} (Eqn 13-11)											
P_{FD}											
v_{12} (pcph)											
v_3 (pcph)											
v_{34} (pcph)											
v_{12a} (pcph)											
Speed Index											
Area Speed											
Outer Lanes Volume											
Outer Lanes Speed											
Segment Speed											
v/c ratio											
Density											
LOS											
On Ramp to Off Ramp Flow Rate for Weave Segments											
On to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to Off Flow (pcph)											
On Ramp to Mainline Flow Rate for Weave Segments											
On to ML Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
On to ML Flow (pcph)											

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 No Sub-Area 4
Time Period: PM

Location	1	2	3	4	5	6	7	8	9	10	11
Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Mainline to Off Ramp Flow Rate for Weave Segments											
ML to Off Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
ML to Off Flow (pcph)											
General Purpose Lanes to General Purpose Lanes Flow Rate for Weave Segm											
GP to GP Volume (vph)											
PHF											
Terrain											
Grade %											
Grade Length (mi)											
Truck & Bus %											
RV %											
E_T											
E_R											
f_{HV}											
f_P											
GP to GP Flow (pcph)											

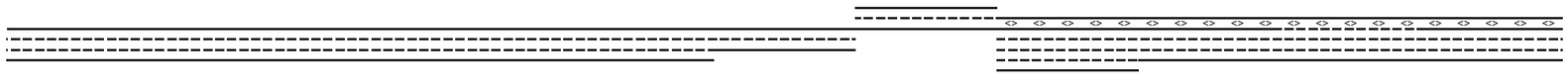
Key

<> Express Lane (HOV)

Project: Richmond Bayshore Specific Plan
Freeway Corridor: I-580 WB, I-80 WB

Alternative: 2040 No Sub-Area 4
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Location	1	2	3	4	5	6	7	8	9	10	11



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Name	I-580 WB between Richmond Pkwy and Harbour Way	I-580 WB between Harbour Way and Marina Bay Pkwy	I-580 WB between Marina Bay Pkwy and Regatta Blvd	I-580 WB between Regatta Blvd and Bayview Ave	I-580 WB between Bayview Ave and Central Ave	I-580 WB between Central Ave and I-80		I-80 WB at Gilman Street Overpass	I-80 WB between Carlson Blvd and Portrero Ave	I-80 WB between Portrero Ave and Cutting Blvd	I-80 WB between Cutting Blvd and Macdonald Ave
Weave Segment Operations											
Type											
Length											
Segment Lanes											
Weave Lanes											
Weave Flow (pcph)											
Non-Weave Flow											
Segment Flow											
Max Weave Length											
Length Check											
Ideal Weave Capacity											
f_{HV}											
f_P											
Capacity Condition 1											
Capacity Condition 2											
v/c ratio											
Interchange Density											
Lane Changes On to ML											
Lane Changes ML to Off											
Lane Changes On to Off											
Min Lane Change Rate											
Weave LC Rate											
Non-Weave LC Rate 1											
Non-Weave LC Rate 2											
Non-Weave LC Rate 3											
Segment LC Rate											
Weave Intensity Factor											
Weave Speed											
Non-Weave Speed											
Segment Speed											
Density											
LOS											
Leisch Method for Weaving											
Balanced?											
Weaving GP Lanes											
Weaving Length											
Summarize Segment Operations											
Segment v/c ratio	0.66	0.72	0.79	0.78	0.80	1.05		0.64	0.46	0.41	0.53
Segment Density	23.4	25.8	29.6	29.0	30.0	-		22.4	15.7	14.1	18.1
Segment LOS	C	C	D	D	D	F		C	B	B	C
Over Capacity						Entering GP Lanes					

Appendix E-6
Study Assumptions Memo

FEHR PEERS

FEHR PEERS

DRAFT MEMORANDUM

Date: February 24, 2016

To: Christy Herron, ESA

From: Sam Tabibnia

Subject: Richmond Bay Specific Plan EIR - Study Assumptions for Transportation Analysis

OK14-0039

This memorandum documents our proposed analysis assumptions for the transportation impact analysis of the Richmond Bay Specific Plan EIR, including the project description, trip generation, proposed study intersections, analysis scenarios and parameters, forecasting methodology, treatment of future transportation network improvements, and significance criteria. We would appreciate your review and comments on the information presented in this memorandum before we move forward with the technical analysis.

PROJECT DESCRIPTION

The proposed project would consist of residential, retail, office, and mixed-use developments within the 500-acre Richmond Bay Specific Plan (RBSP) area in the City of Richmond. The specific plan area is divided into four sub-areas as shown on **Figure 1**. The Specific Plan provides the flexibility for a variety of uses and densities within each sub-area. The actual buildout will be consistent with the Specific Plan standards and will depend on future market demand.

The top portion of **Table 1** presents the conceptual buildout of the Specific Plan area by sub-area as envisioned in the Specific Plan document. The Specific Plan would allow a denser development of both residential and non-residential uses than shown in Table 1. In order to present a robust traffic impact analysis in the Draft EIR that would accommodate the various uses and densities that may occur within each sub-area, **Table 1** also presents the net new development program for the EIR Alternative, which is denser than the one envisioned in the Specific Plan. This development program, will be used in the EIR analysis. It would continue to be consistent with the

Specific Plan standards, but would include a higher residential density, and would, therefore, result in a conservatively higher automobile trip generation for RBSP and each sub-area. Based on trip generation sensitivity analysis presented in **Appendix A**, the trip generation for the EIR Alternative would not be exceeded if the Specific plan area would develop with additional residential or non-residential uses than envisioned in the RBSP Conceptual Program.

TABLE 1
RICHMOND BAY SPECIFIC PLAN
LAND USE BY SUB-AREA

Sub-Area	R&D/Business/ Service (Thousand Square Feet)	Retail (Thousand Square Feet)	Residential (Dwelling Units)	Open Space (acres)
Specific Plan Conceptual Program[1]				
Sub-Area 1	1,870	270	1,160	12.8
Sub-Area 2	140	130	1,330	12.4
Sub-Area 3	1,560	0	0	1.4
Sub-Area 4	2,120	320	1,590	7.6
Total	**5,690**	**720**	**4,080**	**34.2**
EIR Alternative[2]				
Sub-Area 1	1,870	270	1,840	12.8
Sub-Area 2	140	130	1,330	12.4
Sub-Area 3	1,560	0	0	1.4
Sub-Area 4	2,120	320	2,530	7.6
Total	**5,690**	**720**	**5,700**	**34.2**

1. Source: Richmond Bay Specific Plan Public Review Draft (October 2015)
2. Developed in consultation with City of Richmond staff and Specific Plan team to represent a higher trip generating alternative.

It is expected that City of Richmond would track the proposed and constructed developments in the RBSP area and each sub-area and their cumulative trip generation. Thus, regardless of the actual development that would occur in each sub-area, the traffic impact analysis completed for the Draft EIR would remain valid as long as the cumulative trip generation for each sub-area and the entire RBSP remain below the trip generation estimated for the Draft EIR and presented in the next section of this memorandum.

TRIP GENERATION

Trip generation refers to the process of estimating the amount of vehicular traffic a project would add to the surrounding roadway system. Buildout of the RBSP would potentially result in a net increase of about 5.6 million square feet of research and development (R&D)/business/service space, 720 thousand square feet of retail, and 5,700 residential units.

The mix of proposed uses in an urban environment is expected to result in higher non-auto trips than typical suburban developments. If vehicle trip reduction in mixed-use dense urban developments such as this is understated, the result can be excessive traffic impacts and related mitigation that can discourage development of otherwise desirable projects or transportation infrastructure that is not sized to the urban setting of the development. The project trip generation estimated in this analysis accounts for the mix of uses, and the urban setting envisioned in the Specific Plan.

Current accepted methodologies, such as the Institute of Transportation Engineers (ITE) Trip Generation methodology, are primarily based on data collected at suburban, single-use, freestanding sites. These defining characteristics limit their applicability to mixed-use or multi-use development projects, such as the RBSP, which is in a dense mixed-use setting. The land use mix, design features, and setting of the Specific Plan would include characteristics that influence travel behavior differently from typical single-use suburban developments. Thus, traditional data and methodologies, such as ITE, would not accurately estimate the project vehicle trip generation. In response to the limitations in the ITE methodology, and to provide a straightforward and empirically validated method of estimating vehicle trip generation at mixed-use developments, the US Environmental Protection Agency (EPA) sponsored a national study of the trip generation characteristics of multi-use sites. Based on travel survey data gathered from 239 mixed-use developments (MXDs) in six major metropolitan regions and correlated with the characteristics of the sites and their surroundings, the MXD methodology estimates the amount of external traffic that a mixed-use development would generate by reducing the ITE-based estimates to account for internal trips and external non-auto trips.

Appendix B describes the MXD methodology, as implemented in the MainStreet tool developed by Fehr & Peers, and its applicability to the RBSP in more detail.

Tables 2 summarize the external automobile trip generation for buildout of RBSP by Sub-Area. The trip generation process starts with the ITE data for each land use category prior to the application of the MXD adjustments. Table 2 presents the following for each Sub-Area:

- Total trip generation based on ITE *Trip Generation Manual* (9th Edition). For each land use category. The following ITE data are used for each land use cateogry:
    - R&D/Business/Service – This land use designation would consist of a variety of non-retail employment uses, such as office, R&D, and/or light industrial. Since office and R&D would represent the highest trip generating uses, the trip generation for this category is estimated using ITE data for general office building (land use category 710) and research and development center (land use category 760) for half of the uses within each sub-area.
    - Retail – The retail uses in the RBSP are expected to be primarily ground-level retail and mostly food-related. Their trip generation is estimated using ITE data for shopping center (land use category 820), which ITE defines as "integrated group of commercial establishments." The data presented by ITE is based on data collected at existing shopping centers, "including neighborhood centers, community center, regional centers, and super regional centers" that can include "non-merchandizing facilities, such as office buildings, movie theaters, restaurants, post offices, and banks, health clubs, and recreational facilities." Thus, the ITE shopping center data would cover the potential retail uses that would be expected in RBSP.
    - Residential – Since the residential uses in RBSP would be multi-family units, their trip generation is estimated using ITE data for apartments (land use category 220).
- Reduction in automobile trip generation as estimated by the MXD methodology, which accounts for trips internal to each Sub-Area and external non-auto trips (walk, bike, and transit trips). The MXD reduction for each Sub-Area ranges between 10 and 34 percent.
- External trips generated by each Sub-Area.

Appendix B presents the detailed trip generation estimation for each Sub-Area. The trip generation estimate is conservative in that it does not account for the following:

- The multi-modal improvements envisioned in the *South Richmond Transportation Connectivity Plan* (SRTCP, July 2015). The trip generation only assumes the current pedestrian, bicycle, and transit connectivity for the Specific Plan area.

TABLE 2
RICHMOND BAY SPECIFIC PLAN
TRIP GENERATION SUMMARY

Sub-Area[1]	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Sub-Area 1							
ITE Estimate	*38,790*	*2,125*	*1150*	*3,275*	*1,618*	*2,656*	*4,274*
MXD+ Adjustments	-7,580	-496	-269	-765	-450	-738	-1,188
Net	*31,210*	*1,629*	*881*	*2,510*	*1168*	*1,918*	*3,086*
Sub-Area 2							
ITE Estimate	*18,650*	*455*	*645*	*1,100*	*921*	*873*	*1,794*
MXD+ Adjustments	-4,410	-144	-205	-349	-306	-291	-597
Net	*14,240*	*311*	*440*	*751*	*615*	*582*	*1,197*
Sub-Area 3							
ITE Estimate	*11,790*	*1,515*	*251*	*1,766*	*271*	*1,407*	*1,678*
MXD+ Adjustments	-1,250	-160	-26	-186	-36	-188	-224
Net	*10,540*	*1,355*	*225*	*1,580*	*235*	*1,219*	*1,454*
Sub-Area 4							
ITE Estimate	*46,320*	*2,408*	*1,477*	*3,885*	*2,002*	*3,075*	*5,077*
MXD+ Adjustments	-9,460	-578	-355	-933	-571	-878	-1,449
Net	*36,860*	*1,830*	*1122*	*2,952*	*1,431*	*2,197*	*3,628*
All Sub-Areas[2]							
ITE Estimate	115,550	6,503	3,523	10,026	4,812	8,011	12,823
Non-Auto Trips							
Internal Non-Auto	17,050	869	580	1,449	1,039	1,555	2,594
External Non-Auto	5,650	509	276	785	324	540	864
Total	22,700	1,378	855	2,233	1,363	2,095	3,458
Auto Trips							
Internal Auto Trips	21,400	974	419	1,393	617	1,202	1,819
External Auto Trips	71,450	4,151	2,249	6,400	2,832	4,714	7,546
Total Auto Trips	**92,850**	**5,125**	**2,668**	**7,793**	**3,449**	**5,916**	**9,365**

1. See Appendix C for detailed trip generation for each Sub-Area.
2. Total external auto reductions using the MXD+ model: Daily = 38% (15% internal non-auto, 5% external non-auto, 19% internal auto), AM Peak Hour = 36% (14% internal non-auto, 8% external non-auto, 14% internal auto), PM Peak Hour = 40% (20% internal non-auto, 6% external non-auto, 14% internal auto)

Source: Fehr & Peers, 2016.

- The transportation demand management (TDM) strategies described in the Specific Plan document that developments would implement

Table 2 also presents the total trips generated by the Specific Plan area. Based on the difference between the application of the MXD Model to the entire Specific Plan area and each individual sub-area, it is estimated that about 20 percent of daily and 15 percent of peak hour trips are trips between the four Sub-Areas. Considering the relatively large size of the Specific Plan area and that the analysis assumes the current transportation network in the Specific Plan Area with minimal pedestrian and bicycle improvements, it is expected that these internal trips would be automobile trips.

Based on the application of the MXD methodology, the Specific Plan area is estimated to generate about 20 percent fewer daily, 22 percent fewer AM peak hour, and 27 percent fewer PM peak hour automobile trips than estimated by the ITE methodology. The buildout of the RBSP is estimated to generate about 92,850 daily, 7,800 AM peak hour, and 9,370 PM peak hour external auto trips. (See Mode Share Comparison discussion on page 13 of this memorandum for a comparison of mode shares in the Specific Plan area with other mixed-use urban areas around the Bay Area).

PROJECT STUDY LOCATIONS AND STUDY SCENARIOS

Fehr & Peers will analyze the impacts of the proposed project at the intersections listed below as shown on **Figure 1** for the AM and PM peak hours. These intersections were selected because the proposed project would substantially increase the traffic volumes at the intersection, either the project or the proposed mitigation measures would reconfigure the intersection, and/or recent planning and environmental documents have identified as operating at or near capacity:

1. Macdonald Avenue/22nd Street
2. Macdonald Avenue/23rd Street
3. Cutting Boulevard/Hoffman Boulevard/I-580 Eastbound Off-Ramp
4. Cutting Boulevard/I-580 Westbound Ramps
5. Cutting Boulevard/Harbour Way South
6. Hoffman Boulevard/Harbour Way South/I-580 Eastbound On-Ramp
7. Wright Avenue/Harbour Way South
8. Cutting Boulevard/Marina Way
20. Cutting Boulevard/I-80 Eastbound Ramps
21. Cutting Boulevard/I-80 HOV Ramps
22. Cutting Boulevard/I-80 Westbound Ramps
23. Cutting Boulevard/San Pablo Avenue
24. Meade Street/Seaver Avenue
25. Seaport Avenue/I-580 Eastbound Ramps/ South 51st Street/Bayview Avenue
26. Carlson Boulevard/Bayview Avenue
27. I-580 Westbound Ramps/Bayview Avenue
28. Carlson Boulevard/I-80 Eastbound Ramps

9. Wright Avenue/Marina Way South
10. Regatta Boulevard/Marina Way South
11. Cutting Boulevard/23rd Street
12. I-580 Westbound Ramps/23rd Street
13. I-580 Eastbound Ramps/23rd Street
14. Meeker Avenue/23rd Street/Marina Bay Pkwy
15. Regatta Boulevard/Marina Bay Parkway
16. Cutting Boulevard/Carlson Boulevard
17. I-580 Westbound Ramps/Juliga Woods Street
18. I-580 Eastbound Ramps/Regatta Boulevard/Meade Street
19. Meade Street/Regatta Boulevard
29. Carlson Boulevard/I-80 Westbound Ramps
30. Carlson Boulevard/Central Avenue
31. Fairmont Avenue/San Pablo Avenue
32. Barrett Avenue/22nd Street*
33. Barrett Avenue/23rd Street*
34. Macdonald Avenue/Harbour Way*
35. Cutting Boulevard/37th Street*
36. Central Avenue/I-580 Eastbound Ramps*
37. Central Avenue/I-580 Westbound Ramps*
38. Central Avenue I-80 Westbound Ramps/ Jacuzzi Street/San Joaquin Street
39. Central Avenue I-80 Eastbound Ramps
40. Central Avenue/San Pablo Avenue*

We have recent (2012-2014) counts[1] at most of the intersections listed above, except the ones marked with an asterisk (*).

We will also analyze the impacts of the proposed project on the following freeway segments, which were selected using the same criteria used to select the study intersections:

1. I-580 between Harbour Way and Marina Bay Parkway
2. I-580 between Marina Bay Parkway and Regatta Boulevard
3. I-580 between Regatta Boulevard and Bayview Avenue
4. I-580 between Bayview Avenue and Central Avenue
5. I-580 between Central Avenue and I-80
6. I-80 between McDonald Avenue and Cutting Boulevard
7. I-80 between Cutting Boulevard and Potrero Avenue
8. I-80 between Potrero Avenue and Carlson Boulevard
9. I-80 at the Gilman Street Overpass

We will complete the impact analysis for the following scenarios:

1. ***Existing Conditions*** – Represents existing conditions with volumes obtained from recent traffic counts and the existing roadway system.

[1] Sources for available counts:
- Intersections 1-4, 16, 20-23, 30, and 31: data collected in November 2014 for the RBSP EIR.
- Intersections 5-10: data collected in March 2013 for the Costa de Oro Residential Development Transportation Impact Assessment.
- Intersections 11-15, 17-19, 24-29: data collected in December 2012 for the Richmond Bay Campus Long Range Development Plan Draft EIR.
- Intersections 38 and 39: data collected in April 2013 for the Central Avenue Residential Development Transportation Impact Assessment.

2. ***Existing Plus Project Conditions*** – Existing conditions plus project-related traffic resulting from the buildout of the RBSP. This scenario assumes that the transportation network serving the Specific Plan area would be the same as Existing Conditions, except as noted in the Transportation Network Improvement subsection on page 10 of this memorandum.
3. ***2040 No Project with Baseline External Transportation Network Conditions*** – Future 2040 conditions with planned population and employment growth, and planned transportation system improvements, for the year 2040. This scenario assumes no traffic growth in the Specific Plan area. Traffic projections were developed using the most recent version of the Contra Costa Transportation Authority (CCTA) Countywide Travel Demand Model[2] as described in the Traffic Forecasting Methodology subsection below.
4. ***2040 Plus Project with Baseline External Transportation Network Conditions*** – 2040 No Project conditions plus project-related traffic resulting from the buildout of the RBSP.
5. ***2040 Plus Project with Modified External Transportation Network (i.e. Mitigated) Conditions*** – This scenario is same as the above scenario and includes various transportation network improvements as proposed in the SRTCP and other documents. This scenario assumes that these improvements, which would mostly improve multi-modal connections between the Specific Plan area and the region, would mitigate the potential significant impacts identified in the project scenarios above because they would reduce the automobile trips generated by the project.

The analysis described above will identify impacts and mitigation measures caused by the development of the Specific Plan area. We will identify the amount of development in the Specific Plan area and/or each Sub-Area that would trigger each significant impact. We will also estimate the fair share contribution of development in Sub-Area 4 to the identified mitigation measures.

ANALYSIS METHODS

For the analysis scenarios noted above, we will analyze the peak hour intersection and freeway operations using the Transportation Research Board's (TRB) *2010 Highway Capacity Manual* method for vehicles, per the January 2013 CCTA *Technical Procedures*. We will also evaluate peak hour signal warrants for the unsignalized intersections using the *Manual of Uniform Traffic Control Devices* (2009) warrant criteria.

[2] The CCTA Model has been used to develop future forecasts and conduct future year analyses for most environmental documents in the City of Richmond, including the General Plan EIR (February 2011), the Richmond Bay Campus Long Range Development Plan EIR (November 2013), and the Richmond Chevron Refinery Modernization Project EIR (March 2014).

TRAFFIC FORECASTING METHODOLOGY

A project of the size, density, and mix of the RBSP is expected to change local and regional travel patterns. Therefore, the traditional methodology of applying isolated project trip generation, distribution, and assignment procedures would not accurately reflect such a project's impact on the surrounding transportation system.

The traffic volume forecasts will be developed using the CCTA Model and existing traffic volumes. The main inputs to the forecasting process are the existing traffic counts and year 2010 and 2040 outputs from the most recent CCTA Model. Thus, the following basic steps were used in developing traffic forecasts for this analysis:

- **Step 1: Develop 2040 No Project (Scenario 3) traffic forecasts.** The most recent version of the CCTA Model, based on Association of Bay Area Government (ABAG) *Projections 2013* (i.e., Plan Bay Area), will serve as the basis for developing AM and PM peak hour intersection turning movement forecasts for the year 2040. We will check, and if necessary modify, the model land use database in the City of Richmond to ensure consistency with City of Richmond General Plan and to reflect recently approved and proposed developments in the vicinity of the Specific Plan area. The 2040 No Project scenario will generally assume the existing land uses in the Specific Plan Area The 2040 No Project scenario will assume the buildout of the Berkeley Global Campus (BGC), which would consist of about five million square feet of R&D space (10,000 employees). We will also check the model transportation network to ensure that the 2040 network accounts for approved and funded transportation improvements.

  Consistent with the CCTA's *Technical Procedures* (2013), the forecasting process will run the 2010 and 2040 models, then using the model produced segment volumes and existing turning movement counts, will estimate 2040 intersection turning movements using the Furness method, which adjusts existing turning movement volumes to reflect increases in roadway segment volumes forecasted by the CCTA Model.[3]

- **Step 2: Estimate project auto trip generation.** As summarized in Tables 2, the MXD methodology was used to estimate the external automobile trip generation for each Subdistrict in the Specific Plan area.

- **Step 3: Develop 2040 Plus Project (Scenario 4) traffic forecasts.** The 2040 No Project CCTA Model land use database will be adjusted to account for the Richmond Bay Specific

[3] Outlined in NCHRP-255, the industry-standard Furness technique is used to estimate projected (future) intersection turning movement volumes based on comparing existing traffic volume counts and the Model results. It uses mathematical formulae to balance roadway segment volumes approaching, and departing from, the intersection and thus balances turning volumes that make sense compared to the existing counts and Model results. This process improves the level of confidence in the forecasted future turning movement volumes.

Plan uses as shown in Table 1. The CCTA Model will be run through the final distribution step. The number of vehicle trips generated by the Specific Plan in the CCTA Model after final distribution will be adjusted to match the number of project automobile trips estimated in Step 2 using MXD and shown in Table 2. The CCTA Model will then run through final assignment. Similar to Step 1, the AM and PM peak-hour roadway segment volumes forecasted by the CCTA Model will be used to develop turning movement forecasts at the study intersections using the Furness method.

As a result, the 2040 project traffic assigned to the street network will be consistent with the trip generation estimates presented in Table 2, and the 2040 Plus Project forecasts would reflect the potential changes in traffic patterns caused by the mix and size of the Richmond Bay Specific Plan.

- **Step 4: Develop Existing Plus Project (Scenario 2) traffic forecasts.** Intersection turning volumes for Existing Plus Project conditions will be estimated by adding the incremental difference between 2040 Plus Project and 2040 No Project conditions to the Existing intersection volumes.
- **Step 5: Develop 2040 Plus Project with Modified External Transportation Network (Scenario 5) traffic forecasts.** Traffic forecasts accounting for the modified external transportation network improvements, as described in the next section, will be developed by using the process described in Steps 2 and 3. We will update the MXD trip generation model and the CCTA Model transportation network to account for these modifications to the transportation network.

TRANSPORTATION NETWORK IMPROVEMENTS

This section lists planned and proposed major transportation network improvements in the vicinity of the Specific Plan Area and their proposed treatment in the EIR.

- ***Assume in 2040 No Project conditions*** (Scenarios 3, 4, and 5 as described on page 7) – The following is an approved improvement that is likely to be implemented by 2040 regardless of the proposed Specific Plan:
    1. *Richmond Ferry Terminal* – New Ferry Terminal at Ford Peninsula with regular ferry service to San Francisco.
- ***Assume in project-only scenarios*** (Scenarios 2, 4, and 5) – The following improvements are within the Specific Plan area and would be needed to accommodate development within the Specific Plan area:
    2. *Marina Way South/Regatta Boulevard intersection* - Realign Marina Way South and Regatta Boulevard so that traffic between the south and the east would not cross the at-grade railroad crossing.
    3. *Eastbound I-580 Ramps/Regatta Boulevard/Meade Street* Interchange – Reconfigure intersection to provide a roundabout.

4. *Meeker Avenue Extension* – Extend Meeker Avenue to the west to connect with Marina Way South. Provide at least pedestrian/bicycle connection through the existing California Department of Public Health campus and connect to Sub-Area 3.

- ***Assume as mitigation measures*** (Scenario 5 only) – The following are improvements that do not have funding and mostly consist of multi-modal improvements proposed in the SRTCP that would encourage non-automobile trips and reduce automobile trips generated by the project. Only the major improvement projects are listed and described. Smaller improvements, such as providing curb extensions at intersections and implementing bicycle facilities that can be accommodated within the current right-of-way without affecting traffic operations, are not included:

5. *Cutting Boulevard* – Eliminate one automobile travel lane in each direction to provide enhanced bicycle facilities and potential transit/HOV lanes.
6. *South 23rd Street/Marina Bay Parkway at I-580 Overpass* – Modify the I-580 overpass by squaring the ramp intersections, reducing automobile lanes from six to four, and adding separated bikeways on each side of roadway.
7. *South 23rd Street/Marina Bay Parkway between Cutting Boulevard and Meeker Avenue* – Reduce automobile lanes from six to four and provide enhanced bicycle facilities, a median, and turn-pockets north and south of the interchange.
8. *Marina Way South between Cutting Boulevard and Hall Avenue* – Eliminate one automobile travel lane in each direction to provide enhanced bicycle facilities.
9. *Harbour Way South between Ford Point and Hoffman Boulevard* – Provide two-way cycletrack on the east side and formalize parking on west side.
10. *Harbour Way South between Hoffman Boulevard and Cutting Boulevard* – Provide one-way separated bikeways, and square the off- and on-ramps.
11. *Harbour Way South/Wright Avenue intersection* – signalize intersection and provide warning lights and gates for the at-grade railroad crossing.
12. *Hoffman Boulevard between Cutting Boulevard and Harbour Way South* – Eliminate one automobile lane and remove parking in the southbound direction, and provide enhanced bicycle facilities.
13. *Hoffman Boulevard/Harbour Way South Intersection* – Eliminate one automobile lane on the eastbound approach, and realign the I-580 Eastbound off-ramp as part of intersection.
14. *Carlson Boulevard between Broadway and Tehama Avenue* – Reduce automobile lanes from four to three and provide enhanced bicycle facilities.
15. *Carlson Boulevard and I-80 Ramps* – Narrow on-ramps to one lane, extend curbs, and remove right-turn slip lane.
16. *Cutting Boulevard/Carlson Boulevard intersection* – Replace existing signal with a roundabout.

17. *Bayview Avenue Overcrossing I-580* – Reduce to two automobile lanes in each direction and improve pedestrian and bicycle facilities.
18. *Bayview Avenue/Carlson Boulevard intersection* – Provide pedestrian crossings on all approaches. Replace northbound slip right-turn with a dedicated right-turn lane
19. *Spring Street between Regatta Boulevard and Cutting Boulevard* – Establish direct pedestrian and bicycle connections between the Regatta Boulevard overpass and Cutting Boulevard.
20. *South 47th Street Overcrossing* – Construct a new bridge over I-580, the UPRR and Carlson Boulevard to connect the Northeast corner of the BGC with a landing north of Carlson Boulevard. The bridge would provide non-motorized access only.
21. *Passenger Rail Service* – If BART implements diesel multiple unit (DMU) commuter rail service along the UP railroad, construct a new in-fill station near South 47th Street with non-motorized access to south of the I-580 freeway.
22. *Bus Service Expansion* – Provide high frequency service (every 15 minutes or better) for 18 hours on weekdays on the primary transit corridors (Cutting Boulevard, Marina Way South, Regatta Boulevard, Carlson Boulevard, Bay View Avenue, and Lark Drive) and lower frequency service (every 20 to 60 minutes) for 18 hours on weekdays on the secondary transit corridors connecting the 4 sub-areas to each other and Richmond Ferry Terminal, BART stations in El Cerrito and Richmond, and Downtown Richmond.
23. *Railway Improvements* – Consolidate/Eliminate the railroad switching yard, and provide a grade-separated viaduct for between Meade Street and Cutting Boulevard, which would improve at-grade connectivity between the four sub-areas and the surrounding areas.

- ***Analyze as Alternative*** – The EIR will analyze the following as alternatives:

24. *Bayview Avenue/Eastbound I-580 Ramps* – Replace the existing eastbound I-580 hook ramps with diamond ramps parallel to the freeway.
25. *South 23rd Street/Marina Bay Parkway I-580 Interchange* – Reconstruct interchange as an "urban diamond" with ramps parallel to the freeway.
26. *Lark Drive* – As constructed by the BGC project, Lark Drive is expected to accommodate transit vehicles, pedestrians and bicyclists only, allowing automobile access will be analyzed as an alternative.

MITIGATION MEASURE EFFECTIVENESS

Table 3 compares the external automobile trips generated by the buildout of the RBSP after implementation of all the mitigation measures described above (Projects #5 thru #23). Based on the results of the CCTA Model, which was primarily used to estimate the effectiveness of transit improvements, and refining the MXD Model, which was used to estimate the effectiveness of

pedestrian and bicycle improvements, it is estimated that the implementation of the mitigation measures would further reduce external automobile trips generated by the buildout of the RBSP by about 23 percent for daily trips, 27 percent for AM peak hour trips, and 29 percent for PM peak hour trips. This estimate does not account for the TDM strategies, as described in the Specific Plan document that developments would implement. These proposed mitigation measures would similarly reduce the automobile trips generated by the existing areas surrounding the Specific Plan area.

TABLE 3
RICHMOND BAY SPECIFIC PLAN
MITIGATED TRIP GENERATION SUMMARY

All Sub-Areas	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
External Auto Trips[1]	**71,450**	**4,151**	**2,249**	**6,400**	**2,832**	**4,714**	**7,546**
External Non-Auto Trips (Mitigations) [2]	-16,180	-1,103	-597	-1,700	-819	-1,361	-2,180
Mitigated External Auto Trips	**55,270**	**3,048**	**1,652**	**4,700**	**2,013**	**3,353**	**5,366**

1. See Table 2 for detail.
2. Based on application of CCTA Model and MXD Model.

Source: Fehr & Peers, 2016.

Considering that many of the mitigation measures described above would prioritize non-automobile modes over automobile modes, such as converting an automobile lane to a protected bicycle facility, many of the mitigation measures would result in reduced automobile capacity on the surrounding roadways. Although, the mitigation measures would reduce automobile trips, it is expected that the additional traffic generated by the project combined with the reduction in roadway capacity caused by the mitigation measures together would result in significant impacts on intersection operations at several locations. These impacts would most likely be identified as significant and unavoidable because no additional automobile capacity can be provided.

MODE SHARE COMPARISON

American Community Survey (ACS) data was used to check the reasonability of the MXD model results presented above. **Table 4** compares the mode share for both residents and workers for

various mixed-use urban areas around the Bay Area with the mode share estimated for the RBSP project by the MXD Model.

TABLE 4
MODE SHARE COMPARISON

Travel Mode	American Community Survey[1]				RBSP Project[2]	
	Downtown San Francisco	Downtown Berkeley	Emeryville	South Richmond	No Mitigations	Project Plus Mitigations[3]
Auto	34%	52%	83%	89%	80%	66%
Non-Auto	64%	48%	17%	11%	20%	34%

1. American Community Survey (2010 5-year estimates)
2. Based on results of the MXD Model (see Table 2 and 3)
3. Mitigation measures are listed starting on page 11 of this memorandum.
Source: Fehr & Peers, 2016.

SIGNIFICANCE CRITERIA

Significance criteria describe the thresholds of significance used to determine if the proposed project would cause a significant impact. The following thresholds of significance are based on guidance provided in the 2030 General Plan, which is consistent with the *Proposal for Adoption West County Action Plan for Routes of Regional Significance* (December 2014)[4]. A significant traffic-related impact would occur if:

- The project would conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections,

[4] The West Contra Costa County Transportation Advisory Committee (WCCTAC) is the designated regional transportation planning committee for West Contra Costa County and includes the City of Richmond. The WCCTAC regularly updates the West Contra Costa Action Plan for Routes of Regional Significance. The latest Action Plan was proposed in December 2014 and has not been adopted yet. The Action Plan assesses transportation issues within West Contra Costa County and outlines a recommended package of goals, objectives and actions for addressing those issues, including establishing Multi-modal Traffic Service Objectives (MTSOs) for designated Routes of Regional Significance. The Route of Regional Significance near the project are I-80, I-580, 23rd Street, Carlson Boulevard, Central Avenue, and San Pablo Avenue. The proposed 2014 Action Plan proposes to eliminate Cutting Boulevard and Macdonald as Routes of Regional Significance.

streets, highways and freeways, pedestrian and bicycle paths, and mass transit. A significant impact ***could*** be identified:

- If a signalized intersection is projected to operate within expected delay ranges (i.e., LOS D or better with an average control delay of equal to or less than 55 seconds per vehicle) without the project and the project is expected to cause the facility to operate at an unacceptable LOS (LOS E or F);
- If an intersection is projected to operate at or over capacity (i.e., LOS E or F) without the project, and the project is expected to increase the average control delay by more than 5 seconds or deteriorates from LOS E to LOS F; or
- If the operations of an unsignalized study intersection is projected to decline with the addition of project traffic, and if the installation of a traffic signal based on the *Manual on Uniform Traffic Control Devices* (MUTCD) Peak Hour Signal Warrant (Warrant 3) would be warranted.

For intersections that meet the above criteria, capacity enhancing measures that do not degrade other modes of travel would be prioritized, including upgrading signal equipment, extending left-turn pocket storage, providing non-motorized facilities to reduce vehicular demand, enhancing transit access, or implementing other transportation demand management strategies.

- On freeway segments, the project would:
  - I-580: Cause a segment to degrade from LOS E or better to LOS F or increase peak hour volume by five percent or more for a segment already operating at LOS F.
  - I-80: Increase peak hour volume by five percent or more for a segment already operating at LOS F.
- The project would conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads and highways:
- The project substantially increases traffic hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment);
- The project results in inadequate emergency access;
- The project conflicts with adopted policies, plans, or programs regarding public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities;
- A pedestrian, bicycle or transit impact is considered significant if it would:

- Disrupt existing facilities;
- Interfere with planned facilities; or
- Create inconsistencies with adopted system plans, guidelines, policies, or standards.

NEXT STEPS

We appreciate your time to review and comment on assumptions presented in this memorandum. Please contact Sam with any questions.

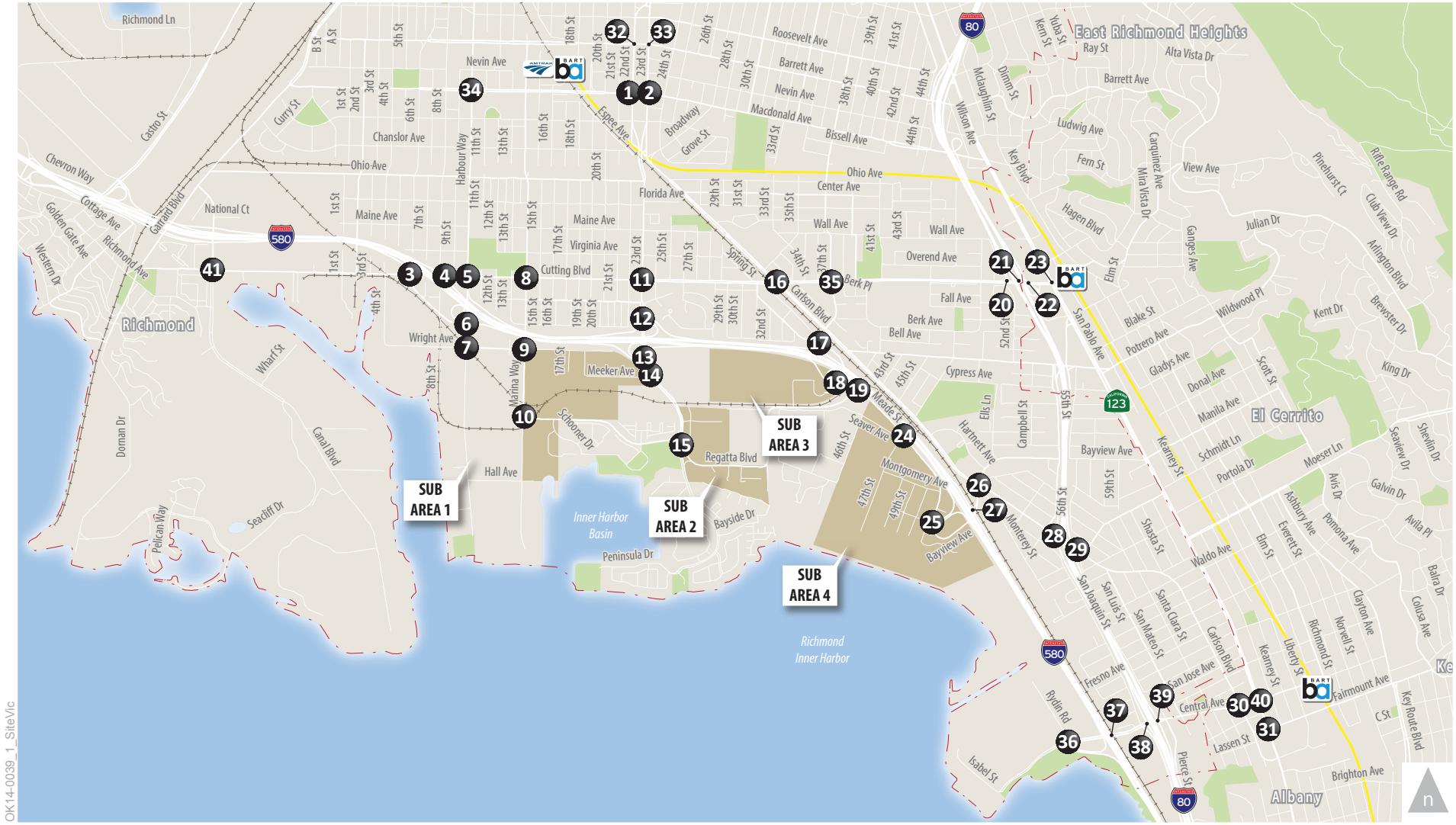
Attachments:

Figure 1 – Project Site Vicinity and Study Locations

Appendix A – Trip Generation Sensitivity

Appendix B – MXD Methodology

Appendix B – Detailed Trip Generation by Sub-Area



OK14-0039_1_SiteVic

LEGEND

(#) Study Intersection

Railroad

Figure 1

Project Site Vicinity

APPENDIX A – TRIP GENERATION SENSITIVITY

Land Use Alternatives	Land Uses			Trip Generation (External Auto Trips)						
	R&D/ Business (KSF)	Retail (KSF)	Residential (DU)	Daily	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
RBSP Conceptual Program	5,690	720	4,080	64,200	3,940	1,980	5,920	2,460	4,500	6,960
Residential Alternative	4,240	660	6,280	67,400	3,210	2,420	5,630	2,810	3,950	6,760
Non-Residential Alternative	7,370	770	2,410	63,600	4,830	1,670	6,500	2,250	5,250	7,500
EIR Alternative	***5,690***	***720***	***5,700***	***71,500***	***4,150***	***2,250***	***6,400***	***2,830***	***4,720***	***7,550***

APPENDIX B – MXD METHODOLOGY

Current accepted methodologies, such as the Institute of Transportation Engineers (ITE) T*rip Generation* methodology, are primarily based on data collected at suburban, single-use, freestanding sites. These defining characteristics limit their applicability to mixed-use or multi-use development projects. The land use mix, design features, and setting of urban mixed-use developments include characteristics that influence travel behavior differently from typical single-use suburban developments. Thus, traditional data and methodologies, such as ITE, would not accurately estimate their vehicle trip generation. In response to the limitations in the ITE methodology, and to provide a straightforward and empirically validated method of estimating vehicle trip generation at mixed-use developments, the US Environmental Protection Agency (EPA) sponsored a national study of the trip generation characteristics of multi-use sites. Travel survey data was gathered from 239 mixed-use developments (MXDs) in six major metropolitan regions, and correlated with the characteristics of the sites and their surroundings. The findings indicate that the amount of external traffic generated is affected by a wide variety of factors, each pertaining to one or more of the following characteristics:

- **The relative numbers of residents and jobs on the site** – the better the site jobs/ housing balance, the greater the proportion of commute trips that remain internal.
- **The amount of retail and service use on the site relative to the number of residences** – the greater the degree to which retail and service opportunities match the needs generated by site residents, the greater the internalization of household-generated shopping, personal services and entertainment travel.
- **The amount of retail and service use relative to the number of employees** – the better the balance of employee-oriented retail and service opportunities, the greater the internal capture of lunchtime and after-work dining, shopping and errands by site employees.
- **The overall size of the development** – the larger the scale of the development in terms of acreage and total amounts of residential and commercial use, the greater the likelihood that travel destinations can be satisfied within the site as a whole.
- **The density of development** – the greater the concentration of dwellings and commercial space per acre, the greater the likelihood that the interacting land uses will be near enough together to encourage walking or short-distance internal driving.

- **The internal connectivity for walking or driving among different activities** – measured in terms of the ratio of intersections to total land area within the site directly influences trip internalization and the number of trips made by walking instead of driving.
- **The availability of transit** – the greater the number of jobs within a reasonable travel time via transit, the greater the share of travel likely to occur by transit, and the lower the traffic generation.
- **The number of convenient trip destinations within the immediate area** – the number of retail and other jobs in neighborhoods immediately surrounding the multi-use site reduces the amount of walking to/from the site and reduce traffic generation.

These characteristics were related statistically to the trip behavior observed at the study development sites using Hierarchical Linear Modeling (HLM) techniques. This quantified relationships between characteristics of the MXDs and the likelihood that trips generated by those MXDs will stay internal and/or use modes of transportation other than the private vehicle. These statistical relationships produced equations, known as the EPA MXD model, that allows predicting external vehicle trip reduction as a function of the MXD characteristics. Applying the external vehicle trip reduction percentage to "raw trips", as predicted by ITE, produces an estimate for the number of vehicle trips traveling in or out of the site.

Validation of MXD Model

Since the conclusion of the EPA sponsored study, Fehr & Peers has been actively enhancing the MXD model to improve sensitivity to various site characteristics, improve peak hour performance, and continue to validate the model against MXDs where data is available.

A set of 27 independent MXD sites across the country that were not included in the initial model development have been tested to validate the model. These sites represent locations where it is expected that traditional data and methodologies, such as ITE, would not accurately estimate the project vehicle trip generation. **Table A-1** presents the performance of the MXD model against ITE and ITE internalization procedures.

Based on all statistical measurements, the MXD model performs better than the ITE recommended procedures for these types of sites.

TABLE B-1
MXD MODEL
VALIDATION STATISTICS COMPARISON

Validation Statistic	ITE raw	ITE with Internalization	MXD Model
Daily			
Average Model Error[1]	28%	16%	**2%**
% RMSE[2]	40%	27%	**17%**
R-Squared[3]	0.77	0.89	**0.96**
AM Peak Hour			
Average Model Error	54%	49%	**12%**
% RMSE	54%	53%	**21%**
R-Squared	0.81	0.81	**0.97**
PM Peak Hour			
Average Model Error	49%	35%	**4%**
% RMSE	64%	49%	**15%**
R-Squared	0.40	0.65	**0.97**

1. Average model error measures the difference between the estimated trip generation and the counted trip generation of the 28 survey sites.
2. RMSE stands for percent root mean squared error is a demand assessment of performance of transportation models in that it does not apply average that would allow over-estimates and under-estimates to cancel one another out and it penalizes proportionally more for large errors. A % RMSE of less than 40% is generally considered acceptable in transportation modeling.
3. R-squared is a statistical measure that indicates, in this case, the degree to which each method explains the variation in trip generation among the 28 survey sites. A R-Squared value closer to 1.0 indicates that the method fully explains the variation in trip generation amongst the survey sites and would be suitable to be used for that set of site types.

Source: Fehr & Peers, 2015.

The MXD model has been approved for use by the EPA[5]. It has also been peer-reviewed in the ASCE Journal of Urban Planning and Development[6], peer-reviewed in a 2012 TRB paper evaluating various smart growth trip generation methodologies[7], recommended by SANDAG for use on mixed-use smart growth developments[8], promoted in an American Planning Association (APA) Planning Advisory Service (PAS)[9] which recommended it for evaluating traffic generation of mixed-use and other forms of smart growth, and has been used successfully in multiple certified EIRs in California, including environmental documents for Broadway Valdez and Coliseum Area Specific Plans in Oakland, and Treasure Island, Candlestick Point/Hunters Point, and Park Merced in San Francisco.

[5] Trip Generation Tool for Mixed-Use Developments (2012). www.epa.gov/dced/mxd_tripgeneration.html

[6] "Traffic Generated by Mixed-Use Developments—Six-Region Study Using Consistent Built Environmental Measures." Journal of Urban Planning and Development, 137(3), 248–261.

[7] Shafizadeh, Kevan et al. "Evaluation of the Operation and Accuracy of Available Smart Growth Trip Generation Methodologies for Use in California". Presented at 91st Annual Meeting of the Transportation Research Board, Washington, D.C., 2012.

[8] SANDA`G Smart Growth Trip Generation and Parking Study. http://www.sandag.org/index.asp?projectid=378&fuseaction=projects.detail

[9] Walters, Jerry et al. "Getting Trip Generation Right – Eliminating the Bias Against Mixed Use Development". American Planning Association. May 2013.

APPENDIX C – DETAILED TRIP GENERATION BY SUB-AREA

TABLE C-1
SUB-AREA 1 TRIP GENERATION

Land Use	ITE Code	Units[1]	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
R&D	760[2]	940 KSF	6,450	757	155	912	127	720	847
Office	710[3]	930 KSF	7,150	1,003	136	1,139	190	930	1,120
Retail	820[4]	270 KSF	12,950	177	109	286	559	607	1,166
Residential	220[5]	1840 DU	12,240	188	750	938	742	399	1,141
		Subtotal	*38,790*	*2,125*	*1150*	*3,275*	*1,618*	*2,656*	*4,274*
MXD+ Trip Adjustments[6]			-7,580	-496	-269	-765	-450	-738	-1,188
Net New Project Trips			**31,210**	**1,629**	**881**	**2,510**	**1,168**	**1,918**	**3,086**

1. DU = dwelling unit. KSF = 1,000 square feet
2. ITE Trip Generation (9th Edition) land use category 760 - Research and Development Center (Peak Hour AM & PM):
   Daily: LN(T) = 0.83*LN(X)+3.09
   AM Peak Hour: LN(T) = 0.87*LN(X)+0.86 (83% in, 17% out)
   PM Peak Hour: LN(T) = 0.83*LN(X)+1.06 (15% in, 85% out)
3. ITE Trip Generation (9th Edition) land use category 710 - General Office Building (Peak Hour, AM & PM):
   Daily: LN(T) = 0.76*LN(X)+3.68
   AM Peak Hour: LN(T) = 0.80*LN(X)+1.57 (88% in, 12% out)
   PM Peak Hour: T = 1.12*(X)+78.45 (17% in, 83% out)
4. ITE Trip Generation (9th Edition) land use category 820 - Shopping Center (Adj Streets, 7-9A, 4-6P):
   Daily: LN(T) = 0.65*LN(X)+5.83
   AM Peak Hour: LN(T) = 0.61*LN(X)+2.24 (62% in, 38% out)
   PM Peak Hour: LN(T) = 0.67*LN(X)+3.31 (48% in, 52% out)
5. ITE Trip Generation (9th Edition) land use category 220 - Apartment (Adj Streets, 7-9A, 4-6P):
   Daily: T = 6.65*(X)
   AM Peak Hour: T = 0.51*(X) (20% in, 80% out)
   PM Peak Hour: T = 0.62*(X) (65% in, 35% out)
6. Reductions based on application of MXD model: Daily = 20% (10% internal, 10% external) , AM Peak Hour = 23% (10% internal, 13% external), PM Peak Hour = 28% (16% internal, 13% external)

Source: Fehr & Peers, 2016.

TABLE C-2
SUB-AREA 2 TRIP GENERATION

Land Use	ITE Code	Units[1]	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
R&D	760[2]	70 KSF	750	79	16	95	15	83	98
Office	710[3]	70 KSF	1,000	127	17	144	27	130	157
Retail	820[4]	130 KSF	8,050	113	70	183	343	371	714
Residential	220[5]	1,330 DU	8,850	136	542	678	536	289	825
		Subtotal	*18,650*	*455*	*645*	*1,100*	*921*	*873*	*1,794*
MXD+ Trip Adjustments[6]			-4,410	-144	-205	-349	-306	-291	-597
Net New Project Trips			**14,240**	**311**	**440**	**751**	**615**	**582**	**1,197**

1. DU = dwelling unit. KSF = 1,000 square feet
2. ITE Trip Generation (9th Edition) land use category 760 - Research and Development Center (Peak Hour AM & PM):
   Daily: LN(T) = 0.83*LN(X)+3.09
   AM Peak Hour: LN(T) = 0.87*LN(X)+0.86 (83% in, 17% out)
   PM Peak Hour: LN(T) = 0.83*LN(X)+1.06 (15% in, 85% out)
3. ITE Trip Generation (9th Edition) land use category 710 - General Office Building (Peak Hour, AM & PM):
   Daily: LN(T) = 0.76*LN(X)+3.68
   AM Peak Hour: LN(T) = 0.80*LN(X)+1.57 (88% in, 12% out)
   PM Peak Hour: T = 1.12*(X)+78.45 (17% in, 83% out)
4. ITE Trip Generation (9th Edition) land use category 820 - Shopping Center (Adj Streets, 7-9A, 4-6P):
   Daily: LN(T) = 0.65*LN(X)+5.83
   AM Peak Hour: LN(T) = 0.61*LN(X)+2.24 (62% in, 38% out)
   PM Peak Hour: LN(T) = 0.67*LN(X)+3.31 (48% in, 52% out)
5. ITE Trip Generation (9th Edition) land use category 220 - Apartment (Adj Streets, 7-9A, 4-6P):
   Daily: T = 6.65*(X)
   AM Peak Hour: T = 0.51*(X) (20% in, 80% out)
   PM Peak Hour: T = 0.62*(X) (65% in, 35% out)
6. Reductions based on application of MXD+ model: Daily = 24% (7% internal, 17% external), AM Peak Hour = 32% (11% internal, 21% external), PM Peak Hour = 34% (16% internal, 18% external)

Source: Fehr & Peers, 2016.

TABLE C-3
SUB-AREA 3 TRIP GENERATION

Land Use	ITE Code	Units[1]	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
R&D	760[2]	780 KSF	5,530	644	132	776	109	617	726
Office	710[3]	780 KSF	6,260	871	119	990	162	790	952
		Subtotal	*11,790*	*1,515*	*251*	*1,766*	*271*	*1,407*	*1,678*
MXD+ Trip Adjustments[4]			-1,250	-160	-26	-186	-36	-188	-224
Net New Project Trips			**10,540**	**1,355**	**225**	**1,580**	**235**	**1,219**	**1,454**

1. DU = dwelling unit. KSF = 1,000 square feet
2. ITE Trip Generation (9th Edition) land use category 760 - Research and Development Center (Peak Hour AM & PM):
   Daily: LN(T) = 0.83*LN(X)+3.09
   AM Peak Hour: LN(T) = 0.87*LN(X)+0.86 (83% in, 17% out)
   PM Peak Hour: LN(T) = 0.83*LN(X)+1.06 (15% in, 85% out)
3. ITE Trip Generation (9th Edition) land use category 710 - General Office Building (Peak Hour, AM & PM):
   Daily: LN(T) = 0.76*LN(X)+3.68
   AM Peak Hour: LN(T) = 0.80*LN(X)+1.57 (88% in, 12% out)
   PM Peak Hour: T = 1.12*(X)+78.45 (17% in, 83% out)
4. Reductions based on application of MXD model: Daily = 11% (3% internal, 8% external), AM Peak Hour = 10% (1% internal, 9% external), PM Peak Hour = 13% (4% internal, 9% external)

Source: Fehr & Peers, 2016.

TABLE C-4
SUB-AREA 4 TRIP GENERATION

Land Use	ITE Code	Units[1]	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
R&D	760[3]	1,060 KSF	7,130	841	172	1,013	140	796	936
Office	710[5]	1,060 KSF	7,900	1,113	152	1,265	215	1,051	1,266
Retail	820[4]	320 KSF	14,460	196	121	317	627	679	1,306
Residential	220[2]	2,530 DU	16,830	258	1,032	1,290	1,020	549	1,569
		Subtotal	*46,320*	*2,408*	*1,477*	*3,885*	*2,002*	*3,075*	*5,077*
MXD+ Trip Adjustments[6]			-9,460	-578	-355	-933	-571	-878	-1,449
Net New Project Trips			**36,860**	**1,830**	**1,122**	**2,952**	**1,431**	**2,197**	**3,628**

1. DU = dwelling unit. KSF = 1,000 square feet
2. ITE Trip Generation (9th Edition) land use category 760 - Research and Development Center (Peak Hour AM & PM):
   Daily: LN(T) = 0.83*LN(X)+3.09
   AM Peak Hour: LN(T) = 0.87*LN(X)+0.86 (83% in, 17% out)
   PM Peak Hour: LN(T) = 0.83*LN(X)+1.06 (15% in, 85% out)
3. ITE Trip Generation (9th Edition) land use category 710 - General Office Building (Peak Hour, AM & PM):
   Daily: LN(T) = 0.76*LN(X)+3.68
   AM Peak Hour: LN(T) = 0.80*LN(X)+1.57 (88% in, 12% out)
   PM Peak Hour: T = 1.12*(X)+78.45 (17% in, 83% out)
4. ITE Trip Generation (9th Edition) land use category 820 - Shopping Center (Adj Streets, 7-9A, 4-6P):
   Daily: LN(T) = 0.65*LN(X)+5.83
   AM Peak Hour: LN(T) = 0.61*LN(X)+2.24 (62% in, 38% out)
   PM Peak Hour: LN(T) = 0.67*LN(X)+3.31 (48% in, 52% out)
5. ITE Trip Generation (9th Edition) land use category 220 - Apartment (Adj Streets, 7-9A, 4-6P):
   Daily: T = 6.65*(X)
   AM Peak Hour: T = 0.51*(X) (20% in, 80% out)
   PM Peak Hour: T = 0.62*(X) (65% in, 35% out)
6. Reductions based on application of MXD+ model: Daily = 21% (12% internal, 9% external), AM Peak Hour = 25% (12% internal, 13% external), PM Peak Hour = 28% (18% internal, 10% external)

Source: Fehr & Peers, 2016.

TABLE C-5
SPECIFIC PLAN AREA TRIP GENERATION

Land Use	ITE Code	Units[1]	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
R&D	760[2]	2,850 KSF	19,860	2,321	475	2,796	391	2,216	2,607
Office	710[3]	2,840 KSF	22,310	3,114	424	3,538	594	2,901	3,495
Retail	820[4]	720 KSF	35,460	486	300	786	1,529	1,657	3,186
Residential	220[5]	5,700 DU	37,920	582	2,324	2,906	2,298	1,237	3,535
		Subtotal	*115,550*	*6,503*	*3,523*	*10,026*	*4,812*	*8,011*	*12,823*
MXD+ Trip Adjustments[6]			-44,100	-2,352	-1,274	-3,626	-1,980	-3,297	-5,277
Net New External Trips			**71,450**	**4,151**	**2,249**	**6,400**	**2,832**	**4,714**	**7,546**

1. DU = dwelling unit. KSF = 1,000 square feet
2. ITE Trip Generation (9th Edition) land use category 760 - Research and Development Center (Peak Hour AM & PM):
   Daily: LN(T) = 0.83*LN(X)+3.09
   AM Peak Hour: LN(T) = 0.87*LN(X)+0.86 (83% in, 17% out)
   PM Peak Hour: LN(T) = 0.83*LN(X)+1.06 (15% in, 85% out)
3. ITE Trip Generation (9th Edition) land use category 710 - General Office Building (Peak Hour, AM & PM):
   Daily: LN(T) = 0.76*LN(X)+3.68
   AM Peak Hour: LN(T) = 0.80*LN(X)+1.57 (88% in, 12% out)
   PM Peak Hour: T = 1.12*(X)+78.45 (17% in, 83% out)
4. ITE Trip Generation (9th Edition) land use category 820 - Shopping Center (Adj Streets, 7-9A, 4-6P):
   Daily: LN(T) = 0.65*LN(X)+5.83
   AM Peak Hour: LN(T) = 0.61*LN(X)+2.24 (62% in, 38% out)
   PM Peak Hour: LN(T) = 0.67*LN(X)+3.31 (48% in, 52% out)
5. ITE Trip Generation (9th Edition) land use category 220 - Apartment (Adj Streets, 7-9A, 4-6P):
   Daily: T = 6.65*(X)
   AM Peak Hour: T = 0.51*(X) (20% in, 80% out)
   PM Peak Hour: T = 0.62*(X) (65% in, 35% out)
6. Reductions based on application of MXD+ model: Daily = 38% (33% internal, 5% external), AM Peak Hour = 36% (28% internal, 8% external), PM Peak Hour = 40% (34% internal, 5% external)

Source: Fehr & Peers, 2016.

Appendix E-7
Existing Plus Specific Plan Conditions
Intersection LOS Calculations

FEHR PEERS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	374	163	154	410	0	0	0	0	93	1178	82
Number	3	8	18	7	4	14				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	0.99		1.00				1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1900	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	402	127	166	441	0				100	1267	79
Adj No. of Lanes	0	2	1	0	2	0				0	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93				0.93	0.93	0.93
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1255	546	276	732	0				128	1702	111
Arrive On Green	0.00	0.35	0.35	0.35	0.35	0.00				0.53	0.53	0.53
Sat Flow, veh/h	0	3632	1539	507	2149	0				243	3218	210
Grp Volume(v), veh/h	0	402	127	276	331	0				762	0	684
Grp Sat Flow(s),veh/h/ln	0	1770	1539	961	1610	0				1851	0	1820
Q Serve(g_s), s	0.0	5.0	3.5	11.6	10.0	0.0				19.8	0.0	17.0
Cycle Q Clear(g_c), s	0.0	5.0	3.5	16.6	10.0	0.0				19.8	0.0	17.0
Prop In Lane	0.00		1.00	0.60		0.00				0.13		0.12
Lane Grp Cap(c), veh/h	0	1255	546	437	571	0				979	0	963
V/C Ratio(X)	0.00	0.32	0.23	0.63	0.58	0.00				0.78	0.00	0.71
Avail Cap(c_a), veh/h	0	1445	628	496	658	0				979	0	963
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.93	0.93	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	14.1	13.6	18.6	15.7	0.0				11.3	0.0	10.7
Incr Delay (d2), s/veh	0.0	0.1	0.1	1.2	0.3	0.0				6.1	0.0	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.4	1.5	4.4	4.5	0.0				11.6	0.0	9.6
LnGrp Delay(d),s/veh	0.0	14.2	13.7	19.9	16.1	0.0				17.4	0.0	15.1
LnGrp LOS		B	B	B	B					B		B
Approach Vol, veh/h		529			607						1446	
Approach Delay, s/veh		14.0			17.8						16.3	
Approach LOS		B			B						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		35.2		24.8				24.8
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		28.5		24.5				24.5
Max Q Clear Time (g_c+I1), s		21.8		18.6				7.0
Green Ext Time (p_c), s		3.8		2.7				4.9

Intersection Summary	
HCM 2010 Ctrl Delay	16.2
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	108	359	0	0	448	127	137	665	169	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	0.99		1.00	1.00		0.94	1.00		0.97			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1863	1900	1863	1900			
Adj Flow Rate, veh/h	123	408	0	0	509	75	156	756	118			
Adj No. of Lanes	0	2	0	0	2	1	0	3	0			
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	337	997	0	0	1506	635	278	1442	230			
Arrive On Green	0.43	0.43	0.00	0.00	0.43	0.43	0.37	0.37	0.37			
Sat Flow, veh/h	429	2428	0	0	3632	1492	750	3883	620			
Grp Volume(v), veh/h	256	275	0	0	509	75	380	320	330			
Grp Sat Flow(s),veh/h/ln	1162	1610	0	0	1770	1492	1825	1695	1733			
Q Serve(g_s), s	2.2	4.1	0.0	0.0	3.3	1.0	5.7	5.0	5.1			
Cycle Q Clear(g_c), s	5.5	4.1	0.0	0.0	3.3	1.0	5.7	5.0	5.1			
Prop In Lane	0.48		0.00	0.00		1.00	0.41		0.36			
Lane Grp Cap(c), veh/h	649	685	0	0	1506	635	678	630	644			
V/C Ratio(X)	0.39	0.40	0.00	0.00	0.34	0.12	0.56	0.51	0.51			
Avail Cap(c_a), veh/h	1162	1402	0	0	3082	1300	1590	1476	1509			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	7.0	6.9	0.0	0.0	6.6	6.0	8.6	8.4	8.4			
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.0	0.0	0.0	0.3	0.2	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.7	1.8	0.0	0.0	1.6	0.4	2.9	2.4	2.4			
LnGrp Delay(d),s/veh	7.1	7.0	0.0	0.0	6.7	6.0	8.9	8.6	8.6			
LnGrp LOS	A	A			A	A	A	A	A			
Approach Vol, veh/h		531			584			1030				
Approach Delay, s/veh		7.1			6.6			8.7				
Approach LOS		A			A			A				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		16.3		18.2				18.2
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		30.0		30.0				30.0
Max Q Clear Time (g_c+I1), s		7.7		5.3				7.5
Green Ext Time (p_c), s		4.4		5.4				5.3

Intersection Summary	
HCM 2010 Ctrl Delay	7.7
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	221	188	26	280	0	52	0	19	244	259	17
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1827	1900	1827	1827	0	1827	0	1827	1827	1827	1900
Adj Flow Rate, veh/h	0	230	95	27	292	0	54	0	11	179	375	13
Adj No. of Lanes	0	2	0	1	2	0	1	0	1	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	4	4	4	4	0	4	0	4	4	4	4
Cap, veh/h	0	876	350	127	1870	0	0	0	0	343	692	24
Arrive On Green	0.00	0.36	0.36	0.07	0.54	0.00	0.00	0.00	0.00	0.20	0.20	0.20
Sat Flow, veh/h	0	2504	964	1740	3563	0		0		1740	3511	121
Grp Volume(v), veh/h	0	163	162	27	292	0		0.0		179	195	193
Grp Sat Flow(s),veh/h/ln	0	1736	1640	1740	1736	0				1740	1827	1805
Q Serve(g_s), s	0.0	2.3	2.4	0.5	1.4	0.0				3.1	3.3	3.3
Cycle Q Clear(g_c), s	0.0	2.3	2.4	0.5	1.4	0.0				3.1	3.3	3.3
Prop In Lane	0.00		0.59	1.00		0.00				1.00		0.07
Lane Grp Cap(c), veh/h	0	630	596	127	1870	0				343	360	356
V/C Ratio(X)	0.00	0.26	0.27	0.21	0.16	0.00				0.52	0.54	0.54
Avail Cap(c_a), veh/h	0	1631	1541	1328	3262	0				1328	1395	1378
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	7.6	7.7	14.9	4.0	0.0				12.2	12.3	12.3
Incr Delay (d2), s/veh	0.0	0.2	0.3	0.3	0.0	0.0				0.5	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.1	1.1	0.3	0.7	0.0				1.5	1.7	1.7
LnGrp Delay(d),s/veh	0.0	7.9	7.9	15.2	4.0	0.0				12.7	12.8	12.8
LnGrp LOS		A	A	B	A					B	B	B
Approach Vol, veh/h		325			319						567	
Approach Delay, s/veh		7.9			4.9						12.7	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		23.3			6.0	17.4		10.7
Change Period (Y+Rc), s		5.0			3.5	5.0		4.0
Max Green Setting (Gmax), s		32.0			26.0	32.0		26.0
Max Q Clear Time (g_c+I1), s		3.4			2.5	4.4		5.3
Green Ext Time (p_c), s		4.3			0.0	4.2		1.5

Intersection Summary	
HCM 2010 Ctrl Delay	9.4
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	174	310	0	0	188	841	118	0	230	0	0	0
Number	1	6	16	5	2	12	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1845	0	0	1845	1900	1845	0	1845			
Adj Flow Rate, veh/h	191	341	0	0	207	432	130	0	127			
Adj No. of Lanes	0	2	0	0	3	0	1	0	1			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	3	3	0	0	3	3	3	0	3			
Cap, veh/h	477	1016	0	0	1999	914	334	0	298			
Arrive On Green	0.60	0.60	0.00	0.00	0.60	0.60	0.19	0.00	0.19			
Sat Flow, veh/h	534	1791	0	0	3523	1535	1757	0	1568			
Grp Volume(v), veh/h	222	310	0	0	207	432	130	0	127			
Grp Sat Flow(s),veh/h/ln	647	1595	0	0	1679	1535	1757	0	1568			
Q Serve(g_s), s	7.4	4.1	0.0	0.0	1.1	6.7	2.7	0.0	3.0			
Cycle Q Clear(g_c), s	14.1	4.1	0.0	0.0	1.1	6.7	2.7	0.0	3.0			
Prop In Lane	0.86		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	544	950	0	0	1999	914	334	0	298			
V/C Ratio(X)	0.41	0.33	0.00	0.00	0.10	0.47	0.39	0.00	0.43			
Avail Cap(c_a), veh/h	665	1176	0	0	2636	1205	1170	0	1045			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	8.1	4.3	0.0	0.0	3.7	4.8	14.9	0.0	15.0			
Incr Delay (d2), s/veh	0.7	0.3	0.0	0.0	0.0	0.5	0.3	0.0	0.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.0	1.8	0.0	0.0	0.5	2.9	1.3	0.0	1.3			
LnGrp Delay(d),s/veh	8.8	4.5	0.0	0.0	3.7	5.3	15.1	0.0	15.3			
LnGrp LOS	A	A			A	A	B		B			
Approach Vol, veh/h		532			639			257				
Approach Delay, s/veh		6.3			4.8			15.2				
Approach LOS		A			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		29.0		13.0		29.0		
Change Period (Y+Rc), s		4.0		5.0		4.0		
Max Green Setting (Gmax), s		33.0		28.0		31.0		
Max Q Clear Time (g_c+I1), s		8.7		5.0		16.1		
Green Ext Time (p_c), s		12.2		0.1		8.9		

Intersection Summary	
HCM 2010 Ctrl Delay	7.2
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	68	239	233	103	277	132	72	465	116	156	501	100
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1900	1845	1845	1900	1845	1900
Adj Flow Rate, veh/h	72	254	129	110	295	86	77	495	41	166	533	91
Adj No. of Lanes	1	2	1	1	2	0	0	2	1	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	92	1189	523	135	976	279	88	598	298	184	620	110
Arrive On Green	0.05	0.34	0.34	0.15	0.73	0.73	0.19	0.19	0.19	0.26	0.26	0.26
Sat Flow, veh/h	1757	3505	1543	1757	2683	767	460	3115	1553	718	2424	432
Grp Volume(v), veh/h	72	254	129	110	191	190	305	267	41	418	0	372
Grp Sat Flow(s),veh/h/ln	1757	1752	1543	1757	1752	1698	1822	1752	1553	1809	0	1765
Q Serve(g_s), s	4.5	5.7	6.6	6.7	4.2	4.3	17.9	16.0	2.4	24.6	0.0	21.8
Cycle Q Clear(g_c), s	4.5	5.7	6.6	6.7	4.2	4.3	17.9	16.0	2.4	24.6	0.0	21.8
Prop In Lane	1.00		1.00	1.00		0.45	0.25		1.00	0.40		0.24
Lane Grp Cap(c), veh/h	92	1189	523	135	637	617	350	336	298	462	0	451
V/C Ratio(X)	0.78	0.21	0.25	0.82	0.30	0.31	0.87	0.79	0.14	0.90	0.00	0.82
Avail Cap(c_a), veh/h	168	1189	523	279	637	617	406	390	346	502	0	489
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.85	0.97	0.97	0.97	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.5	25.9	26.2	45.8	10.1	10.1	43.1	42.4	36.9	39.6	0.0	38.6
Incr Delay (d2), s/veh	4.6	0.4	1.0	4.4	1.2	1.3	15.2	7.9	0.1	18.0	0.0	9.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	2.8	3.0	3.4	2.2	2.2	10.5	8.4	1.0	14.6	0.0	11.8
LnGrp Delay(d),s/veh	56.1	26.2	27.2	50.2	11.3	11.4	58.3	50.2	37.0	57.7	0.0	47.9
LnGrp LOS	E	C	C	D	B	B	E	D	D	E		D
Approach Vol, veh/h		455			491			613			790	
Approach Delay, s/veh		31.2			20.1			53.4			53.1	
Approach LOS		C			C			D			D	

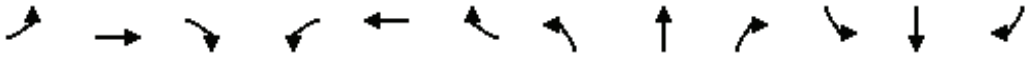
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.9	41.8		31.6	9.3	44.5		24.6
Change Period (Y+Rc), s	3.5	4.5		3.5	3.5	4.5		3.5
Max Green Setting (Gmax), s	17.5	22.5		30.5	10.5	29.5		24.5
Max Q Clear Time (g_c+I1), s	8.7	8.6		26.6	6.5	6.3		19.9
Green Ext Time (p_c), s	0.1	4.8		1.4	0.0	6.1		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	42.0
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	147	266	0	0	0	55	139	166	0	424	38
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900				1863	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	0	165	164				62	156	159	0	476	36
Adj No. of Lanes	1	2	0				1	1	1	0	2	1
Peak Hour Factor	0.89	0.89	0.89				0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2				2	2	2	0	2	2
Cap, veh/h	383	382	342				97	936	795	0	1086	486
Arrive On Green	0.00	0.22	0.22				0.05	0.50	0.50	0.00	0.31	0.31
Sat Flow, veh/h	1774	1770	1583				1774	1863	1583	0	3632	1583
Grp Volume(v), veh/h	0	165	164				62	156	159	0	476	36
Grp Sat Flow(s),veh/h/ln	1774	1770	1583				1774	1863	1583	0	1770	1583
Q Serve(g_s), s	0.0	2.3	2.6				1.0	1.3	1.6	0.0	3.1	0.5
Cycle Q Clear(g_c), s	0.0	2.3	2.6				1.0	1.3	1.6	0.0	3.1	0.5
Prop In Lane	1.00		1.00				1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	383	382	342				97	936	795	0	1086	486
V/C Ratio(X)	0.00	0.43	0.48				0.64	0.17	0.20	0.00	0.44	0.07
Avail Cap(c_a), veh/h	1936	1931	1728				312	1705	1449	0	2118	948
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00				1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	9.6	9.7				13.2	3.8	3.9	0.0	7.9	7.0
Incr Delay (d2), s/veh	0.0	0.8	1.0				6.9	0.1	0.1	0.0	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.2	1.2				0.7	0.7	0.7	0.0	1.5	0.2
LnGrp Delay(d),s/veh	0.0	10.4	10.8				20.1	3.9	4.0	0.0	8.2	7.0
LnGrp LOS		B	B				C	A	A		A	A
Approach Vol, veh/h		329						377			512	
Approach Delay, s/veh		10.6						6.6			8.1	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		18.3		10.1	5.5	12.7		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		26.0		31.0	5.0	17.0		
Max Q Clear Time (g_c+I1), s		3.6		4.6	3.0	5.1		
Green Ext Time (p_c), s		4.7		2.1	0.0	3.7		

Intersection Summary	
HCM 2010 Ctrl Delay	8.3
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	0	6	25	1	279	3	46	12	381	278	30
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	41	0	7	29	1	328	4	54	14	448	327	35
Pedestrians					1							
Lane Width (ft)					12.0							
Walking Speed (ft/s)					4.0							
Percent Blockage					0							
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											499	
pX, platoon unblocked	0.81	0.81	0.81	0.81	0.81		0.81					
vC, conflicting volume	1638	1317	345	1317	1328	62	362			69		
vC1, stage 1 conf vol	1241	1241		69	69							
vC2, stage 2 conf vol	397	76		1248	1259							
vCu, unblocked vol	1672	1273	66	1273	1287	62	88			69		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	99	76	99	67	100			71		
cM capacity (veh/h)	32	145	804	123	140	1002	1215			1530		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	48	359	72	811
Volume Left	41	29	4	448
Volume Right	7	328	14	35
cSH	37	624	1215	1530
Volume to Capacity	1.31	0.57	0.00	0.29
Queue Length 95th (ft)	126	91	0	31
Control Delay (s)	422.9	18.3	0.4	6.0
Lane LOS	F	C	A	A
Approach Delay (s)	422.9	18.3	0.4	6.0
Approach LOS	F	C		

Intersection Summary			
Average Delay	24.7		
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	304	135	262	299	143	112	125	55	137	435	89
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	59	358	151	308	352	146	132	147	47	161	512	12
Adj No. of Lanes	1	2	0	1	2	0	0	2	0	0	2	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	501	1365	566	563	1373	559	239	453	145	253	819	21
Arrive On Green	1.00	1.00	1.00	0.56	0.56	0.56	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	895	2429	1007	886	2444	995	469	1225	392	551	2215	56
Grp Volume(v), veh/h	59	259	250	308	253	245	132	0	194	325	0	360
Grp Sat Flow(s),veh/h/ln	895	1770	1667	886	1770	1669	469	0	1617	1138	0	1684
Q Serve(g_s), s	1.1	0.0	0.0	25.7	8.0	8.3	15.7	0.0	9.4	21.8	0.0	18.9
Cycle Q Clear(g_c), s	9.4	0.0	0.0	25.7	8.0	8.3	34.5	0.0	9.4	31.3	0.0	18.9
Prop In Lane	1.00		0.60	1.00		0.60	1.00		0.24	0.50		0.03
Lane Grp Cap(c), veh/h	501	994	936	563	994	938	239	0	598	470	0	623
V/C Ratio(X)	0.12	0.26	0.27	0.55	0.25	0.26	0.55	0.00	0.32	0.69	0.00	0.58
Avail Cap(c_a), veh/h	501	994	936	563	994	938	321	0	750	606	0	781
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	0.97	1.00	1.00	1.00	0.79	0.00	0.79	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.6	0.0	0.0	16.2	12.3	12.4	41.6	0.0	24.8	35.4	0.0	27.8
Incr Delay (d2), s/veh	0.5	0.6	0.7	3.8	0.6	0.7	0.6	0.0	0.1	1.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.2	0.2	6.8	4.1	4.0	3.8	0.0	4.2	9.2	0.0	8.9
LnGrp Delay(d),s/veh	1.1	0.6	0.7	20.0	12.9	13.0	42.2	0.0	24.9	36.7	0.0	28.1
LnGrp LOS	A	A	A	B	B	B	D		C	D		C
Approach Vol, veh/h		568			806			326			685	
Approach Delay, s/veh		0.7			15.7			31.9			32.2	
Approach LOS		A			B			C			C	

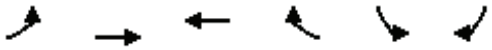
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		65.3		44.7		65.3		44.7
Change Period (Y+Rc), s		3.5		4.0		3.5		4.0
Max Green Setting (Gmax), s		51.5		51.0		51.5		51.0
Max Q Clear Time (g_c+I1), s		11.4		33.3		27.7		36.5
Green Ext Time (p_c), s		10.8		4.5		9.2		4.2

Intersection Summary	
HCM 2010 Ctrl Delay	19.1
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	277	259	113	265	93	174	182	84	253	556	12
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	6	326	259	133	312	105	205	214	98	298	654	9
Adj No. of Lanes	0	1	0	0	1	0	0	2	0	0	2	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	58	398	312	163	310	95	292	520	238	390	921	14
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.48	0.48	0.48	0.48	0.48	0.48
Sat Flow, veh/h	5	977	766	231	759	234	380	1090	499	622	1932	29
Grp Volume(v), veh/h	591	0	0	550	0	0	205	0	312	428	0	533
Grp Sat Flow(s),veh/h/ln	1748	0	0	1224	0	0	380	0	1589	893	0	1689
Q Serve(g_s), s	0.0	0.0	0.0	6.3	0.0	0.0	15.3	0.0	8.3	22.7	0.0	15.7
Cycle Q Clear(g_c), s	20.2	0.0	0.0	26.5	0.0	0.0	31.0	0.0	8.3	31.0	0.0	15.7
Prop In Lane	0.01		0.44	0.24		0.19	1.00		0.31	0.70		0.02
Lane Grp Cap(c), veh/h	768	0	0	568	0	0	292	0	758	520	0	806
V/C Ratio(X)	0.77	0.00	0.00	0.97	0.00	0.00	0.70	0.00	0.41	0.82	0.00	0.66
Avail Cap(c_a), veh/h	768	0	0	568	0	0	292	0	758	520	0	806
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.4	0.0	0.0	20.2	0.0	0.0	25.7	0.0	11.1	21.2	0.0	13.0
Incr Delay (d2), s/veh	4.8	0.0	0.0	29.9	0.0	0.0	7.3	0.0	0.4	10.3	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.5	0.0	0.0	14.5	0.0	0.0	4.2	0.0	3.7	9.1	0.0	7.7
LnGrp Delay(d),s/veh	22.2	0.0	0.0	50.1	0.0	0.0	33.0	0.0	11.4	31.6	0.0	15.0
LnGrp LOS	C			D			C		B	C		B
Approach Vol, veh/h		591			550			517			961	
Approach Delay, s/veh		22.2			50.1			20.0			22.4	
Approach LOS		C			D			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		35.0		30.0		35.0		30.0
Change Period (Y+Rc), s		4.0		3.5		4.0		3.5
Max Green Setting (Gmax), s		31.0		26.5		31.0		26.5
Max Q Clear Time (g_c+I1), s		33.0		22.2		33.0		28.5
Green Ext Time (p_c), s		0.0		2.8		0.0		0.0

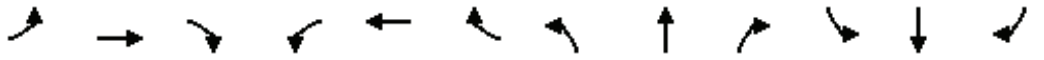
Intersection Summary	
HCM 2010 Ctrl Delay	27.7
HCM 2010 LOS	C



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	44	36	69	161	263	301
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1583	1762	1583
Flt Permitted	0.71	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1318	1863	1863	1583	1762	1583
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	48	40	76	177	289	331
RTOR Reduction (vph)	0	0	0	134	0	177
Lane Group Flow (vph)	48	40	76	43	289	154
Confl. Peds. (#/hr)					5	
Turn Type	Perm	NA	NA	Perm	Perm	Perm
Protected Phases		4	8			
Permitted Phases	4			8	6	6
Actuated Green, G (s)	6.8	6.8	6.8	6.8	12.9	12.9
Effective Green, g (s)	6.8	6.8	6.8	6.8	12.9	12.9
Actuated g/C Ratio	0.25	0.25	0.25	0.25	0.47	0.47
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	323	457	457	388	820	737
v/s Ratio Prot		0.02	c0.04			
v/s Ratio Perm	0.04			0.03	c0.16	0.10
v/c Ratio	0.15	0.09	0.17	0.11	0.35	0.21
Uniform Delay, d1	8.2	8.1	8.2	8.1	4.7	4.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1	0.2	0.1	0.3	0.1
Delay (s)	8.4	8.1	8.4	8.2	5.0	4.5
Level of Service	A	A	A	A	A	A
Approach Delay (s)		8.3	8.3		4.7	
Approach LOS		A	A		A	

Intersection Summary			
HCM 2000 Control Delay	6.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	27.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	30.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	90	300	131	318	449	95	113	346	162	98	890	131
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	99	330	87	349	493	37	124	380	102	108	978	140
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	126	735	323	383	1173	512	154	978	260	137	1066	153
Arrive On Green	0.07	0.21	0.21	0.22	0.33	0.33	0.09	0.36	0.36	0.08	0.35	0.35
Sat Flow, veh/h	1757	3505	1539	1757	3505	1529	1757	2739	727	1757	3072	439
Grp Volume(v), veh/h	99	330	87	349	493	37	124	242	240	108	558	560
Grp Sat Flow(s),veh/h/ln	1757	1752	1539	1757	1752	1529	1757	1752	1714	1757	1752	1759
Q Serve(g_s), s	5.2	7.8	4.5	18.3	10.3	1.6	6.5	9.7	9.9	5.7	28.8	28.9
Cycle Q Clear(g_c), s	5.2	7.8	4.5	18.3	10.3	1.6	6.5	9.7	9.9	5.7	28.8	28.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.42	1.00		0.25
Lane Grp Cap(c), veh/h	126	735	323	383	1173	512	154	626	612	137	608	610
V/C Ratio(X)	0.79	0.45	0.27	0.91	0.42	0.07	0.80	0.39	0.39	0.79	0.92	0.92
Avail Cap(c_a), veh/h	372	1186	521	465	1298	566	279	626	612	372	649	651
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.2	32.6	31.3	36.1	24.3	21.4	42.3	22.7	22.7	42.8	29.6	29.6
Incr Delay (d2), s/veh	4.0	0.6	0.6	18.2	0.3	0.1	3.7	0.1	0.2	3.8	16.7	16.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	3.8	2.0	10.8	5.1	0.7	3.3	4.7	4.7	2.9	16.8	16.9
LnGrp Delay(d),s/veh	47.2	33.2	31.9	54.2	24.7	21.5	46.0	22.8	22.9	46.7	46.3	46.4
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	D	D
Approach Vol, veh/h		516			879			606			1226	
Approach Delay, s/veh		35.7			36.3			27.6			46.4	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.6	23.8	11.3	35.8	11.8	35.6	10.4	36.8
Change Period (Y+Rc), s	3.0	4.0	3.0	3.0	5.0	4.0	3.0	3.0
Max Green Setting (Gmax), s	25.0	32.0	15.0	35.0	20.0	35.0	20.0	30.0
Max Q Clear Time (g_c+I1), s	20.3	9.8	8.5	30.9	7.2	12.3	7.7	11.9
Green Ext Time (p_c), s	0.3	8.3	0.1	2.0	0.1	8.3	0.1	7.6

Intersection Summary	
HCM 2010 Ctrl Delay	38.4
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	388	2	213	0	405	250	0	1065	301
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	0	1863	1863	0	1863	1900
Adj Flow Rate, veh/h				449	0	75	0	431	0	0	1133	231
Adj No. of Lanes				2	0	1	0	3	1	0	3	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				2	2	2	0	2	2	0	2	2
Cap, veh/h				800	0	356	0	2780	866	0	2306	470
Arrive On Green				0.23	0.00	0.23	0.00	0.55	0.00	0.00	0.55	0.55
Sat Flow, veh/h				3548	0	1581	0	5253	1583	0	4386	860
Grp Volume(v), veh/h				449	0	75	0	431	0	0	911	453
Grp Sat Flow(s),veh/h/ln				1774	0	1581	0	1695	1583	0	1695	1688
Q Serve(g_s), s				3.9	0.0	1.4	0.0	1.5	0.0	0.0	5.8	5.8
Cycle Q Clear(g_c), s				3.9	0.0	1.4	0.0	1.5	0.0	0.0	5.8	5.8
Prop In Lane				1.00		1.00	0.00		1.00	0.00		0.51
Lane Grp Cap(c), veh/h				800	0	356	0	2780	866	0	1853	923
V/C Ratio(X)				0.56	0.00	0.21	0.00	0.16	0.00	0.00	0.49	0.49
Avail Cap(c_a), veh/h				3235	0	1442	0	3622	1128	0	2415	1202
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				12.1	0.0	11.1	0.0	3.9	0.0	0.0	4.9	4.9
Incr Delay (d2), s/veh				0.6	0.0	0.3	0.0	0.0	0.0	0.0	0.2	0.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.9	0.0	0.6	0.0	0.7	0.0	0.0	2.7	2.7
LnGrp Delay(d),s/veh				12.7	0.0	11.3	0.0	4.0	0.0	0.0	5.1	5.3
LnGrp LOS				B		B		A			A	A
Approach Vol, veh/h					524			431			1364	
Approach Delay, s/veh					12.5			4.0			5.2	
Approach LOS					B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		23.2				23.2		11.9
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		25.0				25.0		32.0
Max Q Clear Time (g_c+I1), s		3.5				7.8		5.9
Green Ext Time (p_c), s		13.3				11.3		1.9

Intersection Summary	
HCM 2010 Ctrl Delay	6.6
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	107	0	613	0	0	0	0	548	493	0	931	522
Number	3	8	18				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863				0	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	0	0	755				0	623	0	0	1058	0
Adj No. of Lanes	0	1	2				0	3	0	0	2	1
Peak Hour Factor	0.88	0.88	0.88				0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2				0	2	2	0	2	2
Cap, veh/h	0	589	1001				0	2658	0	0	1850	828
Arrive On Green	0.00	0.00	0.32				0.00	0.52	0.00	0.00	0.52	0.00
Sat Flow, veh/h	0	1863	3167				0	5421	0	0	3632	1583
Grp Volume(v), veh/h	0	0	755				0	623	0	0	1058	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583				0	1695	0	0	1770	1583
Q Serve(g_s), s	0.0	0.0	10.6				0.0	3.3	0.0	0.0	10.1	0.0
Cycle Q Clear(g_c), s	0.0	0.0	10.6				0.0	3.3	0.0	0.0	10.1	0.0
Prop In Lane	0.00		1.00				0.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	0	589	1001				0	2658	0	0	1850	828
V/C Ratio(X)	0.00	0.00	0.75				0.00	0.23	0.00	0.00	0.57	0.00
Avail Cap(c_a), veh/h	0	1126	1914				0	3791	0	0	2638	1180
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	15.2				0.0	6.4	0.0	0.0	8.1	0.0
Incr Delay (d2), s/veh	0.0	0.0	1.2				0.0	0.0	0.0	0.0	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	4.8				0.0	1.5	0.0	0.0	4.9	0.0
LnGrp Delay(d),s/veh	0.0	0.0	16.4				0.0	6.5	0.0	0.0	8.3	0.0
LnGrp LOS			B					A			A	
Approach Vol, veh/h		755						623			1058	
Approach Delay, s/veh		16.4						6.5			8.3	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		29.9				29.9		19.7
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		37.0				37.0		30.0
Max Q Clear Time (g_c+I1), s		5.3				12.1		12.6
Green Ext Time (p_c), s		15.8				13.8		3.1

Intersection Summary	
HCM 2010 Ctrl Delay	10.4
HCM 2010 LOS	B

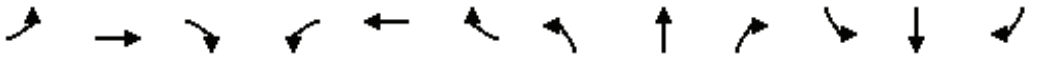
Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	91	7	95	0	1	21	105	929	40	285	971	288
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	99	8	91	0	1	0	114	1010	42	310	1055	289
Adj No. of Lanes	0	1	0	1	1	0	0	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	127	10	117	57	60	0	145	877	36	332	1652	449
Arrive On Green	0.15	0.15	0.15	0.00	0.03	0.00	0.35	0.35	0.35	0.19	0.60	0.60
Sat Flow, veh/h	838	68	770	1774	1863	0	200	2516	104	1774	2736	744
Grp Volume(v), veh/h	198	0	0	0	1	0	489	0	677	310	679	665
Grp Sat Flow(s),veh/h/ln	1676	0	0	1774	1863	0	1143	0	1676	1774	1770	1710
Q Serve(g_s), s	6.7	0.0	0.0	0.0	0.0	0.0	17.3	0.0	20.5	10.1	14.5	14.8
Cycle Q Clear(g_c), s	6.7	0.0	0.0	0.0	0.0	0.0	20.5	0.0	20.5	10.1	14.5	14.8
Prop In Lane	0.50		0.46	1.00		0.00	0.23		0.06	1.00		0.43
Lane Grp Cap(c), veh/h	254	0	0	57	60	0	474	0	584	332	1068	1033
V/C Ratio(X)	0.78	0.00	0.00	0.00	0.02	0.00	1.03	0.00	1.16	0.93	0.64	0.64
Avail Cap(c_a), veh/h	599	0	0	1358	1426	0	474	0	584	332	1068	1033
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.0	0.0	0.0	0.0	27.5	0.0	19.9	0.0	19.1	23.5	7.5	7.5
Incr Delay (d2), s/veh	2.0	0.0	0.0	0.0	0.0	0.0	49.4	0.0	89.5	32.3	1.4	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	0.0	0.0	0.0	0.0	14.0	0.0	23.8	7.9	7.4	7.3
LnGrp Delay(d),s/veh	26.0	0.0	0.0	0.0	27.6	0.0	69.3	0.0	108.7	55.9	8.9	9.1
LnGrp LOS	C				C		F		F	E	A	A
Approach Vol, veh/h		198			1			1166			1654	
Approach Delay, s/veh		26.0			27.6			92.2			17.8	
Approach LOS		C			C			F			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	15.0	25.0		5.9		40.0		12.9
Change Period (Y+Rc), s	4.0	4.5		4.0		4.5		4.0
Max Green Setting (Gmax), s	11.0	20.5		45.0		23.0		21.0
Max Q Clear Time (g_c+I1), s	12.1	22.5		2.0		16.8		8.7
Green Ext Time (p_c), s	0.0	0.0		0.0		6.0		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	47.1
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	313	176	81	69	75	131	35	480	256	251	329	226
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	396	223	0	87	95	127	44	608	292	318	416	0
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	388	1038	464	112	244	216	55	645	310	302	1480	0
Arrive On Green	0.22	0.29	0.00	0.06	0.14	0.14	0.03	0.28	0.28	0.17	0.42	0.00
Sat Flow, veh/h	1774	3539	1583	1774	1770	1566	1774	2310	1109	1774	3632	0
Grp Volume(v), veh/h	396	223	0	87	95	127	44	466	434	318	416	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1566	1774	1770	1649	1774	1770	0
Q Serve(g_s), s	18.0	3.9	0.0	4.0	4.0	6.3	2.0	21.2	21.2	14.0	6.4	0.0
Cycle Q Clear(g_c), s	18.0	3.9	0.0	4.0	4.0	6.3	2.0	21.2	21.2	14.0	6.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.67	1.00		0.00
Lane Grp Cap(c), veh/h	388	1038	464	112	244	216	55	494	460	302	1480	0
V/C Ratio(X)	1.02	0.21	0.00	0.78	0.39	0.59	0.80	0.94	0.94	1.05	0.28	0.00
Avail Cap(c_a), veh/h	388	1332	596	215	494	437	129	494	460	302	1480	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	32.2	22.0	0.0	38.0	32.3	33.3	39.6	29.0	29.0	34.2	15.8	0.0
Incr Delay (d2), s/veh	51.3	0.1	0.0	10.8	1.0	2.5	22.2	26.7	28.1	66.9	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.2	1.9	0.0	2.3	2.0	2.9	1.3	14.0	13.2	12.4	3.1	0.0
LnGrp Delay(d),s/veh	83.5	22.1	0.0	48.8	33.3	35.8	61.9	55.8	57.2	101.1	15.9	0.0
LnGrp LOS	F	C		D	C	D	E	E	E	F	B	
Approach Vol, veh/h		619			309			944			734	
Approach Delay, s/veh		61.4			38.7			56.7			52.8	
Approach LOS		E			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	27.0	9.2	28.2	6.6	38.4	22.0	15.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.0	23.0	10.0	31.0	6.0	31.0	18.0	23.0
Max Q Clear Time (g_c+I1), s	16.0	23.2	6.0	5.9	4.0	8.4	20.0	8.3
Green Ext Time (p_c), s	0.0	0.0	0.1	2.9	0.0	10.0	0.0	2.4

Intersection Summary	
HCM 2010 Ctrl Delay	54.6
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	55	763	443	27	939	97	186	224	25	112	403	156
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	58	803	332	28	988	94	196	236	20	118	424	139
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	216	1773	768	243	1632	155	229	979	82	147	657	213
Arrive On Green	0.50	0.50	0.50	0.50	0.50	0.50	0.13	0.30	0.30	0.08	0.25	0.25
Sat Flow, veh/h	519	3539	1532	493	3257	310	1774	3299	277	1774	2624	851
Grp Volume(v), veh/h	58	803	332	28	537	545	196	126	130	118	285	278
Grp Sat Flow(s),veh/h/ln	519	1770	1532	493	1770	1797	1774	1770	1807	1774	1770	1705
Q Serve(g_s), s	9.5	15.4	14.5	4.1	22.8	22.8	11.4	5.6	5.7	6.9	15.1	15.4
Cycle Q Clear(g_c), s	32.3	15.4	14.5	19.5	22.8	22.8	11.4	5.6	5.7	6.9	15.1	15.4
Prop In Lane	1.00		1.00	1.00		0.17	1.00		0.15	1.00		0.50
Lane Grp Cap(c), veh/h	216	1773	768	243	887	900	229	525	536	147	443	427
V/C Ratio(X)	0.27	0.45	0.43	0.12	0.61	0.61	0.85	0.24	0.24	0.80	0.64	0.65
Avail Cap(c_a), veh/h	216	1773	768	243	887	900	329	615	628	279	565	544
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	16.9	16.7	23.2	18.8	18.8	44.7	27.9	28.0	47.3	35.1	35.2
Incr Delay (d2), s/veh	3.0	0.8	1.8	1.0	3.1	3.0	13.9	0.8	0.8	9.6	5.5	6.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	7.7	6.5	0.6	11.8	12.0	6.4	2.9	3.0	3.8	8.0	7.9
LnGrp Delay(d),s/veh	33.4	17.7	18.5	24.1	21.8	21.8	58.6	28.8	28.8	56.9	40.7	41.2
LnGrp LOS	C	B	B	C	C	C	E	C	C	E	D	D
Approach Vol, veh/h		1193			1110			452			681	
Approach Delay, s/veh		18.7			21.9			41.7			43.7	
Approach LOS		B			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		57.1	17.1	30.8		57.1	12.2	35.7
Change Period (Y+Rc), s		4.5	3.5	4.5		4.5	3.5	4.5
Max Green Setting (Gmax), s		39.5	19.5	33.5		39.5	16.5	36.5
Max Q Clear Time (g_c+I1), s		34.3	13.4	17.4		24.8	8.9	7.7
Green Ext Time (p_c), s		5.1	0.3	9.0		14.2	0.1	12.8

Intersection Summary	
HCM 2010 Ctrl Delay	27.7
HCM 2010 LOS	C

Notes

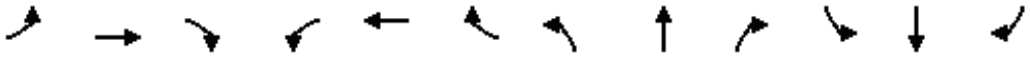
User approved ignoring U-Turning movement.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	675	197	369	167	75	150
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	750	219	410	186	83	167
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						19
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1062		
pX, platoon unblocked						
vC, conflicting volume			969		1756	750
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			969		1756	750
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			42		0	59
cM capacity (veh/h)			707		39	410

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	750	219	410	186	250
Volume Left	0	0	410	0	83
Volume Right	0	219	0	0	167
cSH	1700	1700	707	1700	117
Volume to Capacity	0.44	0.13	0.58	0.11	2.13
Queue Length 95th (ft)	0	0	94	0	526
Control Delay (s)	0.0	0.0	16.9	0.0	261.1
Lane LOS			C		F
Approach Delay (s)	0.0		11.6		261.1
Approach LOS					F

Intersection Summary			
Average Delay	39.8		
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	105	216	333	117	171	330	83	101	235	345	351	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frt	1.00	0.91		1.00	0.90		1.00	0.90			0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)	1752	1677		1752	1662		1752	1619			1767	
Flt Permitted	0.95	1.00		0.95	1.00		0.42	1.00			0.48	
Satd. Flow (perm)	1752	1677		1752	1662		779	1619			864	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	235	362	127	186	359	90	110	255	375	382	140
RTOR Reduction (vph)	0	100	0	0	126	0	0	130	0	0	10	0
Lane Group Flow (vph)	114	497	0	127	419	0	90	235	0	0	887	0
Confl. Peds. (#/hr)									3	3		
Confl. Bikes (#/hr)									3			
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	5.2	19.6		5.2	19.6		16.8	16.8			16.8	
Effective Green, g (s)	5.2	19.6		5.2	19.6		16.8	16.8			16.8	
Actuated g/C Ratio	0.10	0.37		0.10	0.37		0.31	0.31			0.31	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	169	613		169	607		244	507			270	
v/s Ratio Prot	0.07	c0.30		c0.07	0.25			0.14				
v/s Ratio Perm							0.12				c1.03	
v/c Ratio	0.67	0.81		0.75	0.69		0.37	0.46			3.28	
Uniform Delay, d1	23.4	15.3		23.6	14.4		14.3	14.8			18.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	10.2	8.0		17.0	3.3		0.9	0.7			1037.3	
Delay (s)	33.5	23.3		40.6	17.7		15.2	15.4			1055.7	
Level of Service	C	C		D	B		B	B			F	
Approach Delay (s)		25.0			22.0			15.4			1055.7	
Approach LOS		C			C			B			F	

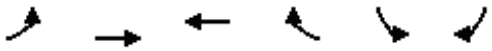
Intersection Summary			
HCM 2000 Control Delay	360.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.80		
Actuated Cycle Length (s)	53.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	117.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	390	406	64	390	228	188
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	424	441	70	424	248	204
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						3
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	337					
pX, platoon unblocked						
vC, conflicting volume			424		1208	645
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			424		1208	645
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		0	57
cM capacity (veh/h)			1130		189	471

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	865	70	424	452
Volume Left	0	70	0	248
Volume Right	441	0	0	204
cSH	1700	1130	1700	275
Volume to Capacity	0.51	0.06	0.25	1.64
Queue Length 95th (ft)	0	5	0	704
Control Delay (s)	0.0	8.4	0.0	337.9
Lane LOS		A		F
Approach Delay (s)	0.0	1.2		337.9
Approach LOS				F

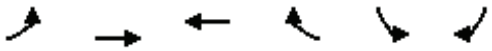
Intersection Summary			
Average Delay	84.7		
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	778	457	0	928	649
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	0	819	481	0	977	440
Adj No. of Lanes	0	2	2	0	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1802	1802	0	1173	540
Arrive On Green	0.00	0.51	0.17	0.00	0.34	0.34
Sat Flow, veh/h	0	3725	3725	0	3442	1583
Grp Volume(v), veh/h	0	819	481	0	977	440
Grp Sat Flow(s),veh/h/ln	0	1770	1770	0	1721	1583
Q Serve(g_s), s	0.0	8.9	7.1	0.0	15.7	15.2
Cycle Q Clear(g_c), s	0.0	8.9	7.1	0.0	15.7	15.2
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1802	1802	0	1173	540
V/C Ratio(X)	0.00	0.45	0.27	0.00	0.83	0.82
Avail Cap(c_a), veh/h	0	1802	1802	0	1319	607
HCM Platoon Ratio	1.00	1.00	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.99	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	9.4	15.2	0.0	18.2	18.1
Incr Delay (d2), s/veh	0.0	0.8	0.4	0.0	4.3	7.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.5	3.6	0.0	8.0	7.8
LnGrp Delay(d),s/veh	0.0	10.2	15.6	0.0	22.5	25.7
LnGrp LOS		B	B		C	C
Approach Vol, veh/h		819	481		1417	
Approach Delay, s/veh		10.2	15.6		23.5	
Approach LOS		B	B		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		35.6		24.4		35.6		
Change Period (Y+Rc), s		5.0		4.0		5.0		
Max Green Setting (Gmax), s		28.0		23.0		28.0		
Max Q Clear Time (g_c+I1), s		10.9		17.7		9.1		
Green Ext Time (p_c), s		8.5		2.8		8.9		

Intersection Summary	
HCM 2010 Ctrl Delay	18.1
HCM 2010 LOS	B



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	14	1692	400	30	301	57
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99			0.95	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1900	1845	1900
Adj Flow Rate, veh/h	15	1781	421	24	317	49
Adj No. of Lanes	0	2	2	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	0	0
Cap, veh/h	67	2139	2102	119	360	56
Arrive On Green	0.83	0.83	0.42	0.42	0.24	0.24
Sat Flow, veh/h	9	3505	3453	191	1494	231
Grp Volume(v), veh/h	963	833	219	226	367	0
Grp Sat Flow(s),veh/h/ln	1835	1595	1752	1799	1729	0
Q Serve(g_s), s	0.0	17.3	4.7	4.8	12.3	0.0
Cycle Q Clear(g_c), s	17.2	17.3	4.7	4.8	12.3	0.0
Prop In Lane	0.02			0.11	0.86	0.13
Lane Grp Cap(c), veh/h	1209	997	1096	1125	417	0
V/C Ratio(X)	0.80	0.84	0.20	0.20	0.88	0.00
Avail Cap(c_a), veh/h	1209	997	1096	1125	519	0
HCM Platoon Ratio	1.33	1.33	0.67	0.67	1.00	1.00
Upstream Filter(I)	0.73	0.73	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	3.3	3.3	7.9	7.9	21.9	0.0
Incr Delay (d2), s/veh	4.1	6.1	0.4	0.4	11.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.2	8.5	2.4	2.5	7.2	0.0
LnGrp Delay(d),s/veh	7.4	9.5	8.3	8.3	33.9	0.0
LnGrp LOS	A	A	A	A	C	
Approach Vol, veh/h		1796	445		367	
Approach Delay, s/veh		8.4	8.3		33.9	
Approach LOS		A	A		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		41.5		18.5		41.5		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		34.0		18.0		34.0		
Max Q Clear Time (g_c+I1), s		19.3		14.3		6.8		
Green Ext Time (p_c), s		12.1		0.2		19.9		

Intersection Summary	
HCM 2010 Ctrl Delay	11.9
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	195	25	915	99	330	68	422	339	0	0	686	153
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.80	1.00		0.92	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	0	1845	1845
Adj Flow Rate, veh/h	205	0	695	104	347	19	444	357	0	0	722	121
Adj No. of Lanes	1	0	2	1	2	1	2	3	0	0	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	242	0	813	395	788	325	509	2750	0	0	1303	570
Arrive On Green	0.14	0.00	0.14	0.22	0.22	0.22	0.15	0.55	0.00	0.00	0.37	0.37
Sat Flow, veh/h	1757	0	2508	1757	3505	1444	3408	5202	0	0	3597	1533
Grp Volume(v), veh/h	205	0	695	104	347	19	444	357	0	0	722	121
Grp Sat Flow(s),veh/h/ln	1757	0	1254	1757	1752	1444	1704	1679	0	0	1752	1533
Q Serve(g_s), s	13.7	0.0	16.5	5.9	10.2	1.2	15.3	4.2	0.0	0.0	19.6	6.5
Cycle Q Clear(g_c), s	13.7	0.0	16.5	5.9	10.2	1.2	15.3	4.2	0.0	0.0	19.6	6.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	242	0	813	395	788	325	509	2750	0	0	1303	570
V/C Ratio(X)	0.85	0.00	0.85	0.26	0.44	0.06	0.87	0.13	0.00	0.00	0.55	0.21
Avail Cap(c_a), veh/h	242	0	813	527	1051	433	596	2750	0	0	1303	570
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	50.5	0.0	41.5	38.3	40.0	36.5	49.9	13.3	0.0	0.0	29.8	25.7
Incr Delay (d2), s/veh	23.7	0.0	8.9	0.4	0.4	0.1	12.0	0.1	0.0	0.0	1.7	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	0.0	12.0	2.9	5.0	0.5	8.1	1.9	0.0	0.0	9.7	2.9
LnGrp Delay(d),s/veh	74.2	0.0	50.3	38.7	40.4	36.6	61.9	13.4	0.0	0.0	31.5	26.6
LnGrp LOS	E		D	D	D	D	E	B			C	C
Approach Vol, veh/h		900			470			801			843	
Approach Delay, s/veh		55.8			39.9			40.3			30.8	
Approach LOS		E			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		69.5		20.0	20.9	48.6		30.5
Change Period (Y+Rc), s		4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s		56.5		16.5	21.0	32.5		36.0
Max Q Clear Time (g_c+I1), s		6.2		18.5	17.3	21.6		12.2
Green Ext Time (p_c), s		10.5		0.0	0.6	5.7		2.7

Intersection Summary	
HCM 2010 Ctrl Delay	42.2
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	398	10	34	372	2	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	468	12	40	438	2	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			480		992	474
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			480		992	474
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		99	99
cM capacity (veh/h)			1082		262	590

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	480	40	438	7
Volume Left	0	40	0	2
Volume Right	12	0	0	5
cSH	1700	1082	1700	417
Volume to Capacity	0.28	0.04	0.26	0.02
Queue Length 95th (ft)	0	3	0	1
Control Delay (s)	0.0	8.5	0.0	13.8
Lane LOS		A		B
Approach Delay (s)	0.0	0.7		13.8
Approach LOS				B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	38.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	75.6
Intersection LOS	F

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	115	126	167	0	432	327	95	0	176	360	156
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	125	137	182	0	470	355	103	0	191	391	170
Number of Lanes	0	0	1	0	0	1	1	0	0	1	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	1	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	3	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	3	3	2
HCM Control Delay	91.7	90.4	60.5
HCM LOS	F	F	F

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	28%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	43%	31%	0%	77%	0%	100%	56%
Vol Right, %	0%	0%	57%	41%	0%	23%	0%	0%	44%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	176	240	276	408	432	422	314	161	144
LT Vol	176	0	0	115	432	0	314	0	0
Through Vol	0	240	120	126	0	327	0	161	81
RT Vol	0	0	156	167	0	95	0	0	63
Lane Flow Rate	191	261	300	443	470	459	341	175	156
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.661	0.865	0.962	1	1	1	1	0.604	0.525
Departure Headway (Hd)	12.442	11.942	11.547	12.845	12.829	12.177	12.902	12.403	12.097
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	291	305	315	288	286	303	283	293	300
Service Time	10.166	9.666	9.271	10.567	10.571	9.918	10.633	10.134	9.827
HCM Lane V/C Ratio	0.656	0.856	0.952	1.538	1.643	1.515	1.205	0.597	0.52
HCM Control Delay	36.5	59	77	91.7	91.7	89.1	91.9	32.4	27.5
HCM Lane LOS	E	F	F	F	F	F	F	D	D
HCM 95th-tile Q	4.3	7.7	9.9	10.2	10.2	10.5	10.2	3.6	2.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	314	242	63
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	341	263	68
Number of Lanes	0	1	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	3
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	61.4
HCM LOS	F

Lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	28	403	257	436	128	38	105	104	645	55	139	25
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	31	448	233	484	142	35	116	117	233	61	154	25
Adj No. of Lanes	1	2	0	2	1	0	1	1	1	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	410	520	268	649	263	65	345	363	307	75	189	31
Arrive On Green	0.23	0.23	0.23	0.18	0.18	0.18	0.19	0.19	0.19	0.16	0.16	0.16
Sat Flow, veh/h	1774	2249	1159	3548	1436	354	1774	1863	1578	458	1157	188
Grp Volume(v), veh/h	31	352	329	484	0	177	116	117	233	240	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1638	1774	0	1790	1774	1863	1578	1803	0	0
Q Serve(g_s), s	1.0	13.4	13.6	9.1	0.0	6.3	4.0	3.8	9.8	9.0	0.0	0.0
Cycle Q Clear(g_c), s	1.0	13.4	13.6	9.1	0.0	6.3	4.0	3.8	9.8	9.0	0.0	0.0
Prop In Lane	1.00		0.71	1.00		0.20	1.00		1.00	0.25		0.10
Lane Grp Cap(c), veh/h	410	409	379	649	0	327	345	363	307	295	0	0
V/C Ratio(X)	0.08	0.86	0.87	0.75	0.00	0.54	0.34	0.32	0.76	0.81	0.00	0.00
Avail Cap(c_a), veh/h	430	429	397	910	0	459	708	743	630	411	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	21.1	25.9	26.0	27.1	0.0	26.0	24.4	24.3	26.7	28.3	0.0	0.0
Incr Delay (d2), s/veh	0.1	15.6	17.8	2.1	0.0	1.4	0.6	0.5	3.8	8.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	8.3	8.0	4.6	0.0	3.2	2.0	2.0	4.6	5.2	0.0	0.0
LnGrp Delay(d),s/veh	21.2	41.5	43.7	29.3	0.0	27.4	24.9	24.8	30.5	36.8	0.0	0.0
LnGrp LOS	C	D	D	C		C	C	C	C	D		
Approach Vol, veh/h		712			661			466			240	
Approach Delay, s/veh		41.6			28.8			27.7			36.8	
Approach LOS		D			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		17.7		20.2		15.5		16.8
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		28.0		17.0		16.0		18.0
Max Q Clear Time (g_c+I1), s		11.8		15.6		11.0		11.1
Green Ext Time (p_c), s		1.6		0.7		0.6		1.7

Intersection Summary	
HCM 2010 Ctrl Delay	33.9
HCM 2010 LOS	C

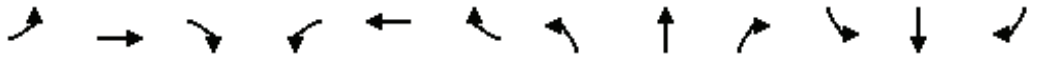
Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	263	0	133	120	721	0	0	429	403
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1900	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				299	0	79	136	819	0	0	488	0
Adj No. of Lanes				1	1	0	1	2	0	0	2	0
Peak Hour Factor				0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				393	0	351	165	2096	0	0	1437	0
Arrive On Green				0.22	0.00	0.22	0.09	0.59	0.00	0.00	0.41	0.00
Sat Flow, veh/h				1774	0	1583	1774	3632	0	0	3725	0
Grp Volume(v), veh/h				299	0	79	136	819	0	0	488	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	1774	1770	0	0	1770	0
Q Serve(g_s), s				6.8	0.0	1.8	3.2	5.3	0.0	0.0	4.1	0.0
Cycle Q Clear(g_c), s				6.8	0.0	1.8	3.2	5.3	0.0	0.0	4.1	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				393	0	351	165	2096	0	0	1437	0
V/C Ratio(X)				0.76	0.00	0.23	0.82	0.39	0.00	0.00	0.34	0.00
Avail Cap(c_a), veh/h				661	0	590	165	2472	0	0	3132	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				15.7	0.0	13.7	19.1	4.6	0.0	0.0	8.8	0.0
Incr Delay (d2), s/veh				3.1	0.0	0.3	27.3	0.1	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.7	0.0	0.8	2.8	2.5	0.0	0.0	2.0	0.0
LnGrp Delay(d),s/veh				18.7	0.0	14.0	46.4	4.8	0.0	0.0	8.9	0.0
LnGrp LOS				B		B	D	A			A	
Approach Vol, veh/h					378			955			488	
Approach Delay, s/veh					17.7			10.7			8.9	
Approach LOS					B			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		29.4			8.0	21.4		13.5
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		30.0			4.0	38.0		16.0
Max Q Clear Time (g_c+I1), s		7.3			5.2	6.1		8.8
Green Ext Time (p_c), s		9.9			0.0	11.4		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	11.7
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	946	202	88	366	0	0	0	0	388	23	341
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1900	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	1028	191	96	398	0				422	25	355
Adj No. of Lanes	0	2	0	0	2	0				0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1191	221	108	703	0				438	26	368
Arrive On Green	0.00	0.40	0.40	0.13	0.13	0.00				0.49	0.49	0.49
Sat Flow, veh/h	0	3071	552	80	1842	0				887	53	747
Grp Volume(v), veh/h	0	610	609	165	329	0				802	0	0
Grp Sat Flow(s),veh/h/ln	0	1770	1761	227	1610	0				1687	0	0
Q Serve(g_s), s	0.0	23.7	23.8	6.2	14.3	0.0				34.5	0.0	0.0
Cycle Q Clear(g_c), s	0.0	23.7	23.8	30.0	14.3	0.0				34.5	0.0	0.0
Prop In Lane	0.00		0.31	0.58		0.00				0.53		0.44
Lane Grp Cap(c), veh/h	0	708	704	167	644	0				832	0	0
V/C Ratio(X)	0.00	0.86	0.86	0.99	0.51	0.00				0.96	0.00	0.00
Avail Cap(c_a), veh/h	0	708	704	167	644	0				832	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.93	0.93	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	20.6	20.6	40.2	25.7	0.0				18.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	10.6	10.9	64.2	0.6	0.0				23.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	13.6	13.6	6.4	6.5	0.0				21.3	0.0	0.0
LnGrp Delay(d),s/veh	0.0	31.2	31.6	104.4	26.3	0.0				41.9	0.0	0.0
LnGrp LOS		C	C	F	C					D		
Approach Vol, veh/h		1219			494						802	
Approach Delay, s/veh		31.4			52.4						41.9	
Approach LOS		C			D						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				34.0		41.0		34.0
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				30.0		37.0		30.0
Max Q Clear Time (g_c+I1), s				25.8		36.5		32.0
Green Ext Time (p_c), s				3.5		0.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	38.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	270	1064	0	0	431	391	23	12	64	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	303	1196	0	0	484	288	20	22	18			
Adj No. of Lanes	0	2	0	0	2	0	1	1	1			
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	367	1444	0	0	1475	874	355	373	316			
Arrive On Green	1.00	1.00	0.00	0.00	0.69	0.69	0.20	0.20	0.20			
Sat Flow, veh/h	427	2167	0	0	2220	1260	1774	1863	1581			
Grp Volume(v), veh/h	638	861	0	0	402	370	20	22	18			
Grp Sat Flow(s),veh/h/ln	900	1610	0	0	1770	1618	1774	1863	1581			
Q Serve(g_s), s	45.2	0.0	0.0	0.0	6.8	6.8	0.7	0.7	0.7			
Cycle Q Clear(g_c), s	52.0	0.0	0.0	0.0	6.8	6.8	0.7	0.7	0.7			
Prop In Lane	0.48		0.00	0.00		0.78	1.00		1.00			
Lane Grp Cap(c), veh/h	694	1117	0	0	1227	1122	355	373	316			
V/C Ratio(X)	0.92	0.77	0.00	0.00	0.33	0.33	0.06	0.06	0.06			
Avail Cap(c_a), veh/h	694	1117	0	0	1227	1122	355	373	316			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.31	0.31	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	3.9	0.0	0.0	0.0	4.6	4.6	24.3	24.3	24.3			
Incr Delay (d2), s/veh	6.7	1.1	0.0	0.0	0.2	0.2	0.3	0.3	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	14.3	0.3	0.0	0.0	3.3	3.0	0.4	0.4	0.3			
LnGrp Delay(d),s/veh	10.6	1.1	0.0	0.0	4.7	4.7	24.6	24.6	24.6			
LnGrp LOS	B	A			A	A	C	C	C			
Approach Vol, veh/h		1499			772			60				
Approach Delay, s/veh		5.1			4.7			24.6				
Approach LOS		A			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		19.0		56.0				56.0
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		15.0		52.0				52.0
Max Q Clear Time (g_c+I1), s		2.7		54.0				8.8
Green Ext Time (p_c), s		0.1		0.0				30.3

Intersection Summary	
HCM 2010 Ctrl Delay	5.5
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

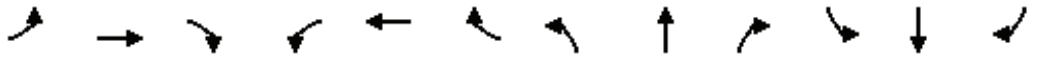
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	17	442	233	21	459	77	169	179	14	159	881	122
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1900	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	18	465	146	22	483	68	178	188	8	167	927	121
Adj No. of Lanes	0	2	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	64	1422	657	65	1244	172	209	1180	50	198	1052	137
Arrive On Green	0.43	0.43	0.43	0.43	0.43	0.43	0.12	0.34	0.34	0.11	0.34	0.34
Sat Flow, veh/h	65	3298	1523	68	2885	398	1757	3422	145	1757	3105	405
Grp Volume(v), veh/h	255	228	146	301	0	272	178	96	100	167	523	525
Grp Sat Flow(s),veh/h/ln	1768	1595	1523	1756	0	1596	1757	1752	1815	1757	1752	1758
Q Serve(g_s), s	0.0	10.3	6.5	0.0	0.0	12.6	10.7	4.1	4.1	10.1	30.4	30.4
Cycle Q Clear(g_c), s	9.8	10.3	6.5	12.0	0.0	12.6	10.7	4.1	4.1	10.1	30.4	30.4
Prop In Lane	0.07		1.00	0.07		0.25	1.00		0.08	1.00		0.23
Lane Grp Cap(c), veh/h	798	688	657	793	0	688	209	604	626	198	594	596
V/C Ratio(X)	0.32	0.33	0.22	0.38	0.00	0.40	0.85	0.16	0.16	0.84	0.88	0.88
Avail Cap(c_a), veh/h	798	688	657	793	0	688	342	604	626	423	633	635
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.00	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.3	20.4	19.3	20.9	0.0	21.1	46.7	24.5	24.5	47.0	33.6	33.6
Incr Delay (d2), s/veh	1.1	1.3	0.8	0.1	0.0	0.2	5.5	0.2	0.2	3.7	13.6	13.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	4.7	2.9	6.1	0.0	5.6	5.5	2.0	2.1	5.1	16.9	17.0
LnGrp Delay(d),s/veh	21.3	21.7	20.1	21.0	0.0	21.2	52.2	24.7	24.7	50.7	47.2	47.2
LnGrp LOS	C	C	C	C		C	D	C	C	D	D	D
Approach Vol, veh/h		629			573			374			1215	
Approach Delay, s/veh		21.2			21.1			37.8			47.7	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.8	40.6		50.6	16.2	41.3		50.6
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	21.0	39.0		36.0	26.0	34.0		36.0
Max Q Clear Time (g_c+I1), s	12.7	32.4		12.3	12.1	6.1		14.6
Green Ext Time (p_c), s	0.2	4.2		10.9	0.2	13.4		10.3

Intersection Summary	
HCM 2010 Ctrl Delay	34.9
HCM 2010 LOS	C

Notes

User approved ignoring U-Turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	240	126	113	186	41	39	313	51	92	1036	7
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.96	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	4	242	109	114	188	33	39	316	39	93	1046	6
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	20	284	128	173	497	87	112	1393	170	153	1669	10
Arrive On Green	0.01	0.24	0.24	0.10	0.33	0.33	0.06	0.44	0.44	0.06	0.31	0.31
Sat Flow, veh/h	1757	1181	532	1757	1517	266	1757	3135	383	1757	3572	20
Grp Volume(v), veh/h	4	0	351	114	0	221	39	175	180	93	513	539
Grp Sat Flow(s),veh/h/ln	1757	0	1713	1757	0	1784	1757	1752	1766	1757	1752	1840
Q Serve(g_s), s	0.2	0.0	21.1	6.8	0.0	10.3	2.3	6.7	6.8	5.6	27.0	27.0
Cycle Q Clear(g_c), s	0.2	0.0	21.1	6.8	0.0	10.3	2.3	6.7	6.8	5.6	27.0	27.0
Prop In Lane	1.00		0.31	1.00		0.15	1.00		0.22	1.00		0.01
Lane Grp Cap(c), veh/h	20	0	412	173	0	585	112	778	784	153	819	860
V/C Ratio(X)	0.20	0.00	0.85	0.66	0.00	0.38	0.35	0.23	0.23	0.61	0.63	0.63
Avail Cap(c_a), veh/h	195	0	412	195	0	585	195	778	784	195	819	860
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.75	0.75	0.75
Uniform Delay (d), s/veh	52.9	0.0	39.2	46.9	0.0	27.9	48.4	18.5	18.6	49.1	29.0	29.0
Incr Delay (d2), s/veh	1.8	0.0	19.4	4.6	0.0	1.9	0.7	0.7	0.7	1.1	2.7	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	12.2	3.5	0.0	5.3	1.1	3.4	3.4	2.8	13.7	14.4
LnGrp Delay(d),s/veh	54.6	0.0	58.5	51.5	0.0	29.7	49.1	19.2	19.3	50.2	31.8	31.6
LnGrp LOS	D		E	D		C	D	B	B	D	C	C
Approach Vol, veh/h		355			335			394			1145	
Approach Delay, s/veh		58.5			37.1			22.2			33.2	
Approach LOS		E			D			C			C	

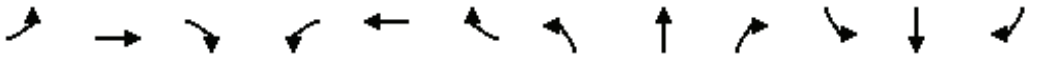
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	54.5	13.6	30.0	12.4	52.0	4.2	39.4
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	12.0	44.0	12.0	26.0	12.0	44.0	12.0	26.0
Max Q Clear Time (g_c+I1), s	4.3	29.0	8.8	23.1	7.6	8.8	2.2	12.3
Green Ext Time (p_c), s	0.0	9.9	0.0	0.7	0.0	17.0	0.0	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	35.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	505	159	121	491	0	0	0	0	180	970	138
Number	7	4	14	3	8	18				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	0.99		1.00				1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	515	134	123	501	0				184	990	127
Adj No. of Lanes	0	2	0	1	2	0				0	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1161	300	365	1494	0				201	1131	152
Arrive On Green	0.00	0.42	0.42	0.42	0.42	0.00				0.41	0.41	0.41
Sat Flow, veh/h	0	2843	711	773	3632	0				490	2759	370
Grp Volume(v), veh/h	0	330	319	123	501	0				690	0	611
Grp Sat Flow(s),veh/h/ln	0	1770	1691	773	1770	0				1838	0	1782
Q Serve(g_s), s	0.0	6.7	6.8	6.8	4.8	0.0				17.9	0.0	15.6
Cycle Q Clear(g_c), s	0.0	6.7	6.8	13.6	4.8	0.0				17.9	0.0	15.6
Prop In Lane	0.00		0.42	1.00		0.00				0.27		0.21
Lane Grp Cap(c), veh/h	0	747	714	365	1494	0				753	0	730
V/C Ratio(X)	0.00	0.44	0.45	0.34	0.34	0.00				0.92	0.00	0.84
Avail Cap(c_a), veh/h	0	1208	1154	566	2415	0				764	0	740
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	10.4	10.4	15.2	9.8	0.0				14.1	0.0	13.4
Incr Delay (d2), s/veh	0.0	0.2	0.2	0.2	0.0	0.0				15.3	0.0	7.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.2	3.1	1.5	2.3	0.0				12.2	0.0	9.0
LnGrp Delay(d),s/veh	0.0	10.5	10.6	15.4	9.9	0.0				29.4	0.0	21.2
LnGrp LOS		B	B	B	A					C		C
Approach Vol, veh/h		649			624						1301	
Approach Delay, s/veh		10.5			11.0						25.5	
Approach LOS		B			B						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		25.2		25.3				25.3
Change Period (Y+Rc), s		4.5		4.0				4.0
Max Green Setting (Gmax), s		21.0		34.5				34.5
Max Q Clear Time (g_c+I1), s		19.9		8.8				15.6
Green Ext Time (p_c), s		0.7		6.3				5.7

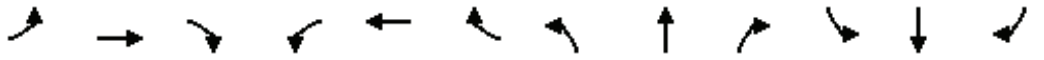
Intersection Summary	
HCM 2010 Ctrl Delay	18.2
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	144	536	0	0	494	83	105	714	63	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.95	1.00		0.96			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1900	1863	1900			
Adj Flow Rate, veh/h	152	564	0	0	520	69	111	752	51			
Adj No. of Lanes	1	2	0	0	2	0	0	3	0			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	276	1780	0	0	816	108	197	1430	99			
Arrive On Green	0.16	0.50	0.00	0.00	0.26	0.26	0.32	0.32	0.32			
Sat Flow, veh/h	1774	3632	0	0	3216	412	608	4406	306			
Grp Volume(v), veh/h	152	564	0	0	294	295	334	281	299			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1766	1832	1695	1793			
Q Serve(g_s), s	3.2	3.8	0.0	0.0	6.0	6.0	6.1	5.4	5.5			
Cycle Q Clear(g_c), s	3.2	3.8	0.0	0.0	6.0	6.0	6.1	5.4	5.5			
Prop In Lane	1.00		0.00	0.00		0.23	0.33		0.17			
Lane Grp Cap(c), veh/h	276	1780	0	0	462	461	595	550	582			
V/C Ratio(X)	0.55	0.32	0.00	0.00	0.64	0.64	0.56	0.51	0.51			
Avail Cap(c_a), veh/h	874	1787	0	0	894	892	1128	1044	1104			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	15.8	6.0	0.0	0.0	13.3	13.3	11.3	11.1	11.1			
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.0	0.5	0.6	0.3	0.3	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.6	1.8	0.0	0.0	2.9	2.9	3.1	2.5	2.7			
LnGrp Delay(d),s/veh	16.5	6.0	0.0	0.0	13.8	13.9	11.6	11.4	11.4			
LnGrp LOS	B	A			B	B	B	B	B			
Approach Vol, veh/h		716			589			914				
Approach Delay, s/veh		8.2			13.8			11.5				
Approach LOS		A			B			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		16.7	9.8	14.1				23.9
Change Period (Y+Rc), s		3.5	3.5	3.5				3.5
Max Green Setting (Gmax), s		25.0	20.0	20.5				20.5
Max Q Clear Time (g_c+I1), s		8.1	5.2	8.0				5.8
Green Ext Time (p_c), s		3.8	2.5	2.0				2.5

Intersection Summary	
HCM 2010 Ctrl Delay	11.1
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	47	227	84	102	211	63	209	367	143	82	660	16
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.96	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1900	1845	1900
Adj Flow Rate, veh/h	51	244	42	110	227	58	225	395	80	88	710	16
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	0	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	71	361	285	141	331	84	473	497	401	110	931	22
Arrive On Green	0.04	0.20	0.20	0.08	0.24	0.24	0.27	0.27	0.27	0.29	0.29	0.29
Sat Flow, veh/h	1757	1845	1460	1757	1404	359	1757	1845	1490	377	3200	75
Grp Volume(v), veh/h	51	244	42	110	0	285	225	395	80	426	0	388
Grp Sat Flow(s),veh/h/ln	1757	1845	1460	1757	0	1762	1757	1845	1490	1826	0	1827
Q Serve(g_s), s	2.6	11.0	2.1	5.5	0.0	13.2	9.6	17.8	3.7	19.3	0.0	17.1
Cycle Q Clear(g_c), s	2.6	11.0	2.1	5.5	0.0	13.2	9.6	17.8	3.7	19.3	0.0	17.1
Prop In Lane	1.00		1.00	1.00		0.20	1.00		1.00	0.21		0.04
Lane Grp Cap(c), veh/h	71	361	285	141	0	415	473	497	401	531	0	531
V/C Ratio(X)	0.72	0.68	0.15	0.78	0.00	0.69	0.48	0.80	0.20	0.80	0.00	0.73
Avail Cap(c_a), veh/h	294	618	490	294	0	591	589	618	500	612	0	613
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.5	33.4	29.8	40.4	0.0	31.2	27.4	30.4	25.2	29.3	0.0	28.6
Incr Delay (d2), s/veh	15.5	2.7	0.3	10.7	0.0	2.4	0.9	6.2	0.3	7.0	0.0	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	5.8	0.9	3.1	0.0	6.7	4.7	9.8	1.6	10.7	0.0	9.2
LnGrp Delay(d),s/veh	57.9	36.1	30.1	51.1	0.0	33.6	28.3	36.6	25.5	36.4	0.0	32.6
LnGrp LOS	E	D	C	D		C	C	D	C	D		C
Approach Vol, veh/h		337			395			700			814	
Approach Delay, s/veh		38.6			38.5			32.6			34.6	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.8	21.6		27.6	7.2	25.2		29.5
Change Period (Y+Rc), s	3.6	4.1		3.5	3.6	4.1		3.5
Max Green Setting (Gmax), s	15.0	30.0		30.0	15.0	30.0		30.0
Max Q Clear Time (g_c+I1), s	7.5	13.0		19.8	4.6	15.2		21.3
Green Ext Time (p_c), s	0.2	3.9		3.1	0.1	3.6		3.9

Intersection Summary	
HCM 2010 Ctrl Delay	35.3
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	685	12	55	880	108	1	69	39	198	199	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00	0.98		1.00	0.99
Flpb, ped/bikes	0.99	1.00		0.98	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.98			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		0.98	1.00
Satd. Flow (prot)	1732	3491		1723	3413			1843	1536		1794	1547
Flt Permitted	0.20	1.00		0.32	1.00			1.00	1.00		0.80	1.00
Satd. Flow (perm)	365	3491		577	3413			1839	1536		1479	1547
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	85	729	13	59	936	115	1	73	41	211	212	98
RTOR Reduction (vph)	0	1	0	0	7	0	0	0	27	0	0	35
Lane Group Flow (vph)	85	741	0	59	1044	0	0	74	14	0	423	63
Confl. Peds. (#/hr)	36		28	28		36	1		8	8		1
Confl. Bikes (#/hr)			3						3			1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	60.1	60.1		60.1	60.1			36.9	36.9		36.9	36.9
Effective Green, g (s)	60.1	60.1		60.1	60.1			36.9	36.9		36.9	36.9
Actuated g/C Ratio	0.57	0.57		0.57	0.57			0.35	0.35		0.35	0.35
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	2.0		2.0	2.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	208	1998		330	1953			646	539		519	543
v/s Ratio Prot		0.21			c0.31							
v/s Ratio Perm	0.23			0.10				0.04	0.01		c0.29	0.04
v/c Ratio	0.41	0.37		0.18	0.53			0.11	0.03		0.82	0.12
Uniform Delay, d1	12.5	12.2		10.7	13.8			23.0	22.3		30.9	23.0
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	5.9	0.5		1.2	1.1			0.1	0.0		9.5	0.1
Delay (s)	18.4	12.7		11.9	14.9			23.1	22.3		40.5	23.1
Level of Service	B	B		B	B			C	C		D	C
Approach Delay (s)		13.3			14.7			22.8			37.2	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	15.1
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	2	156	65	0	241	201	68	0	60	8	205
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	6	5	5	5	6	5	5	5	6	5	5	5
Mvmt Flow	0	2	179	75	0	277	231	78	0	69	9	236
Number of Lanes	0	1	2	0	0	1	2	0	0	0	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	3	3	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	3
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	3
HCM Control Delay	13.2	16.5	14.8
HCM LOS	B	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	88%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	12%	0%	0%	100%	44%	0%	100%	50%	0%	96%
Vol Right, %	0%	100%	0%	0%	56%	0%	0%	50%	0%	4%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	68	205	2	104	117	241	134	135	60	48
LT Vol	60	0	2	0	0	241	0	0	60	0
Through Vol	8	0	0	104	52	0	134	67	0	46
RT Vol	0	205	0	0	65	0	0	68	0	2
Lane Flow Rate	78	236	2	120	134	277	154	155	69	55
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.177	0.458	0.005	0.261	0.279	0.587	0.304	0.291	0.167	0.126
Departure Headway (Hd)	8.138	6.99	8.378	7.866	7.468	7.623	7.113	6.754	8.726	8.191
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	441	516	427	457	480	474	505	532	410	437
Service Time	5.888	4.739	6.136	5.623	5.225	5.372	4.862	4.502	6.488	5.953
HCM Lane V/C Ratio	0.177	0.457	0.005	0.263	0.279	0.584	0.305	0.291	0.168	0.126
HCM Control Delay	12.6	15.5	11.2	13.4	13.1	20.7	13	12.3	13.2	12.1
HCM Lane LOS	B	C	B	B	B	C	B	B	B	B
HCM 95th-tile Q	0.6	2.4	0	1	1.1	3.7	1.3	1.2	0.6	0.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	60	46	2
Peak Hour Factor	0.87	0.87	0.87	0.87
Heavy Vehicles, %	6	5	5	5
Mvmt Flow	0	69	53	2
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	3
Conflicting Approach Right	EB
Conflicting Lanes Right	3
HCM Control Delay	12.7
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	18.8
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	51	370	0	0	0	394	262	0	116	0	75
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	5	4	4	4	5	4	4	4	5	4	4	4
Mvmt Flow	0	59	430	0	0	0	458	305	0	135	0	87
Number of Lanes	0	1	2	0	0	0	2	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	3	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	3
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	13	23.9	13.8
HCM LOS	B	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2
Vol Left, %	100%	0%	100%	0%	0%	0%	0%
Vol Thru, %	0%	0%	0%	100%	100%	100%	33%
Vol Right, %	0%	100%	0%	0%	0%	0%	67%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	116	75	51	185	185	263	393
LT Vol	116	0	51	0	0	0	0
Through Vol	0	0	0	185	185	263	131
RT Vol	0	75	0	0	0	0	262
Lane Flow Rate	135	87	59	215	215	305	457
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	0.319	0.177	0.128	0.435	0.321	0.564	0.784
Departure Headway (Hd)	8.508	7.289	7.785	7.276	5.488	6.756	6.282
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	425	494	463	497	658	538	581
Service Time	6.218	4.998	5.498	4.988	3.188	4.456	3.982
HCM Lane V/C Ratio	0.318	0.176	0.127	0.433	0.327	0.567	0.787
HCM Control Delay	15.2	11.6	11.6	15.5	10.8	17.8	28
HCM Lane LOS	C	B	B	C	B	C	D
HCM 95th-tile Q	1.4	0.6	0.4	2.2	1.4	3.5	7.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	0	0	0
Peak Hour Factor	0.86	0.86	0.86	0.86
Heavy Vehicles, %	5	4	4	4
Mvmt Flow	0	0	0	0
Number of Lanes	0	0	0	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	

Lane



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	426	94	227	381	41	21	11	44	66	177	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0		3.0	4.0			2.0			2.0	2.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00			1.00			1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.97		1.00	0.99			0.92			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	1.00
Satd. Flow (prot)	1703	3296		1703	3348			1629			1768	1502
Flt Permitted	0.95	1.00		0.95	1.00			0.90			0.91	1.00
Satd. Flow (perm)	1703	3296		1703	3348			1490			1623	1502
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	32	444	98	236	397	43	22	11	46	69	184	136
RTOR Reduction (vph)	0	20	0	0	8	0	0	0	0	0	0	104
Lane Group Flow (vph)	32	522	0	236	432	0	0	79	0	0	253	32
Confl. Peds. (#/hr)			3			5						2
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1 3	3 6			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	3.0	22.4		37.6	57.0			21.0			21.0	21.0
Effective Green, g (s)	3.0	22.4		33.6	57.0			21.0			21.0	21.0
Actuated g/C Ratio	0.03	0.25		0.37	0.63			0.23			0.23	0.23
Clearance Time (s)	3.0	4.0						2.0			2.0	2.0
Vehicle Extension (s)	3.0	3.0						3.0			3.0	3.0
Lane Grp Cap (vph)	56	820		635	2120			347			378	350
v/s Ratio Prot	0.02	c0.16		c0.14	0.13							
v/s Ratio Perm								0.05			c0.16	0.02
v/c Ratio	0.57	0.64		0.37	0.20			0.23			0.67	0.09
Uniform Delay, d1	42.9	30.2		20.5	6.9			27.9			31.3	27.0
Progression Factor	1.00	1.00		0.65	0.06			1.00			1.00	1.00
Incremental Delay, d2	13.3	3.8		0.3	0.0			0.3			4.5	0.1
Delay (s)	56.2	33.9		13.6	0.4			28.3			35.8	27.1
Level of Service	E	C		B	A			C			D	C
Approach Delay (s)		35.2			5.0			28.3			32.8	
Approach LOS		D			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	118	556	0	0	582	165	32	1	263	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Lane Util. Factor	1.00	0.95			*1.00		1.00	0.95	0.95			
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Frt	1.00	1.00			0.97		1.00	0.85	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	1736	3471			3514		1736	1477	1475			
Flt Permitted	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	1736	3471			3514		1736	1477	1475			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	123	579	0	0	606	172	33	1	274	0	0	0
RTOR Reduction (vph)	0	0	0	0	25	0	0	126	126	0	0	0
Lane Group Flow (vph)	123	579	0	0	753	0	33	12	11	0	0	0
Confl. Peds. (#/hr)			4	4		8						
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	11.6	75.0			60.4		7.5	7.5	7.5			
Effective Green, g (s)	11.6	75.0			60.4		7.5	7.5	7.5			
Actuated g/C Ratio	0.13	0.83			0.67		0.08	0.08	0.08			
Clearance Time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	223	2892			2358		144	123	122			
v/s Ratio Prot	c0.07	0.17			c0.21			0.01				
v/s Ratio Perm							c0.02		0.01			
v/c Ratio	0.55	0.20			0.32		0.23	0.10	0.09			
Uniform Delay, d1	36.8	1.5			6.2		38.5	38.1	38.1			
Progression Factor	0.56	0.37			1.00		1.00	1.00	1.00			
Incremental Delay, d2	2.8	0.1			0.4		0.8	0.4	0.3			
Delay (s)	23.3	0.7			6.6		39.4	38.5	38.4			
Level of Service	C	A			A		D	D	D			
Approach Delay (s)		4.7			6.6			38.6			0.0	
Approach LOS		A			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	182	292	107	87	333	27	70	280	39	45	841	125
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.92	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	194	311	52	93	354	23	74	298	34	48	895	121
Adj No. of Lanes	1	1	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	195	630	505	0	673	43	145	1537	174	124	1468	198
Arrive On Green	0.04	0.11	0.11	0.00	0.20	0.20	0.03	0.16	0.16	0.07	0.47	0.47
Sat Flow, veh/h	1757	1845	1480	0	3323	215	1757	3163	357	1757	3096	419
Grp Volume(v), veh/h	194	311	52	0	186	191	74	164	168	48	507	509
Grp Sat Flow(s),veh/h/ln	1757	1845	1480	0	1752	1785	1757	1752	1767	1757	1752	1762
Q Serve(g_s), s	11.9	17.1	3.4	0.0	10.2	10.3	4.5	8.7	8.9	2.8	23.1	23.1
Cycle Q Clear(g_c), s	11.9	17.1	3.4	0.0	10.2	10.3	4.5	8.7	8.9	2.8	23.1	23.1
Prop In Lane	1.00		1.00	0.00		0.12	1.00		0.20	1.00		0.24
Lane Grp Cap(c), veh/h	195	630	505	0	355	362	145	852	859	124	831	835
V/C Ratio(X)	0.99	0.49	0.10	0.00	0.52	0.53	0.51	0.19	0.20	0.39	0.61	0.61
Avail Cap(c_a), veh/h	195	630	505	0	422	430	195	852	859	195	831	835
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.87	0.00	1.00	1.00	0.98	0.98	0.98	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.0	39.1	33.1	0.0	38.4	38.5	50.4	27.0	27.0	47.9	21.0	21.0
Incr Delay (d2), s/veh	58.2	0.2	0.0	0.0	0.4	0.4	1.0	0.5	0.5	0.7	3.3	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	8.8	1.4	0.0	5.0	5.1	2.2	4.4	4.5	1.4	11.9	11.9
LnGrp Delay(d),s/veh	110.2	39.3	33.1	0.0	38.9	38.9	51.4	27.5	27.5	48.7	24.3	24.3
LnGrp LOS	F	D	C		D	D	D	C	C	D	C	C
Approach Vol, veh/h		557			377			406			1064	
Approach Delay, s/veh		63.4			38.9			31.9			25.4	
Approach LOS		E			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	56.5	0.0	40.9	11.9	55.2	15.0	25.9
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	12.0	44.0	12.0	26.0	12.0	44.0	12.0	26.0
Max Q Clear Time (g_c+I1), s	4.8	10.9	0.0	19.1	6.5	25.1	13.9	12.3
Green Ext Time (p_c), s	0.0	15.8	0.0	1.8	0.0	11.4	0.0	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	37.4
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	196	182	19	43	180	37	7	123	41	130	136	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1787	3524		1770	3539	1583	1128	2164		1340	1404	1245
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1787	3524		1770	3539	1583	1128	2164		1340	1404	1245
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	228	212	22	50	209	43	8	143	48	151	158	220
RTOR Reduction (vph)	0	7	0	0	0	35	0	33	0	0	0	171
Lane Group Flow (vph)	228	227	0	50	209	8	8	158	0	136	173	49
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	60%	60%	60%	28%	28%	28%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases						2						8
Actuated Green, G (s)	14.6	23.4		4.2	13.0	13.0	11.7	11.7		16.2	16.2	16.2
Effective Green, g (s)	14.6	23.4		4.2	13.0	13.0	11.7	11.7		16.2	16.2	16.2
Actuated g/C Ratio	0.20	0.32		0.06	0.18	0.18	0.16	0.16		0.22	0.22	0.22
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Vehicle Extension (s)	2.0	4.0		2.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Grp Cap (vph)	357	1129		101	630	281	180	346		297	311	276
v/s Ratio Prot	c0.13	0.06		0.03	c0.06		0.01	c0.07		0.10	c0.12	
v/s Ratio Perm						0.00						0.04
v/c Ratio	0.64	0.20		0.50	0.33	0.03	0.04	0.46		0.46	0.56	0.18
Uniform Delay, d1	26.8	18.0		33.4	26.2	24.8	25.9	27.8		24.6	25.2	23.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.8	0.1		1.4	0.4	0.1	0.1	1.3		1.5	2.6	0.4
Delay (s)	29.5	18.1		34.8	26.6	24.8	26.1	29.1		26.1	27.9	23.4
Level of Service	C	B		C	C	C	C	C		C	C	C
Approach Delay (s)		23.8			27.7			29.0			25.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	25.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	73.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	42.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	466	70	250	364	0	0	0	0	208	31	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			3.0						4.0	4.0
Lane Util. Factor		0.95			*1.00						1.00	1.00
Frpb, ped/bikes		1.00			1.00						1.00	1.00
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.98			1.00						1.00	0.85
Flt Protected		1.00			0.98						0.96	1.00
Satd. Flow (prot)		3322			5270						1718	1524
Flt Permitted		1.00			0.71						0.96	1.00
Satd. Flow (perm)		3322			3844						1718	1524
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	485	73	260	379	0	0	0	0	217	32	297
RTOR Reduction (vph)	0	12	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	546	0	0	639	0	0	0	0	0	249	297
Confl. Peds. (#/hr)			6			5						
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Turn Type		NA		Prot	NA					Split	NA	Perm
Protected Phases		2 4		1	1 6					3	3	
Permitted Phases												3
Actuated Green, G (s)		47.4			29.4						23.6	23.6
Effective Green, g (s)		47.4			29.4						23.6	23.6
Actuated g/C Ratio		0.53			0.33						0.26	0.26
Clearance Time (s)											4.0	4.0
Vehicle Extension (s)											3.0	3.0
Lane Grp Cap (vph)		1749			1414						450	399
v/s Ratio Prot		c0.16			c0.05						0.14	
v/s Ratio Perm					c0.10							c0.19
v/c Ratio		0.31			1.38dl						0.55	0.74
Uniform Delay, d1		12.1			23.9						28.7	30.4
Progression Factor		0.04			1.06						1.00	1.00
Incremental Delay, d2		0.1			0.2						1.5	7.4
Delay (s)		0.6			25.6						30.1	37.8
Level of Service		A			C						C	D
Approach Delay (s)		0.6			25.6			0.0			34.3	
Approach LOS		A			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	514	157	125	483	0	0	0	0	148	600	125
Number	3	8	18	7	4	14				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1900	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	514	112	125	483	0				148	600	117
Adj No. of Lanes	0	2	1	0	2	0				0	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1279	559	211	812	0				313	1327	272
Arrive On Green	0.00	0.36	0.36	0.36	0.36	0.00				0.53	0.53	0.53
Sat Flow, veh/h	0	3632	1545	365	2332	0				587	2493	510
Grp Volume(v), veh/h	0	514	112	278	330	0				462	0	403
Grp Sat Flow(s),veh/h/ln	0	1770	1545	1002	1610	0				1833	0	1757
Q Serve(g_s), s	0.0	7.2	3.3	10.4	10.9	0.0				10.4	0.0	9.2
Cycle Q Clear(g_c), s	0.0	7.2	3.3	17.5	10.9	0.0				10.4	0.0	9.2
Prop In Lane	0.00		1.00	0.45		0.00				0.32		0.29
Lane Grp Cap(c), veh/h	0	1279	559	441	582	0				976	0	936
V/C Ratio(X)	0.00	0.40	0.20	0.63	0.57	0.00				0.47	0.00	0.43
Avail Cap(c_a), veh/h	0	1636	714	558	744	0				976	0	936
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.96	0.96	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	15.7	14.5	19.5	16.9	0.0				9.6	0.0	9.4
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.5	0.3	0.0				1.6	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.5	1.4	4.6	4.8	0.0				5.6	0.0	4.7
LnGrp Delay(d),s/veh	0.0	15.8	14.6	20.1	17.2	0.0				11.3	0.0	10.8
LnGrp LOS		B	B	C	B					B		B
Approach Vol, veh/h		626			608						865	
Approach Delay, s/veh		15.6			18.5						11.1	
Approach LOS		B			B						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		38.6		27.4				27.4
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		28.5		30.5				30.5
Max Q Clear Time (g_c+I1), s		12.4		19.5				9.2
Green Ext Time (p_c), s		3.5		4.3				5.7

Intersection Summary	
HCM 2010 Ctrl Delay	14.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	186	468	0	0	401	230	202	1446	185	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	0.98		1.00	1.00		0.93	1.00		0.98			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1863	1900	1863	1900			
Adj Flow Rate, veh/h	190	478	0	0	409	173	206	1476	123			
Adj No. of Lanes	0	2	0	0	2	1	0	3	0			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	331	824	0	0	1466	612	262	2003	171			
Arrive On Green	0.41	0.41	0.00	0.00	0.41	0.41	0.46	0.46	0.46			
Sat Flow, veh/h	538	2075	0	0	3632	1478	571	4371	374			
Grp Volume(v), veh/h	293	375	0	0	409	173	662	556	587			
Grp Sat Flow(s),veh/h/ln	918	1610	0	0	1770	1478	1834	1695	1787			
Q Serve(g_s), s	11.9	9.8	0.0	0.0	4.2	4.3	16.8	14.5	14.5			
Cycle Q Clear(g_c), s	16.1	9.8	0.0	0.0	4.2	4.3	16.8	14.5	14.5			
Prop In Lane	0.65		0.00	0.00		1.00	0.31		0.21			
Lane Grp Cap(c), veh/h	488	667	0	0	1466	612	840	777	819			
V/C Ratio(X)	0.60	0.56	0.00	0.00	0.28	0.28	0.79	0.72	0.72			
Avail Cap(c_a), veh/h	623	881	0	0	1936	809	1003	927	978			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	14.8	12.3	0.0	0.0	10.6	10.7	12.6	12.0	12.0			
Incr Delay (d2), s/veh	0.4	0.3	0.0	0.0	0.0	0.1	2.9	1.5	1.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.9	4.3	0.0	0.0	2.1	1.7	9.1	7.0	7.4			
LnGrp Delay(d),s/veh	15.2	12.5	0.0	0.0	10.7	10.7	15.5	13.5	13.5			
LnGrp LOS	B	B			B	B	B	B	B			
Approach Vol, veh/h		668			582			1805				
Approach Delay, s/veh		13.7			10.7			14.2				
Approach LOS		B			B			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		28.6		26.2				26.2
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		30.0		30.0				30.0
Max Q Clear Time (g_c+I1), s		18.8		6.3				18.1
Green Ext Time (p_c), s		6.4		6.0				4.6

Intersection Summary	
HCM 2010 Ctrl Delay	13.4
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	195	139	27	222	0	75	0	23	263	88	28
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1827	1900	1827	1827	0	1827	0	1827	1827	1827	1900
Adj Flow Rate, veh/h	0	219	47	30	249	0	84	0	16	296	99	25
Adj No. of Lanes	0	2	0	1	2	0	1	0	1	2	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	4	4	4	4	0	4	0	4	4	4	4
Cap, veh/h	0	1071	225	140	1955	0	0	0	0	566	229	58
Arrive On Green	0.00	0.38	0.38	0.08	0.56	0.00	0.00	0.00	0.00	0.16	0.16	0.16
Sat Flow, veh/h	0	2939	599	1740	3563	0		0		3480	1408	356
Grp Volume(v), veh/h	0	132	134	30	249	0		0.0		296	0	124
Grp Sat Flow(s),veh/h/ln	0	1736	1710	1740	1736	0				1740	0	1764
Q Serve(g_s), s	0.0	1.7	1.7	0.5	1.1	0.0				2.6	0.0	2.1
Cycle Q Clear(g_c), s	0.0	1.7	1.7	0.5	1.1	0.0				2.6	0.0	2.1
Prop In Lane	0.00		0.35	1.00		0.00				1.00		0.20
Lane Grp Cap(c), veh/h	0	653	644	140	1955	0				566	0	287
V/C Ratio(X)	0.00	0.20	0.21	0.21	0.13	0.00				0.52	0.00	0.43
Avail Cap(c_a), veh/h	0	1692	1667	1378	3384	0				2756	0	1397
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.9	6.9	14.1	3.4	0.0				12.6	0.0	12.4
Incr Delay (d2), s/veh	0.0	0.2	0.2	0.3	0.0	0.0				0.3	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.8	0.9	0.3	0.5	0.0				1.2	0.0	1.0
LnGrp Delay(d),s/veh	0.0	7.1	7.1	14.4	3.4	0.0				12.9	0.0	12.8
LnGrp LOS		A	A	B	A					B		B
Approach Vol, veh/h		266			279						420	
Approach Delay, s/veh		7.1			4.6						12.8	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		23.5			6.1	17.4		9.3
Change Period (Y+Rc), s		5.0			3.5	5.0		4.0
Max Green Setting (Gmax), s		32.0			26.0	32.0		26.0
Max Q Clear Time (g_c+I1), s		3.1			2.5	3.7		4.6
Green Ext Time (p_c), s		3.5			0.0	3.4		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	8.9
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	483	0	0	157	423	95	0	164	0	0	0
Number	1	6	16	5	2	12	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1863	0	0	1863	1900	1863	0	1863			
Adj Flow Rate, veh/h	0	582	0	0	189	-30	114	0	59			
Adj No. of Lanes	0	2	0	0	3	0	1	0	1			
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83			
Percent Heavy Veh, %	0	2	0	0	2	2	2	0	2			
Cap, veh/h	0	1534	0	0	3205	0	473	0	422			
Arrive On Green	0.00	0.43	0.00	0.00	0.43	0.00	0.27	0.00	0.27			
Sat Flow, veh/h	0	3725	0	0	5421	0	1774	0	1583			
Grp Volume(v), veh/h	0	582	0	0	159	0	114	0	59			
Grp Sat Flow(s),veh/h/ln	0	1770	0	0	1695	0	1774	0	1583			
Q Serve(g_s), s	0.0	3.3	0.0	0.0	0.0	0.0	1.5	0.0	0.9			
Cycle Q Clear(g_c), s	0.0	3.3	0.0	0.0	0.0	0.0	1.5	0.0	0.9			
Prop In Lane	0.00		0.00	0.00		0.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	1534	0	0	0	0	473	0	422			
V/C Ratio(X)	0.00	0.38	0.00	0.00	0.00	0.00	0.24	0.00	0.14			
Avail Cap(c_a), veh/h	0	3657	0	0	0	0	1656	0	1478			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	5.8	0.0	0.0	0.0	0.0	8.6	0.0	8.4			
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	1.7	0.0	0.0	0.0	0.0	0.7	0.0	0.4			
LnGrp Delay(d),s/veh	0.0	6.0	0.0	0.0	0.0	0.0	8.7	0.0	8.4			
LnGrp LOS		A					A		A			
Approach Vol, veh/h		582			159			173				
Approach Delay, s/veh		6.0			0.0			8.6				
Approach LOS		A			A			A				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		17.0		13.0		17.0		
Change Period (Y+Rc), s		4.0		5.0		4.0		
Max Green Setting (Gmax), s		33.0		28.0		31.0		
Max Q Clear Time (g_c+I1), s		2.0		3.5		5.3		
Green Ext Time (p_c), s		7.7		0.1		7.3		

Intersection Summary	
HCM 2010 Ctrl Delay	5.4
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	95	397	84	111	358	102	131	461	136	132	464	57
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1900	1845	1845	1900	1845	1900
Adj Flow Rate, veh/h	101	422	-30	118	381	55	139	490	63	140	494	46
Adj No. of Lanes	1	2	1	1	2	0	0	2	1	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	126	1216	544	143	1096	157	155	578	320	163	605	59
Arrive On Green	0.07	0.35	0.00	0.16	0.71	0.71	0.21	0.21	0.21	0.23	0.23	0.23
Sat Flow, veh/h	1757	3505	1568	1757	3071	440	751	2808	1552	709	2641	256
Grp Volume(v), veh/h	101	422	-30	118	216	220	334	295	63	357	0	323
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1758	1807	1752	1552	1809	0	1797
Q Serve(g_s), s	6.2	9.8	0.0	7.1	5.2	5.3	19.8	17.7	3.7	20.9	0.0	18.6
Cycle Q Clear(g_c), s	6.2	9.8	0.0	7.1	5.2	5.3	19.8	17.7	3.7	20.9	0.0	18.6
Prop In Lane	1.00		1.00	1.00		0.25	0.42		1.00	0.39		0.14
Lane Grp Cap(c), veh/h	126	1216	544	143	626	627	372	361	320	415	0	412
V/C Ratio(X)	0.80	0.35	-0.06	0.82	0.35	0.35	0.90	0.82	0.20	0.86	0.00	0.78
Avail Cap(c_a), veh/h	168	1216	544	279	626	627	402	390	346	502	0	498
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.00	0.97	0.97	0.97	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.3	26.7	0.0	45.3	10.9	10.9	42.6	41.7	36.1	40.7	0.0	39.8
Incr Delay (d2), s/veh	12.8	0.7	0.0	4.3	1.5	1.5	20.4	10.8	0.1	10.8	0.0	5.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	4.9	0.0	3.6	2.7	2.7	12.0	9.6	1.6	11.7	0.0	9.8
LnGrp Delay(d),s/veh	63.1	27.4	0.0	49.6	12.3	12.4	63.0	52.5	36.3	51.5	0.0	45.1
LnGrp LOS	E	C		D	B	B	E	D	D	D		D
Approach Vol, veh/h		493			554			692			680	
Approach Delay, s/veh		36.4			20.3			56.1			48.5	
Approach LOS		D			C			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.5	42.7		28.7	11.4	43.8		26.1
Change Period (Y+Rc), s	3.5	4.5		3.5	3.5	4.5		3.5
Max Green Setting (Gmax), s	17.5	22.5		30.5	10.5	29.5		24.5
Max Q Clear Time (g_c+I1), s	9.1	11.8		22.9	8.2	7.3		21.8
Green Ext Time (p_c), s	0.1	4.9		1.9	0.0	7.3		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	41.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	14	82	97	0	0	0	66	347	347	0	290	1
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900				1863	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	16	96	-27				78	408	379	0	341	-6
Adj No. of Lanes	1	2	0				1	1	1	0	2	1
Peak Hour Factor	0.85	0.85	0.85				0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2				2	2	2	0	2	2
Cap, veh/h	128	255	0				120	1114	945	0	1293	579
Arrive On Green	0.07	0.07	0.00				0.07	0.60	0.60	0.00	0.37	0.00
Sat Flow, veh/h	1774	3632	0				1774	1863	1581	0	3632	1583
Grp Volume(v), veh/h	16	69	0				78	408	379	0	341	-6
Grp Sat Flow(s),veh/h/ln	1774	1770	0				1774	1863	1581	0	1770	1583
Q Serve(g_s), s	0.2	0.4	0.0				1.0	2.7	3.1	0.0	1.6	0.0
Cycle Q Clear(g_c), s	0.2	0.4	0.0				1.0	2.7	3.1	0.0	1.6	0.0
Prop In Lane	1.00		0.00				1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	128	255	0				120	1114	945	0	1293	579
V/C Ratio(X)	0.13	0.27	0.00				0.65	0.37	0.40	0.00	0.26	-0.01
Avail Cap(c_a), veh/h	2270	4528	0				366	1999	1697	0	2483	1111
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00				1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	10.5	10.6	0.0				11.0	2.5	2.6	0.0	5.4	0.0
Incr Delay (d2), s/veh	0.4	0.6	0.0				5.9	0.2	0.3	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.2	0.0				0.7	1.4	1.3	0.0	0.8	0.0
LnGrp Delay(d),s/veh	11.0	11.2	0.0				16.9	2.7	2.9	0.0	5.5	0.0
LnGrp LOS	B	B					B	A	A		A	
Approach Vol, veh/h		85						865			335	
Approach Delay, s/veh		11.2						4.1			5.6	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		18.5		5.7	5.6	12.9		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		26.0		31.0	5.0	17.0		
Max Q Clear Time (g_c+I1), s		5.1		2.4	3.0	3.6		
Green Ext Time (p_c), s		6.2		0.4	0.0	5.1		

Intersection Summary	
HCM 2010 Ctrl Delay	4.9
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	43	1	3	12	2	408	3	303	21	259	100	19
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	51	1	4	14	2	480	4	356	25	305	118	22
Pedestrians		1			1			1				
Lane Width (ft)		12.0			12.0			12.0				
Walking Speed (ft/s)		4.0			4.0			4.0				
Percent Blockage		0			0			0				
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											499	
pX, platoon unblocked	0.90	0.90	0.90	0.90	0.90		0.90					
vC, conflicting volume	1596	1128	131	1120	1127	370	141			382		
vC1, stage 1 conf vol	739	739		377	377							
vC2, stage 2 conf vol	857	389		743	750							
vCu, unblocked vol	1607	1086	0	1077	1085	370	0			382		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	100	95	99	29	100			74		
cM capacity (veh/h)	17	245	972	278	282	675	1455			1175		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	55	496	385	445
Volume Left	51	14	4	305
Volume Right	4	480	25	22
cSH	19	645	1455	1175
Volume to Capacity	2.92	0.77	0.00	0.26
Queue Length 95th (ft)	184	181	0	26
Control Delay (s)	1289.6	26.7	0.1	7.1
Lane LOS	F	D	A	A
Approach Delay (s)	1289.6	26.7	0.1	7.1
Approach LOS	F	D		

Intersection Summary			
Average Delay	63.5		
Intersection Capacity Utilization	73.8%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	90	387	163	90	279	120	223	625	291	93	200	47
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	96	412	166	96	297	108	237	665	294	99	213	-34
Adj No. of Lanes	1	2	0	1	2	0	0	2	0	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	486	1228	489	480	1272	452	305	738	332	226	1220	0
Arrive On Green	1.00	1.00	1.00	0.50	0.50	0.50	0.43	0.43	0.43	0.43	0.43	0.00
Sat Flow, veh/h	976	2463	980	832	2551	907	598	1703	766	108	1695	0
Grp Volume(v), veh/h	96	295	283	96	204	201	605	0	591	99	179	0
Grp Sat Flow(s),veh/h/ln	976	1770	1674	832	1770	1689	1526	0	1540	108	1610	0
Q Serve(g_s), s	1.9	0.1	0.1	7.2	7.2	7.5	40.9	0.0	38.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	9.3	0.1	0.1	7.3	7.2	7.5	40.9	0.0	38.9	0.0	0.0	0.0
Prop In Lane	1.00		0.59	1.00		0.54	0.39		0.50	1.00		0.00
Lane Grp Cap(c), veh/h	486	883	835	480	883	842	707	0	667	0	0	0
V/C Ratio(X)	0.20	0.33	0.34	0.20	0.23	0.24	0.86	0.00	0.89	0.00	0.00	0.00
Avail Cap(c_a), veh/h	486	883	835	480	883	842	753	0	714	0	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	1.00	1.00	1.00	0.19	0.00	0.19	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.7	0.1	0.1	15.7	15.6	15.7	29.3	0.0	28.7	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.8	1.0	1.0	0.9	0.6	0.7	1.8	0.0	2.6	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.3	0.3	1.8	3.7	3.6	17.5	0.0	16.9	0.0	0.0	0.0
LnGrp Delay(d),s/veh	1.6	1.0	1.1	16.6	16.2	16.4	31.1	0.0	31.3	0.0	0.0	0.0
LnGrp LOS	A	A	A	B	B	B	C		C			
Approach Vol, veh/h		674			501			1196			278	
Approach Delay, s/veh		1.1			16.4			31.2			0.0	
Approach LOS		A			B			C			A	

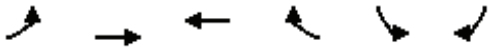
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		58.4		51.6		58.4		51.6
Change Period (Y+Rc), s		3.5		4.0		3.5		4.0
Max Green Setting (Gmax), s		51.5		51.0		51.5		51.0
Max Q Clear Time (g_c+I1), s		11.3		2.0		9.5		42.9
Green Ext Time (p_c), s		8.7		10.5		8.7		4.7

Intersection Summary	
HCM 2010 Ctrl Delay	17.5
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	230	117	135	363	479	209	636	141	196	224	21
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	13	264	89	155	417	548	240	731	161	225	257	19
Adj No. of Lanes	0	1	0	0	1	0	0	2	0	0	2	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	540	177	142	254	319	313	866	211	221	742	55
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.48	0.48	0.48	0.48	0.48	0.48
Sat Flow, veh/h	23	1325	433	194	624	783	489	1816	442	230	1556	115
Grp Volume(v), veh/h	366	0	0	1120	0	0	549	0	583	225	0	276
Grp Sat Flow(s),veh/h/ln	1782	0	0	1601	0	0	1146	0	1601	230	0	1671
Q Serve(g_s), s	0.0	0.0	0.0	16.6	0.0	0.0	24.3	0.0	19.5	11.5	0.0	6.7
Cycle Q Clear(g_c), s	9.9	0.0	0.0	26.5	0.0	0.0	31.0	0.0	19.5	31.0	0.0	6.7
Prop In Lane	0.04		0.24	0.14		0.49	0.44		0.28	1.00		0.07
Lane Grp Cap(c), veh/h	784	0	0	716	0	0	626	0	763	221	0	797
V/C Ratio(X)	0.47	0.00	0.00	1.57	0.00	0.00	0.88	0.00	0.76	1.02	0.00	0.35
Avail Cap(c_a), veh/h	784	0	0	716	0	0	626	0	763	221	0	797
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.3	0.0	0.0	20.2	0.0	0.0	19.9	0.0	14.0	29.6	0.0	10.7
Incr Delay (d2), s/veh	0.4	0.0	0.0	261.1	0.0	0.0	13.2	0.0	4.6	65.8	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	0.0	64.6	0.0	0.0	12.1	0.0	9.4	8.0	0.0	3.1
LnGrp Delay(d),s/veh	14.8	0.0	0.0	281.3	0.0	0.0	33.2	0.0	18.6	95.6	0.0	10.9
LnGrp LOS	B			F			C		B	F		B
Approach Vol, veh/h		366			1120			1132			501	
Approach Delay, s/veh		14.8			281.3			25.7			48.9	
Approach LOS		B			F			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		35.0		30.0		35.0		30.0
Change Period (Y+Rc), s		4.0		3.5		4.0		3.5
Max Green Setting (Gmax), s		31.0		26.5		31.0		26.5
Max Q Clear Time (g_c+I1), s		33.0		11.9		33.0		28.5
Green Ext Time (p_c), s		0.0		10.3		0.0		0.0

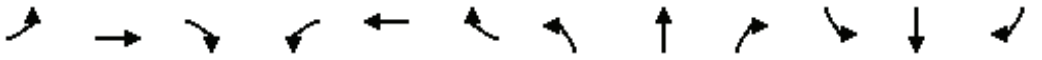
Intersection Summary	
HCM 2010 Ctrl Delay	119.9
HCM 2010 LOS	F



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	271	77	34	650	266	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1583	1764	1583
Flt Permitted	0.73	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1362	1863	1863	1583	1764	1583
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	319	91	40	765	313	194
RTOR Reduction (vph)	0	0	0	449	0	123
Lane Group Flow (vph)	319	91	40	316	313	71
Confl. Peds. (#/hr)					3	
Turn Type	Perm	NA	NA	Perm	Perm	Perm
Protected Phases		4	8			
Permitted Phases	4			8	6	6
Actuated Green, G (s)	14.9	14.9	14.9	14.9	13.2	13.2
Effective Green, g (s)	14.9	14.9	14.9	14.9	13.2	13.2
Actuated g/C Ratio	0.41	0.41	0.41	0.41	0.37	0.37
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	562	768	768	653	645	578
v/s Ratio Prot		0.05	0.02			
v/s Ratio Perm	c0.23			0.20	c0.18	0.04
v/c Ratio	0.57	0.12	0.05	0.48	0.49	0.12
Uniform Delay, d1	8.1	6.5	6.4	7.8	8.8	7.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.1	0.0	0.6	0.6	0.1
Delay (s)	9.4	6.6	6.4	8.3	9.4	7.7
Level of Service	A	A	A	A	A	A
Approach Delay (s)		8.8	8.2		8.8	
Approach LOS		A	A		A	

Intersection Summary			
HCM 2000 Control Delay	8.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	36.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	101	633	113	210	408	135	136	1011	265	80	396	61
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	112	703	68	233	453	82	151	1123	217	89	440	64
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	142	1032	453	270	1211	532	184	1031	198	115	962	139
Arrive On Green	0.08	0.29	0.29	0.15	0.34	0.34	0.10	0.35	0.35	0.06	0.31	0.31
Sat Flow, veh/h	1774	3539	1552	1774	3539	1557	1774	2949	567	1774	3102	449
Grp Volume(v), veh/h	112	703	68	233	453	82	151	671	669	89	250	254
Grp Sat Flow(s),veh/h/ln	1774	1770	1552	1774	1770	1557	1774	1770	1746	1774	1770	1782
Q Serve(g_s), s	5.7	16.1	3.0	11.7	8.8	3.3	7.6	32.0	32.0	4.5	10.4	10.5
Cycle Q Clear(g_c), s	5.7	16.1	3.0	11.7	8.8	3.3	7.6	32.0	32.0	4.5	10.4	10.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.32	1.00		0.25
Lane Grp Cap(c), veh/h	142	1032	453	270	1211	532	184	619	610	115	549	553
V/C Ratio(X)	0.79	0.68	0.15	0.86	0.37	0.15	0.82	1.09	1.10	0.78	0.46	0.46
Avail Cap(c_a), veh/h	388	1237	543	485	1353	595	291	619	610	349	677	681
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.4	28.7	24.0	37.9	22.7	20.9	40.2	29.8	29.8	42.2	25.4	25.4
Incr Delay (d2), s/veh	3.7	1.5	0.2	3.2	0.3	0.2	4.8	61.6	65.2	4.2	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	8.0	1.3	6.0	4.4	1.5	4.0	26.0	26.3	2.4	5.1	5.2
LnGrp Delay(d),s/veh	45.0	30.2	24.2	41.0	23.0	21.1	45.0	91.3	94.9	46.4	25.6	25.6
LnGrp LOS	D	C	C	D	C	C	D	F	F	D	C	C
Approach Vol, veh/h		883			768			1491			593	
Approach Delay, s/veh		31.6			28.3			88.3			28.7	
Approach LOS		C			C			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.9	30.7	12.5	31.4	12.3	35.3	8.9	35.0
Change Period (Y+Rc), s	3.0	4.0	3.0	3.0	5.0	4.0	3.0	3.0
Max Green Setting (Gmax), s	25.0	32.0	15.0	35.0	20.0	35.0	18.0	32.0
Max Q Clear Time (g_c+I1), s	13.7	18.1	9.6	12.5	7.7	10.8	6.5	34.0
Green Ext Time (p_c), s	0.2	8.6	0.1	10.1	0.1	12.3	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	53.1
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	317	2	653	0	806	298	0	589	123
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	0	1863	1863	0	1863	1900
Adj Flow Rate, veh/h				225	0	701	0	857	0	0	627	42
Adj No. of Lanes				1	0	2	0	3	1	0	3	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				2	2	2	0	2	2	0	2	2
Cap, veh/h				609	0	1087	0	2246	699	0	2151	143
Arrive On Green				0.34	0.00	0.34	0.00	0.44	0.00	0.00	0.44	0.44
Sat Flow, veh/h				1774	0	3167	0	5253	1583	0	5039	324
Grp Volume(v), veh/h				225	0	701	0	857	0	0	435	234
Grp Sat Flow(s),veh/h/ln				1774	0	1583	0	1695	1583	0	1695	1806
Q Serve(g_s), s				3.5	0.0	6.9	0.0	4.2	0.0	0.0	3.1	3.1
Cycle Q Clear(g_c), s				3.5	0.0	6.9	0.0	4.2	0.0	0.0	3.1	3.1
Prop In Lane				1.00		1.00	0.00		1.00	0.00		0.18
Lane Grp Cap(c), veh/h				609	0	1087	0	2246	699	0	1497	797
V/C Ratio(X)				0.37	0.00	0.64	0.00	0.38	0.00	0.00	0.29	0.29
Avail Cap(c_a), veh/h				1526	0	2724	0	3418	1064	0	2279	1213
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				9.2	0.0	10.3	0.0	7.0	0.0	0.0	6.7	6.7
Incr Delay (d2), s/veh				0.4	0.0	0.6	0.0	0.1	0.0	0.0	0.1	0.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.8	0.0	3.1	0.0	1.9	0.0	0.0	1.4	1.5
LnGrp Delay(d),s/veh				9.6	0.0	10.9	0.0	7.1	0.0	0.0	6.8	6.9
LnGrp LOS				A		B		A			A	A
Approach Vol, veh/h					926			857			669	
Approach Delay, s/veh					10.6			7.1			6.8	
Approach LOS					B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		20.4				20.4		16.8
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		25.0				25.0		32.0
Max Q Clear Time (g_c+I1), s		6.2				5.1		8.9
Green Ext Time (p_c), s		10.2				10.6		3.8

Intersection Summary	
HCM 2010 Ctrl Delay	8.3
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

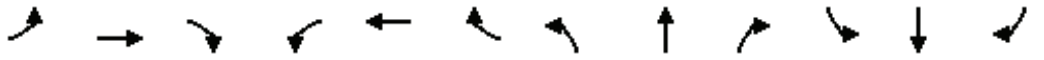
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	223	0	391	0	0	0	0	881	574	0	606	300
Number	3	8	18				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863				0	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	259	91	320				0	1024	0	0	705	0
Adj No. of Lanes	0	1	1				0	3	0	0	2	1
Peak Hour Factor	0.86	0.86	0.86				0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2				0	2	2	0	2	2
Cap, veh/h	394	138	469				0	2650	0	0	1844	825
Arrive On Green	0.30	0.30	0.30				0.00	0.52	0.00	0.00	0.52	0.00
Sat Flow, veh/h	1329	467	1583				0	5421	0	0	3632	1583
Grp Volume(v), veh/h	350	0	320				0	1024	0	0	705	0
Grp Sat Flow(s),veh/h/ln	1796	0	1583				0	1695	0	0	1770	1583
Q Serve(g_s), s	7.5	0.0	7.8				0.0	5.3	0.0	0.0	5.2	0.0
Cycle Q Clear(g_c), s	7.5	0.0	7.8				0.0	5.3	0.0	0.0	5.2	0.0
Prop In Lane	0.74		1.00				0.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	532	0	469				0	2650	0	0	1844	825
V/C Ratio(X)	0.66	0.00	0.68				0.00	0.39	0.00	0.00	0.38	0.00
Avail Cap(c_a), veh/h	1231	0	1085				0	4299	0	0	2992	1339
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	13.5	0.0	13.6				0.0	6.3	0.0	0.0	6.3	0.0
Incr Delay (d2), s/veh	1.4	0.0	1.8				0.0	0.1	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.0	3.6				0.0	2.5	0.0	0.0	2.5	0.0
LnGrp Delay(d),s/veh	14.9	0.0	15.3				0.0	6.4	0.0	0.0	6.4	0.0
LnGrp LOS	B		B					A			A	
Approach Vol, veh/h		670						1024			705	
Approach Delay, s/veh		15.1						6.4			6.4	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		26.8				26.8		17.0
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		37.0				37.0		30.0
Max Q Clear Time (g_c+I1), s		7.3				7.2		9.8
Green Ext Time (p_c), s		15.5				15.5		3.2

Intersection Summary	
HCM 2010 Ctrl Delay	8.8
HCM 2010 LOS	A

Notes

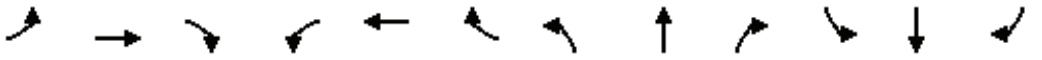
User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	266	1	219	29	18	226	121	963	0	21	825	151
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	289	1	226	32	20	223	132	1047	-1	23	897	140
Adj No. of Lanes	0	1	0	1	1	0	0	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	275	1	215	371	27	302	39	504	0	36	993	155
Arrive On Green	0.29	0.29	0.29	0.21	0.21	0.21	0.25	0.25	0.00	0.02	0.32	0.32
Sat Flow, veh/h	942	3	736	1774	129	1442	53	1956	0	1774	3058	477
Grp Volume(v), veh/h	516	0	0	32	0	243	511	667	0	23	519	518
Grp Sat Flow(s),veh/h/ln	1681	0	0	1774	0	1572	314	1610	0	1774	1770	1766
Q Serve(g_s), s	21.0	0.0	0.0	1.0	0.0	10.4	0.0	0.0	0.0	0.9	20.1	20.2
Cycle Q Clear(g_c), s	21.0	0.0	0.0	1.0	0.0	10.4	0.0	0.0	0.0	0.9	20.1	20.2
Prop In Lane	0.56		0.44	1.00		0.92	0.26		0.00	1.00		0.27
Lane Grp Cap(c), veh/h	491	0	0	371	0	329	0	0	0	36	575	573
V/C Ratio(X)	1.05	0.00	0.00	0.09	0.00	0.74	0.00	0.00	0.00	0.63	0.90	0.90
Avail Cap(c_a), veh/h	491	0	0	1110	0	984	0	0	0	271	575	573
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.4	0.0	0.0	22.9	0.0	26.6	0.0	0.0	0.0	34.9	23.2	23.2
Incr Delay (d2), s/veh	54.6	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	6.6	17.9	18.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.0	0.0	0.0	0.5	0.0	4.6	0.0	0.0	0.0	0.5	12.7	12.6
LnGrp Delay(d),s/veh	80.0	0.0	0.0	22.9	0.0	27.8	0.0	0.0	0.0	41.5	41.1	41.2
LnGrp LOS	F			C		C				D	D	D
Approach Vol, veh/h		516			275			1178			1060	
Approach Delay, s/veh		80.0			27.2			0.0			41.1	
Approach LOS		F			C			A			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	5.5	22.4		19.0		27.8		25.0
Change Period (Y+Rc), s	4.0	4.5		4.0		4.5		4.0
Max Green Setting (Gmax), s	11.0	20.5		45.0		23.0		21.0
Max Q Clear Time (g_c+I1), s	2.9	2.0		12.4		22.2		23.0
Green Ext Time (p_c), s	0.0	15.9		1.1		0.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	30.5
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	386	447	53	66	188	362	34	321	205	176	567	265
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	406	471	0	69	198	348	36	338	190	185	597	0
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	443	1593	713	89	444	397	47	425	234	220	1031	0
Arrive On Green	0.25	0.45	0.00	0.05	0.25	0.25	0.03	0.19	0.19	0.12	0.29	0.00
Sat Flow, veh/h	1774	3539	1583	1774	1770	1583	1774	2190	1205	1774	3632	0
Grp Volume(v), veh/h	406	471	0	69	198	348	36	272	256	185	597	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1625	1774	1770	0
Q Serve(g_s), s	19.6	7.4	0.0	3.4	8.3	18.6	1.8	12.9	13.3	9.0	12.7	0.0
Cycle Q Clear(g_c), s	19.6	7.4	0.0	3.4	8.3	18.6	1.8	12.9	13.3	9.0	12.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.74	1.00		0.00
Lane Grp Cap(c), veh/h	443	1593	713	89	444	397	47	343	315	220	1031	0
V/C Ratio(X)	0.92	0.30	0.00	0.78	0.45	0.88	0.76	0.79	0.81	0.84	0.58	0.00
Avail Cap(c_a), veh/h	484	1593	713	181	483	432	81	362	332	242	1046	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	32.1	15.4	0.0	41.3	27.8	31.7	42.6	33.8	33.9	37.7	26.6	0.0
Incr Delay (d2), s/veh	21.4	0.1	0.0	13.3	0.7	17.1	22.0	10.8	13.7	21.1	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.2	3.6	0.0	2.0	4.2	10.0	1.2	7.3	7.2	5.7	6.2	0.0
LnGrp Delay(d),s/veh	53.6	15.5	0.0	54.6	28.5	48.8	64.5	44.6	47.6	58.8	27.4	0.0
LnGrp LOS	D	B		D	C	D	E	D	D	E	C	
Approach Vol, veh/h		877			615			564			782	
Approach Delay, s/veh		33.1			42.9			47.3			34.8	
Approach LOS		C			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.9	21.1	8.4	43.6	6.3	29.6	26.0	26.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	18.0	9.0	39.0	4.0	26.0	24.0	24.0
Max Q Clear Time (g_c+I1), s	11.0	15.3	5.4	9.4	3.8	14.7	21.6	20.6
Green Ext Time (p_c), s	0.1	1.8	0.0	7.9	0.0	5.7	0.4	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	38.5
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	127	1131	131	4	612	110	127	366	32	62	222	124
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	138	1229	4	4	665	111	138	398	28	67	241	109
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	398	2109	922	237	1803	300	168	810	57	86	466	203
Arrive On Green	0.60	0.60	0.60	0.60	0.60	0.60	0.09	0.24	0.24	0.05	0.20	0.20
Sat Flow, veh/h	691	3539	1548	450	3026	504	1774	3350	235	1774	2379	1038
Grp Volume(v), veh/h	138	1229	4	4	389	387	138	209	217	67	177	173
Grp Sat Flow(s),veh/h/ln	691	1770	1548	450	1770	1760	1774	1770	1815	1774	1770	1648
Q Serve(g_s), s	14.2	23.7	0.1	0.6	12.5	12.5	8.4	11.2	11.3	4.1	9.8	10.4
Cycle Q Clear(g_c), s	26.8	23.7	0.1	24.3	12.5	12.5	8.4	11.2	11.3	4.1	9.8	10.4
Prop In Lane	1.00		1.00	1.00		0.29	1.00		0.13	1.00		0.63
Lane Grp Cap(c), veh/h	398	2109	922	237	1054	1049	168	428	439	86	347	323
V/C Ratio(X)	0.35	0.58	0.00	0.02	0.37	0.37	0.82	0.49	0.49	0.78	0.51	0.54
Avail Cap(c_a), veh/h	398	2109	922	237	1054	1049	282	587	602	185	491	457
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.5	13.8	9.0	21.3	11.5	11.5	48.9	35.9	35.9	51.7	39.5	39.7
Incr Delay (d2), s/veh	2.4	1.2	0.0	0.1	1.0	1.0	9.5	3.1	3.1	13.7	4.2	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	11.8	0.1	0.1	6.3	6.3	4.5	5.8	6.0	2.3	5.2	5.2
LnGrp Delay(d),s/veh	20.8	15.0	9.0	21.4	12.5	12.5	58.4	39.0	39.0	65.4	43.7	44.7
LnGrp LOS	C	B	A	C	B	B	E	D	D	E	D	D
Approach Vol, veh/h		1371			780			564			417	
Approach Delay, s/veh		15.5			12.6			43.7			47.6	
Approach LOS		B			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		70.0	13.9	26.0		70.0	8.9	31.1
Change Period (Y+Rc), s		4.5	3.5	4.5		4.5	3.5	4.5
Max Green Setting (Gmax), s		49.5	17.5	30.5		49.5	11.5	36.5
Max Q Clear Time (g_c+I1), s		28.8	10.4	12.4		26.3	6.1	13.3
Green Ext Time (p_c), s		19.8	0.2	9.2		22.0	0.0	10.7

Intersection Summary	
HCM 2010 Ctrl Delay	24.1
HCM 2010 LOS	C

Notes

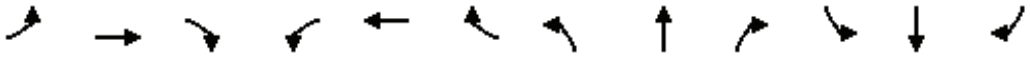
User approved ignoring U-Turning movement.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	498	120	436	503	181	232
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	547	132	479	553	199	255
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						19
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1062		
pX, platoon unblocked						
vC, conflicting volume			679		2058	547
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			679		2058	547
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			48		0	52
cM capacity (veh/h)			913		29	537

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	547	132	479	553	454
Volume Left	0	0	479	0	199
Volume Right	0	132	0	0	255
cSH	1700	1700	913	1700	62
Volume to Capacity	0.32	0.08	0.52	0.33	7.33
Queue Length 95th (ft)	0	0	78	0	Err
Control Delay (s)	0.0	0.0	13.2	0.0	Err
Lane LOS			B		F
Approach Delay (s)	0.0		6.1		Err
Approach LOS					F

Intersection Summary			
Average Delay	2099.2		
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	126	98	131	411	567	342	288	471	282	358	308	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frt	1.00	0.91		1.00	0.94		1.00	0.94			0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)	1770	1703		1770	1758		1770	1742			1797	
Flt Permitted	0.95	1.00		0.95	1.00		0.49	1.00			0.19	
Satd. Flow (perm)	1770	1703		1770	1758		917	1742			341	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	137	107	142	447	616	372	313	512	307	389	335	70
RTOR Reduction (vph)	0	82	0	0	35	0	0	36	0	0	6	0
Lane Group Flow (vph)	137	167	0	447	953	0	313	783	0	0	788	0
Confl. Bikes (#/hr)									3			
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	5.4	23.6		7.0	25.2		16.1	16.1			16.1	
Effective Green, g (s)	5.4	23.6		7.0	25.2		16.1	16.1			16.1	
Actuated g/C Ratio	0.09	0.40		0.12	0.43		0.27	0.27			0.27	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	162	684		211	754		251	477			93	
v/s Ratio Prot	0.08	0.10		c0.25	c0.54			0.45				
v/s Ratio Perm							0.34				c2.31	
v/c Ratio	0.85	0.24		2.12	1.26		1.25	1.64			8.48	
Uniform Delay, d1	26.2	11.6		25.9	16.8		21.3	21.3			21.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	31.2	0.2		519.0	129.1		139.9	298.4			3385.6	
Delay (s)	57.5	11.8		544.8	145.8		161.2	319.7			3406.9	
Level of Service	E	B		F	F		F	F			F	
Approach Delay (s)		28.0			270.1			275.9			3406.9	
Approach LOS		C			F			F			F	

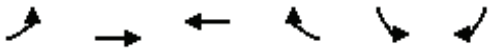
Intersection Summary			
HCM 2000 Control Delay	911.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	3.90		
Actuated Cycle Length (s)	58.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	152.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	379	359	166	811	509	247
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	412	390	180	882	553	268
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						3
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	337					
pX, platoon unblocked						
vC, conflicting volume			412		1849	607
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			412		1849	607
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			84		0	46
cM capacity (veh/h)			1147		69	496

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	802	180	882	822
Volume Left	0	180	0	553
Volume Right	390	0	0	268
cSH	1700	1147	1700	96
Volume to Capacity	0.47	0.16	0.52	8.57
Queue Length 95th (ft)	0	14	0	Err
Control Delay (s)	0.0	8.7	0.0	Err
Lane LOS		A		F
Approach Delay (s)	0.0	1.5		Err
Approach LOS				F

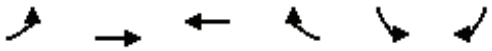
Intersection Summary			
Average Delay	3059.8		
Intersection Capacity Utilization	89.3%	ICU Level of Service	E
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	1258	364	0	469	580
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	0	1353	391	0	504	376
Adj No. of Lanes	0	2	2	0	2	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1988	1988	0	992	456
Arrive On Green	0.00	0.56	1.00	0.00	0.29	0.29
Sat Flow, veh/h	0	3725	3725	0	3442	1583
Grp Volume(v), veh/h	0	1353	391	0	504	376
Grp Sat Flow(s),veh/h/ln	0	1770	1770	0	1721	1583
Q Serve(g_s), s	0.0	16.3	0.0	0.0	7.3	13.3
Cycle Q Clear(g_c), s	0.0	16.3	0.0	0.0	7.3	13.3
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1988	1988	0	992	456
V/C Ratio(X)	0.00	0.68	0.20	0.00	0.51	0.82
Avail Cap(c_a), veh/h	0	1988	1988	0	1262	581
HCM Platoon Ratio	1.00	1.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.99	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	9.3	0.0	0.0	17.8	19.9
Incr Delay (d2), s/veh	0.0	1.9	0.2	0.0	0.4	7.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.2	0.1	0.0	3.5	6.7
LnGrp Delay(d),s/veh	0.0	11.2	0.2	0.0	18.2	27.5
LnGrp LOS		B	A		B	C
Approach Vol, veh/h		1353	391		880	
Approach Delay, s/veh		11.2	0.2		22.2	
Approach LOS		B	A		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		38.7		21.3		38.7		
Change Period (Y+Rc), s		5.0		4.0		5.0		
Max Green Setting (Gmax), s		29.0		22.0		29.0		
Max Q Clear Time (g_c+I1), s		18.3		15.3		2.0		
Green Ext Time (p_c), s		8.0		2.0		15.5		

Intersection Summary	
HCM 2010 Ctrl Delay	13.3
HCM 2010 LOS	B



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	26	1701	351	109	59	13
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	27	1791	369	107	62	3
Adj No. of Lanes	0	2	2	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	79	2809	2203	628	79	4
Arrive On Green	1.00	1.00	0.55	0.55	0.05	0.05
Sat Flow, veh/h	22	3513	2782	767	1659	80
Grp Volume(v), veh/h	974	844	241	235	66	0
Grp Sat Flow(s),veh/h/ln	1840	1610	1770	1686	1766	0
Q Serve(g_s), s	0.0	0.0	4.1	4.2	2.2	0.0
Cycle Q Clear(g_c), s	0.0	0.0	4.1	4.2	2.2	0.0
Prop In Lane	0.03			0.45	0.94	0.05
Lane Grp Cap(c), veh/h	1569	1319	1450	1381	84	0
V/C Ratio(X)	0.62	0.64	0.17	0.17	0.79	0.00
Avail Cap(c_a), veh/h	1569	1319	1450	1381	441	0
HCM Platoon Ratio	2.00	2.00	0.67	0.67	1.00	1.00
Upstream Filter(I)	0.72	0.72	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	3.4	3.4	28.3	0.0
Incr Delay (d2), s/veh	1.3	1.7	0.2	0.3	6.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.6	2.1	2.0	1.2	0.0
LnGrp Delay(d),s/veh	1.3	1.7	3.6	3.7	34.3	0.0
LnGrp LOS	A	A	A	A	C	
Approach Vol, veh/h		1818	476		66	
Approach Delay, s/veh		1.5	3.6		34.3	
Approach LOS		A	A		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		53.2		6.8		53.2		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		37.0		15.0		37.0		
Max Q Clear Time (g_c+I1), s		2.0		4.2		6.2		
Green Ext Time (p_c), s		24.6		0.0		22.5		

Intersection Summary	
HCM 2010 Ctrl Delay	2.9
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	236	26	626	88	392	105	517	810	0	0	516	150
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.72	1.00		0.91	1.00		1.00	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	0	1845	1845
Adj Flow Rate, veh/h	243	0	384	91	404	56	533	835	0	0	532	116
Adj No. of Lanes	1	0	2	1	2	1	2	3	0	0	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	242	0	849	442	881	357	584	2616	0	0	1132	480
Arrive On Green	0.14	0.00	0.14	0.25	0.25	0.25	0.17	0.52	0.00	0.00	0.32	0.32
Sat Flow, veh/h	1757	0	2266	1757	3505	1420	3408	5202	0	0	3597	1487
Grp Volume(v), veh/h	243	0	384	91	404	56	533	835	0	0	532	116
Grp Sat Flow(s),veh/h/ln	1757	0	1133	1757	1752	1420	1704	1679	0	0	1752	1487
Q Serve(g_s), s	16.5	0.0	16.5	4.9	11.7	3.7	18.4	11.5	0.0	0.0	14.5	6.9
Cycle Q Clear(g_c), s	16.5	0.0	16.5	4.9	11.7	3.7	18.4	11.5	0.0	0.0	14.5	6.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	242	0	849	442	881	357	584	2616	0	0	1132	480
V/C Ratio(X)	1.01	0.00	0.45	0.21	0.46	0.16	0.91	0.32	0.00	0.00	0.47	0.24
Avail Cap(c_a), veh/h	242	0	849	527	1051	426	596	2616	0	0	1132	480
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	51.8	0.0	34.5	35.5	38.0	35.0	48.8	16.6	0.0	0.0	32.4	29.8
Incr Delay (d2), s/veh	59.4	0.0	0.4	0.2	0.4	0.2	18.2	0.3	0.0	0.0	1.4	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.0	0.0	5.3	2.4	5.7	1.5	10.1	5.3	0.0	0.0	7.2	3.0
LnGrp Delay(d),s/veh	111.2	0.0	34.9	35.7	38.4	35.2	67.0	16.9	0.0	0.0	33.8	31.0
LnGrp LOS	F		C	D	D	D	E	B			C	C
Approach Vol, veh/h		627			551			1368			648	
Approach Delay, s/veh		64.5			37.6			36.5			33.3	
Approach LOS		E			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		66.3		20.0	23.6	42.8		33.7
Change Period (Y+Rc), s		4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s		56.5		16.5	21.0	32.5		36.0
Max Q Clear Time (g_c+I1), s		13.5		18.5	20.4	16.5		13.7
Green Ext Time (p_c), s		13.9		0.0	0.1	8.9		3.1

Intersection Summary	
HCM 2010 Ctrl Delay	41.5
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	514	2	4	746	11	36
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	659	3	5	956	14	46
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			662		1627	660
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			662		1627	660
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		87	90
cM capacity (veh/h)			927		112	463

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	662	5	956	60
Volume Left	0	5	0	14
Volume Right	3	0	0	46
cSH	1700	927	1700	267
Volume to Capacity	0.39	0.01	0.56	0.23
Queue Length 95th (ft)	0	0	0	21
Control Delay (s)	0.0	8.9	0.0	22.4
Lane LOS		A		C
Approach Delay (s)	0.0	0.0		22.4
Approach LOS				C

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	66.8
Intersection LOS	F

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	140	200	157	0	440	150	105	0	149	325	82
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	152	217	171	0	478	163	114	0	162	353	89
Number of Lanes	0	0	1	0	0	1	1	0	0	1	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	1	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	3	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	3	3	2
HCM Control Delay	90.2	80.1	38.1
HCM LOS	F	F	E

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	28%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	57%	40%	0%	59%	0%	100%	79%
Vol Right, %	0%	0%	43%	32%	0%	41%	0%	0%	21%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	149	217	190	497	440	255	141	323	205
LT Vol	149	0	0	140	440	0	141	0	0
Through Vol	0	217	108	200	0	150	0	323	162
RT Vol	0	0	82	157	0	105	0	0	43
Lane Flow Rate	162	236	207	540	478	277	153	351	222
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.558	0.779	0.667	1	1	0.894	0.516	1	0.71
Departure Headway (Hd)	12.406	11.907	11.607	12.438	12.398	11.615	12.132	11.634	11.487
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	292	304	312	297	297	313	297	313	316
Service Time	10.154	9.656	9.355	10.195	10.157	9.375	9.885	9.387	9.24
HCM Lane V/C Ratio	0.555	0.776	0.663	1.818	1.609	0.885	0.515	1.121	0.703
HCM Control Delay	29.8	46.6	34.9	90.2	90	63.1	27.2	86.9	38.1
HCM Lane LOS	D	E	D	F	F	F	D	F	E
HCM 95th-tile Q	3.2	6.1	4.5	10.4	10.4	8.3	2.8	10.7	5.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	141	485	43
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	153	527	47
Number of Lanes	0	1	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	3
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	59.4
HCM LOS	F

Lane

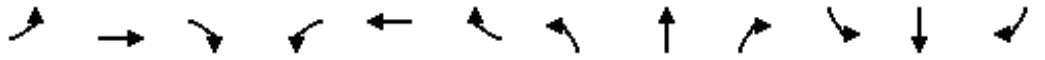
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	45	223	129	433	302	49	326	185	577	25	87	68
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	46	230	84	267	561	45	264	292	146	26	90	67
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	0	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	252	364	129	405	777	62	404	424	359	34	117	87
Arrive On Green	0.14	0.14	0.14	0.23	0.23	0.23	0.23	0.23	0.23	0.14	0.14	0.14
Sat Flow, veh/h	1774	2562	910	1774	3405	273	1774	1863	1579	245	849	632
Grp Volume(v), veh/h	46	157	157	267	306	300	264	292	146	183	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1702	1774	1863	1815	1774	1863	1579	1725	0	0
Q Serve(g_s), s	1.4	5.1	5.3	8.3	9.2	9.2	8.2	8.7	4.8	6.2	0.0	0.0
Cycle Q Clear(g_c), s	1.4	5.1	5.3	8.3	9.2	9.2	8.2	8.7	4.8	6.2	0.0	0.0
Prop In Lane	1.00		0.53	1.00		0.15	1.00		1.00	0.14		0.37
Lane Grp Cap(c), veh/h	252	252	242	405	425	414	404	424	359	238	0	0
V/C Ratio(X)	0.18	0.62	0.65	0.66	0.72	0.72	0.65	0.69	0.41	0.77	0.00	0.00
Avail Cap(c_a), veh/h	498	497	478	527	553	539	820	861	730	456	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	22.9	24.5	24.6	21.2	21.6	21.6	21.2	21.4	19.9	25.2	0.0	0.0
Incr Delay (d2), s/veh	0.3	2.5	2.9	1.9	3.2	3.4	1.8	2.0	0.7	5.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.6	2.7	4.2	5.1	5.0	4.2	4.7	2.1	3.3	0.0	0.0
LnGrp Delay(d),s/veh	23.2	27.0	27.5	23.2	24.8	25.0	23.0	23.4	20.7	30.4	0.0	0.0
LnGrp LOS	C	C	C	C	C	C	C	C	C	C		
Approach Vol, veh/h		360			873			702			183	
Approach Delay, s/veh		26.7			24.3			22.7			30.4	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		17.8		12.6		12.4		17.8
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		28.0		17.0		16.0		18.0
Max Q Clear Time (g_c+I1), s		10.7		7.3		8.2		11.2
Green Ext Time (p_c), s		2.9		1.4		0.6		2.6

Intersection Summary	
HCM 2010 Ctrl Delay	24.7
HCM 2010 LOS	C

Notes

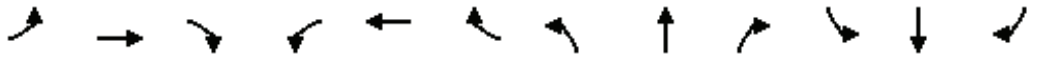
User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	204	0	472	466	616	0	0	352	297
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1900	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				215	0	431	491	648	0	0	371	0
Adj No. of Lanes				1	1	0	1	2	0	0	2	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				483	0	431	556	2094	0	0	745	0
Arrive On Green				0.27	0.00	0.27	0.31	0.59	0.00	0.00	0.21	0.00
Sat Flow, veh/h				1774	0	1583	1774	3632	0	0	3725	0
Grp Volume(v), veh/h				215	0	431	491	648	0	0	371	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	1774	1770	0	0	1770	0
Q Serve(g_s), s				5.9	0.0	16.0	15.4	5.4	0.0	0.0	5.4	0.0
Cycle Q Clear(g_c), s				5.9	0.0	16.0	15.4	5.4	0.0	0.0	5.4	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				483	0	431	556	2094	0	0	745	0
V/C Ratio(X)				0.45	0.00	1.00	0.88	0.31	0.00	0.00	0.50	0.00
Avail Cap(c_a), veh/h				483	0	431	724	2769	0	0	1084	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				17.7	0.0	21.4	19.2	6.0	0.0	0.0	20.5	0.0
Incr Delay (d2), s/veh				0.6	0.0	43.4	10.2	0.1	0.0	0.0	0.5	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.0	0.0	12.0	9.1	2.6	0.0	0.0	2.7	0.0
LnGrp Delay(d),s/veh				18.4	0.0	64.8	29.4	6.1	0.0	0.0	21.0	0.0
LnGrp LOS				B		F	C	A			C	
Approach Vol, veh/h					646			1139			371	
Approach Delay, s/veh					49.3			16.1			21.0	
Approach LOS					D			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		38.8			22.4	16.4		20.0
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		46.0			24.0	18.0		16.0
Max Q Clear Time (g_c+I1), s		7.4			17.4	7.4		18.0
Green Ext Time (p_c), s		8.6			1.0	4.9		0.0

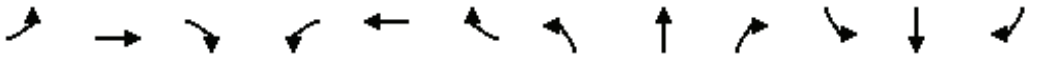
Intersection Summary	
HCM 2010 Ctrl Delay	26.9
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	721	170	73	566	0	0	0	0	333	1	297
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1900	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	751	149	76	590	0				347	1	293
Adj No. of Lanes	0	2	0	0	2	0				0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1399	278	150	1194	0				380	1	321
Arrive On Green	0.00	0.48	0.48	0.95	0.95	0.00				0.42	0.42	0.42
Sat Flow, veh/h	0	3035	584	191	2595	0				910	3	769
Grp Volume(v), veh/h	0	452	448	308	358	0				641	0	0
Grp Sat Flow(s),veh/h/ln	0	1770	1756	1090	1610	0				1682	0	0
Q Serve(g_s), s	0.0	13.5	13.5	7.3	1.5	0.0				26.9	0.0	0.0
Cycle Q Clear(g_c), s	0.0	13.5	13.5	20.8	1.5	0.0				26.9	0.0	0.0
Prop In Lane	0.00		0.33	0.25		0.00				0.54		0.46
Lane Grp Cap(c), veh/h	0	841	835	578	766	0				703	0	0
V/C Ratio(X)	0.00	0.54	0.54	0.53	0.47	0.00				0.91	0.00	0.00
Avail Cap(c_a), veh/h	0	1203	1194	832	1095	0				703	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.92	0.92	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	13.9	13.9	2.4	1.0	0.0				20.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.5	0.5	0.7	0.4	0.0				18.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.6	6.6	2.3	0.6	0.0				16.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	14.4	14.4	3.1	1.4	0.0				38.8	0.0	0.0
LnGrp LOS		B	B	A	A					D		
Approach Vol, veh/h		900			666						641	
Approach Delay, s/veh		14.4			2.2						38.8	
Approach LOS		B			A						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				39.7		35.3		39.7
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				51.0		16.0		51.0
Max Q Clear Time (g_c+I1), s				15.5		28.9		22.8
Green Ext Time (p_c), s				14.3		0.0		13.0

Intersection Summary	
HCM 2010 Ctrl Delay	17.8
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	334	720	0	0	578	387	61	151	110	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	348	750	0	0	602	263	64	157	65			
Adj No. of Lanes	0	2	0	0	2	0	1	1	1			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	455	1112	0	0	1628	710	376	395	335			
Arrive On Green	1.00	1.00	0.00	0.00	0.68	0.68	0.21	0.21	0.21			
Sat Flow, veh/h	529	1716	0	0	2482	1043	1774	1863	1583			
Grp Volume(v), veh/h	362	736	0	0	446	419	64	157	65			
Grp Sat Flow(s),veh/h/ln	550	1610	0	0	1770	1662	1774	1863	1583			
Q Serve(g_s), s	35.0	0.0	0.0	0.0	8.0	8.1	2.2	5.4	2.5			
Cycle Q Clear(g_c), s	43.0	0.0	0.0	0.0	8.0	8.1	2.2	5.4	2.5			
Prop In Lane	0.96		0.00	0.00		0.63	1.00		1.00			
Lane Grp Cap(c), veh/h	469	1097	0	0	1206	1132	376	395	335			
V/C Ratio(X)	0.77	0.67	0.00	0.00	0.37	0.37	0.17	0.40	0.19			
Avail Cap(c_a), veh/h	477	1117	0	0	1227	1152	376	395	335			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.70	0.70	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	3.4	0.0	0.0	0.0	5.1	5.1	24.2	25.4	24.3			
Incr Delay (d2), s/veh	5.3	1.1	0.0	0.0	0.2	0.2	1.0	3.0	1.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.3	0.3	0.0	0.0	3.9	3.7	1.2	3.1	1.2			
LnGrp Delay(d),s/veh	8.7	1.1	0.0	0.0	5.3	5.3	25.1	28.4	25.6			
LnGrp LOS	A	A			A	A	C	C	C			
Approach Vol, veh/h		1098			865			286				
Approach Delay, s/veh		3.6			5.3			27.0				
Approach LOS		A			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		19.9		55.1				55.1
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		15.0		52.0				52.0
Max Q Clear Time (g_c+I1), s		7.4		45.0				10.1
Green Ext Time (p_c), s		0.7		6.1				25.8

Intersection Summary	
HCM 2010 Ctrl Delay	7.2
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	57	606	376	28	410	110	235	534	36	70	276	31
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	59	631	294	29	427	103	245	556	31	73	288	25
Adj No. of Lanes	0	2	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	162	1657	861	98	1391	331	249	932	52	94	614	53
Arrive On Green	0.56	0.56	0.56	0.56	0.56	0.56	0.14	0.27	0.27	0.05	0.19	0.19
Sat Flow, veh/h	223	2964	1540	114	2488	593	1774	3402	189	1774	3287	283
Grp Volume(v), veh/h	343	347	294	286	0	273	245	289	298	73	154	159
Grp Sat Flow(s),veh/h/ln	1577	1610	1540	1624	0	1571	1774	1770	1821	1774	1770	1800
Q Serve(g_s), s	2.5	13.8	11.9	0.0	0.0	10.6	15.7	16.1	16.2	4.6	8.8	9.0
Cycle Q Clear(g_c), s	13.0	13.8	11.9	9.1	0.0	10.6	15.7	16.1	16.2	4.6	8.8	9.0
Prop In Lane	0.17		1.00	0.10		0.38	1.00		0.10	1.00		0.16
Lane Grp Cap(c), veh/h	918	900	861	942	0	878	249	485	499	94	330	336
V/C Ratio(X)	0.37	0.39	0.34	0.30	0.00	0.31	0.98	0.60	0.60	0.78	0.47	0.47
Avail Cap(c_a), veh/h	918	900	861	942	0	878	249	485	499	451	667	679
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.00	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.7	14.1	13.7	13.1	0.0	13.4	48.9	35.9	35.9	53.3	41.3	41.4
Incr Delay (d2), s/veh	1.2	1.3	1.1	0.1	0.0	0.1	52.3	2.4	2.3	5.1	1.5	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	6.4	5.3	4.7	0.0	4.6	11.3	8.2	8.4	2.4	4.5	4.6
LnGrp Delay(d),s/veh	14.9	15.4	14.8	13.2	0.0	13.5	101.1	38.3	38.3	58.4	42.7	42.8
LnGrp LOS	B	B	B	B		B	F	D	D	E	D	D
Approach Vol, veh/h		984			559			832			386	
Approach Delay, s/veh		15.0			13.3			56.8			45.7	
Approach LOS		B			B			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	20.0	26.3		67.7	10.0	36.2		67.7
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0
Max Green Setting (Gmax), s	16.0	43.0		42.0	29.0	30.0		42.0
Max Q Clear Time (g_c+I1), s	17.7	11.0		15.8	6.6	18.2		12.6
Green Ext Time (p_c), s	0.0	6.7		14.9	0.1	5.6		16.0

Intersection Summary	
HCM 2010 Ctrl Delay	31.6
HCM 2010 LOS	C

Notes

User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	6	149	44	95	189	98	88	884	83	95	641	24
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.95	1.00		0.96	1.00		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	6	152	27	97	193	92	90	902	72	97	654	23
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	30	374	66	163	376	179	147	1508	120	148	1589	56
Arrive On Green	0.02	0.25	0.25	0.09	0.32	0.32	0.08	0.46	0.46	0.17	0.91	0.91
Sat Flow, veh/h	1774	1523	270	1774	1171	558	1774	3308	264	1774	3478	122
Grp Volume(v), veh/h	6	0	179	97	0	285	90	483	491	97	332	345
Grp Sat Flow(s),veh/h/ln	1774	0	1793	1774	0	1729	1774	1770	1803	1774	1770	1831
Q Serve(g_s), s	0.4	0.0	9.5	6.0	0.0	15.3	5.6	23.3	23.3	5.8	3.0	3.0
Cycle Q Clear(g_c), s	0.4	0.0	9.5	6.0	0.0	15.3	5.6	23.3	23.3	5.8	3.0	3.0
Prop In Lane	1.00		0.15	1.00		0.32	1.00		0.15	1.00		0.07
Lane Grp Cap(c), veh/h	30	0	440	163	0	555	147	807	822	148	809	837
V/C Ratio(X)	0.20	0.00	0.41	0.59	0.00	0.51	0.61	0.60	0.60	0.65	0.41	0.41
Avail Cap(c_a), veh/h	187	0	440	187	0	555	171	807	822	171	809	837
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.91	0.91	0.91
Uniform Delay (d), s/veh	55.3	0.0	36.0	49.7	0.0	31.5	50.5	23.2	23.2	45.9	2.8	2.8
Incr Delay (d2), s/veh	1.2	0.0	2.8	1.9	0.0	3.4	2.5	3.3	3.2	4.1	1.4	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	5.1	3.0	0.0	7.8	2.9	12.1	12.3	3.0	1.6	1.6
LnGrp Delay(d),s/veh	56.5	0.0	38.8	51.6	0.0	34.8	53.0	26.5	26.4	50.1	4.2	4.2
LnGrp LOS	E		D	D		C	D	C	C	D	A	A
Approach Vol, veh/h		185			382			1064			774	
Approach Delay, s/veh		39.4			39.1			28.7			9.9	
Approach LOS		D			D			C			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	56.1	13.5	32.0	12.5	56.0	4.9	40.6
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	11.0	49.0	12.0	28.0	11.0	49.0	12.0	28.0
Max Q Clear Time (g_c+I1), s	7.6	5.0	8.0	11.5	7.8	25.3	2.4	17.3
Green Ext Time (p_c), s	0.0	22.8	0.0	1.7	0.0	15.7	0.0	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	25.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	702	112	100	465	0	0	0	0	139	643	107
Number	7	4	14	3	8	18				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		1.00				1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	724	93	103	479	0				143	663	92
Adj No. of Lanes	0	2	0	1	2	0				0	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1479	190	364	1669	0				189	919	134
Arrive On Green	0.00	0.47	0.47	0.47	0.47	0.00				0.34	0.34	0.34
Sat Flow, veh/h	0	3228	402	663	3632	0				551	2679	389
Grp Volume(v), veh/h	0	408	409	103	479	0				476	0	422
Grp Sat Flow(s),veh/h/ln	0	1770	1768	663	1770	0				1835	0	1784
Q Serve(g_s), s	0.0	7.3	7.3	5.8	3.8	0.0				10.6	0.0	9.3
Cycle Q Clear(g_c), s	0.0	7.3	7.3	13.1	3.8	0.0				10.6	0.0	9.3
Prop In Lane	0.00		0.23	1.00		0.00				0.30		0.22
Lane Grp Cap(c), veh/h	0	835	834	364	1669	0				629	0	612
V/C Ratio(X)	0.00	0.49	0.49	0.28	0.29	0.00				0.76	0.00	0.69
Avail Cap(c_a), veh/h	0	1332	1330	551	2663	0				841	0	817
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	8.3	8.3	12.8	7.4	0.0				13.4	0.0	13.0
Incr Delay (d2), s/veh	0.0	0.2	0.2	0.2	0.0	0.0				1.8	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.6	3.6	1.1	1.8	0.0				5.6	0.0	4.7
LnGrp Delay(d),s/veh	0.0	8.5	8.5	13.0	7.4	0.0				15.1	0.0	13.7
LnGrp LOS		A	A	B	A					B		B
Approach Vol, veh/h		817			582						898	
Approach Delay, s/veh		8.5			8.4						14.5	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		20.2		25.6				25.6
Change Period (Y+Rc), s		4.5		4.0				4.0
Max Green Setting (Gmax), s		21.0		34.5				34.5
Max Q Clear Time (g_c+I1), s		12.6		9.3				15.1
Green Ext Time (p_c), s		2.8		7.1				6.6

Intersection Summary	
HCM 2010 Ctrl Delay	10.8
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	209	636	0	0	374	140	188	1610	104	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.95	1.00		0.97			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1900	1863	1900			
Adj Flow Rate, veh/h	213	649	0	0	382	86	192	1643	99			
Adj No. of Lanes	1	2	0	0	2	0	0	3	0			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	277	1509	0	0	585	130	221	2023	125			
Arrive On Green	0.16	0.43	0.00	0.00	0.21	0.21	0.44	0.44	0.44			
Sat Flow, veh/h	1774	3632	0	0	2942	633	499	4555	282			
Grp Volume(v), veh/h	213	649	0	0	235	233	708	593	633			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1712	1838	1695	1802			
Q Serve(g_s), s	6.2	7.0	0.0	0.0	6.6	6.8	18.8	16.2	16.3			
Cycle Q Clear(g_c), s	6.2	7.0	0.0	0.0	6.6	6.8	18.8	16.2	16.3			
Prop In Lane	1.00		0.00	0.00		0.37	0.27		0.16			
Lane Grp Cap(c), veh/h	277	1509	0	0	363	351	816	753	800			
V/C Ratio(X)	0.77	0.43	0.00	0.00	0.65	0.66	0.87	0.79	0.79			
Avail Cap(c_a), veh/h	657	1509	0	0	671	649	850	784	834			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	21.9	10.9	0.0	0.0	19.7	19.7	13.6	12.8	12.9			
Incr Delay (d2), s/veh	1.7	0.1	0.0	0.0	0.7	0.8	8.7	4.7	4.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.1	3.4	0.0	0.0	3.3	3.2	11.4	8.4	8.9			
LnGrp Delay(d),s/veh	23.6	11.0	0.0	0.0	20.4	20.5	22.3	17.5	17.4			
LnGrp LOS	C	B			C	C	C	B	B			
Approach Vol, veh/h		862			468			1934				
Approach Delay, s/veh		14.1			20.5			19.2				
Approach LOS		B			C			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		27.5	11.9	14.6				26.5
Change Period (Y+Rc), s		3.5	3.5	3.5				3.5
Max Green Setting (Gmax), s		25.0	20.0	20.5				20.5
Max Q Clear Time (g_c+I1), s		20.8	8.2	8.8				9.0
Green Ext Time (p_c), s		3.2	0.7	1.5				2.7

Intersection Summary	
HCM 2010 Ctrl Delay	18.0
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	207	71	88	264	110	102	478	128	122	447	16
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.97	1.00		0.95	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	36	213	33	91	272	103	105	493	75	126	461	14
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	0	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	59	425	336	119	334	126	545	572	463	169	653	21
Arrive On Green	0.03	0.23	0.23	0.07	0.26	0.26	0.31	0.31	0.31	0.23	0.23	0.23
Sat Flow, veh/h	1774	1863	1474	1774	1275	483	1774	1863	1508	734	2846	90
Grp Volume(v), veh/h	36	213	33	91	0	375	105	493	75	313	0	288
Grp Sat Flow(s),veh/h/ln	1774	1863	1474	1774	0	1757	1774	1863	1508	1826	0	1844
Q Serve(g_s), s	1.7	8.7	1.5	4.4	0.0	17.5	3.8	21.8	3.2	13.9	0.0	12.4
Cycle Q Clear(g_c), s	1.7	8.7	1.5	4.4	0.0	17.5	3.8	21.8	3.2	13.9	0.0	12.4
Prop In Lane	1.00		1.00	1.00		0.27	1.00		1.00	0.40		0.05
Lane Grp Cap(c), veh/h	59	425	336	119	0	460	545	572	463	419	0	423
V/C Ratio(X)	0.61	0.50	0.10	0.77	0.00	0.82	0.19	0.86	0.16	0.75	0.00	0.68
Avail Cap(c_a), veh/h	305	640	506	305	0	604	610	640	518	628	0	634
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.6	29.4	26.6	40.1	0.0	30.2	22.3	28.5	22.1	31.3	0.0	30.7
Incr Delay (d2), s/veh	11.6	1.1	0.2	11.8	0.0	7.0	0.2	11.0	0.2	3.2	0.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	4.6	0.6	2.5	0.0	9.3	1.9	13.0	1.3	7.4	0.0	6.6
LnGrp Delay(d),s/veh	53.2	30.5	26.7	51.8	0.0	37.3	22.5	39.6	22.3	34.5	0.0	33.0
LnGrp LOS	D	C	C	D		D	C	D	C	C		C
Approach Vol, veh/h		282			466			673			601	
Approach Delay, s/veh		32.9			40.1			35.0			33.8	
Approach LOS		C			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.4	24.0		30.3	6.5	26.9		23.5
Change Period (Y+Rc), s	3.6	4.1		3.5	3.6	4.1		3.5
Max Green Setting (Gmax), s	15.0	30.0		30.0	15.0	30.0		30.0
Max Q Clear Time (g_c+I1), s	6.4	10.7		23.8	3.7	19.5		15.9
Green Ext Time (p_c), s	0.1	4.6		2.4	0.0	3.4		3.9

Intersection Summary	
HCM 2010 Ctrl Delay	35.5
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	200	995	18	37	581	107	10	330	58	95	99	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00	0.98		1.00	0.98
Flpb, ped/bikes	0.99	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.98			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		0.98	1.00
Satd. Flow (prot)	1746	3527		1763	3423			1860	1550		1815	1558
Flt Permitted	0.35	1.00		0.23	1.00			0.99	1.00		0.33	1.00
Satd. Flow (perm)	644	3527		419	3423			1845	1550		622	1558
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	208	1036	19	39	605	111	10	344	60	99	103	86
RTOR Reduction (vph)	0	1	0	0	7	0	0	0	21	0	0	64
Lane Group Flow (vph)	208	1054	0	39	709	0	0	354	39	0	202	22
Confl. Peds. (#/hr)	19		10	10		19	2		8	8		2
Confl. Bikes (#/hr)			5			8						2
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	73.5	73.5		73.5	73.5			28.5	28.5		28.5	28.5
Effective Green, g (s)	73.5	73.5		73.5	73.5			28.5	28.5		28.5	28.5
Actuated g/C Ratio	0.67	0.67		0.67	0.67			0.26	0.26		0.26	0.26
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	2.0		2.0	2.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	430	2356		279	2287			478	401		161	403
v/s Ratio Prot		0.30			0.21							
v/s Ratio Perm	c0.32			0.09				0.19	0.03		c0.32	0.01
v/c Ratio	0.48	0.45		0.14	0.31			0.74	0.10		1.25	0.06
Uniform Delay, d1	8.9	8.6		6.7	7.6			37.4	31.0		40.8	30.6
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	3.9	0.6		1.0	0.4			6.1	0.1		155.3	0.1
Delay (s)	12.8	9.3		7.7	8.0			43.5	31.1		196.0	30.7
Level of Service	B	A		A	A			D	C		F	C
Approach Delay (s)		9.8			8.0			41.7			146.6	
Approach LOS		A			A			D			F	

Intersection Summary			
HCM 2000 Control Delay	28.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Intersection Delay, s/veh	51.6
Intersection LOS	F

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	15	528	195	0	36	487	102	0	132	11	237
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	15	533	197	0	36	492	103	0	133	11	239
Number of Lanes	0	1	2	0	0	1	2	0	0	0	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	3	3	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	3
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	3
HCM Control Delay	75	48.9	27.8
HCM LOS	F	E	D

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	92%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	8%	0%	0%	100%	47%	0%	100%	61%	0%	59%
Vol Right, %	0%	100%	0%	0%	53%	0%	0%	39%	0%	41%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	143	237	15	352	371	36	325	264	127	88
LT Vol	132	0	15	0	0	36	0	0	127	0
Through Vol	11	0	0	352	176	0	325	162	0	52
RT Vol	0	237	0	0	195	0	0	102	0	36
Lane Flow Rate	144	239	15	356	375	36	328	267	128	89
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.45	0.667	0.044	0.983	0.996	0.108	0.926	0.733	0.425	0.275
Departure Headway (Hd)	11.218	10.027	10.477	9.955	9.571	10.682	10.16	9.878	11.933	11.123
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	322	361	342	366	378	336	357	366	301	324
Service Time	8.972	7.78	8.228	7.706	7.321	8.432	7.909	7.627	9.694	8.883
HCM Lane V/C Ratio	0.447	0.662	0.044	0.973	0.992	0.107	0.919	0.73	0.425	0.275
HCM Control Delay	22.9	30.8	13.7	75.5	77.1	14.7	63.6	35.5	23.3	18.1
HCM Lane LOS	C	D	B	F	F	B	F	E	C	C
HCM 95th-tile Q	2.2	4.6	0.1	11.1	11.7	0.4	9.6	5.6	2	1.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	127	52	36
Peak Hour Factor	0.99	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	128	53	36
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	3
Conflicting Approach Right	EB
Conflicting Lanes Right	3
HCM Control Delay	21.2
HCM LOS	C

Lane

Intersection	
Intersection Delay, s/veh	39.2
Intersection LOS	E

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	215	677	0	0	0	372	372	0	253	1	104
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	226	713	0	0	0	392	392	0	266	1	109
Number of Lanes	0	1	2	0	0	0	2	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	3	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	3
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	27.9	56.8	30.6
HCM LOS	D	F	D

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2
Vol Left, %	100%	0%	100%	0%	0%	0%	0%
Vol Thru, %	0%	1%	0%	100%	100%	100%	25%
Vol Right, %	0%	99%	0%	0%	0%	0%	75%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	253	105	215	339	339	248	496
LT Vol	253	0	215	0	0	0	0
Through Vol	0	1	0	339	339	248	124
RT Vol	0	104	0	0	0	0	372
Lane Flow Rate	266	111	226	356	356	261	522
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	0.744	0.272	0.552	0.819	0.647	0.637	1
Departure Headway (Hd)	10.051	8.863	8.773	8.272	6.534	8.784	8.241
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	360	405	412	438	552	410	439
Service Time	7.826	6.638	6.519	6.018	4.28	6.563	6.02
HCM Lane V/C Ratio	0.739	0.274	0.549	0.813	0.645	0.637	1.189
HCM Control Delay	37.1	14.9	21.9	39	20.5	25.9	72.2
HCM Lane LOS	E	B	C	E	C	D	F
HCM 95th-tile Q	5.8	1.1	3.2	7.6	4.6	4.3	12.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	0	0	0
Number of Lanes	0	0	0	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	

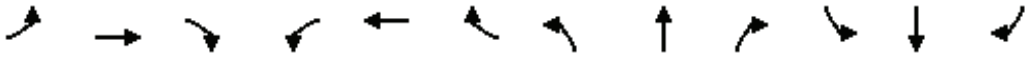
Lane



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	47	684	50	56	649	83	54	41	69	49	17	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0		3.0	2.5			3.5			3.5	3.5
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.99		1.00	0.98			0.94			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.96	1.00
Satd. Flow (prot)	1770	3495		1770	3470			1729			1796	1558
Flt Permitted	0.95	1.00		0.95	1.00			0.85			0.46	1.00
Satd. Flow (perm)	1770	3495		1770	3470			1501			856	1558
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	49	712	52	58	676	86	56	43	72	51	18	24
RTOR Reduction (vph)	0	5	0	0	10	0	0	0	0	0	0	22
Lane Group Flow (vph)	49	759	0	58	752	0	0	171	0	0	69	2
Confl. Peds. (#/hr)			4			4						3
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1 3	3 6			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	4.0	41.0		39.0	76.0			9.5			9.5	9.5
Effective Green, g (s)	4.0	41.0		36.5	76.0			9.5			9.5	9.5
Actuated g/C Ratio	0.04	0.41		0.36	0.76			0.10			0.10	0.10
Clearance Time (s)	3.0	4.0						3.5			3.5	3.5
Vehicle Extension (s)	3.0	3.0						3.0			3.0	3.0
Lane Grp Cap (vph)	70	1432		646	2637			142			81	148
v/s Ratio Prot	0.03	c0.22		0.03	c0.22							
v/s Ratio Perm								c0.11			0.08	0.00
v/c Ratio	0.70	0.53		0.09	0.29			1.20			0.85	0.02
Uniform Delay, d1	47.4	22.2		20.8	3.7			45.2			44.6	41.0
Progression Factor	1.00	1.00		0.55	0.18			1.00			1.00	1.00
Incremental Delay, d2	26.3	1.4		0.1	0.1			140.7			53.8	0.0
Delay (s)	73.7	23.6		11.6	0.7			186.0			98.3	41.1
Level of Service	E	C		B	A			F			F	D
Approach Delay (s)		26.7			1.5			186.0			83.5	
Approach LOS		C			A			F			F	

Intersection Summary			
HCM 2000 Control Delay	32.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	214	840	0	0	707	236	147	52	516	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Lane Util. Factor	1.00	0.95			0.95		1.00	0.95	0.95			
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Frt	1.00	1.00			0.96		1.00	0.88	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	1770	3539			3381		1770	1552	1504			
Flt Permitted	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	1770	3539			3381		1770	1552	1504			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	223	875	0	0	736	246	153	54	538	0	0	0
RTOR Reduction (vph)	0	0	0	0	28	0	0	165	243	0	0	0
Lane Group Flow (vph)	223	875	0	0	954	0	153	136	48	0	0	0
Confl. Peds. (#/hr)	10		5	5		10						
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	17.7	82.5			61.8		10.0	10.0	10.0			
Effective Green, g (s)	17.7	82.5			61.8		10.0	10.0	10.0			
Actuated g/C Ratio	0.18	0.82			0.62		0.10	0.10	0.10			
Clearance Time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	313	2919			2089		177	155	150			
v/s Ratio Prot	c0.13	0.25			c0.28			c0.09				
v/s Ratio Perm							0.09		0.03			
v/c Ratio	0.71	0.30			0.46		0.86	0.88	0.32			
Uniform Delay, d1	38.8	2.0			10.2		44.3	44.4	41.8			
Progression Factor	0.62	2.09			1.00		1.00	1.00	1.00			
Incremental Delay, d2	6.9	0.2			0.7		32.7	39.0	1.2			
Delay (s)	30.8	4.5			10.9		77.1	83.4	43.1			
Level of Service	C	A			B		E	F	D			
Approach Delay (s)		9.8			10.9			66.4			0.0	
Approach LOS		A			B			E			A	

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	308	309	139	64	285	68	143	866	36	57	519	122
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.92	1.00		0.94	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	324	325	78	67	300	53	151	912	35	60	546	111
Adj No. of Lanes	1	1	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	187	617	496	0	593	103	171	1726	66	132	1389	281
Arrive On Green	0.03	0.11	0.11	0.00	0.20	0.20	0.19	1.00	1.00	0.07	0.48	0.48
Sat Flow, veh/h	1774	1863	1499	0	2971	515	1774	3466	133	1774	2918	591
Grp Volume(v), veh/h	324	325	78	0	176	177	151	466	481	60	330	327
Grp Sat Flow(s),veh/h/ln	1774	1863	1499	0	1770	1716	1774	1770	1830	1774	1770	1739
Q Serve(g_s), s	12.0	18.8	5.4	0.0	10.1	10.5	9.4	0.3	0.3	3.7	13.7	13.8
Cycle Q Clear(g_c), s	12.0	18.8	5.4	0.0	10.1	10.5	9.4	0.3	0.3	3.7	13.7	13.8
Prop In Lane	1.00		1.00	0.00		0.30	1.00		0.07	1.00		0.34
Lane Grp Cap(c), veh/h	187	617	496	0	353	342	171	881	911	132	842	828
V/C Ratio(X)	1.74	0.53	0.16	0.00	0.50	0.52	0.88	0.53	0.53	0.45	0.39	0.39
Avail Cap(c_a), veh/h	187	617	496	0	435	421	171	881	911	171	842	828
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.85	0.00	1.00	1.00	0.71	0.71	0.71	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.0	42.3	36.4	0.0	40.6	40.7	45.4	0.1	0.1	50.5	19.2	19.3
Incr Delay (d2), s/veh	349.0	0.4	0.0	0.0	0.4	0.4	28.5	1.6	1.6	0.9	1.4	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.0	9.8	2.2	0.0	5.0	5.0	6.0	0.5	0.5	1.8	7.0	7.0
LnGrp Delay(d),s/veh	404.1	42.7	36.4	0.0	41.0	41.2	73.9	1.7	1.7	51.4	20.6	20.7
LnGrp LOS	F	D	D		D	D	E	A	A	D	C	C
Approach Vol, veh/h		727			353			1098			717	
Approach Delay, s/veh		203.1			41.1			11.6			23.2	
Approach LOS		F			D			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.5	60.8	0.0	41.7	14.0	58.3	15.0	26.7
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	11.0	49.0	12.0	28.0	11.0	49.0	12.0	28.0
Max Q Clear Time (g_c+I1), s	5.7	2.3	0.0	20.8	11.4	15.8	14.0	12.5
Green Ext Time (p_c), s	0.0	22.6	0.0	1.9	0.0	18.9	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	66.2
HCM 2010 LOS	E

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	183	137	9	49	210	101	16	179	44	87	80	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.99	1.00
Satd. Flow (prot)	1770	3506		1770	3539	1583	1530	2962		1618	1694	1503
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.99	1.00
Satd. Flow (perm)	1770	3506		1770	3539	1583	1530	2962		1618	1694	1503
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	201	151	10	54	231	111	18	197	48	96	88	140
RTOR Reduction (vph)	0	4	0	0	0	89	0	21	0	0	0	117
Lane Group Flow (vph)	201	157	0	54	231	22	18	224	0	86	98	23
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	18%	18%	18%	6%	6%	6%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases						2						8
Actuated Green, G (s)	12.7	21.6		4.2	13.1	13.1	11.4	11.4		10.5	10.5	10.5
Effective Green, g (s)	12.7	21.6		4.2	13.1	13.1	11.4	11.4		10.5	10.5	10.5
Actuated g/C Ratio	0.19	0.33		0.06	0.20	0.20	0.17	0.17		0.16	0.16	0.16
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Vehicle Extension (s)	2.0	4.0		2.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Grp Cap (vph)	344	1161		114	711	318	267	517		260	272	242
v/s Ratio Prot	c0.11	0.04		0.03	c0.07		0.01	c0.08		0.05	c0.06	
v/s Ratio Perm						0.01						0.01
v/c Ratio	0.58	0.14		0.47	0.32	0.07	0.07	0.43		0.33	0.36	0.09
Uniform Delay, d1	23.9	15.3		29.4	22.3	21.1	22.5	24.0		24.2	24.4	23.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.6	0.1		1.1	0.4	0.1	0.1	0.8		1.0	1.1	0.2
Delay (s)	25.5	15.3		30.6	22.6	21.2	22.6	24.8		25.3	25.5	23.5
Level of Service	C	B		C	C	C	C	C		C	C	C
Approach Delay (s)		21.0			23.3			24.7			24.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	23.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	65.2	Sum of lost time (s)	17.5
Intersection Capacity Utilization	41.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	760	42	247	607	0	0	0	0	294	2	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			3.0						2.5	2.5
Lane Util. Factor		0.95			0.91						1.00	1.00
Frpb, ped/bikes		1.00			1.00						1.00	1.00
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.99			1.00						1.00	0.85
Flt Protected		1.00			0.99						0.95	1.00
Satd. Flow (prot)		3504			5013						1775	1583
Flt Permitted		1.00			0.66						0.95	1.00
Satd. Flow (perm)		3504			3378						1775	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	792	44	257	632	0	0	0	0	306	2	189
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	833	0	0	889	0	0	0	0	0	308	189
Confl. Peds. (#/hr)			6			8						
Turn Type		NA		Prot	NA					Split	NA	Perm
Protected Phases		2 4		1	1 6					3	3	
Permitted Phases												3
Actuated Green, G (s)		54.5			56.0						17.5	17.5
Effective Green, g (s)		54.5			56.0						17.5	17.5
Actuated g/C Ratio		0.54			0.56						0.18	0.18
Clearance Time (s)											2.5	2.5
Vehicle Extension (s)											3.0	3.0
Lane Grp Cap (vph)		1909			2202						310	277
v/s Ratio Prot		c0.24			c0.08						c0.17	
v/s Ratio Perm					0.15							0.12
v/c Ratio		0.44			0.40						0.99	0.68
Uniform Delay, d1		13.6			12.5						41.2	38.6
Progression Factor		0.15			0.97						1.00	1.00
Incremental Delay, d2		0.1			0.1						49.1	6.8
Delay (s)		2.1			12.2						90.3	45.4
Level of Service		A			B						F	D
Approach Delay (s)		2.1			12.2			0.0			73.2	
Approach LOS		A			B			A			E	

Intersection Summary			
HCM 2000 Control Delay	22.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	374	163	154	410	0	0	0	0	93	1178	82
Number	3	8	18	7	4	14				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	0.99		1.00				1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1900	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	402	127	166	441	0				100	1267	79
Adj No. of Lanes	0	2	1	0	2	0				0	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93				0.93	0.93	0.93
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1255	546	276	732	0				128	1702	111
Arrive On Green	0.00	0.35	0.35	0.35	0.35	0.00				0.53	0.53	0.53
Sat Flow, veh/h	0	3632	1539	507	2149	0				243	3218	210
Grp Volume(v), veh/h	0	402	127	276	331	0				762	0	684
Grp Sat Flow(s),veh/h/ln	0	1770	1539	961	1610	0				1851	0	1820
Q Serve(g_s), s	0.0	5.0	3.5	11.6	10.0	0.0				19.8	0.0	17.0
Cycle Q Clear(g_c), s	0.0	5.0	3.5	16.6	10.0	0.0				19.8	0.0	17.0
Prop In Lane	0.00		1.00	0.60		0.00				0.13		0.12
Lane Grp Cap(c), veh/h	0	1255	546	437	571	0				979	0	963
V/C Ratio(X)	0.00	0.32	0.23	0.63	0.58	0.00				0.78	0.00	0.71
Avail Cap(c_a), veh/h	0	1445	628	496	658	0				979	0	963
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.93	0.93	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	14.1	13.6	18.6	15.7	0.0				11.3	0.0	10.7
Incr Delay (d2), s/veh	0.0	0.1	0.1	1.2	0.3	0.0				6.1	0.0	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.4	1.5	4.4	4.5	0.0				11.6	0.0	9.6
LnGrp Delay(d),s/veh	0.0	14.2	13.7	19.9	16.1	0.0				17.4	0.0	15.1
LnGrp LOS		B	B	B	B					B		B
Approach Vol, veh/h		529			607						1446	
Approach Delay, s/veh		14.0			17.8						16.3	
Approach LOS		B			B						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		35.2		24.8				24.8
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		28.5		24.5				24.5
Max Q Clear Time (g_c+I1), s		21.8		18.6				7.0
Green Ext Time (p_c), s		3.8		2.7				4.9

Intersection Summary	
HCM 2010 Ctrl Delay	16.2
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	108	359	0	0	448	127	137	665	169	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	0.99		1.00	1.00		0.94	1.00		0.97			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1863	1900	1863	1900			
Adj Flow Rate, veh/h	123	408	0	0	509	75	156	756	118			
Adj No. of Lanes	0	2	0	0	2	1	0	3	0			
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	337	997	0	0	1506	635	278	1442	230			
Arrive On Green	0.43	0.43	0.00	0.00	0.43	0.43	0.37	0.37	0.37			
Sat Flow, veh/h	429	2428	0	0	3632	1492	750	3883	620			
Grp Volume(v), veh/h	256	275	0	0	509	75	380	320	330			
Grp Sat Flow(s),veh/h/ln	1162	1610	0	0	1770	1492	1825	1695	1733			
Q Serve(g_s), s	2.2	4.1	0.0	0.0	3.3	1.0	5.7	5.0	5.1			
Cycle Q Clear(g_c), s	5.5	4.1	0.0	0.0	3.3	1.0	5.7	5.0	5.1			
Prop In Lane	0.48		0.00	0.00		1.00	0.41		0.36			
Lane Grp Cap(c), veh/h	649	685	0	0	1506	635	678	630	644			
V/C Ratio(X)	0.39	0.40	0.00	0.00	0.34	0.12	0.56	0.51	0.51			
Avail Cap(c_a), veh/h	1162	1402	0	0	3082	1300	1590	1476	1509			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	7.0	6.9	0.0	0.0	6.6	6.0	8.6	8.4	8.4			
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.0	0.0	0.0	0.3	0.2	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.7	1.8	0.0	0.0	1.6	0.4	2.9	2.4	2.4			
LnGrp Delay(d),s/veh	7.1	7.0	0.0	0.0	6.7	6.0	8.9	8.6	8.6			
LnGrp LOS	A	A			A	A	A	A	A			
Approach Vol, veh/h		531			584			1030				
Approach Delay, s/veh		7.1			6.6			8.7				
Approach LOS		A			A			A				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		16.3		18.2				18.2
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		30.0		30.0				30.0
Max Q Clear Time (g_c+I1), s		7.7		5.3				7.5
Green Ext Time (p_c), s		4.4		5.4				5.3

Intersection Summary	
HCM 2010 Ctrl Delay	7.7
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	221	188	26	280	0	52	0	19	244	259	17
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1827	1900	1827	1827	0	1827	0	1827	1827	1827	1900
Adj Flow Rate, veh/h	0	230	95	27	292	0	54	0	11	179	375	13
Adj No. of Lanes	0	2	0	1	2	0	1	0	1	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	4	4	4	4	0	4	0	4	4	4	4
Cap, veh/h	0	876	350	127	1870	0	0	0	0	343	692	24
Arrive On Green	0.00	0.36	0.36	0.07	0.54	0.00	0.00	0.00	0.00	0.20	0.20	0.20
Sat Flow, veh/h	0	2504	964	1740	3563	0		0		1740	3511	121
Grp Volume(v), veh/h	0	163	162	27	292	0		0.0		179	195	193
Grp Sat Flow(s),veh/h/ln	0	1736	1640	1740	1736	0				1740	1827	1805
Q Serve(g_s), s	0.0	2.3	2.4	0.5	1.4	0.0				3.1	3.3	3.3
Cycle Q Clear(g_c), s	0.0	2.3	2.4	0.5	1.4	0.0				3.1	3.3	3.3
Prop In Lane	0.00		0.59	1.00		0.00				1.00		0.07
Lane Grp Cap(c), veh/h	0	630	596	127	1870	0				343	360	356
V/C Ratio(X)	0.00	0.26	0.27	0.21	0.16	0.00				0.52	0.54	0.54
Avail Cap(c_a), veh/h	0	1631	1541	1328	3262	0				1328	1395	1378
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	7.6	7.7	14.9	4.0	0.0				12.2	12.3	12.3
Incr Delay (d2), s/veh	0.0	0.2	0.3	0.3	0.0	0.0				0.5	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.1	1.1	0.3	0.7	0.0				1.5	1.7	1.7
LnGrp Delay(d),s/veh	0.0	7.9	7.9	15.2	4.0	0.0				12.7	12.8	12.8
LnGrp LOS		A	A	B	A					B	B	B
Approach Vol, veh/h		325			319						567	
Approach Delay, s/veh		7.9			4.9						12.7	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		23.3			6.0	17.4		10.7
Change Period (Y+Rc), s		5.0			3.5	5.0		4.0
Max Green Setting (Gmax), s		32.0			26.0	32.0		26.0
Max Q Clear Time (g_c+I1), s		3.4			2.5	4.4		5.3
Green Ext Time (p_c), s		4.3			0.0	4.2		1.5

Intersection Summary	
HCM 2010 Ctrl Delay	9.4
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	174	310	0	0	188	841	118	0	230	0	0	0
Number	1	6	16	5	2	12	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1845	0	0	1845	1900	1845	0	1845			
Adj Flow Rate, veh/h	191	341	0	0	207	432	130	0	127			
Adj No. of Lanes	0	2	0	0	3	0	1	0	1			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	3	3	0	0	3	3	3	0	3			
Cap, veh/h	477	1016	0	0	1999	914	334	0	298			
Arrive On Green	0.60	0.60	0.00	0.00	0.60	0.60	0.19	0.00	0.19			
Sat Flow, veh/h	534	1791	0	0	3523	1535	1757	0	1568			
Grp Volume(v), veh/h	222	310	0	0	207	432	130	0	127			
Grp Sat Flow(s),veh/h/ln	647	1595	0	0	1679	1535	1757	0	1568			
Q Serve(g_s), s	7.4	4.1	0.0	0.0	1.1	6.7	2.7	0.0	3.0			
Cycle Q Clear(g_c), s	14.1	4.1	0.0	0.0	1.1	6.7	2.7	0.0	3.0			
Prop In Lane	0.86		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	544	950	0	0	1999	914	334	0	298			
V/C Ratio(X)	0.41	0.33	0.00	0.00	0.10	0.47	0.39	0.00	0.43			
Avail Cap(c_a), veh/h	665	1176	0	0	2636	1205	1170	0	1045			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	8.1	4.3	0.0	0.0	3.7	4.8	14.9	0.0	15.0			
Incr Delay (d2), s/veh	0.7	0.3	0.0	0.0	0.0	0.5	0.3	0.0	0.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.0	1.8	0.0	0.0	0.5	2.9	1.3	0.0	1.3			
LnGrp Delay(d),s/veh	8.8	4.5	0.0	0.0	3.7	5.3	15.1	0.0	15.3			
LnGrp LOS	A	A			A	A	B		B			
Approach Vol, veh/h		532			639			257				
Approach Delay, s/veh		6.3			4.8			15.2				
Approach LOS		A			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		29.0		13.0		29.0		
Change Period (Y+Rc), s		4.0		5.0		4.0		
Max Green Setting (Gmax), s		33.0		28.0		31.0		
Max Q Clear Time (g_c+I1), s		8.7		5.0		16.1		
Green Ext Time (p_c), s		12.2		0.1		8.9		

Intersection Summary	
HCM 2010 Ctrl Delay	7.2
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	68	239	233	103	277	132	72	465	116	156	501	100
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1900	1845	1845	1900	1845	1900
Adj Flow Rate, veh/h	72	254	129	110	295	86	77	495	41	166	533	91
Adj No. of Lanes	1	2	1	1	2	0	0	2	1	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	92	1189	523	135	976	279	88	598	298	184	620	110
Arrive On Green	0.05	0.34	0.34	0.15	0.73	0.73	0.19	0.19	0.19	0.26	0.26	0.26
Sat Flow, veh/h	1757	3505	1543	1757	2683	767	460	3115	1553	718	2424	432
Grp Volume(v), veh/h	72	254	129	110	191	190	305	267	41	418	0	372
Grp Sat Flow(s),veh/h/ln	1757	1752	1543	1757	1752	1698	1822	1752	1553	1809	0	1765
Q Serve(g_s), s	4.5	5.7	6.6	6.7	4.2	4.3	17.9	16.0	2.4	24.6	0.0	21.8
Cycle Q Clear(g_c), s	4.5	5.7	6.6	6.7	4.2	4.3	17.9	16.0	2.4	24.6	0.0	21.8
Prop In Lane	1.00		1.00	1.00		0.45	0.25		1.00	0.40		0.24
Lane Grp Cap(c), veh/h	92	1189	523	135	637	617	350	336	298	462	0	451
V/C Ratio(X)	0.78	0.21	0.25	0.82	0.30	0.31	0.87	0.79	0.14	0.90	0.00	0.82
Avail Cap(c_a), veh/h	168	1189	523	279	637	617	406	390	346	502	0	489
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.85	0.97	0.97	0.97	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.5	25.9	26.2	45.8	10.1	10.1	43.1	42.4	36.9	39.6	0.0	38.6
Incr Delay (d2), s/veh	4.6	0.4	1.0	4.4	1.2	1.3	15.2	7.9	0.1	18.0	0.0	9.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	2.8	3.0	3.4	2.2	2.2	10.5	8.4	1.0	14.6	0.0	11.8
LnGrp Delay(d),s/veh	56.1	26.2	27.2	50.2	11.3	11.4	58.3	50.2	37.0	57.7	0.0	47.9
LnGrp LOS	E	C	C	D	B	B	E	D	D	E		D
Approach Vol, veh/h		455			491			613			790	
Approach Delay, s/veh		31.2			20.1			53.4			53.1	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.9	41.8		31.6	9.3	44.5		24.6
Change Period (Y+Rc), s	3.5	4.5		3.5	3.5	4.5		3.5
Max Green Setting (Gmax), s	17.5	22.5		30.5	10.5	29.5		24.5
Max Q Clear Time (g_c+I1), s	8.7	8.6		26.6	6.5	6.3		19.9
Green Ext Time (p_c), s	0.1	4.8		1.4	0.0	6.1		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	42.0
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	147	266	0	0	0	55	139	166	0	424	38
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900				1863	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	0	165	164				62	156	159	0	476	36
Adj No. of Lanes	1	2	0				1	1	1	0	2	1
Peak Hour Factor	0.89	0.89	0.89				0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2				2	2	2	0	2	2
Cap, veh/h	383	382	342				97	936	795	0	1086	486
Arrive On Green	0.00	0.22	0.22				0.05	0.50	0.50	0.00	0.31	0.31
Sat Flow, veh/h	1774	1770	1583				1774	1863	1583	0	3632	1583
Grp Volume(v), veh/h	0	165	164				62	156	159	0	476	36
Grp Sat Flow(s),veh/h/ln	1774	1770	1583				1774	1863	1583	0	1770	1583
Q Serve(g_s), s	0.0	2.3	2.6				1.0	1.3	1.6	0.0	3.1	0.5
Cycle Q Clear(g_c), s	0.0	2.3	2.6				1.0	1.3	1.6	0.0	3.1	0.5
Prop In Lane	1.00		1.00				1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	383	382	342				97	936	795	0	1086	486
V/C Ratio(X)	0.00	0.43	0.48				0.64	0.17	0.20	0.00	0.44	0.07
Avail Cap(c_a), veh/h	1936	1931	1728				312	1705	1449	0	2118	948
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00				1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	9.6	9.7				13.2	3.8	3.9	0.0	7.9	7.0
Incr Delay (d2), s/veh	0.0	0.8	1.0				6.9	0.1	0.1	0.0	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.2	1.2				0.7	0.7	0.7	0.0	1.5	0.2
LnGrp Delay(d),s/veh	0.0	10.4	10.8				20.1	3.9	4.0	0.0	8.2	7.0
LnGrp LOS		B	B				C	A	A		A	A
Approach Vol, veh/h		329						377			512	
Approach Delay, s/veh		10.6						6.6			8.1	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		18.3		10.1	5.5	12.7		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		26.0		31.0	5.0	17.0		
Max Q Clear Time (g_c+I1), s		3.6		4.6	3.0	5.1		
Green Ext Time (p_c), s		4.7		2.1	0.0	3.7		

Intersection Summary	
HCM 2010 Ctrl Delay	8.3
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	0	6	25	1	279	3	46	12	381	278	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	41	0	7	29	1	328	4	54	14	448	327	35
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	1	1	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	487	16	52	136	21	443	124	640	157	830	751	80
Arrive On Green	0.31	0.00	0.31	0.31	0.31	0.31	0.45	0.45	0.45	0.45	0.45	0.45
Sat Flow, veh/h	939	52	169	65	68	1452	22	1406	345	1326	1650	177
Grp Volume(v), veh/h	48	0	0	358	0	0	72	0	0	448	0	362
Grp Sat Flow(s),veh/h/ln	1160	0	0	1585	0	0	1773	0	0	1326	0	1827
Q Serve(g_s), s	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0	8.1	0.0	4.5
Cycle Q Clear(g_c), s	0.8	0.0	0.0	6.7	0.0	0.0	0.8	0.0	0.0	8.9	0.0	4.5
Prop In Lane	0.85		0.15	0.08		0.92	0.06		0.19	1.00		0.10
Lane Grp Cap(c), veh/h	554	0	0	600	0	0	921	0	0	830	0	831
V/C Ratio(X)	0.09	0.00	0.00	0.60	0.00	0.00	0.08	0.00	0.00	0.54	0.00	0.44
Avail Cap(c_a), veh/h	780	0	0	921	0	0	1940	0	0	1618	0	1918
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.3	0.0	0.0	10.4	0.0	0.0	5.2	0.0	0.0	7.3	0.0	6.2
Incr Delay (d2), s/veh	0.1	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	3.0	0.0	0.0	0.4	0.0	0.0	3.4	0.0	2.3
LnGrp Delay(d),s/veh	8.4	0.0	0.0	11.3	0.0	0.0	5.2	0.0	0.0	7.8	0.0	6.5
LnGrp LOS	A			B			A			A		A
Approach Vol, veh/h		48			358			72			810	
Approach Delay, s/veh		8.4			11.3			5.2			7.3	
Approach LOS		A			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		19.2		14.2		19.2		14.2
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		35.0		17.0		35.0		17.0
Max Q Clear Time (g_c+I1), s		2.8		2.8		10.9		8.7
Green Ext Time (p_c), s		4.5		2.3		4.3		1.7

Intersection Summary	
HCM 2010 Ctrl Delay	8.3
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	304	135	262	299	143	112	125	55	137	435	89
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	59	358	151	308	352	146	132	147	47	161	512	12
Adj No. of Lanes	1	2	0	1	2	0	0	2	0	0	2	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	501	1365	566	563	1373	559	239	453	145	253	819	21
Arrive On Green	1.00	1.00	1.00	0.56	0.56	0.56	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	895	2429	1007	886	2444	995	469	1225	392	551	2215	56
Grp Volume(v), veh/h	59	259	250	308	253	245	132	0	194	325	0	360
Grp Sat Flow(s),veh/h/ln	895	1770	1667	886	1770	1669	469	0	1617	1138	0	1684
Q Serve(g_s), s	1.1	0.0	0.0	25.7	8.0	8.3	15.7	0.0	9.4	21.8	0.0	18.9
Cycle Q Clear(g_c), s	9.4	0.0	0.0	25.7	8.0	8.3	34.5	0.0	9.4	31.3	0.0	18.9
Prop In Lane	1.00		0.60	1.00		0.60	1.00		0.24	0.50		0.03
Lane Grp Cap(c), veh/h	501	994	936	563	994	938	239	0	598	470	0	623
V/C Ratio(X)	0.12	0.26	0.27	0.55	0.25	0.26	0.55	0.00	0.32	0.69	0.00	0.58
Avail Cap(c_a), veh/h	501	994	936	563	994	938	321	0	750	606	0	781
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	0.97	1.00	1.00	1.00	0.86	0.00	0.86	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.6	0.0	0.0	16.2	12.3	12.4	41.6	0.0	24.8	35.4	0.0	27.8
Incr Delay (d2), s/veh	0.5	0.6	0.7	3.8	0.6	0.7	0.6	0.0	0.1	1.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.2	0.2	6.8	4.1	4.0	3.8	0.0	4.2	9.2	0.0	8.9
LnGrp Delay(d),s/veh	1.1	0.6	0.7	20.0	12.9	13.0	42.3	0.0	24.9	36.7	0.0	28.1
LnGrp LOS	A	A	A	B	B	B	D		C	D		C
Approach Vol, veh/h		568			806			326			685	
Approach Delay, s/veh		0.7			15.7			31.9			32.2	
Approach LOS		A			B			C			C	

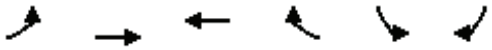
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		65.3		44.7		65.3		44.7
Change Period (Y+Rc), s		3.5		4.0		3.5		4.0
Max Green Setting (Gmax), s		51.5		51.0		51.5		51.0
Max Q Clear Time (g_c+I1), s		11.4		33.3		27.7		36.5
Green Ext Time (p_c), s		10.8		4.5		9.2		4.2

Intersection Summary	
HCM 2010 Ctrl Delay	19.1
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	277	259	113	265	93	174	182	84	253	556	12
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	6	326	259	133	312	105	205	214	98	298	654	9
Adj No. of Lanes	0	1	0	0	1	1	0	2	0	0	2	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	66	290	226	171	310	648	290	496	227	381	878	13
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.45	0.45	0.45	0.45	0.45	0.45
Sat Flow, veh/h	0	708	553	211	758	1583	350	1090	500	595	1932	29
Grp Volume(v), veh/h	591	0	0	445	0	105	206	0	311	434	0	527
Grp Sat Flow(s),veh/h/ln	1261	0	0	969	0	1583	352	0	1588	867	0	1689
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	2.3	11.4	0.0	7.3	17.7	0.0	13.6
Cycle Q Clear(g_c), s	22.5	0.0	0.0	22.5	0.0	2.3	25.0	0.0	7.3	25.0	0.0	13.6
Prop In Lane	0.01		0.44	0.30		1.00	1.00		0.31	0.69		0.02
Lane Grp Cap(c), veh/h	582	0	0	481	0	648	291	0	722	504	0	768
V/C Ratio(X)	1.02	0.00	0.00	0.92	0.00	0.16	0.71	0.00	0.43	0.86	0.00	0.69
Avail Cap(c_a), veh/h	582	0	0	481	0	648	291	0	722	504	0	768
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.9	0.0	0.0	16.2	0.0	10.3	23.0	0.0	10.2	19.5	0.0	11.9
Incr Delay (d2), s/veh	41.3	0.0	0.0	23.8	0.0	0.1	7.7	0.0	0.4	14.1	0.0	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.4	0.0	0.0	9.9	0.0	1.0	3.7	0.0	3.3	8.5	0.0	6.8
LnGrp Delay(d),s/veh	56.2	0.0	0.0	39.9	0.0	10.4	30.8	0.0	10.6	33.5	0.0	14.5
LnGrp LOS	F			D		B	C		B	C		B
Approach Vol, veh/h		591			550			517			961	
Approach Delay, s/veh		56.2			34.3			18.6			23.1	
Approach LOS		E			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		29.0		26.0		29.0		26.0
Change Period (Y+Rc), s		4.0		3.5		4.0		3.5
Max Green Setting (Gmax), s		25.0		22.5		25.0		22.5
Max Q Clear Time (g_c+I1), s		27.0		24.5		27.0		24.5
Green Ext Time (p_c), s		0.0		0.0		0.0		0.0

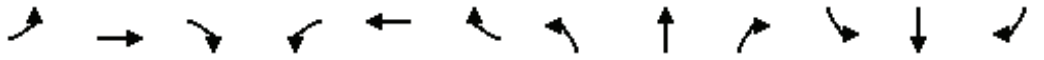
Intersection Summary	
HCM 2010 Ctrl Delay	32.0
HCM 2010 LOS	C



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	44	36	69	161	263	301
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1583	1762	1583
Flt Permitted	0.71	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1318	1863	1863	1583	1762	1583
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	48	40	76	177	289	331
RTOR Reduction (vph)	0	0	0	134	0	177
Lane Group Flow (vph)	48	40	76	43	289	154
Confl. Peds. (#/hr)					5	
Turn Type	Perm	NA	NA	Perm	Perm	Perm
Protected Phases		4	8			
Permitted Phases	4			8	6	6
Actuated Green, G (s)	6.8	6.8	6.8	6.8	12.9	12.9
Effective Green, g (s)	6.8	6.8	6.8	6.8	12.9	12.9
Actuated g/C Ratio	0.25	0.25	0.25	0.25	0.47	0.47
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	323	457	457	388	820	737
v/s Ratio Prot		0.02	c0.04			
v/s Ratio Perm	0.04			0.03	c0.16	0.10
v/c Ratio	0.15	0.09	0.17	0.11	0.35	0.21
Uniform Delay, d1	8.2	8.1	8.2	8.1	4.7	4.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	0.1	0.2	0.1	0.3	0.1
Delay (s)	8.4	8.1	8.4	8.2	5.0	4.5
Level of Service	A	A	A	A	A	A
Approach Delay (s)		8.3	8.3		4.7	
Approach LOS		A	A		A	

Intersection Summary			
HCM 2000 Control Delay	6.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	27.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	30.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	90	300	131	318	449	95	113	346	162	98	890	131
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	99	330	87	349	493	37	124	380	102	108	978	140
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	126	735	323	383	1173	512	154	978	260	137	1066	153
Arrive On Green	0.07	0.21	0.21	0.22	0.33	0.33	0.09	0.36	0.36	0.08	0.35	0.35
Sat Flow, veh/h	1757	3505	1539	1757	3505	1529	1757	2739	727	1757	3072	439
Grp Volume(v), veh/h	99	330	87	349	493	37	124	242	240	108	558	560
Grp Sat Flow(s),veh/h/ln	1757	1752	1539	1757	1752	1529	1757	1752	1714	1757	1752	1759
Q Serve(g_s), s	5.2	7.8	4.5	18.3	10.3	1.6	6.5	9.7	9.9	5.7	28.8	28.9
Cycle Q Clear(g_c), s	5.2	7.8	4.5	18.3	10.3	1.6	6.5	9.7	9.9	5.7	28.8	28.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.42	1.00		0.25
Lane Grp Cap(c), veh/h	126	735	323	383	1173	512	154	626	612	137	608	610
V/C Ratio(X)	0.79	0.45	0.27	0.91	0.42	0.07	0.80	0.39	0.39	0.79	0.92	0.92
Avail Cap(c_a), veh/h	372	1186	521	465	1298	566	279	626	612	372	649	651
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.2	32.6	31.3	36.1	24.3	21.4	42.3	22.7	22.7	42.8	29.6	29.6
Incr Delay (d2), s/veh	4.0	0.6	0.6	18.2	0.3	0.1	3.7	0.1	0.2	3.8	16.7	16.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	3.8	2.0	10.8	5.1	0.7	3.3	4.7	4.7	2.9	16.8	16.9
LnGrp Delay(d),s/veh	47.2	33.2	31.9	54.2	24.7	21.5	46.0	22.8	22.9	46.7	46.3	46.4
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	D	D
Approach Vol, veh/h		516			879			606			1226	
Approach Delay, s/veh		35.7			36.3			27.6			46.4	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.6	23.8	11.3	35.8	11.8	35.6	10.4	36.8
Change Period (Y+Rc), s	3.0	4.0	3.0	3.0	5.0	4.0	3.0	3.0
Max Green Setting (Gmax), s	25.0	32.0	15.0	35.0	20.0	35.0	20.0	30.0
Max Q Clear Time (g_c+I1), s	20.3	9.8	8.5	30.9	7.2	12.3	7.7	11.9
Green Ext Time (p_c), s	0.3	8.3	0.1	2.0	0.1	8.3	0.1	7.6

Intersection Summary	
HCM 2010 Ctrl Delay	38.4
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	388	2	213	0	405	250	0	1065	301
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	0	1863	1863	0	1863	1900
Adj Flow Rate, veh/h				449	0	75	0	431	0	0	1133	231
Adj No. of Lanes				2	0	1	0	3	1	0	3	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				2	2	2	0	2	2	0	2	2
Cap, veh/h				800	0	356	0	2780	866	0	2306	470
Arrive On Green				0.23	0.00	0.23	0.00	0.55	0.00	0.00	0.55	0.55
Sat Flow, veh/h				3548	0	1581	0	5253	1583	0	4386	860
Grp Volume(v), veh/h				449	0	75	0	431	0	0	911	453
Grp Sat Flow(s),veh/h/ln				1774	0	1581	0	1695	1583	0	1695	1688
Q Serve(g_s), s				3.9	0.0	1.4	0.0	1.5	0.0	0.0	5.8	5.8
Cycle Q Clear(g_c), s				3.9	0.0	1.4	0.0	1.5	0.0	0.0	5.8	5.8
Prop In Lane				1.00		1.00	0.00		1.00	0.00		0.51
Lane Grp Cap(c), veh/h				800	0	356	0	2780	866	0	1853	923
V/C Ratio(X)				0.56	0.00	0.21	0.00	0.16	0.00	0.00	0.49	0.49
Avail Cap(c_a), veh/h				3235	0	1442	0	3622	1128	0	2415	1202
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				12.1	0.0	11.1	0.0	3.9	0.0	0.0	4.9	4.9
Incr Delay (d2), s/veh				0.6	0.0	0.3	0.0	0.0	0.0	0.0	0.2	0.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.9	0.0	0.6	0.0	0.7	0.0	0.0	2.7	2.7
LnGrp Delay(d),s/veh				12.7	0.0	11.3	0.0	4.0	0.0	0.0	5.1	5.3
LnGrp LOS				B		B		A			A	A
Approach Vol, veh/h					524			431			1364	
Approach Delay, s/veh					12.5			4.0			5.2	
Approach LOS					B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		23.2				23.2		11.9
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		25.0				25.0		32.0
Max Q Clear Time (g_c+I1), s		3.5				7.8		5.9
Green Ext Time (p_c), s		13.3				11.3		1.9

Intersection Summary	
HCM 2010 Ctrl Delay	6.6
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	107	0	613	0	0	0	0	548	493	0	931	522
Number	3	8	18				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863				0	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	0	0	755				0	623	0	0	1058	0
Adj No. of Lanes	0	1	2				0	3	0	0	2	1
Peak Hour Factor	0.88	0.88	0.88				0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2				0	2	2	0	2	2
Cap, veh/h	0	589	1001				0	2658	0	0	1850	828
Arrive On Green	0.00	0.00	0.32				0.00	0.52	0.00	0.00	0.52	0.00
Sat Flow, veh/h	0	1863	3167				0	5421	0	0	3632	1583
Grp Volume(v), veh/h	0	0	755				0	623	0	0	1058	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583				0	1695	0	0	1770	1583
Q Serve(g_s), s	0.0	0.0	10.6				0.0	3.3	0.0	0.0	10.1	0.0
Cycle Q Clear(g_c), s	0.0	0.0	10.6				0.0	3.3	0.0	0.0	10.1	0.0
Prop In Lane	0.00		1.00				0.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	0	589	1001				0	2658	0	0	1850	828
V/C Ratio(X)	0.00	0.00	0.75				0.00	0.23	0.00	0.00	0.57	0.00
Avail Cap(c_a), veh/h	0	1126	1914				0	3791	0	0	2638	1180
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	15.2				0.0	6.4	0.0	0.0	8.1	0.0
Incr Delay (d2), s/veh	0.0	0.0	1.2				0.0	0.0	0.0	0.0	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	4.8				0.0	1.5	0.0	0.0	4.9	0.0
LnGrp Delay(d),s/veh	0.0	0.0	16.4				0.0	6.5	0.0	0.0	8.3	0.0
LnGrp LOS			B					A			A	
Approach Vol, veh/h		755						623			1058	
Approach Delay, s/veh		16.4						6.5			8.3	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		29.9				29.9		19.7
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		37.0				37.0		30.0
Max Q Clear Time (g_c+I1), s		5.3				12.1		12.6
Green Ext Time (p_c), s		15.8				13.8		3.1

Intersection Summary	
HCM 2010 Ctrl Delay	10.4
HCM 2010 LOS	B

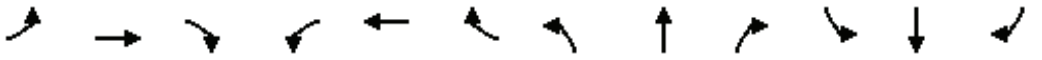
Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	91	7	95	0	1	21	105	929	40	285	971	288
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	99	8	91	0	1	0	114	1010	42	310	1055	289
Adj No. of Lanes	0	1	0	1	1	0	0	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	127	10	117	57	60	0	145	877	36	332	1652	449
Arrive On Green	0.15	0.15	0.15	0.00	0.03	0.00	0.35	0.35	0.35	0.19	0.60	0.60
Sat Flow, veh/h	838	68	770	1774	1863	0	200	2516	104	1774	2736	744
Grp Volume(v), veh/h	198	0	0	0	1	0	489	0	677	310	679	665
Grp Sat Flow(s),veh/h/ln	1676	0	0	1774	1863	0	1143	0	1676	1774	1770	1710
Q Serve(g_s), s	6.7	0.0	0.0	0.0	0.0	0.0	17.3	0.0	20.5	10.1	14.5	14.8
Cycle Q Clear(g_c), s	6.7	0.0	0.0	0.0	0.0	0.0	20.5	0.0	20.5	10.1	14.5	14.8
Prop In Lane	0.50		0.46	1.00		0.00	0.23		0.06	1.00		0.43
Lane Grp Cap(c), veh/h	254	0	0	57	60	0	474	0	584	332	1068	1033
V/C Ratio(X)	0.78	0.00	0.00	0.00	0.02	0.00	1.03	0.00	1.16	0.93	0.64	0.64
Avail Cap(c_a), veh/h	599	0	0	1358	1426	0	474	0	584	332	1068	1033
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.0	0.0	0.0	0.0	27.5	0.0	19.9	0.0	19.1	23.5	7.5	7.5
Incr Delay (d2), s/veh	2.0	0.0	0.0	0.0	0.0	0.0	49.4	0.0	89.5	32.3	1.4	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	0.0	0.0	0.0	0.0	14.0	0.0	23.8	7.9	7.4	7.3
LnGrp Delay(d),s/veh	26.0	0.0	0.0	0.0	27.6	0.0	69.3	0.0	108.7	55.9	8.9	9.1
LnGrp LOS	C				C		F		F	E	A	A
Approach Vol, veh/h		198			1			1166			1654	
Approach Delay, s/veh		26.0			27.6			92.2			17.8	
Approach LOS		C			C			F			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	15.0	25.0		5.9		40.0		12.9
Change Period (Y+Rc), s	4.0	4.5		4.0		4.5		4.0
Max Green Setting (Gmax), s	11.0	20.5		45.0		23.0		21.0
Max Q Clear Time (g_c+I1), s	12.1	22.5		2.0		16.8		8.7
Green Ext Time (p_c), s	0.0	0.0		0.0		6.0		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	47.1
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	313	176	81	69	75	131	35	480	256	251	329	226
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	396	223	0	87	95	127	44	608	292	318	416	0
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	388	1038	464	112	244	216	55	645	310	302	1480	0
Arrive On Green	0.22	0.29	0.00	0.06	0.14	0.14	0.03	0.28	0.28	0.17	0.42	0.00
Sat Flow, veh/h	1774	3539	1583	1774	1770	1566	1774	2310	1109	1774	3632	0
Grp Volume(v), veh/h	396	223	0	87	95	127	44	466	434	318	416	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1566	1774	1770	1649	1774	1770	0
Q Serve(g_s), s	18.0	3.9	0.0	4.0	4.0	6.3	2.0	21.2	21.2	14.0	6.4	0.0
Cycle Q Clear(g_c), s	18.0	3.9	0.0	4.0	4.0	6.3	2.0	21.2	21.2	14.0	6.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.67	1.00		0.00
Lane Grp Cap(c), veh/h	388	1038	464	112	244	216	55	494	460	302	1480	0
V/C Ratio(X)	1.02	0.21	0.00	0.78	0.39	0.59	0.80	0.94	0.94	1.05	0.28	0.00
Avail Cap(c_a), veh/h	388	1332	596	215	494	437	129	494	460	302	1480	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	32.2	22.0	0.0	38.0	32.3	33.3	39.6	29.0	29.0	34.2	15.8	0.0
Incr Delay (d2), s/veh	51.3	0.1	0.0	10.8	1.0	2.5	22.2	26.7	28.1	66.9	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.2	1.9	0.0	2.3	2.0	2.9	1.3	14.0	13.2	12.4	3.1	0.0
LnGrp Delay(d),s/veh	83.5	22.1	0.0	48.8	33.3	35.8	61.9	55.8	57.2	101.1	15.9	0.0
LnGrp LOS	F	C		D	C	D	E	E	E	F	B	
Approach Vol, veh/h		619			309			944			734	
Approach Delay, s/veh		61.4			38.7			56.7			52.8	
Approach LOS		E			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	27.0	9.2	28.2	6.6	38.4	22.0	15.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	14.0	23.0	10.0	31.0	6.0	31.0	18.0	23.0
Max Q Clear Time (g_c+I1), s	16.0	23.2	6.0	5.9	4.0	8.4	20.0	8.3
Green Ext Time (p_c), s	0.0	0.0	0.1	2.9	0.0	10.0	0.0	2.4

Intersection Summary	
HCM 2010 Ctrl Delay	54.6
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	55	763	443	27	939	97	186	224	25	112	403	156
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	58	803	332	28	988	94	196	236	20	118	424	139
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	216	1773	768	243	1632	155	229	979	82	147	657	213
Arrive On Green	0.50	0.50	0.50	0.50	0.50	0.50	0.13	0.30	0.30	0.08	0.25	0.25
Sat Flow, veh/h	519	3539	1532	493	3257	310	1774	3299	277	1774	2624	851
Grp Volume(v), veh/h	58	803	332	28	537	545	196	126	130	118	285	278
Grp Sat Flow(s),veh/h/ln	519	1770	1532	493	1770	1797	1774	1770	1807	1774	1770	1705
Q Serve(g_s), s	9.5	15.4	14.5	4.1	22.8	22.8	11.4	5.6	5.7	6.9	15.1	15.4
Cycle Q Clear(g_c), s	32.3	15.4	14.5	19.5	22.8	22.8	11.4	5.6	5.7	6.9	15.1	15.4
Prop In Lane	1.00		1.00	1.00		0.17	1.00		0.15	1.00		0.50
Lane Grp Cap(c), veh/h	216	1773	768	243	887	900	229	525	536	147	443	427
V/C Ratio(X)	0.27	0.45	0.43	0.12	0.61	0.61	0.85	0.24	0.24	0.80	0.64	0.65
Avail Cap(c_a), veh/h	216	1773	768	243	887	900	329	615	628	279	565	544
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	16.9	16.7	23.2	18.8	18.8	44.7	27.9	28.0	47.3	35.1	35.2
Incr Delay (d2), s/veh	3.0	0.8	1.8	1.0	3.1	3.0	13.9	0.8	0.8	9.6	5.5	6.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	7.7	6.5	0.6	11.8	12.0	6.4	2.9	3.0	3.8	8.0	7.9
LnGrp Delay(d),s/veh	33.4	17.7	18.5	24.1	21.8	21.8	58.6	28.8	28.8	56.9	40.7	41.2
LnGrp LOS	C	B	B	C	C	C	E	C	C	E	D	D
Approach Vol, veh/h		1193			1110			452			681	
Approach Delay, s/veh		18.7			21.9			41.7			43.7	
Approach LOS		B			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		57.1	17.1	30.8		57.1	12.2	35.7
Change Period (Y+Rc), s		4.5	3.5	4.5		4.5	3.5	4.5
Max Green Setting (Gmax), s		39.5	19.5	33.5		39.5	16.5	36.5
Max Q Clear Time (g_c+I1), s		34.3	13.4	17.4		24.8	8.9	7.7
Green Ext Time (p_c), s		5.1	0.3	9.0		14.2	0.1	12.8

Intersection Summary	
HCM 2010 Ctrl Delay	27.7
HCM 2010 LOS	C

Notes

User approved ignoring U-Turning movement.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	675	197	369	167	75	150
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845
Adj Flow Rate, veh/h	750	219	410	186	83	0
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	860	716	462	1463	140	125
Arrive On Green	0.47	0.47	0.26	0.79	0.08	0.00
Sat Flow, veh/h	1845	1535	1757	1845	1757	1568
Grp Volume(v), veh/h	750	219	410	186	83	0
Grp Sat Flow(s),veh/h/ln	1845	1535	1757	1845	1757	1568
Q Serve(g_s), s	22.9	5.6	14.1	1.5	2.9	0.0
Cycle Q Clear(g_c), s	22.9	5.6	14.1	1.5	2.9	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	860	716	462	1463	140	125
V/C Ratio(X)	0.87	0.31	0.89	0.13	0.59	0.00
Avail Cap(c_a), veh/h	970	808	532	1647	448	400
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	15.0	10.4	22.2	1.5	27.9	0.0
Incr Delay (d2), s/veh	8.0	0.2	15.2	0.0	4.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.4	2.4	8.8	0.7	1.5	0.0
LnGrp Delay(d),s/veh	23.1	10.7	37.4	1.5	31.9	0.0
LnGrp LOS	C	B	D	A	C	
Approach Vol, veh/h	969			596	83	
Approach Delay, s/veh	20.3			26.2	31.9	
Approach LOS	C			C	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		9.0	20.5	33.3				53.8
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		16.0	19.0	33.0				56.0
Max Q Clear Time (g_c+I1), s		4.9	16.1	24.9				3.5
Green Ext Time (p_c), s		0.1	0.4	4.3				9.5

Intersection Summary	
HCM 2010 Ctrl Delay	23.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	105	216	333	117	171	330	83	101	235	345	351	129
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1900	1845	1845	1845	1845	1900	1900	1845	1900
Adj Flow Rate, veh/h	114	235	348	127	186	305	90	110	240	375	382	70
Adj No. of Lanes	1	1	0	0	1	1	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	398	152	226	98	143	209	516	284	621	300	270	49
Arrive On Green	0.23	0.23	0.23	0.04	0.04	0.04	0.56	0.56	0.56	0.56	0.56	0.56
Sat Flow, veh/h	1757	673	996	734	1074	1568	925	508	1108	473	481	88
Grp Volume(v), veh/h	114	0	583	313	0	305	90	0	350	827	0	0
Grp Sat Flow(s),veh/h/ln	1757	0	1669	1808	0	1568	925	0	1616	1042	0	0
Q Serve(g_s), s	8.0	0.0	34.0	20.0	0.0	20.0	0.0	0.0	18.2	65.8	0.0	0.0
Cycle Q Clear(g_c), s	8.0	0.0	34.0	20.0	0.0	20.0	8.0	0.0	18.2	84.0	0.0	0.0
Prop In Lane	1.00		0.60	0.41		1.00	1.00		0.69	0.45		0.08
Lane Grp Cap(c), veh/h	398	0	378	241	0	209	516	0	905	618	0	0
V/C Ratio(X)	0.29	0.00	1.54	1.30	0.00	1.46	0.17	0.00	0.39	1.34	0.00	0.00
Avail Cap(c_a), veh/h	398	0	378	241	0	209	516	0	905	618	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.89	0.00	0.89	1.00	0.00	1.00	0.46	0.00	0.00
Uniform Delay (d), s/veh	48.0	0.0	58.0	71.7	0.0	71.7	16.3	0.0	18.5	44.0	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	256.4	158.7	0.0	228.5	0.2	0.0	0.3	156.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.0	42.6	20.7	0.0	22.0	1.8	0.0	8.1	52.5	0.0	0.0
LnGrp Delay(d),s/veh	48.4	0.0	314.4	230.4	0.0	300.2	16.4	0.0	18.8	200.8	0.0	0.0
LnGrp LOS	D		F	F		F	B		B	F		
Approach Vol, veh/h		697			618			440			827	
Approach Delay, s/veh		270.9			264.9			18.3			200.8	
Approach LOS		F			F			B			F	

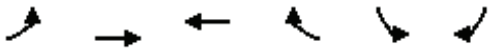
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		88.0		38.0		88.0		24.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		84.0		34.0		84.0		20.0
Max Q Clear Time (g_c+I1), s		20.2		36.0		86.0		22.0
Green Ext Time (p_c), s		15.5		0.0		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	204.0
HCM 2010 LOS	F

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	390	406	64	390	228	188
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1900	1845	1845	1845	1845
Adj Flow Rate, veh/h	424	0	70	424	248	204
Adj No. of Lanes	1	0	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3
Cap, veh/h	1236	0	88	1377	351	314
Arrive On Green	0.67	0.00	0.05	0.75	0.20	0.20
Sat Flow, veh/h	1845	0	1757	1845	1757	1568
Grp Volume(v), veh/h	424	0	70	424	248	204
Grp Sat Flow(s),veh/h/ln	1845	0	1757	1845	1757	1568
Q Serve(g_s), s	14.8	0.0	5.9	11.3	19.7	17.9
Cycle Q Clear(g_c), s	14.8	0.0	5.9	11.3	19.7	17.9
Prop In Lane		0.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1236	0	88	1377	351	314
V/C Ratio(X)	0.34	0.00	0.80	0.31	0.71	0.65
Avail Cap(c_a), veh/h	1236	0	129	1377	351	314
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.6	0.0	70.5	6.2	55.9	55.2
Incr Delay (d2), s/veh	0.1	0.0	18.8	0.6	11.3	10.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	0.0	3.3	6.0	10.7	8.6
LnGrp Delay(d),s/veh	10.7	0.0	89.2	6.8	67.2	65.2
LnGrp LOS	B		F	A	E	E
Approach Vol, veh/h	424			494	452	
Approach Delay, s/veh	10.7			18.5	66.3	
Approach LOS	B			B	E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		34.0	11.5	104.5				116.0
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		30.0	11.0	97.0				112.0
Max Q Clear Time (g_c+I1), s		21.7	7.9	16.8				13.3
Green Ext Time (p_c), s		1.0	0.0	6.6				6.6

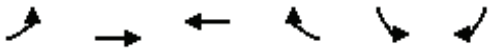
Intersection Summary	
HCM 2010 Ctrl Delay	31.9
HCM 2010 LOS	C



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	778	457	0	928	649
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	0	819	481	0	977	440
Adj No. of Lanes	0	2	2	0	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1802	1802	0	1173	540
Arrive On Green	0.00	0.51	0.17	0.00	0.34	0.34
Sat Flow, veh/h	0	3725	3725	0	3442	1583
Grp Volume(v), veh/h	0	819	481	0	977	440
Grp Sat Flow(s),veh/h/ln	0	1770	1770	0	1721	1583
Q Serve(g_s), s	0.0	8.9	7.1	0.0	15.7	15.2
Cycle Q Clear(g_c), s	0.0	8.9	7.1	0.0	15.7	15.2
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1802	1802	0	1173	540
V/C Ratio(X)	0.00	0.45	0.27	0.00	0.83	0.82
Avail Cap(c_a), veh/h	0	1802	1802	0	1319	607
HCM Platoon Ratio	1.00	1.00	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.99	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	9.4	15.2	0.0	18.2	18.1
Incr Delay (d2), s/veh	0.0	0.8	0.4	0.0	4.3	7.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.5	3.6	0.0	8.0	7.8
LnGrp Delay(d),s/veh	0.0	10.2	15.6	0.0	22.5	25.7
LnGrp LOS		B	B		C	C
Approach Vol, veh/h		819	481		1417	
Approach Delay, s/veh		10.2	15.6		23.5	
Approach LOS		B	B		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		35.6		24.4		35.6		
Change Period (Y+Rc), s		5.0		4.0		5.0		
Max Green Setting (Gmax), s		28.0		23.0		28.0		
Max Q Clear Time (g_c+I1), s		10.9		17.7		9.1		
Green Ext Time (p_c), s		8.5		2.8		8.9		

Intersection Summary	
HCM 2010 Ctrl Delay	18.1
HCM 2010 LOS	B



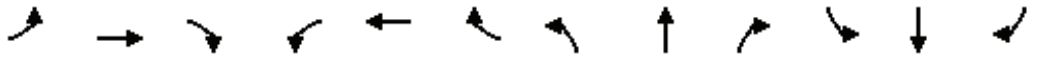
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	14	1692	400	30	301	57
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99			0.95	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1900	1845	1900
Adj Flow Rate, veh/h	15	1781	421	24	317	49
Adj No. of Lanes	0	2	2	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	0	0
Cap, veh/h	67	2139	2102	119	360	56
Arrive On Green	0.83	0.83	0.42	0.42	0.24	0.24
Sat Flow, veh/h	9	3505	3453	191	1494	231
Grp Volume(v), veh/h	963	833	219	226	367	0
Grp Sat Flow(s),veh/h/ln	1835	1595	1752	1799	1729	0
Q Serve(g_s), s	0.0	17.3	4.7	4.8	12.3	0.0
Cycle Q Clear(g_c), s	17.2	17.3	4.7	4.8	12.3	0.0
Prop In Lane	0.02			0.11	0.86	0.13
Lane Grp Cap(c), veh/h	1209	997	1096	1125	417	0
V/C Ratio(X)	0.80	0.84	0.20	0.20	0.88	0.00
Avail Cap(c_a), veh/h	1209	997	1096	1125	519	0
HCM Platoon Ratio	1.33	1.33	0.67	0.67	1.00	1.00
Upstream Filter(I)	0.73	0.73	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	3.3	3.3	7.9	7.9	21.9	0.0
Incr Delay (d2), s/veh	4.1	6.1	0.4	0.4	11.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.2	8.5	2.4	2.5	7.2	0.0
LnGrp Delay(d),s/veh	7.4	9.5	8.3	8.3	33.9	0.0
LnGrp LOS	A	A	A	A	C	
Approach Vol, veh/h		1796	445		367	
Approach Delay, s/veh		8.4	8.3		33.9	
Approach LOS		A	A		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		41.5		18.5		41.5		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		34.0		18.0		34.0		
Max Q Clear Time (g_c+I1), s		19.3		14.3		6.8		
Green Ext Time (p_c), s		12.1		0.2		19.9		

Intersection Summary	
HCM 2010 Ctrl Delay	11.9
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	195	25	915	99	330	68	422	339	0	0	686	153
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.80	1.00		0.92	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	0	1845	1845
Adj Flow Rate, veh/h	205	0	695	104	347	19	444	357	0	0	722	121
Adj No. of Lanes	1	0	2	1	2	1	2	3	0	0	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	242	0	813	395	788	325	509	2750	0	0	1303	570
Arrive On Green	0.14	0.00	0.14	0.22	0.22	0.22	0.15	0.55	0.00	0.00	0.37	0.37
Sat Flow, veh/h	1757	0	2508	1757	3505	1444	3408	5202	0	0	3597	1533
Grp Volume(v), veh/h	205	0	695	104	347	19	444	357	0	0	722	121
Grp Sat Flow(s),veh/h/ln	1757	0	1254	1757	1752	1444	1704	1679	0	0	1752	1533
Q Serve(g_s), s	13.7	0.0	16.5	5.9	10.2	1.2	15.3	4.2	0.0	0.0	19.6	6.5
Cycle Q Clear(g_c), s	13.7	0.0	16.5	5.9	10.2	1.2	15.3	4.2	0.0	0.0	19.6	6.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	242	0	813	395	788	325	509	2750	0	0	1303	570
V/C Ratio(X)	0.85	0.00	0.85	0.26	0.44	0.06	0.87	0.13	0.00	0.00	0.55	0.21
Avail Cap(c_a), veh/h	242	0	813	527	1051	433	596	2750	0	0	1303	570
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	50.5	0.0	41.5	38.3	40.0	36.5	49.9	13.3	0.0	0.0	29.8	25.7
Incr Delay (d2), s/veh	23.7	0.0	8.9	0.4	0.4	0.1	12.0	0.1	0.0	0.0	1.7	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	0.0	12.0	2.9	5.0	0.5	8.1	1.9	0.0	0.0	9.7	2.9
LnGrp Delay(d),s/veh	74.2	0.0	50.3	38.7	40.4	36.6	61.9	13.4	0.0	0.0	31.5	26.6
LnGrp LOS	E		D	D	D	D	E	B			C	C
Approach Vol, veh/h		900			470			801			843	
Approach Delay, s/veh		55.8			39.9			40.3			30.8	
Approach LOS		E			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		69.5		20.0	20.9	48.6		30.5
Change Period (Y+Rc), s		4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s		56.5		16.5	21.0	32.5		36.0
Max Q Clear Time (g_c+I1), s		6.2		18.5	17.3	21.6		12.2
Green Ext Time (p_c), s		10.5		0.0	0.6	5.7		2.7

Intersection Summary	
HCM 2010 Ctrl Delay	42.2
HCM 2010 LOS	D

Notes

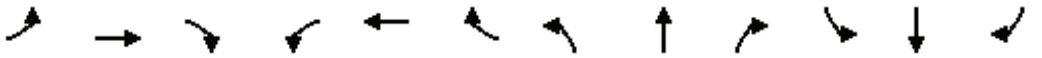
User approved volume balancing among the lanes for turning movement.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	398	10	34	372	2	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	468	12	40	438	2	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			480		992	474
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			480		992	474
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		99	99
cM capacity (veh/h)			1082		262	590

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	480	40	438	7
Volume Left	0	40	0	2
Volume Right	12	0	0	5
cSH	1700	1082	1700	417
Volume to Capacity	0.28	0.04	0.26	0.02
Queue Length 95th (ft)	0	3	0	1
Control Delay (s)	0.0	8.5	0.0	13.8
Lane LOS		A		B
Approach Delay (s)	0.0	0.7		13.8
Approach LOS				B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	38.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	115	126	167	432	327	95	176	360	156	314	242	63
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	125	137	182	470	355	103	191	391	170	341	263	68
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	2	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	155	153	203	507	568	165	222	563	242	410	325	84
Arrive On Green	0.09	0.21	0.21	0.29	0.41	0.41	0.12	0.23	0.23	0.12	0.23	0.23
Sat Flow, veh/h	1774	727	966	1774	1389	403	1774	2414	1036	3442	1428	369
Grp Volume(v), veh/h	125	0	319	470	0	458	191	285	276	341	0	331
Grp Sat Flow(s),veh/h/ln	1774	0	1692	1774	0	1792	1774	1770	1680	1721	0	1798
Q Serve(g_s), s	7.3	0.0	19.4	27.2	0.0	21.4	11.1	15.6	15.9	10.2	0.0	18.4
Cycle Q Clear(g_c), s	7.3	0.0	19.4	27.2	0.0	21.4	11.1	15.6	15.9	10.2	0.0	18.4
Prop In Lane	1.00		0.57	1.00		0.22	1.00		0.62	1.00		0.21
Lane Grp Cap(c), veh/h	155	0	356	507	0	733	222	413	392	410	0	409
V/C Ratio(X)	0.81	0.00	0.90	0.93	0.00	0.62	0.86	0.69	0.70	0.83	0.00	0.81
Avail Cap(c_a), veh/h	252	0	369	622	0	764	252	486	461	489	0	494
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	47.3	0.0	40.6	36.6	0.0	24.8	45.3	37.0	37.1	45.5	0.0	38.6
Incr Delay (d2), s/veh	9.6	0.0	23.2	17.9	0.0	1.5	22.9	3.4	3.9	10.1	0.0	8.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.0	11.3	15.8	0.0	10.9	6.9	8.0	7.8	5.5	0.0	10.0
LnGrp Delay(d),s/veh	56.9	0.0	63.7	54.5	0.0	26.3	68.2	40.4	41.1	55.5	0.0	46.9
LnGrp LOS	E		E	D		C	E	D	D	E		D
Approach Vol, veh/h		444			928			752			672	
Approach Delay, s/veh		61.8			40.6			47.7			51.3	
Approach LOS		E			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.6	28.6	34.2	26.2	17.2	28.0	13.2	47.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	15.0	29.0	37.0	23.0	15.0	29.0	15.0	45.0
Max Q Clear Time (g_c+I1), s	12.2	17.9	29.2	21.4	13.1	20.4	9.3	23.4
Green Ext Time (p_c), s	0.4	4.2	1.0	0.8	0.1	3.6	0.1	5.3

Intersection Summary	
HCM 2010 Ctrl Delay	48.4
HCM 2010 LOS	D

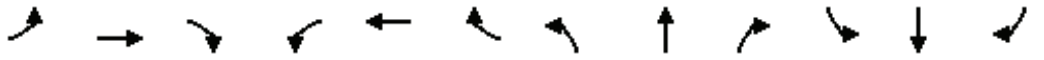
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	28	403	257	436	128	38	105	104	645	55	139	25
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	31	448	233	484	142	35	116	117	233	61	154	25
Adj No. of Lanes	1	2	0	2	1	0	1	1	1	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	410	520	268	649	263	65	345	363	307	75	189	31
Arrive On Green	0.23	0.23	0.23	0.18	0.18	0.18	0.19	0.19	0.19	0.16	0.16	0.16
Sat Flow, veh/h	1774	2249	1159	3548	1436	354	1774	1863	1578	458	1157	188
Grp Volume(v), veh/h	31	352	329	484	0	177	116	117	233	240	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1638	1774	0	1790	1774	1863	1578	1803	0	0
Q Serve(g_s), s	1.0	13.4	13.6	9.1	0.0	6.3	4.0	3.8	9.8	9.0	0.0	0.0
Cycle Q Clear(g_c), s	1.0	13.4	13.6	9.1	0.0	6.3	4.0	3.8	9.8	9.0	0.0	0.0
Prop In Lane	1.00		0.71	1.00		0.20	1.00		1.00	0.25		0.10
Lane Grp Cap(c), veh/h	410	409	379	649	0	327	345	363	307	295	0	0
V/C Ratio(X)	0.08	0.86	0.87	0.75	0.00	0.54	0.34	0.32	0.76	0.81	0.00	0.00
Avail Cap(c_a), veh/h	430	429	397	910	0	459	708	743	630	411	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	21.1	25.9	26.0	27.1	0.0	26.0	24.4	24.3	26.7	28.3	0.0	0.0
Incr Delay (d2), s/veh	0.1	15.6	17.8	2.1	0.0	1.4	0.6	0.5	3.8	8.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	8.3	8.0	4.6	0.0	3.2	2.0	2.0	4.6	5.2	0.0	0.0
LnGrp Delay(d),s/veh	21.2	41.5	43.7	29.3	0.0	27.4	24.9	24.8	30.5	36.8	0.0	0.0
LnGrp LOS	C	D	D	C		C	C	C	C	D		
Approach Vol, veh/h		712			661			466			240	
Approach Delay, s/veh		41.6			28.8			27.7			36.8	
Approach LOS		D			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		17.7		20.2		15.5		16.8
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		28.0		17.0		16.0		18.0
Max Q Clear Time (g_c+I1), s		11.8		15.6		11.0		11.1
Green Ext Time (p_c), s		1.6		0.7		0.6		1.7

Intersection Summary	
HCM 2010 Ctrl Delay	33.9
HCM 2010 LOS	C

Notes

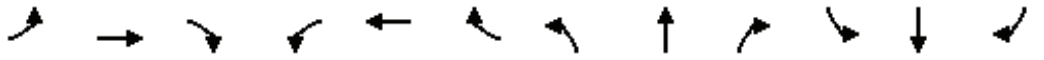
User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	263	0	133	120	721	0	0	429	403
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1900	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				299	0	79	136	819	0	0	488	0
Adj No. of Lanes				1	1	0	1	2	0	0	2	0
Peak Hour Factor				0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				393	0	351	165	2096	0	0	1437	0
Arrive On Green				0.22	0.00	0.22	0.09	0.59	0.00	0.00	0.41	0.00
Sat Flow, veh/h				1774	0	1583	1774	3632	0	0	3725	0
Grp Volume(v), veh/h				299	0	79	136	819	0	0	488	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	1774	1770	0	0	1770	0
Q Serve(g_s), s				6.8	0.0	1.8	3.2	5.3	0.0	0.0	4.1	0.0
Cycle Q Clear(g_c), s				6.8	0.0	1.8	3.2	5.3	0.0	0.0	4.1	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				393	0	351	165	2096	0	0	1437	0
V/C Ratio(X)				0.76	0.00	0.23	0.82	0.39	0.00	0.00	0.34	0.00
Avail Cap(c_a), veh/h				661	0	590	165	2472	0	0	3132	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				15.7	0.0	13.7	19.1	4.6	0.0	0.0	8.8	0.0
Incr Delay (d2), s/veh				3.1	0.0	0.3	27.3	0.1	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.7	0.0	0.8	2.8	2.5	0.0	0.0	2.0	0.0
LnGrp Delay(d),s/veh				18.7	0.0	14.0	46.4	4.8	0.0	0.0	8.9	0.0
LnGrp LOS				B		B	D	A			A	
Approach Vol, veh/h					378			955			488	
Approach Delay, s/veh					17.7			10.7			8.9	
Approach LOS					B			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		29.4			8.0	21.4		13.5
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		30.0			4.0	38.0		16.0
Max Q Clear Time (g_c+I1), s		7.3			5.2	6.1		8.8
Green Ext Time (p_c), s		9.9			0.0	11.4		0.8

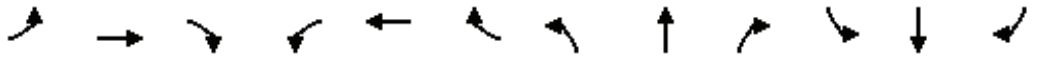
Intersection Summary	
HCM 2010 Ctrl Delay	11.7
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	946	202	88	366	0	0	0	0	388	23	341
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1900	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	1028	191	96	398	0				422	25	355
Adj No. of Lanes	0	2	0	0	2	0				0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1191	221	108	703	0				438	26	368
Arrive On Green	0.00	0.40	0.40	0.13	0.13	0.00				0.49	0.49	0.49
Sat Flow, veh/h	0	3071	552	80	1842	0				887	53	747
Grp Volume(v), veh/h	0	610	609	165	329	0				802	0	0
Grp Sat Flow(s),veh/h/ln	0	1770	1761	227	1610	0				1687	0	0
Q Serve(g_s), s	0.0	23.7	23.8	6.2	14.3	0.0				34.5	0.0	0.0
Cycle Q Clear(g_c), s	0.0	23.7	23.8	30.0	14.3	0.0				34.5	0.0	0.0
Prop In Lane	0.00		0.31	0.58		0.00				0.53		0.44
Lane Grp Cap(c), veh/h	0	708	704	167	644	0				832	0	0
V/C Ratio(X)	0.00	0.86	0.86	0.99	0.51	0.00				0.96	0.00	0.00
Avail Cap(c_a), veh/h	0	708	704	167	644	0				832	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.93	0.93	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	20.6	20.6	40.2	25.7	0.0				18.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	10.6	10.9	64.2	0.6	0.0				23.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	13.6	13.6	6.4	6.5	0.0				21.3	0.0	0.0
LnGrp Delay(d),s/veh	0.0	31.2	31.6	104.4	26.3	0.0				41.9	0.0	0.0
LnGrp LOS		C	C	F	C					D		
Approach Vol, veh/h		1219			494						802	
Approach Delay, s/veh		31.4			52.4						41.9	
Approach LOS		C			D						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				34.0		41.0		34.0
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				30.0		37.0		30.0
Max Q Clear Time (g_c+I1), s				25.8		36.5		32.0
Green Ext Time (p_c), s				3.5		0.3		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	38.9
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	270	1064	0	0	431	391	23	12	64	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	303	1196	0	0	484	288	20	22	18			
Adj No. of Lanes	0	2	0	0	2	0	1	1	1			
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	367	1444	0	0	1475	874	355	373	316			
Arrive On Green	1.00	1.00	0.00	0.00	0.69	0.69	0.20	0.20	0.20			
Sat Flow, veh/h	427	2167	0	0	2220	1260	1774	1863	1581			
Grp Volume(v), veh/h	638	861	0	0	402	370	20	22	18			
Grp Sat Flow(s),veh/h/ln	900	1610	0	0	1770	1618	1774	1863	1581			
Q Serve(g_s), s	45.2	0.0	0.0	0.0	6.8	6.8	0.7	0.7	0.7			
Cycle Q Clear(g_c), s	52.0	0.0	0.0	0.0	6.8	6.8	0.7	0.7	0.7			
Prop In Lane	0.48		0.00	0.00		0.78	1.00		1.00			
Lane Grp Cap(c), veh/h	694	1117	0	0	1227	1122	355	373	316			
V/C Ratio(X)	0.92	0.77	0.00	0.00	0.33	0.33	0.06	0.06	0.06			
Avail Cap(c_a), veh/h	694	1117	0	0	1227	1122	355	373	316			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.31	0.31	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	3.9	0.0	0.0	0.0	4.6	4.6	24.3	24.3	24.3			
Incr Delay (d2), s/veh	6.7	1.1	0.0	0.0	0.2	0.2	0.3	0.3	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	14.3	0.3	0.0	0.0	3.3	3.0	0.4	0.4	0.3			
LnGrp Delay(d),s/veh	10.6	1.1	0.0	0.0	4.7	4.7	24.6	24.6	24.6			
LnGrp LOS	B	A			A	A	C	C	C			
Approach Vol, veh/h		1499			772			60				
Approach Delay, s/veh		5.1			4.7			24.6				
Approach LOS		A			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		19.0		56.0				56.0
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		15.0		52.0				52.0
Max Q Clear Time (g_c+I1), s		2.7		54.0				8.8
Green Ext Time (p_c), s		0.1		0.0				30.3

Intersection Summary	
HCM 2010 Ctrl Delay	5.5
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	17	442	233	21	459	77	169	179	14	159	881	122
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1900	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	18	465	146	22	483	68	178	188	8	167	927	121
Adj No. of Lanes	0	2	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	64	1422	657	65	1244	172	209	1180	50	198	1052	137
Arrive On Green	0.43	0.43	0.43	0.43	0.43	0.43	0.12	0.34	0.34	0.11	0.34	0.34
Sat Flow, veh/h	65	3298	1523	68	2885	398	1757	3422	145	1757	3105	405
Grp Volume(v), veh/h	255	228	146	301	0	272	178	96	100	167	523	525
Grp Sat Flow(s),veh/h/ln	1768	1595	1523	1756	0	1596	1757	1752	1815	1757	1752	1758
Q Serve(g_s), s	0.0	10.3	6.5	0.0	0.0	12.6	10.7	4.1	4.1	10.1	30.4	30.4
Cycle Q Clear(g_c), s	9.8	10.3	6.5	12.0	0.0	12.6	10.7	4.1	4.1	10.1	30.4	30.4
Prop In Lane	0.07		1.00	0.07		0.25	1.00		0.08	1.00		0.23
Lane Grp Cap(c), veh/h	798	688	657	793	0	688	209	604	626	198	594	596
V/C Ratio(X)	0.32	0.33	0.22	0.38	0.00	0.40	0.85	0.16	0.16	0.84	0.88	0.88
Avail Cap(c_a), veh/h	798	688	657	793	0	688	342	604	626	423	633	635
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.00	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.3	20.4	19.3	20.9	0.0	21.1	46.7	24.5	24.5	47.0	33.6	33.6
Incr Delay (d2), s/veh	1.1	1.3	0.8	0.1	0.0	0.2	5.5	0.2	0.2	3.7	13.6	13.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	4.7	2.9	6.1	0.0	5.6	5.5	2.0	2.1	5.1	16.9	17.0
LnGrp Delay(d),s/veh	21.3	21.7	20.1	21.0	0.0	21.2	52.2	24.7	24.7	50.7	47.2	47.2
LnGrp LOS	C	C	C	C		C	D	C	C	D	D	D
Approach Vol, veh/h		629			573			374			1215	
Approach Delay, s/veh		21.2			21.1			37.8			47.7	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.8	40.6		50.6	16.2	41.3		50.6
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	21.0	39.0		36.0	26.0	34.0		36.0
Max Q Clear Time (g_c+I1), s	12.7	32.4		12.3	12.1	6.1		14.6
Green Ext Time (p_c), s	0.2	4.2		10.9	0.2	13.4		10.3

Intersection Summary	
HCM 2010 Ctrl Delay	34.9
HCM 2010 LOS	C

Notes

User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	240	126	113	186	41	39	313	51	92	1036	7
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.96	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	4	242	109	114	188	33	39	316	39	93	1046	6
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	20	284	128	173	497	87	112	1393	170	153	1669	10
Arrive On Green	0.01	0.24	0.24	0.10	0.33	0.33	0.06	0.44	0.44	0.06	0.31	0.31
Sat Flow, veh/h	1757	1181	532	1757	1517	266	1757	3135	383	1757	3572	20
Grp Volume(v), veh/h	4	0	351	114	0	221	39	175	180	93	513	539
Grp Sat Flow(s),veh/h/ln	1757	0	1713	1757	0	1784	1757	1752	1766	1757	1752	1840
Q Serve(g_s), s	0.2	0.0	21.1	6.8	0.0	10.3	2.3	6.7	6.8	5.6	27.0	27.0
Cycle Q Clear(g_c), s	0.2	0.0	21.1	6.8	0.0	10.3	2.3	6.7	6.8	5.6	27.0	27.0
Prop In Lane	1.00		0.31	1.00		0.15	1.00		0.22	1.00		0.01
Lane Grp Cap(c), veh/h	20	0	412	173	0	585	112	778	784	153	819	860
V/C Ratio(X)	0.20	0.00	0.85	0.66	0.00	0.38	0.35	0.23	0.23	0.61	0.63	0.63
Avail Cap(c_a), veh/h	195	0	412	195	0	585	195	778	784	195	819	860
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.75	0.75	0.75
Uniform Delay (d), s/veh	52.9	0.0	39.2	46.9	0.0	27.9	48.4	18.5	18.6	49.1	29.0	29.0
Incr Delay (d2), s/veh	1.8	0.0	19.4	4.6	0.0	1.9	0.7	0.7	0.7	1.1	2.7	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	12.2	3.5	0.0	5.3	1.1	3.4	3.4	2.8	13.7	14.4
LnGrp Delay(d),s/veh	54.6	0.0	58.5	51.5	0.0	29.7	49.1	19.2	19.3	50.2	31.8	31.6
LnGrp LOS	D		E	D		C	D	B	B	D	C	C
Approach Vol, veh/h		355			335			394			1145	
Approach Delay, s/veh		58.5			37.1			22.2			33.2	
Approach LOS		E			D			C			C	

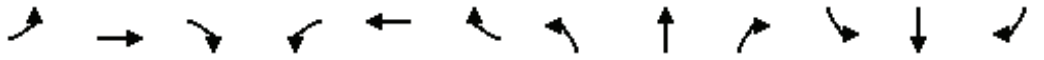
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	54.5	13.6	30.0	12.4	52.0	4.2	39.4
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	12.0	44.0	12.0	26.0	12.0	44.0	12.0	26.0
Max Q Clear Time (g_c+I1), s	4.3	29.0	8.8	23.1	7.6	8.8	2.2	12.3
Green Ext Time (p_c), s	0.0	9.9	0.0	0.7	0.0	17.0	0.0	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	35.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	505	159	121	491	0	0	0	0	180	970	138
Number	7	4	14	3	8	18				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	0.99		1.00				1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	515	134	123	501	0				184	990	127
Adj No. of Lanes	0	2	0	1	2	0				0	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1161	300	365	1494	0				201	1131	152
Arrive On Green	0.00	0.42	0.42	0.42	0.42	0.00				0.41	0.41	0.41
Sat Flow, veh/h	0	2843	711	773	3632	0				490	2759	370
Grp Volume(v), veh/h	0	330	319	123	501	0				690	0	611
Grp Sat Flow(s),veh/h/ln	0	1770	1691	773	1770	0				1838	0	1782
Q Serve(g_s), s	0.0	6.7	6.8	6.8	4.8	0.0				17.9	0.0	15.6
Cycle Q Clear(g_c), s	0.0	6.7	6.8	13.6	4.8	0.0				17.9	0.0	15.6
Prop In Lane	0.00		0.42	1.00		0.00				0.27		0.21
Lane Grp Cap(c), veh/h	0	747	714	365	1494	0				753	0	730
V/C Ratio(X)	0.00	0.44	0.45	0.34	0.34	0.00				0.92	0.00	0.84
Avail Cap(c_a), veh/h	0	1208	1154	566	2415	0				764	0	740
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	10.4	10.4	15.2	9.8	0.0				14.1	0.0	13.4
Incr Delay (d2), s/veh	0.0	0.2	0.2	0.2	0.0	0.0				15.3	0.0	7.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.2	3.1	1.5	2.3	0.0				12.2	0.0	9.0
LnGrp Delay(d),s/veh	0.0	10.5	10.6	15.4	9.9	0.0				29.4	0.0	21.2
LnGrp LOS		B	B	B	A					C		C
Approach Vol, veh/h		649			624						1301	
Approach Delay, s/veh		10.5			11.0						25.5	
Approach LOS		B			B						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		25.2		25.3				25.3
Change Period (Y+Rc), s		4.5		4.0				4.0
Max Green Setting (Gmax), s		21.0		34.5				34.5
Max Q Clear Time (g_c+I1), s		19.9		8.8				15.6
Green Ext Time (p_c), s		0.7		6.3				5.7

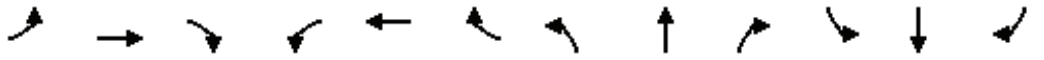
Intersection Summary	
HCM 2010 Ctrl Delay	18.2
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	144	536	0	0	494	83	105	714	63	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.95	1.00		0.96			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1900	1863	1900			
Adj Flow Rate, veh/h	152	564	0	0	520	69	111	752	51			
Adj No. of Lanes	1	2	0	0	2	0	0	3	0			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	276	1780	0	0	816	108	197	1430	99			
Arrive On Green	0.16	0.50	0.00	0.00	0.26	0.26	0.32	0.32	0.32			
Sat Flow, veh/h	1774	3632	0	0	3216	412	608	4406	306			
Grp Volume(v), veh/h	152	564	0	0	294	295	334	281	299			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1766	1832	1695	1793			
Q Serve(g_s), s	3.2	3.8	0.0	0.0	6.0	6.0	6.1	5.4	5.5			
Cycle Q Clear(g_c), s	3.2	3.8	0.0	0.0	6.0	6.0	6.1	5.4	5.5			
Prop In Lane	1.00		0.00	0.00		0.23	0.33		0.17			
Lane Grp Cap(c), veh/h	276	1780	0	0	462	461	595	550	582			
V/C Ratio(X)	0.55	0.32	0.00	0.00	0.64	0.64	0.56	0.51	0.51			
Avail Cap(c_a), veh/h	874	1787	0	0	894	892	1128	1044	1104			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	15.8	6.0	0.0	0.0	13.3	13.3	11.3	11.1	11.1			
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.0	0.5	0.6	0.3	0.3	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.6	1.8	0.0	0.0	2.9	2.9	3.1	2.5	2.7			
LnGrp Delay(d),s/veh	16.5	6.0	0.0	0.0	13.8	13.9	11.6	11.4	11.4			
LnGrp LOS	B	A			B	B	B	B	B			
Approach Vol, veh/h		716			589			914				
Approach Delay, s/veh		8.2			13.8			11.5				
Approach LOS		A			B			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		16.7	9.8	14.1				23.9
Change Period (Y+Rc), s		3.5	3.5	3.5				3.5
Max Green Setting (Gmax), s		25.0	20.0	20.5				20.5
Max Q Clear Time (g_c+I1), s		8.1	5.2	8.0				5.8
Green Ext Time (p_c), s		3.8	2.5	2.0				2.5

Intersection Summary	
HCM 2010 Ctrl Delay	11.1
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	47	227	84	102	211	63	209	367	143	82	660	16
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.96	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1900	1845	1900
Adj Flow Rate, veh/h	51	244	42	110	227	58	225	395	80	88	710	16
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	0	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	71	361	285	141	331	84	473	497	401	110	931	22
Arrive On Green	0.04	0.20	0.20	0.08	0.24	0.24	0.27	0.27	0.27	0.29	0.29	0.29
Sat Flow, veh/h	1757	1845	1460	1757	1404	359	1757	1845	1490	377	3200	75
Grp Volume(v), veh/h	51	244	42	110	0	285	225	395	80	426	0	388
Grp Sat Flow(s),veh/h/ln	1757	1845	1460	1757	0	1762	1757	1845	1490	1826	0	1827
Q Serve(g_s), s	2.6	11.0	2.1	5.5	0.0	13.2	9.6	17.8	3.7	19.3	0.0	17.1
Cycle Q Clear(g_c), s	2.6	11.0	2.1	5.5	0.0	13.2	9.6	17.8	3.7	19.3	0.0	17.1
Prop In Lane	1.00		1.00	1.00		0.20	1.00		1.00	0.21		0.04
Lane Grp Cap(c), veh/h	71	361	285	141	0	415	473	497	401	531	0	531
V/C Ratio(X)	0.72	0.68	0.15	0.78	0.00	0.69	0.48	0.80	0.20	0.80	0.00	0.73
Avail Cap(c_a), veh/h	294	618	490	294	0	591	589	618	500	612	0	613
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.5	33.4	29.8	40.4	0.0	31.2	27.4	30.4	25.2	29.3	0.0	28.6
Incr Delay (d2), s/veh	15.5	2.7	0.3	10.7	0.0	2.4	0.9	6.2	0.3	7.0	0.0	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	5.8	0.9	3.1	0.0	6.7	4.7	9.8	1.6	10.7	0.0	9.2
LnGrp Delay(d),s/veh	57.9	36.1	30.1	51.1	0.0	33.6	28.3	36.6	25.5	36.4	0.0	32.6
LnGrp LOS	E	D	C	D		C	C	D	C	D		C
Approach Vol, veh/h		337			395			700			814	
Approach Delay, s/veh		38.6			38.5			32.6			34.6	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.8	21.6		27.6	7.2	25.2		29.5
Change Period (Y+Rc), s	3.6	4.1		3.5	3.6	4.1		3.5
Max Green Setting (Gmax), s	15.0	30.0		30.0	15.0	30.0		30.0
Max Q Clear Time (g_c+I1), s	7.5	13.0		19.8	4.6	15.2		21.3
Green Ext Time (p_c), s	0.2	3.9		3.1	0.1	3.6		3.9

Intersection Summary	
HCM 2010 Ctrl Delay	35.3
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	80	685	12	55	880	108	1	69	39	198	199	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00	0.98		1.00	0.99
Flpb, ped/bikes	0.99	1.00		0.98	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.98			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		0.98	1.00
Satd. Flow (prot)	1732	3491		1723	3413			1843	1536		1794	1547
Flt Permitted	0.20	1.00		0.32	1.00			1.00	1.00		0.80	1.00
Satd. Flow (perm)	365	3491		577	3413			1839	1536		1479	1547
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	85	729	13	59	936	115	1	73	41	211	212	98
RTOR Reduction (vph)	0	1	0	0	7	0	0	0	27	0	0	35
Lane Group Flow (vph)	85	741	0	59	1044	0	0	74	14	0	423	63
Confl. Peds. (#/hr)	36		28	28		36	1		8	8		1
Confl. Bikes (#/hr)			3						3			1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	60.1	60.1		60.1	60.1			36.9	36.9		36.9	36.9
Effective Green, g (s)	60.1	60.1		60.1	60.1			36.9	36.9		36.9	36.9
Actuated g/C Ratio	0.57	0.57		0.57	0.57			0.35	0.35		0.35	0.35
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	2.0		2.0	2.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	208	1998		330	1953			646	539		519	543
v/s Ratio Prot		0.21			c0.31							
v/s Ratio Perm	0.23			0.10				0.04	0.01		c0.29	0.04
v/c Ratio	0.41	0.37		0.18	0.53			0.11	0.03		0.82	0.12
Uniform Delay, d1	12.5	12.2		10.7	13.8			23.0	22.3		30.9	23.0
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	5.9	0.5		1.2	1.1			0.1	0.0		9.5	0.1
Delay (s)	18.4	12.7		11.9	14.9			23.1	22.3		40.5	23.1
Level of Service	B	B		B	B			C	C		D	C
Approach Delay (s)		13.3			14.7			22.8			37.2	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	156	65	241	201	68	60	8	205	60	46	2
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1900	1900	1810	1810	1810	1810	1900
Adj Flow Rate, veh/h	2	179	75	277	231	78	69	9	236	69	53	2
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	560	1063	429	593	1123	368	578	66	570	519	654	25
Arrive On Green	0.44	0.44	0.44	0.44	0.44	0.44	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	1035	2392	965	1089	2527	827	1131	175	1509	1098	1731	65
Grp Volume(v), veh/h	2	127	127	277	155	154	78	0	236	69	0	55
Grp Sat Flow(s),veh/h/ln	1035	1719	1638	1089	1719	1635	1306	0	1509	1098	0	1797
Q Serve(g_s), s	0.1	2.0	2.1	9.3	2.5	2.6	1.4	0.0	5.2	2.0	0.0	0.9
Cycle Q Clear(g_c), s	2.7	2.0	2.1	11.4	2.5	2.6	2.3	0.0	5.2	4.3	0.0	0.9
Prop In Lane	1.00		0.59	1.00		0.51	0.88		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	560	764	728	593	764	727	644	0	570	519	0	679
V/C Ratio(X)	0.00	0.17	0.17	0.47	0.20	0.21	0.12	0.00	0.41	0.13	0.00	0.08
Avail Cap(c_a), veh/h	560	764	728	593	764	727	644	0	570	519	0	679
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.80	0.80	0.80	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.5	7.5	7.5	11.0	7.6	7.7	9.5	0.0	10.3	10.9	0.0	9.0
Incr Delay (d2), s/veh	0.0	0.5	0.5	2.1	0.5	0.5	0.4	0.0	2.2	0.5	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.0	1.1	3.1	1.3	1.3	0.7	0.0	2.5	0.7	0.0	0.5
LnGrp Delay(d),s/veh	8.5	8.0	8.1	13.1	8.1	8.2	9.9	0.0	12.5	11.4	0.0	9.2
LnGrp LOS	A	A	A	B	A	A	A		B	B		A
Approach Vol, veh/h		256			586			314			124	
Approach Delay, s/veh		8.0			10.5			11.9			10.4	
Approach LOS		A			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		21.0		24.0		21.0		24.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		17.0		20.0		17.0		20.0
Max Q Clear Time (g_c+I1), s		7.2		4.7		6.3		13.4
Green Ext Time (p_c), s		1.4		4.2		1.5		2.6

Intersection Summary	
HCM 2010 Ctrl Delay	10.3
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	51	370	0	0	394	262	116	0	75	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1827	1827	0	0	1827	1900	1827	1827	1900			
Adj Flow Rate, veh/h	59	430	0	0	458	305	135	0	87			
Adj No. of Lanes	1	2	0	0	2	0	1	1	0			
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86			
Percent Heavy Veh, %	4	4	0	0	4	4	4	4	4			
Cap, veh/h	307	1209	0	0	686	454	825	0	736			
Arrive On Green	0.11	0.11	0.00	0.00	0.70	0.70	0.47	0.00	0.47			
Sat Flow, veh/h	686	3563	0	0	2062	1304	1740	0	1553			
Grp Volume(v), veh/h	59	430	0	0	403	360	135	0	87			
Grp Sat Flow(s),veh/h/ln	686	1736	0	0	1736	1539	1740	0	1553			
Q Serve(g_s), s	3.7	5.1	0.0	0.0	5.9	6.0	2.0	0.0	1.4			
Cycle Q Clear(g_c), s	9.7	5.1	0.0	0.0	5.9	6.0	2.0	0.0	1.4			
Prop In Lane	1.00		0.00	0.00		0.85	1.00		1.00			
Lane Grp Cap(c), veh/h	307	1209	0	0	605	536	825	0	736			
V/C Ratio(X)	0.19	0.36	0.00	0.00	0.67	0.67	0.16	0.00	0.12			
Avail Cap(c_a), veh/h	343	1388	0	0	694	615	825	0	736			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.98	0.98	0.00	0.00	0.98	0.98	1.00	0.00	1.00			
Uniform Delay (d), s/veh	20.1	15.3	0.0	0.0	5.3	5.4	6.8	0.0	6.6			
Incr Delay (d2), s/veh	0.3	0.2	0.0	0.0	2.0	2.3	0.4	0.0	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.7	2.5	0.0	0.0	2.9	2.6	1.0	0.0	0.7			
LnGrp Delay(d),s/veh	20.4	15.4	0.0	0.0	7.3	7.7	7.2	0.0	6.9			
LnGrp LOS	C	B			A	A	A		A			
Approach Vol, veh/h		489			763			222				
Approach Delay, s/veh		16.0			7.5			7.1				
Approach LOS		B			A			A				

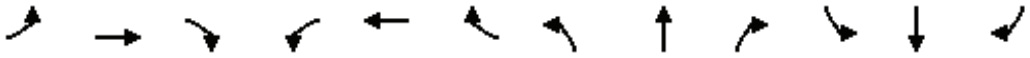
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		25.3		19.7				19.7
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		19.0		18.0				18.0
Max Q Clear Time (g_c+I1), s		4.0		11.7				8.0
Green Ext Time (p_c), s		0.8		4.0				5.7

Intersection Summary	
HCM 2010 Ctrl Delay	10.3
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	426	94	227	381	41	21	11	44	66	177	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0		3.0	4.0			2.0			2.0	2.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00			1.00			1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.97		1.00	0.99			0.92			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	1.00
Satd. Flow (prot)	1703	3296		1703	3348			1629			1768	1502
Flt Permitted	0.95	1.00		0.95	1.00			0.90			0.91	1.00
Satd. Flow (perm)	1703	3296		1703	3348			1490			1623	1502
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	32	444	98	236	397	43	22	11	46	69	184	136
RTOR Reduction (vph)	0	20	0	0	8	0	0	0	0	0	0	104
Lane Group Flow (vph)	32	522	0	236	432	0	0	79	0	0	253	32
Confl. Peds. (#/hr)			3			5						2
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1 3	3 6			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	3.0	22.4		37.6	57.0			21.0			21.0	21.0
Effective Green, g (s)	3.0	22.4		33.6	57.0			21.0			21.0	21.0
Actuated g/C Ratio	0.03	0.25		0.37	0.63			0.23			0.23	0.23
Clearance Time (s)	3.0	4.0						2.0			2.0	2.0
Vehicle Extension (s)	3.0	3.0						3.0			3.0	3.0
Lane Grp Cap (vph)	56	820		635	2120			347			378	350
v/s Ratio Prot	0.02	c0.16		c0.14	0.13							
v/s Ratio Perm								0.05			c0.16	0.02
v/c Ratio	0.57	0.64		0.37	0.20			0.23			0.67	0.09
Uniform Delay, d1	42.9	30.2		20.5	6.9			27.9			31.3	27.0
Progression Factor	1.07	1.06		0.65	0.06			1.00			1.00	1.00
Incremental Delay, d2	13.1	3.7		0.3	0.0			0.3			4.5	0.1
Delay (s)	59.1	35.7		13.6	0.4			28.3			35.8	27.1
Level of Service	E	D		B	A			C			D	C
Approach Delay (s)		37.0			5.0			28.3			32.8	
Approach LOS		D			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	118	556	0	0	582	165	32	1	263	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Lane Util. Factor	1.00	0.95			*1.00		1.00	0.95	0.95			
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Frt	1.00	1.00			0.97		1.00	0.85	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	1736	3471			3514		1736	1477	1475			
Flt Permitted	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	1736	3471			3514		1736	1477	1475			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	123	579	0	0	606	172	33	1	274	0	0	0
RTOR Reduction (vph)	0	0	0	0	25	0	0	126	126	0	0	0
Lane Group Flow (vph)	123	579	0	0	753	0	33	12	11	0	0	0
Confl. Peds. (#/hr)			4	4		8						
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	11.6	75.0			60.4		7.5	7.5	7.5			
Effective Green, g (s)	11.6	75.0			60.4		7.5	7.5	7.5			
Actuated g/C Ratio	0.13	0.83			0.67		0.08	0.08	0.08			
Clearance Time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	223	2892			2358		144	123	122			
v/s Ratio Prot	c0.07	0.17			c0.21			0.01				
v/s Ratio Perm							c0.02		0.01			
v/c Ratio	0.55	0.20			0.32		0.23	0.10	0.09			
Uniform Delay, d1	36.8	1.5			6.2		38.5	38.1	38.1			
Progression Factor	0.54	0.51			1.00		1.00	1.00	1.00			
Incremental Delay, d2	2.8	0.1			0.4		0.8	0.4	0.3			
Delay (s)	22.6	0.9			6.6		39.4	38.5	38.4			
Level of Service	C	A			A		D	D	D			
Approach Delay (s)		4.7			6.6			38.6			0.0	
Approach LOS		A			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	182	292	107	87	333	27	70	280	39	45	841	125
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.92	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	194	311	52	93	354	23	74	298	34	48	895	121
Adj No. of Lanes	1	1	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	195	630	505	0	673	43	145	1537	174	124	1468	198
Arrive On Green	0.04	0.11	0.11	0.00	0.20	0.20	0.03	0.16	0.16	0.07	0.47	0.47
Sat Flow, veh/h	1757	1845	1480	0	3323	215	1757	3163	357	1757	3096	419
Grp Volume(v), veh/h	194	311	52	0	186	191	74	164	168	48	507	509
Grp Sat Flow(s),veh/h/ln	1757	1845	1480	0	1752	1785	1757	1752	1767	1757	1752	1762
Q Serve(g_s), s	11.9	17.1	3.4	0.0	10.2	10.3	4.5	8.7	8.9	2.8	23.1	23.1
Cycle Q Clear(g_c), s	11.9	17.1	3.4	0.0	10.2	10.3	4.5	8.7	8.9	2.8	23.1	23.1
Prop In Lane	1.00		1.00	0.00		0.12	1.00		0.20	1.00		0.24
Lane Grp Cap(c), veh/h	195	630	505	0	355	362	145	852	859	124	831	835
V/C Ratio(X)	0.99	0.49	0.10	0.00	0.52	0.53	0.51	0.19	0.20	0.39	0.61	0.61
Avail Cap(c_a), veh/h	195	630	505	0	422	430	195	852	859	195	831	835
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.87	0.00	1.00	1.00	0.98	0.98	0.98	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.0	39.1	33.1	0.0	38.4	38.5	50.4	27.0	27.0	47.9	21.0	21.0
Incr Delay (d2), s/veh	58.2	0.2	0.0	0.0	0.4	0.4	1.0	0.5	0.5	0.7	3.3	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	8.8	1.4	0.0	5.0	5.1	2.2	4.4	4.5	1.4	11.9	11.9
LnGrp Delay(d),s/veh	110.2	39.3	33.1	0.0	38.9	38.9	51.4	27.5	27.5	48.7	24.3	24.3
LnGrp LOS	F	D	C		D	D	D	C	C	D	C	C
Approach Vol, veh/h		557			377			406			1064	
Approach Delay, s/veh		63.4			38.9			31.9			25.4	
Approach LOS		E			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	56.5	0.0	40.9	11.9	55.2	15.0	25.9
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	12.0	44.0	12.0	26.0	12.0	44.0	12.0	26.0
Max Q Clear Time (g_c+I1), s	4.8	10.9	0.0	19.1	6.5	25.1	13.9	12.3
Green Ext Time (p_c), s	0.0	15.8	0.0	1.8	0.0	11.4	0.0	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	37.4
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	196	182	19	43	180	37	7	123	41	130	136	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1787	3524		1770	3539	1583	1128	2164		1340	1404	1245
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1787	3524		1770	3539	1583	1128	2164		1340	1404	1245
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	228	212	22	50	209	43	8	143	48	151	158	220
RTOR Reduction (vph)	0	7	0	0	0	35	0	33	0	0	0	171
Lane Group Flow (vph)	228	227	0	50	209	8	8	158	0	136	173	49
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	60%	60%	60%	28%	28%	28%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases						2						8
Actuated Green, G (s)	14.6	23.4		4.2	13.0	13.0	11.7	11.7		16.2	16.2	16.2
Effective Green, g (s)	14.6	23.4		4.2	13.0	13.0	11.7	11.7		16.2	16.2	16.2
Actuated g/C Ratio	0.20	0.32		0.06	0.18	0.18	0.16	0.16		0.22	0.22	0.22
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Vehicle Extension (s)	2.0	4.0		2.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Grp Cap (vph)	357	1129		101	630	281	180	346		297	311	276
v/s Ratio Prot	c0.13	0.06		0.03	c0.06		0.01	c0.07		0.10	c0.12	
v/s Ratio Perm						0.00						0.04
v/c Ratio	0.64	0.20		0.50	0.33	0.03	0.04	0.46		0.46	0.56	0.18
Uniform Delay, d1	26.8	18.0		33.4	26.2	24.8	25.9	27.8		24.6	25.2	23.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.8	0.1		1.4	0.4	0.1	0.1	1.3		1.5	2.6	0.4
Delay (s)	29.5	18.1		34.8	26.6	24.8	26.1	29.1		26.1	27.9	23.4
Level of Service	C	B		C	C	C	C	C		C	C	C
Approach Delay (s)		23.8			27.7			29.0			25.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	25.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	73.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	42.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	466	70	250	364	0	0	0	0	208	31	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			3.0						4.0	4.0
Lane Util. Factor		0.95			*1.00						1.00	1.00
Frpb, ped/bikes		1.00			1.00						1.00	1.00
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.98			1.00						1.00	0.85
Flt Protected		1.00			0.98						0.96	1.00
Satd. Flow (prot)		3322			5270						1718	1524
Flt Permitted		1.00			0.71						0.96	1.00
Satd. Flow (perm)		3322			3844						1718	1524
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	485	73	260	379	0	0	0	0	217	32	297
RTOR Reduction (vph)	0	12	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	546	0	0	639	0	0	0	0	0	249	297
Confl. Peds. (#/hr)			6			5						
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Turn Type		NA		Prot	NA					Split	NA	Perm
Protected Phases		2 4		1	1 6					3	3	
Permitted Phases												3
Actuated Green, G (s)		47.4			29.4						23.6	23.6
Effective Green, g (s)		47.4			29.4						23.6	23.6
Actuated g/C Ratio		0.53			0.33						0.26	0.26
Clearance Time (s)											4.0	4.0
Vehicle Extension (s)											3.0	3.0
Lane Grp Cap (vph)		1749			1414						450	399
v/s Ratio Prot		c0.16			c0.05						0.14	
v/s Ratio Perm					c0.10							c0.19
v/c Ratio		0.31			1.38dl						0.55	0.74
Uniform Delay, d1		12.1			23.9						28.7	30.4
Progression Factor		0.04			1.06						1.00	1.00
Incremental Delay, d2		0.1			0.2						1.5	7.4
Delay (s)		0.6			25.6						30.1	37.8
Level of Service		A			C						C	D
Approach Delay (s)		0.6			25.6			0.0			34.3	
Approach LOS		A			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	514	157	125	483	0	0	0	0	148	600	125
Number	3	8	18	7	4	14				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1900	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	514	112	125	483	0				148	600	117
Adj No. of Lanes	0	2	1	0	2	0				0	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1279	559	211	812	0				313	1327	272
Arrive On Green	0.00	0.36	0.36	0.36	0.36	0.00				0.53	0.53	0.53
Sat Flow, veh/h	0	3632	1545	365	2332	0				587	2493	510
Grp Volume(v), veh/h	0	514	112	278	330	0				462	0	403
Grp Sat Flow(s),veh/h/ln	0	1770	1545	1002	1610	0				1833	0	1757
Q Serve(g_s), s	0.0	7.2	3.3	10.4	10.9	0.0				10.4	0.0	9.2
Cycle Q Clear(g_c), s	0.0	7.2	3.3	17.5	10.9	0.0				10.4	0.0	9.2
Prop In Lane	0.00		1.00	0.45		0.00				0.32		0.29
Lane Grp Cap(c), veh/h	0	1279	559	441	582	0				976	0	936
V/C Ratio(X)	0.00	0.40	0.20	0.63	0.57	0.00				0.47	0.00	0.43
Avail Cap(c_a), veh/h	0	1636	714	558	744	0				976	0	936
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.96	0.96	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	15.7	14.5	19.5	16.9	0.0				9.6	0.0	9.4
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.5	0.3	0.0				1.6	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.5	1.4	4.6	4.8	0.0				5.6	0.0	4.7
LnGrp Delay(d),s/veh	0.0	15.8	14.6	20.1	17.2	0.0				11.3	0.0	10.8
LnGrp LOS		B	B	C	B					B		B
Approach Vol, veh/h		626			608						865	
Approach Delay, s/veh		15.6			18.5						11.1	
Approach LOS		B			B						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		38.6		27.4				27.4
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		28.5		30.5				30.5
Max Q Clear Time (g_c+I1), s		12.4		19.5				9.2
Green Ext Time (p_c), s		3.5		4.3				5.7

Intersection Summary	
HCM 2010 Ctrl Delay	14.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	186	468	0	0	401	230	202	1446	185	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	0.98		1.00	1.00		0.93	1.00		0.98			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1863	1900	1863	1900			
Adj Flow Rate, veh/h	190	478	0	0	409	173	206	1476	123			
Adj No. of Lanes	0	2	0	0	2	1	0	3	0			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	331	824	0	0	1466	612	262	2003	171			
Arrive On Green	0.41	0.41	0.00	0.00	0.41	0.41	0.46	0.46	0.46			
Sat Flow, veh/h	538	2075	0	0	3632	1478	571	4371	374			
Grp Volume(v), veh/h	293	375	0	0	409	173	662	556	587			
Grp Sat Flow(s),veh/h/ln	918	1610	0	0	1770	1478	1834	1695	1787			
Q Serve(g_s), s	11.9	9.8	0.0	0.0	4.2	4.3	16.8	14.5	14.5			
Cycle Q Clear(g_c), s	16.1	9.8	0.0	0.0	4.2	4.3	16.8	14.5	14.5			
Prop In Lane	0.65		0.00	0.00		1.00	0.31		0.21			
Lane Grp Cap(c), veh/h	488	667	0	0	1466	612	840	777	819			
V/C Ratio(X)	0.60	0.56	0.00	0.00	0.28	0.28	0.79	0.72	0.72			
Avail Cap(c_a), veh/h	623	881	0	0	1936	809	1003	927	978			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	14.8	12.3	0.0	0.0	10.6	10.7	12.6	12.0	12.0			
Incr Delay (d2), s/veh	0.4	0.3	0.0	0.0	0.0	0.1	2.9	1.5	1.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.9	4.3	0.0	0.0	2.1	1.7	9.1	7.0	7.4			
LnGrp Delay(d),s/veh	15.2	12.5	0.0	0.0	10.7	10.7	15.5	13.5	13.5			
LnGrp LOS	B	B			B	B	B	B	B			
Approach Vol, veh/h		668			582			1805				
Approach Delay, s/veh		13.7			10.7			14.2				
Approach LOS		B			B			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		28.6		26.2				26.2
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		30.0		30.0				30.0
Max Q Clear Time (g_c+I1), s		18.8		6.3				18.1
Green Ext Time (p_c), s		6.4		6.0				4.6

Intersection Summary	
HCM 2010 Ctrl Delay	13.4
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	195	139	27	222	0	75	0	23	263	88	28
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1827	1900	1827	1827	0	1827	0	1827	1827	1827	1900
Adj Flow Rate, veh/h	0	219	47	30	249	0	84	0	16	296	99	25
Adj No. of Lanes	0	2	0	1	2	0	1	0	1	2	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	4	4	4	4	0	4	0	4	4	4	4
Cap, veh/h	0	1071	225	140	1955	0	0	0	0	566	229	58
Arrive On Green	0.00	0.38	0.38	0.08	0.56	0.00	0.00	0.00	0.00	0.16	0.16	0.16
Sat Flow, veh/h	0	2939	599	1740	3563	0		0		3480	1408	356
Grp Volume(v), veh/h	0	132	134	30	249	0		0.0		296	0	124
Grp Sat Flow(s),veh/h/ln	0	1736	1710	1740	1736	0				1740	0	1764
Q Serve(g_s), s	0.0	1.7	1.7	0.5	1.1	0.0				2.6	0.0	2.1
Cycle Q Clear(g_c), s	0.0	1.7	1.7	0.5	1.1	0.0				2.6	0.0	2.1
Prop In Lane	0.00		0.35	1.00		0.00				1.00		0.20
Lane Grp Cap(c), veh/h	0	653	644	140	1955	0				566	0	287
V/C Ratio(X)	0.00	0.20	0.21	0.21	0.13	0.00				0.52	0.00	0.43
Avail Cap(c_a), veh/h	0	1692	1667	1378	3384	0				2756	0	1397
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.9	6.9	14.1	3.4	0.0				12.6	0.0	12.4
Incr Delay (d2), s/veh	0.0	0.2	0.2	0.3	0.0	0.0				0.3	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.8	0.9	0.3	0.5	0.0				1.2	0.0	1.0
LnGrp Delay(d),s/veh	0.0	7.1	7.1	14.4	3.4	0.0				12.9	0.0	12.8
LnGrp LOS		A	A	B	A					B		B
Approach Vol, veh/h		266			279						420	
Approach Delay, s/veh		7.1			4.6						12.8	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		23.5			6.1	17.4		9.3
Change Period (Y+Rc), s		5.0			3.5	5.0		4.0
Max Green Setting (Gmax), s		32.0			26.0	32.0		26.0
Max Q Clear Time (g_c+I1), s		3.1			2.5	3.7		4.6
Green Ext Time (p_c), s		3.5			0.0	3.4		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	8.9
HCM 2010 LOS	A

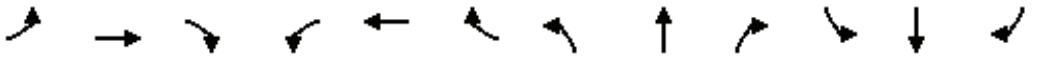
Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	483	0	0	157	423	95	0	164	0	0	0
Number	1	6	16	5	2	12	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1863	0	0	1863	1900	1863	0	1863			
Adj Flow Rate, veh/h	0	582	0	0	189	-30	114	0	59			
Adj No. of Lanes	0	2	0	0	3	0	1	0	1			
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83			
Percent Heavy Veh, %	0	2	0	0	2	2	2	0	2			
Cap, veh/h	0	1534	0	0	3205	0	473	0	422			
Arrive On Green	0.00	0.43	0.00	0.00	0.43	0.00	0.27	0.00	0.27			
Sat Flow, veh/h	0	3725	0	0	5421	0	1774	0	1583			
Grp Volume(v), veh/h	0	582	0	0	159	0	114	0	59			
Grp Sat Flow(s),veh/h/ln	0	1770	0	0	1695	0	1774	0	1583			
Q Serve(g_s), s	0.0	3.3	0.0	0.0	0.0	0.0	1.5	0.0	0.9			
Cycle Q Clear(g_c), s	0.0	3.3	0.0	0.0	0.0	0.0	1.5	0.0	0.9			
Prop In Lane	0.00		0.00	0.00		0.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	1534	0	0	0	0	473	0	422			
V/C Ratio(X)	0.00	0.38	0.00	0.00	0.00	0.00	0.24	0.00	0.14			
Avail Cap(c_a), veh/h	0	3657	0	0	0	0	1656	0	1478			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	5.8	0.0	0.0	0.0	0.0	8.6	0.0	8.4			
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	1.7	0.0	0.0	0.0	0.0	0.7	0.0	0.4			
LnGrp Delay(d),s/veh	0.0	6.0	0.0	0.0	0.0	0.0	8.7	0.0	8.4			
LnGrp LOS		A					A		A			
Approach Vol, veh/h		582			159			173				
Approach Delay, s/veh		6.0			0.0			8.6				
Approach LOS		A			A			A				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		17.0		13.0		17.0		
Change Period (Y+Rc), s		4.0		5.0		4.0		
Max Green Setting (Gmax), s		33.0		28.0		31.0		
Max Q Clear Time (g_c+I1), s		2.0		3.5		5.3		
Green Ext Time (p_c), s		7.7		0.1		7.3		

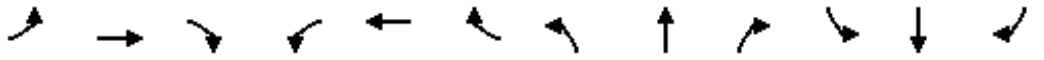
Intersection Summary	
HCM 2010 Ctrl Delay	5.4
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	95	397	84	111	358	102	131	461	136	132	464	57
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1900	1845	1845	1900	1845	1900
Adj Flow Rate, veh/h	101	422	-30	118	381	55	139	490	63	140	494	46
Adj No. of Lanes	1	2	1	1	2	0	0	2	1	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	126	1216	544	143	1096	157	155	578	320	163	605	59
Arrive On Green	0.07	0.35	0.00	0.16	0.71	0.71	0.21	0.21	0.21	0.23	0.23	0.23
Sat Flow, veh/h	1757	3505	1568	1757	3071	440	751	2808	1552	709	2641	256
Grp Volume(v), veh/h	101	422	-30	118	216	220	334	295	63	357	0	323
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1758	1807	1752	1552	1809	0	1797
Q Serve(g_s), s	6.2	9.8	0.0	7.1	5.2	5.3	19.8	17.7	3.7	20.9	0.0	18.6
Cycle Q Clear(g_c), s	6.2	9.8	0.0	7.1	5.2	5.3	19.8	17.7	3.7	20.9	0.0	18.6
Prop In Lane	1.00		1.00	1.00		0.25	0.42		1.00	0.39		0.14
Lane Grp Cap(c), veh/h	126	1216	544	143	626	627	372	361	320	415	0	412
V/C Ratio(X)	0.80	0.35	-0.06	0.82	0.35	0.35	0.90	0.82	0.20	0.86	0.00	0.78
Avail Cap(c_a), veh/h	168	1216	544	279	626	627	402	390	346	502	0	498
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	0.00	0.97	0.97	0.97	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.3	26.7	0.0	45.3	10.9	10.9	42.6	41.7	36.1	40.7	0.0	39.8
Incr Delay (d2), s/veh	12.8	0.7	0.0	4.3	1.5	1.5	20.4	10.8	0.1	10.8	0.0	5.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	4.9	0.0	3.6	2.7	2.7	12.0	9.6	1.6	11.7	0.0	9.8
LnGrp Delay(d),s/veh	63.1	27.4	0.0	49.6	12.3	12.4	63.0	52.5	36.3	51.5	0.0	45.1
LnGrp LOS	E	C		D	B	B	E	D	D	D		D
Approach Vol, veh/h		493			554			692			680	
Approach Delay, s/veh		36.4			20.3			56.1			48.5	
Approach LOS		D			C			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.5	42.7		28.7	11.4	43.8		26.1
Change Period (Y+Rc), s	3.5	4.5		3.5	3.5	4.5		3.5
Max Green Setting (Gmax), s	17.5	22.5		30.5	10.5	29.5		24.5
Max Q Clear Time (g_c+I1), s	9.1	11.8		22.9	8.2	7.3		21.8
Green Ext Time (p_c), s	0.1	4.9		1.9	0.0	7.3		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	41.7
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	14	82	97	0	0	0	66	347	347	0	290	1
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900				1863	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	16	96	-27				78	408	379	0	341	-6
Adj No. of Lanes	1	2	0				1	1	1	0	2	1
Peak Hour Factor	0.85	0.85	0.85				0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2				2	2	2	0	2	2
Cap, veh/h	128	255	0				120	1114	945	0	1293	579
Arrive On Green	0.07	0.07	0.00				0.07	0.60	0.60	0.00	0.37	0.00
Sat Flow, veh/h	1774	3632	0				1774	1863	1581	0	3632	1583
Grp Volume(v), veh/h	16	69	0				78	408	379	0	341	-6
Grp Sat Flow(s),veh/h/ln	1774	1770	0				1774	1863	1581	0	1770	1583
Q Serve(g_s), s	0.2	0.4	0.0				1.0	2.7	3.1	0.0	1.6	0.0
Cycle Q Clear(g_c), s	0.2	0.4	0.0				1.0	2.7	3.1	0.0	1.6	0.0
Prop In Lane	1.00		0.00				1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	128	255	0				120	1114	945	0	1293	579
V/C Ratio(X)	0.13	0.27	0.00				0.65	0.37	0.40	0.00	0.26	-0.01
Avail Cap(c_a), veh/h	2270	4528	0				366	1999	1697	0	2483	1111
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00				1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	10.5	10.6	0.0				11.0	2.5	2.6	0.0	5.4	0.0
Incr Delay (d2), s/veh	0.4	0.6	0.0				5.9	0.2	0.3	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.2	0.0				0.7	1.4	1.3	0.0	0.8	0.0
LnGrp Delay(d),s/veh	11.0	11.2	0.0				16.9	2.7	2.9	0.0	5.5	0.0
LnGrp LOS	B	B					B	A	A		A	
Approach Vol, veh/h		85						865			335	
Approach Delay, s/veh		11.2						4.1			5.6	
Approach LOS		B						A			A	

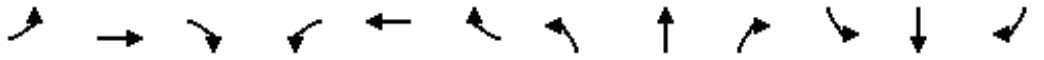
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		18.5		5.7	5.6	12.9		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		26.0		31.0	5.0	17.0		
Max Q Clear Time (g_c+I1), s		5.1		2.4	3.0	3.6		
Green Ext Time (p_c), s		6.2		0.4	0.0	5.1		

Intersection Summary	
HCM 2010 Ctrl Delay	4.9
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	43	1	3	12	2	408	3	303	21	259	100	19
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	51	1	4	14	2	480	4	356	25	305	118	22
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	1	1	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	422	13	21	94	14	601	88	716	50	594	636	119
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	660	33	53	16	35	1533	4	1712	119	997	1521	284
Grp Volume(v), veh/h	56	0	0	496	0	0	385	0	0	305	0	140
Grp Sat Flow(s),veh/h/ln	747	0	0	1585	0	0	1836	0	0	997	0	1805
Q Serve(g_s), s	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	3.9	0.0	2.1
Cycle Q Clear(g_c), s	2.0	0.0	0.0	11.6	0.0	0.0	6.5	0.0	0.0	10.4	0.0	2.1
Prop In Lane	0.91		0.07	0.03		0.97	0.01		0.06	1.00		0.16
Lane Grp Cap(c), veh/h	456	0	0	709	0	0	854	0	0	594	0	755
V/C Ratio(X)	0.12	0.00	0.00	0.70	0.00	0.00	0.45	0.00	0.00	0.51	0.00	0.19
Avail Cap(c_a), veh/h	625	0	0	990	0	0	1957	0	0	1196	0	1843
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.3	0.0	0.0	11.3	0.0	0.0	9.0	0.0	0.0	10.1	0.0	7.7
Incr Delay (d2), s/veh	0.1	0.0	0.0	1.3	0.0	0.0	0.4	0.0	0.0	0.7	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	5.2	0.0	0.0	3.3	0.0	0.0	3.0	0.0	1.0
LnGrp Delay(d),s/veh	8.4	0.0	0.0	12.6	0.0	0.0	9.4	0.0	0.0	10.8	0.0	7.8
LnGrp LOS	A			B			A			B		A
Approach Vol, veh/h		56			496			385			445	
Approach Delay, s/veh		8.4			12.6			9.4			9.9	
Approach LOS		A			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		21.6		20.5		21.6		20.5
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		43.0		24.0		43.0		24.0
Max Q Clear Time (g_c+I1), s		8.5		4.0		12.4		13.6
Green Ext Time (p_c), s		5.3		4.0		5.2		2.9

Intersection Summary	
HCM 2010 Ctrl Delay	10.7
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	90	387	163	90	279	120	223	625	291	93	200	47
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	96	412	166	96	297	108	237	665	294	99	213	-34
Adj No. of Lanes	1	2	0	1	2	0	0	2	0	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	486	1228	489	480	1272	452	305	738	332	226	1220	0
Arrive On Green	1.00	1.00	1.00	0.50	0.50	0.50	0.43	0.43	0.43	0.43	0.43	0.00
Sat Flow, veh/h	976	2463	980	832	2551	907	598	1703	766	108	1695	0
Grp Volume(v), veh/h	96	295	283	96	204	201	605	0	591	99	179	0
Grp Sat Flow(s),veh/h/ln	976	1770	1674	832	1770	1689	1526	0	1540	108	1610	0
Q Serve(g_s), s	1.9	0.1	0.1	7.2	7.2	7.5	40.9	0.0	38.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s	9.3	0.1	0.1	7.3	7.2	7.5	40.9	0.0	38.9	0.0	0.0	0.0
Prop In Lane	1.00		0.59	1.00		0.54	0.39		0.50	1.00		0.00
Lane Grp Cap(c), veh/h	486	883	835	480	883	842	707	0	667	0	0	0
V/C Ratio(X)	0.20	0.33	0.34	0.20	0.23	0.24	0.86	0.00	0.89	0.00	0.00	0.00
Avail Cap(c_a), veh/h	486	883	835	480	883	842	753	0	714	0	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	1.00	1.00	1.00	0.29	0.00	0.29	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.7	0.1	0.1	15.7	15.6	15.7	29.3	0.0	28.7	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.8	1.0	1.0	0.9	0.6	0.7	2.7	0.0	3.9	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.3	0.3	1.8	3.7	3.6	17.7	0.0	17.1	0.0	0.0	0.0
LnGrp Delay(d),s/veh	1.6	1.0	1.1	16.6	16.2	16.4	31.9	0.0	32.5	0.0	0.0	0.0
LnGrp LOS	A	A	A	B	B	B	C		C			
Approach Vol, veh/h		674			501			1196			278	
Approach Delay, s/veh		1.1			16.4			32.2			0.0	
Approach LOS		A			B			C			A	

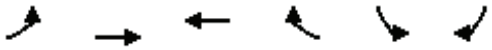
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		58.4		51.6		58.4		51.6
Change Period (Y+Rc), s		3.5		4.0		3.5		4.0
Max Green Setting (Gmax), s		51.5		51.0		51.5		51.0
Max Q Clear Time (g_c+I1), s		11.3		2.0		9.5		42.9
Green Ext Time (p_c), s		8.7		10.5		8.7		4.7

Intersection Summary	
HCM 2010 Ctrl Delay	17.9
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	230	117	135	363	479	209	636	141	196	224	21
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	13	264	89	155	417	548	240	731	161	225	257	19
Adj No. of Lanes	0	1	0	0	1	1	0	2	0	0	2	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	68	356	114	170	314	648	309	828	202	221	707	52
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.45	0.45	0.45	0.45	0.45	0.45
Sat Flow, veh/h	0	870	280	212	768	1583	473	1821	445	198	1556	115
Grp Volume(v), veh/h	366	0	0	572	0	548	553	0	579	225	0	276
Grp Sat Flow(s),veh/h/ln	1150	0	0	981	0	1583	1139	0	1600	198	0	1671
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	17.2	19.1	0.0	17.0	8.0	0.0	5.9
Cycle Q Clear(g_c), s	22.5	0.0	0.0	22.5	0.0	17.2	25.0	0.0	17.0	25.0	0.0	5.9
Prop In Lane	0.04		0.24	0.27		1.00	0.43		0.28	1.00		0.07
Lane Grp Cap(c), veh/h	538	0	0	484	0	648	611	0	727	221	0	759
V/C Ratio(X)	0.68	0.00	0.00	1.18	0.00	0.85	0.90	0.00	0.80	1.02	0.00	0.36
Avail Cap(c_a), veh/h	538	0	0	484	0	648	611	0	727	221	0	759
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.7	0.0	0.0	17.3	0.0	14.7	18.0	0.0	12.8	25.9	0.0	9.8
Incr Delay (d2), s/veh	3.5	0.0	0.0	100.9	0.0	10.1	17.0	0.0	6.2	65.2	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	0.0	0.0	20.8	0.0	9.3	11.2	0.0	8.6	7.3	0.0	2.7
LnGrp Delay(d),s/veh	16.1	0.0	0.0	118.2	0.0	24.8	34.9	0.0	19.0	91.2	0.0	10.1
LnGrp LOS	B			F		C	C		B	F		B
Approach Vol, veh/h		366			1120			1132			501	
Approach Delay, s/veh		16.1			72.5			26.8			46.5	
Approach LOS		B			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		29.0		26.0		29.0		26.0
Change Period (Y+Rc), s		4.0		3.5		4.0		3.5
Max Green Setting (Gmax), s		25.0		22.5		25.0		22.5
Max Q Clear Time (g_c+I1), s		27.0		24.5		27.0		24.5
Green Ext Time (p_c), s		0.0		0.0		0.0		0.0

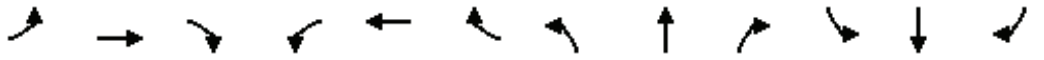
Intersection Summary	
HCM 2010 Ctrl Delay	45.1
HCM 2010 LOS	D



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	271	77	34	650	266	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1583	1764	1583
Flt Permitted	0.73	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1362	1863	1863	1583	1764	1583
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	319	91	40	765	313	194
RTOR Reduction (vph)	0	0	0	449	0	123
Lane Group Flow (vph)	319	91	40	316	313	71
Confl. Peds. (#/hr)					3	
Turn Type	Perm	NA	NA	Perm	Perm	Perm
Protected Phases		4	8			
Permitted Phases	4			8	6	6
Actuated Green, G (s)	14.9	14.9	14.9	14.9	13.2	13.2
Effective Green, g (s)	14.9	14.9	14.9	14.9	13.2	13.2
Actuated g/C Ratio	0.41	0.41	0.41	0.41	0.37	0.37
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	562	768	768	653	645	578
v/s Ratio Prot		0.05	0.02			
v/s Ratio Perm	c0.23			0.20	c0.18	0.04
v/c Ratio	0.57	0.12	0.05	0.48	0.49	0.12
Uniform Delay, d1	8.1	6.5	6.4	7.8	8.8	7.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	0.1	0.0	0.6	0.6	0.1
Delay (s)	9.4	6.6	6.4	8.3	9.4	7.7
Level of Service	A	A	A	A	A	A
Approach Delay (s)		8.8	8.2		8.8	
Approach LOS		A	A		A	

Intersection Summary			
HCM 2000 Control Delay	8.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	36.1	Sum of lost time (s)	8.0
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	101	633	113	210	408	135	136	1011	265	80	396	61
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	112	703	68	233	453	82	151	1123	217	89	440	64
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	142	1032	453	270	1211	532	184	1031	198	115	962	139
Arrive On Green	0.08	0.29	0.29	0.15	0.34	0.34	0.10	0.35	0.35	0.06	0.31	0.31
Sat Flow, veh/h	1774	3539	1552	1774	3539	1557	1774	2949	567	1774	3102	449
Grp Volume(v), veh/h	112	703	68	233	453	82	151	671	669	89	250	254
Grp Sat Flow(s),veh/h/ln	1774	1770	1552	1774	1770	1557	1774	1770	1746	1774	1770	1782
Q Serve(g_s), s	5.7	16.1	3.0	11.7	8.8	3.3	7.6	32.0	32.0	4.5	10.4	10.5
Cycle Q Clear(g_c), s	5.7	16.1	3.0	11.7	8.8	3.3	7.6	32.0	32.0	4.5	10.4	10.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.32	1.00		0.25
Lane Grp Cap(c), veh/h	142	1032	453	270	1211	532	184	619	610	115	549	553
V/C Ratio(X)	0.79	0.68	0.15	0.86	0.37	0.15	0.82	1.09	1.10	0.78	0.46	0.46
Avail Cap(c_a), veh/h	388	1237	543	485	1353	595	291	619	610	349	677	681
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.4	28.7	24.0	37.9	22.7	20.9	40.2	29.8	29.8	42.2	25.4	25.4
Incr Delay (d2), s/veh	3.7	1.5	0.2	3.2	0.3	0.2	4.8	61.6	65.2	4.2	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	8.0	1.3	6.0	4.4	1.5	4.0	26.0	26.3	2.4	5.1	5.2
LnGrp Delay(d),s/veh	45.0	30.2	24.2	41.0	23.0	21.1	45.0	91.3	94.9	46.4	25.6	25.6
LnGrp LOS	D	C	C	D	C	C	D	F	F	D	C	C
Approach Vol, veh/h		883			768			1491			593	
Approach Delay, s/veh		31.6			28.3			88.3			28.7	
Approach LOS		C			C			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.9	30.7	12.5	31.4	12.3	35.3	8.9	35.0
Change Period (Y+Rc), s	3.0	4.0	3.0	3.0	5.0	4.0	3.0	3.0
Max Green Setting (Gmax), s	25.0	32.0	15.0	35.0	20.0	35.0	18.0	32.0
Max Q Clear Time (g_c+I1), s	13.7	18.1	9.6	12.5	7.7	10.8	6.5	34.0
Green Ext Time (p_c), s	0.2	8.6	0.1	10.1	0.1	12.3	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	53.1
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	317	2	653	0	806	298	0	589	123
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	0	1863	1863	0	1863	1900
Adj Flow Rate, veh/h				225	0	701	0	857	0	0	627	42
Adj No. of Lanes				1	0	2	0	3	1	0	3	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				2	2	2	0	2	2	0	2	2
Cap, veh/h				609	0	1087	0	2246	699	0	2151	143
Arrive On Green				0.34	0.00	0.34	0.00	0.44	0.00	0.00	0.44	0.44
Sat Flow, veh/h				1774	0	3167	0	5253	1583	0	5039	324
Grp Volume(v), veh/h				225	0	701	0	857	0	0	435	234
Grp Sat Flow(s),veh/h/ln				1774	0	1583	0	1695	1583	0	1695	1806
Q Serve(g_s), s				3.5	0.0	6.9	0.0	4.2	0.0	0.0	3.1	3.1
Cycle Q Clear(g_c), s				3.5	0.0	6.9	0.0	4.2	0.0	0.0	3.1	3.1
Prop In Lane				1.00		1.00	0.00		1.00	0.00		0.18
Lane Grp Cap(c), veh/h				609	0	1087	0	2246	699	0	1497	797
V/C Ratio(X)				0.37	0.00	0.64	0.00	0.38	0.00	0.00	0.29	0.29
Avail Cap(c_a), veh/h				1526	0	2724	0	3418	1064	0	2279	1213
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				9.2	0.0	10.3	0.0	7.0	0.0	0.0	6.7	6.7
Incr Delay (d2), s/veh				0.4	0.0	0.6	0.0	0.1	0.0	0.0	0.1	0.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.8	0.0	3.1	0.0	1.9	0.0	0.0	1.4	1.5
LnGrp Delay(d),s/veh				9.6	0.0	10.9	0.0	7.1	0.0	0.0	6.8	6.9
LnGrp LOS				A		B		A			A	A
Approach Vol, veh/h					926			857			669	
Approach Delay, s/veh					10.6			7.1			6.8	
Approach LOS					B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		20.4				20.4		16.8
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		25.0				25.0		32.0
Max Q Clear Time (g_c+I1), s		6.2				5.1		8.9
Green Ext Time (p_c), s		10.2				10.6		3.8

Intersection Summary	
HCM 2010 Ctrl Delay	8.3
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

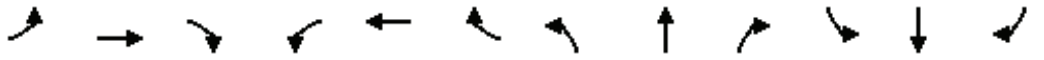
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	223	0	391	0	0	0	0	881	574	0	606	300
Number	3	8	18				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863				0	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	259	91	320				0	1024	0	0	705	0
Adj No. of Lanes	0	1	1				0	3	0	0	2	1
Peak Hour Factor	0.86	0.86	0.86				0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2				0	2	2	0	2	2
Cap, veh/h	394	138	469				0	2650	0	0	1844	825
Arrive On Green	0.30	0.30	0.30				0.00	0.52	0.00	0.00	0.52	0.00
Sat Flow, veh/h	1329	467	1583				0	5421	0	0	3632	1583
Grp Volume(v), veh/h	350	0	320				0	1024	0	0	705	0
Grp Sat Flow(s),veh/h/ln	1796	0	1583				0	1695	0	0	1770	1583
Q Serve(g_s), s	7.5	0.0	7.8				0.0	5.3	0.0	0.0	5.2	0.0
Cycle Q Clear(g_c), s	7.5	0.0	7.8				0.0	5.3	0.0	0.0	5.2	0.0
Prop In Lane	0.74		1.00				0.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	532	0	469				0	2650	0	0	1844	825
V/C Ratio(X)	0.66	0.00	0.68				0.00	0.39	0.00	0.00	0.38	0.00
Avail Cap(c_a), veh/h	1231	0	1085				0	4299	0	0	2992	1339
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	13.5	0.0	13.6				0.0	6.3	0.0	0.0	6.3	0.0
Incr Delay (d2), s/veh	1.4	0.0	1.8				0.0	0.1	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.0	3.6				0.0	2.5	0.0	0.0	2.5	0.0
LnGrp Delay(d),s/veh	14.9	0.0	15.3				0.0	6.4	0.0	0.0	6.4	0.0
LnGrp LOS	B		B					A			A	
Approach Vol, veh/h		670						1024			705	
Approach Delay, s/veh		15.1						6.4			6.4	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		26.8				26.8		17.0
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		37.0				37.0		30.0
Max Q Clear Time (g_c+I1), s		7.3				7.2		9.8
Green Ext Time (p_c), s		15.5				15.5		3.2

Intersection Summary	
HCM 2010 Ctrl Delay	8.8
HCM 2010 LOS	A

Notes

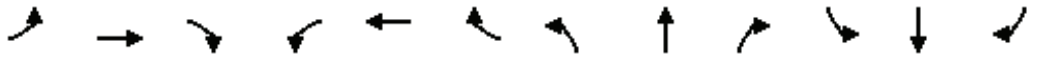
User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	266	1	219	29	18	226	121	963	0	21	825	151
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	289	1	226	32	20	223	132	1047	-1	23	897	140
Adj No. of Lanes	0	1	0	1	1	0	0	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	275	1	215	371	27	302	39	504	0	36	993	155
Arrive On Green	0.29	0.29	0.29	0.21	0.21	0.21	0.25	0.25	0.00	0.02	0.32	0.32
Sat Flow, veh/h	942	3	736	1774	129	1442	53	1956	0	1774	3058	477
Grp Volume(v), veh/h	516	0	0	32	0	243	511	667	0	23	519	518
Grp Sat Flow(s),veh/h/ln	1681	0	0	1774	0	1572	314	1610	0	1774	1770	1766
Q Serve(g_s), s	21.0	0.0	0.0	1.0	0.0	10.4	0.0	0.0	0.0	0.9	20.1	20.2
Cycle Q Clear(g_c), s	21.0	0.0	0.0	1.0	0.0	10.4	0.0	0.0	0.0	0.9	20.1	20.2
Prop In Lane	0.56		0.44	1.00		0.92	0.26		0.00	1.00		0.27
Lane Grp Cap(c), veh/h	491	0	0	371	0	329	0	0	0	36	575	573
V/C Ratio(X)	1.05	0.00	0.00	0.09	0.00	0.74	0.00	0.00	0.00	0.63	0.90	0.90
Avail Cap(c_a), veh/h	491	0	0	1110	0	984	0	0	0	271	575	573
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.4	0.0	0.0	22.9	0.0	26.6	0.0	0.0	0.0	34.9	23.2	23.2
Incr Delay (d2), s/veh	54.6	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	6.6	17.9	18.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.0	0.0	0.0	0.5	0.0	4.6	0.0	0.0	0.0	0.5	12.7	12.6
LnGrp Delay(d),s/veh	80.0	0.0	0.0	22.9	0.0	27.8	0.0	0.0	0.0	41.5	41.1	41.2
LnGrp LOS	F			C		C				D	D	D
Approach Vol, veh/h		516			275			1178			1060	
Approach Delay, s/veh		80.0			27.2			0.0			41.1	
Approach LOS		F			C			A			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	5.5	22.4		19.0		27.8		25.0
Change Period (Y+Rc), s	4.0	4.5		4.0		4.5		4.0
Max Green Setting (Gmax), s	11.0	20.5		45.0		23.0		21.0
Max Q Clear Time (g_c+I1), s	2.9	2.0		12.4		22.2		23.0
Green Ext Time (p_c), s	0.0	15.9		1.1		0.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	30.5
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	386	447	53	66	188	362	34	321	205	176	567	265
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	406	471	0	69	198	348	36	338	190	185	597	0
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	443	1593	713	89	444	397	47	425	234	220	1031	0
Arrive On Green	0.25	0.45	0.00	0.05	0.25	0.25	0.03	0.19	0.19	0.12	0.29	0.00
Sat Flow, veh/h	1774	3539	1583	1774	1770	1583	1774	2190	1205	1774	3632	0
Grp Volume(v), veh/h	406	471	0	69	198	348	36	272	256	185	597	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1625	1774	1770	0
Q Serve(g_s), s	19.6	7.4	0.0	3.4	8.3	18.6	1.8	12.9	13.3	9.0	12.7	0.0
Cycle Q Clear(g_c), s	19.6	7.4	0.0	3.4	8.3	18.6	1.8	12.9	13.3	9.0	12.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.74	1.00		0.00
Lane Grp Cap(c), veh/h	443	1593	713	89	444	397	47	343	315	220	1031	0
V/C Ratio(X)	0.92	0.30	0.00	0.78	0.45	0.88	0.76	0.79	0.81	0.84	0.58	0.00
Avail Cap(c_a), veh/h	484	1593	713	181	483	432	81	362	332	242	1046	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	32.1	15.4	0.0	41.3	27.8	31.7	42.6	33.8	33.9	37.7	26.6	0.0
Incr Delay (d2), s/veh	21.4	0.1	0.0	13.3	0.7	17.1	22.0	10.8	13.7	21.1	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.2	3.6	0.0	2.0	4.2	10.0	1.2	7.3	7.2	5.7	6.2	0.0
LnGrp Delay(d),s/veh	53.6	15.5	0.0	54.6	28.5	48.8	64.5	44.6	47.6	58.8	27.4	0.0
LnGrp LOS	D	B		D	C	D	E	D	D	E	C	
Approach Vol, veh/h		877			615			564			782	
Approach Delay, s/veh		33.1			42.9			47.3			34.8	
Approach LOS		C			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.9	21.1	8.4	43.6	6.3	29.6	26.0	26.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	18.0	9.0	39.0	4.0	26.0	24.0	24.0
Max Q Clear Time (g_c+I1), s	11.0	15.3	5.4	9.4	3.8	14.7	21.6	20.6
Green Ext Time (p_c), s	0.1	1.8	0.0	7.9	0.0	5.7	0.4	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	38.5
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	127	1131	131	4	612	110	127	366	32	62	222	124
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	138	1229	4	4	665	111	138	398	28	67	241	109
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	398	2109	922	237	1803	300	168	810	57	86	466	203
Arrive On Green	0.60	0.60	0.60	0.60	0.60	0.60	0.09	0.24	0.24	0.05	0.20	0.20
Sat Flow, veh/h	691	3539	1548	450	3026	504	1774	3350	235	1774	2379	1038
Grp Volume(v), veh/h	138	1229	4	4	389	387	138	209	217	67	177	173
Grp Sat Flow(s),veh/h/ln	691	1770	1548	450	1770	1760	1774	1770	1815	1774	1770	1648
Q Serve(g_s), s	14.2	23.7	0.1	0.6	12.5	12.5	8.4	11.2	11.3	4.1	9.8	10.4
Cycle Q Clear(g_c), s	26.8	23.7	0.1	24.3	12.5	12.5	8.4	11.2	11.3	4.1	9.8	10.4
Prop In Lane	1.00		1.00	1.00		0.29	1.00		0.13	1.00		0.63
Lane Grp Cap(c), veh/h	398	2109	922	237	1054	1049	168	428	439	86	347	323
V/C Ratio(X)	0.35	0.58	0.00	0.02	0.37	0.37	0.82	0.49	0.49	0.78	0.51	0.54
Avail Cap(c_a), veh/h	398	2109	922	237	1054	1049	282	587	602	185	491	457
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.5	13.8	9.0	21.3	11.5	11.5	48.9	35.9	35.9	51.7	39.5	39.7
Incr Delay (d2), s/veh	2.4	1.2	0.0	0.1	1.0	1.0	9.5	3.1	3.1	13.7	4.2	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	11.8	0.1	0.1	6.3	6.3	4.5	5.8	6.0	2.3	5.2	5.2
LnGrp Delay(d),s/veh	20.8	15.0	9.0	21.4	12.5	12.5	58.4	39.0	39.0	65.4	43.7	44.7
LnGrp LOS	C	B	A	C	B	B	E	D	D	E	D	D
Approach Vol, veh/h		1371			780			564			417	
Approach Delay, s/veh		15.5			12.6			43.7			47.6	
Approach LOS		B			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		70.0	13.9	26.0		70.0	8.9	31.1
Change Period (Y+Rc), s		4.5	3.5	4.5		4.5	3.5	4.5
Max Green Setting (Gmax), s		49.5	17.5	30.5		49.5	11.5	36.5
Max Q Clear Time (g_c+I1), s		28.8	10.4	12.4		26.3	6.1	13.3
Green Ext Time (p_c), s		19.8	0.2	9.2		22.0	0.0	10.7

Intersection Summary	
HCM 2010 Ctrl Delay	24.1
HCM 2010 LOS	C

Notes

User approved ignoring U-Turning movement.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	498	120	436	503	181	232
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	547	132	479	553	199	0
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	681	567	538	1362	255	228
Arrive On Green	0.37	0.37	0.30	0.73	0.14	0.00
Sat Flow, veh/h	1863	1550	1774	1863	1774	1583
Grp Volume(v), veh/h	547	132	479	553	199	0
Grp Sat Flow(s),veh/h/ln	1863	1550	1774	1863	1774	1583
Q Serve(g_s), s	16.9	3.8	16.5	7.3	6.9	0.0
Cycle Q Clear(g_c), s	16.9	3.8	16.5	7.3	6.9	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	681	567	538	1362	255	228
V/C Ratio(X)	0.80	0.23	0.89	0.41	0.78	0.00
Avail Cap(c_a), veh/h	783	652	691	1625	442	395
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	18.3	14.1	21.3	3.3	26.5	0.0
Incr Delay (d2), s/veh	5.3	0.2	11.4	0.2	5.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.7	1.6	9.8	3.8	3.7	0.0
LnGrp Delay(d),s/veh	23.6	14.3	32.8	3.5	31.6	0.0
LnGrp LOS	C	B	C	A	C	
Approach Vol, veh/h	679			1032	199	
Approach Delay, s/veh	21.8			17.1	31.6	
Approach LOS	C			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		13.2	23.5	27.5				51.0
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		16.0	25.0	27.0				56.0
Max Q Clear Time (g_c+I1), s		8.9	18.5	18.9				9.3
Green Ext Time (p_c), s		0.3	0.9	4.6				10.2

Intersection Summary	
HCM 2010 Ctrl Delay	20.3
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	126	98	131	411	567	342	288	471	282	358	308	64
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1863	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	137	107	128	447	616	318	313	512	292	389	335	0
Adj No. of Lanes	1	1	0	0	1	1	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	189	83	99	230	317	475	562	567	323	85	41	0
Arrive On Green	0.11	0.11	0.11	0.50	0.50	0.50	0.51	0.51	0.51	0.51	0.51	0.00
Sat Flow, veh/h	1774	774	926	767	1057	1583	1041	1105	630	93	80	0
Grp Volume(v), veh/h	137	0	235	1063	0	318	313	0	804	724	0	0
Grp Sat Flow(s),veh/h/ln	1774	0	1699	1824	0	1583	1041	0	1735	173	0	0
Q Serve(g_s), s	11.2	0.0	16.0	45.0	0.0	22.6	0.0	0.0	63.1	13.9	0.0	0.0
Cycle Q Clear(g_c), s	11.2	0.0	16.0	45.0	0.0	22.6	33.2	0.0	63.1	77.0	0.0	0.0
Prop In Lane	1.00		0.54	0.42		1.00	1.00		0.36	0.54		0.00
Lane Grp Cap(c), veh/h	189	0	181	547	0	475	562	0	891	126	0	0
V/C Ratio(X)	0.72	0.00	1.30	1.94	0.00	0.67	0.56	0.00	0.90	5.75	0.00	0.00
Avail Cap(c_a), veh/h	189	0	181	547	0	475	562	0	891	126	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.44	0.00	0.44	1.00	0.00	1.00	0.57	0.00	0.00
Uniform Delay (d), s/veh	64.9	0.0	67.0	37.4	0.0	31.8	25.8	0.0	33.1	70.1	0.0	0.0
Incr Delay (d2), s/veh	12.8	0.0	167.9	426.9	0.0	3.3	1.2	0.0	12.4	2149.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	0.0	16.0	87.2	0.0	10.3	9.3	0.0	33.2	80.3	0.0	0.0
LnGrp Delay(d),s/veh	77.7	0.0	234.9	464.4	0.0	35.1	27.1	0.0	45.5	2219.1	0.0	0.0
LnGrp LOS	E		F	F		D	C		D	F		
Approach Vol, veh/h		372			1381			1117			724	
Approach Delay, s/veh		177.0			365.5			40.3			2219.1	
Approach LOS		F			F			D			F	

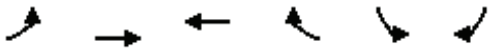
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		81.0		20.0		81.0		49.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		77.0		16.0		77.0		45.0
Max Q Clear Time (g_c+I1), s		65.1		18.0		79.0		47.0
Green Ext Time (p_c), s		9.7		0.0		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	618.3
HCM 2010 LOS	F

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	379	359	166	811	509	247
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	412	0	180	882	553	268
Adj No. of Lanes	1	0	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	894	0	189	1142	591	528
Arrive On Green	0.48	0.00	0.11	0.61	0.33	0.33
Sat Flow, veh/h	1863	0	1774	1863	1774	1583
Grp Volume(v), veh/h	412	0	180	882	553	268
Grp Sat Flow(s),veh/h/ln	1863	0	1774	1863	1774	1583
Q Serve(g_s), s	22.2	0.0	15.1	52.2	45.3	20.4
Cycle Q Clear(g_c), s	22.2	0.0	15.1	52.2	45.3	20.4
Prop In Lane		0.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	894	0	189	1142	591	528
V/C Ratio(X)	0.46	0.00	0.95	0.77	0.94	0.51
Avail Cap(c_a), veh/h	894	0	189	1142	591	528
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.0	0.0	66.6	21.3	48.4	40.1
Incr Delay (d2), s/veh	0.2	0.0	51.3	5.1	24.1	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.4	0.0	10.1	28.3	26.1	9.4
LnGrp Delay(d),s/veh	26.2	0.0	117.9	26.4	72.5	43.6
LnGrp LOS	C		F	C	E	D
Approach Vol, veh/h	412			1062	821	
Approach Delay, s/veh	26.2			41.9	63.1	
Approach LOS	C			D	E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		54.0	20.0	76.0				96.0
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		50.0	16.0	72.0				92.0
Max Q Clear Time (g_c+I1), s		47.3	17.1	24.2				54.2
Green Ext Time (p_c), s		0.9	0.0	13.4				12.6

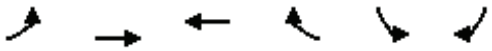
Intersection Summary	
HCM 2010 Ctrl Delay	46.6
HCM 2010 LOS	D



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	1258	364	0	469	580
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	0	1353	391	0	504	376
Adj No. of Lanes	0	2	2	0	2	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1988	1988	0	992	456
Arrive On Green	0.00	0.56	1.00	0.00	0.29	0.29
Sat Flow, veh/h	0	3725	3725	0	3442	1583
Grp Volume(v), veh/h	0	1353	391	0	504	376
Grp Sat Flow(s),veh/h/ln	0	1770	1770	0	1721	1583
Q Serve(g_s), s	0.0	16.3	0.0	0.0	7.3	13.3
Cycle Q Clear(g_c), s	0.0	16.3	0.0	0.0	7.3	13.3
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1988	1988	0	992	456
V/C Ratio(X)	0.00	0.68	0.20	0.00	0.51	0.82
Avail Cap(c_a), veh/h	0	1988	1988	0	1262	581
HCM Platoon Ratio	1.00	1.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.99	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	9.3	0.0	0.0	17.8	19.9
Incr Delay (d2), s/veh	0.0	1.9	0.2	0.0	0.4	7.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.2	0.1	0.0	3.5	6.7
LnGrp Delay(d),s/veh	0.0	11.2	0.2	0.0	18.2	27.5
LnGrp LOS		B	A		B	C
Approach Vol, veh/h		1353	391		880	
Approach Delay, s/veh		11.2	0.2		22.2	
Approach LOS		B	A		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		38.7		21.3		38.7		
Change Period (Y+Rc), s		5.0		4.0		5.0		
Max Green Setting (Gmax), s		29.0		22.0		29.0		
Max Q Clear Time (g_c+I1), s		18.3		15.3		2.0		
Green Ext Time (p_c), s		8.0		2.0		15.5		

Intersection Summary	
HCM 2010 Ctrl Delay	13.3
HCM 2010 LOS	B



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	26	1701	351	109	59	13
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	27	1791	369	107	62	3
Adj No. of Lanes	0	2	2	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	79	2809	2203	628	79	4
Arrive On Green	1.00	1.00	0.55	0.55	0.05	0.05
Sat Flow, veh/h	22	3513	2782	767	1659	80
Grp Volume(v), veh/h	974	844	241	235	66	0
Grp Sat Flow(s),veh/h/ln	1840	1610	1770	1686	1766	0
Q Serve(g_s), s	0.0	0.0	4.1	4.2	2.2	0.0
Cycle Q Clear(g_c), s	0.0	0.0	4.1	4.2	2.2	0.0
Prop In Lane	0.03			0.45	0.94	0.05
Lane Grp Cap(c), veh/h	1569	1319	1450	1381	84	0
V/C Ratio(X)	0.62	0.64	0.17	0.17	0.79	0.00
Avail Cap(c_a), veh/h	1569	1319	1450	1381	441	0
HCM Platoon Ratio	2.00	2.00	0.67	0.67	1.00	1.00
Upstream Filter(I)	0.72	0.72	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	3.4	3.4	28.3	0.0
Incr Delay (d2), s/veh	1.3	1.7	0.2	0.3	6.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.6	2.1	2.0	1.2	0.0
LnGrp Delay(d),s/veh	1.3	1.7	3.6	3.7	34.3	0.0
LnGrp LOS	A	A	A	A	C	
Approach Vol, veh/h		1818	476		66	
Approach Delay, s/veh		1.5	3.6		34.3	
Approach LOS		A	A		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		53.2		6.8		53.2		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		37.0		15.0		37.0		
Max Q Clear Time (g_c+I1), s		2.0		4.2		6.2		
Green Ext Time (p_c), s		24.6		0.0		22.5		

Intersection Summary	
HCM 2010 Ctrl Delay	2.9
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	236	26	626	88	392	105	517	810	0	0	516	150
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.72	1.00		0.91	1.00		1.00	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	0	1845	1845
Adj Flow Rate, veh/h	243	0	384	91	404	56	533	835	0	0	532	116
Adj No. of Lanes	1	0	2	1	2	1	2	3	0	0	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	242	0	849	442	881	357	584	2616	0	0	1132	480
Arrive On Green	0.14	0.00	0.14	0.25	0.25	0.25	0.17	0.52	0.00	0.00	0.32	0.32
Sat Flow, veh/h	1757	0	2266	1757	3505	1420	3408	5202	0	0	3597	1487
Grp Volume(v), veh/h	243	0	384	91	404	56	533	835	0	0	532	116
Grp Sat Flow(s),veh/h/ln	1757	0	1133	1757	1752	1420	1704	1679	0	0	1752	1487
Q Serve(g_s), s	16.5	0.0	16.5	4.9	11.7	3.7	18.4	11.5	0.0	0.0	14.5	6.9
Cycle Q Clear(g_c), s	16.5	0.0	16.5	4.9	11.7	3.7	18.4	11.5	0.0	0.0	14.5	6.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	242	0	849	442	881	357	584	2616	0	0	1132	480
V/C Ratio(X)	1.01	0.00	0.45	0.21	0.46	0.16	0.91	0.32	0.00	0.00	0.47	0.24
Avail Cap(c_a), veh/h	242	0	849	527	1051	426	596	2616	0	0	1132	480
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	51.8	0.0	34.5	35.5	38.0	35.0	48.8	16.6	0.0	0.0	32.4	29.8
Incr Delay (d2), s/veh	59.4	0.0	0.4	0.2	0.4	0.2	18.2	0.3	0.0	0.0	1.4	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.0	0.0	5.3	2.4	5.7	1.5	10.1	5.3	0.0	0.0	7.2	3.0
LnGrp Delay(d),s/veh	111.2	0.0	34.9	35.7	38.4	35.2	67.0	16.9	0.0	0.0	33.8	31.0
LnGrp LOS	F		C	D	D	D	E	B			C	C
Approach Vol, veh/h		627			551			1368			648	
Approach Delay, s/veh		64.5			37.6			36.5			33.3	
Approach LOS		E			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		66.3		20.0	23.6	42.8		33.7
Change Period (Y+Rc), s		4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s		56.5		16.5	21.0	32.5		36.0
Max Q Clear Time (g_c+I1), s		13.5		18.5	20.4	16.5		13.7
Green Ext Time (p_c), s		13.9		0.0	0.1	8.9		3.1

Intersection Summary	
HCM 2010 Ctrl Delay	41.5
HCM 2010 LOS	D

Notes

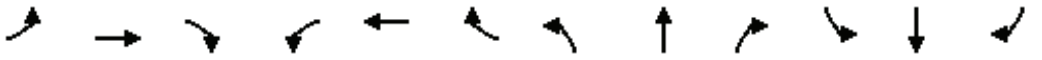
User approved volume balancing among the lanes for turning movement.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	514	2	4	746	11	36
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	659	3	5	956	14	46
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			662		1627	660
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			662		1627	660
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		87	90
cM capacity (veh/h)			927		112	463

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	662	5	956	60
Volume Left	0	5	0	14
Volume Right	3	0	0	46
cSH	1700	927	1700	267
Volume to Capacity	0.39	0.01	0.56	0.23
Queue Length 95th (ft)	0	0	0	21
Control Delay (s)	0.0	8.9	0.0	22.4
Lane LOS		A		C
Approach Delay (s)	0.0	0.0		22.4
Approach LOS				C

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	140	200	157	440	150	105	149	325	82	141	485	43
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	152	217	171	478	163	114	162	353	89	153	527	47
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	2	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	181	192	151	473	372	260	163	953	237	210	520	46
Arrive On Green	0.10	0.20	0.20	0.27	0.36	0.36	0.09	0.34	0.34	0.06	0.31	0.31
Sat Flow, veh/h	1774	958	755	1774	1021	714	1774	2809	700	3442	1686	150
Grp Volume(v), veh/h	152	0	388	478	0	277	162	221	221	153	0	574
Grp Sat Flow(s),veh/h/ln	1774	0	1713	1774	0	1735	1774	1770	1739	1721	0	1836
Q Serve(g_s), s	10.1	0.0	24.0	32.0	0.0	14.5	11.0	11.3	11.6	5.2	0.0	37.0
Cycle Q Clear(g_c), s	10.1	0.0	24.0	32.0	0.0	14.5	11.0	11.3	11.6	5.2	0.0	37.0
Prop In Lane	1.00		0.44	1.00		0.41	1.00		0.40	1.00		0.08
Lane Grp Cap(c), veh/h	181	0	343	473	0	633	163	600	590	210	0	566
V/C Ratio(X)	0.84	0.00	1.13	1.01	0.00	0.44	1.00	0.37	0.38	0.73	0.00	1.01
Avail Cap(c_a), veh/h	296	0	343	473	0	633	163	600	590	287	0	566
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.9	0.0	48.0	44.0	0.0	28.8	54.5	29.9	30.0	55.4	0.0	41.5
Incr Delay (d2), s/veh	10.8	0.0	89.6	44.0	0.0	0.5	69.4	0.4	0.4	5.9	0.0	41.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	0.0	19.8	21.4	0.0	7.0	8.5	5.6	5.6	2.7	0.0	25.2
LnGrp Delay(d),s/veh	63.7	0.0	137.6	88.0	0.0	29.3	123.9	30.3	30.4	61.3	0.0	82.8
LnGrp LOS	E		F	F		C	F	C	C	E		F
Approach Vol, veh/h		540			755			604			727	
Approach Delay, s/veh		116.8			66.5			55.4			78.3	
Approach LOS		F			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.3	44.7	36.0	28.0	15.0	41.0	16.2	47.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	38.0	32.0	24.0	11.0	37.0	20.0	36.0
Max Q Clear Time (g_c+I1), s	7.2	13.6	34.0	26.0	13.0	39.0	12.1	16.5
Green Ext Time (p_c), s	0.1	7.2	0.0	0.0	0.0	0.0	0.2	4.3

Intersection Summary	
HCM 2010 Ctrl Delay	77.6
HCM 2010 LOS	E

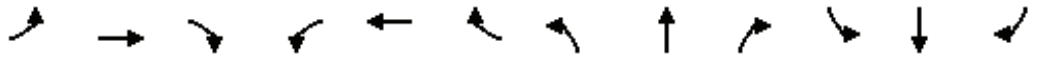
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	45	223	129	433	302	49	326	185	577	25	87	68
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	46	230	84	267	561	45	264	292	146	26	90	67
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	0	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	252	364	129	405	777	62	404	424	359	34	117	87
Arrive On Green	0.14	0.14	0.14	0.23	0.23	0.23	0.23	0.23	0.23	0.14	0.14	0.14
Sat Flow, veh/h	1774	2562	910	1774	3405	273	1774	1863	1579	245	849	632
Grp Volume(v), veh/h	46	157	157	267	306	300	264	292	146	183	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1702	1774	1863	1815	1774	1863	1579	1725	0	0
Q Serve(g_s), s	1.4	5.1	5.3	8.3	9.2	9.2	8.2	8.7	4.8	6.2	0.0	0.0
Cycle Q Clear(g_c), s	1.4	5.1	5.3	8.3	9.2	9.2	8.2	8.7	4.8	6.2	0.0	0.0
Prop In Lane	1.00		0.53	1.00		0.15	1.00		1.00	0.14		0.37
Lane Grp Cap(c), veh/h	252	252	242	405	425	414	404	424	359	238	0	0
V/C Ratio(X)	0.18	0.62	0.65	0.66	0.72	0.72	0.65	0.69	0.41	0.77	0.00	0.00
Avail Cap(c_a), veh/h	498	497	478	527	553	539	820	861	730	456	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	22.9	24.5	24.6	21.2	21.6	21.6	21.2	21.4	19.9	25.2	0.0	0.0
Incr Delay (d2), s/veh	0.3	2.5	2.9	1.9	3.2	3.4	1.8	2.0	0.7	5.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	2.6	2.7	4.2	5.1	5.0	4.2	4.7	2.1	3.3	0.0	0.0
LnGrp Delay(d),s/veh	23.2	27.0	27.5	23.2	24.8	25.0	23.0	23.4	20.7	30.4	0.0	0.0
LnGrp LOS	C	C	C	C	C	C	C	C	C	C		
Approach Vol, veh/h		360			873			702			183	
Approach Delay, s/veh		26.7			24.3			22.7			30.4	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		17.8		12.6		12.4		17.8
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		28.0		17.0		16.0		18.0
Max Q Clear Time (g_c+I1), s		10.7		7.3		8.2		11.2
Green Ext Time (p_c), s		2.9		1.4		0.6		2.6

Intersection Summary	
HCM 2010 Ctrl Delay	24.7
HCM 2010 LOS	C

Notes

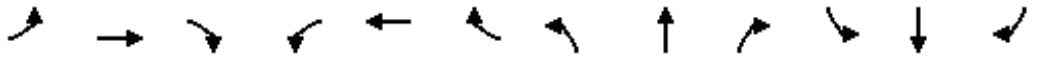
User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	204	0	472	466	616	0	0	352	297
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1900	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				215	0	431	491	648	0	0	371	0
Adj No. of Lanes				1	1	0	1	2	0	0	2	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				483	0	431	556	2094	0	0	745	0
Arrive On Green				0.27	0.00	0.27	0.31	0.59	0.00	0.00	0.21	0.00
Sat Flow, veh/h				1774	0	1583	1774	3632	0	0	3725	0
Grp Volume(v), veh/h				215	0	431	491	648	0	0	371	0
Grp Sat Flow(s),veh/h/ln				1774	0	1583	1774	1770	0	0	1770	0
Q Serve(g_s), s				5.9	0.0	16.0	15.4	5.4	0.0	0.0	5.4	0.0
Cycle Q Clear(g_c), s				5.9	0.0	16.0	15.4	5.4	0.0	0.0	5.4	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				483	0	431	556	2094	0	0	745	0
V/C Ratio(X)				0.45	0.00	1.00	0.88	0.31	0.00	0.00	0.50	0.00
Avail Cap(c_a), veh/h				483	0	431	724	2769	0	0	1084	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				17.7	0.0	21.4	19.2	6.0	0.0	0.0	20.5	0.0
Incr Delay (d2), s/veh				0.6	0.0	43.4	10.2	0.1	0.0	0.0	0.5	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.0	0.0	12.0	9.1	2.6	0.0	0.0	2.7	0.0
LnGrp Delay(d),s/veh				18.4	0.0	64.8	29.4	6.1	0.0	0.0	21.0	0.0
LnGrp LOS				B		F	C	A			C	
Approach Vol, veh/h					646			1139			371	
Approach Delay, s/veh					49.3			16.1			21.0	
Approach LOS					D			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		38.8			22.4	16.4		20.0
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		46.0			24.0	18.0		16.0
Max Q Clear Time (g_c+I1), s		7.4			17.4	7.4		18.0
Green Ext Time (p_c), s		8.6			1.0	4.9		0.0

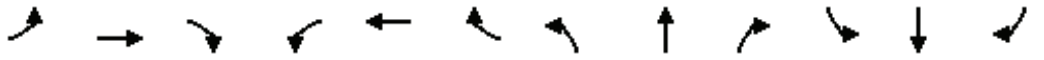
Intersection Summary	
HCM 2010 Ctrl Delay	26.9
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	721	170	73	566	0	0	0	0	333	1	297
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1900	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	751	149	76	590	0				347	1	293
Adj No. of Lanes	0	2	0	0	2	0				0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1399	278	150	1194	0				380	1	321
Arrive On Green	0.00	0.48	0.48	0.95	0.95	0.00				0.42	0.42	0.42
Sat Flow, veh/h	0	3035	584	191	2595	0				910	3	769
Grp Volume(v), veh/h	0	452	448	308	358	0				641	0	0
Grp Sat Flow(s),veh/h/ln	0	1770	1756	1090	1610	0				1682	0	0
Q Serve(g_s), s	0.0	13.5	13.5	7.3	1.5	0.0				26.9	0.0	0.0
Cycle Q Clear(g_c), s	0.0	13.5	13.5	20.8	1.5	0.0				26.9	0.0	0.0
Prop In Lane	0.00		0.33	0.25		0.00				0.54		0.46
Lane Grp Cap(c), veh/h	0	841	835	578	766	0				703	0	0
V/C Ratio(X)	0.00	0.54	0.54	0.53	0.47	0.00				0.91	0.00	0.00
Avail Cap(c_a), veh/h	0	1203	1194	832	1095	0				703	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.92	0.92	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	13.9	13.9	2.4	1.0	0.0				20.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.5	0.5	0.7	0.4	0.0				18.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.6	6.6	2.3	0.6	0.0				16.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	14.4	14.4	3.1	1.4	0.0				38.8	0.0	0.0
LnGrp LOS		B	B	A	A					D		
Approach Vol, veh/h		900			666						641	
Approach Delay, s/veh		14.4			2.2						38.8	
Approach LOS		B			A						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				39.7		35.3		39.7
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				51.0		16.0		51.0
Max Q Clear Time (g_c+I1), s				15.5		28.9		22.8
Green Ext Time (p_c), s				14.3		0.0		13.0

Intersection Summary	
HCM 2010 Ctrl Delay	17.8
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	334	720	0	0	578	387	61	151	110	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	348	750	0	0	602	263	64	157	65			
Adj No. of Lanes	0	2	0	0	2	0	1	1	1			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	455	1112	0	0	1628	710	376	395	335			
Arrive On Green	1.00	1.00	0.00	0.00	0.68	0.68	0.21	0.21	0.21			
Sat Flow, veh/h	529	1716	0	0	2482	1043	1774	1863	1583			
Grp Volume(v), veh/h	362	736	0	0	446	419	64	157	65			
Grp Sat Flow(s),veh/h/ln	550	1610	0	0	1770	1662	1774	1863	1583			
Q Serve(g_s), s	35.0	0.0	0.0	0.0	8.0	8.1	2.2	5.4	2.5			
Cycle Q Clear(g_c), s	43.0	0.0	0.0	0.0	8.0	8.1	2.2	5.4	2.5			
Prop In Lane	0.96		0.00	0.00		0.63	1.00		1.00			
Lane Grp Cap(c), veh/h	469	1097	0	0	1206	1132	376	395	335			
V/C Ratio(X)	0.77	0.67	0.00	0.00	0.37	0.37	0.17	0.40	0.19			
Avail Cap(c_a), veh/h	477	1117	0	0	1227	1152	376	395	335			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.70	0.70	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	3.4	0.0	0.0	0.0	5.1	5.1	24.2	25.4	24.3			
Incr Delay (d2), s/veh	5.3	1.1	0.0	0.0	0.2	0.2	1.0	3.0	1.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.3	0.3	0.0	0.0	3.9	3.7	1.2	3.1	1.2			
LnGrp Delay(d),s/veh	8.7	1.1	0.0	0.0	5.3	5.3	25.1	28.4	25.6			
LnGrp LOS	A	A			A	A	C	C	C			
Approach Vol, veh/h		1098			865			286				
Approach Delay, s/veh		3.6			5.3			27.0				
Approach LOS		A			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		19.9		55.1				55.1
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		15.0		52.0				52.0
Max Q Clear Time (g_c+I1), s		7.4		45.0				10.1
Green Ext Time (p_c), s		0.7		6.1				25.8

Intersection Summary	
HCM 2010 Ctrl Delay	7.2
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	57	606	376	28	410	110	235	534	36	70	276	31
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	59	631	294	29	427	103	245	556	31	73	288	25
Adj No. of Lanes	0	2	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	162	1657	861	98	1391	331	249	932	52	94	614	53
Arrive On Green	0.56	0.56	0.56	0.56	0.56	0.56	0.14	0.27	0.27	0.05	0.19	0.19
Sat Flow, veh/h	223	2964	1540	114	2488	593	1774	3402	189	1774	3287	283
Grp Volume(v), veh/h	343	347	294	286	0	273	245	289	298	73	154	159
Grp Sat Flow(s),veh/h/ln	1577	1610	1540	1624	0	1571	1774	1770	1821	1774	1770	1800
Q Serve(g_s), s	2.5	13.8	11.9	0.0	0.0	10.6	15.7	16.1	16.2	4.6	8.8	9.0
Cycle Q Clear(g_c), s	13.0	13.8	11.9	9.1	0.0	10.6	15.7	16.1	16.2	4.6	8.8	9.0
Prop In Lane	0.17		1.00	0.10		0.38	1.00		0.10	1.00		0.16
Lane Grp Cap(c), veh/h	918	900	861	942	0	878	249	485	499	94	330	336
V/C Ratio(X)	0.37	0.39	0.34	0.30	0.00	0.31	0.98	0.60	0.60	0.78	0.47	0.47
Avail Cap(c_a), veh/h	918	900	861	942	0	878	249	485	499	451	667	679
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.00	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.7	14.1	13.7	13.1	0.0	13.4	48.9	35.9	35.9	53.3	41.3	41.4
Incr Delay (d2), s/veh	1.2	1.3	1.1	0.1	0.0	0.1	52.3	2.4	2.3	5.1	1.5	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	6.4	5.3	4.7	0.0	4.6	11.3	8.2	8.4	2.4	4.5	4.6
LnGrp Delay(d),s/veh	14.9	15.4	14.8	13.2	0.0	13.5	101.1	38.3	38.3	58.4	42.7	42.8
LnGrp LOS	B	B	B	B		B	F	D	D	E	D	D
Approach Vol, veh/h		984			559			832			386	
Approach Delay, s/veh		15.0			13.3			56.8			45.7	
Approach LOS		B			B			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	20.0	26.3		67.7	10.0	36.2		67.7
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0
Max Green Setting (Gmax), s	16.0	43.0		42.0	29.0	30.0		42.0
Max Q Clear Time (g_c+I1), s	17.7	11.0		15.8	6.6	18.2		12.6
Green Ext Time (p_c), s	0.0	6.7		14.9	0.1	5.6		16.0

Intersection Summary	
HCM 2010 Ctrl Delay	31.6
HCM 2010 LOS	C

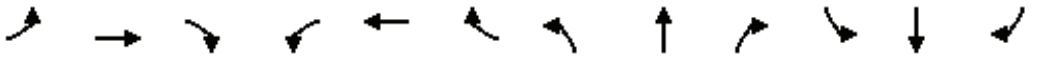
Notes

User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	6	149	44	95	189	98	88	884	83	95	641	24
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.95	1.00		0.96	1.00		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	6	152	27	97	193	92	90	902	72	97	654	23
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	30	374	66	163	376	179	147	1508	120	148	1589	56
Arrive On Green	0.02	0.25	0.25	0.09	0.32	0.32	0.08	0.46	0.46	0.17	0.91	0.91
Sat Flow, veh/h	1774	1523	270	1774	1171	558	1774	3308	264	1774	3478	122
Grp Volume(v), veh/h	6	0	179	97	0	285	90	483	491	97	332	345
Grp Sat Flow(s),veh/h/ln	1774	0	1793	1774	0	1729	1774	1770	1803	1774	1770	1831
Q Serve(g_s), s	0.4	0.0	9.5	6.0	0.0	15.3	5.6	23.3	23.3	5.8	3.0	3.0
Cycle Q Clear(g_c), s	0.4	0.0	9.5	6.0	0.0	15.3	5.6	23.3	23.3	5.8	3.0	3.0
Prop In Lane	1.00		0.15	1.00		0.32	1.00		0.15	1.00		0.07
Lane Grp Cap(c), veh/h	30	0	440	163	0	555	147	807	822	148	809	837
V/C Ratio(X)	0.20	0.00	0.41	0.59	0.00	0.51	0.61	0.60	0.60	0.65	0.41	0.41
Avail Cap(c_a), veh/h	187	0	440	187	0	555	171	807	822	171	809	837
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.91	0.91	0.91
Uniform Delay (d), s/veh	55.3	0.0	36.0	49.7	0.0	31.5	50.5	23.2	23.2	45.9	2.8	2.8
Incr Delay (d2), s/veh	1.2	0.0	2.8	1.9	0.0	3.4	2.5	3.3	3.2	4.1	1.4	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	5.1	3.0	0.0	7.8	2.9	12.1	12.3	3.0	1.6	1.6
LnGrp Delay(d),s/veh	56.5	0.0	38.8	51.6	0.0	34.8	53.0	26.5	26.4	50.1	4.2	4.2
LnGrp LOS	E		D	D		C	D	C	C	D	A	A
Approach Vol, veh/h		185			382			1064			774	
Approach Delay, s/veh		39.4			39.1			28.7			9.9	
Approach LOS		D			D			C			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	56.1	13.5	32.0	12.5	56.0	4.9	40.6
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	11.0	49.0	12.0	28.0	11.0	49.0	12.0	28.0
Max Q Clear Time (g_c+I1), s	7.6	5.0	8.0	11.5	7.8	25.3	2.4	17.3
Green Ext Time (p_c), s	0.0	22.8	0.0	1.7	0.0	15.7	0.0	1.4

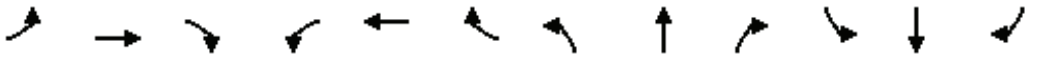
Intersection Summary	
HCM 2010 Ctrl Delay	25.1
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	702	112	100	465	0	0	0	0	139	643	107
Number	7	4	14	3	8	18				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		1.00				1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	724	93	103	479	0				143	663	92
Adj No. of Lanes	0	2	0	1	2	0				0	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1479	190	364	1669	0				189	919	134
Arrive On Green	0.00	0.47	0.47	0.47	0.47	0.00				0.34	0.34	0.34
Sat Flow, veh/h	0	3228	402	663	3632	0				551	2679	389
Grp Volume(v), veh/h	0	408	409	103	479	0				476	0	422
Grp Sat Flow(s),veh/h/ln	0	1770	1768	663	1770	0				1835	0	1784
Q Serve(g_s), s	0.0	7.3	7.3	5.8	3.8	0.0				10.6	0.0	9.3
Cycle Q Clear(g_c), s	0.0	7.3	7.3	13.1	3.8	0.0				10.6	0.0	9.3
Prop In Lane	0.00		0.23	1.00		0.00				0.30		0.22
Lane Grp Cap(c), veh/h	0	835	834	364	1669	0				629	0	612
V/C Ratio(X)	0.00	0.49	0.49	0.28	0.29	0.00				0.76	0.00	0.69
Avail Cap(c_a), veh/h	0	1332	1330	551	2663	0				841	0	817
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	8.3	8.3	12.8	7.4	0.0				13.4	0.0	13.0
Incr Delay (d2), s/veh	0.0	0.2	0.2	0.2	0.0	0.0				1.8	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.6	3.6	1.1	1.8	0.0				5.6	0.0	4.7
LnGrp Delay(d),s/veh	0.0	8.5	8.5	13.0	7.4	0.0				15.1	0.0	13.7
LnGrp LOS		A	A	B	A					B		B
Approach Vol, veh/h		817			582						898	
Approach Delay, s/veh		8.5			8.4						14.5	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		20.2		25.6				25.6
Change Period (Y+Rc), s		4.5		4.0				4.0
Max Green Setting (Gmax), s		21.0		34.5				34.5
Max Q Clear Time (g_c+I1), s		12.6		9.3				15.1
Green Ext Time (p_c), s		2.8		7.1				6.6

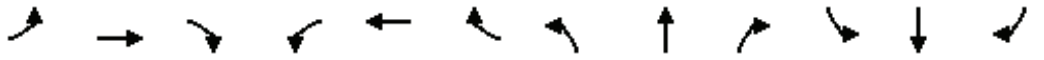
Intersection Summary	
HCM 2010 Ctrl Delay	10.8
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	209	636	0	0	374	140	188	1610	104	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.95	1.00		0.97			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1900	1863	1900			
Adj Flow Rate, veh/h	213	649	0	0	382	86	192	1643	99			
Adj No. of Lanes	1	2	0	0	2	0	0	3	0			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	277	1509	0	0	585	130	221	2023	125			
Arrive On Green	0.16	0.43	0.00	0.00	0.21	0.21	0.44	0.44	0.44			
Sat Flow, veh/h	1774	3632	0	0	2942	633	499	4555	282			
Grp Volume(v), veh/h	213	649	0	0	235	233	708	593	633			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1712	1838	1695	1802			
Q Serve(g_s), s	6.2	7.0	0.0	0.0	6.6	6.8	18.8	16.2	16.3			
Cycle Q Clear(g_c), s	6.2	7.0	0.0	0.0	6.6	6.8	18.8	16.2	16.3			
Prop In Lane	1.00		0.00	0.00		0.37	0.27		0.16			
Lane Grp Cap(c), veh/h	277	1509	0	0	363	351	816	753	800			
V/C Ratio(X)	0.77	0.43	0.00	0.00	0.65	0.66	0.87	0.79	0.79			
Avail Cap(c_a), veh/h	657	1509	0	0	671	649	850	784	834			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	21.9	10.9	0.0	0.0	19.7	19.7	13.6	12.8	12.9			
Incr Delay (d2), s/veh	1.7	0.1	0.0	0.0	0.7	0.8	8.7	4.7	4.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.1	3.4	0.0	0.0	3.3	3.2	11.4	8.4	8.9			
LnGrp Delay(d),s/veh	23.6	11.0	0.0	0.0	20.4	20.5	22.3	17.5	17.4			
LnGrp LOS	C	B			C	C	C	B	B			
Approach Vol, veh/h		862			468			1934				
Approach Delay, s/veh		14.1			20.5			19.2				
Approach LOS		B			C			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		27.5	11.9	14.6				26.5
Change Period (Y+Rc), s		3.5	3.5	3.5				3.5
Max Green Setting (Gmax), s		25.0	20.0	20.5				20.5
Max Q Clear Time (g_c+I1), s		20.8	8.2	8.8				9.0
Green Ext Time (p_c), s		3.2	0.7	1.5				2.7

Intersection Summary	
HCM 2010 Ctrl Delay	18.0
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	207	71	88	264	110	102	478	128	122	447	16
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.97	1.00		0.95	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	36	213	33	91	272	103	105	493	75	126	461	14
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	0	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	59	425	336	119	334	126	545	572	463	169	653	21
Arrive On Green	0.03	0.23	0.23	0.07	0.26	0.26	0.31	0.31	0.31	0.23	0.23	0.23
Sat Flow, veh/h	1774	1863	1474	1774	1275	483	1774	1863	1508	734	2846	90
Grp Volume(v), veh/h	36	213	33	91	0	375	105	493	75	313	0	288
Grp Sat Flow(s),veh/h/ln	1774	1863	1474	1774	0	1757	1774	1863	1508	1826	0	1844
Q Serve(g_s), s	1.7	8.7	1.5	4.4	0.0	17.5	3.8	21.8	3.2	13.9	0.0	12.4
Cycle Q Clear(g_c), s	1.7	8.7	1.5	4.4	0.0	17.5	3.8	21.8	3.2	13.9	0.0	12.4
Prop In Lane	1.00		1.00	1.00		0.27	1.00		1.00	0.40		0.05
Lane Grp Cap(c), veh/h	59	425	336	119	0	460	545	572	463	419	0	423
V/C Ratio(X)	0.61	0.50	0.10	0.77	0.00	0.82	0.19	0.86	0.16	0.75	0.00	0.68
Avail Cap(c_a), veh/h	305	640	506	305	0	604	610	640	518	628	0	634
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.6	29.4	26.6	40.1	0.0	30.2	22.3	28.5	22.1	31.3	0.0	30.7
Incr Delay (d2), s/veh	11.6	1.1	0.2	11.8	0.0	7.0	0.2	11.0	0.2	3.2	0.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	4.6	0.6	2.5	0.0	9.3	1.9	13.0	1.3	7.4	0.0	6.6
LnGrp Delay(d),s/veh	53.2	30.5	26.7	51.8	0.0	37.3	22.5	39.6	22.3	34.5	0.0	33.0
LnGrp LOS	D	C	C	D		D	C	D	C	C		C
Approach Vol, veh/h		282			466			673			601	
Approach Delay, s/veh		32.9			40.1			35.0			33.8	
Approach LOS		C			D			C			C	

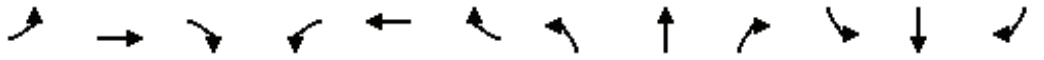
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	9.4	24.0		30.3	6.5	26.9		23.5
Change Period (Y+Rc), s	3.6	4.1		3.5	3.6	4.1		3.5
Max Green Setting (Gmax), s	15.0	30.0		30.0	15.0	30.0		30.0
Max Q Clear Time (g_c+I1), s	6.4	10.7		23.8	3.7	19.5		15.9
Green Ext Time (p_c), s	0.1	4.6		2.4	0.0	3.4		3.9

Intersection Summary	
HCM 2010 Ctrl Delay	35.5
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	200	995	18	37	581	107	10	330	58	95	99	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00	0.98		1.00	0.98
Flpb, ped/bikes	0.99	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.98			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		0.98	1.00
Satd. Flow (prot)	1746	3527		1763	3423			1860	1550		1815	1558
Flt Permitted	0.35	1.00		0.23	1.00			0.99	1.00		0.33	1.00
Satd. Flow (perm)	644	3527		419	3423			1845	1550		622	1558
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	208	1036	19	39	605	111	10	344	60	99	103	86
RTOR Reduction (vph)	0	1	0	0	7	0	0	0	21	0	0	64
Lane Group Flow (vph)	208	1054	0	39	709	0	0	354	39	0	202	22
Confl. Peds. (#/hr)	19		10	10		19	2		8	8		2
Confl. Bikes (#/hr)			5			8						2
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	73.5	73.5		73.5	73.5			28.5	28.5		28.5	28.5
Effective Green, g (s)	73.5	73.5		73.5	73.5			28.5	28.5		28.5	28.5
Actuated g/C Ratio	0.67	0.67		0.67	0.67			0.26	0.26		0.26	0.26
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	2.0		2.0	2.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	430	2356		279	2287			478	401		161	403
v/s Ratio Prot		0.30			0.21							
v/s Ratio Perm	c0.32			0.09				0.19	0.03		c0.32	0.01
v/c Ratio	0.48	0.45		0.14	0.31			0.74	0.10		1.25	0.06
Uniform Delay, d1	8.9	8.6		6.7	7.6			37.4	31.0		40.8	30.6
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	3.9	0.6		1.0	0.4			6.1	0.1		155.3	0.1
Delay (s)	12.8	9.3		7.7	8.0			43.5	31.1		196.0	30.7
Level of Service	B	A		A	A			D	C		F	C
Approach Delay (s)		9.8			8.0			41.7			146.6	
Approach LOS		A			A			D			F	

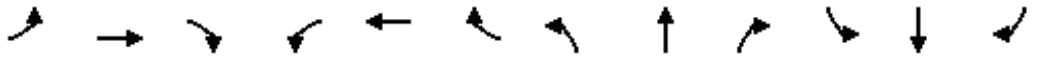
Intersection Summary			
HCM 2000 Control Delay	28.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	15	528	195	36	487	102	132	11	237	127	52	36
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	15	533	197	36	492	103	133	11	239	128	53	36
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	1	1	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	445	1009	371	332	1160	241	635	47	657	523	432	294
Arrive On Green	0.40	0.40	0.40	0.80	0.80	0.80	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	818	2522	928	722	2900	603	1139	110	1555	1125	1024	696
Grp Volume(v), veh/h	15	373	357	36	299	296	144	0	239	128	0	89
Grp Sat Flow(s),veh/h/ln	818	1770	1681	722	1770	1734	1250	0	1555	1125	0	1720
Q Serve(g_s), s	0.5	7.2	7.3	1.3	2.3	2.3	3.1	0.0	4.7	3.9	0.0	1.4
Cycle Q Clear(g_c), s	2.9	7.2	7.3	8.6	2.3	2.3	4.5	0.0	4.7	8.4	0.0	1.4
Prop In Lane	1.00		0.55	1.00		0.35	0.92		1.00	1.00		0.40
Lane Grp Cap(c), veh/h	445	708	672	332	708	694	682	0	657	523	0	726
V/C Ratio(X)	0.03	0.53	0.53	0.11	0.42	0.43	0.21	0.00	0.36	0.24	0.00	0.12
Avail Cap(c_a), veh/h	445	708	672	332	708	694	682	0	657	523	0	726
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.89	0.89	0.89	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.7	10.3	10.3	5.7	2.9	2.9	9.1	0.0	8.9	11.6	0.0	7.9
Incr Delay (d2), s/veh	0.1	2.8	3.0	0.6	1.6	1.7	0.7	0.0	1.6	1.1	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	4.0	3.9	0.3	1.2	1.2	1.3	0.0	2.3	1.4	0.0	0.7
LnGrp Delay(d),s/veh	9.9	13.1	13.3	6.3	4.6	4.6	9.9	0.0	10.4	12.8	0.0	8.3
LnGrp LOS	A	B	B	A	A	A	A		B	B		A
Approach Vol, veh/h		745			631			383			217	
Approach Delay, s/veh		13.1			4.7			10.2			10.9	
Approach LOS		B			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		23.0		22.0		23.0		22.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		19.0		18.0		19.0		18.0
Max Q Clear Time (g_c+I1), s		6.7		9.3		10.4		10.6
Green Ext Time (p_c), s		2.4		5.3		2.0		4.7

Intersection Summary	
HCM 2010 Ctrl Delay	9.6
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	215	677	0	0	372	372	253	1	104	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1900			
Adj Flow Rate, veh/h	226	713	0	0	392	392	266	1	109			
Adj No. of Lanes	1	2	0	0	2	0	1	1	0			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	354	1652	0	0	826	715	631	5	559			
Arrive On Green	0.15	0.15	0.00	0.00	0.47	0.47	0.36	0.36	0.36			
Sat Flow, veh/h	686	3632	0	0	1863	1531	1774	14	1571			
Grp Volume(v), veh/h	226	713	0	0	392	392	266	0	110			
Grp Sat Flow(s),veh/h/ln	686	1770	0	0	1770	1531	1774	0	1585			
Q Serve(g_s), s	12.7	8.2	0.0	0.0	6.8	8.3	5.1	0.0	2.2			
Cycle Q Clear(g_c), s	21.0	8.2	0.0	0.0	6.8	8.3	5.1	0.0	2.2			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		0.99			
Lane Grp Cap(c), veh/h	354	1652	0	0	826	715	631	0	564			
V/C Ratio(X)	0.64	0.43	0.00	0.00	0.47	0.55	0.42	0.00	0.20			
Avail Cap(c_a), veh/h	354	1652	0	0	826	715	631	0	564			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.90	0.90	0.00	0.00	0.97	0.97	1.00	0.00	1.00			
Uniform Delay (d), s/veh	24.1	13.6	0.0	0.0	8.2	8.6	11.0	0.0	10.0			
Incr Delay (d2), s/veh	3.4	0.2	0.0	0.0	0.4	0.9	2.1	0.0	0.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.1	4.1	0.0	0.0	3.4	3.5	2.8	0.0	1.1			
LnGrp Delay(d),s/veh	27.5	13.8	0.0	0.0	8.6	9.5	13.1	0.0	10.8			
LnGrp LOS	C	B			A	A	B		B			
Approach Vol, veh/h		939			784			376				
Approach Delay, s/veh		17.1			9.1			12.4				
Approach LOS		B			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		20.0		25.0				25.0
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		16.0		21.0				21.0
Max Q Clear Time (g_c+I1), s		7.1		23.0				10.3
Green Ext Time (p_c), s		1.0		0.0				7.8

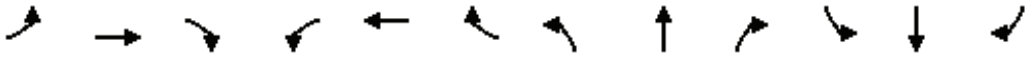
Intersection Summary	
HCM 2010 Ctrl Delay	13.2
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	47	684	50	56	649	83	54	41	69	49	17	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0		3.0	2.5			3.5			3.5	3.5
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.99		1.00	0.98			0.94			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.98			0.96	1.00
Satd. Flow (prot)	1770	3495		1770	3470			1729			1796	1558
Flt Permitted	0.95	1.00		0.95	1.00			0.85			0.46	1.00
Satd. Flow (perm)	1770	3495		1770	3470			1501			856	1558
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	49	712	52	58	676	86	56	43	72	51	18	24
RTOR Reduction (vph)	0	5	0	0	10	0	0	0	0	0	0	22
Lane Group Flow (vph)	49	759	0	58	752	0	0	171	0	0	69	2
Confl. Peds. (#/hr)			4			4						3
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1 3	3 6			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	4.0	41.0		39.0	76.0			9.5			9.5	9.5
Effective Green, g (s)	4.0	41.0		36.5	76.0			9.5			9.5	9.5
Actuated g/C Ratio	0.04	0.41		0.36	0.76			0.10			0.10	0.10
Clearance Time (s)	3.0	4.0						3.5			3.5	3.5
Vehicle Extension (s)	3.0	3.0						3.0			3.0	3.0
Lane Grp Cap (vph)	70	1432		646	2637			142			81	148
v/s Ratio Prot	0.03	c0.22		0.03	c0.22							
v/s Ratio Perm								c0.11			0.08	0.00
v/c Ratio	0.70	0.53		0.09	0.29			1.20			0.85	0.02
Uniform Delay, d1	47.4	22.2		20.8	3.7			45.2			44.6	41.0
Progression Factor	1.00	1.00		0.55	0.18			1.00			1.00	1.00
Incremental Delay, d2	26.3	1.4		0.1	0.1			140.7			53.8	0.0
Delay (s)	73.7	23.6		11.6	0.7			186.0			98.3	41.1
Level of Service	E	C		B	A			F			F	D
Approach Delay (s)		26.7			1.5			186.0			83.5	
Approach LOS		C			A			F			F	

Intersection Summary			
HCM 2000 Control Delay	32.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	214	840	0	0	707	236	147	52	516	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Lane Util. Factor	1.00	0.95			0.95		1.00	0.95	0.95			
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Frt	1.00	1.00			0.96		1.00	0.88	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	1770	3539			3381		1770	1552	1504			
Flt Permitted	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	1770	3539			3381		1770	1552	1504			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	223	875	0	0	736	246	153	54	538	0	0	0
RTOR Reduction (vph)	0	0	0	0	28	0	0	165	243	0	0	0
Lane Group Flow (vph)	223	875	0	0	954	0	153	136	48	0	0	0
Confl. Peds. (#/hr)	10		5	5		10						
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	17.7	82.5			61.8		10.0	10.0	10.0			
Effective Green, g (s)	17.7	82.5			61.8		10.0	10.0	10.0			
Actuated g/C Ratio	0.18	0.82			0.62		0.10	0.10	0.10			
Clearance Time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	313	2919			2089		177	155	150			
v/s Ratio Prot	c0.13	0.25			c0.28			c0.09				
v/s Ratio Perm							0.09		0.03			
v/c Ratio	0.71	0.30			0.46		0.86	0.88	0.32			
Uniform Delay, d1	38.8	2.0			10.2		44.3	44.4	41.8			
Progression Factor	0.62	2.09			1.00		1.00	1.00	1.00			
Incremental Delay, d2	6.9	0.2			0.7		32.7	39.0	1.2			
Delay (s)	30.8	4.5			10.9		77.1	83.4	43.1			
Level of Service	C	A			B		E	F	D			
Approach Delay (s)		9.8			10.9			66.4			0.0	
Approach LOS		A			B			E			A	

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	308	309	139	64	285	68	143	866	36	57	519	122
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.92	1.00		0.94	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	324	325	78	67	300	53	151	912	35	60	546	111
Adj No. of Lanes	1	1	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	187	617	496	0	593	103	171	1726	66	132	1389	281
Arrive On Green	0.03	0.11	0.11	0.00	0.20	0.20	0.19	1.00	1.00	0.07	0.48	0.48
Sat Flow, veh/h	1774	1863	1499	0	2971	515	1774	3466	133	1774	2918	591
Grp Volume(v), veh/h	324	325	78	0	176	177	151	466	481	60	330	327
Grp Sat Flow(s),veh/h/ln	1774	1863	1499	0	1770	1716	1774	1770	1830	1774	1770	1739
Q Serve(g_s), s	12.0	18.8	5.4	0.0	10.1	10.5	9.4	0.3	0.3	3.7	13.7	13.8
Cycle Q Clear(g_c), s	12.0	18.8	5.4	0.0	10.1	10.5	9.4	0.3	0.3	3.7	13.7	13.8
Prop In Lane	1.00		1.00	0.00		0.30	1.00		0.07	1.00		0.34
Lane Grp Cap(c), veh/h	187	617	496	0	353	342	171	881	911	132	842	828
V/C Ratio(X)	1.74	0.53	0.16	0.00	0.50	0.52	0.88	0.53	0.53	0.45	0.39	0.39
Avail Cap(c_a), veh/h	187	617	496	0	435	421	171	881	911	171	842	828
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.85	0.00	1.00	1.00	0.71	0.71	0.71	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.0	42.3	36.4	0.0	40.6	40.7	45.4	0.1	0.1	50.5	19.2	19.3
Incr Delay (d2), s/veh	349.0	0.4	0.0	0.0	0.4	0.4	28.5	1.6	1.6	0.9	1.4	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.0	9.8	2.2	0.0	5.0	5.0	6.0	0.5	0.5	1.8	7.0	7.0
LnGrp Delay(d),s/veh	404.1	42.7	36.4	0.0	41.0	41.2	73.9	1.7	1.7	51.4	20.6	20.7
LnGrp LOS	F	D	D		D	D	E	A	A	D	C	C
Approach Vol, veh/h		727			353			1098			717	
Approach Delay, s/veh		203.1			41.1			11.6			23.2	
Approach LOS		F			D			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.5	60.8	0.0	41.7	14.0	58.3	15.0	26.7
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	11.0	49.0	12.0	28.0	11.0	49.0	12.0	28.0
Max Q Clear Time (g_c+I1), s	5.7	2.3	0.0	20.8	11.4	15.8	14.0	12.5
Green Ext Time (p_c), s	0.0	22.6	0.0	1.9	0.0	18.9	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	66.2
HCM 2010 LOS	E

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	183	137	9	49	210	101	16	179	44	87	80	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.99	1.00
Satd. Flow (prot)	1770	3506		1770	3539	1583	1530	2962		1618	1694	1503
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.99	1.00
Satd. Flow (perm)	1770	3506		1770	3539	1583	1530	2962		1618	1694	1503
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	201	151	10	54	231	111	18	197	48	96	88	140
RTOR Reduction (vph)	0	4	0	0	0	89	0	21	0	0	0	117
Lane Group Flow (vph)	201	157	0	54	231	22	18	224	0	86	98	23
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	18%	18%	18%	6%	6%	6%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases						2						8
Actuated Green, G (s)	12.7	21.6		4.2	13.1	13.1	11.4	11.4		10.5	10.5	10.5
Effective Green, g (s)	12.7	21.6		4.2	13.1	13.1	11.4	11.4		10.5	10.5	10.5
Actuated g/C Ratio	0.19	0.33		0.06	0.20	0.20	0.17	0.17		0.16	0.16	0.16
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Vehicle Extension (s)	2.0	4.0		2.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Grp Cap (vph)	344	1161		114	711	318	267	517		260	272	242
v/s Ratio Prot	c0.11	0.04		0.03	c0.07		0.01	c0.08		0.05	c0.06	
v/s Ratio Perm						0.01						0.01
v/c Ratio	0.58	0.14		0.47	0.32	0.07	0.07	0.43		0.33	0.36	0.09
Uniform Delay, d1	23.9	15.3		29.4	22.3	21.1	22.5	24.0		24.2	24.4	23.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.6	0.1		1.1	0.4	0.1	0.1	0.8		1.0	1.1	0.2
Delay (s)	25.5	15.3		30.6	22.6	21.2	22.6	24.8		25.3	25.5	23.5
Level of Service	C	B		C	C	C	C	C		C	C	C
Approach Delay (s)		21.0			23.3			24.7			24.6	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	23.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	65.2	Sum of lost time (s)	17.5
Intersection Capacity Utilization	41.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	760	42	247	607	0	0	0	0	294	2	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			3.0						2.5	2.5
Lane Util. Factor		0.95			0.91						1.00	1.00
Frpb, ped/bikes		1.00			1.00						1.00	1.00
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.99			1.00						1.00	0.85
Flt Protected		1.00			0.99						0.95	1.00
Satd. Flow (prot)		3504			5013						1775	1583
Flt Permitted		1.00			0.66						0.95	1.00
Satd. Flow (perm)		3504			3378						1775	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	792	44	257	632	0	0	0	0	306	2	189
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	833	0	0	889	0	0	0	0	0	308	189
Confl. Peds. (#/hr)			6			8						
Turn Type		NA		Prot	NA					Split	NA	Perm
Protected Phases		2 4		1	1 6					3	3	
Permitted Phases												3
Actuated Green, G (s)		54.5			56.0						17.5	17.5
Effective Green, g (s)		54.5			56.0						17.5	17.5
Actuated g/C Ratio		0.54			0.56						0.18	0.18
Clearance Time (s)											2.5	2.5
Vehicle Extension (s)											3.0	3.0
Lane Grp Cap (vph)		1909			2202						310	277
v/s Ratio Prot		c0.24			c0.08						c0.17	
v/s Ratio Perm					0.15							0.12
v/c Ratio		0.44			0.40						0.99	0.68
Uniform Delay, d1		13.6			12.5						41.2	38.6
Progression Factor		0.15			0.97						1.00	1.00
Incremental Delay, d2		0.1			0.1						49.1	6.8
Delay (s)		2.1			12.2						90.3	45.4
Level of Service		A			B						F	D
Approach Delay (s)		2.1			12.2			0.0			73.2	
Approach LOS		A			B			A			E	

Intersection Summary			
HCM 2000 Control Delay	22.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Appendix E-8
2040 No Project Conditions
Intersection LOS Calculations

FEHR PEERS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	500	180	180	470	0	0	0	0	140	1070	120
Number	3	8	18	7	4	14				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00				1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1900	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	538	167	194	505	0				151	1151	117
Adj No. of Lanes	0	2	1	0	2	0				0	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93				0.93	0.93	0.93
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1445	628	286	781	0				176	1404	149
Arrive On Green	0.00	0.41	0.41	0.41	0.41	0.00				0.47	0.47	0.47
Sat Flow, veh/h	0	3632	1538	456	1997	0				371	2957	315
Grp Volume(v), veh/h	0	538	167	290	409	0				750	0	669
Grp Sat Flow(s),veh/h/ln	0	1770	1538	758	1610	0				1844	0	1798
Q Serve(g_s), s	0.0	6.4	4.3	16.3	12.1	0.0				21.6	0.0	18.7
Cycle Q Clear(g_c), s	0.0	6.4	4.3	22.7	12.1	0.0				21.6	0.0	18.7
Prop In Lane	0.00		1.00	0.67		0.00				0.20		0.17
Lane Grp Cap(c), veh/h	0	1445	628	409	658	0				876	0	854
V/C Ratio(X)	0.00	0.37	0.27	0.71	0.62	0.00				0.86	0.00	0.78
Avail Cap(c_a), veh/h	0	1445	628	409	658	0				876	0	854
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.93	0.93	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	12.4	11.8	18.8	14.1	0.0				13.9	0.0	13.2
Incr Delay (d2), s/veh	0.0	0.1	0.1	4.5	1.3	0.0				10.5	0.0	7.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.1	1.8	5.1	5.6	0.0				13.4	0.0	10.8
LnGrp Delay(d),s/veh	0.0	12.4	11.9	23.3	15.3	0.0				24.5	0.0	20.3
LnGrp LOS		B	B	C	B					C		C
Approach Vol, veh/h		705			699						1419	
Approach Delay, s/veh		12.3			18.6						22.5	
Approach LOS		B			B						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		32.0		28.0				28.0
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		28.5		24.5				24.5
Max Q Clear Time (g_c+I1), s		23.6		24.7				8.4
Green Ext Time (p_c), s		2.9		0.0				6.2

Intersection Summary	
HCM 2010 Ctrl Delay	19.0
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	590	160	130	570	0	0	0	0	170	720	130
Number	3	8	18	7	4	14				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00				1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1900	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	590	135	130	570	0				170	720	119
Adj No. of Lanes	0	2	1	0	2	0				0	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1344	586	204	871	0				292	1297	225
Arrive On Green	0.00	0.38	0.38	0.38	0.38	0.00				0.50	0.50	0.50
Sat Flow, veh/h	0	3632	1543	313	2378	0				580	2576	446
Grp Volume(v), veh/h	0	590	135	316	384	0				537	0	472
Grp Sat Flow(s),veh/h/ln	0	1770	1543	996	1610	0				1834	0	1768
Q Serve(g_s), s	0.0	7.4	3.6	10.8	11.6	0.0				12.3	0.0	10.8
Cycle Q Clear(g_c), s	0.0	7.4	3.6	18.2	11.6	0.0				12.3	0.0	10.8
Prop In Lane	0.00		1.00	0.41		0.00				0.32		0.25
Lane Grp Cap(c), veh/h	0	1344	586	463	612	0				923	0	890
V/C Ratio(X)	0.00	0.44	0.23	0.68	0.63	0.00				0.58	0.00	0.53
Avail Cap(c_a), veh/h	0	1445	630	495	658	0				923	0	890
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.95	0.95	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	13.8	12.6	17.4	15.2	0.0				10.5	0.0	10.1
Incr Delay (d2), s/veh	0.0	0.1	0.1	2.6	1.1	0.0				2.7	0.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.6	1.5	5.2	5.3	0.0				6.8	0.0	5.8
LnGrp Delay(d),s/veh	0.0	13.9	12.7	20.1	16.2	0.0				13.1	0.0	12.3
LnGrp LOS		B	B	C	B					B		B
Approach Vol, veh/h		725			700						1009	
Approach Delay, s/veh		13.7			18.0						12.8	
Approach LOS		B			B						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		33.7		26.3				26.3
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		28.5		24.5				24.5
Max Q Clear Time (g_c+I1), s		14.3		20.2				9.4
Green Ext Time (p_c), s		4.0		2.5				6.0

Intersection Summary	
HCM 2010 Ctrl Delay	14.5
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	180	460	0	0	490	170	180	780	170	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	0.99		1.00	1.00		0.94	1.00		0.97			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1863	1900	1863	1900			
Adj Flow Rate, veh/h	205	523	0	0	557	148	205	886	149			
Adj No. of Lanes	0	2	0	0	2	1	0	3	0			
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	367	938	0	0	1732	730	300	1387	239			
Arrive On Green	0.49	0.49	0.00	0.00	0.49	0.49	0.37	0.37	0.37			
Sat Flow, veh/h	497	2001	0	0	3632	1491	816	3774	651			
Grp Volume(v), veh/h	301	427	0	0	557	148	458	387	395			
Grp Sat Flow(s),veh/h/ln	803	1610	0	0	1770	1491	1822	1695	1724			
Q Serve(g_s), s	11.8	9.0	0.0	0.0	4.7	2.8	10.4	9.2	9.2			
Cycle Q Clear(g_c), s	16.5	9.0	0.0	0.0	4.7	2.8	10.4	9.2	9.2			
Prop In Lane	0.68		0.00	0.00		1.00	0.45		0.38			
Lane Grp Cap(c), veh/h	517	788	0	0	1732	730	669	623	633			
V/C Ratio(X)	0.58	0.54	0.00	0.00	0.32	0.20	0.68	0.62	0.62			
Avail Cap(c_a), veh/h	630	989	0	0	2173	915	1118	1041	1058			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	11.4	8.7	0.0	0.0	7.6	7.1	13.1	12.7	12.7			
Incr Delay (d2), s/veh	0.4	0.2	0.0	0.0	0.0	0.1	0.5	0.4	0.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.5	4.0	0.0	0.0	2.3	1.1	5.3	4.3	4.3			
LnGrp Delay(d),s/veh	11.7	8.9	0.0	0.0	7.6	7.1	13.5	13.1	13.1			
LnGrp LOS	B	A			A	A	B	B	B			
Approach Vol, veh/h		728			705			1240				
Approach Delay, s/veh		10.1			7.5			13.2				
Approach LOS		B			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		21.5		27.4				27.4
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		30.0		30.0				30.0
Max Q Clear Time (g_c+I1), s		12.4		6.7				18.5
Green Ext Time (p_c), s		5.2		7.5				5.4

Intersection Summary	
HCM 2010 Ctrl Delay	10.9
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	200	560	0	0	470	220	230	1390	200	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	0.99		1.00	1.00		0.93	1.00		0.98			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1863	1900	1863	1900			
Adj Flow Rate, veh/h	204	571	0	0	480	183	235	1418	164			
Adj No. of Lanes	0	2	0	0	2	1	0	3	0			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	315	882	0	0	1575	654	283	1827	217			
Arrive On Green	0.45	0.45	0.00	0.00	0.45	0.45	0.44	0.44	0.44			
Sat Flow, veh/h	492	2066	0	0	3632	1470	644	4151	493			
Grp Volume(v), veh/h	324	451	0	0	480	183	668	562	586			
Grp Sat Flow(s),veh/h/ln	862	1610	0	0	1770	1470	1831	1695	1762			
Q Serve(g_s), s	16.2	13.2	0.0	0.0	5.3	4.8	19.6	17.0	17.0			
Cycle Q Clear(g_c), s	21.5	13.2	0.0	0.0	5.3	4.8	19.6	17.0	17.0			
Prop In Lane	0.63		0.00	0.00		1.00	0.35		0.28			
Lane Grp Cap(c), veh/h	480	717	0	0	1575	654	806	746	775			
V/C Ratio(X)	0.68	0.63	0.00	0.00	0.30	0.28	0.83	0.75	0.76			
Avail Cap(c_a), veh/h	525	792	0	0	1741	723	900	834	867			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	16.4	13.0	0.0	0.0	10.9	10.7	15.1	14.3	14.3			
Incr Delay (d2), s/veh	2.3	0.9	0.0	0.0	0.0	0.1	5.3	2.9	2.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.2	5.9	0.0	0.0	2.6	1.9	11.0	8.4	8.8			
LnGrp Delay(d),s/veh	18.6	13.9	0.0	0.0	10.9	10.8	20.4	17.2	17.2			
LnGrp LOS	B	B			B	B	C	B	B			
Approach Vol, veh/h		775			663			1817				
Approach Delay, s/veh		15.9			10.9			18.4				
Approach LOS		B			B			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		30.3		30.6				30.6
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		30.0		30.0				30.0
Max Q Clear Time (g_c+I1), s		21.6		7.3				23.5
Green Ext Time (p_c), s		5.2		7.3				3.6

Intersection Summary	
HCM 2010 Ctrl Delay	16.2
HCM 2010 LOS	B

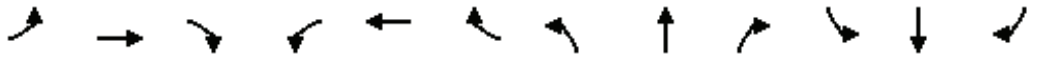
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	370	180	40	260	0	40	0	20	250	180	40
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1827	1900	1827	1827	0	1827	0	1827	1827	1827	1900
Adj Flow Rate, veh/h	0	385	142	42	271	0	42	0	0	160	328	33
Adj No. of Lanes	0	2	0	1	2	0	1	0	1	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	4	4	4	4	0	4	0	4	4	4	4
Cap, veh/h	0	876	319	183	1935	0	0	0	0	324	608	61
Arrive On Green	0.00	0.35	0.35	0.11	0.56	0.00	0.00	0.00	0.00	0.19	0.19	0.19
Sat Flow, veh/h	0	2576	903	1740	3563	0		0		1740	3270	327
Grp Volume(v), veh/h	0	267	260	42	271	0		0.0		160	182	179
Grp Sat Flow(s),veh/h/ln	0	1736	1652	1740	1736	0				1740	1827	1769
Q Serve(g_s), s	0.0	4.1	4.2	0.8	1.3	0.0				2.9	3.2	3.2
Cycle Q Clear(g_c), s	0.0	4.1	4.2	0.8	1.3	0.0				2.9	3.2	3.2
Prop In Lane	0.00		0.55	1.00		0.00				1.00		0.18
Lane Grp Cap(c), veh/h	0	612	582	183	1935	0				324	340	329
V/C Ratio(X)	0.00	0.44	0.45	0.23	0.14	0.00				0.49	0.54	0.54
Avail Cap(c_a), veh/h	0	1582	1506	1289	3165	0				1289	1353	1311
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	8.7	8.7	14.4	3.7	0.0				12.8	12.9	12.9
Incr Delay (d2), s/veh	0.0	0.6	0.6	0.2	0.0	0.0				0.4	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.0	2.0	0.4	0.6	0.0				1.4	1.6	1.6
LnGrp Delay(d),s/veh	0.0	9.2	9.3	14.6	3.8	0.0				13.2	13.4	13.5
LnGrp LOS		A	A	B	A					B	B	B
Approach Vol, veh/h		527			313						521	
Approach Delay, s/veh		9.3			5.2						13.4	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		24.6			7.2	17.4		10.5
Change Period (Y+Rc), s		5.0			3.5	5.0		4.0
Max Green Setting (Gmax), s		32.0			26.0	32.0		26.0
Max Q Clear Time (g_c+I1), s		3.3			2.8	6.2		5.2
Green Ext Time (p_c), s		5.8			0.0	5.7		1.4

Intersection Summary	
HCM 2010 Ctrl Delay	9.9
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	330	140	30	230	0	60	0	30	350	90	40
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1845	1900	1845	1845	0	1845	0	1845	1845	1845	1900
Adj Flow Rate, veh/h	0	371	108	34	258	0	67	0	12	393	101	35
Adj No. of Lanes	0	2	0	1	2	0	1	0	1	2	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	3	3	3	3	0	3	0	3	3	3	3
Cap, veh/h	0	959	275	156	1921	0	0	0	0	672	251	87
Arrive On Green	0.00	0.36	0.36	0.09	0.55	0.00	0.00	0.00	0.00	0.19	0.19	0.19
Sat Flow, veh/h	0	2770	769	1757	3597	0		0		3514	1310	454
Grp Volume(v), veh/h	0	241	238	34	258	0		0.0		393	0	136
Grp Sat Flow(s),veh/h/ln	0	1752	1694	1757	1752	0				1757	0	1765
Q Serve(g_s), s	0.0	3.5	3.6	0.6	1.2	0.0				3.5	0.0	2.3
Cycle Q Clear(g_c), s	0.0	3.5	3.6	0.6	1.2	0.0				3.5	0.0	2.3
Prop In Lane	0.00		0.45	1.00		0.00				1.00		0.26
Lane Grp Cap(c), veh/h	0	628	607	156	1921	0				672	0	338
V/C Ratio(X)	0.00	0.38	0.39	0.22	0.13	0.00				0.58	0.00	0.40
Avail Cap(c_a), veh/h	0	1624	1570	1323	3247	0				2645	0	1328
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	8.2	8.3	14.6	3.8	0.0				12.7	0.0	12.2
Incr Delay (d2), s/veh	0.0	0.4	0.5	0.3	0.0	0.0				0.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.7	1.7	0.3	0.6	0.0				1.7	0.0	1.2
LnGrp Delay(d),s/veh	0.0	8.7	8.7	14.9	3.8	0.0				13.0	0.0	12.5
LnGrp LOS		A	A	B	A					B		B
Approach Vol, veh/h		479			292						529	
Approach Delay, s/veh		8.7			5.1						12.9	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		23.9			6.6	17.4		10.6
Change Period (Y+Rc), s		5.0			3.5	5.0		4.0
Max Green Setting (Gmax), s		32.0			26.0	32.0		26.0
Max Q Clear Time (g_c+I1), s		3.2			2.6	5.6		5.5
Green Ext Time (p_c), s		5.3			0.0	5.2		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	9.6
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	200	440	0	0	170	800	130	0	230	0	0	0
Number	1	6	16	5	2	12	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1845	0	0	1845	1900	1845	0	1845			
Adj Flow Rate, veh/h	220	484	0	0	187	456	143	0	35			
Adj No. of Lanes	0	2	0	0	3	0	1	0	1			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	3	3	0	0	3	3	3	0	3			
Cap, veh/h	454	1109	0	0	2070	946	317	0	283			
Arrive On Green	0.62	0.62	0.00	0.00	0.62	0.62	0.18	0.00	0.18			
Sat Flow, veh/h	504	1883	0	0	3523	1535	1757	0	1568			
Grp Volume(v), veh/h	290	414	0	0	187	456	143	0	35			
Grp Sat Flow(s),veh/h/ln	708	1595	0	0	1679	1535	1757	0	1568			
Q Serve(g_s), s	9.5	6.0	0.0	0.0	1.0	7.2	3.2	0.0	0.8			
Cycle Q Clear(g_c), s	16.7	6.0	0.0	0.0	1.0	7.2	3.2	0.0	0.8			
Prop In Lane	0.76		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	579	983	0	0	2070	946	317	0	283			
V/C Ratio(X)	0.50	0.42	0.00	0.00	0.09	0.48	0.45	0.00	0.12			
Avail Cap(c_a), veh/h	654	1115	0	0	2499	1142	1109	0	990			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	8.1	4.4	0.0	0.0	3.5	4.6	16.2	0.0	15.2			
Incr Delay (d2), s/veh	1.0	0.4	0.0	0.0	0.0	0.5	0.4	0.0	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.8	2.6	0.0	0.0	0.4	3.1	1.6	0.0	0.4			
LnGrp Delay(d),s/veh	9.1	4.8	0.0	0.0	3.5	5.2	16.6	0.0	15.3			
LnGrp LOS	A	A			A	A	B		B			
Approach Vol, veh/h		704			643			178				
Approach Delay, s/veh		6.6			4.7			16.3				
Approach LOS		A			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		31.3		13.0		31.3		
Change Period (Y+Rc), s		4.0		5.0		4.0		
Max Green Setting (Gmax), s		33.0		28.0		31.0		
Max Q Clear Time (g_c+I1), s		9.2		5.2		18.7		
Green Ext Time (p_c), s		13.9		0.1		8.6		

Intersection Summary	
HCM 2010 Ctrl Delay	6.9
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	710	0	0	150	350	110	0	100	0	0	0
Number	1	6	16	5	2	12	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1863	0	0	1863	1900	1863	0	1863			
Adj Flow Rate, veh/h	0	835	0	0	176	-41	129	0	-115			
Adj No. of Lanes	0	2	0	0	3	0	1	0	1			
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85			
Percent Heavy Veh, %	0	2	0	0	2	2	2	0	2			
Cap, veh/h	0	1764	0	0	3677	0	419	0	374			
Arrive On Green	0.00	0.50	0.00	0.00	0.50	0.00	0.24	0.00	0.00			
Sat Flow, veh/h	0	3725	0	0	5421	0	1774	0	1583			
Grp Volume(v), veh/h	0	835	0	0	135	0	129	0	-115			
Grp Sat Flow(s),veh/h/ln	0	1770	0	0	1695	0	1774	0	1583			
Q Serve(g_s), s	0.0	5.2	0.0	0.0	0.0	0.0	2.0	0.0	0.0			
Cycle Q Clear(g_c), s	0.0	5.2	0.0	0.0	0.0	0.0	2.0	0.0	0.0			
Prop In Lane	0.00		0.00	0.00		0.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	1764	0	0	0	0	419	0	374			
V/C Ratio(X)	0.00	0.47	0.00	0.00	0.00	0.00	0.31	0.00	-0.31			
Avail Cap(c_a), veh/h	0	3238	0	0	0	0	1466	0	1308			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	0.0	5.6	0.0	0.0	0.0	0.0	10.7	0.0	0.0			
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	0.0	0.0	0.2	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	2.5	0.0	0.0	0.0	0.0	1.0	0.0	0.0			
LnGrp Delay(d),s/veh	0.0	5.9	0.0	0.0	0.0	0.0	10.8	0.0	0.0			
LnGrp LOS		A					B					
Approach Vol, veh/h		835			135			14				
Approach Delay, s/veh		5.9			0.0			99.7				
Approach LOS		A			A			F				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		20.9		13.0		20.9		
Change Period (Y+Rc), s		4.0		5.0		4.0		
Max Green Setting (Gmax), s		33.0		28.0		31.0		
Max Q Clear Time (g_c+I1), s		2.0		4.0		7.2		
Green Ext Time (p_c), s		10.8		0.0		9.6		

Intersection Summary	
HCM 2010 Ctrl Delay	6.4
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	110	280	280	80	700	170	130	430	100	180	390	140
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	117	298	84	85	745	162	138	457	17	191	415	128
Adj No. of Lanes	1	2	1	1	2	0	0	2	1	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	144	1283	564	107	986	214	157	551	308	216	493	159
Arrive On Green	0.08	0.36	0.36	0.12	0.68	0.68	0.20	0.20	0.20	0.24	0.24	0.24
Sat Flow, veh/h	1774	3539	1557	1774	2885	627	795	2797	1566	887	2022	651
Grp Volume(v), veh/h	117	298	84	85	457	450	316	279	17	392	0	342
Grp Sat Flow(s),veh/h/ln	1774	1770	1557	1774	1770	1743	1823	1770	1566	1818	0	1741
Q Serve(g_s), s	7.1	6.4	4.0	5.1	18.6	18.6	18.6	16.5	1.0	22.8	0.0	20.3
Cycle Q Clear(g_c), s	7.1	6.4	4.0	5.1	18.6	18.6	18.6	16.5	1.0	22.8	0.0	20.3
Prop In Lane	1.00		1.00	1.00		0.36	0.44		1.00	0.49		0.37
Lane Grp Cap(c), veh/h	144	1283	564	107	605	596	359	348	308	444	0	425
V/C Ratio(X)	0.82	0.23	0.15	0.79	0.76	0.76	0.88	0.80	0.06	0.88	0.00	0.81
Avail Cap(c_a), veh/h	169	1283	564	282	605	596	406	394	349	504	0	483
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.77	0.77	0.77	0.91	0.91	0.91	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	49.7	24.4	23.6	47.7	14.4	14.4	42.9	42.1	35.9	40.1	0.0	39.1
Incr Delay (d2), s/veh	15.5	0.3	0.4	4.5	7.8	8.0	16.8	8.7	0.0	14.2	0.0	7.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	3.2	1.8	2.6	9.9	9.8	11.0	8.9	0.4	13.2	0.0	10.7
LnGrp Delay(d),s/veh	65.3	24.7	24.1	52.2	22.2	22.3	59.8	50.8	35.9	54.3	0.0	46.6
LnGrp LOS	E	C	C	D	C	C	E	D	D	D		D
Approach Vol, veh/h		499			992			612			734	
Approach Delay, s/veh		34.1			24.8			55.0			50.7	
Approach LOS		C			C			E			D	

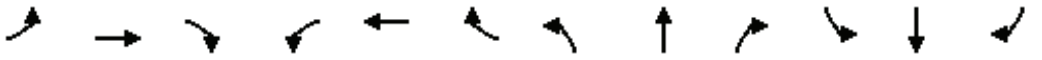
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.1	44.4		30.3	12.4	42.1		25.2
Change Period (Y+Rc), s	3.5	4.5		3.5	3.5	4.5		3.5
Max Green Setting (Gmax), s	17.5	22.5		30.5	10.5	29.5		24.5
Max Q Clear Time (g_c+I1), s	7.1	8.4		24.8	9.1	20.6		20.6
Green Ext Time (p_c), s	0.1	8.4		1.7	0.0	6.0		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	39.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	120	530	160	120	250	150	170	590	180	180	610	80
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	128	564	-44	128	266	141	181	628	102	191	649	64
Adj No. of Lanes	1	2	1	1	2	0	0	2	1	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	155	986	441	155	626	321	171	629	349	202	725	74
Arrive On Green	0.09	0.28	0.00	0.15	0.46	0.46	0.22	0.22	0.22	0.28	0.28	0.28
Sat Flow, veh/h	1774	3539	1583	1774	2249	1152	768	2826	1566	734	2634	270
Grp Volume(v), veh/h	128	564	-44	128	207	200	430	379	102	475	0	429
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1631	1824	1770	1566	1826	0	1812
Q Serve(g_s), s	7.8	15.0	0.0	7.7	8.6	9.1	24.5	23.3	6.0	28.0	0.0	24.7
Cycle Q Clear(g_c), s	7.8	15.0	0.0	7.7	8.6	9.1	24.5	23.3	6.0	28.0	0.0	24.7
Prop In Lane	1.00		1.00	1.00		0.71	0.42		1.00	0.40		0.15
Lane Grp Cap(c), veh/h	155	986	441	155	492	454	406	394	349	502	0	499
V/C Ratio(X)	0.83	0.57	-0.10	0.83	0.42	0.44	1.06	0.96	0.29	0.95	0.00	0.86
Avail Cap(c_a), veh/h	169	986	441	282	492	454	406	394	349	506	0	502
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.00	0.99	0.99	0.99	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	49.4	34.1	0.0	46.2	23.5	23.7	42.8	42.3	35.5	39.1	0.0	37.9
Incr Delay (d2), s/veh	21.2	2.2	0.0	4.2	2.6	3.1	60.7	35.3	0.2	26.5	0.0	13.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	7.7	0.0	4.0	4.5	4.4	19.1	15.2	2.6	17.8	0.0	14.2
LnGrp Delay(d),s/veh	70.5	36.2	0.0	50.4	26.2	26.7	103.4	77.5	35.7	65.5	0.0	51.3
LnGrp LOS	E	D		D	C	C	F	E	D	E		D
Approach Vol, veh/h		648			535			911			904	
Approach Delay, s/veh		45.5			32.2			85.1			58.8	
Approach LOS		D			C			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.1	35.1		33.8	13.1	35.1		28.0
Change Period (Y+Rc), s	3.5	4.5		3.5	3.5	4.5		3.5
Max Green Setting (Gmax), s	17.5	22.5		30.5	10.5	29.5		24.5
Max Q Clear Time (g_c+I1), s	9.7	17.0		30.0	9.8	11.1		26.5
Green Ext Time (p_c), s	0.1	3.3		0.2	0.0	7.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	59.1
HCM 2010 LOS	E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	120	200	0	0	0	50	140	150	0	370	10
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900				1863	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	0	135	32				56	157	77	0	416	3
Adj No. of Lanes	1	2	0				1	1	1	0	2	1
Peak Hour Factor	0.89	0.89	0.89				0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2				2	2	2	0	2	2
Cap, veh/h	202	326	75				93	1004	854	0	1109	496
Arrive On Green	0.00	0.11	0.11				0.05	0.54	0.54	0.00	0.31	0.31
Sat Flow, veh/h	1774	2857	659				1774	1863	1583	0	3632	1583
Grp Volume(v), veh/h	0	82	85				56	157	77	0	416	3
Grp Sat Flow(s),veh/h/ln	1774	1770	1746				1774	1863	1583	0	1770	1583
Q Serve(g_s), s	0.0	1.0	1.0				0.7	1.0	0.5	0.0	2.1	0.0
Cycle Q Clear(g_c), s	0.0	1.0	1.0				0.7	1.0	0.5	0.0	2.1	0.0
Prop In Lane	1.00		0.38				1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	202	202	199				93	1004	854	0	1109	496
V/C Ratio(X)	0.00	0.41	0.43				0.60	0.16	0.09	0.00	0.38	0.01
Avail Cap(c_a), veh/h	2385	2379	2348				385	2100	1785	0	2609	1167
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00				1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	9.5	9.5				10.7	2.7	2.6	0.0	6.2	5.4
Incr Delay (d2), s/veh	0.0	1.3	1.4				6.2	0.1	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.6	0.6				0.5	0.5	0.2	0.0	1.0	0.0
LnGrp Delay(d),s/veh	0.0	10.8	11.0				16.9	2.7	2.6	0.0	6.4	5.5
LnGrp LOS		B	B				B	A	A		A	A
Approach Vol, veh/h		167						290			419	
Approach Delay, s/veh		10.9						5.4			6.4	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		16.4		6.6	5.2	11.2		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		26.0		31.0	5.0	17.0		
Max Q Clear Time (g_c+I1), s		3.0		3.0	2.7	4.1		
Green Ext Time (p_c), s		3.9		0.9	0.0	3.1		

Intersection Summary	
HCM 2010 Ctrl Delay	6.9
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	140	90	0	0	0	60	400	390	0	400	30
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900				1863	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	24	165	-96				71	471	363	0	471	27
Adj No. of Lanes	1	2	0				1	1	1	0	2	1
Peak Hour Factor	0.85	0.85	0.85				0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2				2	2	2	0	2	2
Cap, veh/h	133	266	0				109	1151	976	0	1424	636
Arrive On Green	0.08	0.08	0.00				0.06	0.62	0.62	0.00	0.40	0.40
Sat Flow, veh/h	1774	3632	0				1774	1863	1580	0	3632	1581
Grp Volume(v), veh/h	24	69	0				71	471	363	0	471	27
Grp Sat Flow(s),veh/h/ln	1774	1770	0				1774	1863	1580	0	1770	1581
Q Serve(g_s), s	0.3	0.5	0.0				1.0	3.4	3.0	0.0	2.4	0.3
Cycle Q Clear(g_c), s	0.3	0.5	0.0				1.0	3.4	3.0	0.0	2.4	0.3
Prop In Lane	1.00		0.00				1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	133	266	0				109	1151	976	0	1424	636
V/C Ratio(X)	0.18	0.26	0.00				0.65	0.41	0.37	0.00	0.33	0.04
Avail Cap(c_a), veh/h	2111	4212	0				341	1859	1577	0	2310	1032
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00				1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	11.3	11.4	0.0				11.9	2.5	2.5	0.0	5.4	4.7
Incr Delay (d2), s/veh	0.6	0.5	0.0				6.3	0.2	0.2	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.2	0.0				0.7	1.8	1.3	0.0	1.1	0.1
LnGrp Delay(d),s/veh	11.9	11.9	0.0				18.3	2.8	2.7	0.0	5.5	4.8
LnGrp LOS	B	B					B	A	A		A	A
Approach Vol, veh/h		93						905			498	
Approach Delay, s/veh		11.9						4.0			5.5	
Approach LOS		B						A			A	

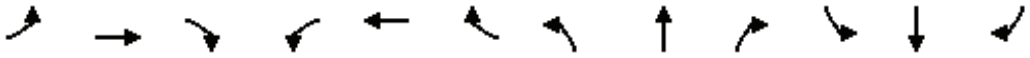
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		20.1		6.0	5.6	14.5		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		26.0		31.0	5.0	17.0		
Max Q Clear Time (g_c+I1), s		5.4		2.5	3.0	4.4		
Green Ext Time (p_c), s		7.7		0.4	0.0	6.0		

Intersection Summary	
HCM 2010 Ctrl Delay	5.0
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	20	10	20	30	210	10	100	10	160	380	30
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	22	11	22	33	228	11	109	11	174	413	33
Pedestrians					1							
Lane Width (ft)					12.0							
Walking Speed (ft/s)					4.0							
Percent Blockage					0							
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											499	
pX, platoon unblocked	0.85	0.85	0.85	0.85	0.85		0.85					
vC, conflicting volume	1158	919	429	936	930	115	446			121		
vC1, stage 1 conf vol	777	777		137	137							
vC2, stage 2 conf vol	380	142		799	793							
vCu, unblocked vol	1096	816	238	835	829	115	257			121		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	86	93	98	92	90	76	99			88		
cM capacity (veh/h)	235	332	679	287	320	937	1109			1466		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	65	283	130	620
Volume Left	33	22	11	174
Volume Right	11	228	11	33
cSH	296	671	1109	1466
Volume to Capacity	0.22	0.42	0.01	0.12
Queue Length 95th (ft)	21	52	1	10
Control Delay (s)	20.6	14.2	0.8	3.1
Lane LOS	C	B	A	A
Approach Delay (s)	20.6	14.2	0.8	3.1
Approach LOS	C	B		

Intersection Summary				
Average Delay	6.7			
Intersection Capacity Utilization	59.7%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	70	20	10	10	20	250	10	510	10	260	190	20
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	76	22	11	11	22	272	11	554	11	283	207	22
Pedestrians		1			1			1				
Lane Width (ft)		12.0			12.0			12.0				
Walking Speed (ft/s)		4.0			4.0			4.0				
Percent Blockage		0			0			0				
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											499	
pX, platoon unblocked	0.85	0.85	0.85	0.85	0.85		0.85					
vC, conflicting volume	1648	1372	219	1388	1377	561	229			566		
vC1, stage 1 conf vol	784	784		583	583							
vC2, stage 2 conf vol	864	588		805	794							
vCu, unblocked vol	1674	1349	0	1368	1355	561	4			566		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	88	99	95	91	48	99			72		
cM capacity (veh/h)	23	182	920	213	240	527	1373			1005		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	109	304	576	511
Volume Left	76	11	11	283
Volume Right	11	272	11	22
cSH	31	463	1373	1005
Volume to Capacity	3.49	0.66	0.01	0.28
Queue Length 95th (ft)	Err	116	1	29
Control Delay (s)	Err	26.5	0.2	7.0
Lane LOS	F	D	A	A
Approach Delay (s)	9999.0	26.5	0.2	7.0
Approach LOS	F	D		

Intersection Summary				
Average Delay	732.4			
Intersection Capacity Utilization	89.8%	ICU Level of Service	E	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	60	360	110	130	690	180	100	90	70	150	110	140
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	71	424	113	153	812	199	118	106	23	176	129	64
Adj No. of Lanes	1	2	0	1	2	0	0	2	0	0	2	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	377	1898	501	659	1932	473	233	328	71	286	261	131
Arrive On Green	1.00	1.00	1.00	0.69	0.69	0.69	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	555	2762	729	863	2810	689	686	1344	292	904	1069	537
Grp Volume(v), veh/h	71	270	267	153	511	500	118	0	129	180	0	189
Grp Sat Flow(s),veh/h/ln	555	1770	1721	863	1770	1729	686	0	1635	925	0	1586
Q Serve(g_s), s	3.2	0.0	0.0	7.4	14.0	14.0	10.5	0.0	7.1	15.1	0.0	11.2
Cycle Q Clear(g_c), s	17.2	0.0	0.0	7.4	14.0	14.0	21.7	0.0	7.1	22.2	0.0	11.2
Prop In Lane	1.00		0.42	1.00		0.40	1.00		0.18	0.98		0.34
Lane Grp Cap(c), veh/h	377	1216	1183	659	1216	1188	233	0	400	291	0	388
V/C Ratio(X)	0.19	0.22	0.23	0.23	0.42	0.42	0.51	0.00	0.32	0.62	0.00	0.49
Avail Cap(c_a), veh/h	377	1216	1183	659	1216	1188	492	0	758	566	0	735
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	0.98	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	1.6	0.0	0.0	6.5	7.6	7.6	45.0	0.0	34.1	43.2	0.0	35.6
Incr Delay (d2), s/veh	1.1	0.4	0.4	0.8	1.1	1.1	0.6	0.0	0.2	0.8	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.1	0.1	1.9	7.0	6.9	3.4	0.0	3.2	5.3	0.0	5.0
LnGrp Delay(d),s/veh	2.7	0.4	0.4	7.4	8.6	8.7	45.6	0.0	34.3	44.0	0.0	36.0
LnGrp LOS	A	A	A	A	A	A	D		C	D		D
Approach Vol, veh/h		608			1164			247			369	
Approach Delay, s/veh		0.7			8.5			39.7			39.9	
Approach LOS		A			A			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		79.1		30.9		79.1		30.9
Change Period (Y+Rc), s		3.5		4.0		3.5		4.0
Max Green Setting (Gmax), s		51.5		51.0		51.5		51.0
Max Q Clear Time (g_c+I1), s		19.2		24.2		16.0		23.7
Green Ext Time (p_c), s		15.2		2.7		15.8		2.7

Intersection Summary	
HCM 2010 Ctrl Delay	14.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	140	640	100	110	300	110	100	130	150	110	100	70
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.98		0.96	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	149	681	91	117	319	105	106	138	107	117	106	-17
Adj No. of Lanes	1	2	0	1	2	0	0	2	0	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	758	2371	316	591	1984	641	194	208	170	533	1036	0
Arrive On Green	1.00	1.00	1.00	0.76	0.76	0.76	0.18	0.18	0.18	0.18	0.18	0.00
Sat Flow, veh/h	959	3134	418	695	2623	847	815	1185	967	463	1695	0
Grp Volume(v), veh/h	149	384	388	117	213	211	187	0	164	117	89	0
Grp Sat Flow(s),veh/h/ln	959	1770	1782	695	1770	1700	1487	0	1480	463	1610	0
Q Serve(g_s), s	1.0	0.0	0.0	5.4	3.7	3.8	12.5	0.0	11.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.8	0.0	0.0	5.4	3.7	3.8	13.0	0.0	11.3	0.0	0.0	0.0
Prop In Lane	1.00		0.23	1.00		0.50	0.57		0.65	1.00		0.00
Lane Grp Cap(c), veh/h	758	1339	1348	591	1339	1286	312	0	259	0	0	0
V/C Ratio(X)	0.20	0.29	0.29	0.20	0.16	0.16	0.60	0.00	0.63	0.00	0.00	0.00
Avail Cap(c_a), veh/h	758	1339	1348	591	1339	1286	738	0	686	0	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.80	0.80	0.80	1.00	1.00	1.00	0.99	0.00	0.99	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.1	0.0	0.0	3.9	3.7	3.7	42.7	0.0	42.1	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.4	0.4	0.8	0.3	0.3	0.7	0.0	0.9	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.2	0.2	1.2	1.9	1.9	5.4	0.0	4.7	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.6	0.4	0.4	4.7	4.0	4.0	43.4	0.0	43.0	0.0	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D		D			
Approach Vol, veh/h		921			541			351			206	
Approach Delay, s/veh		0.5			4.1			43.2			0.0	
Approach LOS		A			A			D			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		86.7		23.3		86.7		23.3
Change Period (Y+Rc), s		3.5		4.0		3.5		4.0
Max Green Setting (Gmax), s		51.5		51.0		51.5		51.0
Max Q Clear Time (g_c+I1), s		6.8		2.0		7.4		15.0
Green Ext Time (p_c), s		12.3		2.8		12.3		2.8

Intersection Summary	
HCM 2010 Ctrl Delay	8.8
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	10	50	30	20	30	30	210	10	20	300	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	12	12	0	35	24	0	35	247	8	24	353	19
Adj No. of Lanes	0	1	0	0	1	0	0	2	0	0	2	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	210	54	0	226	41	0	325	2115	68	191	2293	120
Arrive On Green	0.06	0.06	0.00	0.06	0.06	0.00	0.72	0.72	0.72	0.72	0.72	0.72
Sat Flow, veh/h	857	857	0	952	653	0	273	2936	95	104	3182	167
Grp Volume(v), veh/h	24	0	0	59	0	0	149	0	141	207	0	189
Grp Sat Flow(s),veh/h/ln	1713	0	0	1605	0	0	1629	0	1676	1793	0	1661
Q Serve(g_s), s	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.9	0.0	0.0	1.2
Cycle Q Clear(g_c), s	0.4	0.0	0.0	1.2	0.0	0.0	0.8	0.0	0.9	1.2	0.0	1.2
Prop In Lane	0.50		0.00	0.59		0.00	0.24		0.06	0.12		0.10
Lane Grp Cap(c), veh/h	264	0	0	267	0	0	1302	0	1207	1408	0	1196
V/C Ratio(X)	0.09	0.00	0.00	0.22	0.00	0.00	0.11	0.00	0.12	0.15	0.00	0.16
Avail Cap(c_a), veh/h	1375	0	0	1356	0	0	1570	0	1497	1706	0	1483
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.4	0.0	0.0	15.8	0.0	0.0	1.5	0.0	1.5	1.5	0.0	1.5
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	0.6	0.0	0.0	0.4	0.0	0.4	0.6	0.0	0.5
LnGrp Delay(d),s/veh	15.6	0.0	0.0	16.2	0.0	0.0	1.5	0.0	1.5	1.6	0.0	1.6
LnGrp LOS	B			B			A		A	A		A
Approach Vol, veh/h		24			59			290			396	
Approach Delay, s/veh		15.6			16.2			1.5			1.6	
Approach LOS		B			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		29.0		5.7		29.0		5.7
Change Period (Y+Rc), s		4.0		3.5		4.0		3.5
Max Green Setting (Gmax), s		31.0		26.5		31.0		26.5
Max Q Clear Time (g_c+I1), s		2.9		2.4		3.2		3.2
Green Ext Time (p_c), s		4.3		0.4		4.3		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	3.1
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	30	20	20	40	30	40	320	20	20	240	40
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	23	34	-34	23	46	0	46	368	20	23	276	41
Adj No. of Lanes	0	1	0	0	1	0	0	2	0	0	2	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	716	1007	0	171	63	0	297	2144	114	205	2062	297
Arrive On Green	0.06	0.06	0.00	0.06	0.06	0.00	0.73	0.73	0.73	0.73	0.73	0.73
Sat Flow, veh/h	1745	2580	-2580	561	1122	0	235	2952	158	120	2839	409
Grp Volume(v), veh/h	0	0	0	69	0	0	223	0	211	179	0	161
Grp Sat Flow(s),veh/h/ln	0	0	0	1683	0	0	1683	0	1662	1757	0	1611
Q Serve(g_s), s	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	1.4	0.0	0.0	1.1
Cycle Q Clear(g_c), s	0.0	0.0	0.0	1.4	0.0	0.0	1.3	0.0	1.4	1.0	0.0	1.1
Prop In Lane	1.00		-1.48	0.33		0.00	0.21		0.09	0.13		0.25
Lane Grp Cap(c), veh/h	0	0	0	234	0	0	1348	0	1207	1394	0	1170
V/C Ratio(X)	0.00	0.00	0.00	0.30	0.00	0.00	0.17	0.00	0.17	0.13	0.00	0.14
Avail Cap(c_a), veh/h	0	0	0	1435	0	0	1628	0	1497	1685	0	1451
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	16.0	0.0	0.0	1.5	0.0	1.5	1.4	0.0	1.4
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.7	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.7	0.0	0.0	0.6	0.0	0.6	0.5	0.0	0.5
LnGrp Delay(d),s/veh	0.0	0.0	0.0	16.7	0.0	0.0	1.5	0.0	1.5	1.5	0.0	1.5
LnGrp LOS				B			A		A	A		A
Approach Vol, veh/h		0			69			434			340	
Approach Delay, s/veh		0.0			16.7			1.5			1.5	
Approach LOS					B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		29.0		5.4		29.0		5.4
Change Period (Y+Rc), s		4.0		3.5		4.0		3.5
Max Green Setting (Gmax), s		31.0		26.5		31.0		26.5
Max Q Clear Time (g_c+I1), s		3.4		0.0		3.1		3.4
Green Ext Time (p_c), s		4.9		0.0		5.0		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	2.8
HCM 2010 LOS	A



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	30	80	230	10	80	230
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	33	88	253	11	88	253
Pedestrians	4					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	564	136			268	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	564	136			268	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	92	90			93	
cM capacity (veh/h)	423	885			1289	

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	33	44	44	168	95	88	126	126
Volume Left	33	0	0	0	0	88	0	0
Volume Right	0	44	44	0	11	0	0	0
cSH	423	885	885	1700	1700	1289	1700	1700
Volume to Capacity	0.08	0.05	0.05	0.10	0.06	0.07	0.07	0.07
Queue Length 95th (ft)	6	4	4	0	0	5	0	0
Control Delay (s)	14.2	9.3	9.3	0.0	0.0	8.0	0.0	0.0
Lane LOS	B	A	A			A		
Approach Delay (s)	10.6			0.0		2.1		
Approach LOS	B							

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	24.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	20	60	280	40	70	350
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	24	71	329	47	82	412
Pedestrians	2					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	726	190			378	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	726	190			378	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	91			93	
cM capacity (veh/h)	334	818			1175	

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	24	35	35	220	157	82	206	206
Volume Left	24	0	0	0	0	82	0	0
Volume Right	0	35	35	0	47	0	0	0
cSH	334	818	818	1700	1700	1175	1700	1700
Volume to Capacity	0.07	0.04	0.04	0.13	0.09	0.07	0.12	0.12
Queue Length 95th (ft)	6	3	3	0	0	6	0	0
Control Delay (s)	16.6	9.6	9.6	0.0	0.0	8.3	0.0	0.0
Lane LOS	C	A	A			A		
Approach Delay (s)	11.3			0.0		1.4		
Approach LOS	B							

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	26.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	120	440	80	290	610	130	70	370	160	130	830	140
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	132	484	12	319	670	65	77	407	135	143	912	143
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	164	891	391	354	1195	520	99	787	258	176	1052	165
Arrive On Green	0.09	0.25	0.25	0.20	0.34	0.34	0.06	0.30	0.30	0.10	0.35	0.35
Sat Flow, veh/h	1757	3505	1538	1757	3505	1525	1757	2592	850	1757	3029	475
Grp Volume(v), veh/h	132	484	12	319	670	65	77	274	268	143	528	527
Grp Sat Flow(s),veh/h/ln	1757	1752	1538	1757	1752	1525	1757	1752	1690	1757	1752	1751
Q Serve(g_s), s	6.8	11.1	0.5	16.4	14.4	2.7	4.0	11.9	12.2	7.4	26.0	26.1
Cycle Q Clear(g_c), s	6.8	11.1	0.5	16.4	14.4	2.7	4.0	11.9	12.2	7.4	26.0	26.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.50	1.00		0.27
Lane Grp Cap(c), veh/h	164	891	391	354	1195	520	99	532	513	176	609	608
V/C Ratio(X)	0.81	0.54	0.03	0.90	0.56	0.12	0.78	0.51	0.52	0.81	0.87	0.87
Avail Cap(c_a), veh/h	379	1210	531	474	1324	576	284	567	547	379	662	661
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.2	29.9	26.0	36.1	24.9	21.0	43.2	26.6	26.7	40.8	28.2	28.2
Incr Delay (d2), s/veh	3.5	0.7	0.0	13.9	0.6	0.2	4.9	0.3	0.3	3.4	10.3	10.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	5.5	0.2	9.3	7.1	1.2	2.1	5.8	5.7	3.7	14.3	14.3
LnGrp Delay(d),s/veh	44.7	30.6	26.0	50.0	25.5	21.2	48.0	26.9	27.0	44.3	38.5	38.5
LnGrp LOS	D	C	C	D	C	C	D	C	C	D	D	D
Approach Vol, veh/h		628			1054			619			1198	
Approach Delay, s/veh		33.5			32.6			29.6			39.2	
Approach LOS		C			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.7	27.6	8.2	35.2	13.6	35.6	12.3	31.1
Change Period (Y+Rc), s	3.0	4.0	3.0	3.0	5.0	4.0	3.0	3.0
Max Green Setting (Gmax), s	25.0	32.0	15.0	35.0	20.0	35.0	20.0	30.0
Max Q Clear Time (g_c+I1), s	18.4	13.1	6.0	28.1	8.8	16.4	9.4	14.2
Green Ext Time (p_c), s	0.3	10.2	0.0	4.1	0.1	10.1	0.1	7.0

Intersection Summary	
HCM 2010 Ctrl Delay	34.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	130	740	70	210	500	150	130	1120	240	140	440	70
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	144	822	1	233	556	88	144	1244	226	156	489	67
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	176	1072	468	268	1182	519	175	915	165	189	983	134
Arrive On Green	0.10	0.30	0.30	0.15	0.33	0.33	0.10	0.31	0.31	0.11	0.31	0.31
Sat Flow, veh/h	1774	3539	1547	1774	3539	1555	1774	2982	537	1774	3128	427
Grp Volume(v), veh/h	144	822	1	233	556	88	144	733	737	156	276	280
Grp Sat Flow(s),veh/h/ln	1774	1770	1547	1774	1770	1555	1774	1770	1749	1774	1770	1785
Q Serve(g_s), s	7.8	20.6	0.0	12.6	12.1	3.9	7.8	30.0	30.0	8.4	12.4	12.5
Cycle Q Clear(g_c), s	7.8	20.6	0.0	12.6	12.1	3.9	7.8	30.0	30.0	8.4	12.4	12.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		0.24
Lane Grp Cap(c), veh/h	176	1072	468	268	1182	519	175	543	537	189	556	561
V/C Ratio(X)	0.82	0.77	0.00	0.87	0.47	0.17	0.82	1.35	1.37	0.83	0.50	0.50
Avail Cap(c_a), veh/h	363	1158	506	454	1267	557	272	543	537	363	633	639
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.2	31.0	23.8	40.6	25.7	23.0	43.2	33.9	33.9	42.8	27.2	27.3
Incr Delay (d2), s/veh	3.5	3.2	0.0	4.4	0.4	0.2	5.9	169.8	179.3	3.5	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	10.5	0.0	6.5	6.0	1.7	4.1	40.1	41.0	4.3	6.1	6.2
LnGrp Delay(d),s/veh	46.7	34.2	23.8	45.0	26.1	23.2	49.1	203.7	213.2	46.3	27.5	27.5
LnGrp LOS	D	C	C	D	C	C	D	F	F	D	C	C
Approach Vol, veh/h		967			877			1614			712	
Approach Delay, s/veh		36.0			30.8			194.2			31.6	
Approach LOS		D			C			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.8	33.6	12.7	33.7	14.7	36.7	13.4	33.0
Change Period (Y+Rc), s	3.0	4.0	3.0	3.0	5.0	4.0	3.0	3.0
Max Green Setting (Gmax), s	25.0	32.0	15.0	35.0	20.0	35.0	20.0	30.0
Max Q Clear Time (g_c+I1), s	14.6	22.6	9.8	14.5	9.8	14.1	10.4	32.0
Green Ext Time (p_c), s	0.2	7.0	0.1	11.0	0.1	12.9	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	95.4
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	340	10	270	0	330	150	0	950	250
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	0	1863	1863	0	1863	1900
Adj Flow Rate, veh/h				409	0	94	0	351	0	0	1011	201
Adj No. of Lanes				2	0	1	0	3	1	0	3	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				2	2	2	0	2	2	0	2	2
Cap, veh/h				783	0	349	0	2703	841	0	2254	447
Arrive On Green				0.22	0.00	0.22	0.00	0.53	0.00	0.00	0.53	0.53
Sat Flow, veh/h				3548	0	1581	0	5253	1583	0	4408	841
Grp Volume(v), veh/h				409	0	94	0	351	0	0	808	404
Grp Sat Flow(s),veh/h/ln				1774	0	1581	0	1695	1583	0	1695	1691
Q Serve(g_s), s				3.3	0.0	1.6	0.0	1.1	0.0	0.0	4.7	4.7
Cycle Q Clear(g_c), s				3.3	0.0	1.6	0.0	1.1	0.0	0.0	4.7	4.7
Prop In Lane				1.00		1.00	0.00		1.00	0.00		0.50
Lane Grp Cap(c), veh/h				783	0	349	0	2703	841	0	1802	899
V/C Ratio(X)				0.52	0.00	0.27	0.00	0.13	0.00	0.00	0.45	0.45
Avail Cap(c_a), veh/h				3518	0	1568	0	3939	1226	0	2626	1310
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				11.1	0.0	10.4	0.0	3.8	0.0	0.0	4.7	4.7
Incr Delay (d2), s/veh				0.5	0.0	0.4	0.0	0.0	0.0	0.0	0.2	0.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.6	0.0	0.7	0.0	0.5	0.0	0.0	2.2	2.2
LnGrp Delay(d),s/veh				11.6	0.0	10.8	0.0	3.8	0.0	0.0	4.8	5.0
LnGrp LOS				B		B		A			A	A
Approach Vol, veh/h					503			351			1212	
Approach Delay, s/veh					11.5			3.8			4.9	
Approach LOS					B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		21.2				21.2		11.1
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		25.0				25.0		32.0
Max Q Clear Time (g_c+I1), s		3.1				6.7		5.3
Green Ext Time (p_c), s		11.6				10.4		1.8

Intersection Summary	
HCM 2010 Ctrl Delay	6.3
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	320	10	890	0	650	300	0	550	190
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	0	1863	1863	0	1863	1900
Adj Flow Rate, veh/h				230	0	921	0	691	0	0	585	137
Adj No. of Lanes				1	0	2	0	3	1	0	3	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				2	2	2	0	2	2	0	2	2
Cap, veh/h				733	0	1308	0	1975	615	0	1606	369
Arrive On Green				0.41	0.00	0.41	0.00	0.39	0.00	0.00	0.39	0.39
Sat Flow, veh/h				1774	0	3167	0	5253	1583	0	4303	950
Grp Volume(v), veh/h				230	0	921	0	691	0	0	478	244
Grp Sat Flow(s),veh/h/ln				1774	0	1583	0	1695	1583	0	1695	1695
Q Serve(g_s), s				3.5	0.0	9.7	0.0	3.9	0.0	0.0	4.0	4.2
Cycle Q Clear(g_c), s				3.5	0.0	9.7	0.0	3.9	0.0	0.0	4.0	4.2
Prop In Lane				1.00		1.00	0.00		1.00	0.00		0.56
Lane Grp Cap(c), veh/h				733	0	1308	0	1975	615	0	1317	658
V/C Ratio(X)				0.31	0.00	0.70	0.00	0.35	0.00	0.00	0.36	0.37
Avail Cap(c_a), veh/h				1409	0	2514	0	3155	982	0	2103	1052
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				8.0	0.0	9.8	0.0	8.7	0.0	0.0	8.8	8.8
Incr Delay (d2), s/veh				0.2	0.0	0.7	0.0	0.1	0.0	0.0	0.2	0.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.8	0.0	4.3	0.0	1.8	0.0	0.0	1.9	2.0
LnGrp Delay(d),s/veh				8.2	0.0	10.5	0.0	8.8	0.0	0.0	8.9	9.2
LnGrp LOS				A		B		A			A	A
Approach Vol, veh/h					1151			691			722	
Approach Delay, s/veh					10.0			8.8			9.0	
Approach LOS					B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		19.7				19.7		20.6
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		25.0				25.0		32.0
Max Q Clear Time (g_c+I1), s		5.9				6.2		11.7
Green Ext Time (p_c), s		9.6				9.5		4.9

Intersection Summary	
HCM 2010 Ctrl Delay	9.4
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	100	0	230	0	0	0	0	380	360	0	610	680
Number	3	8	18				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863				0	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	114	12	122				0	432	0	0	693	0
Adj No. of Lanes	0	1	1				0	3	0	0	2	1
Peak Hour Factor	0.88	0.88	0.88				0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2				0	2	2	0	2	2
Cap, veh/h	251	26	247				0	2767	0	0	1926	861
Arrive On Green	0.16	0.16	0.16				0.00	0.54	0.00	0.00	0.54	0.00
Sat Flow, veh/h	1612	170	1583				0	5421	0	0	3632	1583
Grp Volume(v), veh/h	126	0	122				0	432	0	0	693	0
Grp Sat Flow(s),veh/h/ln	1782	0	1583				0	1695	0	0	1770	1583
Q Serve(g_s), s	1.7	0.0	1.9				0.0	1.1	0.0	0.0	3.0	0.0
Cycle Q Clear(g_c), s	1.7	0.0	1.9				0.0	1.1	0.0	0.0	3.0	0.0
Prop In Lane	0.90		1.00				0.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	278	0	247				0	2767	0	0	1926	861
V/C Ratio(X)	0.45	0.00	0.49				0.00	0.16	0.00	0.00	0.36	0.00
Avail Cap(c_a), veh/h	2005	0	1782				0	7057	0	0	4911	2197
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	10.2	0.0	10.3				0.0	3.0	0.0	0.0	3.4	0.0
Incr Delay (d2), s/veh	1.2	0.0	1.5				0.0	0.0	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.9				0.0	0.5	0.0	0.0	1.4	0.0
LnGrp Delay(d),s/veh	11.4	0.0	11.8				0.0	3.1	0.0	0.0	3.6	0.0
LnGrp LOS	B		B					A			A	
Approach Vol, veh/h		248						432			693	
Approach Delay, s/veh		11.6						3.1			3.6	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		18.5				18.5		8.2
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		37.0				37.0		30.0
Max Q Clear Time (g_c+I1), s		3.1				5.0		3.9
Green Ext Time (p_c), s		9.6				9.4		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	4.9
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	370	0	220	0	0	0	0	580	380	0	520	350
Number	3	8	18				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863				0	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	430	0	122				0	674	0	0	605	0
Adj No. of Lanes	0	1	1				0	3	0	0	2	1
Peak Hour Factor	0.86	0.86	0.86				0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2				0	2	2	0	2	2
Cap, veh/h	603	0	539				0	2296	0	0	1598	715
Arrive On Green	0.34	0.00	0.34				0.00	0.45	0.00	0.00	0.45	0.00
Sat Flow, veh/h	1774	0	1583				0	5421	0	0	3632	1583
Grp Volume(v), veh/h	430	0	122				0	674	0	0	605	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1695	0	0	1770	1583
Q Serve(g_s), s	8.1	0.0	2.1				0.0	3.2	0.0	0.0	4.3	0.0
Cycle Q Clear(g_c), s	8.1	0.0	2.1				0.0	3.2	0.0	0.0	4.3	0.0
Prop In Lane	1.00		1.00				0.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	603	0	539				0	2296	0	0	1598	715
V/C Ratio(X)	0.71	0.00	0.23				0.00	0.29	0.00	0.00	0.38	0.00
Avail Cap(c_a), veh/h	1387	0	1238				0	4902	0	0	3412	1526
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	11.0	0.0	9.1				0.0	6.7	0.0	0.0	7.0	0.0
Incr Delay (d2), s/veh	1.6	0.0	0.2				0.0	0.1	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.0	0.9				0.0	1.5	0.0	0.0	2.1	0.0
LnGrp Delay(d),s/veh	12.6	0.0	9.3				0.0	6.7	0.0	0.0	7.1	0.0
LnGrp LOS	B		A					A			A	
Approach Vol, veh/h		552						674			605	
Approach Delay, s/veh		11.9						6.7			7.1	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		21.3				21.3		17.1
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		37.0				37.0		30.0
Max Q Clear Time (g_c+I1), s		5.2				6.3		10.1
Green Ext Time (p_c), s		11.0				10.8		3.0

Intersection Summary	
HCM 2010 Ctrl Delay	8.4
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	20	20	10	10	30	30	660	20	290	440	110
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1900	1845	1845	1900	1900	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	54	22	11	11	11	0	33	717	21	315	478	107
Adj No. of Lanes	0	1	0	1	1	0	0	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	71	29	14	81	85	0	107	1044	30	374	1759	391
Arrive On Green	0.07	0.07	0.07	0.05	0.05	0.00	0.32	0.32	0.32	0.21	0.62	0.62
Sat Flow, veh/h	1085	442	221	1757	1845	0	71	3252	94	1757	2838	631
Grp Volume(v), veh/h	87	0	0	11	11	0	399	0	372	315	294	291
Grp Sat Flow(s),veh/h/ln	1748	0	0	1757	1845	0	1755	0	1662	1757	1752	1716
Q Serve(g_s), s	2.3	0.0	0.0	0.3	0.3	0.0	1.6	0.0	9.1	8.0	3.6	3.6
Cycle Q Clear(g_c), s	2.3	0.0	0.0	0.3	0.3	0.0	8.9	0.0	9.1	8.0	3.6	3.6
Prop In Lane	0.62		0.13	1.00		0.00	0.08		0.06	1.00		0.37
Lane Grp Cap(c), veh/h	114	0	0	81	85	0	648	0	534	374	1086	1064
V/C Ratio(X)	0.76	0.00	0.00	0.14	0.13	0.00	0.62	0.00	0.70	0.84	0.27	0.27
Avail Cap(c_a), veh/h	790	0	0	1701	1786	0	848	0	733	416	1086	1064
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.4	0.0	0.0	21.3	21.3	0.0	13.7	0.0	13.8	17.6	4.0	4.0
Incr Delay (d2), s/veh	3.9	0.0	0.0	0.3	0.3	0.0	1.4	0.0	2.4	12.2	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.0	0.1	0.1	0.0	4.7	0.0	4.5	5.1	1.8	1.8
LnGrp Delay(d),s/veh	25.3	0.0	0.0	21.6	21.5	0.0	15.0	0.0	16.2	29.8	4.2	4.2
LnGrp LOS	C			C	C		B		B	C	A	A
Approach Vol, veh/h		87			22			771			900	
Approach Delay, s/veh		25.3			21.6			15.6			13.2	
Approach LOS		C			C			B			B	

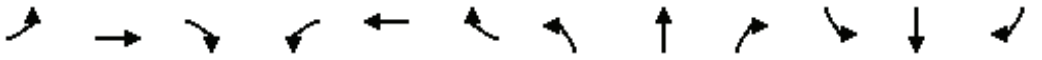
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	13.9	19.4		6.1		33.3		7.0
Change Period (Y+Rc), s	4.0	4.5		4.0		4.5		4.0
Max Green Setting (Gmax), s	11.0	20.5		45.0		23.0		21.0
Max Q Clear Time (g_c+I1), s	10.0	11.1		2.3		5.6		4.3
Green Ext Time (p_c), s	0.1	3.8		0.0		10.6		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	14.9
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	180	20	90	20	10	250	40	530	0	30	590	120
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	196	22	87	22	11	239	43	576	-1	33	641	117
Adj No. of Lanes	0	1	0	1	1	0	0	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	239	27	106	389	15	328	36	571	0	50	1036	189
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.25	0.25	0.00	0.03	0.35	0.35
Sat Flow, veh/h	1104	124	490	1774	69	1497	129	3215	0	1774	2980	543
Grp Volume(v), veh/h	305	0	0	22	0	250	319	299	0	33	380	378
Grp Sat Flow(s),veh/h/ln	1718	0	0	1774	0	1566	1650	1610	0	1774	1770	1753
Q Serve(g_s), s	9.8	0.0	0.0	0.6	0.0	8.6	0.0	0.0	0.0	1.1	10.3	10.4
Cycle Q Clear(g_c), s	9.8	0.0	0.0	0.6	0.0	8.6	0.0	0.0	0.0	1.1	10.3	10.4
Prop In Lane	0.64		0.29	1.00		0.96	0.13		0.00	1.00		0.31
Lane Grp Cap(c), veh/h	372	0	0	389	0	343	0	0	0	50	615	610
V/C Ratio(X)	0.82	0.00	0.00	0.06	0.00	0.73	0.00	0.00	0.00	0.65	0.62	0.62
Avail Cap(c_a), veh/h	624	0	0	1381	0	1219	0	0	0	338	704	697
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.6	0.0	0.0	17.8	0.0	21.0	0.0	0.0	0.0	27.8	15.7	15.7
Incr Delay (d2), s/veh	1.7	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	5.2	1.7	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	0.0	0.0	0.3	0.0	3.8	0.0	0.0	0.0	0.6	5.3	5.2
LnGrp Delay(d),s/veh	23.3	0.0	0.0	17.9	0.0	22.1	0.0	0.0	0.0	33.0	17.4	17.4
LnGrp LOS	C			B		C				C	B	B
Approach Vol, veh/h		305			272			618			791	
Approach Delay, s/veh		23.3			21.7			0.0			18.0	
Approach LOS		C			C			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	5.6	19.0		16.7		24.6		16.5
Change Period (Y+Rc), s	4.0	4.5		4.0		4.5		4.0
Max Green Setting (Gmax), s	11.0	20.5		45.0		23.0		21.0
Max Q Clear Time (g_c+I1), s	3.1	2.0		10.6		12.4		11.8
Green Ext Time (p_c), s	0.0	11.6		1.2		7.6		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	13.7
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	260	70	20	20	10	60	10	390	130	160	120	190
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	283	76	0	22	11	0	11	424	105	174	130	0
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	250	706	316	38	283	0	20	784	192	220	1386	0
Arrive On Green	0.14	0.20	0.00	0.02	0.08	0.00	0.01	0.28	0.28	0.12	0.39	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3632	0	1774	2811	690	1774	3632	0
Grp Volume(v), veh/h	283	76	0	22	11	0	11	265	264	174	130	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	0	1774	1770	1731	1774	1770	0
Q Serve(g_s), s	6.0	0.7	0.0	0.5	0.1	0.0	0.3	5.4	5.5	4.1	1.0	0.0
Cycle Q Clear(g_c), s	6.0	0.7	0.0	0.5	0.1	0.0	0.3	5.4	5.5	4.1	1.0	0.0
Prop In Lane	1.00		1.00	1.00		0.00	1.00		0.40	1.00		0.00
Lane Grp Cap(c), veh/h	250	706	316	38	283	0	20	494	483	220	1386	0
V/C Ratio(X)	1.13	0.11	0.00	0.58	0.04	0.00	0.54	0.54	0.55	0.79	0.09	0.00
Avail Cap(c_a), veh/h	250	3243	1451	167	3077	0	167	1206	1179	250	2578	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	18.3	13.9	0.0	20.6	18.1	0.0	20.9	13.0	13.0	18.1	8.2	0.0
Incr Delay (d2), s/veh	97.0	0.1	0.0	13.0	0.1	0.0	20.5	0.9	1.0	14.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	0.4	0.0	0.4	0.1	0.0	0.2	2.7	2.8	2.8	0.5	0.0
LnGrp Delay(d),s/veh	115.3	14.0	0.0	33.6	18.1	0.0	41.4	13.9	14.0	32.2	8.2	0.0
LnGrp LOS	F	B		C	B		D	B	B	C	A	
Approach Vol, veh/h		359			33			540			304	
Approach Delay, s/veh		93.8			28.4			14.5			21.9	
Approach LOS		F			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	15.9	4.9	12.5	4.5	20.7	10.0	7.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	29.0	4.0	39.0	4.0	31.0	6.0	37.0
Max Q Clear Time (g_c+I1), s	6.1	7.5	2.5	2.7	2.3	3.0	8.0	2.1
Green Ext Time (p_c), s	0.0	4.4	0.0	0.5	0.0	4.7	0.0	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	39.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	190	20	60	60	60	170	50	180	30	40	350	240
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	200	21	0	63	63	116	53	189	-3	42	368	0
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	266	837	375	89	242	217	79	1019	0	49	960	0
Arrive On Green	0.15	0.24	0.00	0.05	0.14	0.14	0.04	0.29	0.00	0.03	0.27	0.00
Sat Flow, veh/h	1774	3539	1583	1774	1770	1583	1774	3632	0	1774	3632	0
Grp Volume(v), veh/h	200	21	0	63	63	116	53	186	0	42	368	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	0	1774	1770	0
Q Serve(g_s), s	4.3	0.2	0.0	1.4	1.3	2.7	1.2	1.6	0.0	0.9	3.4	0.0
Cycle Q Clear(g_c), s	4.3	0.2	0.0	1.4	1.3	2.7	1.2	1.6	0.0	0.9	3.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	266	837	375	89	242	217	79	1019	0	49	960	0
V/C Ratio(X)	0.75	0.03	0.00	0.71	0.26	0.54	0.67	0.18	0.00	0.86	0.38	0.00
Avail Cap(c_a), veh/h	793	2902	1298	397	1055	944	309	2638	0	264	2550	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	16.4	11.8	0.0	18.8	15.5	16.2	18.9	10.8	0.0	19.5	11.9	0.0
Incr Delay (d2), s/veh	4.3	0.0	0.0	9.8	0.6	2.1	9.5	0.1	0.0	32.0	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.1	0.0	0.9	0.7	1.3	0.8	0.8	0.0	0.9	1.7	0.0
LnGrp Delay(d),s/veh	20.6	11.8	0.0	28.6	16.1	18.2	28.5	10.9	0.0	51.5	12.2	0.0
LnGrp LOS	C	B		C	B	B	C	B		D	B	
Approach Vol, veh/h		221			242			239			410	
Approach Delay, s/veh		19.8			20.4			14.8			16.2	
Approach LOS		B			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	5.1	15.6	6.0	13.5	5.8	14.9	10.0	9.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	30.0	9.0	33.0	7.0	29.0	18.0	24.0
Max Q Clear Time (g_c+I1), s	2.9	3.6	3.4	2.2	3.2	5.4	6.3	4.7
Green Ext Time (p_c), s	0.0	4.1	0.0	1.2	0.0	3.9	0.4	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	17.5
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	90	880	520	80	990	130	190	350	50	120	580	130
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	95	926	390	84	1042	128	200	368	41	126	611	117
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	160	1623	698	179	1449	178	233	1072	119	156	861	165
Arrive On Green	0.46	0.46	0.46	0.46	0.46	0.46	0.13	0.33	0.33	0.09	0.29	0.29
Sat Flow, veh/h	477	3539	1523	415	3159	388	1774	3206	355	1774	2962	566
Grp Volume(v), veh/h	95	926	390	84	583	587	200	202	207	126	365	363
Grp Sat Flow(s),veh/h/ln	477	1770	1523	415	1770	1778	1774	1770	1791	1774	1770	1758
Q Serve(g_s), s	20.1	20.1	19.6	19.5	27.9	28.0	11.6	9.0	9.1	7.3	19.3	19.4
Cycle Q Clear(g_c), s	48.2	20.1	19.6	39.7	27.9	28.0	11.6	9.0	9.1	7.3	19.3	19.4
Prop In Lane	1.00		1.00	1.00		0.22	1.00		0.20	1.00		0.32
Lane Grp Cap(c), veh/h	160	1623	698	179	812	815	233	592	599	156	515	511
V/C Ratio(X)	0.59	0.57	0.56	0.47	0.72	0.72	0.86	0.34	0.35	0.81	0.71	0.71
Avail Cap(c_a), veh/h	160	1623	698	179	812	815	329	615	622	279	565	561
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.8	20.8	20.7	35.4	22.9	23.0	44.6	26.3	26.3	47.0	33.3	33.3
Incr Delay (d2), s/veh	15.1	1.5	3.2	8.5	5.4	5.4	14.5	1.2	1.2	9.4	6.9	7.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	10.1	8.8	2.7	14.8	14.9	6.6	4.6	4.7	4.0	10.4	10.4
LnGrp Delay(d),s/veh	57.9	22.3	23.9	43.9	28.4	28.4	59.1	27.5	27.6	56.4	40.1	40.3
LnGrp LOS	E	C	C	D	C	C	E	C	C	E	D	D
Approach Vol, veh/h		1411			1254			609			854	
Approach Delay, s/veh		25.1			29.4			37.9			42.6	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		52.7	17.3	35.0		52.7	12.7	39.6
Change Period (Y+Rc), s		4.5	3.5	4.5		4.5	3.5	4.5
Max Green Setting (Gmax), s		39.5	19.5	33.5		39.5	16.5	36.5
Max Q Clear Time (g_c+I1), s		50.2	13.6	21.4		41.7	9.3	11.1
Green Ext Time (p_c), s		0.0	0.3	9.1		0.0	0.2	16.3

Intersection Summary	
HCM 2010 Ctrl Delay	31.9
HCM 2010 LOS	C

Notes

User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	200	1260	180	10	700	160	190	570	40	60	390	90
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	217	1370	34	11	761	164	207	620	31	65	424	77
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	247	1710	744	128	1392	300	240	1200	60	84	783	141
Arrive On Green	0.48	0.48	0.48	0.48	0.48	0.48	0.14	0.35	0.35	0.05	0.26	0.26
Sat Flow, veh/h	601	3539	1539	382	2882	621	1774	3427	171	1774	2984	538
Grp Volume(v), veh/h	217	1370	34	11	467	458	207	320	331	65	250	251
Grp Sat Flow(s),veh/h/ln	601	1770	1539	382	1770	1733	1774	1770	1829	1774	1770	1752
Q Serve(g_s), s	31.2	34.3	1.2	2.6	19.5	19.5	12.0	15.0	15.1	3.8	12.7	12.9
Cycle Q Clear(g_c), s	50.7	34.3	1.2	36.9	19.5	19.5	12.0	15.0	15.1	3.8	12.7	12.9
Prop In Lane	1.00		1.00	1.00		0.36	1.00		0.09	1.00		0.31
Lane Grp Cap(c), veh/h	247	1710	744	128	855	837	240	620	641	84	464	460
V/C Ratio(X)	0.88	0.80	0.05	0.09	0.55	0.55	0.86	0.52	0.52	0.77	0.54	0.55
Avail Cap(c_a), veh/h	247	1710	744	128	855	837	329	620	641	279	565	559
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.6	22.9	14.3	38.5	19.1	19.1	44.4	27.0	27.1	49.4	33.3	33.3
Incr Delay (d2), s/veh	32.6	4.1	0.1	1.3	2.5	2.6	15.6	2.4	2.4	13.6	3.5	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	17.5	0.5	0.3	10.1	9.9	6.9	7.8	8.1	2.2	6.7	6.7
LnGrp Delay(d),s/veh	72.3	27.0	14.5	39.8	21.6	21.6	60.0	29.5	29.4	63.0	36.7	37.0
LnGrp LOS	E	C	B	D	C	C	E	C	C	E	D	D
Approach Vol, veh/h		1621			936			858			566	
Approach Delay, s/veh		32.8			21.8			36.8			39.9	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		55.2	17.7	32.1		55.2	8.5	41.3
Change Period (Y+Rc), s		4.5	3.5	4.5		4.5	3.5	4.5
Max Green Setting (Gmax), s		39.5	19.5	33.5		39.5	16.5	36.5
Max Q Clear Time (g_c+I1), s		52.7	14.0	14.9		38.9	5.8	17.1
Green Ext Time (p_c), s		0.0	0.3	12.6		0.6	0.1	13.4

Intersection Summary	
HCM 2010 Ctrl Delay	32.1
HCM 2010 LOS	C

Notes

User approved ignoring U-Turning movement.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	520	140	100	130	120	250
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	578	156	111	144	133	278
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						19
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1062		
pX, platoon unblocked						
vC, conflicting volume			733		944	578
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			733		944	578
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			87		47	46
cM capacity (veh/h)			862		251	512

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	578	156	111	144	411
Volume Left	0	0	111	0	133
Volume Right	0	156	0	0	278
cSH	1700	1700	862	1700	758
Volume to Capacity	0.34	0.09	0.13	0.08	0.54
Queue Length 95th (ft)	0	0	11	0	83
Control Delay (s)	0.0	0.0	9.8	0.0	24.7
Lane LOS			A		C
Approach Delay (s)	0.0		4.3		24.7
Approach LOS					C

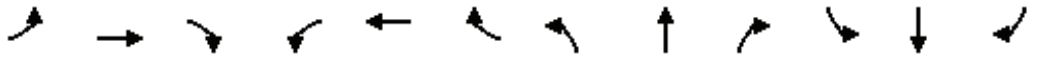
Intersection Summary			
Average Delay	8.0		
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	90	70	280	340	290	130
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	99	77	308	374	319	143
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						19
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1062		
pX, platoon unblocked						
vC, conflicting volume			176		1088	99
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			176		1088	99
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			78		0	85
cM capacity (veh/h)			1400		186	957

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	99	77	308	374	462
Volume Left	0	0	308	0	319
Volume Right	0	77	0	0	143
cSH	1700	1700	1400	1700	260
Volume to Capacity	0.06	0.05	0.22	0.22	1.78
Queue Length 95th (ft)	0	0	21	0	770
Control Delay (s)	0.0	0.0	8.3	0.0	397.1
Lane LOS			A		F
Approach Delay (s)	0.0		3.7		397.1
Approach LOS					F

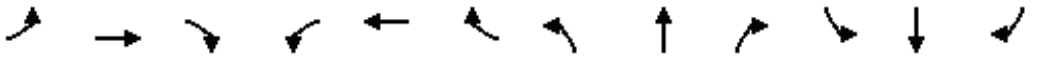
Intersection Summary			
Average Delay	140.9		
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	90	350	40	20	80	110	20	30	30	420	50	300
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1900	1827	1827	1900	1900	1827	1900
Adj Flow Rate, veh/h	98	380	35	22	87	16	22	33	5	457	54	288
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	124	523	48	37	402	74	574	584	88	432	35	188
Arrive On Green	0.07	0.32	0.32	0.02	0.27	0.27	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	1740	1648	152	1740	1502	276	1014	1545	234	790	93	498
Grp Volume(v), veh/h	98	0	415	22	0	103	22	0	38	799	0	0
Grp Sat Flow(s),veh/h/ln	1740	0	1800	1740	0	1778	1014	0	1779	1381	0	0
Q Serve(g_s), s	2.3	0.0	8.7	0.5	0.0	1.9	0.0	0.0	0.6	15.4	0.0	0.0
Cycle Q Clear(g_c), s	2.3	0.0	8.7	0.5	0.0	1.9	0.6	0.0	0.6	16.0	0.0	0.0
Prop In Lane	1.00		0.08	1.00		0.16	1.00		0.13	0.57		0.36
Lane Grp Cap(c), veh/h	124	0	571	37	0	476	574	0	672	655	0	0
V/C Ratio(X)	0.79	0.00	0.73	0.59	0.00	0.22	0.04	0.00	0.06	1.22	0.00	0.00
Avail Cap(c_a), veh/h	288	0	1063	288	0	1050	574	0	672	655	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	19.4	0.0	12.8	20.5	0.0	12.1	8.4	0.0	8.4	15.0	0.0	0.0
Incr Delay (d2), s/veh	10.8	0.0	1.8	13.7	0.0	0.2	0.0	0.0	0.0	112.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	4.5	0.4	0.0	0.9	0.2	0.0	0.3	27.9	0.0	0.0
LnGrp Delay(d),s/veh	30.2	0.0	14.6	34.3	0.0	12.3	8.4	0.0	8.4	127.1	0.0	0.0
LnGrp LOS	C		B	C		B	A		A	F		
Approach Vol, veh/h		513			125			60			799	
Approach Delay, s/veh		17.6			16.1			8.4			127.1	
Approach LOS		B			B			A			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		20.0	4.9	17.4		20.0	7.0	15.3
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		16.0	7.0	25.0		16.0	7.0	25.0
Max Q Clear Time (g_c+I1), s		2.6	2.5	10.7		18.0	4.3	3.9
Green Ext Time (p_c), s		5.4	0.0	2.8		0.0	0.0	3.2

Intersection Summary	
HCM 2010 Ctrl Delay	75.6
HCM 2010 LOS	E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	120	30	10	10	180	480	20	20	20	130	20	70
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1900	1845	1900
Adj Flow Rate, veh/h	130	33	3	11	196	418	22	22	-6	141	22	38
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	166	881	80	20	234	500	434	336	0	318	40	51
Arrive On Green	0.09	0.53	0.53	0.01	0.45	0.45	0.18	0.18	0.00	0.18	0.18	0.18
Sat Flow, veh/h	1757	1666	151	1757	526	1121	1324	1845	0	969	221	277
Grp Volume(v), veh/h	130	0	36	11	0	614	22	16	0	201	0	0
Grp Sat Flow(s),veh/h/ln	1757	0	1818	1757	0	1647	1324	1845	0	1468	0	0
Q Serve(g_s), s	3.1	0.0	0.4	0.3	0.0	14.3	0.0	0.3	0.0	5.2	0.0	0.0
Cycle Q Clear(g_c), s	3.1	0.0	0.4	0.3	0.0	14.3	0.5	0.3	0.0	5.6	0.0	0.0
Prop In Lane	1.00		0.08	1.00		0.68	1.00		0.00	0.70		0.19
Lane Grp Cap(c), veh/h	166	0	961	20	0	734	434	336	0	409	0	0
V/C Ratio(X)	0.78	0.00	0.04	0.55	0.00	0.84	0.05	0.05	0.00	0.49	0.00	0.00
Avail Cap(c_a), veh/h	284	0	1051	284	0	952	683	682	0	681	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	19.1	0.0	4.9	21.3	0.0	10.6	14.7	14.6	0.0	16.7	0.0	0.0
Incr Delay (d2), s/veh	7.8	0.0	0.0	21.1	0.0	5.2	0.0	0.1	0.0	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.2	0.2	0.0	7.4	0.2	0.2	0.0	2.3	0.0	0.0
LnGrp Delay(d),s/veh	26.9	0.0	4.9	42.4	0.0	15.8	14.7	14.6	0.0	17.6	0.0	0.0
LnGrp LOS	C		A	D		B	B	B		B		
Approach Vol, veh/h		166			625			38			201	
Approach Delay, s/veh		22.1			16.3			14.7			17.6	
Approach LOS		C			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		11.9	4.5	26.9		11.9	8.1	23.3
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		16.0	7.0	25.0		16.0	7.0	25.0
Max Q Clear Time (g_c+I1), s		2.5	2.3	2.4		7.6	5.1	16.3
Green Ext Time (p_c), s		1.0	0.0	4.9		0.8	0.1	3.0

Intersection Summary	
HCM 2010 Ctrl Delay	17.4
HCM 2010 LOS	B



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	570	230	50	110	100	220
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	620	250	54	120	109	239
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						3
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	337					
pX, platoon unblocked			0.82		0.82	0.82
vC, conflicting volume			620		973	745
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			427		857	579
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		57	43
cM capacity (veh/h)			925		252	421

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	870	54	120	348
Volume Left	0	54	0	109
Volume Right	250	0	0	239
cSH	1700	925	1700	612
Volume to Capacity	0.51	0.06	0.07	0.57
Queue Length 95th (ft)	0	5	0	89
Control Delay (s)	0.0	9.1	0.0	25.9
Lane LOS		A		D
Approach Delay (s)	0.0	2.9		25.9
Approach LOS				D

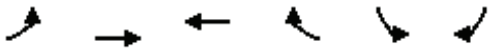
Intersection Summary			
Average Delay	6.8		
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	90	90	90	490	180	110
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	98	98	98	533	196	120
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						3
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	337					
pX, platoon unblocked						
vC, conflicting volume			98		875	147
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			98		875	147
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			93		35	87
cM capacity (veh/h)			1495		299	900

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	196	98	533	315
Volume Left	0	98	0	196
Volume Right	98	0	0	120
cSH	1700	1495	1700	481
Volume to Capacity	0.12	0.07	0.31	0.65
Queue Length 95th (ft)	0	5	0	116
Control Delay (s)	0.0	7.6	0.0	26.8
Lane LOS		A		D
Approach Delay (s)	0.0	1.2		26.8
Approach LOS				D

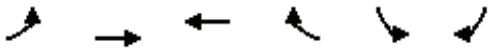
Intersection Summary			
Average Delay	8.0		
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	1010	530	0	980	650
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	0	1063	558	0	1032	561
Adj No. of Lanes	0	2	2	0	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1662	1662	0	1309	602
Arrive On Green	0.00	0.47	0.15	0.00	0.38	0.38
Sat Flow, veh/h	0	3725	3725	0	3442	1583
Grp Volume(v), veh/h	0	1063	558	0	1032	561
Grp Sat Flow(s),veh/h/ln	0	1770	1770	0	1721	1583
Q Serve(g_s), s	0.0	13.7	8.4	0.0	15.9	20.4
Cycle Q Clear(g_c), s	0.0	13.7	8.4	0.0	15.9	20.4
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1662	1662	0	1309	602
V/C Ratio(X)	0.00	0.64	0.34	0.00	0.79	0.93
Avail Cap(c_a), veh/h	0	1662	1662	0	1319	607
HCM Platoon Ratio	1.00	1.00	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.98	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	12.1	17.0	0.0	16.4	17.8
Incr Delay (d2), s/veh	0.0	1.9	0.5	0.0	3.3	21.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.1	4.3	0.0	8.0	12.4
LnGrp Delay(d),s/veh	0.0	14.0	17.5	0.0	19.7	39.0
LnGrp LOS		B	B		B	D
Approach Vol, veh/h		1063	558		1593	
Approach Delay, s/veh		14.0	17.5		26.5	
Approach LOS		B	B		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		33.2		26.8		33.2		
Change Period (Y+Rc), s		5.0		4.0		5.0		
Max Green Setting (Gmax), s		28.0		23.0		28.0		
Max Q Clear Time (g_c+I1), s		15.7		22.4		10.4		
Green Ext Time (p_c), s		8.3		0.4		10.7		

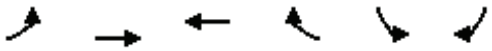
Intersection Summary	
HCM 2010 Ctrl Delay	20.8
HCM 2010 LOS	C



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	1220	460	0	560	510
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	0	1312	495	0	602	422
Adj No. of Lanes	0	2	2	0	2	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1883	1883	0	1095	504
Arrive On Green	0.00	0.53	0.18	0.00	0.32	0.32
Sat Flow, veh/h	0	3725	3725	0	3442	1583
Grp Volume(v), veh/h	0	1312	495	0	602	422
Grp Sat Flow(s),veh/h/ln	0	1770	1770	0	1721	1583
Q Serve(g_s), s	0.0	16.5	7.3	0.0	8.7	14.9
Cycle Q Clear(g_c), s	0.0	16.5	7.3	0.0	8.7	14.9
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1883	1883	0	1095	504
V/C Ratio(X)	0.00	0.70	0.26	0.00	0.55	0.84
Avail Cap(c_a), veh/h	0	1883	1883	0	1319	607
HCM Platoon Ratio	1.00	1.00	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.98	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	10.4	14.6	0.0	16.9	19.0
Incr Delay (d2), s/veh	0.0	2.2	0.3	0.0	0.4	8.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.6	3.6	0.0	4.2	7.7
LnGrp Delay(d),s/veh	0.0	12.6	14.9	0.0	17.3	27.7
LnGrp LOS		B	B		B	C
Approach Vol, veh/h		1312	495		1024	
Approach Delay, s/veh		12.6	14.9		21.6	
Approach LOS		B	B		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		36.9		23.1		36.9		
Change Period (Y+Rc), s		5.0		4.0		5.0		
Max Green Setting (Gmax), s		28.0		23.0		28.0		
Max Q Clear Time (g_c+I1), s		18.5		16.9		9.3		
Green Ext Time (p_c), s		7.3		2.2		12.5		

Intersection Summary	
HCM 2010 Ctrl Delay	16.3
HCM 2010 LOS	B



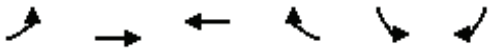
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	10	1980	460	40	300	70
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99			0.94	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	11	2084	484	31	316	58
Adj No. of Lanes	0	2	2	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	64	2155	2094	134	359	66
Arrive On Green	0.62	0.62	0.42	0.42	0.24	0.24
Sat Flow, veh/h	5	3547	3458	215	1468	269
Grp Volume(v), veh/h	1124	971	254	261	375	0
Grp Sat Flow(s),veh/h/ln	1857	1610	1770	1810	1742	0
Q Serve(g_s), s	7.9	34.4	5.5	5.6	12.4	0.0
Cycle Q Clear(g_c), s	34.7	34.4	5.5	5.6	12.4	0.0
Prop In Lane	0.01			0.12	0.84	0.15
Lane Grp Cap(c), veh/h	1216	1002	1101	1127	425	0
V/C Ratio(X)	0.92	0.97	0.23	0.23	0.88	0.00
Avail Cap(c_a), veh/h	1216	1002	1101	1127	523	0
HCM Platoon Ratio	1.00	1.00	0.67	0.67	1.00	1.00
Upstream Filter(I)	0.63	0.63	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	10.8	10.8	8.2	8.2	21.8	0.0
Incr Delay (d2), s/veh	9.0	16.3	0.5	0.5	12.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.2	19.4	2.9	3.0	7.4	0.0
LnGrp Delay(d),s/veh	19.8	27.1	8.7	8.7	34.1	0.0
LnGrp LOS	B	C	A	A	C	
Approach Vol, veh/h		2095	515		375	
Approach Delay, s/veh		23.2	8.7		34.1	
Approach LOS		C	A		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		41.3		18.7		41.3		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		34.0		18.0		34.0		
Max Q Clear Time (g_c+I1), s		36.7		14.4		7.6		
Green Ext Time (p_c), s		0.0		0.2		22.5		

Intersection Summary	
HCM 2010 Ctrl Delay	22.1
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	50	1730	440	120	70	20
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99			0.95	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	53	1821	463	115	74	5
Adj No. of Lanes	0	2	2	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	108	2707	2251	554	95	6
Arrive On Green	1.00	1.00	0.54	0.54	0.06	0.06
Sat Flow, veh/h	55	3434	2878	685	1630	110
Grp Volume(v), veh/h	1004	870	293	285	80	0
Grp Sat Flow(s),veh/h/ln	1794	1610	1770	1700	1762	0
Q Serve(g_s), s	0.0	0.0	5.1	5.2	2.7	0.0
Cycle Q Clear(g_c), s	0.0	0.0	5.1	5.2	2.7	0.0
Prop In Lane	0.05			0.40	0.92	0.06
Lane Grp Cap(c), veh/h	1513	1302	1430	1374	103	0
V/C Ratio(X)	0.66	0.67	0.20	0.21	0.78	0.00
Avail Cap(c_a), veh/h	1513	1302	1430	1374	529	0
HCM Platoon Ratio	2.00	2.00	0.67	0.67	1.00	1.00
Upstream Filter(I)	0.71	0.71	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	3.8	3.8	27.9	0.0
Incr Delay (d2), s/veh	1.6	2.0	0.3	0.3	4.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.7	2.6	2.5	1.4	0.0
LnGrp Delay(d),s/veh	1.6	2.0	4.1	4.2	32.6	0.0
LnGrp LOS	A	A	A	A	C	
Approach Vol, veh/h		1874	578		80	
Approach Delay, s/veh		1.8	4.2		32.6	
Approach LOS		A	A		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		52.5		7.5		52.5		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		34.0		18.0		34.0		
Max Q Clear Time (g_c+I1), s		2.0		4.7		7.2		
Green Ext Time (p_c), s		24.6		0.1		21.4		

Intersection Summary	
HCM 2010 Ctrl Delay	3.3
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	220	30	1050	120	410	80	530	550	0	0	760	240
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.76	1.00		0.91	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	232	0	892	126	432	12	558	579	0	0	800	167
Adj No. of Lanes	1	0	2	1	2	1	2	3	0	0	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	0	2	2
Cap, veh/h	244	0	887	435	869	355	602	2672	0	0	1152	499
Arrive On Green	0.14	0.00	0.14	0.25	0.25	0.25	0.17	0.53	0.00	0.00	0.33	0.33
Sat Flow, veh/h	1774	0	2420	1774	3539	1448	3442	5253	0	0	3632	1534
Grp Volume(v), veh/h	232	0	892	126	432	12	558	579	0	0	800	167
Grp Sat Flow(s),veh/h/ln	1774	0	1210	1774	1770	1448	1721	1695	0	0	1770	1534
Q Serve(g_s), s	15.6	0.0	16.5	6.9	12.6	0.8	19.2	7.3	0.0	0.0	23.6	9.9
Cycle Q Clear(g_c), s	15.6	0.0	16.5	6.9	12.6	0.8	19.2	7.3	0.0	0.0	23.6	9.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	244	0	887	435	869	355	602	2672	0	0	1152	499
V/C Ratio(X)	0.95	0.00	1.01	0.29	0.50	0.03	0.93	0.22	0.00	0.00	0.69	0.33
Avail Cap(c_a), veh/h	244	0	887	532	1062	434	602	2672	0	0	1152	499
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	51.3	0.0	42.5	36.8	38.9	34.4	48.7	15.2	0.0	0.0	35.3	30.6
Incr Delay (d2), s/veh	44.1	0.0	31.6	0.4	0.4	0.0	20.6	0.2	0.0	0.0	3.5	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.6	0.0	18.6	3.4	6.2	0.3	10.8	3.5	0.0	0.0	12.1	4.4
LnGrp Delay(d),s/veh	95.5	0.0	74.1	37.1	39.4	34.5	69.3	15.4	0.0	0.0	38.7	32.4
LnGrp LOS	F		F	D	D	C	E	B			D	C
Approach Vol, veh/h		1124			570			1137			967	
Approach Delay, s/veh		78.5			38.8			41.9			37.7	
Approach LOS		E			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		67.1		20.0	24.0	43.1		32.9
Change Period (Y+Rc), s		4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s		56.5		16.5	21.0	32.5		36.0
Max Q Clear Time (g_c+I1), s		9.3		18.5	21.2	25.6		14.6
Green Ext Time (p_c), s		14.9		0.0	0.0	4.8		3.2

Intersection Summary	
HCM 2010 Ctrl Delay	51.2
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	240	40	680	120	450	160	570	920	0	0	780	210
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.80	1.00		0.89	1.00		1.00	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	247	41	10	124	464	95	588	948	0	0	804	131
Adj No. of Lanes	1	1	1	1	2	1	2	3	0	0	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	0	2	2
Cap, veh/h	244	256	452	472	942	377	602	2566	0	0	1078	453
Arrive On Green	0.14	0.14	0.14	0.27	0.27	0.27	0.17	0.50	0.00	0.00	0.30	0.30
Sat Flow, veh/h	1774	1863	1271	1774	3539	1416	3442	5253	0	0	3632	1486
Grp Volume(v), veh/h	247	41	10	124	464	95	588	948	0	0	804	131
Grp Sat Flow(s),veh/h/ln	1774	1863	1271	1774	1770	1416	1721	1695	0	0	1770	1486
Q Serve(g_s), s	16.5	2.3	0.7	6.6	13.3	6.3	20.4	13.6	0.0	0.0	24.5	8.1
Cycle Q Clear(g_c), s	16.5	2.3	0.7	6.6	13.3	6.3	20.4	13.6	0.0	0.0	24.5	8.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	244	256	452	472	942	377	602	2566	0	0	1078	453
V/C Ratio(X)	1.01	0.16	0.02	0.26	0.49	0.25	0.98	0.37	0.00	0.00	0.75	0.29
Avail Cap(c_a), veh/h	244	256	452	532	1062	425	602	2566	0	0	1078	453
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	45.6	28.6	34.7	37.2	34.6	49.3	18.1	0.0	0.0	37.5	31.8
Incr Delay (d2), s/veh	60.9	0.3	0.0	0.3	0.4	0.3	30.6	0.4	0.0	0.0	4.7	1.6
Initial Q Delay(d3),s/veh	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.2	1.2	0.2	3.3	6.6	2.5	12.3	6.4	0.0	0.0	12.7	3.5
LnGrp Delay(d),s/veh	112.7	45.9	28.6	35.0	37.6	35.0	79.9	18.5	0.0	0.0	42.2	33.4
LnGrp LOS	F	D	C	D	D	C	E	B			D	C
Approach Vol, veh/h		298			683			1536			935	
Approach Delay, s/veh		100.7			36.8			42.0			41.0	
Approach LOS		F			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		64.6		20.0	24.0	40.6		35.4
Change Period (Y+Rc), s		4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s		56.5		16.5	21.0	32.5		36.0
Max Q Clear Time (g_c+I1), s		15.6		18.5	22.4	26.5		15.3
Green Ext Time (p_c), s		19.4		0.0	0.0	4.9		3.8

Intersection Summary	
HCM 2010 Ctrl Delay	45.8
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	240	380	570	380	70	100
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	253	400	600	400	74	105
Adj No. of Lanes	1	0	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	290	459	667	1452	176	157
Arrive On Green	0.45	0.45	0.27	0.78	0.10	0.10
Sat Flow, veh/h	651	1030	1774	1863	1774	1583
Grp Volume(v), veh/h	0	653	600	400	74	105
Grp Sat Flow(s),veh/h/ln	0	1681	1774	1863	1774	1583
Q Serve(g_s), s	0.0	23.3	14.3	4.0	2.6	4.2
Cycle Q Clear(g_c), s	0.0	23.3	14.3	4.0	2.6	4.2
Prop In Lane		0.61	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	749	667	1452	176	157
V/C Ratio(X)	0.00	0.87	0.90	0.28	0.42	0.67
Avail Cap(c_a), veh/h	0	839	959	1859	429	383
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	16.6	15.1	2.0	28.0	28.7
Incr Delay (d2), s/veh	0.0	9.2	8.4	0.1	1.6	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	12.6	11.9	2.0	1.4	2.1
LnGrp Delay(d),s/veh	0.0	25.9	23.5	2.1	29.6	33.5
LnGrp LOS		C	C	A	C	C
Approach Vol, veh/h	653			1000	179	
Approach Delay, s/veh	25.9			15.0	31.9	
Approach LOS	C			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		10.6	22.1	33.5				55.6
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		16.0	29.0	33.0				66.0
Max Q Clear Time (g_c+I1), s		6.2	16.3	25.3				6.0
Green Ext Time (p_c), s		0.3	1.8	4.2				9.8

Intersection Summary	
HCM 2010 Ctrl Delay	20.5
HCM 2010 LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	380	60	90	100	360	560
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	400	63	95	105	379	589
Adj No. of Lanes	1	0	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	481	76	300	816	731	652
Arrive On Green	0.31	0.31	0.06	0.44	0.41	0.41
Sat Flow, veh/h	1572	248	1774	1863	1774	1583
Grp Volume(v), veh/h	0	463	95	105	379	589
Grp Sat Flow(s),veh/h/ln	0	1819	1774	1863	1774	1583
Q Serve(g_s), s	0.0	12.6	1.8	1.8	8.5	18.5
Cycle Q Clear(g_c), s	0.0	12.6	1.8	1.8	8.5	18.5
Prop In Lane		0.14	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	557	300	816	731	652
V/C Ratio(X)	0.00	0.83	0.32	0.13	0.52	0.90
Avail Cap(c_a), veh/h	0	684	333	980	800	714
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	17.2	12.3	8.9	11.7	14.7
Incr Delay (d2), s/veh	0.0	7.2	0.6	0.1	0.6	14.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.4	0.9	0.9	4.2	10.5
LnGrp Delay(d),s/veh	0.0	24.4	12.9	9.0	12.3	28.8
LnGrp LOS		C	B	A	B	C
Approach Vol, veh/h	463			200	968	
Approach Delay, s/veh	24.4			10.9	22.3	
Approach LOS	C			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		25.9	7.0	20.3				27.3
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		24.0	4.0	20.0				28.0
Max Q Clear Time (g_c+I1), s		20.5	3.8	14.6				3.8
Green Ext Time (p_c), s		1.4	0.0	1.7				3.8

Intersection Summary	
HCM 2010 Ctrl Delay	21.5
HCM 2010 LOS	C

Intersection	
Intersection Delay, s/veh	59.8
Intersection LOS	F

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	10	10	10	0	430	10	30	0	30	920	180
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	11	11	11	0	467	11	33	0	33	1000	196
Number of Lanes	0	0	1	0	0	1	1	0	0	1	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	1	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	3	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	3	3	2
HCM Control Delay	14.2	70.7	68.4
HCM LOS	B	F	F

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	33%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	63%	33%	0%	25%	0%	100%	85%
Vol Right, %	0%	0%	37%	33%	0%	75%	0%	0%	15%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	30	613	487	30	430	40	130	113	67
LT Vol	30	0	0	10	430	0	130	0	0
Through Vol	0	613	307	10	0	10	0	113	57
RT Vol	0	0	180	10	0	30	0	0	10
Lane Flow Rate	33	667	529	33	467	43	141	123	72
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.076	1	1	0.094	1	0.098	0.376	0.311	0.181
Departure Headway (Hd)	8.407	7.91	7.652	10.359	9.145	8.125	9.583	9.084	8.979
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	427	460	476	347	397	441	377	397	401
Service Time	6.147	5.649	5.392	8.097	6.887	5.867	7.303	6.804	6.699
HCM Lane V/C Ratio	0.077	1.45	1.111	0.095	1.176	0.098	0.374	0.31	0.18
HCM Control Delay	11.8	70.5	69.2	14.2	76.2	11.8	18	15.9	13.7
HCM Lane LOS	B	F	F	B	F	B	C	C	B
HCM 95th-tile Q	0.2	13	13.2	0.3	12.1	0.3	1.7	1.3	0.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	130	170	10
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	141	185	11
Number of Lanes	0	1	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	3
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	16.3
HCM LOS	C

Lane

Intersection	
Intersection Delay, s/veh	50.1
Intersection LOS	F

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	10	20	10	0	510	10	20	0	10	120	100
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	11	22	11	0	554	11	22	0	11	130	109
Number of Lanes	0	0	1	0	0	1	1	0	0	1	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	1	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	3	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	3	3	2
HCM Control Delay	13.9	70.8	15.3
HCM LOS	B	F	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	25%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	29%	50%	0%	33%	0%	100%	93%
Vol Right, %	0%	0%	71%	25%	0%	67%	0%	0%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	10	80	140	40	510	30	510	267	143
LT Vol	10	0	0	10	510	0	510	0	0
Through Vol	0	80	40	20	0	10	0	267	133
RT Vol	0	0	100	10	0	20	0	0	10
Lane Flow Rate	11	87	152	43	554	33	554	290	156
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.029	0.218	0.361	0.118	1	0.07	1	0.616	0.329
Departure Headway (Hd)	9.53	9.031	8.533	9.804	8.718	7.76	8.148	7.651	7.602
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	377	398	423	366	421	461	449	472	474
Service Time	7.264	6.766	6.267	7.555	6.468	5.51	5.877	5.379	5.33
HCM Lane V/C Ratio	0.029	0.219	0.359	0.117	1.316	0.072	1.234	0.614	0.329
HCM Control Delay	12.5	14.3	16	13.9	74.3	11.1	71.5	21.9	14
HCM Lane LOS	B	B	C	B	F	B	F	C	B
HCM 95th-tile Q	0.1	0.8	1.6	0.4	12.4	0.2	12.8	4.1	1.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	510	400	10
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	554	435	11
Number of Lanes	0	1	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	3
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	48.2
HCM LOS	E

Lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	460	190	820	150	40	60	70	540	50	150	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	11	511	161	911	167	38	67	78	42	56	167	26
Adj No. of Lanes	1	2	0	2	1	0	1	1	1	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	413	615	193	964	397	90	149	156	132	69	206	32
Arrive On Green	0.23	0.23	0.23	0.27	0.27	0.27	0.08	0.08	0.08	0.17	0.17	0.17
Sat Flow, veh/h	1774	2644	828	3548	1462	333	1774	1863	1572	406	1211	189
Grp Volume(v), veh/h	11	341	331	911	0	205	67	78	42	249	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1703	1774	0	1795	1774	1863	1572	1805	0	0
Q Serve(g_s), s	0.3	12.1	12.3	16.7	0.0	6.2	2.4	2.7	1.7	8.8	0.0	0.0
Cycle Q Clear(g_c), s	0.3	12.1	12.3	16.7	0.0	6.2	2.4	2.7	1.7	8.8	0.0	0.0
Prop In Lane	1.00		0.49	1.00		0.19	1.00		1.00	0.22		0.10
Lane Grp Cap(c), veh/h	413	411	396	964	0	488	149	156	132	307	0	0
V/C Ratio(X)	0.03	0.83	0.84	0.94	0.00	0.42	0.45	0.50	0.32	0.81	0.00	0.00
Avail Cap(c_a), veh/h	455	454	437	964	0	488	750	787	664	436	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	19.6	24.2	24.2	23.6	0.0	19.8	28.9	29.0	28.6	26.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	11.3	12.3	17.2	0.0	0.6	2.1	2.5	1.4	7.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	7.2	7.1	10.4	0.0	3.2	1.3	1.5	0.8	5.0	0.0	0.0
LnGrp Delay(d),s/veh	19.7	35.4	36.5	40.9	0.0	20.4	31.0	31.5	29.9	34.0	0.0	0.0
LnGrp LOS	B	D	D	D		C	C	C	C	C		
Approach Vol, veh/h		683			1116			187			249	
Approach Delay, s/veh		35.7			37.1			31.0			34.0	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		9.6		19.4		15.3		22.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		28.0		17.0		16.0		18.0
Max Q Clear Time (g_c+I1), s		4.7		14.3		10.8		18.7
Green Ext Time (p_c), s		0.7		1.1		0.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	35.8
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	530	80	310	370	50	320	190	880	30	40	50
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	52	546	36	249	480	47	263	290	389	31	41	46
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	0	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	355	675	44	341	643	63	528	555	471	41	54	60
Arrive On Green	0.20	0.20	0.20	0.19	0.19	0.19	0.30	0.30	0.30	0.09	0.09	0.09
Sat Flow, veh/h	1774	3371	222	1774	3342	326	1774	1863	1580	448	593	665
Grp Volume(v), veh/h	52	286	296	249	267	260	263	290	389	118	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1824	1774	1863	1805	1774	1863	1580	1706	0	0
Q Serve(g_s), s	1.8	11.3	11.3	9.6	9.9	9.9	8.9	9.5	16.7	4.9	0.0	0.0
Cycle Q Clear(g_c), s	1.8	11.3	11.3	9.6	9.9	9.9	8.9	9.5	16.7	4.9	0.0	0.0
Prop In Lane	1.00		0.12	1.00		0.18	1.00		1.00	0.26		0.39
Lane Grp Cap(c), veh/h	355	354	365	341	358	347	528	555	471	154	0	0
V/C Ratio(X)	0.15	0.81	0.81	0.73	0.74	0.75	0.50	0.52	0.83	0.76	0.00	0.00
Avail Cap(c_a), veh/h	413	412	425	438	459	445	681	715	606	374	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.1	27.9	27.9	27.7	27.8	27.8	21.1	21.3	23.9	32.4	0.0	0.0
Incr Delay (d2), s/veh	0.2	10.0	9.9	4.5	4.8	5.2	0.7	0.8	7.3	7.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	6.5	6.7	5.1	5.5	5.4	4.5	5.0	8.2	2.7	0.0	0.0
LnGrp Delay(d),s/veh	24.2	37.8	37.8	32.2	32.6	33.0	21.9	22.1	31.2	40.0	0.0	0.0
LnGrp LOS	C	D	D	C	C	C	C	C	C	D		
Approach Vol, veh/h		634			776			942			118	
Approach Delay, s/veh		36.7			32.6			25.8			40.0	
Approach LOS		D			C			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		25.7		18.6		10.6		18.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		28.0		17.0		16.0		18.0
Max Q Clear Time (g_c+I1), s		18.7		13.3		6.9		11.9
Green Ext Time (p_c), s		2.9		1.3		0.3		2.1

Intersection Summary	
HCM 2010 Ctrl Delay	31.4
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	510	10	80	20	590	0	0	620	540
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1900	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				580	11	18	23	670	0	0	705	0
Adj No. of Lanes				1	1	0	1	2	0	0	2	0
Peak Hour Factor				0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				569	204	334	39	1837	0	0	1476	0
Arrive On Green				0.32	0.32	0.32	0.02	0.52	0.00	0.00	0.42	0.00
Sat Flow, veh/h				1774	637	1042	1774	3632	0	0	3725	0
Grp Volume(v), veh/h				580	0	29	23	670	0	0	705	0
Grp Sat Flow(s),veh/h/ln				1774	0	1679	1774	1770	0	0	1770	0
Q Serve(g_s), s				16.0	0.0	0.6	0.6	5.6	0.0	0.0	7.2	0.0
Cycle Q Clear(g_c), s				16.0	0.0	0.6	0.6	5.6	0.0	0.0	7.2	0.0
Prop In Lane				1.00		0.62	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				569	0	538	39	1837	0	0	1476	0
V/C Ratio(X)				1.02	0.00	0.05	0.59	0.36	0.00	0.00	0.48	0.00
Avail Cap(c_a), veh/h				569	0	538	142	2128	0	0	2695	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				17.0	0.0	11.7	24.2	7.1	0.0	0.0	10.6	0.0
Incr Delay (d2), s/veh				42.8	0.0	0.0	13.6	0.1	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				14.3	0.0	0.3	0.5	2.7	0.0	0.0	3.6	0.0
LnGrp Delay(d),s/veh				59.8	0.0	11.8	37.7	7.2	0.0	0.0	10.8	0.0
LnGrp LOS				F		B	D	A			B	
Approach Vol, veh/h					609			693			705	
Approach Delay, s/veh					57.5			8.3			10.8	
Approach LOS					E			A			B	

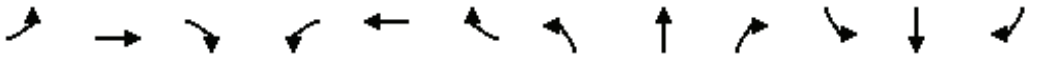
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		29.9			5.1	24.8		20.0
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		30.0			4.0	38.0		16.0
Max Q Clear Time (g_c+I1), s		7.6			2.6	9.2		18.0
Green Ext Time (p_c), s		10.3			0.0	11.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	24.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	110	10	500	30	890	0	0	120	310
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1900	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				116	11	459	32	937	0	0	126	0
Adj No. of Lanes				1	1	0	1	2	0	0	2	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				624	13	546	53	1576	0	0	1110	0
Arrive On Green				0.35	0.35	0.35	0.03	0.45	0.00	0.00	0.31	0.00
Sat Flow, veh/h				1774	37	1552	1774	3632	0	0	3725	0
Grp Volume(v), veh/h				116	0	470	32	937	0	0	126	0
Grp Sat Flow(s),veh/h/ln				1774	0	1589	1774	1770	0	0	1770	0
Q Serve(g_s), s				1.8	0.0	10.7	0.7	7.9	0.0	0.0	1.0	0.0
Cycle Q Clear(g_c), s				1.8	0.0	10.7	0.7	7.9	0.0	0.0	1.0	0.0
Prop In Lane				1.00		0.98	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				624	0	559	53	1576	0	0	1110	0
V/C Ratio(X)				0.19	0.00	0.84	0.60	0.59	0.00	0.00	0.11	0.00
Avail Cap(c_a), veh/h				721	0	645	180	2695	0	0	3414	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				8.9	0.0	11.8	18.9	8.2	0.0	0.0	9.6	0.0
Incr Delay (d2), s/veh				0.1	0.0	8.7	10.4	0.4	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				0.9	0.0	5.9	0.5	3.9	0.0	0.0	0.5	0.0
LnGrp Delay(d),s/veh				9.0	0.0	20.5	29.3	8.6	0.0	0.0	9.7	0.0
LnGrp LOS				A		C	C	A			A	
Approach Vol, veh/h					586			969			126	
Approach Delay, s/veh					18.2			9.3			9.7	
Approach LOS					B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		21.5			5.2	16.4		17.8
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		30.0			4.0	38.0		16.0
Max Q Clear Time (g_c+I1), s		9.9			2.7	3.0		12.7
Green Ext Time (p_c), s		7.7			0.0	9.3		1.1

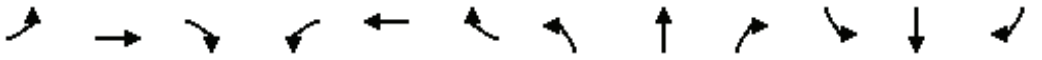
Intersection Summary	
HCM 2010 Ctrl Delay	12.4
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	890	240	160	390	0	0	0	0	520	40	620
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1900	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	967	208	174	424	0				565	43	628
Adj No. of Lanes	0	2	0	0	2	0				0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1811	389	303	1008	0				205	16	228
Arrive On Green	0.00	0.63	0.63	1.00	1.00	0.00				0.27	0.27	0.27
Sat Flow, veh/h	0	2990	622	332	1697	0				765	58	851
Grp Volume(v), veh/h	0	590	585	175	423	0				1236	0	0
Grp Sat Flow(s),veh/h/ln	0	1770	1749	333	1610	0				1674	0	0
Q Serve(g_s), s	0.0	14.1	14.1	20.0	0.0	0.0				20.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	14.1	14.1	34.1	0.0	0.0				20.1	0.0	0.0
Prop In Lane	0.00		0.36	1.00		0.00				0.46		0.51
Lane Grp Cap(c), veh/h	0	1106	1094	304	1007	0				449	0	0
V/C Ratio(X)	0.00	0.53	0.53	0.57	0.42	0.00				2.75	0.00	0.00
Avail Cap(c_a), veh/h	0	1203	1189	330	1095	0				449	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.91	0.91	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.9	7.9	5.1	0.0	0.0				27.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.4	0.4	1.9	0.3	0.0				795.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.8	6.8	2.6	0.1	0.0				108.4	0.0	0.0
LnGrp Delay(d),s/veh	0.0	8.3	8.3	7.0	0.3	0.0				822.6	0.0	0.0
LnGrp LOS		A	A	A	A					F		
Approach Vol, veh/h		1175			598						1236	
Approach Delay, s/veh		8.3			2.2						822.6	
Approach LOS		A			A						F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				50.9		24.1		50.9
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				51.0		16.0		51.0
Max Q Clear Time (g_c+I1), s				16.1		22.1		36.1
Green Ext Time (p_c), s				19.2		0.0		10.8

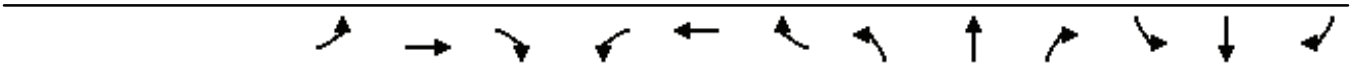
Intersection Summary	
HCM 2010 Ctrl Delay	341.6
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1010	380	170	470	0	0	0	0	580	20	400
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1900	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	1052	368	177	490	0				604	21	373
Adj No. of Lanes	0	2	0	0	2	0				0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1754	606	267	1095	0				219	8	135
Arrive On Green	0.00	0.68	0.68	1.00	1.00	0.00				0.21	0.21	0.21
Sat Flow, veh/h	0	2673	891	252	1695	0				1028	36	635
Grp Volume(v), veh/h	0	717	703	177	490	0				998	0	0
Grp Sat Flow(s),veh/h/ln	0	1770	1701	252	1610	0				1699	0	0
Q Serve(g_s), s	0.0	16.4	16.9	34.1	0.0	0.0				16.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	16.4	16.9	51.0	0.0	0.0				16.0	0.0	0.0
Prop In Lane	0.00		0.52	1.00		0.00				0.61		0.37
Lane Grp Cap(c), veh/h	0	1203	1157	267	1095	0				363	0	0
V/C Ratio(X)	0.00	0.60	0.61	0.66	0.45	0.00				2.75	0.00	0.00
Avail Cap(c_a), veh/h	0	1203	1157	267	1095	0				363	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.88	0.88	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	6.5	6.5	9.0	0.0	0.0				29.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.8	0.9	5.3	0.3	0.0				796.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.0	8.1	4.0	0.1	0.0				87.7	0.0	0.0
LnGrp Delay(d),s/veh	0.0	7.3	7.5	14.3	0.3	0.0				826.1	0.0	0.0
LnGrp LOS		A	A	B	A					F		
Approach Vol, veh/h		1420			667						998	
Approach Delay, s/veh		7.4			4.0						826.1	
Approach LOS		A			A						F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				55.0		20.0		55.0
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				51.0		16.0		51.0
Max Q Clear Time (g_c+I1), s				18.9		18.0		53.0
Green Ext Time (p_c), s				22.8		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	271.5
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	320	1090	0	0	470	480	80	10	110	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	360	1225	0	0	528	354	98	0	32			
Adj No. of Lanes	0	2	0	0	2	0	2	0	1			
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	363	1346	0	0	1399	937	710	0	316			
Arrive On Green	1.00	1.00	0.00	0.00	0.69	0.69	0.20	0.00	0.20			
Sat Flow, veh/h	417	2027	0	0	2110	1351	3548	0	1581			
Grp Volume(v), veh/h	647	938	0	0	463	419	98	0	32			
Grp Sat Flow(s),veh/h/ln	748	1610	0	0	1770	1599	1774	0	1581			
Q Serve(g_s), s	43.8	0.0	0.0	0.0	8.2	8.2	1.7	0.0	1.2			
Cycle Q Clear(g_c), s	52.0	0.0	0.0	0.0	8.2	8.2	1.7	0.0	1.2			
Prop In Lane	0.56		0.00	0.00		0.85	1.00		1.00			
Lane Grp Cap(c), veh/h	593	1117	0	0	1227	1108	710	0	316			
V/C Ratio(X)	1.09	0.84	0.00	0.00	0.38	0.38	0.14	0.00	0.10			
Avail Cap(c_a), veh/h	593	1117	0	0	1227	1108	710	0	316			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.68	0.68	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	6.8	0.0	0.0	0.0	4.8	4.8	24.7	0.0	24.5			
Incr Delay (d2), s/veh	57.9	4.1	0.0	0.0	0.2	0.2	0.4	0.0	0.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	21.7	1.3	0.0	0.0	3.9	3.6	0.9	0.0	0.6			
LnGrp Delay(d),s/veh	64.7	4.1	0.0	0.0	5.0	5.0	25.1	0.0	25.1			
LnGrp LOS	F	A			A	A	C		C			
Approach Vol, veh/h		1585			882			130				
Approach Delay, s/veh		28.8			5.0			25.1				
Approach LOS		C			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		19.0		56.0				56.0
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		15.0		52.0				52.0
Max Q Clear Time (g_c+I1), s		3.7		54.0				10.2
Green Ext Time (p_c), s		0.3		0.0				33.1

Intersection Summary	
HCM 2010 Ctrl Delay	20.5
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	570	1020	0	0	540	550	100	150	220	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	594	1062	0	0	562	401	104	156	144			
Adj No. of Lanes	0	2	0	0	2	0	1	1	1			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	422	1127	0	0	1360	971	355	373	317			
Arrive On Green	1.00	1.00	0.00	0.00	0.69	0.69	0.20	0.20	0.20			
Sat Flow, veh/h	473	1711	0	0	2055	1400	1774	1863	1583			
Grp Volume(v), veh/h	613	1043	0	0	507	456	104	156	144			
Grp Sat Flow(s),veh/h/ln	488	1610	0	0	1770	1592	1774	1863	1583			
Q Serve(g_s), s	42.8	0.0	0.0	0.0	9.2	9.2	3.7	5.5	6.0			
Cycle Q Clear(g_c), s	52.0	0.0	0.0	0.0	9.2	9.2	3.7	5.5	6.0			
Prop In Lane	0.97		0.00	0.00		0.88	1.00		1.00			
Lane Grp Cap(c), veh/h	433	1117	0	0	1227	1104	355	373	317			
V/C Ratio(X)	1.42	0.93	0.00	0.00	0.41	0.41	0.29	0.42	0.45			
Avail Cap(c_a), veh/h	433	1117	0	0	1227	1104	355	373	317			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.64	0.64	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	9.3	0.0	0.0	0.0	4.9	4.9	25.5	26.2	26.4			
Incr Delay (d2), s/veh	196.2	9.9	0.0	0.0	0.2	0.2	2.1	3.4	4.7			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	32.4	3.1	0.0	0.0	4.4	4.0	2.0	3.2	3.0			
LnGrp Delay(d),s/veh	205.4	9.9	0.0	0.0	5.2	5.2	27.6	29.6	31.1			
LnGrp LOS	F	A			A	A	C	C	C			
Approach Vol, veh/h		1656			963			404				
Approach Delay, s/veh		82.3			5.2			29.6				
Approach LOS		F			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		19.0		56.0				56.0
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		15.0		52.0				52.0
Max Q Clear Time (g_c+I1), s		8.0		54.0				11.2
Green Ext Time (p_c), s		1.0		0.0				35.8

Intersection Summary	
HCM 2010 Ctrl Delay	50.7
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	510	230	30	590	90	210	210	30	190	990	180
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	32	537	167	32	621	83	221	221	23	200	1042	175
Adj No. of Lanes	0	2	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	76	1167	592	69	1114	146	252	1200	123	232	1087	182
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.14	0.37	0.37	0.13	0.36	0.36
Sat Flow, veh/h	101	3017	1530	86	2880	378	1774	3230	332	1774	3017	506
Grp Volume(v), veh/h	277	292	167	382	0	354	221	120	124	200	610	607
Grp Sat Flow(s),veh/h/ln	1508	1610	1530	1731	0	1614	1774	1770	1793	1774	1770	1753
Q Serve(g_s), s	0.9	14.7	8.1	1.6	0.0	18.6	13.2	4.9	5.0	11.9	36.4	36.6
Cycle Q Clear(g_c), s	19.6	14.7	8.1	17.3	0.0	18.6	13.2	4.9	5.0	11.9	36.4	36.6
Prop In Lane	0.12		1.00	0.08		0.23	1.00		0.19	1.00		0.29
Lane Grp Cap(c), veh/h	621	623	592	706	0	624	252	657	666	232	637	631
V/C Ratio(X)	0.45	0.47	0.28	0.54	0.00	0.57	0.88	0.18	0.19	0.86	0.96	0.96
Avail Cap(c_a), veh/h	621	623	592	706	0	624	345	657	666	427	639	633
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.00	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.0	24.8	22.8	25.5	0.0	26.0	45.4	22.9	22.9	46.0	33.7	33.8
Incr Delay (d2), s/veh	2.3	2.5	1.2	0.3	0.0	0.3	13.9	0.2	0.2	3.7	25.6	26.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	6.9	3.6	8.9	0.0	8.3	7.4	2.4	2.5	6.1	22.3	22.3
LnGrp Delay(d),s/veh	26.3	27.3	24.0	25.8	0.0	26.3	59.3	23.1	23.1	49.7	59.3	60.3
LnGrp LOS	C	C	C	C		C	E	C	C	D	E	E
Approach Vol, veh/h		736			736			465			1417	
Approach Delay, s/veh		26.2			26.1			40.3			58.4	
Approach LOS		C			C			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	19.3	42.9		45.8	18.1	44.1		45.8
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	21.0	39.0		36.0	26.0	34.0		36.0
Max Q Clear Time (g_c+I1), s	15.2	38.6		21.6	13.9	7.0		20.6
Green Ext Time (p_c), s	0.2	0.3		9.7	0.2	15.9		10.2

Intersection Summary	
HCM 2010 Ctrl Delay	41.7
HCM 2010 LOS	D

Notes

User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	80	580	370	30	480	130	250	670	40	90	380	60
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	83	604	311	31	500	124	260	698	33	94	396	48
Adj No. of Lanes	0	2	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	183	1238	757	83	1248	303	290	1123	53	119	732	88
Arrive On Green	0.49	0.49	0.49	0.49	0.49	0.49	0.16	0.33	0.33	0.07	0.23	0.23
Sat Flow, veh/h	283	2504	1532	94	2523	614	1774	3434	162	1774	3168	381
Grp Volume(v), veh/h	294	393	311	339	0	316	260	359	372	94	220	224
Grp Sat Flow(s),veh/h/ln	1177	1610	1532	1668	0	1562	1774	1770	1827	1774	1770	1779
Q Serve(g_s), s	10.1	17.7	13.9	0.0	0.0	13.8	15.5	18.5	18.6	5.6	11.8	12.0
Cycle Q Clear(g_c), s	23.9	17.7	13.9	12.2	0.0	13.8	15.5	18.5	18.6	5.6	11.8	12.0
Prop In Lane	0.28		1.00	0.09		0.39	1.00		0.09	1.00		0.21
Lane Grp Cap(c), veh/h	625	796	757	861	0	773	290	579	598	119	409	411
V/C Ratio(X)	0.47	0.49	0.41	0.39	0.00	0.41	0.90	0.62	0.62	0.79	0.54	0.55
Avail Cap(c_a), veh/h	625	796	757	861	0	773	345	579	598	427	639	642
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.00	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.0	18.3	17.3	16.9	0.0	17.3	44.3	30.7	30.7	49.6	36.5	36.5
Incr Delay (d2), s/veh	2.5	2.2	1.6	0.1	0.0	0.1	20.5	2.4	2.3	4.3	1.6	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	8.2	6.2	6.2	0.0	6.0	9.2	9.4	9.8	2.9	5.9	6.0
LnGrp Delay(d),s/veh	22.5	20.4	19.0	17.0	0.0	17.4	64.8	33.1	33.0	53.9	38.0	38.1
LnGrp LOS	C	C	B	B		B	E	C	C	D	D	D
Approach Vol, veh/h		998			655			991			538	
Approach Delay, s/veh		20.6			17.2			41.4			40.8	
Approach LOS		C			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	21.6	28.9		57.4	11.3	39.3		57.4
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	21.0	39.0		36.0	26.0	34.0		36.0
Max Q Clear Time (g_c+I1), s	17.5	14.0		25.9	7.6	20.6		15.8
Green Ext Time (p_c), s	0.1	9.1		7.8	0.1	7.8		13.6

Intersection Summary	
HCM 2010 Ctrl Delay	29.8
HCM 2010 LOS	C

Notes

User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	290	150	130	210	90	50	650	70	110	1080	20
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.94	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	30	293	135	131	212	78	51	657	63	111	1091	19
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	107	284	131	177	358	132	129	1434	137	158	1626	28
Arrive On Green	0.06	0.24	0.24	0.10	0.28	0.28	0.07	0.44	0.44	0.03	0.15	0.15
Sat Flow, veh/h	1774	1179	543	1774	1277	470	1774	3256	312	1774	3556	62
Grp Volume(v), veh/h	30	0	428	131	0	290	51	357	363	111	543	567
Grp Sat Flow(s),veh/h/ln	1774	0	1722	1774	0	1747	1774	1770	1798	1774	1770	1848
Q Serve(g_s), s	1.7	0.0	26.0	7.8	0.0	15.5	3.0	15.3	15.3	6.7	31.3	31.3
Cycle Q Clear(g_c), s	1.7	0.0	26.0	7.8	0.0	15.5	3.0	15.3	15.3	6.7	31.3	31.3
Prop In Lane	1.00		0.32	1.00		0.27	1.00		0.17	1.00		0.03
Lane Grp Cap(c), veh/h	107	0	414	177	0	489	129	780	792	158	809	845
V/C Ratio(X)	0.28	0.00	1.03	0.74	0.00	0.59	0.40	0.46	0.46	0.70	0.67	0.67
Avail Cap(c_a), veh/h	197	0	414	197	0	489	197	780	792	197	809	845
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.63	0.63	0.63
Uniform Delay (d), s/veh	48.5	0.0	41.0	47.2	0.0	33.6	47.8	21.2	21.2	51.0	38.2	38.2
Incr Delay (d2), s/veh	0.5	0.0	52.9	10.2	0.0	5.2	0.7	1.9	1.9	3.2	2.8	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	18.4	4.3	0.0	8.2	1.5	7.9	8.0	3.4	16.0	16.7
LnGrp Delay(d),s/veh	49.0	0.0	93.9	57.4	0.0	38.7	48.6	23.1	23.1	54.2	41.0	40.9
LnGrp LOS	D		F	E		D	D	C	C	D	D	D
Approach Vol, veh/h		458			421			771			1221	
Approach Delay, s/veh		90.9			44.6			24.8			42.1	
Approach LOS		F			D			C			D	

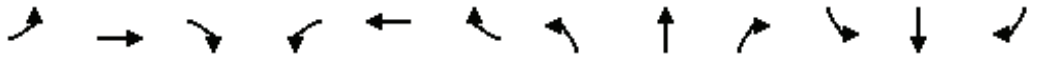
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	53.4	13.8	30.0	12.6	51.6	9.5	34.3
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	12.0	44.0	12.0	26.0	12.0	44.0	12.0	26.0
Max Q Clear Time (g_c+I1), s	5.0	33.3	9.8	28.0	8.7	17.3	3.7	17.5
Green Ext Time (p_c), s	0.0	8.9	0.0	0.0	0.0	18.8	0.0	2.2

Intersection Summary	
HCM 2010 Ctrl Delay	45.6
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	180	60	90	300	100	110	980	90	130	950	50
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.94	1.00		0.95	1.00		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	20	184	44	92	306	89	112	1000	84	133	969	50
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	82	344	82	169	396	115	159	1456	122	163	1516	78
Arrive On Green	0.05	0.24	0.24	0.10	0.29	0.29	0.09	0.44	0.44	0.03	0.15	0.15
Sat Flow, veh/h	1774	1428	341	1774	1364	397	1774	3291	276	1774	3408	176
Grp Volume(v), veh/h	20	0	228	92	0	395	112	538	546	133	503	516
Grp Sat Flow(s),veh/h/ln	1774	0	1769	1774	0	1761	1774	1770	1797	1774	1770	1814
Q Serve(g_s), s	1.2	0.0	12.1	5.3	0.0	22.2	6.6	26.3	26.3	8.1	28.9	28.9
Cycle Q Clear(g_c), s	1.2	0.0	12.1	5.3	0.0	22.2	6.6	26.3	26.3	8.1	28.9	28.9
Prop In Lane	1.00		0.19	1.00		0.23	1.00		0.15	1.00		0.10
Lane Grp Cap(c), veh/h	82	0	426	169	0	511	159	783	796	163	787	807
V/C Ratio(X)	0.25	0.00	0.54	0.54	0.00	0.77	0.71	0.69	0.69	0.82	0.64	0.64
Avail Cap(c_a), veh/h	197	0	426	197	0	511	197	783	796	197	787	807
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.66	0.66	0.66
Uniform Delay (d), s/veh	49.7	0.0	35.7	46.6	0.0	35.1	47.8	24.1	24.1	51.5	37.9	37.9
Incr Delay (d2), s/veh	0.6	0.0	4.8	1.0	0.0	10.8	5.4	4.9	4.8	11.5	2.6	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	6.5	2.7	0.0	12.3	3.5	13.9	14.1	4.5	14.8	15.1
LnGrp Delay(d),s/veh	50.3	0.0	40.5	47.6	0.0	45.9	53.2	29.0	28.9	63.0	40.5	40.5
LnGrp LOS	D		D	D		D	D	C	C	E	D	D
Approach Vol, veh/h		248			487			1196			1152	
Approach Delay, s/veh		41.3			46.2			31.2			43.1	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	52.0	13.3	30.0	12.9	51.8	8.0	35.3
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	12.0	44.0	12.0	26.0	12.0	44.0	12.0	26.0
Max Q Clear Time (g_c+I1), s	8.6	30.9	7.3	14.1	10.1	28.3	3.2	24.2
Green Ext Time (p_c), s	0.0	11.4	0.0	2.1	0.0	13.4	0.0	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	38.8
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	630	160	130	710	0	0	0	0	190	940	150
Number	7	4	14	3	8	18				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	0.99		1.00				1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	643	154	133	724	0				194	959	139
Adj No. of Lanes	0	2	0	1	2	0				0	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1342	321	346	1697	0				192	994	151
Arrive On Green	0.00	0.48	0.48	0.48	0.48	0.00				0.37	0.37	0.37
Sat Flow, veh/h	0	2893	669	675	3632	0				519	2682	407
Grp Volume(v), veh/h	0	406	391	133	724	0				687	0	605
Grp Sat Flow(s),veh/h/ln	0	1770	1699	675	1770	0				1837	0	1770
Q Serve(g_s), s	0.0	8.8	8.8	9.4	7.6	0.0				21.0	0.0	18.5
Cycle Q Clear(g_c), s	0.0	8.8	8.8	18.2	7.6	0.0				21.0	0.0	18.5
Prop In Lane	0.00		0.39	1.00		0.00				0.28		0.23
Lane Grp Cap(c), veh/h	0	848	814	346	1697	0				681	0	656
V/C Ratio(X)	0.00	0.48	0.48	0.38	0.43	0.00				1.01	0.00	0.92
Avail Cap(c_a), veh/h	0	1077	1035	433	2155	0				681	0	656
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	10.0	10.0	16.1	9.7	0.0				17.8	0.0	17.0
Incr Delay (d2), s/veh	0.0	0.2	0.2	0.3	0.1	0.0				36.8	0.0	18.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.3	4.2	1.8	3.6	0.0				17.4	0.0	12.2
LnGrp Delay(d),s/veh	0.0	10.1	10.1	16.4	9.7	0.0				54.6	0.0	35.3
LnGrp LOS		B	B	B	A					F		D
Approach Vol, veh/h		797			857						1292	
Approach Delay, s/veh		10.1			10.8						45.6	
Approach LOS		B			B						D	

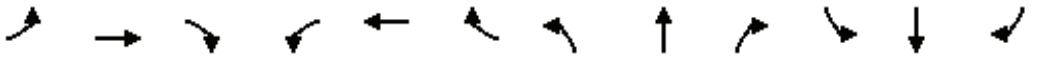
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		25.5		31.2				31.2
Change Period (Y+Rc), s		4.5		4.0				4.0
Max Green Setting (Gmax), s		21.0		34.5				34.5
Max Q Clear Time (g_c+I1), s		23.0		10.8				20.2
Green Ext Time (p_c), s		0.0		8.8				6.9

Intersection Summary	
HCM 2010 Ctrl Delay	25.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	830	150	120	570	0	0	0	0	160	700	120
Number	7	4	14	3	8	18				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		1.00				1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	856	146	124	588	0				165	722	110
Adj No. of Lanes	0	2	0	1	2	0				0	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1558	266	307	1839	0				191	877	140
Arrive On Green	0.00	0.52	0.52	0.52	0.52	0.00				0.33	0.33	0.33
Sat Flow, veh/h	0	3092	512	559	3632	0				571	2622	418
Grp Volume(v), veh/h	0	505	497	124	588	0				530	0	467
Grp Sat Flow(s),veh/h/ln	0	1770	1741	559	1770	0				1834	0	1777
Q Serve(g_s), s	0.0	11.2	11.2	11.2	5.6	0.0				15.7	0.0	13.8
Cycle Q Clear(g_c), s	0.0	11.2	11.2	22.3	5.6	0.0				15.7	0.0	13.8
Prop In Lane	0.00		0.29	1.00		0.00				0.31		0.24
Lane Grp Cap(c), veh/h	0	919	905	307	1839	0				613	0	594
V/C Ratio(X)	0.00	0.55	0.55	0.40	0.32	0.00				0.86	0.00	0.79
Avail Cap(c_a), veh/h	0	1049	1032	348	2098	0				662	0	641
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	9.4	9.4	16.9	8.1	0.0				18.1	0.0	17.5
Incr Delay (d2), s/veh	0.0	0.2	0.2	0.3	0.0	0.0				10.1	0.0	5.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.4	5.3	1.7	2.7	0.0				9.7	0.0	7.6
LnGrp Delay(d),s/veh	0.0	9.6	9.6	17.2	8.1	0.0				28.2	0.0	22.8
LnGrp LOS		A	A	B	A					C		C
Approach Vol, veh/h		1002			712						997	
Approach Delay, s/veh		9.6			9.7						25.7	
Approach LOS		A			A						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		24.0		34.2				34.2
Change Period (Y+Rc), s		4.5		4.0				4.0
Max Green Setting (Gmax), s		21.0		34.5				34.5
Max Q Clear Time (g_c+I1), s		17.7		13.2				24.3
Green Ext Time (p_c), s		1.6		9.1				5.9

Intersection Summary	
HCM 2010 Ctrl Delay	15.5
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	190	610	0	0	630	120	200	840	100	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.95	1.00		0.95			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1900	1863	1900			
Adj Flow Rate, veh/h	200	642	0	0	663	105	211	884	90			
Adj No. of Lanes	1	2	0	0	2	0	0	3	0			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	263	1809	0	0	890	141	309	1391	145			
Arrive On Green	0.15	0.51	0.00	0.00	0.29	0.29	0.35	0.35	0.35			
Sat Flow, veh/h	1774	3632	0	0	3131	480	885	3981	414			
Grp Volume(v), veh/h	200	642	0	0	386	382	434	368	384			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1749	1819	1695	1766			
Q Serve(g_s), s	5.4	5.4	0.0	0.0	9.9	9.9	10.2	9.0	9.1			
Cycle Q Clear(g_c), s	5.4	5.4	0.0	0.0	9.9	9.9	10.2	9.0	9.1			
Prop In Lane	1.00		0.00	0.00		0.27	0.49		0.23			
Lane Grp Cap(c), veh/h	263	1809	0	0	518	512	635	592	617			
V/C Ratio(X)	0.76	0.35	0.00	0.00	0.74	0.75	0.68	0.62	0.62			
Avail Cap(c_a), veh/h	707	1809	0	0	723	715	906	845	880			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	20.5	7.3	0.0	0.0	16.0	16.0	13.9	13.6	13.6			
Incr Delay (d2), s/veh	1.7	0.0	0.0	0.0	1.4	1.5	0.5	0.4	0.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.8	2.6	0.0	0.0	5.0	5.0	5.1	4.3	4.4			
LnGrp Delay(d),s/veh	22.2	7.4	0.0	0.0	17.5	17.5	14.4	14.0	13.9			
LnGrp LOS	C	A			B	B	B	B	B			
Approach Vol, veh/h		842			768			1185				
Approach Delay, s/veh		10.9			17.5			14.1				
Approach LOS		B			B			B				

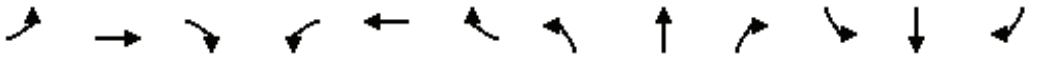
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		21.0	10.9	18.2				29.1
Change Period (Y+Rc), s		3.5	3.5	3.5				3.5
Max Green Setting (Gmax), s		25.0	20.0	20.5				20.5
Max Q Clear Time (g_c+I1), s		12.2	7.4	11.9				7.4
Green Ext Time (p_c), s		4.6	0.6	2.3				2.8

Intersection Summary	
HCM 2010 Ctrl Delay	14.1
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	270	720	0	0	410	150	280	1460	130	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.95	1.00		0.96			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1900	1863	1900			
Adj Flow Rate, veh/h	276	735	0	0	418	133	286	1490	119			
Adj No. of Lanes	1	2	0	0	2	0	0	3	0			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	341	1678	0	0	586	184	309	1726	141			
Arrive On Green	0.19	0.47	0.00	0.00	0.22	0.22	0.41	0.41	0.41			
Sat Flow, veh/h	1774	3632	0	0	2707	820	754	4209	344			
Grp Volume(v), veh/h	276	735	0	0	281	270	693	584	618			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1665	1825	1695	1787			
Q Serve(g_s), s	9.0	8.3	0.0	0.0	8.9	9.1	21.8	18.8	18.9			
Cycle Q Clear(g_c), s	9.0	8.3	0.0	0.0	8.9	9.1	21.8	18.8	18.9			
Prop In Lane	1.00		0.00	0.00		0.49	0.41		0.19			
Lane Grp Cap(c), veh/h	341	1678	0	0	396	373	748	695	733			
V/C Ratio(X)	0.81	0.44	0.00	0.00	0.71	0.72	0.93	0.84	0.84			
Avail Cap(c_a), veh/h	587	1678	0	0	600	565	755	701	739			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	23.4	10.5	0.0	0.0	21.6	21.7	17.0	16.1	16.1			
Incr Delay (d2), s/veh	1.8	0.1	0.0	0.0	0.9	1.0	16.9	8.5	8.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.5	4.0	0.0	0.0	4.4	4.2	14.3	10.2	11.0			
LnGrp Delay(d),s/veh	25.1	10.6	0.0	0.0	22.5	22.7	33.8	24.5	24.4			
LnGrp LOS	C	B			C	C	C	C	C			
Approach Vol, veh/h		1011			551			1895				
Approach Delay, s/veh		14.6			22.6			27.9				
Approach LOS		B			C			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		28.3	15.1	17.0				32.2
Change Period (Y+Rc), s		3.5	3.5	3.5				3.5
Max Green Setting (Gmax), s		25.0	20.0	20.5				20.5
Max Q Clear Time (g_c+I1), s		23.8	11.0	11.1				10.3
Green Ext Time (p_c), s		1.0	0.8	1.6				3.0

Intersection Summary	
HCM 2010 Ctrl Delay	23.2
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	70	300	80	110	290	90	210	360	190	120	550	30
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.95	1.00		0.94	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	75	323	30	118	312	84	226	387	126	129	591	30
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	0	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	98	440	348	149	371	100	460	483	387	161	780	41
Arrive On Green	0.06	0.24	0.24	0.08	0.27	0.27	0.26	0.26	0.26	0.27	0.27	0.27
Sat Flow, veh/h	1774	1863	1475	1774	1398	376	1774	1863	1492	601	2904	154
Grp Volume(v), veh/h	75	323	30	118	0	396	226	387	126	393	0	357
Grp Sat Flow(s),veh/h/ln	1774	1863	1475	1774	0	1775	1774	1863	1492	1833	0	1825
Q Serve(g_s), s	4.0	15.5	1.5	6.3	0.0	20.5	10.5	18.8	6.6	19.4	0.0	17.2
Cycle Q Clear(g_c), s	4.0	15.5	1.5	6.3	0.0	20.5	10.5	18.8	6.6	19.4	0.0	17.2
Prop In Lane	1.00		1.00	1.00		0.21	1.00		1.00	0.33		0.08
Lane Grp Cap(c), veh/h	98	440	348	149	0	471	460	483	387	492	0	490
V/C Ratio(X)	0.77	0.73	0.09	0.79	0.00	0.84	0.49	0.80	0.33	0.80	0.00	0.73
Avail Cap(c_a), veh/h	275	577	456	275	0	549	549	577	462	567	0	565
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	45.2	34.2	28.9	43.6	0.0	33.7	30.5	33.5	29.0	33.0	0.0	32.2
Incr Delay (d2), s/veh	14.0	3.8	0.1	10.7	0.0	10.4	1.0	7.1	0.6	7.4	0.0	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	8.5	0.6	3.6	0.0	11.4	5.3	10.6	2.8	10.8	0.0	9.2
LnGrp Delay(d),s/veh	59.2	38.0	29.0	54.3	0.0	44.1	31.4	40.7	29.6	40.4	0.0	36.5
LnGrp LOS	E	D	C	D		D	C	D	C	D		D
Approach Vol, veh/h		428			514			739			750	
Approach Delay, s/veh		41.1			46.4			36.0			38.5	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.7	27.0		28.6	8.9	29.8		29.5
Change Period (Y+Rc), s	3.6	4.1		3.5	3.6	4.1		3.5
Max Green Setting (Gmax), s	15.0	30.0		30.0	15.0	30.0		30.0
Max Q Clear Time (g_c+I1), s	8.3	17.5		20.8	6.0	22.5		21.4
Green Ext Time (p_c), s	0.2	4.5		3.0	0.1	3.2		3.6

Intersection Summary	
HCM 2010 Ctrl Delay	39.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	40	270	80	100	340	120	140	510	150	150	470	30
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.96	1.00		0.95	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	41	278	28	103	351	112	144	526	80	155	485	29
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	0	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	60	458	360	131	383	122	527	553	445	192	635	39
Arrive On Green	0.03	0.25	0.25	0.07	0.29	0.29	0.30	0.30	0.30	0.24	0.24	0.24
Sat Flow, veh/h	1774	1863	1465	1774	1341	428	1774	1863	1497	808	2677	166
Grp Volume(v), veh/h	41	278	28	103	0	463	144	526	80	350	0	319
Grp Sat Flow(s),veh/h/ln	1774	1863	1465	1774	0	1768	1774	1863	1497	1822	0	1828
Q Serve(g_s), s	2.3	13.3	1.5	5.8	0.0	25.5	6.3	27.9	4.0	18.3	0.0	16.3
Cycle Q Clear(g_c), s	2.3	13.3	1.5	5.8	0.0	25.5	6.3	27.9	4.0	18.3	0.0	16.3
Prop In Lane	1.00		1.00	1.00		0.24	1.00		1.00	0.44		0.09
Lane Grp Cap(c), veh/h	60	458	360	131	0	506	527	553	445	433	0	434
V/C Ratio(X)	0.68	0.61	0.08	0.78	0.00	0.92	0.27	0.95	0.18	0.81	0.00	0.74
Avail Cap(c_a), veh/h	264	554	436	264	0	526	528	554	445	542	0	544
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	48.2	33.7	29.2	45.9	0.0	34.8	27.1	34.7	26.3	36.3	0.0	35.5
Incr Delay (d2), s/veh	15.2	1.6	0.1	11.6	0.0	20.6	0.3	26.5	0.2	7.7	0.0	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	7.1	0.6	3.3	0.0	15.4	3.1	18.4	1.7	10.2	0.0	8.8
LnGrp Delay(d),s/veh	63.4	35.3	29.4	57.5	0.0	55.4	27.5	61.2	26.6	44.0	0.0	39.9
LnGrp LOS	E	D	C	E		E	C	E	C	D		D
Approach Vol, veh/h		347			566			750			669	
Approach Delay, s/veh		38.1			55.8			51.0			42.0	
Approach LOS		D			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.1	28.9		33.5	7.0	33.0		27.4
Change Period (Y+Rc), s	3.6	4.1		3.5	3.6	4.1		3.5
Max Green Setting (Gmax), s	15.0	30.0		30.0	15.0	30.0		30.0
Max Q Clear Time (g_c+I1), s	7.8	15.3		29.9	4.3	27.5		20.3
Green Ext Time (p_c), s	0.2	5.2		0.1	0.1	1.3		3.5

Intersection Summary	
HCM 2010 Ctrl Delay	47.7
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	120	860	20	70	980	110	10	80	50	220	240	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00	0.98		1.00	0.99
Flpb, ped/bikes	0.99	1.00		0.99	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.98			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99	1.00		0.98	1.00
Satd. Flow (prot)	1751	3520		1746	3449			1852	1549		1813	1562
Flt Permitted	0.15	1.00		0.23	1.00			0.94	1.00		0.80	1.00
Satd. Flow (perm)	281	3520		417	3449			1758	1549		1485	1562
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	128	915	21	74	1043	117	11	85	53	234	255	106
RTOR Reduction (vph)	0	1	0	0	7	0	0	0	32	0	0	24
Lane Group Flow (vph)	128	935	0	74	1153	0	0	96	21	0	489	82
Confl. Peds. (#/hr)	43		34	34		43	1		10	10		1
Confl. Bikes (#/hr)			4						4			1
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	56.1	56.1		56.1	56.1			40.9	40.9		40.9	40.9
Effective Green, g (s)	56.1	56.1		56.1	56.1			40.9	40.9		40.9	40.9
Actuated g/C Ratio	0.53	0.53		0.53	0.53			0.39	0.39		0.39	0.39
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	2.0		2.0	2.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	150	1880		222	1842			684	603		578	608
v/s Ratio Prot		0.27			0.33							
v/s Ratio Perm	c0.46			0.18				0.05	0.01		c0.33	0.05
v/c Ratio	0.85	0.50		0.33	0.63			0.14	0.03		0.85	0.14
Uniform Delay, d1	20.9	15.5		13.9	17.1			20.7	19.8		29.2	20.7
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	42.5	0.9		4.0	1.6			0.1	0.0		11.0	0.1
Delay (s)	63.4	16.4		17.9	18.7			20.8	19.9		40.2	20.8
Level of Service	E	B		B	B			C	B		D	C
Approach Delay (s)		22.1			18.7			20.5			36.7	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		

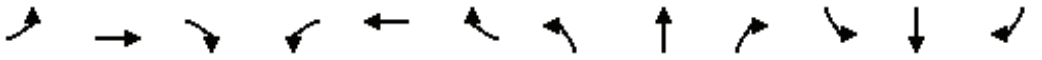
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	240	1100	10	50	690	120	20	330	60	100	100	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00	0.98		1.00	0.98
Flpb, ped/bikes	0.99	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.98			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		0.98	1.00
Satd. Flow (prot)	1748	3533		1763	3424			1857	1547		1813	1558
Flt Permitted	0.30	1.00		0.19	1.00			0.98	1.00		0.33	1.00
Satd. Flow (perm)	546	3533		360	3424			1818	1547		617	1558
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	250	1146	10	52	719	125	21	344	62	104	104	115
RTOR Reduction (vph)	0	0	0	0	9	0	0	0	25	0	0	84
Lane Group Flow (vph)	250	1156	0	52	835	0	0	365	37	0	208	31
Confl. Peds. (#/hr)	23		12	12		23	2		10	10		2
Confl. Bikes (#/hr)			6			10						2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	68.9	68.9		68.9	68.9			28.1	28.1		28.1	28.1
Effective Green, g (s)	68.9	68.9		68.9	68.9			28.1	28.1		28.1	28.1
Actuated g/C Ratio	0.66	0.66		0.66	0.66			0.27	0.27		0.27	0.27
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	2.0		2.0	2.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	358	2318		236	2246			486	414		165	416
v/s Ratio Prot		0.33			0.24							
v/s Ratio Perm	c0.46			0.14				0.20	0.02		c0.34	0.02
v/c Ratio	0.70	0.50		0.22	0.37			0.75	0.09		1.26	0.07
Uniform Delay, d1	11.5	9.2		7.3	8.2			35.2	28.9		38.5	28.7
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	10.8	0.8		2.1	0.5			6.4	0.1		156.8	0.1
Delay (s)	22.2	10.0		9.4	8.7			41.7	28.9		195.2	28.8
Level of Service	C	A		A	A			D	C		F	C
Approach Delay (s)		12.2			8.7			39.8			136.0	
Approach LOS		B			A			D			F	

Intersection Summary			
HCM 2000 Control Delay	28.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		

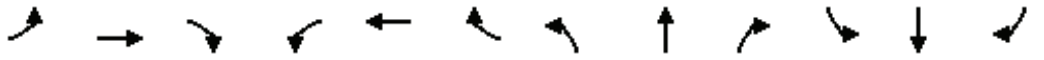
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	140	70	270	230	90	70	10	210	50	50	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1900	1900	1810	1810	1810	1810	1900
Adj Flow Rate, veh/h	11	161	80	310	264	103	80	11	241	57	57	23
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	5	5	5	5	5	5	5	5	5	5	5	5
Cap, veh/h	552	1057	501	627	1129	427	527	63	536	469	433	175
Arrive On Green	0.47	0.47	0.47	0.47	0.47	0.47	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	981	2264	1074	1102	2418	916	1060	177	1506	1091	1219	492
Grp Volume(v), veh/h	11	120	121	310	185	182	91	0	241	57	0	80
Grp Sat Flow(s),veh/h/ln	981	1719	1619	1102	1719	1615	1236	0	1506	1091	0	1711
Q Serve(g_s), s	0.3	1.8	1.9	10.2	2.9	3.0	1.8	0.0	5.5	1.8	0.0	1.4
Cycle Q Clear(g_c), s	3.3	1.8	1.9	12.1	2.9	3.0	3.3	0.0	5.5	5.0	0.0	1.4
Prop In Lane	1.00		0.66	1.00		0.57	0.88		1.00	1.00		0.29
Lane Grp Cap(c), veh/h	552	802	756	627	802	754	590	0	536	469	0	608
V/C Ratio(X)	0.02	0.15	0.16	0.49	0.23	0.24	0.15	0.00	0.45	0.12	0.00	0.13
Avail Cap(c_a), veh/h	552	802	756	627	802	754	590	0	536	469	0	608
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.87	0.87	0.87	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.2	6.9	6.9	10.4	7.2	7.2	10.6	0.0	11.1	12.2	0.0	9.8
Incr Delay (d2), s/veh	0.1	0.4	0.5	2.4	0.6	0.7	0.6	0.0	2.7	0.5	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.9	0.9	3.4	1.5	1.4	0.9	0.0	2.7	0.6	0.0	0.7
LnGrp Delay(d),s/veh	8.3	7.3	7.4	12.8	7.8	7.9	11.2	0.0	13.8	12.7	0.0	10.3
LnGrp LOS	A	A	A	B	A	A	B		B	B		B
Approach Vol, veh/h		252			677			332			137	
Approach Delay, s/veh		7.4			10.1			13.1			11.3	
Approach LOS		A			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		20.0		25.0		20.0		25.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		16.0		21.0		16.0		21.0
Max Q Clear Time (g_c+I1), s		7.5		5.3		7.0		14.1
Green Ext Time (p_c), s		1.4		4.7		1.5		2.9

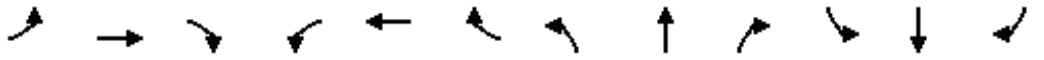
Intersection Summary	
HCM 2010 Ctrl Delay	10.4
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	590	210	50	530	120	160	20	240	70	50	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	20	596	212	51	535	121	162	20	242	71	51	20
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	1	1	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	422	1019	362	305	1141	257	636	70	656	510	534	209
Arrive On Green	0.40	0.40	0.40	0.80	0.80	0.80	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	773	2549	905	671	2852	642	1147	166	1554	1113	1264	496
Grp Volume(v), veh/h	20	413	395	51	331	325	182	0	242	71	0	71
Grp Sat Flow(s),veh/h/ln	773	1770	1684	671	1770	1724	1313	0	1554	1113	0	1759
Q Serve(g_s), s	0.8	8.2	8.3	2.3	2.7	2.7	3.8	0.0	4.8	2.1	0.0	1.1
Cycle Q Clear(g_c), s	3.5	8.2	8.3	10.5	2.7	2.7	4.9	0.0	4.8	7.0	0.0	1.1
Prop In Lane	1.00		0.54	1.00		0.37	0.89		1.00	1.00		0.28
Lane Grp Cap(c), veh/h	422	708	674	305	708	690	706	0	656	510	0	743
V/C Ratio(X)	0.05	0.58	0.59	0.17	0.47	0.47	0.26	0.00	0.37	0.14	0.00	0.10
Avail Cap(c_a), veh/h	422	708	674	305	708	690	706	0	656	510	0	743
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.88	0.88	0.88	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.1	10.6	10.6	6.5	3.0	3.0	9.1	0.0	8.9	11.3	0.0	7.8
Incr Delay (d2), s/veh	0.2	3.5	3.7	1.0	1.9	2.0	0.9	0.0	1.6	0.6	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.6	4.4	0.5	1.6	1.6	1.7	0.0	2.3	0.7	0.0	0.6
LnGrp Delay(d),s/veh	10.3	14.1	14.3	7.6	4.9	5.0	10.0	0.0	10.5	11.9	0.0	8.1
LnGrp LOS	B	B	B	A	A	A	B		B	B		A
Approach Vol, veh/h		828			707			424			142	
Approach Delay, s/veh		14.1			5.1			10.3			10.0	
Approach LOS		B			A			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		23.0		22.0		23.0		22.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		19.0		18.0		19.0		18.0
Max Q Clear Time (g_c+I1), s		6.9		10.3		9.0		12.5
Green Ext Time (p_c), s		2.2		5.3		2.0		3.9

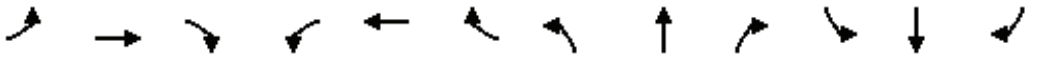
Intersection Summary	
HCM 2010 Ctrl Delay	10.0
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	70	330	0	0	470	300	120	0	100	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1827	1827	0	0	1827	1900	1827	1827	1900			
Adj Flow Rate, veh/h	81	384	0	0	547	349	140	0	116			
Adj No. of Lanes	1	2	0	0	2	0	1	1	0			
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86			
Percent Heavy Veh, %	4	4	0	0	4	4	4	4	4			
Cap, veh/h	418	1620	0	0	935	596	619	0	552			
Arrive On Green	0.15	0.15	0.00	0.00	0.93	0.93	0.36	0.00	0.36			
Sat Flow, veh/h	606	3563	0	0	2096	1278	1740	0	1553			
Grp Volume(v), veh/h	81	384	0	0	474	422	140	0	116			
Grp Sat Flow(s),veh/h/ln	606	1736	0	0	1736	1547	1740	0	1553			
Q Serve(g_s), s	5.4	4.4	0.0	0.0	1.8	1.8	2.5	0.0	2.3			
Cycle Q Clear(g_c), s	7.2	4.4	0.0	0.0	1.8	1.8	2.5	0.0	2.3			
Prop In Lane	1.00		0.00	0.00		0.83	1.00		1.00			
Lane Grp Cap(c), veh/h	418	1620	0	0	810	722	619	0	552			
V/C Ratio(X)	0.19	0.24	0.00	0.00	0.58	0.59	0.23	0.00	0.21			
Avail Cap(c_a), veh/h	418	1620	0	0	810	722	619	0	552			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.98	0.98	0.00	0.00	0.98	0.98	1.00	0.00	1.00			
Uniform Delay (d), s/veh	14.0	12.0	0.0	0.0	0.9	0.9	10.2	0.0	10.1			
Incr Delay (d2), s/veh	1.0	0.3	0.0	0.0	3.0	3.4	0.8	0.0	0.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.0	2.2	0.0	0.0	1.1	1.0	1.4	0.0	1.1			
LnGrp Delay(d),s/veh	15.0	12.3	0.0	0.0	3.9	4.2	11.0	0.0	11.0			
LnGrp LOS	B	B			A	A	B		B			
Approach Vol, veh/h		465			896			256				
Approach Delay, s/veh		12.8			4.0			11.0				
Approach LOS		B			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		20.0		25.0				25.0
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		16.0		21.0				21.0
Max Q Clear Time (g_c+I1), s		4.5		9.2				3.8
Green Ext Time (p_c), s		0.8		6.9				8.9

Intersection Summary	
HCM 2010 Ctrl Delay	7.7
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	240	660	0	0	420	350	280	10	170	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1900			
Adj Flow Rate, veh/h	253	695	0	0	442	368	295	11	179			
Adj No. of Lanes	1	2	0	0	2	0	1	1	0			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	451	1652	0	0	843	699	631	33	535			
Arrive On Green	0.31	0.31	0.00	0.00	0.93	0.93	0.36	0.36	0.36			
Sat Flow, veh/h	669	3632	0	0	1900	1497	1774	92	1505			
Grp Volume(v), veh/h	253	695	0	0	433	377	295	0	190			
Grp Sat Flow(s),veh/h/ln	669	1770	0	0	1770	1535	1774	0	1597			
Q Serve(g_s), s	16.2	7.0	0.0	0.0	1.4	1.4	5.8	0.0	3.9			
Cycle Q Clear(g_c), s	17.6	7.0	0.0	0.0	1.4	1.4	5.8	0.0	3.9			
Prop In Lane	1.00		0.00	0.00		0.98	1.00		0.94			
Lane Grp Cap(c), veh/h	451	1652	0	0	826	716	631	0	568			
V/C Ratio(X)	0.56	0.42	0.00	0.00	0.52	0.53	0.47	0.00	0.33			
Avail Cap(c_a), veh/h	451	1652	0	0	826	716	631	0	568			
HCM Platoon Ratio	0.67	0.67	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.87	0.87	0.00	0.00	0.95	0.95	1.00	0.00	1.00			
Uniform Delay (d), s/veh	15.0	10.7	0.0	0.0	0.8	0.8	11.2	0.0	10.6			
Incr Delay (d2), s/veh	4.4	0.7	0.0	0.0	2.3	2.6	2.5	0.0	1.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.5	3.5	0.0	0.0	0.9	0.8	3.2	0.0	1.9			
LnGrp Delay(d),s/veh	19.3	11.3	0.0	0.0	3.1	3.5	13.7	0.0	12.2			
LnGrp LOS	B	B			A	A	B		B			
Approach Vol, veh/h		948			810			485				
Approach Delay, s/veh		13.5			3.3			13.1				
Approach LOS		B			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		20.0		25.0				25.0
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		16.0		21.0				21.0
Max Q Clear Time (g_c+I1), s		7.8		19.6				3.4
Green Ext Time (p_c), s		1.4		1.2				11.5

Intersection Summary	
HCM 2010 Ctrl Delay	9.7
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	380	100	260	460	50	20	40	40	80	190	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0		3.0	4.0			2.0			2.0	2.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00			1.00			1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.97		1.00	0.99			0.95			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	1.00
Satd. Flow (prot)	1719	3309		1719	3379			1695			1783	1516
Flt Permitted	0.95	1.00		0.95	1.00			0.91			0.90	1.00
Satd. Flow (perm)	1719	3309		1719	3379			1554			1624	1516
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	42	396	104	271	479	52	21	42	42	83	198	135
RTOR Reduction (vph)	0	25	0	0	8	0	0	0	0	0	0	102
Lane Group Flow (vph)	42	475	0	271	523	0	0	105	0	0	281	33
Confl. Peds. (#/hr)			4			6						2
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1 3	3 6			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	3.0	20.7		38.6	56.3			21.7			21.7	21.7
Effective Green, g (s)	3.0	20.7		34.6	56.3			21.7			21.7	21.7
Actuated g/C Ratio	0.03	0.23		0.38	0.63			0.24			0.24	0.24
Clearance Time (s)	3.0	4.0						2.0			2.0	2.0
Vehicle Extension (s)	3.0	3.0						3.0			3.0	3.0
Lane Grp Cap (vph)	57	761		660	2113			374			391	365
v/s Ratio Prot	0.02	c0.14		c0.16	0.15							
v/s Ratio Perm								0.07			c0.17	0.02
v/c Ratio	0.74	0.62		0.41	0.25			0.28			0.72	0.09
Uniform Delay, d1	43.1	31.2		20.2	7.5			27.8			31.3	26.5
Progression Factor	1.11	1.10		0.81	0.17			1.00			1.00	1.00
Incremental Delay, d2	38.4	3.8		0.3	0.0			0.4			6.2	0.1
Delay (s)	86.1	38.1		16.7	1.3			28.2			37.6	26.6
Level of Service	F	D		B	A			C			D	C
Approach Delay (s)		41.8			6.5			28.2			34.0	
Approach LOS		D			A			C			C	

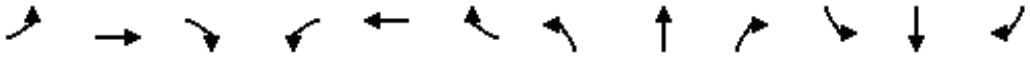
Intersection Summary			
HCM 2000 Control Delay	24.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	730	50	70	640	100	50	80	80	70	50	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0		3.0	4.0			2.0			2.0	2.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.99		1.00	0.98			0.95			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.97	1.00
Satd. Flow (prot)	1770	3497		1770	3456			1746			1810	1557
Flt Permitted	0.95	1.00		0.95	1.00			0.91			0.69	1.00
Satd. Flow (perm)	1770	3497		1770	3456			1612			1293	1557
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	52	760	52	73	667	104	52	83	83	73	52	42
RTOR Reduction (vph)	0	5	0	0	12	0	0	0	0	0	0	32
Lane Group Flow (vph)	52	807	0	73	759	0	0	218	0	0	125	10
Confl. Peds. (#/hr)			5			5						4
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1 3	3 6			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	4.0	20.9		38.5	55.4			21.6			21.6	21.6
Effective Green, g (s)	4.0	20.9		34.5	55.4			21.6			21.6	21.6
Actuated g/C Ratio	0.04	0.23		0.38	0.62			0.24			0.24	0.24
Clearance Time (s)	3.0	4.0						2.0			2.0	2.0
Vehicle Extension (s)	3.0	3.0						3.0			3.0	3.0
Lane Grp Cap (vph)	78	812		678	2127			386			310	373
v/s Ratio Prot	0.03	c0.23		0.04	c0.22							
v/s Ratio Perm								c0.14			0.10	0.01
v/c Ratio	0.67	0.99		0.11	0.36			0.56			0.40	0.03
Uniform Delay, d1	42.3	34.5		17.8	8.5			30.1			28.8	26.2
Progression Factor	1.09	1.09		1.26	0.34			1.00			1.00	1.00
Incremental Delay, d2	18.3	29.0		0.0	0.1			1.9			0.9	0.0
Delay (s)	64.3	66.5		22.6	3.0			32.0			29.6	26.2
Level of Service	E	E		C	A			C			C	C
Approach Delay (s)		66.3			4.7			32.0			28.8	
Approach LOS		E			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	34.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		

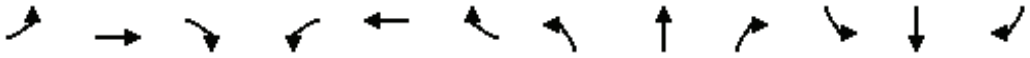
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	520	0	0	710	260	70	10	290	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Lane Util. Factor	1.00	0.95			*1.00		1.00	0.95	0.95			
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Frt	1.00	1.00			0.96		1.00	0.86	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	1736	3471			3481		1736	1492	1475			
Flt Permitted	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	1736	3471			3481		1736	1492	1475			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	135	542	0	0	740	271	73	10	302	0	0	0
RTOR Reduction (vph)	0	0	0	0	38	0	0	134	139	0	0	0
Lane Group Flow (vph)	135	542	0	0	973	0	73	24	15	0	0	0
Confl. Peds. (#/hr)			5	5		10						
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	12.3	73.9			58.6		8.6	8.6	8.6			
Effective Green, g (s)	12.3	73.9			58.6		8.6	8.6	8.6			
Actuated g/C Ratio	0.14	0.82			0.65		0.10	0.10	0.10			
Clearance Time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	237	2850			2266		165	142	140			
v/s Ratio Prot	c0.08	0.16			c0.28			0.02				
v/s Ratio Perm							c0.04		0.01			
v/c Ratio	0.57	0.19			0.43		0.44	0.17	0.11			
Uniform Delay, d1	36.4	1.7			7.6		38.4	37.4	37.2			
Progression Factor	0.53	0.31			1.00		1.00	1.00	1.00			
Incremental Delay, d2	3.0	0.1			0.6		1.9	0.6	0.3			
Delay (s)	22.3	0.7			8.2		40.3	38.0	37.5			
Level of Service	C	A			A		D	D	D			
Approach Delay (s)		5.0			8.2			38.2			0.0	
Approach LOS		A			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	12.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	300	850	0	0	710	290	160	60	560	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Lane Util. Factor	1.00	0.95			*1.00		1.00	0.95	0.95			
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Frt	1.00	1.00			0.96		1.00	0.88	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	1770	3539			3532		1770	1555	1504			
Flt Permitted	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	1770	3539			3532		1770	1555	1504			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	312	885	0	0	740	302	167	62	583	0	0	0
RTOR Reduction (vph)	0	0	0	0	55	0	0	169	228	0	0	0
Lane Group Flow (vph)	312	885	0	0	987	0	167	155	93	0	0	0
Confl. Peds. (#/hr)	12		6	6		12						
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	17.3	72.5			52.2		10.0	10.0	10.0			
Effective Green, g (s)	17.3	72.5			52.2		10.0	10.0	10.0			
Actuated g/C Ratio	0.19	0.81			0.58		0.11	0.11	0.11			
Clearance Time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	340	2850			2048		196	172	167			
v/s Ratio Prot	c0.18	0.25			c0.28			c0.10				
v/s Ratio Perm							0.09		0.06			
v/c Ratio	0.92	0.31			0.48		0.85	0.90	0.56			
Uniform Delay, d1	35.7	2.3			11.0		39.3	39.5	37.9			
Progression Factor	0.53	0.57			1.00		1.00	1.00	1.00			
Incremental Delay, d2	26.1	0.2			0.8		28.2	41.6	4.0			
Delay (s)	45.1	1.5			11.8		67.5	81.1	41.9			
Level of Service	D	A			B		E	F	D			
Approach Delay (s)		12.9			11.8			62.8			0.0	
Approach LOS		B			B			E			A	

Intersection Summary			
HCM 2000 Control Delay	25.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	190	360	140	90	360	40	90	640	60	60	910	210
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.91	1.00		0.96	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	202	383	51	96	383	36	96	681	58	64	968	205
Adj No. of Lanes	1	1	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	197	649	516	0	679	63	155	1550	132	140	1340	283
Arrive On Green	0.04	0.11	0.11	0.00	0.21	0.21	0.06	0.32	0.32	0.08	0.46	0.46
Sat Flow, veh/h	1774	1863	1482	0	3242	302	1774	3291	280	1774	2898	613
Grp Volume(v), veh/h	202	383	51	0	208	211	96	366	373	64	591	582
Grp Sat Flow(s),veh/h/ln	1774	1863	1482	0	1770	1774	1774	1770	1801	1774	1770	1741
Q Serve(g_s), s	12.0	21.1	3.3	0.0	11.3	11.6	5.7	17.7	17.8	3.7	29.1	29.2
Cycle Q Clear(g_c), s	12.0	21.1	3.3	0.0	11.3	11.6	5.7	17.7	17.8	3.7	29.1	29.2
Prop In Lane	1.00		1.00	0.00		0.17	1.00		0.16	1.00		0.35
Lane Grp Cap(c), veh/h	197	649	516	0	371	371	155	833	848	140	818	805
V/C Ratio(X)	1.02	0.59	0.10	0.00	0.56	0.57	0.62	0.44	0.44	0.46	0.72	0.72
Avail Cap(c_a), veh/h	197	649	516	0	426	427	197	833	848	197	818	805
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00
Upstream Filter(I)	0.73	0.73	0.73	0.00	1.00	1.00	0.87	0.87	0.87	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.0	40.5	32.6	0.0	38.2	38.3	49.1	25.6	25.6	47.5	23.4	23.4
Incr Delay (d2), s/veh	61.4	0.7	0.0	0.0	0.5	0.5	1.3	1.5	1.4	0.9	5.5	5.6
Initial Q Delay(d3),s/veh	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.3	11.0	1.4	0.0	5.6	5.7	2.9	9.0	9.2	1.9	15.3	15.2
LnGrp Delay(d),s/veh	113.6	41.2	32.6	0.0	38.7	38.8	50.4	27.1	27.1	48.4	28.9	29.0
LnGrp LOS	F	D	C		D	D	D	C	C	D	C	C
Approach Vol, veh/h		636			419			835			1237	
Approach Delay, s/veh		63.5			38.8			29.8			30.0	
Approach LOS		E			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.5	54.9	0.0	41.6	12.4	53.9	15.0	26.6
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	12.0	44.0	12.0	26.0	12.0	44.0	12.0	26.0
Max Q Clear Time (g_c+I1), s	5.7	19.8	0.0	23.1	7.7	31.2	14.0	13.6
Green Ext Time (p_c), s	0.0	18.3	0.0	1.1	0.0	10.7	0.0	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	37.9
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	310	290	150	80	280	70	190	930	50	70	840	180
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.90	1.00		0.93	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	316	320	61	84	295	67	200	979	47	74	884	171
Adj No. of Lanes	1	1	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	197	647	517	0	588	130	197	1603	77	146	1293	250
Arrive On Green	0.04	0.11	0.11	0.00	0.21	0.21	0.11	0.47	0.47	0.08	0.44	0.44
Sat Flow, veh/h	1774	1863	1489	0	2820	625	1774	3425	164	1774	2942	569
Grp Volume(v), veh/h	316	320	61	0	182	180	200	506	520	74	532	523
Grp Sat Flow(s),veh/h/ln	1774	1863	1489	0	1770	1675	1774	1770	1819	1774	1770	1741
Q Serve(g_s), s	12.0	17.4	4.0	0.0	9.8	10.3	12.0	23.0	23.0	4.3	26.0	26.0
Cycle Q Clear(g_c), s	12.0	17.4	4.0	0.0	9.8	10.3	12.0	23.0	23.0	4.3	26.0	26.0
Prop In Lane	1.00		1.00	0.00		0.37	1.00		0.09	1.00		0.33
Lane Grp Cap(c), veh/h	197	647	517	0	369	349	197	828	852	146	778	765
V/C Ratio(X)	1.60	0.49	0.12	0.00	0.49	0.51	1.01	0.61	0.61	0.51	0.68	0.68
Avail Cap(c_a), veh/h	197	647	517	0	426	403	197	828	852	197	778	765
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.76	0.76	0.76	0.00	1.00	1.00	0.58	0.58	0.58	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.0	38.9	33.0	0.0	37.7	37.9	48.0	21.4	21.4	47.4	24.2	24.2
Incr Delay (d2), s/veh	288.7	0.2	0.0	0.0	0.4	0.4	52.5	1.9	1.9	1.0	4.8	4.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.7	9.0	1.6	0.0	4.8	4.8	8.7	11.7	12.0	2.2	13.7	13.5
LnGrp Delay(d),s/veh	340.8	39.1	33.0	0.0	38.1	38.3	100.6	23.3	23.3	48.4	29.1	29.2
LnGrp LOS	F	D	C		D	D	F	C	C	D	C	C
Approach Vol, veh/h		697			362			1226			1129	
Approach Delay, s/veh		175.3			38.2			35.9			30.4	
Approach LOS		F			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	54.6	0.0	41.5	15.0	51.5	15.0	26.5
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	12.0	44.0	12.0	26.0	12.0	44.0	12.0	26.0
Max Q Clear Time (g_c+I1), s	6.3	25.0	0.0	19.4	14.0	28.0	14.0	12.3
Green Ext Time (p_c), s	0.0	15.8	0.0	1.8	0.0	13.6	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	62.8
HCM 2010 LOS	E

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	280	240	50	70	170	30	30	190	80	170	220	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1787	3482		1770	3539	1583	1128	2148		1340	1405	1246
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1787	3482		1770	3539	1583	1128	2148		1340	1405	1246
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	326	279	58	81	198	35	35	221	93	198	256	314
RTOR Reduction (vph)	0	17	0	0	0	30	0	44	0	0	0	229
Lane Group Flow (vph)	326	320	0	81	198	5	35	270	0	178	276	85
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	60%	60%	60%	28%	28%	28%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases						2						8
Actuated Green, G (s)	14.8	20.8		6.3	12.3	12.3	16.7	16.7		22.8	22.8	22.8
Effective Green, g (s)	14.8	20.8		6.3	12.3	12.3	16.7	16.7		22.8	22.8	22.8
Actuated g/C Ratio	0.18	0.25		0.07	0.15	0.15	0.20	0.20		0.27	0.27	0.27
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Vehicle Extension (s)	2.0	4.0		2.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Grp Cap (vph)	314	861		132	517	231	223	426		363	380	337
v/s Ratio Prot	c0.18	c0.09		0.05	0.06		0.03	c0.13		0.13	c0.20	
v/s Ratio Perm						0.00						0.07
v/c Ratio	1.04	0.37		0.61	0.38	0.02	0.16	0.63		0.49	0.73	0.25
Uniform Delay, d1	34.6	26.2		37.7	32.5	30.7	27.9	30.9		25.8	27.8	24.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	61.1	0.4		5.8	0.6	0.1	0.5	3.4		1.4	7.2	0.5
Delay (s)	95.7	26.6		43.5	33.1	30.8	28.3	34.3		27.2	35.0	24.5
Level of Service	F	C		D	C	C	C	C		C	D	C
Approach Delay (s)		60.6			35.5			33.7			28.9	
Approach LOS		E			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	40.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	84.1	Sum of lost time (s)	17.5
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	260	200	30	70	200	100	20	260	70	110	160	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3470		1770	3539	1583	1530	2954		1618	1697	1504
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3470		1770	3539	1583	1530	2954		1618	1697	1504
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	286	220	33	77	220	110	22	286	77	121	176	264
RTOR Reduction (vph)	0	11	0	0	0	92	0	23	0	0	0	208
Lane Group Flow (vph)	286	242	0	77	220	18	22	340	0	109	188	56
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	18%	18%	18%	6%	6%	6%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases						2						8
Actuated Green, G (s)	14.9	21.4		6.1	12.6	12.6	15.4	15.4		16.2	16.2	16.2
Effective Green, g (s)	14.9	21.4		6.1	12.6	12.6	15.4	15.4		16.2	16.2	16.2
Actuated g/C Ratio	0.19	0.28		0.08	0.16	0.16	0.20	0.20		0.21	0.21	0.21
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Vehicle Extension (s)	2.0	4.0		2.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Grp Cap (vph)	344	969		140	582	260	307	593		342	358	318
v/s Ratio Prot	c0.16	0.07		0.04	c0.06		0.01	c0.12		0.07	c0.11	
v/s Ratio Perm						0.01						0.04
v/c Ratio	0.83	0.25		0.55	0.38	0.07	0.07	0.57		0.32	0.53	0.18
Uniform Delay, d1	29.6	21.4		33.9	28.5	27.0	24.8	27.6		25.5	26.8	24.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	15.0	0.2		2.6	0.6	0.2	0.1	1.6		0.7	1.8	0.4
Delay (s)	44.6	21.6		36.6	29.1	27.2	24.9	29.2		26.3	28.6	25.1
Level of Service	D	C		D	C	C	C	C		C	C	C
Approach Delay (s)		33.8			30.0			29.0			26.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	29.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	76.6	Sum of lost time (s)	17.5
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	400	100	320	460	0	0	0	0	250	30	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			3.0						4.0	4.0
Lane Util. Factor		0.95			*1.00						1.00	1.00
Frpb, ped/bikes		0.99			1.00						1.00	1.00
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.97			1.00						1.00	0.85
Flt Protected		1.00			0.98						0.96	1.00
Satd. Flow (prot)		3279			5269						1716	1524
Flt Permitted		1.00			0.72						0.96	1.00
Satd. Flow (perm)		3279			3884						1716	1524
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	417	104	333	479	0	0	0	0	260	31	323
RTOR Reduction (vph)	0	23	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	498	0	0	812	0	0	0	0	0	291	323
Confl. Peds. (#/hr)			6			5						
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Turn Type		NA		Prot	NA					Split	NA	Perm
Protected Phases		2 4		1	1 6					3	3	
Permitted Phases												3
Actuated Green, G (s)		46.4			27.7						24.6	24.6
Effective Green, g (s)		46.4			27.7						24.6	24.6
Actuated g/C Ratio		0.52			0.31						0.27	0.27
Clearance Time (s)											4.0	4.0
Vehicle Extension (s)											3.0	3.0
Lane Grp Cap (vph)		1690			1349						469	416
v/s Ratio Prot		c0.15			c0.07						0.17	
v/s Ratio Perm					c0.12							c0.21
v/c Ratio		0.29			1.76dl						0.62	0.78
Uniform Delay, d1		12.5			26.5						28.6	30.2
Progression Factor		0.03			0.94						1.00	1.00
Incremental Delay, d2		0.1			0.7						2.5	8.8
Delay (s)		0.5			25.7						31.2	39.0
Level of Service		A			C						C	D
Approach Delay (s)		0.5			25.7			0.0			35.3	
Approach LOS		A			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	830	50	250	620	0	0	0	0	320	10	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			3.0						4.0	4.0
Lane Util. Factor		0.95			*1.00						1.00	1.00
Frpb, ped/bikes		1.00			1.00						1.00	1.00
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.99			1.00						1.00	0.85
Flt Protected		1.00			0.99						0.95	1.00
Satd. Flow (prot)		3502			5509						1777	1583
Flt Permitted		1.00			0.74						0.95	1.00
Satd. Flow (perm)		3502			4121						1777	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	865	52	260	646	0	0	0	0	333	10	198
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	913	0	0	906	0	0	0	0	0	343	198
Confl. Peds. (#/hr)			6			5						
Turn Type		NA		Prot	NA					Split	NA	Perm
Protected Phases		2 4		1	1 6					3	3	
Permitted Phases												3
Actuated Green, G (s)		46.5			26.9						24.5	24.5
Effective Green, g (s)		46.5			26.9						24.5	24.5
Actuated g/C Ratio		0.52			0.30						0.27	0.27
Clearance Time (s)											4.0	4.0
Vehicle Extension (s)											3.0	3.0
Lane Grp Cap (vph)		1809			1385						483	430
v/s Ratio Prot		c0.26			c0.07						c0.19	
v/s Ratio Perm					c0.12							0.13
v/c Ratio		0.50			1.33dl						0.71	0.46
Uniform Delay, d1		14.2			27.5						29.5	27.3
Progression Factor		0.13			0.83						1.00	1.00
Incremental Delay, d2		0.1			0.9						4.9	0.8
Delay (s)		1.9			23.7						34.4	28.0
Level of Service		A			C						C	C
Approach Delay (s)		1.9			23.7			0.0			32.1	
Approach LOS		A			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

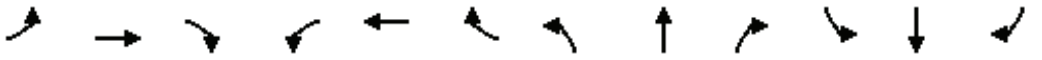
Appendix E-9
2040 Plus Specific Plan Conditions
Intersection LOS Calculations

FEHR PEERS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	540	210	200	510	0	0	0	0	150	1330	120
Number	3	8	18	7	4	14				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00				1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1900	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	581	215	215	548	0				161	1430	118
Adj No. of Lanes	0	2	1	0	2	0				0	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93				0.93	0.93	0.93
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1445	628	276	749	0				157	1454	125
Arrive On Green	0.00	0.41	0.41	0.41	0.41	0.00				0.47	0.47	0.47
Sat Flow, veh/h	0	3632	1538	423	1918	0				331	3061	263
Grp Volume(v), veh/h	0	581	215	301	462	0				899	0	810
Grp Sat Flow(s),veh/h/ln	0	1770	1538	646	1610	0				1846	0	1809
Q Serve(g_s), s	0.0	7.0	5.8	17.5	14.3	0.0				28.5	0.0	25.6
Cycle Q Clear(g_c), s	0.0	7.0	5.8	24.5	14.3	0.0				28.5	0.0	25.6
Prop In Lane	0.00		1.00	0.71		0.00				0.18		0.15
Lane Grp Cap(c), veh/h	0	1445	628	367	658	0				877	0	859
V/C Ratio(X)	0.00	0.40	0.34	0.82	0.70	0.00				1.02	0.00	0.94
Avail Cap(c_a), veh/h	0	1445	628	367	658	0				877	0	859
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.92	0.92	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	12.6	12.2	21.2	14.7	0.0				15.8	0.0	15.0
Incr Delay (d2), s/veh	0.0	0.1	0.1	12.1	2.6	0.0				36.8	0.0	19.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.4	2.5	6.2	6.8	0.0				23.3	0.0	17.3
LnGrp Delay(d),s/veh	0.0	12.6	12.3	33.3	17.4	0.0				52.5	0.0	34.7
LnGrp LOS		B	B	C	B					F		C
Approach Vol, veh/h		796			763						1709	
Approach Delay, s/veh		12.5			23.6						44.1	
Approach LOS		B			C						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		32.0		28.0				28.0
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		28.5		24.5				24.5
Max Q Clear Time (g_c+I1), s		30.5		26.5				9.0
Green Ext Time (p_c), s		0.0		0.0				7.0

Intersection Summary	
HCM 2010 Ctrl Delay	31.6
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	200	490	0	0	540	200	190	910	180	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	0.99		1.00	1.00		0.94	1.00		0.97			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1863	1900	1863	1900			
Adj Flow Rate, veh/h	227	557	0	0	614	200	216	1034	166			
Adj No. of Lanes	0	2	0	0	2	1	0	3	0			
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	346	901	0	0	1776	749	285	1458	241			
Arrive On Green	0.50	0.50	0.00	0.00	0.50	0.50	0.38	0.38	0.38			
Sat Flow, veh/h	472	1880	0	0	3632	1492	753	3858	636			
Grp Volume(v), veh/h	297	487	0	0	614	200	523	442	451			
Grp Sat Flow(s),veh/h/ln	657	1610	0	0	1770	1492	1825	1695	1727			
Q Serve(g_s), s	19.2	12.6	0.0	0.0	6.1	4.5	14.5	12.8	12.8			
Cycle Q Clear(g_c), s	25.3	12.6	0.0	0.0	6.1	4.5	14.5	12.8	12.8			
Prop In Lane	0.76		0.00	0.00		1.00	0.41		0.37			
Lane Grp Cap(c), veh/h	439	808	0	0	1776	749	690	641	653			
V/C Ratio(X)	0.68	0.60	0.00	0.00	0.35	0.27	0.76	0.69	0.69			
Avail Cap(c_a), veh/h	449	830	0	0	1824	769	941	874	890			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	15.3	10.4	0.0	0.0	8.7	8.3	15.8	15.2	15.2			
Incr Delay (d2), s/veh	3.2	0.8	0.0	0.0	0.0	0.1	1.5	0.6	0.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.8	5.7	0.0	0.0	2.9	1.8	7.6	6.0	6.1			
LnGrp Delay(d),s/veh	18.5	11.2	0.0	0.0	8.8	8.4	17.3	15.8	15.8			
LnGrp LOS	B	B			A	A	B	B	B			
Approach Vol, veh/h		784			814			1416				
Approach Delay, s/veh		13.9			8.7			16.3				
Approach LOS		B			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		25.5		32.7				32.7
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		30.0		30.0				30.0
Max Q Clear Time (g_c+I1), s		16.5		8.1				27.3
Green Ext Time (p_c), s		5.5		8.6				1.9

Intersection Summary	
HCM 2010 Ctrl Delay	13.7
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	400	220	50	320	0	70	0	30	290	320	40
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1845	1900	1845	1845	0	1845	0	1845	1845	1845	1900
Adj Flow Rate, veh/h	0	417	171	52	333	0	73	0	2	224	443	36
Adj No. of Lanes	0	2	0	1	2	0	1	0	1	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	3	3	3	3	0	3	0	3	3	3	3
Cap, veh/h	0	865	351	211	1975	0	0	0	0	377	722	58
Arrive On Green	0.00	0.36	0.36	0.12	0.56	0.00	0.00	0.00	0.00	0.21	0.21	0.21
Sat Flow, veh/h	0	2517	983	1757	3597	0		0		1757	3368	273
Grp Volume(v), veh/h	0	300	288	52	333	0		0.0		224	242	237
Grp Sat Flow(s),veh/h/ln	0	1752	1655	1757	1752	0				1757	1845	1797
Q Serve(g_s), s	0.0	5.4	5.5	1.1	1.9	0.0				4.7	4.8	4.8
Cycle Q Clear(g_c), s	0.0	5.4	5.5	1.1	1.9	0.0				4.7	4.8	4.8
Prop In Lane	0.00		0.59	1.00		0.00				1.00		0.15
Lane Grp Cap(c), veh/h	0	626	591	211	1975	0				377	396	385
V/C Ratio(X)	0.00	0.48	0.49	0.25	0.17	0.00				0.59	0.61	0.62
Avail Cap(c_a), veh/h	0	1383	1306	1127	2767	0				1127	1183	1152
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	10.1	10.1	16.2	4.3	0.0				14.3	14.4	14.4
Incr Delay (d2), s/veh	0.0	0.6	0.7	0.2	0.0	0.0				0.6	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.7	2.6	0.5	0.9	0.0				2.3	2.5	2.4
LnGrp Delay(d),s/veh	0.0	10.8	10.9	16.4	4.3	0.0				14.9	15.0	15.0
LnGrp LOS		B	B	B	A					B	B	B
Approach Vol, veh/h		588			385						703	
Approach Delay, s/veh		10.8			5.9						15.0	
Approach LOS		B			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		27.8			8.4	19.5		12.7
Change Period (Y+Rc), s		5.0			3.5	5.0		4.0
Max Green Setting (Gmax), s		32.0			26.0	32.0		26.0
Max Q Clear Time (g_c+I1), s		3.9			3.1	7.5		6.8
Green Ext Time (p_c), s		6.9			0.0	6.6		1.9

Intersection Summary	
HCM 2010 Ctrl Delay	11.4
HCM 2010 LOS	B

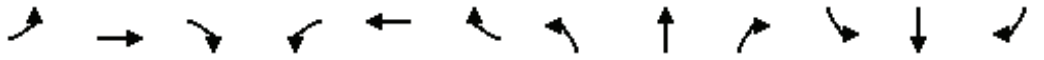
Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	220	500	0	0	220	880	150	0	320	0	0	0
Number	1	6	16	5	2	12	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1845	0	0	1845	1900	1845	0	1845			
Adj Flow Rate, veh/h	242	549	0	0	242	530	165	0	147			
Adj No. of Lanes	0	2	0	0	3	0	1	0	1			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	3	3	0	0	3	3	3	0	3			
Cap, veh/h	421	1109	0	0	2147	981	298	0	266			
Arrive On Green	0.64	0.64	0.00	0.00	0.64	0.64	0.17	0.00	0.17			
Sat Flow, veh/h	443	1818	0	0	3523	1535	1757	0	1568			
Grp Volume(v), veh/h	302	489	0	0	242	530	165	0	147			
Grp Sat Flow(s),veh/h/ln	582	1595	0	0	1679	1535	1757	0	1568			
Q Serve(g_s), s	14.3	7.5	0.0	0.0	1.3	9.0	4.1	0.0	4.0			
Cycle Q Clear(g_c), s	23.3	7.5	0.0	0.0	1.3	9.0	4.1	0.0	4.0			
Prop In Lane	0.80		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	510	1020	0	0	2147	981	298	0	266			
V/C Ratio(X)	0.59	0.48	0.00	0.00	0.11	0.54	0.55	0.00	0.55			
Avail Cap(c_a), veh/h	524	1049	0	0	2350	1074	1043	0	931			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	10.1	4.4	0.0	0.0	3.3	4.7	17.9	0.0	17.9			
Incr Delay (d2), s/veh	2.1	0.5	0.0	0.0	0.0	0.7	0.6	0.0	0.7			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.6	3.4	0.0	0.0	0.6	3.9	2.0	0.0	1.8			
LnGrp Delay(d),s/veh	12.2	4.9	0.0	0.0	3.3	5.3	18.5	0.0	18.6			
LnGrp LOS	B	A			A	A	B		B			
Approach Vol, veh/h		791			772			312				
Approach Delay, s/veh		7.7			4.7			18.6				
Approach LOS		A			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		34.1		13.0		34.1		
Change Period (Y+Rc), s		4.0		5.0		4.0		
Max Green Setting (Gmax), s		33.0		28.0		31.0		
Max Q Clear Time (g_c+I1), s		11.0		6.1		25.3		
Green Ext Time (p_c), s		15.4		0.2		4.9		

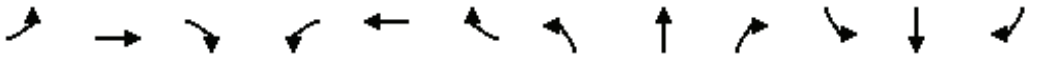
Intersection Summary	
HCM 2010 Ctrl Delay	8.3
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	120	370	330	120	770	190	170	550	130	200	570	160
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	128	394	71	128	819	181	181	585	24	213	606	153
Adj No. of Lanes	1	2	1	1	2	0	0	2	1	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	155	980	430	154	794	175	181	619	349	208	620	164
Arrive On Green	0.09	0.28	0.28	0.17	0.55	0.55	0.22	0.22	0.22	0.28	0.28	0.28
Sat Flow, veh/h	1774	3539	1555	1774	2875	635	811	2781	1568	750	2237	592
Grp Volume(v), veh/h	128	394	71	128	504	496	407	359	24	519	0	453
Grp Sat Flow(s),veh/h/ln	1774	1770	1555	1774	1770	1741	1822	1770	1568	1825	0	1753
Q Serve(g_s), s	7.8	10.0	3.8	7.7	30.4	30.4	24.5	21.8	1.3	30.5	0.0	27.7
Cycle Q Clear(g_c), s	7.8	10.0	3.8	7.7	30.4	30.4	24.5	21.8	1.3	30.5	0.0	27.7
Prop In Lane	1.00		1.00	1.00		0.36	0.44		1.00	0.41		0.34
Lane Grp Cap(c), veh/h	155	980	430	154	489	481	406	394	349	506	0	486
V/C Ratio(X)	0.83	0.40	0.17	0.83	1.03	1.03	1.00	0.91	0.07	1.02	0.00	0.93
Avail Cap(c_a), veh/h	169	980	430	282	489	481	406	394	349	506	0	486
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.64	0.64	0.64	0.68	0.68	0.68	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	49.4	32.4	30.1	44.7	24.6	24.6	42.8	41.7	33.7	39.8	0.0	38.7
Incr Delay (d2), s/veh	16.1	0.8	0.5	3.0	42.0	42.2	45.2	24.4	0.0	46.5	0.0	24.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	5.0	1.7	3.8	20.1	19.8	17.4	13.3	0.6	21.9	0.0	16.7
LnGrp Delay(d),s/veh	65.5	33.2	30.7	47.7	66.6	66.9	88.0	66.1	33.8	86.2	0.0	63.5
LnGrp LOS	E	C	C	D	F	F	F	E	C	F		E
Approach Vol, veh/h		593			1128			790			972	
Approach Delay, s/veh		39.8			64.6			76.4			75.6	
Approach LOS		D			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.1	34.9		34.0	13.1	34.9		28.0
Change Period (Y+Rc), s	3.5	4.5		3.5	3.5	4.5		3.5
Max Green Setting (Gmax), s	17.5	22.5		30.5	10.5	29.5		24.5
Max Q Clear Time (g_c+I1), s	9.7	12.0		32.5	9.8	32.4		26.5
Green Ext Time (p_c), s	0.1	7.5		0.0	0.0	0.0		0.0

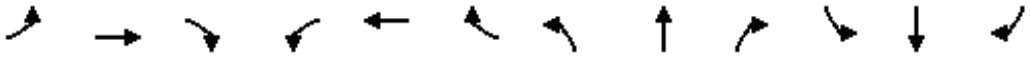
Intersection Summary	
HCM 2010 Ctrl Delay	66.1
HCM 2010 LOS	E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	190	330	0	0	0	80	250	270	0	580	40
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900				1863	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	0	213	146				90	281	141	0	652	11
Adj No. of Lanes	1	2	0				1	1	1	0	2	1
Peak Hour Factor	0.89	0.89	0.89				0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2				2	2	2	0	2	2
Cap, veh/h	384	444	291				121	1004	854	0	1234	552
Arrive On Green	0.00	0.22	0.22				0.07	0.54	0.54	0.00	0.35	0.35
Sat Flow, veh/h	1774	2051	1344				1774	1863	1583	0	3632	1583
Grp Volume(v), veh/h	0	182	177				90	281	141	0	652	11
Grp Sat Flow(s),veh/h/ln	1774	1770	1626				1774	1863	1583	0	1770	1583
Q Serve(g_s), s	0.0	2.9	3.1				1.6	2.7	1.5	0.0	4.8	0.1
Cycle Q Clear(g_c), s	0.0	2.9	3.1				1.6	2.7	1.5	0.0	4.8	0.1
Prop In Lane	1.00		0.83				1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	384	383	352				121	1004	854	0	1234	552
V/C Ratio(X)	0.00	0.48	0.50				0.74	0.28	0.17	0.00	0.53	0.02
Avail Cap(c_a), veh/h	1681	1677	1540				271	1480	1258	0	1839	823
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00				1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	11.2	11.3				15.0	4.1	3.8	0.0	8.5	7.0
Incr Delay (d2), s/veh	0.0	0.9	1.1				8.6	0.2	0.1	0.0	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.5	1.5				1.1	1.4	0.6	0.0	2.4	0.1
LnGrp Delay(d),s/veh	0.0	12.1	12.4				23.6	4.2	3.9	0.0	8.9	7.0
LnGrp LOS		B	B				C	A	A		A	A
Approach Vol, veh/h		359						512			663	
Approach Delay, s/veh		12.2						7.5			8.8	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		21.6		11.1	6.2	15.4		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		26.0		31.0	5.0	17.0		
Max Q Clear Time (g_c+I1), s		4.7		5.1	3.6	6.8		
Green Ext Time (p_c), s		6.7		2.2	0.0	4.6		

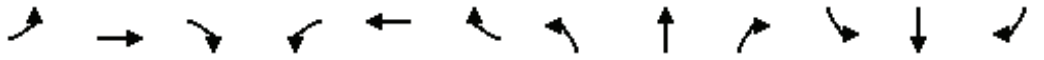
Intersection Summary	
HCM 2010 Ctrl Delay	9.2
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	40	20	10	40	30	450	10	110	20	480	390	40
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	22	11	43	33	489	11	120	22	522	424	43
Pedestrians					1							
Lane Width (ft)					12.0							
Walking Speed (ft/s)					4.0							
Percent Blockage					0							
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											499	
pX, platoon unblocked	0.73	0.73	0.73	0.73	0.73		0.73					
vC, conflicting volume	2147	1653	446	1664	1664	131	467			142		
vC1, stage 1 conf vol	1489	1489		153	153							
vC2, stage 2 conf vol	658	164		1511	1511							
vCu, unblocked vol	2384	1709	59	1724	1724	131	89			142		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	74	99	0	55	47	99			64		
cM capacity (veh/h)	4	84	736	40	72	917	1102			1439		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	76	565	152	989
Volume Left	43	43	11	522
Volume Right	11	489	22	43
cSH	7	272	1102	1439
Volume to Capacity	11.61	2.08	0.01	0.36
Queue Length 95th (ft)	Err	1043	1	42
Control Delay (s)	Err	527.2	0.7	6.8
Lane LOS	F	F	A	A
Approach Delay (s)	Err	527.2	0.7	6.8
Approach LOS	F	F		

Intersection Summary				
Average Delay	597.8			
Intersection Capacity Utilization	98.7%	ICU Level of Service	F	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	60	440	190	320	740	200	180	190	110	190	520	150
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	71	518	172	376	871	209	212	224	100	224	612	157
Adj No. of Lanes	1	2	0	1	2	0	0	2	0	0	2	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	185	1219	403	400	1322	317	204	512	229	263	752	221
Arrive On Green	0.94	0.94	0.94	0.47	0.47	0.47	0.46	0.46	0.46	0.46	0.46	0.46
Sat Flow, veh/h	520	2603	860	749	2823	677	300	1104	493	462	1621	476
Grp Volume(v), veh/h	71	351	339	376	546	534	212	0	324	464	0	529
Grp Sat Flow(s),veh/h/ln	520	1770	1694	749	1770	1730	300	0	1597	957	0	1601
Q Serve(g_s), s	11.1	2.3	2.3	49.2	26.1	26.1	21.9	0.0	15.0	36.0	0.0	29.1
Cycle Q Clear(g_c), s	37.2	2.3	2.3	51.5	26.1	26.1	51.0	0.0	15.0	51.0	0.0	29.1
Prop In Lane	1.00		0.51	1.00		0.39	1.00		0.31	0.48		0.30
Lane Grp Cap(c), veh/h	185	828	793	400	828	810	204	0	741	492	0	742
V/C Ratio(X)	0.38	0.42	0.43	0.94	0.66	0.66	1.04	0.00	0.44	0.94	0.00	0.71
Avail Cap(c_a), veh/h	185	828	793	400	828	810	204	0	741	492	0	742
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.92	1.00	1.00	1.00	0.50	0.00	0.50	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.7	1.9	1.9	33.1	22.5	22.5	47.5	0.0	19.8	37.8	0.0	23.6
Incr Delay (d2), s/veh	5.4	1.5	1.5	32.0	4.1	4.2	54.6	0.0	0.1	26.6	0.0	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	1.3	1.3	14.9	13.7	13.4	9.3	0.0	6.6	17.7	0.0	13.3
LnGrp Delay(d),s/veh	18.1	3.4	3.5	65.2	26.6	26.7	102.2	0.0	19.9	64.4	0.0	26.4
LnGrp LOS	B	A	A	E	C	C	F		B	E		C
Approach Vol, veh/h		761			1456			536			993	
Approach Delay, s/veh		4.8			36.6			52.5			44.2	
Approach LOS		A			D			D			D	

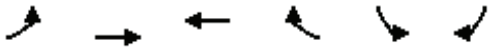
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		55.0		55.0		55.0		55.0
Change Period (Y+Rc), s		3.5		4.0		3.5		4.0
Max Green Setting (Gmax), s		51.5		51.0		51.5		51.0
Max Q Clear Time (g_c+I1), s		39.2		53.0		53.5		53.0
Green Ext Time (p_c), s		9.9		0.0		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	34.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	280	270	120	280	120	180	340	90	260	740	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	12	329	257	141	329	121	212	400	81	306	871	22
Adj No. of Lanes	0	1	0	0	1	0	0	2	0	0	2	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	62	402	307	163	299	101	173	656	139	278	904	26
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.48	0.48	0.48	0.48	0.48	0.48
Sat Flow, veh/h	13	986	753	231	734	248	145	1376	292	397	1896	54
Grp Volume(v), veh/h	598	0	0	591	0	0	240	0	453	512	0	687
Grp Sat Flow(s),veh/h/ln	1752	0	0	1213	0	0	180	0	1633	663	0	1684
Q Serve(g_s), s	0.0	0.0	0.0	6.2	0.0	0.0	7.5	0.0	13.0	18.0	0.0	23.5
Cycle Q Clear(g_c), s	20.3	0.0	0.0	26.5	0.0	0.0	31.0	0.0	13.0	31.0	0.0	23.5
Prop In Lane	0.02		0.43	0.24		0.20	0.88		0.18	0.60		0.03
Lane Grp Cap(c), veh/h	771	0	0	563	0	0	190	0	779	405	0	803
V/C Ratio(X)	0.78	0.00	0.00	1.05	0.00	0.00	1.26	0.00	0.58	1.26	0.00	0.86
Avail Cap(c_a), veh/h	771	0	0	563	0	0	190	0	779	405	0	803
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.5	0.0	0.0	20.6	0.0	0.0	29.7	0.0	12.3	25.5	0.0	15.0
Incr Delay (d2), s/veh	5.0	0.0	0.0	51.4	0.0	0.0	154.1	0.0	1.1	137.1	0.0	9.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.7	0.0	0.0	18.1	0.0	0.0	11.5	0.0	6.0	22.6	0.0	12.7
LnGrp Delay(d),s/veh	22.5	0.0	0.0	72.1	0.0	0.0	183.8	0.0	13.4	162.6	0.0	24.1
LnGrp LOS	C			F			F		B	F		C
Approach Vol, veh/h		598			591			693			1199	
Approach Delay, s/veh		22.5			72.1			72.5			83.2	
Approach LOS		C			E			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		35.0		30.0		35.0		30.0
Change Period (Y+Rc), s		4.0		3.5		4.0		3.5
Max Green Setting (Gmax), s		31.0		26.5		31.0		26.5
Max Q Clear Time (g_c+I1), s		33.0		22.3		33.0		28.5
Green Ext Time (p_c), s		0.0		2.9		0.0		0.0

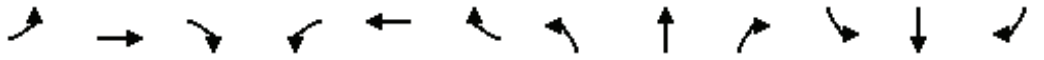
Intersection Summary	
HCM 2010 Ctrl Delay	66.9
HCM 2010 LOS	E



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	260	40	80	180	310	460
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1583	1770	1583
Flt Permitted	0.70	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1304	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	286	44	88	198	341	505
RTOR Reduction (vph)	0	0	0	133	0	294
Lane Group Flow (vph)	286	44	88	65	341	211
Confl. Peds. (#/hr)					5	
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)	10.4	10.4	10.4	10.4	13.2	13.2
Effective Green, g (s)	10.4	10.4	10.4	10.4	13.2	13.2
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.42	0.42
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	429	613	613	520	739	661
v/s Ratio Prot		0.02	0.05		c0.19	
v/s Ratio Perm	c0.22			0.04		0.13
v/c Ratio	0.67	0.07	0.14	0.13	0.46	0.32
Uniform Delay, d1	9.1	7.3	7.5	7.4	6.6	6.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.9	0.0	0.1	0.1	0.5	0.3
Delay (s)	13.0	7.3	7.6	7.5	7.1	6.5
Level of Service	B	A	A	A	A	A
Approach Delay (s)		12.2	7.5		6.7	
Approach LOS		B	A		A	

Intersection Summary			
HCM 2000 Control Delay	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	31.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	150	470	150	370	740	140	140	490	190	160	1130	230
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	165	516	80	407	813	77	154	538	174	176	1242	238
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	195	813	356	405	1168	508	183	807	260	206	947	180
Arrive On Green	0.11	0.23	0.23	0.23	0.33	0.33	0.10	0.31	0.31	0.12	0.32	0.32
Sat Flow, veh/h	1774	3539	1550	1774	3539	1539	1774	2631	847	1774	2960	562
Grp Volume(v), veh/h	165	516	80	407	813	77	154	361	351	176	738	742
Grp Sat Flow(s),veh/h/ln	1774	1770	1550	1774	1770	1539	1774	1770	1708	1774	1770	1752
Q Serve(g_s), s	10.0	14.4	4.6	25.0	21.9	3.9	9.3	19.5	19.6	10.7	35.0	35.0
Cycle Q Clear(g_c), s	10.0	14.4	4.6	25.0	21.9	3.9	9.3	19.5	19.6	10.7	35.0	35.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.50	1.00		0.32
Lane Grp Cap(c), veh/h	195	813	356	405	1168	508	183	543	524	206	566	560
V/C Ratio(X)	0.85	0.63	0.22	1.00	0.70	0.15	0.84	0.67	0.67	0.85	1.30	1.32
Avail Cap(c_a), veh/h	324	1035	453	405	1168	508	243	543	524	324	566	560
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.8	38.0	34.2	42.2	31.9	25.9	48.2	33.0	33.1	47.4	37.2	37.2
Incr Delay (d2), s/veh	4.6	1.2	0.5	45.8	2.0	0.2	14.1	2.5	2.7	7.2	149.1	158.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	7.2	2.0	17.3	10.9	1.7	5.3	9.9	9.6	5.6	40.4	41.4
LnGrp Delay(d),s/veh	52.4	39.2	34.7	88.0	33.9	26.1	62.3	35.5	35.8	54.7	186.3	195.5
LnGrp LOS	D	D	C	F	C	C	E	D	D	D	F	F
Approach Vol, veh/h		761			1297			866			1656	
Approach Delay, s/veh		41.6			50.4			40.4			176.4	
Approach LOS		D			D			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.0	29.1	14.3	38.0	17.0	40.1	15.7	36.6
Change Period (Y+Rc), s	3.0	4.0	3.0	3.0	5.0	4.0	3.0	3.0
Max Green Setting (Gmax), s	25.0	32.0	15.0	35.0	20.0	35.0	20.0	30.0
Max Q Clear Time (g_c+I1), s	27.0	16.4	11.3	37.0	12.0	23.9	12.7	21.6
Green Ext Time (p_c), s	0.0	8.8	0.1	0.0	0.1	8.0	0.1	6.2

Intersection Summary	
HCM 2010 Ctrl Delay	92.6
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	420	10	320	0	500	270	0	1330	320
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	0	1863	1863	0	1863	1900
Adj Flow Rate, veh/h				517	0	145	0	532	0	0	1415	288
Adj No. of Lanes				2	0	1	0	3	1	0	3	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				2	2	2	0	2	2	0	2	2
Cap, veh/h				861	0	384	0	2836	883	0	2354	478
Arrive On Green				0.24	0.00	0.24	0.00	0.56	0.00	0.00	0.56	0.56
Sat Flow, veh/h				3548	0	1581	0	5253	1583	0	4389	857
Grp Volume(v), veh/h				517	0	145	0	532	0	0	1136	567
Grp Sat Flow(s),veh/h/ln				1774	0	1581	0	1695	1583	0	1695	1688
Q Serve(g_s), s				5.2	0.0	3.1	0.0	2.1	0.0	0.0	8.9	9.0
Cycle Q Clear(g_c), s				5.2	0.0	3.1	0.0	2.1	0.0	0.0	8.9	9.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		0.51
Lane Grp Cap(c), veh/h				861	0	384	0	2836	883	0	1891	942
V/C Ratio(X)				0.60	0.00	0.38	0.00	0.19	0.00	0.00	0.60	0.60
Avail Cap(c_a), veh/h				2831	0	1262	0	3170	987	0	2113	1052
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				13.5	0.0	12.7	0.0	4.4	0.0	0.0	5.9	5.9
Incr Delay (d2), s/veh				0.7	0.0	0.6	0.0	0.0	0.0	0.0	0.4	0.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.6	0.0	1.4	0.0	0.9	0.0	0.0	4.2	4.3
LnGrp Delay(d),s/veh				14.1	0.0	13.3	0.0	4.4	0.0	0.0	6.3	6.7
LnGrp LOS				B		B		A			A	A
Approach Vol, veh/h					662			532			1703	
Approach Delay, s/veh					13.9			4.4			6.4	
Approach LOS					B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		26.4				26.4		13.7
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		25.0				25.0		32.0
Max Q Clear Time (g_c+I1), s		4.1				11.0		7.2
Green Ext Time (p_c), s		15.8				11.4		2.4

Intersection Summary	
HCM 2010 Ctrl Delay	7.8
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	140	0	750	0	0	0	0	630	540	0	1020	730
Number	3	8	18				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863				0	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	0	0	992				0	716	0	0	1159	0
Adj No. of Lanes	0	1	2				0	3	0	0	2	1
Peak Hour Factor	0.88	0.88	0.88				0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2				0	2	2	0	2	2
Cap, veh/h	0	696	1184				0	2521	0	0	1755	785
Arrive On Green	0.00	0.00	0.37				0.00	0.50	0.00	0.00	0.50	0.00
Sat Flow, veh/h	0	1863	3167				0	5421	0	0	3632	1583
Grp Volume(v), veh/h	0	0	992				0	716	0	0	1159	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583				0	1695	0	0	1770	1583
Q Serve(g_s), s	0.0	0.0	17.5				0.0	5.1	0.0	0.0	15.1	0.0
Cycle Q Clear(g_c), s	0.0	0.0	17.5				0.0	5.1	0.0	0.0	15.1	0.0
Prop In Lane	0.00		1.00				0.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	0	696	1184				0	2521	0	0	1755	785
V/C Ratio(X)	0.00	0.00	0.84				0.00	0.28	0.00	0.00	0.66	0.00
Avail Cap(c_a), veh/h	0	911	1548				0	3066	0	0	2134	955
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	17.5				0.0	9.1	0.0	0.0	11.6	0.0
Incr Delay (d2), s/veh	0.0	0.0	3.3				0.0	0.1	0.0	0.0	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	8.1				0.0	2.3	0.0	0.0	7.4	0.0
LnGrp Delay(d),s/veh	0.0	0.0	20.8				0.0	9.1	0.0	0.0	12.2	0.0
LnGrp LOS			C					A			B	
Approach Vol, veh/h		992						716			1159	
Approach Delay, s/veh		20.8						9.1			12.2	
Approach LOS		C						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		34.4				34.4		26.9
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		37.0				37.0		30.0
Max Q Clear Time (g_c+I1), s		7.1				17.1		19.5
Green Ext Time (p_c), s		17.4				13.4		3.4

Intersection Summary	
HCM 2010 Ctrl Delay	14.4
HCM 2010 LOS	B

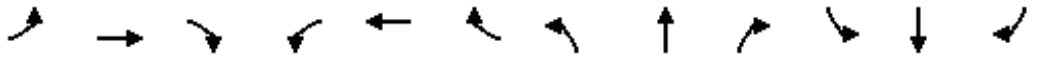
Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	100	20	100	10	10	30	120	1040	50	300	1170	300
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	109	22	63	11	11	0	130	1130	52	326	1272	309
Adj No. of Lanes	0	1	0	1	1	0	0	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	140	28	81	90	95	0	129	768	37	327	1676	400
Arrive On Green	0.15	0.15	0.15	0.05	0.05	0.00	0.34	0.34	0.34	0.18	0.59	0.59
Sat Flow, veh/h	961	194	555	1774	1863	0	156	2239	108	1774	2821	673
Grp Volume(v), veh/h	194	0	0	11	11	0	505	0	807	326	789	792
Grp Sat Flow(s),veh/h/ln	1710	0	0	1774	1863	0	828	0	1675	1774	1770	1725
Q Serve(g_s), s	6.5	0.0	0.0	0.4	0.3	0.0	14.9	0.0	20.5	11.0	19.5	20.6
Cycle Q Clear(g_c), s	6.5	0.0	0.0	0.4	0.3	0.0	20.5	0.0	20.5	11.0	19.5	20.6
Prop In Lane	0.56		0.32	1.00		0.00	0.26		0.06	1.00		0.39
Lane Grp Cap(c), veh/h	250	0	0	90	95	0	360	0	575	327	1051	1025
V/C Ratio(X)	0.78	0.00	0.00	0.12	0.12	0.00	1.40	0.00	1.40	1.00	0.75	0.77
Avail Cap(c_a), veh/h	601	0	0	1336	1403	0	360	0	575	327	1051	1025
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	0.0	0.0	27.1	27.1	0.0	21.5	0.0	19.6	24.4	8.9	9.1
Incr Delay (d2), s/veh	2.0	0.0	0.0	0.2	0.2	0.0	197.6	0.0	192.2	49.3	3.3	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	0.0	0.2	0.2	0.0	25.5	0.0	39.9	9.7	10.4	10.8
LnGrp Delay(d),s/veh	26.6	0.0	0.0	27.3	27.3	0.0	219.1	0.0	211.8	73.7	12.2	13.1
LnGrp LOS	C			C	C		F		F	E	B	B
Approach Vol, veh/h		194			22			1312			1907	
Approach Delay, s/veh		26.6			27.3			214.6			23.1	
Approach LOS		C			C			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	15.0	25.0		7.0		40.0		12.7
Change Period (Y+Rc), s	4.0	4.5		4.0		4.5		4.0
Max Green Setting (Gmax), s	11.0	20.5		45.0		23.0		21.0
Max Q Clear Time (g_c+I1), s	13.0	22.5		2.4		22.6		8.5
Green Ext Time (p_c), s	0.0	0.0		0.0		0.4		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	96.5
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	390	220	90	80	80	160	40	510	290	380	370	270
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	411	232	0	84	84	39	42	537	270	400	389	0
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	396	907	406	108	224	98	54	564	283	418	1606	0
Arrive On Green	0.22	0.26	0.00	0.06	0.09	0.09	0.03	0.25	0.25	0.24	0.45	0.00
Sat Flow, veh/h	1774	3539	1583	1774	2388	1040	1774	2273	1140	1774	3632	0
Grp Volume(v), veh/h	411	232	0	84	61	62	42	418	389	400	389	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1659	1774	1770	1643	1774	1770	0
Q Serve(g_s), s	18.0	4.2	0.0	3.8	2.6	2.8	1.9	18.7	18.8	17.9	5.4	0.0
Cycle Q Clear(g_c), s	18.0	4.2	0.0	3.8	2.6	2.8	1.9	18.7	18.8	17.9	5.4	0.0
Prop In Lane	1.00		1.00	1.00		0.63	1.00		0.69	1.00		0.00
Lane Grp Cap(c), veh/h	396	907	406	108	166	156	54	439	408	418	1606	0
V/C Ratio(X)	1.04	0.26	0.00	0.78	0.37	0.40	0.78	0.95	0.95	0.96	0.24	0.00
Avail Cap(c_a), veh/h	396	1318	590	198	461	432	154	439	408	418	1606	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	31.3	23.8	0.0	37.3	34.2	34.4	38.8	29.8	29.8	30.4	13.5	0.0
Incr Delay (d2), s/veh	55.1	0.1	0.0	11.2	1.3	1.6	21.4	30.7	32.9	32.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.8	2.1	0.0	2.2	1.3	1.4	1.2	12.9	12.3	12.6	2.7	0.0
LnGrp Delay(d),s/veh	86.4	24.0	0.0	48.5	35.6	36.0	60.2	60.5	62.8	63.2	13.6	0.0
LnGrp LOS	F	C		D	D	D	E	E	E	E	B	
Approach Vol, veh/h		643			207			849			789	
Approach Delay, s/veh		63.9			40.9			61.5			38.7	
Approach LOS		E			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	24.0	8.9	24.7	6.4	40.6	22.0	11.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	19.0	20.0	9.0	30.0	7.0	32.0	18.0	21.0
Max Q Clear Time (g_c+I1), s	19.9	20.8	5.8	6.2	3.9	7.4	20.0	4.8
Green Ext Time (p_c), s	0.0	0.0	0.0	2.2	0.0	9.3	0.0	1.9

Intersection Summary	
HCM 2010 Ctrl Delay	53.2
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	90	950	550	90	1270	140	240	370	60	130	600	190
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	95	1000	418	95	1337	139	253	389	50	137	632	169
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	73	1504	646	143	1371	142	285	1138	145	168	815	218
Arrive On Green	0.42	0.42	0.42	0.42	0.42	0.42	0.16	0.36	0.36	0.09	0.30	0.30
Sat Flow, veh/h	357	3539	1519	377	3225	333	1774	3149	402	1774	2759	737
Grp Volume(v), veh/h	95	1000	418	95	730	746	253	217	222	137	405	396
Grp Sat Flow(s),veh/h/ln	357	1770	1519	377	1770	1789	1774	1770	1782	1774	1770	1727
Q Serve(g_s), s	1.4	23.8	22.9	20.8	42.4	43.2	14.7	9.4	9.5	8.0	22.0	22.0
Cycle Q Clear(g_c), s	44.6	23.8	22.9	44.6	42.4	43.2	14.7	9.4	9.5	8.0	22.0	22.0
Prop In Lane	1.00		1.00	1.00		0.19	1.00		0.23	1.00		0.43
Lane Grp Cap(c), veh/h	73	1504	646	143	752	760	285	639	644	168	523	510
V/C Ratio(X)	1.29	0.66	0.65	0.66	0.97	0.98	0.89	0.34	0.34	0.82	0.77	0.78
Avail Cap(c_a), veh/h	73	1504	646	143	752	760	329	639	644	279	565	551
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.5	24.2	23.9	44.3	29.5	29.8	43.2	24.4	24.5	46.6	33.8	33.8
Incr Delay (d2), s/veh	202.4	2.3	5.0	21.6	26.4	28.4	22.2	1.1	1.2	9.3	9.5	9.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	12.0	10.5	3.6	26.2	27.1	8.9	4.8	4.9	4.3	12.1	11.8
LnGrp Delay(d),s/veh	254.9	26.5	28.9	65.9	56.0	58.2	65.3	25.5	25.6	55.9	43.3	43.6
LnGrp LOS	F	C	C	E	E	E	E	C	C	E	D	D
Approach Vol, veh/h		1513			1571			692			938	
Approach Delay, s/veh		41.5			57.6			40.1			45.3	
Approach LOS		D			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		49.1	20.4	35.5		49.1	13.4	42.4
Change Period (Y+Rc), s		4.5	3.5	4.5		4.5	3.5	4.5
Max Green Setting (Gmax), s		39.5	19.5	33.5		39.5	16.5	36.5
Max Q Clear Time (g_c+I1), s		46.6	16.7	24.0		46.6	10.0	11.5
Green Ext Time (p_c), s		0.0	0.2	7.0		0.0	0.2	17.4

Intersection Summary	
HCM 2010 Ctrl Delay	47.4
HCM 2010 LOS	D

Notes

User approved ignoring U-Turning movement.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1060	230	450	210	150	350
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1178	256	500	233	167	389
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						19
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1062		
pX, platoon unblocked						
vC, conflicting volume			1433		2411	1178
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1433		2411	1178
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			0		0	0
cM capacity (veh/h)			474		0	232

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	1178	256	500	233	556
Volume Left	0	0	500	0	167
Volume Right	0	256	0	0	389
cSH	1700	1700	474	1700	0
Volume to Capacity	0.69	0.15	1.06	0.14	Err
Queue Length 95th (ft)	0	0	386	0	Err
Control Delay (s)	0.0	0.0	86.3	0.0	Err
Lane LOS			F		F
Approach Delay (s)	0.0		58.9		Err
Approach LOS					F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	99.0%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	150	530	360	130	210	390	100	120	250	700	380	330
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	163	576	346	141	228	303	109	130	8	761	413	339
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	204	463	278	179	298	396	388	471	29	246	84	69
Arrive On Green	0.11	0.42	0.42	0.10	0.41	0.41	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1774	1091	656	1774	727	966	708	1733	107	567	308	253
Grp Volume(v), veh/h	163	0	922	141	0	531	109	0	138	1513	0	0
Grp Sat Flow(s),veh/h/ln	1774	0	1747	1774	0	1692	708	0	1840	1127	0	0
Q Serve(g_s), s	5.3	0.0	25.0	4.6	0.0	15.9	0.0	0.0	3.5	12.5	0.0	0.0
Cycle Q Clear(g_c), s	5.3	0.0	25.0	4.6	0.0	15.9	5.4	0.0	3.5	16.0	0.0	0.0
Prop In Lane	1.00		0.38	1.00		0.57	1.00		0.06	0.50		0.22
Lane Grp Cap(c), veh/h	204	0	741	179	0	694	388	0	500	398	0	0
V/C Ratio(X)	0.80	0.00	1.24	0.79	0.00	0.77	0.28	0.00	0.28	3.80	0.00	0.00
Avail Cap(c_a), veh/h	211	0	741	211	0	718	388	0	500	398	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	25.4	0.0	17.0	25.9	0.0	14.9	17.6	0.0	16.9	24.7	0.0	0.0
Incr Delay (d2), s/veh	18.8	0.0	121.1	15.6	0.0	4.8	0.4	0.0	0.3	1267.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	36.9	3.0	0.0	8.3	1.5	0.0	1.8	146.5	0.0	0.0
LnGrp Delay(d),s/veh	44.2	0.0	138.1	41.5	0.0	19.7	18.0	0.0	17.2	1292.3	0.0	0.0
LnGrp LOS	D		F	D		B	B		B	F		
Approach Vol, veh/h		1085			672			247			1513	
Approach Delay, s/veh		124.0			24.3			17.5			1292.3	
Approach LOS		F			C			B			F	

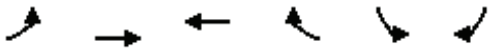
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		20.0	9.9	29.0		20.0	10.8	28.2
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		16.0	7.0	25.0		16.0	7.0	25.0
Max Q Clear Time (g_c+I1), s		7.4	6.6	27.0		18.0	7.3	17.9
Green Ext Time (p_c), s		8.0	0.0	0.0		0.0	0.0	5.2

Intersection Summary	
HCM 2010 Ctrl Delay	600.0
HCM 2010 LOS	F

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	930	550	90	480	250	280
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1011	598	98	522	272	304
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						3
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	337					
pX, platoon unblocked			0.62		0.62	0.62
vC, conflicting volume			1011		2027	1310
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			710		2351	1193
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			82		0	0
cM capacity (veh/h)			551		20	141

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	1609	98	522	576
Volume Left	0	98	0	272
Volume Right	598	0	0	304
cSH	1700	551	1700	37
Volume to Capacity	0.95	0.18	0.31	15.65
Queue Length 95th (ft)	0	16	0	Err
Control Delay (s)	0.0	12.9	0.0	Err
Lane LOS		B		F
Approach Delay (s)	0.0	2.0		Err
Approach LOS				F

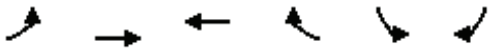
Intersection Summary			
Average Delay	2054.5		
Intersection Capacity Utilization	106.5%	ICU Level of Service	G
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	1050	670	0	1020	830
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	0	1105	705	0	1074	797
Adj No. of Lanes	0	2	2	0	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1652	1652	0	1319	607
Arrive On Green	0.00	0.47	0.15	0.00	0.38	0.38
Sat Flow, veh/h	0	3725	3725	0	3442	1583
Grp Volume(v), veh/h	0	1105	705	0	1074	797
Grp Sat Flow(s),veh/h/ln	0	1770	1770	0	1721	1583
Q Serve(g_s), s	0.0	14.5	10.8	0.0	16.8	23.0
Cycle Q Clear(g_c), s	0.0	14.5	10.8	0.0	16.8	23.0
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1652	1652	0	1319	607
V/C Ratio(X)	0.00	0.67	0.43	0.00	0.81	1.31
Avail Cap(c_a), veh/h	0	1652	1652	0	1319	607
HCM Platoon Ratio	1.00	1.00	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.96	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	12.4	18.1	0.0	16.6	18.5
Incr Delay (d2), s/veh	0.0	2.2	0.8	0.0	4.0	152.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.6	5.5	0.0	8.6	35.6
LnGrp Delay(d),s/veh	0.0	14.6	18.9	0.0	20.6	170.9
LnGrp LOS		B	B		C	F
Approach Vol, veh/h		1105	705		1871	
Approach Delay, s/veh		14.6	18.9		84.6	
Approach LOS		B	B		F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		33.0		27.0		33.0		
Change Period (Y+Rc), s		5.0		4.0		5.0		
Max Green Setting (Gmax), s		28.0		23.0		28.0		
Max Q Clear Time (g_c+I1), s		16.5		25.0		12.8		
Green Ext Time (p_c), s		8.5		0.0		10.6		

Intersection Summary	
HCM 2010 Ctrl Delay	51.0
HCM 2010 LOS	D



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	20	2050	590	50	310	80
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99			0.94	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	21	2158	621	42	326	67
Adj No. of Lanes	0	2	2	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	69	2105	2049	138	367	75
Arrive On Green	0.61	0.61	0.61	0.61	0.25	0.25
Sat Flow, veh/h	13	3526	3444	226	1439	296
Grp Volume(v), veh/h	1169	1010	328	335	394	0
Grp Sat Flow(s),veh/h/ln	1844	1610	1770	1807	1739	0
Q Serve(g_s), s	14.5	36.7	5.3	5.3	13.1	0.0
Cycle Q Clear(g_c), s	36.7	36.7	5.3	5.3	13.1	0.0
Prop In Lane	0.02			0.13	0.83	0.17
Lane Grp Cap(c), veh/h	1189	985	1082	1105	443	0
V/C Ratio(X)	0.98	1.03	0.30	0.30	0.89	0.00
Avail Cap(c_a), veh/h	1189	985	1082	1105	522	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.59	0.59	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.2	11.6	5.6	5.6	21.5	0.0
Incr Delay (d2), s/veh	16.5	28.7	0.7	0.7	13.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.6	23.7	2.8	2.8	8.0	0.0
LnGrp Delay(d),s/veh	28.7	40.3	6.3	6.3	35.5	0.0
LnGrp LOS	C	F	A	A	D	
Approach Vol, veh/h		2179	663		394	
Approach Delay, s/veh		34.1	6.3		35.5	
Approach LOS		C	A		D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		40.7		19.3		40.7		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		34.0		18.0		34.0		
Max Q Clear Time (g_c+I1), s		38.7		15.1		7.3		
Green Ext Time (p_c), s		0.0		0.2		23.8		

Intersection Summary	
HCM 2010 Ctrl Delay	28.6
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	240	30	1070	120	490	90	570	580	0	0	800	290
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.76	1.00		0.92	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	253	0	921	126	516	16	600	611	0	0	842	201
Adj No. of Lanes	1	0	2	1	2	1	2	3	0	0	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	0	2	2
Cap, veh/h	244	0	887	452	902	370	602	2624	0	0	1118	484
Arrive On Green	0.14	0.00	0.14	0.25	0.25	0.25	0.17	0.52	0.00	0.00	0.32	0.32
Sat Flow, veh/h	1774	0	2420	1774	3539	1452	3442	5253	0	0	3632	1532
Grp Volume(v), veh/h	253	0	921	126	516	16	600	611	0	0	842	201
Grp Sat Flow(s),veh/h/ln	1774	0	1210	1774	1770	1452	1721	1695	0	0	1770	1532
Q Serve(g_s), s	16.5	0.0	16.5	6.8	15.3	1.0	20.9	7.9	0.0	0.0	25.6	12.4
Cycle Q Clear(g_c), s	16.5	0.0	16.5	6.8	15.3	1.0	20.9	7.9	0.0	0.0	25.6	12.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	244	0	887	452	902	370	602	2624	0	0	1118	484
V/C Ratio(X)	1.04	0.00	1.04	0.28	0.57	0.04	1.00	0.23	0.00	0.00	0.75	0.42
Avail Cap(c_a), veh/h	244	0	887	532	1062	436	602	2624	0	0	1118	484
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	0.0	42.5	35.9	39.0	33.7	49.5	16.0	0.0	0.0	36.8	32.3
Incr Delay (d2), s/veh	67.6	0.0	40.7	0.3	0.6	0.0	35.6	0.2	0.0	0.0	4.7	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.6	0.0	19.7	3.4	7.5	0.4	12.9	3.7	0.0	0.0	13.2	5.6
LnGrp Delay(d),s/veh	119.4	0.0	83.1	36.2	39.6	33.7	85.1	16.2	0.0	0.0	41.6	34.9
LnGrp LOS	F		F	D	D	C	F	B			D	C
Approach Vol, veh/h		1174			658			1211			1043	
Approach Delay, s/veh		90.9			38.8			50.3			40.3	
Approach LOS		F			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		65.9		20.0	24.0	41.9		34.1
Change Period (Y+Rc), s		4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s		56.5		16.5	21.0	32.5		36.0
Max Q Clear Time (g_c+I1), s		9.9		18.5	22.9	27.6		17.3
Green Ext Time (p_c), s		16.3		0.0	0.0	3.7		3.7

Intersection Summary	
HCM 2010 Ctrl Delay	57.6
HCM 2010 LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	490	380	570	710	70	100
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	516	400	600	747	74	105
Adj No. of Lanes	1	0	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	506	392	578	1573	151	134
Arrive On Green	0.52	0.52	0.29	0.84	0.08	0.08
Sat Flow, veh/h	974	755	1774	1863	1774	1583
Grp Volume(v), veh/h	0	916	600	747	74	105
Grp Sat Flow(s),veh/h/ln	0	1729	1774	1863	1774	1583
Q Serve(g_s), s	0.0	59.0	33.0	11.8	4.5	7.4
Cycle Q Clear(g_c), s	0.0	59.0	33.0	11.8	4.5	7.4
Prop In Lane		0.44	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	898	578	1573	151	134
V/C Ratio(X)	0.00	1.02	1.04	0.47	0.49	0.78
Avail Cap(c_a), veh/h	0	898	578	1573	250	223
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	27.3	36.4	2.3	49.7	51.0
Incr Delay (d2), s/veh	0.0	35.2	47.4	0.2	2.5	9.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	36.7	25.6	5.9	2.3	3.6
LnGrp Delay(d),s/veh	0.0	62.6	83.8	2.5	52.1	60.4
LnGrp LOS		F	F	A	D	E
Approach Vol, veh/h	916			1347	179	
Approach Delay, s/veh	62.6			38.7	57.0	
Approach LOS	E			D	E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		13.6	37.0	63.0				100.0
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		16.0	33.0	59.0				96.0
Max Q Clear Time (g_c+I1), s		9.4	35.0	61.0				13.8
Green Ext Time (p_c), s		0.3	0.0	0.0				24.2

Intersection Summary	
HCM 2010 Ctrl Delay	49.0
HCM 2010 LOS	D

Intersection	
Intersection Delay, s/veh	83.2
Intersection LOS	F

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	120	130	170	0	450	330	110	0	180	1180	190
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	130	141	185	0	489	359	120	0	196	1283	207
Number of Lanes	0	0	1	0	0	1	1	0	0	1	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	1	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	3	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	3	3	2
HCM Control Delay	92.6	92.3	83.2
HCM LOS	F	F	F

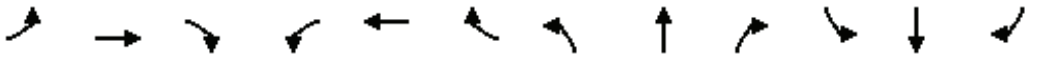
Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	29%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	67%	31%	0%	75%	0%	100%	58%
Vol Right, %	0%	0%	33%	40%	0%	25%	0%	0%	42%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	180	787	583	420	450	440	350	193	167
LT Vol	180	0	0	120	450	0	350	0	0
Through Vol	0	787	393	130	0	330	0	193	97
RT Vol	0	0	190	170	0	110	0	0	70
Lane Flow Rate	196	855	634	457	489	478	380	210	181
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.691	1	1	1	1	1	1	0.741	0.624
Departure Headway (Hd)	12.71	12.211	11.983	13.092	13.292	12.619	13.192	12.692	12.398
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	286	308	311	283	279	292	278	286	292
Service Time	10.469	9.97	9.742	10.806	11.052	10.378	10.939	10.44	10.146
HCM Lane V/C Ratio	0.685	2.776	2.039	1.615	1.753	1.637	1.367	0.734	0.62
HCM Control Delay	39.8	89.3	88.4	92.6	93.6	90.9	93.1	44.6	33.8
HCM Lane LOS	E	F	F	F	F	F	F	E	D
HCM 95th-tile Q	4.7	10.5	10.6	10.1	10.1	10.3	10.1	5.4	3.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	350	290	70
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	380	315	76
Number of Lanes	0	1	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	3
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	66
HCM LOS	F

Lane



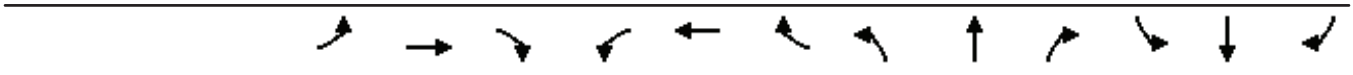
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	500	290	960	200	60	110	110	710	60	160	40
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	33	556	226	1067	222	60	122	122	297	67	178	36
Adj No. of Lanes	1	2	0	2	1	0	1	1	1	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	354	488	198	749	297	80	398	418	354	76	202	41
Arrive On Green	0.20	0.20	0.20	0.21	0.21	0.21	0.22	0.22	0.22	0.18	0.18	0.18
Sat Flow, veh/h	1774	2448	992	3548	1405	380	1774	1863	1579	428	1138	230
Grp Volume(v), veh/h	33	402	380	1067	0	282	122	122	297	281	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1670	1774	0	1785	1774	1863	1579	1796	0	0
Q Serve(g_s), s	1.3	17.0	17.0	18.0	0.0	12.6	4.9	4.6	15.3	13.0	0.0	0.0
Cycle Q Clear(g_c), s	1.3	17.0	17.0	18.0	0.0	12.6	4.9	4.6	15.3	13.0	0.0	0.0
Prop In Lane	1.00		0.59	1.00		0.21	1.00		1.00	0.24		0.13
Lane Grp Cap(c), veh/h	354	353	333	749	0	377	398	418	354	319	0	0
V/C Ratio(X)	0.09	1.14	1.14	1.42	0.00	0.75	0.31	0.29	0.84	0.88	0.00	0.00
Avail Cap(c_a), veh/h	354	353	333	749	0	377	583	612	519	337	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	27.8	34.1	34.1	33.6	0.0	31.5	27.6	27.5	31.6	34.2	0.0	0.0
Incr Delay (d2), s/veh	0.1	90.9	93.8	198.8	0.0	8.0	0.4	0.4	7.9	21.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	17.1	16.4	29.4	0.0	7.0	2.5	2.4	7.5	8.4	0.0	0.0
LnGrp Delay(d),s/veh	28.0	125.0	127.9	232.4	0.0	39.6	28.0	27.8	39.5	56.0	0.0	0.0
LnGrp LOS	C	F	F	F		D	C	C	D	E		
Approach Vol, veh/h		815			1349			541			281	
Approach Delay, s/veh		122.4			192.1			34.3			56.0	
Approach LOS		F			F			C			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		23.1		21.0		19.1		22.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		28.0		17.0		16.0		18.0
Max Q Clear Time (g_c+I1), s		17.3		19.0		15.0		20.0
Green Ext Time (p_c), s		1.6		0.0		0.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	131.7
HCM 2010 LOS	F

Notes

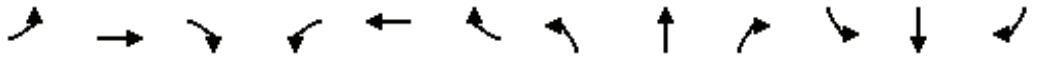
User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	710	10	150	130	780	0	0	840	570
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1900	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				807	11	22	148	886	0	0	955	0
Adj No. of Lanes				1	1	0	1	2	0	0	2	0
Peak Hour Factor				0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				705	221	441	104	1717	0	0	1300	0
Arrive On Green				0.40	0.40	0.40	0.06	0.49	0.00	0.00	0.37	0.00
Sat Flow, veh/h				1774	556	1111	1774	3632	0	0	3725	0
Grp Volume(v), veh/h				807	0	33	148	886	0	0	955	0
Grp Sat Flow(s),veh/h/ln				1774	0	1667	1774	1770	0	0	1770	0
Q Serve(g_s), s				27.0	0.0	0.8	4.0	11.7	0.0	0.0	15.9	0.0
Cycle Q Clear(g_c), s				27.0	0.0	0.8	4.0	11.7	0.0	0.0	15.9	0.0
Prop In Lane				1.00		0.67	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				705	0	662	104	1717	0	0	1300	0
V/C Ratio(X)				1.15	0.00	0.05	1.42	0.52	0.00	0.00	0.73	0.00
Avail Cap(c_a), veh/h				705	0	662	104	1823	0	0	1406	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				20.5	0.0	12.6	32.0	12.0	0.0	0.0	18.6	0.0
Incr Delay (d2), s/veh				81.4	0.0	0.0	234.7	0.2	0.0	0.0	1.9	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				29.1	0.0	0.4	8.8	5.7	0.0	0.0	8.0	0.0
LnGrp Delay(d),s/veh				101.9	0.0	12.6	266.7	12.3	0.0	0.0	20.5	0.0
LnGrp LOS				F		B	F	B			C	
Approach Vol, veh/h					840			1034			955	
Approach Delay, s/veh					98.4			48.7			20.5	
Approach LOS					F			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		37.0			8.0	29.0		31.0
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		35.0			4.0	27.0		27.0
Max Q Clear Time (g_c+I1), s		13.7			6.0	17.9		29.0
Green Ext Time (p_c), s		13.7			0.0	7.1		0.0

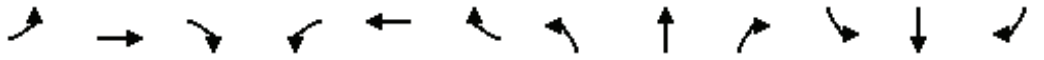
Intersection Summary	
HCM 2010 Ctrl Delay	53.9
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1010	320	170	440	0	0	0	0	520	40	780
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1900	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	1098	293	185	478	0				565	43	784
Adj No. of Lanes	0	2	0	0	2	0				0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1881	498	276	1095	0				144	11	200
Arrive On Green	0.00	0.68	0.68	1.00	1.00	0.00				0.21	0.21	0.21
Sat Flow, veh/h	0	2860	732	265	1695	0				675	51	937
Grp Volume(v), veh/h	0	699	692	185	478	0				1392	0	0
Grp Sat Flow(s),veh/h/ln	0	1770	1729	265	1610	0				1664	0	0
Q Serve(g_s), s	0.0	15.7	16.0	35.0	0.0	0.0				16.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	15.7	16.0	51.0	0.0	0.0				16.0	0.0	0.0
Prop In Lane	0.00		0.42	1.00		0.00				0.41		0.56
Lane Grp Cap(c), veh/h	0	1203	1176	276	1095	0				355	0	0
V/C Ratio(X)	0.00	0.58	0.59	0.67	0.44	0.00				3.92	0.00	0.00
Avail Cap(c_a), veh/h	0	1203	1176	276	1095	0				355	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.89	0.89	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	6.3	6.4	8.4	0.0	0.0				29.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.7	0.8	5.4	0.2	0.0				1321.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.8	7.8	4.2	0.1	0.0				137.6	0.0	0.0
LnGrp Delay(d),s/veh	0.0	7.1	7.2	13.9	0.2	0.0				1351.2	0.0	0.0
LnGrp LOS		A	A	B	A					F		
Approach Vol, veh/h		1391			663						1392	
Approach Delay, s/veh		7.1			4.0						1351.2	
Approach LOS		A			A						F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				55.0		20.0		55.0
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				51.0		16.0		51.0
Max Q Clear Time (g_c+I1), s				18.0		18.0		53.0
Green Ext Time (p_c), s				22.8		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	549.5
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	380	1150	0	0	530	490	80	20	120	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	427	1292	0	0	596	361	56	70	55			
Adj No. of Lanes	0	2	0	0	2	0	1	1	1			
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	352	1304	0	0	1461	885	355	373	316			
Arrive On Green	1.00	1.00	0.00	0.00	0.69	0.69	0.20	0.20	0.20			
Sat Flow, veh/h	397	1965	0	0	2200	1276	1774	1863	1581			
Grp Volume(v), veh/h	717	1002	0	0	501	456	56	70	55			
Grp Sat Flow(s),veh/h/ln	667	1610	0	0	1770	1613	1774	1863	1581			
Q Serve(g_s), s	42.9	0.0	0.0	0.0	9.1	9.1	2.0	2.3	2.2			
Cycle Q Clear(g_c), s	52.0	0.0	0.0	0.0	9.1	9.1	2.0	2.3	2.2			
Prop In Lane	0.60		0.00	0.00		0.79	1.00		1.00			
Lane Grp Cap(c), veh/h	539	1117	0	0	1227	1119	355	373	316			
V/C Ratio(X)	1.33	0.90	0.00	0.00	0.41	0.41	0.16	0.19	0.17			
Avail Cap(c_a), veh/h	539	1117	0	0	1227	1119	355	373	316			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.65	0.65	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	7.6	0.0	0.0	0.0	4.9	4.9	24.8	24.9	24.9			
Incr Delay (d2), s/veh	156.7	6.7	0.0	0.0	0.2	0.2	0.9	1.1	1.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	34.5	2.1	0.0	0.0	4.4	4.0	1.0	1.3	1.1			
LnGrp Delay(d),s/veh	164.3	6.7	0.0	0.0	5.1	5.2	25.7	26.1	26.1			
LnGrp LOS	F	A			A	A	C	C	C			
Approach Vol, veh/h		1719			957			181				
Approach Delay, s/veh		72.5			5.1			26.0				
Approach LOS		E			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		19.0		56.0				56.0
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		15.0		52.0				52.0
Max Q Clear Time (g_c+I1), s		4.3		54.0				11.1
Green Ext Time (p_c), s		0.5		0.0				35.3

Intersection Summary	
HCM 2010 Ctrl Delay	47.0
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

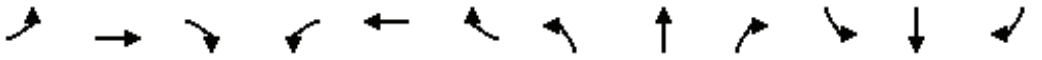
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	600	270	30	620	100	230	230	30	200	1000	190
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	32	632	208	32	653	93	242	242	24	211	1053	185
Adj No. of Lanes	0	2	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	66	1128	572	62	1019	149	272	1227	120	243	1081	189
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.15	0.38	0.38	0.14	0.36	0.36
Sat Flow, veh/h	79	3015	1528	70	2724	398	1774	3247	319	1774	2994	525
Grp Volume(v), veh/h	320	344	208	402	0	376	242	131	135	211	621	617
Grp Sat Flow(s),veh/h/ln	1483	1610	1528	1582	0	1609	1774	1770	1796	1774	1770	1749
Q Serve(g_s), s	1.4	18.4	10.6	5.1	0.0	20.6	14.4	5.4	5.5	12.6	37.3	37.6
Cycle Q Clear(g_c), s	22.0	18.4	10.6	23.5	0.0	20.6	14.4	5.4	5.5	12.6	37.3	37.6
Prop In Lane	0.10		1.00	0.08		0.25	1.00		0.18	1.00		0.30
Lane Grp Cap(c), veh/h	592	603	572	628	0	602	272	669	679	243	639	632
V/C Ratio(X)	0.54	0.57	0.36	0.64	0.00	0.63	0.89	0.20	0.20	0.87	0.97	0.98
Avail Cap(c_a), veh/h	592	603	572	628	0	602	345	669	679	427	639	632
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.00	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.7	26.9	24.5	27.6	0.0	27.6	44.8	22.6	22.6	45.7	34.0	34.0
Incr Delay (d2), s/veh	3.5	3.9	1.8	0.5	0.0	0.4	17.6	0.2	0.2	3.7	28.7	29.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	8.8	4.8	10.1	0.0	9.2	8.4	2.7	2.7	6.4	23.2	23.4
LnGrp Delay(d),s/veh	29.2	30.8	26.3	28.0	0.0	28.1	62.4	22.8	22.8	49.4	62.7	64.0
LnGrp LOS	C	C	C	C		C	E	C	C	D	E	E
Approach Vol, veh/h		872			778			508			1449	
Approach Delay, s/veh		29.1			28.0			41.6			61.3	
Approach LOS		C			C			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	20.6	43.0		44.4	18.8	44.8		44.4
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	21.0	39.0		36.0	26.0	34.0		36.0
Max Q Clear Time (g_c+I1), s	16.4	39.6		24.0	14.6	7.5		25.5
Green Ext Time (p_c), s	0.2	0.0		9.1	0.2	16.2		8.1

Intersection Summary	
HCM 2010 Ctrl Delay	43.6
HCM 2010 LOS	D

Notes

User approved ignoring U-Turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	320	160	130	250	90	60	670	70	110	1130	20
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.94	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	30	323	146	131	253	80	61	677	64	111	1141	19
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	107	286	129	177	374	118	138	1436	136	158	1609	27
Arrive On Green	0.06	0.24	0.24	0.10	0.28	0.28	0.08	0.44	0.44	0.03	0.15	0.15
Sat Flow, veh/h	1774	1187	536	1774	1336	423	1774	3261	308	1774	3559	59
Grp Volume(v), veh/h	30	0	469	131	0	333	61	367	374	111	567	593
Grp Sat Flow(s),veh/h/ln	1774	0	1723	1774	0	1759	1774	1770	1799	1774	1770	1849
Q Serve(g_s), s	1.7	0.0	26.0	7.8	0.0	18.2	3.5	15.8	15.9	6.7	32.9	32.9
Cycle Q Clear(g_c), s	1.7	0.0	26.0	7.8	0.0	18.2	3.5	15.8	15.9	6.7	32.9	32.9
Prop In Lane	1.00		0.31	1.00		0.24	1.00		0.17	1.00		0.03
Lane Grp Cap(c), veh/h	107	0	415	177	0	493	138	780	792	158	800	836
V/C Ratio(X)	0.28	0.00	1.13	0.74	0.00	0.68	0.44	0.47	0.47	0.70	0.71	0.71
Avail Cap(c_a), veh/h	197	0	415	197	0	493	197	780	792	197	800	836
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.55	0.55	0.55
Uniform Delay (d), s/veh	48.5	0.0	41.0	47.2	0.0	34.5	47.6	21.3	21.3	51.0	39.2	39.2
Incr Delay (d2), s/veh	0.5	0.0	84.8	10.2	0.0	7.3	0.8	2.0	2.0	2.8	3.0	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	22.1	4.3	0.0	9.8	1.8	8.2	8.3	3.4	16.8	17.6
LnGrp Delay(d),s/veh	49.0	0.0	125.8	57.4	0.0	41.8	48.4	23.4	23.4	53.8	42.1	42.0
LnGrp LOS	D		F	E		D	D	C	C	D	D	D
Approach Vol, veh/h		499			464			802			1271	
Approach Delay, s/veh		121.2			46.2			25.3			43.1	
Approach LOS		F			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.4	52.8	13.8	30.0	12.6	51.6	9.5	34.3
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	12.0	44.0	12.0	26.0	12.0	44.0	12.0	26.0
Max Q Clear Time (g_c+I1), s	5.5	34.9	9.8	28.0	8.7	17.9	3.7	20.2
Green Ext Time (p_c), s	0.0	7.8	0.0	0.0	0.0	19.2	0.0	1.9

Intersection Summary	
HCM 2010 Ctrl Delay	51.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	650	190	160	740	0	0	0	0	200	1140	160
Number	7	4	14	3	8	18				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		1.00				1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	663	191	163	755	0				204	1163	150
Adj No. of Lanes	0	2	0	1	2	0				0	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1247	359	299	1650	0				187	1112	150
Arrive On Green	0.00	0.47	0.47	0.47	0.47	0.00				0.40	0.40	0.40
Sat Flow, veh/h	0	2767	769	642	3632	0				467	2777	374
Grp Volume(v), veh/h	0	439	415	163	755	0				803	0	714
Grp Sat Flow(s),veh/h/ln	0	1770	1674	642	1770	0				1839	0	1779
Q Serve(g_s), s	0.0	11.2	11.2	15.4	9.2	0.0				25.5	0.0	25.5
Cycle Q Clear(g_c), s	0.0	11.2	11.2	26.6	9.2	0.0				25.5	0.0	25.5
Prop In Lane	0.00		0.46	1.00		0.00				0.25		0.21
Lane Grp Cap(c), veh/h	0	825	780	299	1650	0				736	0	712
V/C Ratio(X)	0.00	0.53	0.53	0.54	0.46	0.00				1.09	0.00	1.00
Avail Cap(c_a), veh/h	0	833	788	302	1667	0				736	0	712
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	12.1	12.1	21.5	11.5	0.0				19.1	0.0	19.1
Incr Delay (d2), s/veh	0.0	0.3	0.3	1.1	0.1	0.0				60.6	0.0	34.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.4	5.2	2.8	4.4	0.0				25.1	0.0	19.1
LnGrp Delay(d),s/veh	0.0	12.4	12.4	22.6	11.6	0.0				79.7	0.0	53.5
LnGrp LOS		B	B	C	B					F		F
Approach Vol, veh/h		854			918						1517	
Approach Delay, s/veh		12.4			13.6						67.3	
Approach LOS		B			B						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		30.0		33.7				33.7
Change Period (Y+Rc), s		4.5		4.0				4.0
Max Green Setting (Gmax), s		25.5		30.0				30.0
Max Q Clear Time (g_c+I1), s		27.5		13.2				28.6
Green Ext Time (p_c), s		0.0		8.3				1.1

Intersection Summary	
HCM 2010 Ctrl Delay	38.1
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	210	630	0	0	680	130	210	960	100	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.95	1.00		0.95			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1900	1863	1900			
Adj Flow Rate, veh/h	221	663	0	0	716	116	221	1011	92			
Adj No. of Lanes	1	2	0	0	2	0	0	3	0			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	285	1845	0	0	900	146	293	1440	134			
Arrive On Green	0.16	0.52	0.00	0.00	0.30	0.30	0.35	0.35	0.35			
Sat Flow, veh/h	1774	3632	0	0	3120	490	831	4079	380			
Grp Volume(v), veh/h	221	663	0	0	418	414	484	410	429			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1747	1821	1695	1774			
Q Serve(g_s), s	6.6	6.1	0.0	0.0	12.1	12.1	13.0	11.5	11.5			
Cycle Q Clear(g_c), s	6.6	6.1	0.0	0.0	12.1	12.1	13.0	11.5	11.5			
Prop In Lane	1.00		0.00	0.00		0.28	0.46		0.21			
Lane Grp Cap(c), veh/h	285	1845	0	0	526	520	643	598	626			
V/C Ratio(X)	0.77	0.36	0.00	0.00	0.80	0.80	0.75	0.69	0.69			
Avail Cap(c_a), veh/h	637	1845	0	0	652	643	818	761	797			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	22.4	7.9	0.0	0.0	18.0	18.0	15.9	15.4	15.4			
Incr Delay (d2), s/veh	1.7	0.0	0.0	0.0	4.3	4.4	2.1	1.0	0.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.4	3.0	0.0	0.0	6.6	6.5	6.8	5.5	5.8			
LnGrp Delay(d),s/veh	24.1	7.9	0.0	0.0	22.3	22.4	18.0	16.4	16.3			
LnGrp LOS	C	A			C	C	B	B	B			
Approach Vol, veh/h		884			832			1324				
Approach Delay, s/veh		11.9			22.4			16.9				
Approach LOS		B			C			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		23.2	12.5	20.1				32.5
Change Period (Y+Rc), s		3.5	3.5	3.5				3.5
Max Green Setting (Gmax), s		25.0	20.0	20.5				20.5
Max Q Clear Time (g_c+I1), s		15.0	8.6	14.1				8.1
Green Ext Time (p_c), s		4.5	0.7	2.1				2.9

Intersection Summary	
HCM 2010 Ctrl Delay	17.0
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	80	310	110	130	310	90	230	440	190	120	720	30
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.95	1.00		0.94	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	86	333	61	140	333	84	247	473	141	129	774	30
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	0	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	110	422	333	170	369	93	480	504	405	132	836	34
Arrive On Green	0.06	0.23	0.23	0.10	0.26	0.26	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1774	1863	1471	1774	1420	358	1774	1863	1495	485	3063	124
Grp Volume(v), veh/h	86	333	61	140	0	417	247	473	141	489	0	444
Grp Sat Flow(s),veh/h/ln	1774	1863	1471	1774	0	1779	1774	1863	1495	1839	0	1833
Q Serve(g_s), s	5.2	18.5	3.7	8.5	0.0	24.9	13.0	27.3	8.3	29.0	0.0	25.5
Cycle Q Clear(g_c), s	5.2	18.5	3.7	8.5	0.0	24.9	13.0	27.3	8.3	29.0	0.0	25.5
Prop In Lane	1.00		1.00	1.00		0.20	1.00		1.00	0.26		0.07
Lane Grp Cap(c), veh/h	110	422	333	170	0	462	480	504	405	502	0	501
V/C Ratio(X)	0.78	0.79	0.18	0.82	0.00	0.90	0.51	0.94	0.35	0.97	0.00	0.89
Avail Cap(c_a), veh/h	242	509	402	242	0	486	484	509	408	502	0	501
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.8	40.0	34.3	48.7	0.0	39.3	33.9	39.1	32.2	39.5	0.0	38.3
Incr Delay (d2), s/veh	13.2	7.3	0.3	15.5	0.0	19.6	1.1	25.3	0.6	33.5	0.0	17.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	10.4	1.5	4.9	0.0	14.7	6.5	17.6	3.5	19.4	0.0	15.4
LnGrp Delay(d),s/veh	64.0	47.3	34.6	64.3	0.0	58.9	35.0	64.4	32.9	73.1	0.0	55.7
LnGrp LOS	E	D	C	E		E	D	E	C	E		E
Approach Vol, veh/h		480			557			861			933	
Approach Delay, s/veh		48.7			60.2			50.8			64.8	
Approach LOS		D			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.1	29.0		33.2	10.4	32.7		33.5
Change Period (Y+Rc), s	3.6	4.1		3.5	3.6	4.1		3.5
Max Green Setting (Gmax), s	15.0	30.0		30.0	15.0	30.0		30.0
Max Q Clear Time (g_c+I1), s	10.5	20.5		29.3	7.2	26.9		31.0
Green Ext Time (p_c), s	0.2	4.1		0.4	0.1	1.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	56.9
HCM 2010 LOS	E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	940	20	70	1250	120	10	80	50	220	240	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00	0.98		1.00	0.99
Flpb, ped/bikes	1.00	1.00		0.99	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99	1.00		0.98	1.00
Satd. Flow (prot)	1770	3522		1750	3460			1852	1549		1813	1562
Flt Permitted	0.08	1.00		0.20	1.00			0.94	1.00		0.80	1.00
Satd. Flow (perm)	143	3522		362	3460			1758	1549		1485	1562
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	138	1000	21	74	1330	128	11	85	53	234	255	128
RTOR Reduction (vph)	0	1	0	0	6	0	0	0	29	0	0	10
Lane Group Flow (vph)	138	1020	0	74	1452	0	0	96	24	0	489	118
Confl. Peds. (#/hr)	43		34	34		43	1		10	10		1
Confl. Bikes (#/hr)			4						4			1
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	56.1	56.1		56.1	56.1			40.9	40.9		40.9	40.9
Effective Green, g (s)	56.1	56.1		56.1	56.1			40.9	40.9		40.9	40.9
Actuated g/C Ratio	0.53	0.53		0.53	0.53			0.39	0.39		0.39	0.39
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	2.0		2.0	2.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	76	1881		193	1848			684	603		578	608
v/s Ratio Prot		0.29			0.42							
v/s Ratio Perm	c0.97			0.20				0.05	0.02		c0.33	0.08
v/c Ratio	1.82	0.54		0.38	0.79			0.14	0.04		0.85	0.19
Uniform Delay, d1	24.4	16.0		14.3	19.6			20.7	19.9		29.2	21.2
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	413.9	1.1		5.7	3.4			0.1	0.0		11.0	0.2
Delay (s)	438.3	17.2		20.0	23.1			20.8	19.9		40.2	21.3
Level of Service	F	B		C	C			C	B		D	C
Approach Delay (s)		67.3			22.9			20.5			36.3	
Approach LOS		E			C			C			D	

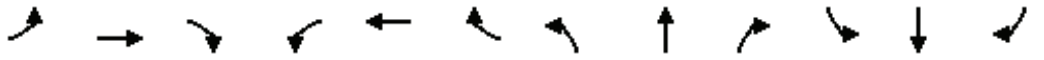
Intersection Summary			
HCM 2000 Control Delay	40.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.40		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	200	70	280	240	90	70	10	250	80	70	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1900	1900	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	11	230	80	322	276	103	80	11	287	92	80	23
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	587	1189	403	590	1154	419	513	61	541	449	483	139
Arrive On Green	0.47	0.47	0.47	0.78	0.78	0.78	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	980	2547	863	1044	2474	898	1021	172	1521	1056	1358	390
Grp Volume(v), veh/h	11	155	155	322	191	188	91	0	287	92	0	103
Grp Sat Flow(s),veh/h/ln	980	1736	1674	1044	1736	1636	1193	0	1521	1056	0	1749
Q Serve(g_s), s	0.3	2.3	2.5	8.9	1.3	1.4	1.9	0.0	6.7	3.1	0.0	1.8
Cycle Q Clear(g_c), s	1.7	2.3	2.5	11.4	1.3	1.4	3.7	0.0	6.7	6.8	0.0	1.8
Prop In Lane	1.00		0.52	1.00		0.55	0.88		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	587	810	781	590	810	763	575	0	541	449	0	622
V/C Ratio(X)	0.02	0.19	0.20	0.55	0.24	0.25	0.16	0.00	0.53	0.21	0.00	0.17
Avail Cap(c_a), veh/h	587	810	781	590	810	763	575	0	541	449	0	622
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.85	0.85	0.85	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.3	7.0	7.1	4.7	2.8	2.8	10.9	0.0	11.5	13.0	0.0	9.9
Incr Delay (d2), s/veh	0.1	0.5	0.6	3.0	0.6	0.6	0.6	0.0	3.7	1.0	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.2	1.2	2.9	0.7	0.7	0.9	0.0	3.3	1.0	0.0	1.0
LnGrp Delay(d),s/veh	7.3	7.6	7.6	7.7	3.4	3.5	11.5	0.0	15.2	14.0	0.0	10.5
LnGrp LOS	A	A	A	A	A	A	B		B	B		B
Approach Vol, veh/h		321			701			378			195	
Approach Delay, s/veh		7.6			5.4			14.3			12.2	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		20.0		25.0		20.0		25.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		16.0		21.0		16.0		21.0
Max Q Clear Time (g_c+I1), s		8.7		4.5		8.8		13.4
Green Ext Time (p_c), s		1.6		5.5		1.6		3.5

Intersection Summary	
HCM 2010 Ctrl Delay	8.8
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	90	440	0	0	480	350	130	0	110	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1845	1845	0	0	1845	1900	1845	1845	1900			
Adj Flow Rate, veh/h	105	512	0	0	558	407	151	0	128			
Adj No. of Lanes	1	2	0	0	2	0	1	1	0			
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	400	1636	0	0	889	648	625	0	557			
Arrive On Green	0.93	0.93	0.00	0.00	0.93	0.93	0.36	0.00	0.36			
Sat Flow, veh/h	573	3597	0	0	1996	1389	1757	0	1568			
Grp Volume(v), veh/h	105	512	0	0	514	451	151	0	128			
Grp Sat Flow(s),veh/h/ln	573	1752	0	0	1752	1540	1757	0	1568			
Q Serve(g_s), s	2.1	0.6	0.0	0.0	2.1	2.1	2.7	0.0	2.6			
Cycle Q Clear(g_c), s	4.2	0.6	0.0	0.0	2.1	2.1	2.7	0.0	2.6			
Prop In Lane	1.00		0.00	0.00		0.90	1.00		1.00			
Lane Grp Cap(c), veh/h	400	1636	0	0	818	719	625	0	557			
V/C Ratio(X)	0.26	0.31	0.00	0.00	0.63	0.63	0.24	0.00	0.23			
Avail Cap(c_a), veh/h	400	1636	0	0	818	719	625	0	557			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.97	0.97	0.00	0.00	0.97	0.97	1.00	0.00	1.00			
Uniform Delay (d), s/veh	1.2	0.8	0.0	0.0	0.9	0.9	10.2	0.0	10.2			
Incr Delay (d2), s/veh	1.5	0.5	0.0	0.0	3.5	4.0	0.9	0.0	1.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.4	0.3	0.0	0.0	1.2	1.2	1.5	0.0	1.3			
LnGrp Delay(d),s/veh	2.8	1.3	0.0	0.0	4.4	4.9	11.1	0.0	11.1			
LnGrp LOS	A	A			A	A	B		B			
Approach Vol, veh/h		617			965			279				
Approach Delay, s/veh		1.6			4.6			11.1				
Approach LOS		A			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		20.0		25.0				25.0
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		16.0		21.0				21.0
Max Q Clear Time (g_c+I1), s		4.7		6.2				4.1
Green Ext Time (p_c), s		0.9		9.3				10.2

Intersection Summary	
HCM 2010 Ctrl Delay	4.6
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	510	110	280	500	60	30	40	50	80	200	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0		3.0	4.0			2.0			2.0	2.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00			1.00			1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.97		1.00	0.98			0.94			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	1.00
Satd. Flow (prot)	1719	3327		1719	3374			1687			1784	1516
Flt Permitted	0.95	1.00		0.95	1.00			0.81			0.89	1.00
Satd. Flow (perm)	1719	3327		1719	3374			1387			1609	1516
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	52	531	115	292	521	62	31	42	52	83	208	156
RTOR Reduction (vph)	0	20	0	0	9	0	0	0	0	0	0	110
Lane Group Flow (vph)	52	626	0	292	574	0	0	125	0	0	291	46
Confl. Peds. (#/hr)			4			6						2
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1 3	3 6			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	4.0	19.6		38.9	54.5			22.5			22.5	22.5
Effective Green, g (s)	4.0	19.6		34.9	54.5			22.5			22.5	22.5
Actuated g/C Ratio	0.04	0.22		0.39	0.61			0.25			0.25	0.25
Clearance Time (s)	3.0	4.0						2.0			2.0	2.0
Vehicle Extension (s)	3.0	3.0						3.0			3.0	3.0
Lane Grp Cap (vph)	76	724		666	2043			346			402	379
v/s Ratio Prot	0.03	c0.19		c0.17	0.17							
v/s Ratio Perm								0.09			c0.18	0.03
v/c Ratio	0.68	0.87		0.44	0.28			0.36			0.72	0.12
Uniform Delay, d1	42.4	33.9		20.3	8.4			27.8			30.9	26.1
Progression Factor	1.07	1.06		0.88	0.20			1.00			1.00	1.00
Incremental Delay, d2	22.1	12.9		0.2	0.0			0.6			6.3	0.1
Delay (s)	67.6	48.8		18.1	1.7			28.5			37.2	26.2
Level of Service	E	D		B	A			C			D	C
Approach Delay (s)		50.2			7.2			28.5			33.4	
Approach LOS		D			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	650	0	0	780	270	70	10	300	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Lane Util. Factor	1.00	0.95			*1.00		1.00	0.95	0.95			
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Frt	1.00	1.00			0.96		1.00	0.86	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	1752	3505			3522		1752	1506	1490			
Flt Permitted	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	1752	3505			3522		1752	1506	1490			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	146	677	0	0	812	281	73	10	312	0	0	0
RTOR Reduction (vph)	0	0	0	0	35	0	0	138	144	0	0	0
Lane Group Flow (vph)	146	677	0	0	1058	0	73	25	15	0	0	0
Confl. Peds. (#/hr)			5	5		10						
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	12.7	73.9			58.2		8.6	8.6	8.6			
Effective Green, g (s)	12.7	73.9			58.2		8.6	8.6	8.6			
Actuated g/C Ratio	0.14	0.82			0.65		0.10	0.10	0.10			
Clearance Time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	247	2877			2277		167	143	142			
v/s Ratio Prot	c0.08	0.19			c0.30			0.02				
v/s Ratio Perm							c0.04		0.01			
v/c Ratio	0.59	0.24			0.46		0.44	0.17	0.11			
Uniform Delay, d1	36.2	1.8			8.0		38.4	37.4	37.2			
Progression Factor	0.49	0.46			1.00		1.00	1.00	1.00			
Incremental Delay, d2	3.5	0.2			0.7		1.8	0.6	0.3			
Delay (s)	21.4	1.0			8.7		40.2	38.0	37.5			
Level of Service	C	A			A		D	D	D			
Approach Delay (s)		4.6			8.7			38.2			0.0	
Approach LOS		A			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	220	410	160	100	400	40	100	650	70	60	930	210
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.91	1.00		0.96	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	234	436	58	106	426	37	106	691	67	64	989	204
Adj No. of Lanes	1	1	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	197	651	518	0	689	59	157	1525	148	140	1339	276
Arrive On Green	0.04	0.12	0.12	0.00	0.21	0.21	0.06	0.31	0.31	0.08	0.46	0.46
Sat Flow, veh/h	1774	1863	1482	0	3268	282	1774	3249	315	1774	2913	600
Grp Volume(v), veh/h	234	436	58	0	229	234	106	376	382	64	600	593
Grp Sat Flow(s),veh/h/ln	1774	1863	1482	0	1770	1780	1774	1770	1794	1774	1770	1743
Q Serve(g_s), s	12.0	24.2	3.8	0.0	12.7	12.9	6.3	18.3	18.4	3.7	29.9	30.1
Cycle Q Clear(g_c), s	12.0	24.2	3.8	0.0	12.7	12.9	6.3	18.3	18.4	3.7	29.9	30.1
Prop In Lane	1.00		1.00	0.00		0.16	1.00		0.18	1.00		0.34
Lane Grp Cap(c), veh/h	197	651	518	0	373	375	157	831	842	140	813	801
V/C Ratio(X)	1.19	0.67	0.11	0.00	0.61	0.62	0.67	0.45	0.45	0.46	0.74	0.74
Avail Cap(c_a), veh/h	197	651	518	0	426	429	197	831	842	197	813	801
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00
Upstream Filter(I)	0.62	0.62	0.62	0.00	1.00	1.00	0.86	0.86	0.86	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.0	41.8	32.7	0.0	38.6	38.7	49.3	25.9	25.9	47.5	23.9	23.9
Incr Delay (d2), s/veh	111.4	1.3	0.0	0.0	1.2	1.3	3.0	1.5	1.5	0.9	5.9	6.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.0	12.8	1.6	0.0	6.3	6.5	3.2	9.3	9.5	1.9	15.8	15.7
LnGrp Delay(d),s/veh	163.4	43.1	32.8	0.0	39.8	40.0	52.2	27.5	27.5	48.4	29.8	30.0
LnGrp LOS	F	D	C		D	D	D	C	C	D	C	C
Approach Vol, veh/h		728			463			864			1257	
Approach Delay, s/veh		81.0			39.9			30.5			30.8	
Approach LOS		F			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.5	54.7	0.0	41.8	12.6	53.6	15.0	26.8
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	12.0	44.0	12.0	26.0	12.0	44.0	12.0	26.0
Max Q Clear Time (g_c+I1), s	5.7	20.4	0.0	26.2	8.3	32.1	14.0	14.9
Green Ext Time (p_c), s	0.0	18.2	0.0	0.0	0.0	10.2	0.0	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	43.0
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	280	290	50	80	230	40	30	190	90	180	220	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1787	3496		1770	3539	1583	1128	2138		1340	1405	1246
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1787	3496		1770	3539	1583	1128	2138		1340	1405	1246
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	326	337	58	93	267	47	35	221	105	209	256	314
RTOR Reduction (vph)	0	13	0	0	0	39	0	54	0	0	0	230
Lane Group Flow (vph)	326	382	0	93	267	8	35	272	0	188	277	84
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	60%	60%	60%	28%	28%	28%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases						2						8
Actuated Green, G (s)	14.8	22.4		6.6	14.2	14.2	17.2	17.2		23.3	23.3	23.3
Effective Green, g (s)	14.8	22.4		6.6	14.2	14.2	17.2	17.2		23.3	23.3	23.3
Actuated g/C Ratio	0.17	0.26		0.08	0.16	0.16	0.20	0.20		0.27	0.27	0.27
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Vehicle Extension (s)	2.0	4.0		2.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Grp Cap (vph)	303	900		134	577	258	223	422		358	376	333
v/s Ratio Prot	c0.18	c0.11		0.05	0.08		0.03	c0.13		0.14	c0.20	
v/s Ratio Perm						0.00						0.07
v/c Ratio	1.08	0.42		0.69	0.46	0.03	0.16	0.65		0.53	0.74	0.25
Uniform Delay, d1	36.1	26.9		39.2	32.9	30.6	28.9	32.1		27.1	29.1	25.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	73.4	0.4		11.8	0.8	0.1	0.5	3.8		1.8	7.8	0.5
Delay (s)	109.5	27.4		51.1	33.8	30.7	29.3	35.9		28.9	36.9	25.6
Level of Service	F	C		D	C	C	C	D		C	D	C
Approach Delay (s)		64.5			37.3			35.2			30.4	
Approach LOS		E			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	43.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	87.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	530	110	330	520	0	0	0	0	260	40	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			3.0						4.0	4.0
Lane Util. Factor		0.95			*1.00						1.00	1.00
Frpb, ped/bikes		0.99			1.00						1.00	1.00
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.97			1.00						1.00	0.85
Flt Protected		1.00			0.98						0.96	1.00
Satd. Flow (prot)		3296			5275						1718	1524
Flt Permitted		1.00			0.75						0.96	1.00
Satd. Flow (perm)		3296			4018						1718	1524
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	552	115	344	542	0	0	0	0	271	42	333
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	649	0	0	886	0	0	0	0	0	313	333
Confl. Peds. (#/hr)			6			5						
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Turn Type		NA		Prot	NA					Split	NA	Perm
Protected Phases		2 4		1	1 6					3	3	
Permitted Phases												3
Actuated Green, G (s)		46.1			25.6						24.9	24.9
Effective Green, g (s)		46.1			25.6						24.9	24.9
Actuated g/C Ratio		0.51			0.28						0.28	0.28
Clearance Time (s)											4.0	4.0
Vehicle Extension (s)											3.0	3.0
Lane Grp Cap (vph)		1688			1282						475	421
v/s Ratio Prot		c0.20			c0.08						0.18	
v/s Ratio Perm					c0.12							c0.22
v/c Ratio		0.38			1.82dl						0.66	0.79
Uniform Delay, d1		13.3			28.7						28.8	30.1
Progression Factor		0.05			0.92						1.00	1.00
Incremental Delay, d2		0.1			1.5						3.3	9.8
Delay (s)		0.7			27.9						32.1	39.9
Level of Service		A			C						C	D
Approach Delay (s)		0.7			27.9			0.0			36.1	
Approach LOS		A			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	22.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	620	170	150	610	0	0	0	0	180	820	140
Number	3	8	18	7	4	14				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1900	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	620	120	150	610	0				180	820	122
Adj No. of Lanes	0	2	1	0	2	0				0	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1421	620	220	885	0				267	1274	199
Arrive On Green	0.00	0.40	0.40	0.40	0.40	0.00				0.48	0.48	0.48
Sat Flow, veh/h	0	3632	1544	332	2288	0				554	2644	412
Grp Volume(v), veh/h	0	620	120	334	426	0				597	0	525
Grp Sat Flow(s),veh/h/ln	0	1770	1544	925	1610	0				1835	0	1775
Q Serve(g_s), s	0.0	7.6	3.0	13.5	12.9	0.0				15.0	0.0	13.1
Cycle Q Clear(g_c), s	0.0	7.6	3.0	21.1	12.9	0.0				15.0	0.0	13.1
Prop In Lane	0.00		1.00	0.45		0.00				0.30		0.23
Lane Grp Cap(c), veh/h	0	1421	620	458	647	0				884	0	855
V/C Ratio(X)	0.00	0.44	0.19	0.73	0.66	0.00				0.67	0.00	0.61
Avail Cap(c_a), veh/h	0	1445	630	466	658	0				884	0	855
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.95	0.95	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	13.0	11.6	17.8	14.6	0.0				11.9	0.0	11.4
Incr Delay (d2), s/veh	0.0	0.1	0.1	4.6	1.8	0.0				4.1	0.0	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.7	1.3	5.8	6.0	0.0				8.5	0.0	7.1
LnGrp Delay(d),s/veh	0.0	13.1	11.7	22.4	16.4	0.0				16.0	0.0	14.7
LnGrp LOS		B	B	C	B					B		B
Approach Vol, veh/h		740			760						1122	
Approach Delay, s/veh		12.9			19.0						15.4	
Approach LOS		B			B						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		32.4		27.6				27.6
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		28.5		24.5				24.5
Max Q Clear Time (g_c+I1), s		17.0		23.1				9.6
Green Ext Time (p_c), s		4.1		1.0				6.4

Intersection Summary	
HCM 2010 Ctrl Delay	15.8
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	230	570	0	0	490	250	270	1690	220	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	0.99		1.00	1.00		0.93	1.00		0.98			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1863	1900	1863	1900			
Adj Flow Rate, veh/h	235	582	0	0	500	250	276	1724	204			
Adj No. of Lanes	0	2	0	0	2	1	0	3	0			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	316	806	0	0	1585	658	280	1863	225			
Arrive On Green	0.45	0.45	0.00	0.00	0.45	0.45	0.45	0.45	0.45			
Sat Flow, veh/h	495	1886	0	0	3632	1471	624	4160	502			
Grp Volume(v), veh/h	315	502	0	0	500	250	810	679	715			
Grp Sat Flow(s),veh/h/ln	686	1610	0	0	1770	1471	1832	1695	1760			
Q Serve(g_s), s	23.9	16.8	0.0	0.0	6.1	7.6	29.3	24.7	25.3			
Cycle Q Clear(g_c), s	30.0	16.8	0.0	0.0	6.1	7.6	29.3	24.7	25.3			
Prop In Lane	0.75		0.00	0.00		1.00	0.34		0.29			
Lane Grp Cap(c), veh/h	401	721	0	0	1585	658	820	759	788			
V/C Ratio(X)	0.78	0.70	0.00	0.00	0.32	0.38	0.99	0.89	0.91			
Avail Cap(c_a), veh/h	401	721	0	0	1585	658	820	759	788			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	21.3	14.8	0.0	0.0	11.9	12.3	18.3	17.0	17.2			
Incr Delay (d2), s/veh	9.0	2.5	0.0	0.0	0.0	0.1	28.2	12.8	13.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.8	7.9	0.0	0.0	2.9	3.1	21.0	14.2	15.2			
LnGrp Delay(d),s/veh	30.3	17.3	0.0	0.0	11.9	12.4	46.5	29.8	31.2			
LnGrp LOS	C	B			B	B	D	C	C			
Approach Vol, veh/h		817			750			2204				
Approach Delay, s/veh		22.3			12.1			36.4				
Approach LOS		C			B			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		33.5		33.5				33.5
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		30.0		30.0				30.0
Max Q Clear Time (g_c+I1), s		31.3		9.6				32.0
Green Ext Time (p_c), s		0.0		7.9				0.0

Intersection Summary	
HCM 2010 Ctrl Delay	28.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	360	160	40	320	0	100	0	50	370	120	50
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1845	1900	1845	1845	0	1845	0	1845	1845	1845	1900
Adj Flow Rate, veh/h	0	404	135	45	360	0	112	0	4	416	135	45
Adj No. of Lanes	0	2	0	1	2	0	1	0	1	2	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	3	3	3	3	0	3	0	3	3	3	3
Cap, veh/h	0	923	305	193	1968	0	0	0	0	692	261	87
Arrive On Green	0.00	0.36	0.36	0.11	0.56	0.00	0.00	0.00	0.00	0.20	0.20	0.20
Sat Flow, veh/h	0	2671	851	1757	3597	0		0		3514	1325	442
Grp Volume(v), veh/h	0	273	266	45	360	0		0.0		416	0	180
Grp Sat Flow(s),veh/h/ln	0	1752	1678	1757	1752	0				1757	0	1767
Q Serve(g_s), s	0.0	4.4	4.5	0.9	1.9	0.0				4.0	0.0	3.4
Cycle Q Clear(g_c), s	0.0	4.4	4.5	0.9	1.9	0.0				4.0	0.0	3.4
Prop In Lane	0.00		0.51	1.00		0.00				1.00		0.25
Lane Grp Cap(c), veh/h	0	627	600	193	1968	0				692	0	348
V/C Ratio(X)	0.00	0.44	0.44	0.23	0.18	0.00				0.60	0.00	0.52
Avail Cap(c_a), veh/h	0	1505	1442	1226	3011	0				2452	0	1233
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	9.1	9.1	15.1	4.0	0.0				13.6	0.0	13.4
Incr Delay (d2), s/veh	0.0	0.5	0.6	0.2	0.0	0.0				0.3	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.2	2.2	0.4	0.9	0.0				1.9	0.0	1.7
LnGrp Delay(d),s/veh	0.0	9.6	9.7	15.4	4.0	0.0				13.9	0.0	13.8
LnGrp LOS		A	A	B	A					B		B
Approach Vol, veh/h		539			405						596	
Approach Delay, s/veh		9.7			5.3						13.9	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		25.9			7.6	18.3		11.3
Change Period (Y+Rc), s		5.0			3.5	5.0		4.0
Max Green Setting (Gmax), s		32.0			26.0	32.0		26.0
Max Q Clear Time (g_c+I1), s		3.9			2.9	6.5		6.0
Green Ext Time (p_c), s		6.6			0.0	6.4		1.3

Intersection Summary	
HCM 2010 Ctrl Delay	10.2
HCM 2010 LOS	B

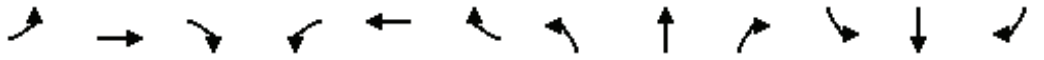
Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	780	0	0	210	510	150	0	220	0	0	0
Number	1	6	16	5	2	12	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1863	0	0	1863	1900	1863	0	1863			
Adj Flow Rate, veh/h	0	918	0	0	247	267	176	0	173			
Adj No. of Lanes	0	2	0	0	3	0	1	0	1			
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85			
Percent Heavy Veh, %	0	2	0	0	2	2	2	0	2			
Cap, veh/h	0	1988	0	0	1904	870	366	0	327			
Arrive On Green	0.00	0.56	0.00	0.00	0.56	0.56	0.21	0.00	0.21			
Sat Flow, veh/h	0	3725	0	0	3558	1550	1774	0	1583			
Grp Volume(v), veh/h	0	918	0	0	247	267	176	0	173			
Grp Sat Flow(s),veh/h/ln	0	1770	0	0	1695	1550	1774	0	1583			
Q Serve(g_s), s	0.0	6.0	0.0	0.0	1.3	3.5	3.4	0.0	3.8			
Cycle Q Clear(g_c), s	0.0	6.0	0.0	0.0	1.3	3.5	3.4	0.0	3.8			
Prop In Lane	0.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	1988	0	0	1904	870	366	0	327			
V/C Ratio(X)	0.00	0.46	0.00	0.00	0.13	0.31	0.48	0.00	0.53			
Avail Cap(c_a), veh/h	0	2829	0	0	2885	1319	1281	0	1143			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	5.0	0.0	0.0	4.0	4.5	13.6	0.0	13.7			
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.0	0.3	0.4	0.0	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	2.9	0.0	0.0	0.6	1.6	1.7	0.0	1.7			
LnGrp Delay(d),s/veh	0.0	5.3	0.0	0.0	4.1	4.8	13.9	0.0	14.2			
LnGrp LOS		A			A	A	B		B			
Approach Vol, veh/h		918			514			349				
Approach Delay, s/veh		5.3			4.4			14.1				
Approach LOS		A			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		25.8		13.0		25.8		
Change Period (Y+Rc), s		4.0		5.0		4.0		
Max Green Setting (Gmax), s		33.0		28.0		31.0		
Max Q Clear Time (g_c+I1), s		5.5		5.8		8.0		
Green Ext Time (p_c), s		15.4		0.2		13.8		

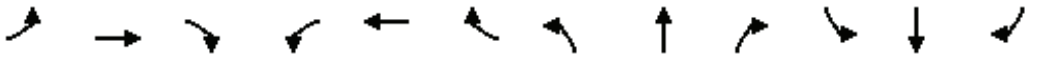
Intersection Summary	
HCM 2010 Ctrl Delay	6.8
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	130	690	180	170	430	150	200	700	220	210	750	90
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	138	734	35	181	457	127	213	745	56	223	798	89
Adj No. of Lanes	1	2	1	1	2	0	0	2	1	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	165	862	378	213	738	203	170	630	349	193	729	85
Arrive On Green	0.09	0.24	0.24	0.04	0.09	0.09	0.22	0.22	0.22	0.28	0.28	0.28
Sat Flow, veh/h	1774	3539	1550	1774	2729	752	764	2830	1566	697	2630	306
Grp Volume(v), veh/h	138	734	35	181	295	289	509	449	56	584	0	526
Grp Sat Flow(s),veh/h/ln	1774	1770	1550	1774	1770	1712	1825	1770	1566	1828	0	1806
Q Serve(g_s), s	8.4	21.8	1.9	11.2	17.7	17.9	24.5	24.5	3.2	30.5	0.0	30.5
Cycle Q Clear(g_c), s	8.4	21.8	1.9	11.2	17.7	17.9	24.5	24.5	3.2	30.5	0.0	30.5
Prop In Lane	1.00		1.00	1.00		0.44	0.42		1.00	0.38		0.17
Lane Grp Cap(c), veh/h	165	862	378	213	478	463	406	394	349	507	0	501
V/C Ratio(X)	0.83	0.85	0.09	0.85	0.62	0.62	1.25	1.14	0.16	1.15	0.00	1.05
Avail Cap(c_a), veh/h	169	862	378	282	478	463	406	394	349	507	0	501
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.84	0.84	0.84	0.93	0.93	0.93	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	49.0	39.7	32.2	51.8	44.6	44.7	42.8	42.8	34.5	39.8	0.0	39.8
Incr Delay (d2), s/veh	23.1	8.8	0.4	12.8	5.4	5.8	132.4	89.1	0.1	89.5	0.0	53.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	11.7	0.9	6.3	9.4	9.3	27.2	21.7	1.4	28.0	0.0	22.7
LnGrp Delay(d),s/veh	72.1	48.5	32.6	64.6	50.0	50.5	175.1	131.8	34.5	129.3	0.0	93.6
LnGrp LOS	E	D	C	E	D	D	F	F	C	F		F
Approach Vol, veh/h		907			765			1014			1110	
Approach Delay, s/veh		51.5			53.7			148.2			112.4	
Approach LOS		D			D			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.7	31.3		34.0	13.8	34.2		28.0
Change Period (Y+Rc), s	3.5	4.5		3.5	3.5	4.5		3.5
Max Green Setting (Gmax), s	17.5	22.5		30.5	10.5	29.5		24.5
Max Q Clear Time (g_c+I1), s	13.2	23.8		32.5	10.4	19.9		26.5
Green Ext Time (p_c), s	0.1	0.0		0.0	0.0	6.6		0.0

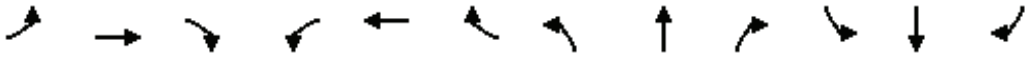
Intersection Summary	
HCM 2010 Ctrl Delay	95.6
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	140	140	0	0	0	100	570	530	0	610	30
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900				1863	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	35	165	17				118	671	419	0	718	9
Adj No. of Lanes	1	2	0				1	1	1	0	2	1
Peak Hour Factor	0.85	0.85	0.85				0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2				2	2	2	0	2	2
Cap, veh/h	218	399	41				148	1177	999	0	1506	673
Arrive On Green	0.12	0.12	0.12				0.08	0.63	0.63	0.00	0.43	0.43
Sat Flow, veh/h	1774	3244	330				1774	1863	1580	0	3632	1581
Grp Volume(v), veh/h	35	89	93				118	671	419	0	718	9
Grp Sat Flow(s),veh/h/ln	1774	1770	1804				1774	1863	1580	0	1770	1581
Q Serve(g_s), s	0.6	1.5	1.6				2.1	6.8	4.3	0.0	4.8	0.1
Cycle Q Clear(g_c), s	0.6	1.5	1.6				2.1	6.8	4.3	0.0	4.8	0.1
Prop In Lane	1.00		0.18				1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	218	217	222				148	1177	999	0	1506	673
V/C Ratio(X)	0.16	0.41	0.42				0.80	0.57	0.42	0.00	0.48	0.01
Avail Cap(c_a), veh/h	1686	1682	1715				272	1485	1260	0	1845	824
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	12.8	13.2	13.2				14.7	3.5	3.0	0.0	6.7	5.4
Incr Delay (d2), s/veh	0.3	1.2	1.3				9.3	0.4	0.3	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.8	0.9				1.4	3.5	1.9	0.0	2.3	0.0
LnGrp Delay(d),s/veh	13.1	14.5	14.5				24.0	3.9	3.3	0.0	7.0	5.4
LnGrp LOS	B	B	B				C	A	A		A	A
Approach Vol, veh/h		217						1208			727	
Approach Delay, s/veh		14.3						5.6			7.0	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		24.6		8.0	6.7	17.9		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		26.0		31.0	5.0	17.0		
Max Q Clear Time (g_c+I1), s		8.8		3.6	4.1	6.8		
Green Ext Time (p_c), s		10.2		1.1	0.0	7.0		

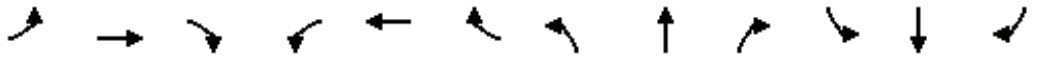
Intersection Summary	
HCM 2010 Ctrl Delay	7.0
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	70	20	10	20	20	590	10	520	30	490	210	30
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	76	22	11	22	22	641	11	565	33	533	228	33
Pedestrians		1			1			1				
Lane Width (ft)		12.0			12.0			12.0				
Walking Speed (ft/s)		4.0			4.0			4.0				
Percent Blockage		0			0			0				
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											499	
pX, platoon unblocked	0.72	0.72	0.72	0.72	0.72		0.72					
vC, conflicting volume	2566	1931	247	1937	1931	583	262			599		
vC1, stage 1 conf vol	1311	1311		604	604							
vC2, stage 2 conf vol	1255	621		1333	1327							
vCu, unblocked vol	2973	2096	0	2104	2096	583	0			599		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	0	99	41	67	0	99			45		
cM capacity (veh/h)	0	17	784	37	66	512	1174			977		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	109	685	609	793
Volume Left	76	22	11	533
Volume Right	11	641	33	33
cSH	0	316	1174	977
Volume to Capacity	Err	2.17	0.01	0.55
Queue Length 95th (ft)	Err	1277	1	85
Control Delay (s)	Err	561.1	0.3	11.5
Lane LOS	F	F	A	B
Approach Delay (s)	Err	561.1	0.3	11.5
Approach LOS	F	F		

Intersection Summary				
Average Delay	Err			
Intersection Capacity Utilization	121.4%	ICU Level of Service	H	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	150	740	220	140	390	160	260	710	370	140	260	70
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	160	787	207	149	415	127	277	755	356	149	277	60
Adj No. of Lanes	1	2	0	1	2	0	0	2	0	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	346	1194	314	258	1153	349	263	694	379	94	673	146
Arrive On Green	0.86	0.86	0.86	0.43	0.43	0.43	0.50	0.50	0.50	0.50	0.50	0.50
Sat Flow, veh/h	860	2765	727	564	2669	808	433	1388	757	57	1345	291
Grp Volume(v), veh/h	160	504	490	149	274	268	663	0	725	149	0	337
Grp Sat Flow(s),veh/h/ln	860	1770	1723	564	1770	1707	1035	0	1542	57	0	1636
Q Serve(g_s), s	11.3	9.9	9.9	26.0	11.4	11.7	40.7	0.0	48.8	6.2	0.0	14.3
Cycle Q Clear(g_c), s	23.0	9.9	9.9	35.9	11.4	11.7	55.0	0.0	48.8	55.0	0.0	14.3
Prop In Lane	1.00		0.42	1.00		0.47	0.42		0.49	1.00		0.18
Lane Grp Cap(c), veh/h	346	764	744	258	764	737	564	0	771	94	0	818
V/C Ratio(X)	0.46	0.66	0.66	0.58	0.36	0.36	1.18	0.00	0.94	1.59	0.00	0.41
Avail Cap(c_a), veh/h	346	764	744	258	764	737	564	0	771	94	0	818
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.51	0.51	0.51	1.00	1.00	1.00	0.09	0.00	0.09	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.1	4.9	4.9	32.4	21.0	21.1	36.3	0.0	25.9	54.1	0.0	17.3
Incr Delay (d2), s/veh	2.3	2.3	2.4	9.1	1.3	1.4	80.8	0.0	2.7	307.7	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	5.0	4.8	4.7	5.8	5.7	29.7	0.0	21.1	10.9	0.0	6.5
LnGrp Delay(d),s/veh	11.3	7.2	7.3	41.5	22.3	22.5	117.1	0.0	28.6	361.7	0.0	17.4
LnGrp LOS	B	A	A	D	C	C	F		C	F		B
Approach Vol, veh/h		1154			691			1388			486	
Approach Delay, s/veh		7.8			26.5			70.9			123.0	
Approach LOS		A			C			E			F	

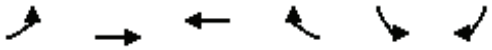
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		51.0		59.0		51.0		59.0
Change Period (Y+Rc), s		3.5		4.0		3.5		4.0
Max Green Setting (Gmax), s		47.5		55.0		47.5		55.0
Max Q Clear Time (g_c+I1), s		25.0		57.0		37.9		57.0
Green Ext Time (p_c), s		13.4		0.0		7.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	49.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	250	120	140	390	490	210	820	150	210	350	50
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	23	287	110	161	448	515	241	943	151	241	402	46
Adj No. of Lanes	0	1	0	0	1	0	0	2	0	0	2	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	76	505	186	144	265	292	226	856	162	141	710	81
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.48	0.48	0.48	0.48	0.48	0.48
Sat Flow, veh/h	43	1240	455	197	651	717	313	1796	340	64	1489	170
Grp Volume(v), veh/h	420	0	0	1124	0	0	614	0	721	241	0	448
Grp Sat Flow(s),veh/h/ln	1738	0	0	1565	0	0	826	0	1622	64	0	1659
Q Serve(g_s), s	0.0	0.0	0.0	14.6	0.0	0.0	18.4	0.0	27.2	3.8	0.0	12.6
Cycle Q Clear(g_c), s	11.9	0.0	0.0	26.5	0.0	0.0	31.0	0.0	27.2	31.0	0.0	12.6
Prop In Lane	0.05		0.26	0.14		0.46	0.39		0.21	1.00		0.10
Lane Grp Cap(c), veh/h	767	0	0	701	0	0	471	0	774	141	0	791
V/C Ratio(X)	0.55	0.00	0.00	1.60	0.00	0.00	1.30	0.00	0.93	1.71	0.00	0.57
Avail Cap(c_a), veh/h	767	0	0	701	0	0	471	0	774	141	0	791
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.9	0.0	0.0	20.3	0.0	0.0	24.2	0.0	16.0	32.1	0.0	12.2
Incr Delay (d2), s/veh	0.8	0.0	0.0	277.7	0.0	0.0	151.7	0.0	17.8	347.0	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	0.0	0.0	66.6	0.0	0.0	28.2	0.0	15.8	16.1	0.0	5.9
LnGrp Delay(d),s/veh	15.7	0.0	0.0	298.0	0.0	0.0	175.8	0.0	33.8	379.1	0.0	13.1
LnGrp LOS	B			F			F		C	F		B
Approach Vol, veh/h		420			1124			1335			689	
Approach Delay, s/veh		15.7			298.0			99.2			141.1	
Approach LOS		B			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		35.0		30.0		35.0		30.0
Change Period (Y+Rc), s		4.0		3.5		4.0		3.5
Max Green Setting (Gmax), s		31.0		26.5		31.0		26.5
Max Q Clear Time (g_c+I1), s		33.0		13.9		33.0		28.5
Green Ext Time (p_c), s		0.0		9.5		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	160.1
HCM 2010 LOS	F



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	450	90	40	680	300	420
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1583	1770	1583
Flt Permitted	0.73	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1353	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	529	106	47	800	353	494
RTOR Reduction (vph)	0	0	0	374	0	338
Lane Group Flow (vph)	529	106	47	426	353	156
Confl. Peds. (#/hr)					3	
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)	28.1	28.1	28.1	28.1	16.7	16.7
Effective Green, g (s)	28.1	28.1	28.1	28.1	16.7	16.7
Actuated g/C Ratio	0.53	0.53	0.53	0.53	0.32	0.32
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	720	991	991	842	559	500
v/s Ratio Prot		0.06	0.03		c0.20	
v/s Ratio Perm	c0.39			0.27		0.10
v/c Ratio	0.73	0.11	0.05	0.51	0.63	0.31
Uniform Delay, d1	9.5	6.1	5.9	7.9	15.4	13.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.9	0.0	0.0	0.5	2.3	0.4
Delay (s)	13.4	6.2	5.9	8.4	17.7	14.1
Level of Service	B	A	A	A	B	B
Approach Delay (s)		12.2	8.2		15.6	
Approach LOS		B	A		B	

Intersection Summary			
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	52.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	150	1040	130	270	570	180	170	1420	340	160	580	90
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	167	1156	65	300	633	126	189	1578	359	178	644	88
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	197	1041	455	330	1241	545	218	813	177	209	868	118
Arrive On Green	0.11	0.29	0.29	0.19	0.35	0.35	0.12	0.28	0.28	0.12	0.28	0.28
Sat Flow, veh/h	1774	3539	1546	1774	3539	1555	1774	2873	625	1774	3128	427
Grp Volume(v), veh/h	167	1156	65	300	633	126	189	944	993	178	364	368
Grp Sat Flow(s),veh/h/ln	1774	1770	1546	1774	1770	1555	1774	1770	1729	1774	1770	1785
Q Serve(g_s), s	10.0	32.0	3.4	18.0	15.4	6.2	11.4	30.8	30.8	10.7	20.4	20.4
Cycle Q Clear(g_c), s	10.0	32.0	3.4	18.0	15.4	6.2	11.4	30.8	30.8	10.7	20.4	20.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.36	1.00		0.24
Lane Grp Cap(c), veh/h	197	1041	455	330	1241	545	218	500	489	209	491	495
V/C Ratio(X)	0.85	1.11	0.14	0.91	0.51	0.23	0.87	1.89	2.03	0.85	0.74	0.74
Avail Cap(c_a), veh/h	326	1041	455	408	1241	545	245	500	489	326	569	574
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.4	38.4	28.3	43.4	27.9	25.0	46.8	39.0	39.0	47.1	35.8	35.8
Incr Delay (d2), s/veh	4.8	63.4	0.2	19.1	0.5	0.3	22.6	406.7	470.5	7.4	3.4	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	24.6	1.5	10.6	7.6	2.7	6.9	71.4	78.5	5.7	10.4	10.5
LnGrp Delay(d),s/veh	52.3	101.8	28.5	62.5	28.4	25.3	69.4	445.7	509.6	54.5	39.2	39.3
LnGrp LOS	D	F	C	E	C	C	E	F	F	D	D	D
Approach Vol, veh/h		1388			1059			2126			910	
Approach Delay, s/veh		92.4			37.7			442.1			42.2	
Approach LOS		F			D			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.2	36.0	16.4	33.2	17.1	42.1	15.8	33.8
Change Period (Y+Rc), s	3.0	4.0	3.0	3.0	5.0	4.0	3.0	3.0
Max Green Setting (Gmax), s	25.0	32.0	15.0	35.0	20.0	35.0	20.0	30.0
Max Q Clear Time (g_c+I1), s	20.0	34.0	13.4	22.4	12.0	17.4	12.7	32.8
Green Ext Time (p_c), s	0.2	0.0	0.0	7.8	0.1	14.2	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	209.1
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	330	10	930	0	1050	490	0	780	200
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	0	1863	1863	0	1863	1900
Adj Flow Rate, veh/h				238	0	1106	0	1117	0	0	830	139
Adj No. of Lanes				1	0	2	0	3	1	0	3	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				2	2	2	0	2	2	0	2	2
Cap, veh/h				778	0	1389	0	2085	649	0	1801	300
Arrive On Green				0.44	0.00	0.44	0.00	0.41	0.00	0.00	0.41	0.41
Sat Flow, veh/h				1774	0	3167	0	5253	1583	0	4560	731
Grp Volume(v), veh/h				238	0	1106	0	1117	0	0	639	330
Grp Sat Flow(s),veh/h/ln				1774	0	1583	0	1695	1583	0	1695	1734
Q Serve(g_s), s				4.6	0.0	15.9	0.0	8.8	0.0	0.0	7.3	7.3
Cycle Q Clear(g_c), s				4.6	0.0	15.9	0.0	8.8	0.0	0.0	7.3	7.3
Prop In Lane				1.00		1.00	0.00		1.00	0.00		0.42
Lane Grp Cap(c), veh/h				778	0	1389	0	2085	649	0	1390	711
V/C Ratio(X)				0.31	0.00	0.80	0.00	0.54	0.00	0.00	0.46	0.46
Avail Cap(c_a), veh/h				1074	0	1917	0	2404	749	0	1603	820
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				9.6	0.0	12.8	0.0	11.8	0.0	0.0	11.3	11.4
Incr Delay (d2), s/veh				0.2	0.0	1.7	0.0	0.2	0.0	0.0	0.2	0.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.3	0.0	7.2	0.0	4.1	0.0	0.0	3.4	3.6
LnGrp Delay(d),s/veh				9.8	0.0	14.5	0.0	12.0	0.0	0.0	11.6	11.8
LnGrp LOS				A		B		B			B	B
Approach Vol, veh/h					1344			1117			969	
Approach Delay, s/veh					13.7			12.0			11.7	
Approach LOS					B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		25.7				25.7		27.2
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		25.0				25.0		32.0
Max Q Clear Time (g_c+I1), s		10.8				9.3		17.9
Green Ext Time (p_c), s		10.9				11.8		5.3

Intersection Summary	
HCM 2010 Ctrl Delay	12.6
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	380	0	480	0	0	0	0	1160	590	0	680	430
Number	3	8	18				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863				0	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	442	13	451				0	1349	0	0	791	0
Adj No. of Lanes	0	1	1				0	3	0	0	2	1
Peak Hour Factor	0.86	0.86	0.86				0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2				0	2	2	0	2	2
Cap, veh/h	615	18	564				0	2579	0	0	1795	803
Arrive On Green	0.36	0.36	0.36				0.00	0.51	0.00	0.00	0.51	0.00
Sat Flow, veh/h	1726	51	1583				0	5421	0	0	3632	1583
Grp Volume(v), veh/h	455	0	451				0	1349	0	0	791	0
Grp Sat Flow(s),veh/h/ln	1776	0	1583				0	1695	0	0	1770	1583
Q Serve(g_s), s	13.0	0.0	15.0				0.0	10.4	0.0	0.0	8.3	0.0
Cycle Q Clear(g_c), s	13.0	0.0	15.0				0.0	10.4	0.0	0.0	8.3	0.0
Prop In Lane	0.97		1.00				0.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	633	0	564				0	2579	0	0	1795	803
V/C Ratio(X)	0.72	0.00	0.80				0.00	0.52	0.00	0.00	0.44	0.00
Avail Cap(c_a), veh/h	911	0	812				0	3215	0	0	2238	1001
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	16.3	0.0	17.0				0.0	9.7	0.0	0.0	9.2	0.0
Incr Delay (d2), s/veh	1.6	0.0	3.7				0.0	0.2	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.0	7.1				0.0	4.8	0.0	0.0	4.0	0.0
LnGrp Delay(d),s/veh	17.9	0.0	20.7				0.0	9.8	0.0	0.0	9.3	0.0
LnGrp LOS	B		C					A			A	
Approach Vol, veh/h		906						1349			791	
Approach Delay, s/veh		19.3						9.8			9.3	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		33.7				33.7		24.8
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		37.0				37.0		30.0
Max Q Clear Time (g_c+I1), s		12.4				10.3		17.0
Green Ext Time (p_c), s		17.3				18.3		3.8

Intersection Summary	
HCM 2010 Ctrl Delay	12.5
HCM 2010 LOS	B

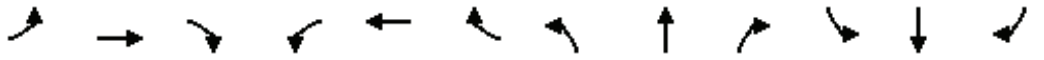
Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	300	20	250	40	20	260	140	1190	0	40	940	180
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	326	22	248	43	22	65	152	1293	0	43	1022	183
Adj No. of Lanes	0	1	0	1	1	0	0	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	288	19	219	189	43	128	90	585	0	58	1185	212
Arrive On Green	0.31	0.31	0.31	0.11	0.11	0.11	0.30	0.30	0.00	0.03	0.40	0.40
Sat Flow, veh/h	924	62	703	1774	406	1201	73	2007	0	1774	2990	534
Grp Volume(v), veh/h	596	0	0	43	0	87	578	867	0	43	604	601
Grp Sat Flow(s),veh/h/ln	1689	0	0	1774	0	1607	385	1610	0	1774	1770	1754
Q Serve(g_s), s	21.0	0.0	0.0	1.5	0.0	3.4	5.5	20.5	0.0	1.6	21.1	21.2
Cycle Q Clear(g_c), s	21.0	0.0	0.0	1.5	0.0	3.4	20.5	20.5	0.0	1.6	21.1	21.2
Prop In Lane	0.55		0.42	1.00		0.75	0.26		0.00	1.00		0.30
Lane Grp Cap(c), veh/h	526	0	0	189	0	171	185	490	0	58	701	695
V/C Ratio(X)	1.13	0.00	0.00	0.23	0.00	0.51	3.13	1.77	0.00	0.74	0.86	0.86
Avail Cap(c_a), veh/h	526	0	0	1185	0	1073	185	490	0	290	701	695
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.2	0.0	0.0	27.6	0.0	28.4	28.9	23.4	0.0	32.3	18.6	18.7
Incr Delay (d2), s/veh	81.2	0.0	0.0	0.2	0.0	0.9	971.5	355.1	0.0	6.6	11.0	11.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.5	0.0	0.0	0.7	0.0	1.6	53.2	57.3	0.0	0.9	12.4	12.4
LnGrp Delay(d),s/veh	104.4	0.0	0.0	27.8	0.0	29.3	1000.5	378.6	0.0	38.9	29.6	30.0
LnGrp LOS	F			C		C	F	F		D	C	C
Approach Vol, veh/h		596			130			1445			1248	
Approach Delay, s/veh		104.4			28.8			627.1			30.1	
Approach LOS		F			C			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	6.2	25.0		11.2		31.2		25.0
Change Period (Y+Rc), s	4.0	4.5		4.0		4.5		4.0
Max Green Setting (Gmax), s	11.0	20.5		45.0		23.0		21.0
Max Q Clear Time (g_c+I1), s	3.6	22.5		5.4		23.2		23.0
Green Ext Time (p_c), s	0.0	0.0		0.4		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	295.3
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	420	460	100	100	240	510	70	360	220	210	600	340
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	442	484	0	105	253	360	74	379	135	221	632	0
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	463	1539	688	134	441	395	77	475	167	231	965	0
Arrive On Green	0.26	0.43	0.00	0.08	0.25	0.25	0.04	0.19	0.19	0.13	0.27	0.00
Sat Flow, veh/h	1774	3539	1583	1774	1770	1583	1774	2557	898	1774	3632	0
Grp Volume(v), veh/h	442	484	0	105	253	360	74	261	253	221	632	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1685	1774	1770	0
Q Serve(g_s), s	22.6	8.2	0.0	5.4	11.5	20.3	3.8	12.9	13.3	11.4	14.6	0.0
Cycle Q Clear(g_c), s	22.6	8.2	0.0	5.4	11.5	20.3	3.8	12.9	13.3	11.4	14.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.53	1.00		0.00
Lane Grp Cap(c), veh/h	463	1539	688	134	441	395	77	329	313	231	965	0
V/C Ratio(X)	0.96	0.31	0.00	0.79	0.57	0.91	0.96	0.79	0.81	0.96	0.66	0.00
Avail Cap(c_a), veh/h	463	1539	688	231	461	413	77	346	330	231	1000	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	33.5	17.0	0.0	41.8	30.3	33.6	43.9	35.8	35.9	39.8	29.6	0.0
Incr Delay (d2), s/veh	30.7	0.1	0.0	9.7	1.6	23.6	88.6	11.4	13.5	46.7	1.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.0	4.1	0.0	3.0	5.8	11.5	3.8	7.3	7.4	8.6	7.3	0.0
LnGrp Delay(d),s/veh	64.2	17.1	0.0	51.5	31.8	57.2	132.5	47.2	49.4	86.4	31.1	0.0
LnGrp LOS	E	B		D	C	E	F	D	D	F	C	
Approach Vol, veh/h		926			718			588			853	
Approach Delay, s/veh		39.6			47.4			58.9			45.5	
Approach LOS		D			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	21.1	10.9	44.0	8.0	29.1	28.0	27.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	18.0	12.0	36.0	4.0	26.0	24.0	24.0
Max Q Clear Time (g_c+I1), s	13.4	15.3	7.4	10.2	5.8	16.6	24.6	22.3
Green Ext Time (p_c), s	0.0	1.8	0.1	8.2	0.0	5.1	0.0	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	46.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	220	1630	190	10	800	180	200	590	50	70	410	130
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	239	1772	177	11	870	179	217	641	47	76	446	106
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	199	1665	724	69	1369	282	250	1185	87	98	762	180
Arrive On Green	0.47	0.47	0.47	0.47	0.47	0.47	0.14	0.35	0.35	0.06	0.27	0.27
Sat Flow, veh/h	535	3539	1539	225	2909	598	1774	3339	245	1774	2829	667
Grp Volume(v), veh/h	239	1772	177	11	529	520	217	339	349	76	278	274
Grp Sat Flow(s),veh/h/ln	535	1770	1539	225	1770	1737	1774	1770	1814	1774	1770	1726
Q Serve(g_s), s	25.7	49.4	7.2	0.0	23.7	23.7	12.6	16.1	16.1	4.4	14.3	14.5
Cycle Q Clear(g_c), s	49.4	49.4	7.2	49.4	23.7	23.7	12.6	16.1	16.1	4.4	14.3	14.5
Prop In Lane	1.00		1.00	1.00		0.34	1.00		0.13	1.00		0.39
Lane Grp Cap(c), veh/h	199	1665	724	69	833	817	250	628	644	98	477	465
V/C Ratio(X)	1.20	1.06	0.24	0.16	0.64	0.64	0.87	0.54	0.54	0.77	0.58	0.59
Avail Cap(c_a), veh/h	199	1665	724	69	833	817	329	628	644	279	565	551
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.1	27.8	16.6	52.5	21.0	21.0	44.1	27.0	27.0	48.9	33.2	33.3
Incr Delay (d2), s/veh	127.5	41.4	0.8	5.0	3.7	3.8	17.1	2.7	2.6	12.0	4.0	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.8	33.6	3.2	0.4	12.3	12.1	7.3	8.3	8.5	2.5	7.5	7.5
LnGrp Delay(d),s/veh	171.6	69.2	17.4	57.5	24.7	24.8	61.2	29.7	29.7	61.0	37.3	37.6
LnGrp LOS	F	F	B	E	C	C	E	C	C	E	D	D
Approach Vol, veh/h		2188			1060			905			628	
Approach Delay, s/veh		76.2			25.1			37.2			40.3	
Approach LOS		E			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		53.9	18.3	32.8		53.9	9.3	41.8
Change Period (Y+Rc), s		4.5	3.5	4.5		4.5	3.5	4.5
Max Green Setting (Gmax), s		39.5	19.5	33.5		39.5	16.5	36.5
Max Q Clear Time (g_c+I1), s		51.4	14.6	16.5		51.4	6.4	18.1
Green Ext Time (p_c), s		0.0	0.3	11.8		0.0	0.1	13.6

Intersection Summary	
HCM 2010 Ctrl Delay	52.7
HCM 2010 LOS	D

Notes

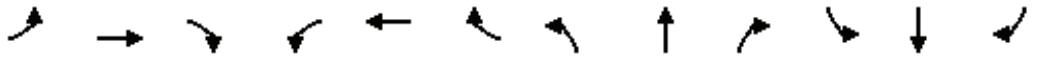
User approved ignoring U-Turning movement.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	520	150	700	700	340	330
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	571	165	769	769	374	363
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						19
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1062		
pX, platoon unblocked						
vC, conflicting volume			736		2879	571
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			736		2879	571
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			12		0	30
cM capacity (veh/h)			869		2	520

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	571	165	769	769	736
Volume Left	0	0	769	0	374
Volume Right	0	165	0	0	363
cSH	1700	1700	869	1700	4
Volume to Capacity	0.34	0.10	0.88	0.45	180.54
Queue Length 95th (ft)	0	0	296	0	Err
Control Delay (s)	0.0	0.0	31.4	0.0	Err
Lane LOS			D		F
Approach Delay (s)	0.0		15.7		Err
Approach LOS					F

Intersection Summary			
Average Delay	2453.0		
Intersection Capacity Utilization	95.0%	ICU Level of Service	F
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	140	120	140	420	720	780	300	480	300	440	320	90
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	152	130	76	457	783	782	326	522	264	478	348	90
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	191	453	265	209	360	360	393	312	158	92	0	0
Arrive On Green	0.11	0.41	0.41	0.12	0.42	0.42	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1774	1104	645	1774	856	855	947	1157	585	0	0	0
Grp Volume(v), veh/h	152	0	206	457	0	1565	326	0	786	916	0	0
Grp Sat Flow(s),veh/h/ln	1774	0	1749	1774	0	1712	947	0	1742	0	0	0
Q Serve(g_s), s	5.0	0.0	4.7	7.0	0.0	25.0	0.0	0.0	16.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	5.0	0.0	4.7	7.0	0.0	25.0	16.0	0.0	16.0	16.0	0.0	0.0
Prop In Lane	1.00		0.37	1.00		0.50	1.00		0.34	0.52		0.10
Lane Grp Cap(c), veh/h	191	0	718	209	0	720	393	0	469	92	0	0
V/C Ratio(X)	0.80	0.00	0.29	2.19	0.00	2.17	0.83	0.00	1.67	9.93	0.00	0.00
Avail Cap(c_a), veh/h	209	0	736	209	0	720	393	0	469	92	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	25.9	0.0	11.7	26.2	0.0	17.2	23.0	0.0	21.7	29.7	0.0	0.0
Incr Delay (d2), s/veh	17.6	0.0	0.2	549.1	0.0	532.1	13.8	0.0	312.8	4040.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	2.3	35.3	0.0	118.1	6.8	0.0	48.3	105.0	0.0	0.0
LnGrp Delay(d),s/veh	43.4	0.0	11.9	575.3	0.0	549.3	36.8	0.0	334.5	4070.5	0.0	0.0
LnGrp LOS	D		B	F		F	D		F	F		
Approach Vol, veh/h		358			2022			1112			916	
Approach Delay, s/veh		25.3			555.2			247.3			4070.5	
Approach LOS		C			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		20.0	11.0	28.4		20.0	10.4	29.0
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		16.0	7.0	25.0		16.0	7.0	25.0
Max Q Clear Time (g_c+I1), s		18.0	9.0	6.7		18.0	7.0	27.0
Green Ext Time (p_c), s		0.0	0.0	16.4		0.0	0.0	0.0

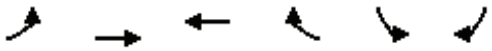
Intersection Summary	
HCM 2010 Ctrl Delay	1165.0
HCM 2010 LOS	F



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	450	410	220	1280	640	320
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	489	446	239	1391	696	348
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						3
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	337					
pX, platoon unblocked						
vC, conflicting volume			489		2582	712
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			489		2582	712
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			78		0	20
cM capacity (veh/h)			1074		22	432

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	935	239	1391	1043
Volume Left	0	239	0	696
Volume Right	446	0	0	348
cSH	1700	1074	1700	32
Volume to Capacity	0.55	0.22	0.82	32.64
Queue Length 95th (ft)	0	21	0	Err
Control Delay (s)	0.0	9.3	0.0	Err
Lane LOS		A		F
Approach Delay (s)	0.0	1.4		Err
Approach LOS				F

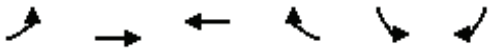
Intersection Summary			
Average Delay	2891.9		
Intersection Capacity Utilization	109.5%	ICU Level of Service	H
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↰↑	↱
Volume (veh/h)	0	1690	500	0	560	670
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	0	1817	538	0	602	593
Adj No. of Lanes	0	2	2	0	2	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1652	1652	0	1319	607
Arrive On Green	0.00	0.47	0.15	0.00	0.38	0.38
Sat Flow, veh/h	0	3725	3725	0	3442	1583
Grp Volume(v), veh/h	0	1817	538	0	602	593
Grp Sat Flow(s),veh/h/ln	0	1770	1770	0	1721	1583
Q Serve(g_s), s	0.0	28.0	8.1	0.0	7.8	22.2
Cycle Q Clear(g_c), s	0.0	28.0	8.1	0.0	7.8	22.2
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1652	1652	0	1319	607
V/C Ratio(X)	0.00	1.10	0.33	0.00	0.46	0.98
Avail Cap(c_a), veh/h	0	1652	1652	0	1319	607
HCM Platoon Ratio	1.00	1.00	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.98	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	16.0	17.0	0.0	13.8	18.2
Incr Delay (d2), s/veh	0.0	54.9	0.5	0.0	0.2	30.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	26.1	4.1	0.0	3.7	14.7
LnGrp Delay(d),s/veh	0.0	70.9	17.5	0.0	14.1	48.9
LnGrp LOS		F	B		B	D
Approach Vol, veh/h		1817	538		1195	
Approach Delay, s/veh		70.9	17.5		31.4	
Approach LOS		E	B		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		33.0		27.0		33.0		
Change Period (Y+Rc), s		5.0		4.0		5.0		
Max Green Setting (Gmax), s		28.0		23.0		28.0		
Max Q Clear Time (g_c+I1), s		30.0		24.2		10.1		
Green Ext Time (p_c), s		0.0		0.0		15.0		

Intersection Summary	
HCM 2010 Ctrl Delay	49.5
HCM 2010 LOS	D



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	70	2180	470	130	70	30
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99			0.95	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	74	2295	495	113	74	1
Adj No. of Lanes	0	2	2	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	119	2690	2302	522	95	1
Arrive On Green	1.00	1.00	0.54	0.54	0.06	0.06
Sat Flow, veh/h	69	3399	2930	643	1726	23
Grp Volume(v), veh/h	1272	1097	307	301	76	0
Grp Sat Flow(s),veh/h/ln	1772	1610	1770	1710	1772	0
Q Serve(g_s), s	0.0	0.0	5.4	5.5	2.5	0.0
Cycle Q Clear(g_c), s	0.0	0.0	5.4	5.5	2.5	0.0
Prop In Lane	0.06			0.38	0.97	0.01
Lane Grp Cap(c), veh/h	1502	1307	1436	1388	98	0
V/C Ratio(X)	0.85	0.84	0.21	0.22	0.78	0.00
Avail Cap(c_a), veh/h	1502	1307	1436	1388	532	0
HCM Platoon Ratio	2.00	2.00	0.67	0.67	1.00	1.00
Upstream Filter(I)	0.23	0.23	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	3.8	3.8	28.0	0.0
Incr Delay (d2), s/veh	1.5	1.6	0.3	0.4	5.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.6	2.8	2.7	1.4	0.0
LnGrp Delay(d),s/veh	1.5	1.6	4.1	4.2	33.0	0.0
LnGrp LOS	A	A	A	A	C	
Approach Vol, veh/h		2369	608		76	
Approach Delay, s/veh		1.5	4.2		33.0	
Approach LOS		A	A		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		52.7		7.3		52.7		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		34.0		18.0		34.0		
Max Q Clear Time (g_c+I1), s		2.0		4.5		7.5		
Green Ext Time (p_c), s		29.4		0.1		24.7		

Intersection Summary	
HCM 2010 Ctrl Delay	2.8
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	270	40	740	120	470	170	590	920	0	0	790	220
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.67	1.00		0.90	1.00		1.00	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	278	0	572	124	485	120	608	948	0	0	814	148
Adj No. of Lanes	1	0	2	1	2	1	2	3	0	0	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	0	2	2
Cap, veh/h	244	0	846	475	948	380	602	2557	0	0	1072	450
Arrive On Green	0.14	0.00	0.14	0.27	0.27	0.27	0.17	0.50	0.00	0.00	0.30	0.30
Sat Flow, veh/h	1774	0	2126	1774	3539	1417	3442	5253	0	0	3632	1485
Grp Volume(v), veh/h	278	0	572	124	485	120	608	948	0	0	814	148
Grp Sat Flow(s),veh/h/ln	1774	0	1063	1774	1770	1417	1721	1695	0	0	1770	1485
Q Serve(g_s), s	16.5	0.0	16.5	6.6	13.9	8.1	21.0	13.7	0.0	0.0	25.0	9.3
Cycle Q Clear(g_c), s	16.5	0.0	16.5	6.6	13.9	8.1	21.0	13.7	0.0	0.0	25.0	9.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	244	0	846	475	948	380	602	2557	0	0	1072	450
V/C Ratio(X)	1.14	0.00	0.68	0.26	0.51	0.32	1.01	0.37	0.00	0.00	0.76	0.33
Avail Cap(c_a), veh/h	244	0	846	532	1062	425	602	2557	0	0	1072	450
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	0.0	37.9	34.6	37.3	35.1	49.5	18.2	0.0	0.0	37.9	32.4
Incr Delay (d2), s/veh	100.5	0.0	2.1	0.3	0.4	0.5	39.0	0.4	0.0	0.0	5.1	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.9	0.0	8.7	3.3	6.9	3.2	13.2	6.5	0.0	0.0	13.0	4.0
LnGrp Delay(d),s/veh	152.3	0.0	40.1	34.9	37.7	35.6	88.6	18.6	0.0	0.0	42.9	34.3
LnGrp LOS	F		D	C	D	D	F	B			D	C
Approach Vol, veh/h		850			729			1556			962	
Approach Delay, s/veh		76.8			36.9			46.0			41.6	
Approach LOS		E			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		64.3		20.0	24.0	40.3		35.7
Change Period (Y+Rc), s		4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s		56.5		16.5	21.0	32.5		36.0
Max Q Clear Time (g_c+I1), s		15.7		18.5	23.0	27.0		15.9
Green Ext Time (p_c), s		19.6		0.0	0.0	4.5		4.0

Intersection Summary	
HCM 2010 Ctrl Delay	49.7
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	840	60	90	800	360	560
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	884	63	95	842	379	589
Adj No. of Lanes	1	0	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	914	65	141	1116	593	529
Arrive On Green	0.53	0.53	0.03	0.60	0.33	0.33
Sat Flow, veh/h	1719	122	1774	1863	1774	1583
Grp Volume(v), veh/h	0	947	95	842	379	589
Grp Sat Flow(s),veh/h/ln	0	1841	1774	1863	1774	1583
Q Serve(g_s), s	0.0	59.3	2.8	39.6	21.6	40.0
Cycle Q Clear(g_c), s	0.0	59.3	2.8	39.6	21.6	40.0
Prop In Lane		0.07	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	980	141	1116	593	529
V/C Ratio(X)	0.00	0.97	0.67	0.75	0.64	1.11
Avail Cap(c_a), veh/h	0	985	141	1121	593	529
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	27.0	28.6	17.6	33.7	39.8
Incr Delay (d2), s/veh	0.0	20.9	11.9	3.0	2.3	73.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	35.7	2.2	21.0	11.0	28.3
LnGrp Delay(d),s/veh	0.0	47.9	40.5	20.5	36.0	113.7
LnGrp LOS		D	D	C	D	F
Approach Vol, veh/h	947			937	968	
Approach Delay, s/veh	47.9			22.5	83.3	
Approach LOS	D			C	F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		44.0	8.0	67.7				75.7
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		40.0	4.0	64.0				72.0
Max Q Clear Time (g_c+I1), s		42.0	4.8	61.3				41.6
Green Ext Time (p_c), s		0.0	0.0	2.4				18.1

Intersection Summary	
HCM 2010 Ctrl Delay	51.6
HCM 2010 LOS	D

Intersection	
Intersection Delay, s/veh	90.3
Intersection LOS	F

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	150	210	160	0	550	160	120	0	150	410	120
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	163	228	174	0	598	174	130	0	163	446	130
Number of Lanes	0	0	1	0	0	1	1	0	0	1	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	1	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	3	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	3	3	2
HCM Control Delay	93.2	94.4	80.6
HCM LOS	F	F	F

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	29%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	53%	40%	0%	57%	0%	100%	85%
Vol Right, %	0%	0%	47%	31%	0%	43%	0%	0%	15%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	150	273	257	520	550	280	610	547	323
LT Vol	150	0	0	150	550	0	610	0	0
Through Vol	0	273	137	210	0	160	0	547	273
RT Vol	0	0	120	160	0	120	0	0	50
Lane Flow Rate	163	297	279	565	598	304	663	594	351
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.626	1	1	1	1	1	1	1	1
Departure Headway (Hd)	13.83	13.33	13.003	13.247	13.769	12.97	13.116	12.616	12.508
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	263	273	282	283	269	280	285	297	292
Service Time	11.53	11.03	10.703	10.955	11.526	10.726	10.816	10.316	10.208
HCM Lane V/C Ratio	0.62	1.088	0.989	1.996	2.223	1.086	2.326	2	1.202
HCM Control Delay	37.2	93.5	92.2	93.2	95.4	92.3	92.6	90.7	90.2
HCM Lane LOS	E	F	F	F	F	F	F	F	F
HCM 95th-tile Q	3.8	10.1	10.2	10.1	9.9	10.2	10.1	10.3	10.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	610	820	50
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	663	891	54
Number of Lanes	0	1	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	3
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	91.4
HCM LOS	F

Lane

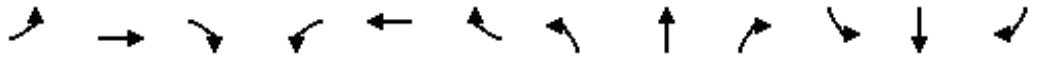
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	70	590	150	470	420	60	340	200	1040	40	90	80
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	72	608	130	324	659	54	278	307	615	41	93	57
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	0	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	331	542	116	351	672	55	546	573	486	49	112	69
Arrive On Green	0.19	0.19	0.19	0.20	0.20	0.20	0.31	0.31	0.31	0.13	0.13	0.13
Sat Flow, veh/h	1774	2904	620	1774	3398	278	1774	1863	1580	374	848	520
Grp Volume(v), veh/h	72	370	368	324	361	352	278	307	615	191	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1753	1774	1863	1814	1774	1863	1580	1741	0	0
Q Serve(g_s), s	3.1	17.0	17.0	16.3	17.5	17.6	11.7	12.4	28.0	9.7	0.0	0.0
Cycle Q Clear(g_c), s	3.1	17.0	17.0	16.3	17.5	17.6	11.7	12.4	28.0	9.7	0.0	0.0
Prop In Lane	1.00		0.35	1.00		0.15	1.00		1.00	0.21		0.30
Lane Grp Cap(c), veh/h	331	331	328	351	368	359	546	573	486	230	0	0
V/C Ratio(X)	0.22	1.12	1.12	0.92	0.98	0.98	0.51	0.54	1.26	0.83	0.00	0.00
Avail Cap(c_a), veh/h	331	331	328	351	368	359	546	573	486	306	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	31.4	37.0	37.0	35.8	36.3	36.3	25.9	26.1	31.5	38.5	0.0	0.0
Incr Delay (d2), s/veh	0.3	85.7	87.3	29.4	41.3	42.4	0.8	1.0	134.8	13.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	16.1	16.1	10.9	13.2	13.0	5.8	6.6	30.4	5.5	0.0	0.0
LnGrp Delay(d),s/veh	31.7	122.7	124.3	65.2	77.6	78.7	26.6	27.1	166.3	52.0	0.0	0.0
LnGrp LOS	C	F	F	E	E	E	C	C	F	D		
Approach Vol, veh/h		810			1037			1200			191	
Approach Delay, s/veh		115.4			74.1			98.3			52.0	
Approach LOS		F			E			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		32.0		21.0		16.0		22.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		28.0		17.0		16.0		18.0
Max Q Clear Time (g_c+I1), s		30.0		19.0		11.7		19.6
Green Ext Time (p_c), s		0.0		0.0		0.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	92.1
HCM 2010 LOS	F

Notes

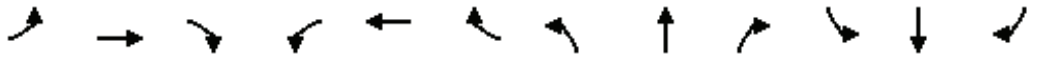
User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	290	10	540	490	1040	0	0	390	320
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1900	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				305	11	502	516	1095	0	0	411	0
Adj No. of Lanes				1	1	0	1	2	0	0	2	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				551	11	483	525	2021	0	0	765	0
Arrive On Green				0.31	0.31	0.31	0.30	0.57	0.00	0.00	0.22	0.00
Sat Flow, veh/h				1774	34	1554	1774	3632	0	0	3725	0
Grp Volume(v), veh/h				305	0	513	516	1095	0	0	411	0
Grp Sat Flow(s),veh/h/ln				1774	0	1588	1774	1770	0	0	1770	0
Q Serve(g_s), s				9.7	0.0	21.0	19.5	13.0	0.0	0.0	7.0	0.0
Cycle Q Clear(g_c), s				9.7	0.0	21.0	19.5	13.0	0.0	0.0	7.0	0.0
Prop In Lane				1.00		0.98	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				551	0	493	525	2021	0	0	765	0
V/C Ratio(X)				0.55	0.00	1.04	0.98	0.54	0.00	0.00	0.54	0.00
Avail Cap(c_a), veh/h				551	0	493	525	2146	0	0	890	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				19.4	0.0	23.3	23.6	9.0	0.0	0.0	23.5	0.0
Incr Delay (d2), s/veh				1.2	0.0	51.2	34.9	0.2	0.0	0.0	0.6	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.9	0.0	16.1	14.5	6.3	0.0	0.0	3.4	0.0
LnGrp Delay(d),s/veh				20.6	0.0	74.5	58.5	9.3	0.0	0.0	24.1	0.0
LnGrp LOS				C		F	E	A			C	
Approach Vol, veh/h					818			1611			411	
Approach Delay, s/veh					54.4			25.0			24.1	
Approach LOS					D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		42.6			24.0	18.6		25.0
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		41.0			20.0	17.0		21.0
Max Q Clear Time (g_c+I1), s		15.0			21.5	9.0		23.0
Green Ext Time (p_c), s		12.6			0.0	5.6		0.0

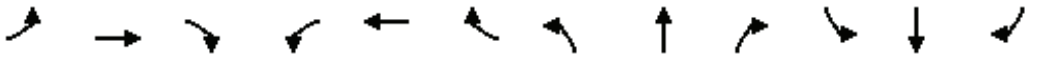
Intersection Summary	
HCM 2010 Ctrl Delay	33.4
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	1150	480	190	590	0	0	0	0	630	20	510
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1900	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	1198	431	198	615	0				656	21	492
Adj No. of Lanes	0	2	0	0	2	0				0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1747	611	215	1095	0				202	6	152
Arrive On Green	0.00	0.68	0.68	1.00	1.00	0.00				0.21	0.21	0.21
Sat Flow, veh/h	0	2663	899	174	1695	0				948	30	711
Grp Volume(v), veh/h	0	814	815	198	615	0				1169	0	0
Grp Sat Flow(s),veh/h/ln	0	1770	1699	174	1610	0				1690	0	0
Q Serve(g_s), s	0.0	20.5	22.1	28.9	0.0	0.0				16.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	20.5	22.1	51.0	0.0	0.0				16.0	0.0	0.0
Prop In Lane	0.00		0.53	1.00		0.00				0.56		0.42
Lane Grp Cap(c), veh/h	0	1203	1156	215	1095	0				360	0	0
V/C Ratio(X)	0.00	0.68	0.70	0.92	0.56	0.00				3.24	0.00	0.00
Avail Cap(c_a), veh/h	0	1203	1156	215	1095	0				360	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.84	0.84	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	7.1	7.4	16.8	0.0	0.0				29.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.5	2.0	36.2	0.6	0.0				1016.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	10.2	10.8	6.2	0.2	0.0				109.2	0.0	0.0
LnGrp Delay(d),s/veh	0.0	8.6	9.3	53.0	0.6	0.0				1045.9	0.0	0.0
LnGrp LOS		A	A	D	A					F		
Approach Vol, veh/h		1629			813						1169	
Approach Delay, s/veh		9.0			13.3						1045.9	
Approach LOS		A			B						F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				55.0		20.0		55.0
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				51.0		16.0		51.0
Max Q Clear Time (g_c+I1), s				24.1		18.0		53.0
Green Ext Time (p_c), s				23.0		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	345.7
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	690	1090	0	0	680	560	100	160	230	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	719	1135	0	0	708	475	104	167	155			
Adj No. of Lanes	0	2	0	0	2	0	1	1	1			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	338	1131	0	0	1402	935	355	373	317			
Arrive On Green	1.00	1.00	0.00	0.00	0.69	0.69	0.20	0.20	0.20			
Sat Flow, veh/h	353	1716	0	0	2116	1349	1774	1863	1583			
Grp Volume(v), veh/h	762	1092	0	0	619	564	104	167	155			
Grp Sat Flow(s),veh/h/ln	374	1610	0	0	1770	1602	1774	1863	1583			
Q Serve(g_s), s	39.5	0.0	0.0	0.0	12.4	12.5	3.7	5.9	6.5			
Cycle Q Clear(g_c), s	52.0	0.0	0.0	0.0	12.4	12.5	3.7	5.9	6.5			
Prop In Lane	0.94		0.00	0.00		0.84	1.00		1.00			
Lane Grp Cap(c), veh/h	353	1117	0	0	1227	1111	355	373	317			
V/C Ratio(X)	2.16	0.98	0.00	0.00	0.50	0.51	0.29	0.45	0.49			
Avail Cap(c_a), veh/h	353	1117	0	0	1227	1111	355	373	317			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.56	0.56	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	11.5	0.0	0.0	0.0	5.4	5.4	25.5	26.4	26.6			
Incr Delay (d2), s/veh	527.4	15.4	0.0	0.0	0.3	0.4	2.1	3.9	5.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	58.9	4.8	0.0	0.0	6.0	5.4	2.0	3.4	3.3			
LnGrp Delay(d),s/veh	538.9	15.4	0.0	0.0	5.8	5.8	27.6	30.2	31.9			
LnGrp LOS	F	B			A	A	C	C	C			
Approach Vol, veh/h		1854			1183			426				
Approach Delay, s/veh		230.5			5.8			30.2				
Approach LOS		F			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		19.0		56.0				56.0
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		15.0		52.0				52.0
Max Q Clear Time (g_c+I1), s		8.5		54.0				14.5
Green Ext Time (p_c), s		1.0		0.0				36.1

Intersection Summary	
HCM 2010 Ctrl Delay	129.1
HCM 2010 LOS	F

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	90	710	440	40	570	140	280	680	40	100	390	60
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	94	740	376	42	594	129	292	708	38	104	406	48
Adj No. of Lanes	0	2	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	158	1158	739	76	1089	256	321	1133	61	131	716	84
Arrive On Green	0.48	0.48	0.48	0.48	0.48	0.48	0.18	0.33	0.33	0.07	0.23	0.23
Sat Flow, veh/h	239	2398	1531	82	2256	530	1774	3409	183	1774	3177	373
Grp Volume(v), veh/h	332	502	376	380	0	385	292	367	379	104	225	229
Grp Sat Flow(s),veh/h/ln	1027	1610	1531	1287	0	1580	1774	1770	1823	1774	1770	1780
Q Serve(g_s), s	15.8	25.3	18.2	3.6	0.0	18.0	17.4	18.9	18.9	6.2	12.2	12.4
Cycle Q Clear(g_c), s	33.7	25.3	18.2	28.8	0.0	18.0	17.4	18.9	18.9	6.2	12.2	12.4
Prop In Lane	0.28		1.00	0.11		0.34	1.00		0.10	1.00		0.21
Lane Grp Cap(c), veh/h	538	778	739	659	0	763	321	588	606	131	399	401
V/C Ratio(X)	0.62	0.65	0.51	0.58	0.00	0.50	0.91	0.62	0.63	0.79	0.56	0.57
Avail Cap(c_a), veh/h	538	778	739	659	0	763	345	588	606	427	639	643
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.00	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.5	21.0	19.1	18.8	0.0	19.1	43.4	30.4	30.4	49.2	37.1	37.2
Incr Delay (d2), s/veh	5.2	4.1	2.5	0.3	0.0	0.2	25.3	2.4	2.4	4.1	1.8	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	12.0	8.1	7.3	0.0	7.8	10.8	9.6	9.9	3.2	6.1	6.2
LnGrp Delay(d),s/veh	29.7	25.1	21.6	19.1	0.0	19.3	68.6	32.8	32.7	53.3	38.9	39.0
LnGrp LOS	C	C	C	B		B	E	C	C	D	D	D
Approach Vol, veh/h		1210			765			1038			558	
Approach Delay, s/veh		25.3			19.2			42.9			41.6	
Approach LOS		C			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	23.5	28.3		56.1	12.0	39.9		56.1
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	21.0	39.0		36.0	26.0	34.0		36.0
Max Q Clear Time (g_c+I1), s	19.4	14.4		35.7	8.2	20.9		30.8
Green Ext Time (p_c), s	0.1	8.3		0.2	0.1	7.8		4.6

Intersection Summary	
HCM 2010 Ctrl Delay	31.6
HCM 2010 LOS	C

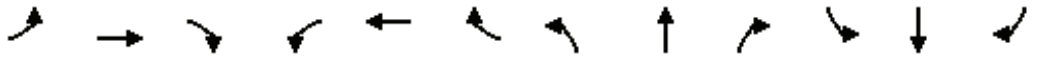
Notes

User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	210	80	100	330	100	120	1020	90	130	990	60
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.94	1.00		0.95	1.00		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	20	214	69	102	337	93	122	1041	86	133	1010	57
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	82	318	102	172	404	111	160	1453	120	163	1499	85
Arrive On Green	0.05	0.24	0.24	0.10	0.29	0.29	0.09	0.44	0.44	0.03	0.15	0.15
Sat Flow, veh/h	1774	1320	426	1774	1383	382	1774	3296	272	1774	3388	191
Grp Volume(v), veh/h	20	0	283	102	0	430	122	559	568	133	527	540
Grp Sat Flow(s),veh/h/ln	1774	0	1746	1774	0	1765	1774	1770	1798	1774	1770	1810
Q Serve(g_s), s	1.2	0.0	15.9	5.9	0.0	24.6	7.3	27.9	27.9	8.1	30.5	30.5
Cycle Q Clear(g_c), s	1.2	0.0	15.9	5.9	0.0	24.6	7.3	27.9	27.9	8.1	30.5	30.5
Prop In Lane	1.00		0.24	1.00		0.22	1.00		0.15	1.00		0.11
Lane Grp Cap(c), veh/h	82	0	420	172	0	515	160	780	793	163	783	801
V/C Ratio(X)	0.25	0.00	0.67	0.59	0.00	0.83	0.76	0.72	0.72	0.82	0.67	0.67
Avail Cap(c_a), veh/h	197	0	420	197	0	515	197	780	793	197	783	801
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.65	0.65	0.65
Uniform Delay (d), s/veh	49.7	0.0	37.2	46.7	0.0	35.8	48.0	24.7	24.7	51.5	38.7	38.7
Incr Delay (d2), s/veh	0.6	0.0	8.3	1.7	0.0	14.7	9.9	5.6	5.5	11.3	3.0	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	8.6	3.0	0.0	14.1	4.0	14.7	14.9	4.5	15.6	16.0
LnGrp Delay(d),s/veh	50.3	0.0	45.5	48.4	0.0	50.5	57.9	30.2	30.2	62.8	41.7	41.7
LnGrp LOS	D		D	D		D	E	C	C	E	D	D
Approach Vol, veh/h		303			532			1249			1200	
Approach Delay, s/veh		45.8			50.1			32.9			44.0	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	51.8	13.5	30.0	12.9	51.6	8.0	35.5
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	12.0	44.0	12.0	26.0	12.0	44.0	12.0	26.0
Max Q Clear Time (g_c+I1), s	9.3	32.5	7.9	17.9	10.1	29.9	3.2	26.6
Green Ext Time (p_c), s	0.0	10.3	0.0	2.1	0.0	12.4	0.0	0.0

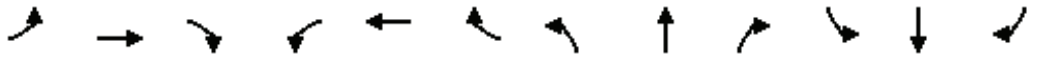
Intersection Summary	
HCM 2010 Ctrl Delay	41.0
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	860	160	130	610	0	0	0	0	170	800	130
Number	7	4	14	3	8	18				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		1.00				1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	887	146	134	629	0				175	825	119
Adj No. of Lanes	0	2	0	1	2	0				0	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1579	260	293	1852	0				183	907	137
Arrive On Green	0.00	0.52	0.52	0.52	0.52	0.00				0.34	0.34	0.34
Sat Flow, veh/h	0	3111	497	543	3632	0				541	2672	404
Grp Volume(v), veh/h	0	520	513	134	629	0				594	0	525
Grp Sat Flow(s),veh/h/ln	0	1770	1745	543	1770	0				1836	0	1780
Q Serve(g_s), s	0.0	12.3	12.3	13.7	6.4	0.0				19.6	0.0	17.1
Cycle Q Clear(g_c), s	0.0	12.3	12.3	26.0	6.4	0.0				19.6	0.0	17.1
Prop In Lane	0.00		0.28	1.00		0.00				0.29		0.23
Lane Grp Cap(c), veh/h	0	926	913	293	1852	0				623	0	604
V/C Ratio(X)	0.00	0.56	0.56	0.46	0.34	0.00				0.95	0.00	0.87
Avail Cap(c_a), veh/h	0	987	973	311	1973	0				623	0	604
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	10.0	10.0	18.7	8.6	0.0				20.0	0.0	19.2
Incr Delay (d2), s/veh	0.0	0.3	0.3	0.4	0.0	0.0				24.9	0.0	12.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.0	5.9	2.1	3.1	0.0				14.0	0.0	10.4
LnGrp Delay(d),s/veh	0.0	10.3	10.3	19.1	8.6	0.0				44.9	0.0	31.5
LnGrp LOS		B	B	B	A					D		C
Approach Vol, veh/h		1033			763						1119	
Approach Delay, s/veh		10.3			10.4						38.6	
Approach LOS		B			B						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		25.5		36.4				36.4
Change Period (Y+Rc), s		4.5		4.0				4.0
Max Green Setting (Gmax), s		21.0		34.5				34.5
Max Q Clear Time (g_c+I1), s		21.6		14.3				28.0
Green Ext Time (p_c), s		0.0		9.4				4.4

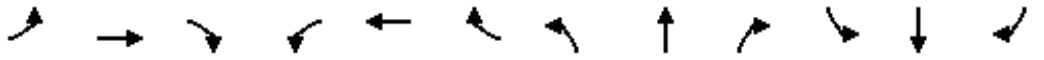
Intersection Summary	
HCM 2010 Ctrl Delay	21.2
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	270	760	0	0	440	160	300	1750	150	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.95	1.00		0.96			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1900	1863	1900			
Adj Flow Rate, veh/h	276	776	0	0	449	112	306	1786	143			
Adj No. of Lanes	1	2	0	0	2	0	0	3	0			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	341	1678	0	0	624	154	281	1756	143			
Arrive On Green	0.19	0.47	0.00	0.00	0.22	0.22	0.41	0.41	0.41			
Sat Flow, veh/h	1774	3632	0	0	2873	686	684	4276	349			
Grp Volume(v), veh/h	276	776	0	0	284	277	818	686	731			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1697	1829	1695	1785			
Q Serve(g_s), s	9.1	9.0	0.0	0.0	9.0	9.2	25.0	24.4	24.9			
Cycle Q Clear(g_c), s	9.1	9.0	0.0	0.0	9.0	9.2	25.0	24.4	24.9			
Prop In Lane	1.00		0.00	0.00		0.40	0.37		0.20			
Lane Grp Cap(c), veh/h	341	1678	0	0	397	381	751	696	733			
V/C Ratio(X)	0.81	0.46	0.00	0.00	0.71	0.73	1.09	0.99	1.00			
Avail Cap(c_a), veh/h	583	1678	0	0	596	572	751	696	733			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	23.5	10.8	0.0	0.0	21.8	21.9	17.9	17.7	17.9			
Incr Delay (d2), s/veh	1.8	0.1	0.0	0.0	0.9	1.0	59.5	30.3	32.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.6	4.3	0.0	0.0	4.5	4.4	24.7	17.1	18.6			
LnGrp Delay(d),s/veh	25.3	10.8	0.0	0.0	22.7	22.9	77.5	48.0	50.3			
LnGrp LOS	C	B			C	C	F	D	D			
Approach Vol, veh/h		1052			561			2235				
Approach Delay, s/veh		14.6			22.8			59.5				
Approach LOS		B			C			E				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		28.5	15.2	17.2				32.4
Change Period (Y+Rc), s		3.5	3.5	3.5				3.5
Max Green Setting (Gmax), s		25.0	20.0	20.5				20.5
Max Q Clear Time (g_c+I1), s		27.0	11.1	11.2				11.0
Green Ext Time (p_c), s		0.0	0.8	1.7				3.0

Intersection Summary	
HCM 2010 Ctrl Delay	41.9
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	280	100	110	340	130	160	660	160	160	650	30
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.96	1.00		0.94	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	52	289	46	113	351	123	165	680	108	165	670	29
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	0	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	68	440	345	142	362	127	493	518	415	180	774	35
Arrive On Green	0.04	0.24	0.24	0.08	0.28	0.28	0.28	0.28	0.28	0.27	0.27	0.27
Sat Flow, veh/h	1774	1863	1461	1774	1304	457	1774	1863	1493	668	2868	129
Grp Volume(v), veh/h	52	289	46	113	0	474	165	680	108	452	0	412
Grp Sat Flow(s),veh/h/ln	1774	1863	1461	1774	0	1761	1774	1863	1493	1829	0	1836
Q Serve(g_s), s	3.1	15.1	2.7	6.8	0.0	28.7	8.0	30.0	6.1	25.8	0.0	22.8
Cycle Q Clear(g_c), s	3.1	15.1	2.7	6.8	0.0	28.7	8.0	30.0	6.1	25.8	0.0	22.8
Prop In Lane	1.00		1.00	1.00		0.26	1.00		1.00	0.37		0.07
Lane Grp Cap(c), veh/h	68	440	345	142	0	489	493	518	415	494	0	496
V/C Ratio(X)	0.77	0.66	0.13	0.80	0.00	0.97	0.33	1.31	0.26	0.91	0.00	0.83
Avail Cap(c_a), veh/h	246	518	406	246	0	489	493	518	415	508	0	510
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.5	37.3	32.5	48.8	0.0	38.5	31.0	39.0	30.3	38.2	0.0	37.1
Incr Delay (d2), s/veh	19.5	2.7	0.2	11.6	0.0	32.6	0.5	154.5	0.4	21.0	0.0	11.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	8.1	1.1	3.8	0.0	18.4	4.0	37.6	2.6	15.9	0.0	13.1
LnGrp Delay(d),s/veh	71.0	40.0	32.7	60.4	0.0	71.1	31.5	193.5	30.7	59.2	0.0	48.3
LnGrp LOS	E	D	C	E		E	C	F	C	E		D
Approach Vol, veh/h		387			587			953			864	
Approach Delay, s/veh		43.3			69.1			147.0			54.0	
Approach LOS		D			E			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.2	29.6		33.5	7.7	34.1		32.7
Change Period (Y+Rc), s	3.6	4.1		3.5	3.6	4.1		3.5
Max Green Setting (Gmax), s	15.0	30.0		30.0	15.0	30.0		30.0
Max Q Clear Time (g_c+I1), s	8.8	17.1		32.0	5.1	30.7		27.8
Green Ext Time (p_c), s	0.2	5.0		0.0	0.1	0.0		1.3

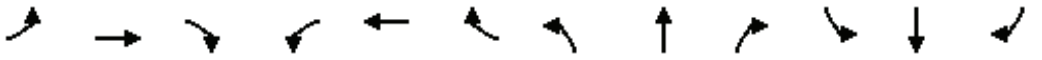
Intersection Summary	
HCM 2010 Ctrl Delay	87.4
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	270	1490	20	50	780	120	20	350	70	110	110	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00	0.98		1.00	0.98
Flpb, ped/bikes	0.99	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.98			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		0.98	1.00
Satd. Flow (prot)	1752	3530		1770	3436			1858	1548		1813	1559
Flt Permitted	0.26	1.00		0.09	1.00			0.98	1.00		0.33	1.00
Satd. Flow (perm)	475	3530		172	3436			1819	1548		604	1559
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	281	1552	21	52	812	125	21	365	73	115	115	125
RTOR Reduction (vph)	0	1	0	0	8	0	0	0	7	0	0	64
Lane Group Flow (vph)	281	1572	0	52	929	0	0	386	66	0	230	61
Confl. Peds. (#/hr)	23		12	12		23	2		10	10		2
Confl. Bikes (#/hr)			6			10						2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	66.8	66.8		66.8	66.8			30.2	30.2		30.2	30.2
Effective Green, g (s)	66.8	66.8		66.8	66.8			30.2	30.2		30.2	30.2
Actuated g/C Ratio	0.64	0.64		0.64	0.64			0.29	0.29		0.29	0.29
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	2.0		2.0	2.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	302	2245		109	2185			523	445		173	448
v/s Ratio Prot		0.45			0.27							
v/s Ratio Perm	c0.59			0.30				0.21	0.04		c0.38	0.04
v/c Ratio	0.93	0.70		0.48	0.43			0.74	0.15		1.33	0.14
Uniform Delay, d1	17.0	12.5		10.0	9.5			33.8	27.8		37.4	27.7
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	36.7	1.8		14.2	0.6			5.4	0.2		182.4	0.1
Delay (s)	53.7	14.4		24.2	10.1			39.2	28.0		219.8	27.9
Level of Service	D	B		C	B			D	C		F	C
Approach Delay (s)		20.3			10.9			37.4			152.2	
Approach LOS		C			B			D			F	

Intersection Summary			
HCM 2000 Control Delay	32.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	96.4%	ICU Level of Service	F
Analysis Period (min)	15		

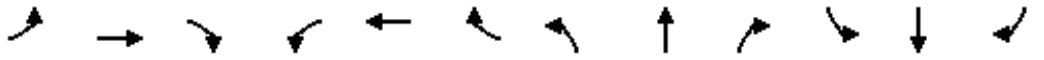
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	650	220	60	560	120	170	20	260	150	70	50
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	30	657	222	61	566	121	172	20	263	152	71	51
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	1	1	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	389	1092	369	302	1218	259	566	58	621	435	399	286
Arrive On Green	0.42	0.42	0.42	0.56	0.56	0.56	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	751	2587	873	628	2886	615	1037	145	1553	1092	997	716
Grp Volume(v), veh/h	30	449	430	61	346	341	192	0	263	152	0	122
Grp Sat Flow(s),veh/h/ln	751	1770	1690	628	1770	1731	1182	0	1553	1092	0	1713
Q Serve(g_s), s	1.3	8.8	8.9	3.5	5.2	5.3	4.6	0.0	5.5	5.4	0.0	2.1
Cycle Q Clear(g_c), s	6.6	8.8	8.9	12.4	5.2	5.3	6.7	0.0	5.5	12.1	0.0	2.1
Prop In Lane	1.00		0.52	1.00		0.36	0.90		1.00	1.00		0.42
Lane Grp Cap(c), veh/h	389	747	714	302	747	731	624	0	621	435	0	685
V/C Ratio(X)	0.08	0.60	0.60	0.20	0.46	0.47	0.31	0.00	0.42	0.35	0.00	0.18
Avail Cap(c_a), veh/h	389	747	714	302	747	731	624	0	621	435	0	685
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.84	0.84	0.84	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.3	10.1	10.1	12.0	6.8	6.9	10.7	0.0	9.8	14.6	0.0	8.7
Incr Delay (d2), s/veh	0.4	3.6	3.7	1.3	1.7	1.8	1.3	0.0	2.1	2.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	5.0	4.8	0.7	2.8	2.7	2.0	0.0	2.7	1.9	0.0	1.1
LnGrp Delay(d),s/veh	11.7	13.6	13.8	13.2	8.6	8.6	11.9	0.0	11.9	16.9	0.0	9.3
LnGrp LOS	B	B	B	B	A	A	B		B	B		A
Approach Vol, veh/h		909			748			455			274	
Approach Delay, s/veh		13.7			9.0			11.9			13.5	
Approach LOS		B			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		22.0		23.0		22.0		23.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		18.0		19.0		18.0		19.0
Max Q Clear Time (g_c+I1), s		8.7		10.9		14.1		14.4
Green Ext Time (p_c), s		2.6		5.8		1.4		3.6

Intersection Summary	
HCM 2010 Ctrl Delay	11.8
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	260	800	0	0	450	440	290	10	200	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1900			
Adj Flow Rate, veh/h	274	842	0	0	474	463	305	11	211			
Adj No. of Lanes	1	2	0	0	2	0	1	1	0			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	407	1652	0	0	826	713	631	28	539			
Arrive On Green	0.31	0.31	0.00	0.00	0.93	0.93	0.36	0.36	0.36			
Sat Flow, veh/h	594	3632	0	0	1863	1528	1774	79	1516			
Grp Volume(v), veh/h	274	842	0	0	474	463	305	0	222			
Grp Sat Flow(s),veh/h/ln	594	1770	0	0	1770	1528	1774	0	1595			
Q Serve(g_s), s	18.7	8.8	0.0	0.0	1.7	2.3	6.0	0.0	4.7			
Cycle Q Clear(g_c), s	21.0	8.8	0.0	0.0	1.7	2.3	6.0	0.0	4.7			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		0.95			
Lane Grp Cap(c), veh/h	407	1652	0	0	826	713	631	0	567			
V/C Ratio(X)	0.67	0.51	0.00	0.00	0.57	0.65	0.48	0.00	0.39			
Avail Cap(c_a), veh/h	407	1652	0	0	826	713	631	0	567			
HCM Platoon Ratio	0.67	0.67	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.85	0.85	0.00	0.00	0.91	0.91	1.00	0.00	1.00			
Uniform Delay (d), s/veh	17.5	11.3	0.0	0.0	0.9	0.9	11.3	0.0	10.9			
Incr Delay (d2), s/veh	7.4	1.0	0.0	0.0	2.6	4.1	2.6	0.0	2.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.2	4.5	0.0	0.0	1.0	1.2	3.3	0.0	2.4			
LnGrp Delay(d),s/veh	24.9	12.2	0.0	0.0	3.5	5.0	13.9	0.0	12.9			
LnGrp LOS	C	B			A	A	B		B			
Approach Vol, veh/h		1116			937			527				
Approach Delay, s/veh		15.3			4.2			13.5				
Approach LOS		B			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		20.0		25.0				25.0
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		16.0		21.0				21.0
Max Q Clear Time (g_c+I1), s		8.0		23.0				4.3
Green Ext Time (p_c), s		1.6		0.0				12.8

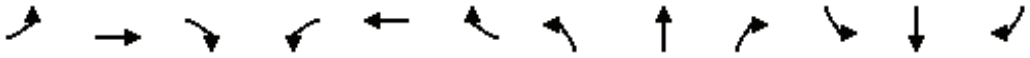
Intersection Summary	
HCM 2010 Ctrl Delay	10.9
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	880	60	80	770	100	70	80	90	70	50	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0		3.0	4.0			2.0			2.0	2.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.99		1.00	0.98			0.95			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.97	1.00
Satd. Flow (prot)	1770	3498		1770	3469			1743			1810	1557
Flt Permitted	0.95	1.00		0.95	1.00			0.89			0.71	1.00
Satd. Flow (perm)	1770	3498		1770	3469			1567			1318	1557
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	62	917	62	83	802	104	73	83	94	73	52	42
RTOR Reduction (vph)	0	5	0	0	10	0	0	0	0	0	0	31
Lane Group Flow (vph)	62	974	0	83	896	0	0	250	0	0	125	11
Confl. Peds. (#/hr)			5			5						4
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1 3	3 6			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	4.4	24.4		32.0	52.0			24.6			24.6	24.6
Effective Green, g (s)	4.4	24.4		28.0	52.0			24.6			24.6	24.6
Actuated g/C Ratio	0.05	0.27		0.31	0.58			0.27			0.27	0.27
Clearance Time (s)	3.0	4.0						2.0			2.0	2.0
Vehicle Extension (s)	3.0	3.0						3.0			3.0	3.0
Lane Grp Cap (vph)	86	948		550	2004			428			360	425
v/s Ratio Prot	0.04	c0.28		0.05	c0.26							
v/s Ratio Perm								c0.16			0.09	0.01
v/c Ratio	0.72	1.03		0.15	0.45			0.58			0.35	0.03
Uniform Delay, d1	42.2	32.8		22.4	10.8			28.3			26.3	23.9
Progression Factor	1.06	1.07		1.17	0.26			1.00			1.00	1.00
Incremental Delay, d2	23.1	34.8		0.1	0.1			2.0			0.6	0.0
Delay (s)	68.0	69.9		26.2	2.9			30.3			26.8	24.0
Level of Service	E	E		C	A			C			C	C
Approach Delay (s)		69.8			4.8			30.3			26.1	
Approach LOS		E			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	36.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	310	1010	0	0	840	300	170	60	570	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Lane Util. Factor	1.00	0.95			*1.00		1.00	0.95	0.95			
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Frt	1.00	1.00			0.96		1.00	0.88	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	1770	3539			3550		1770	1553	1504			
Flt Permitted	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	1770	3539			3550		1770	1553	1504			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	323	1052	0	0	875	312	177	62	594	0	0	0
RTOR Reduction (vph)	0	0	0	0	44	0	0	172	172	0	0	0
Lane Group Flow (vph)	323	1052	0	0	1143	0	177	163	149	0	0	0
Confl. Peds. (#/hr)	12		6	6		12						
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	17.5	72.5			52.0		10.0	10.0	10.0			
Effective Green, g (s)	17.5	72.5			52.0		10.0	10.0	10.0			
Actuated g/C Ratio	0.19	0.81			0.58		0.11	0.11	0.11			
Clearance Time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	344	2850			2051		196	172	167			
v/s Ratio Prot	c0.18	0.30			c0.32			c0.10				
v/s Ratio Perm							0.10		0.10			
v/c Ratio	0.94	0.37			0.56		0.90	0.95	0.89			
Uniform Delay, d1	35.7	2.4			11.8		39.5	39.7	39.5			
Progression Factor	0.50	1.25			1.00		1.00	1.00	1.00			
Incremental Delay, d2	29.7	0.3			1.1		38.3	52.3	39.2			
Delay (s)	47.6	3.3			12.9		77.8	92.0	78.7			
Level of Service	D	A			B		E	F	E			
Approach Delay (s)		13.7			12.9			83.8			0.0	
Approach LOS		B			B			F			A	

Intersection Summary			
HCM 2000 Control Delay	30.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	340	360	190	90	350	80	210	950	50	70	850	190
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.90	1.00		0.93	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	358	379	145	95	368	26	221	1000	9	74	895	174
Adj No. of Lanes	1	1	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	197	643	513	0	686	48	197	1690	15	146	1299	252
Arrive On Green	0.04	0.11	0.11	0.00	0.21	0.21	0.11	0.47	0.47	0.08	0.44	0.44
Sat Flow, veh/h	1774	1863	1489	0	3328	233	1774	3592	32	1774	2939	571
Grp Volume(v), veh/h	358	379	145	0	194	200	221	493	516	74	539	530
Grp Sat Flow(s),veh/h/ln	1774	1863	1489	0	1770	1792	1774	1770	1854	1774	1770	1740
Q Serve(g_s), s	12.0	20.9	9.6	0.0	10.6	10.7	12.0	22.1	22.1	4.3	26.4	26.4
Cycle Q Clear(g_c), s	12.0	20.9	9.6	0.0	10.6	10.7	12.0	22.1	22.1	4.3	26.4	26.4
Prop In Lane	1.00		1.00	0.00		0.13	1.00		0.02	1.00		0.33
Lane Grp Cap(c), veh/h	197	643	513	0	365	369	197	833	873	146	782	769
V/C Ratio(X)	1.82	0.59	0.28	0.00	0.53	0.54	1.12	0.59	0.59	0.51	0.69	0.69
Avail Cap(c_a), veh/h	197	643	513	0	426	431	197	833	873	197	782	769
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.49	0.49	0.49	0.00	1.00	1.00	0.54	0.54	0.54	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.0	40.6	35.6	0.0	38.2	38.3	48.0	21.0	21.0	47.4	24.2	24.2
Incr Delay (d2), s/veh	376.9	0.5	0.1	0.0	0.5	0.5	83.9	1.7	1.6	1.0	4.9	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.5	10.9	4.0	0.0	5.2	5.4	10.5	11.1	11.6	2.2	13.9	13.7
LnGrp Delay(d),s/veh	428.9	41.1	35.7	0.0	38.7	38.8	131.9	22.6	22.6	48.4	29.1	29.2
LnGrp LOS	F	D	D		D	D	F	C	C	D	C	C
Approach Vol, veh/h		882			394			1230			1143	
Approach Delay, s/veh		197.6			38.7			42.2			30.4	
Approach LOS		F			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	54.8	0.0	41.3	15.0	51.7	15.0	26.3
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	12.0	44.0	12.0	26.0	12.0	44.0	12.0	26.0
Max Q Clear Time (g_c+I1), s	6.3	24.1	0.0	22.9	14.0	28.4	14.0	12.7
Green Ext Time (p_c), s	0.0	16.4	0.0	1.2	0.0	13.3	0.0	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	75.7
HCM 2010 LOS	E

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	260	230	30	90	300	120	20	260	80	130	160	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3478		1770	3539	1583	1530	2942		1618	1697	1504
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3478		1770	3539	1583	1530	2942		1618	1697	1504
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	286	253	33	99	330	132	22	286	88	143	176	264
RTOR Reduction (vph)	0	9	0	0	0	106	0	28	0	0	0	209
Lane Group Flow (vph)	286	277	0	99	330	26	22	346	0	129	190	55
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	18%	18%	18%	6%	6%	6%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases						2						8
Actuated Green, G (s)	15.0	24.3		6.6	15.9	15.9	16.2	16.2		17.0	17.0	17.0
Effective Green, g (s)	15.0	24.3		6.6	15.9	15.9	16.2	16.2		17.0	17.0	17.0
Actuated g/C Ratio	0.18	0.30		0.08	0.19	0.19	0.20	0.20		0.21	0.21	0.21
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Vehicle Extension (s)	2.0	4.0		2.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Grp Cap (vph)	325	1035		143	689	308	303	584		337	353	313
v/s Ratio Prot	c0.16	0.08		0.06	c0.09		0.01	c0.12		0.08	c0.11	
v/s Ratio Perm						0.02						0.04
v/c Ratio	0.88	0.27		0.69	0.48	0.08	0.07	0.59		0.38	0.54	0.18
Uniform Delay, d1	32.4	21.9		36.5	29.2	26.9	26.6	29.7		27.8	28.8	26.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	22.5	0.2		11.1	0.7	0.2	0.1	1.9		1.0	2.0	0.4
Delay (s)	54.9	22.1		47.6	29.9	27.0	26.7	31.6		28.8	30.8	26.9
Level of Service	D	C		D	C	C	C	C		C	C	C
Approach Delay (s)		38.5			32.3			31.3			28.6	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	32.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	81.6	Sum of lost time (s)	17.5
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	980	60	280	730	0	0	0	0	340	10	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			3.0						4.0	4.0
Lane Util. Factor		0.95			*1.00						1.00	1.00
Frpb, ped/bikes		1.00			1.00						1.00	1.00
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.99			1.00						1.00	0.85
Flt Protected		1.00			0.99						0.95	1.00
Satd. Flow (prot)		3501			5512						1776	1583
Flt Permitted		1.00			0.72						0.95	1.00
Satd. Flow (perm)		3501			4030						1776	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	1021	62	292	760	0	0	0	0	354	10	229
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1078	0	0	1052	0	0	0	0	0	364	229
Confl. Peds. (#/hr)			6			5						
Turn Type		NA		Prot	NA					Split	NA	Perm
Protected Phases		2 4		1	1 6					3	3	
Permitted Phases												3
Actuated Green, G (s)		53.0			30.0						18.0	18.0
Effective Green, g (s)		53.0			30.0						18.0	18.0
Actuated g/C Ratio		0.59			0.33						0.20	0.20
Clearance Time (s)											4.0	4.0
Vehicle Extension (s)											3.0	3.0
Lane Grp Cap (vph)		2061			1508						355	316
v/s Ratio Prot		c0.31			c0.08						c0.20	
v/s Ratio Perm					c0.16							0.14
v/c Ratio		0.52			1.49dl						1.03	0.72
Uniform Delay, d1		11.0			26.1						36.0	33.7
Progression Factor		0.13			0.83						1.00	1.00
Incremental Delay, d2		0.1			1.1						54.4	8.0
Delay (s)		1.5			22.8						90.4	41.7
Level of Service		A			C						F	D
Approach Delay (s)		1.5			22.8			0.0			71.6	
Approach LOS		A			C			A			E	

Intersection Summary			
HCM 2000 Control Delay	24.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

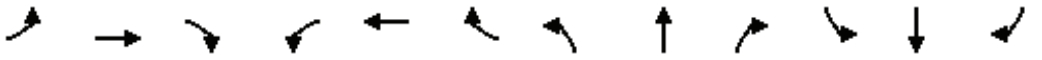
Appendix E-10
2040 Plus Specific Plan and SRTCP Conditions
Intersection LOS Calculations

FEHR PEERS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	590	200	190	580	0	0	0	0	150	1200	120
Number	3	8	18	7	4	14				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	0.99		1.00				1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1900	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	634	204	204	624	0				161	1290	118
Adj No. of Lanes	0	2	1	0	2	0				0	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93				0.93	0.93	0.93
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1445	621	247	777	0				171	1425	136
Arrive On Green	0.00	0.41	0.41	0.41	0.41	0.00				0.47	0.47	0.47
Sat Flow, veh/h	0	3632	1521	367	1988	0				359	3000	287
Grp Volume(v), veh/h	0	634	204	327	501	0				827	0	742
Grp Sat Flow(s),veh/h/ln	0	1770	1521	660	1610	0				1845	0	1801
Q Serve(g_s), s	0.0	7.7	5.5	16.8	16.0	0.0				25.6	0.0	22.0
Cycle Q Clear(g_c), s	0.0	7.7	5.5	24.5	16.0	0.0				25.6	0.0	22.0
Prop In Lane	0.00		1.00	0.62		0.00				0.19		0.16
Lane Grp Cap(c), veh/h	0	1445	621	367	658	0				876	0	856
V/C Ratio(X)	0.00	0.44	0.33	0.89	0.76	0.00				0.94	0.00	0.87
Avail Cap(c_a), veh/h	0	1445	621	367	658	0				876	0	856
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.91	0.91	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	12.8	12.1	21.7	15.2	0.0				15.0	0.0	14.1
Incr Delay (d2), s/veh	0.0	0.1	0.1	20.7	4.3	0.0				19.5	0.0	11.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.8	2.3	7.5	7.9	0.0				17.6	0.0	13.4
LnGrp Delay(d),s/veh	0.0	12.9	12.2	42.4	19.5	0.0				34.5	0.0	25.5
LnGrp LOS		B	B	D	B					C		C
Approach Vol, veh/h		838			828						1569	
Approach Delay, s/veh		12.7			28.6						30.3	
Approach LOS		B			C						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		32.0		28.0				28.0
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		28.5		24.5				24.5
Max Q Clear Time (g_c+I1), s		27.6		26.5				9.7
Green Ext Time (p_c), s		0.7		0.0				7.3

Intersection Summary	
HCM 2010 Ctrl Delay	25.3
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	200	540	0	0	600	200	190	850	180	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	0.99		1.00	1.00		0.92	1.00		0.96			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1863	1900	1863	1900			
Adj Flow Rate, veh/h	227	614	0	0	682	200	216	966	166			
Adj No. of Lanes	0	2	0	0	2	1	0	3	0			
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	328	933	0	0	1823	749	288	1376	243			
Arrive On Green	0.52	0.52	0.00	0.00	0.52	0.52	0.36	0.36	0.36			
Sat Flow, veh/h	428	1896	0	0	3632	1454	789	3774	666			
Grp Volume(v), veh/h	310	531	0	0	682	200	499	422	426			
Grp Sat Flow(s),veh/h/ln	629	1610	0	0	1770	1454	1823	1695	1710			
Q Serve(g_s), s	21.4	13.9	0.0	0.0	6.7	4.5	14.0	12.3	12.3			
Cycle Q Clear(g_c), s	28.1	13.9	0.0	0.0	6.7	4.5	14.0	12.3	12.3			
Prop In Lane	0.73		0.00	0.00		1.00	0.43		0.39			
Lane Grp Cap(c), veh/h	431	830	0	0	1823	749	665	618	623			
V/C Ratio(X)	0.72	0.64	0.00	0.00	0.37	0.27	0.75	0.68	0.68			
Avail Cap(c_a), veh/h	431	830	0	0	1823	749	939	873	881			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	15.6	10.2	0.0	0.0	8.5	7.9	16.2	15.7	15.7			
Incr Delay (d2), s/veh	4.9	1.3	0.0	0.0	0.0	0.1	1.1	0.5	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.3	6.4	0.0	0.0	3.2	1.8	7.1	5.7	5.8			
LnGrp Delay(d),s/veh	20.5	11.5	0.0	0.0	8.5	8.0	17.3	16.2	16.2			
LnGrp LOS	C	B			A	A	B	B	B			
Approach Vol, veh/h		841			882			1348				
Approach Delay, s/veh		14.8			8.4			16.6				
Approach LOS		B			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		24.7		33.5				33.5
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		30.0		30.0				30.0
Max Q Clear Time (g_c+I1), s		16.0		8.7				30.1
Green Ext Time (p_c), s		5.3		9.5				0.0

Intersection Summary	
HCM 2010 Ctrl Delay	13.8
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	350	200	50	280	0	60	0	30	250	240	40
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1845	1900	1845	1845	0	1900	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	0	365	150	52	292	0	62	0	2	255	257	36
Adj No. of Lanes	0	2	0	1	2	0	0	1	0	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	3	3	3	3	0	3	3	3	3	3	3
Cap, veh/h	0	475	192	750	2347	0	80	0	3	298	313	266
Arrive On Green	0.00	0.20	0.20	0.43	0.67	0.00	0.05	0.00	0.05	0.17	0.17	0.17
Sat Flow, veh/h	0	2505	973	1757	3597	0	1696	0	55	1757	1845	1568
Grp Volume(v), veh/h	0	263	252	52	292	0	64	0	0	255	257	36
Grp Sat Flow(s),veh/h/ln	0	1752	1633	1757	1752	0	1750	0	0	1757	1845	1568
Q Serve(g_s), s	0.0	15.6	16.1	1.9	3.3	0.0	4.0	0.0	0.0	15.5	14.8	2.1
Cycle Q Clear(g_c), s	0.0	15.6	16.1	1.9	3.3	0.0	4.0	0.0	0.0	15.5	14.8	2.1
Prop In Lane	0.00		0.60	1.00		0.00	0.97		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	0	345	322	750	2347	0	82	0	0	298	313	266
V/C Ratio(X)	0.00	0.76	0.78	0.07	0.12	0.00	0.78	0.00	0.00	0.86	0.82	0.14
Avail Cap(c_a), veh/h	0	558	520	750	2347	0	183	0	0	543	570	485
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	41.7	41.9	18.6	6.6	0.0	51.8	0.0	0.0	44.4	44.1	38.8
Incr Delay (d2), s/veh	0.0	14.7	17.1	0.0	0.1	0.0	5.7	0.0	0.0	2.8	2.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.9	8.8	0.9	1.6	0.0	2.1	0.0	0.0	7.7	7.7	0.9
LnGrp Delay(d),s/veh	0.0	56.4	59.0	18.6	6.7	0.0	57.6	0.0	0.0	47.1	46.1	38.9
LnGrp LOS		E	E	B	A		E			D	D	D
Approach Vol, veh/h		515			344			64			548	
Approach Delay, s/veh		57.7			8.5			57.6			46.1	
Approach LOS		E			A			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		78.7		8.7	52.0	26.7		22.7
Change Period (Y+Rc), s		5.0		3.5	5.0	* 5		4.0
Max Green Setting (Gmax), s		52.0		11.5	13.5	* 35		34.0
Max Q Clear Time (g_c+I1), s		5.3		6.0	3.9	18.1		17.5
Green Ext Time (p_c), s		2.2		0.1	1.3	3.1		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	41.9
HCM 2010 LOS	D

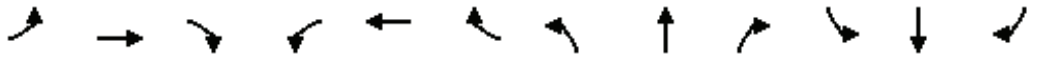
Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	210	420	0	0	190	580	140	0	260	0	0	0
Number	1	6	16	5	2	12	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1845	0	0	1845	1845	1845	0	1845			
Adj Flow Rate, veh/h	231	462	0	0	209	200	154	0	81			
Adj No. of Lanes	0	2	0	0	1	1	1	0	1			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	3	3	0	0	3	3	3	0	3			
Cap, veh/h	741	1489	0	0	1500	1247	185	0	165			
Arrive On Green	0.81	0.81	0.00	0.00	1.00	1.00	0.11	0.00	0.11			
Sat Flow, veh/h	839	1916	0	0	1845	1534	1757	0	1568			
Grp Volume(v), veh/h	293	400	0	0	209	200	154	0	81			
Grp Sat Flow(s),veh/h/ln	1077	1595	0	0	1845	1534	1757	0	1568			
Q Serve(g_s), s	6.8	6.9	0.0	0.0	0.0	0.0	9.5	0.0	5.4			
Cycle Q Clear(g_c), s	7.3	6.9	0.0	0.0	0.0	0.0	9.5	0.0	5.4			
Prop In Lane	0.79		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	934	1297	0	0	1500	1247	185	0	165			
V/C Ratio(X)	0.31	0.31	0.00	0.00	0.14	0.16	0.83	0.00	0.49			
Avail Cap(c_a), veh/h	934	1297	0	0	1500	1247	559	0	499			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.67	1.67	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	0.09	0.09	1.00	0.00	1.00			
Uniform Delay (d), s/veh	2.6	2.6	0.0	0.0	0.0	0.0	48.3	0.0	46.4			
Incr Delay (d2), s/veh	0.9	0.6	0.0	0.0	0.0	0.0	3.7	0.0	0.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.4	3.2	0.0	0.0	0.0	0.0	4.8	0.0	2.4			
LnGrp Delay(d),s/veh	3.4	3.2	0.0	0.0	0.0	0.0	52.0	0.0	47.3			
LnGrp LOS	A	A			A	A	D		D			
Approach Vol, veh/h		693			409			235				
Approach Delay, s/veh		3.3			0.0			50.4				
Approach LOS		A			A			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		93.4		16.6		93.4		
Change Period (Y+Rc), s		4.0		5.0		4.0		
Max Green Setting (Gmax), s		66.0		35.0		66.0		
Max Q Clear Time (g_c+I1), s		2.0		11.5		9.3		
Green Ext Time (p_c), s		13.2		0.1		13.0		

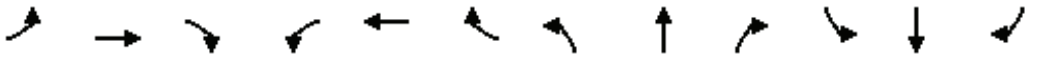
Intersection Summary	
HCM 2010 Ctrl Delay	10.6
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	110	270	300	110	480	170	150	530	130	200	510	140
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	117	287	39	117	511	160	160	564	24	213	543	132
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	123	635	529	142	476	149	168	589	491	224	503	122
Arrive On Green	0.02	0.11	0.11	0.16	0.70	0.70	0.09	0.32	0.32	0.13	0.35	0.35
Sat Flow, veh/h	1774	1863	1551	1774	1353	424	1774	1863	1553	1774	1445	351
Grp Volume(v), veh/h	117	287	39	117	0	671	160	564	24	213	0	675
Grp Sat Flow(s),veh/h/ln	1774	1863	1551	1774	0	1777	1774	1863	1553	1774	0	1796
Q Serve(g_s), s	7.2	15.8	2.5	7.0	0.0	38.7	9.9	32.7	1.2	13.1	0.0	38.3
Cycle Q Clear(g_c), s	7.2	15.8	2.5	7.0	0.0	38.7	9.9	32.7	1.2	13.1	0.0	38.3
Prop In Lane	1.00		1.00	1.00		0.24	1.00		1.00	1.00		0.20
Lane Grp Cap(c), veh/h	123	635	529	142	0	625	168	589	491	224	0	625
V/C Ratio(X)	0.95	0.45	0.07	0.82	0.00	1.07	0.95	0.96	0.05	0.95	0.00	1.08
Avail Cap(c_a), veh/h	123	635	529	234	0	625	168	589	491	224	0	625
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.91	0.34	0.00	0.34	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.6	39.2	33.3	45.4	0.0	16.3	49.6	36.9	26.1	47.7	0.0	35.9
Incr Delay (d2), s/veh	63.1	2.1	0.2	1.6	0.0	43.8	55.4	26.5	0.0	45.7	0.0	59.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	8.6	1.1	3.5	0.0	25.7	7.4	21.1	0.5	9.3	0.0	29.2
LnGrp Delay(d),s/veh	116.7	41.3	33.5	47.0	0.0	60.1	105.0	63.3	26.1	93.4	0.0	95.1
LnGrp LOS	F	D	C	D		F	F	E	C	F		F
Approach Vol, veh/h		443			788			748			888	
Approach Delay, s/veh		60.5			58.2			71.0			94.7	
Approach LOS		E			E			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	42.0	13.9	41.8	11.1	43.2	17.4	38.3
Change Period (Y+Rc), s	3.5	4.5	3.5	3.5	3.5	4.5	3.5	3.5
Max Green Setting (Gmax), s	14.5	31.8	10.4	38.3	7.6	38.7	13.9	34.8
Max Q Clear Time (g_c+I1), s	9.0	17.8	11.9	40.3	9.2	40.7	15.1	34.7
Green Ext Time (p_c), s	0.1	7.0	0.0	0.0	0.0	0.0	0.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	73.2
HCM 2010 LOS	E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	190	250	0	0	0	60	210	220	0	480	440
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900				1863	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	0	213	56				67	236	85	0	539	460
Adj No. of Lanes	1	1	0				1	1	0	0	1	1
Peak Hour Factor	0.89	0.89	0.89				0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2				2	2	2	0	2	2
Cap, veh/h	391	314	82				96	733	264	0	739	628
Arrive On Green	0.00	0.22	0.22				0.05	0.56	0.56	0.00	0.40	0.40
Sat Flow, veh/h	1774	1423	374				1774	1308	471	0	1863	1583
Grp Volume(v), veh/h	0	0	269				67	0	321	0	539	460
Grp Sat Flow(s),veh/h/ln	1774	0	1797				1774	0	1780	0	1863	1583
Q Serve(g_s), s	0.0	0.0	5.0				1.4	0.0	3.5	0.0	9.0	9.0
Cycle Q Clear(g_c), s	0.0	0.0	5.0				1.4	0.0	3.5	0.0	9.0	9.0
Prop In Lane	1.00		0.21				1.00		0.26	0.00		1.00
Lane Grp Cap(c), veh/h	391	0	396				96	0	997	0	739	628
V/C Ratio(X)	0.00	0.00	0.68				0.70	0.00	0.32	0.00	0.73	0.73
Avail Cap(c_a), veh/h	1507	0	1526				243	0	1268	0	868	738
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00				1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	13.0				17.0	0.0	4.3	0.0	9.3	9.4
Incr Delay (d2), s/veh	0.0	0.0	2.0				8.8	0.0	0.2	0.0	2.6	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	2.7				0.9	0.0	1.7	0.0	5.0	4.4
LnGrp Delay(d),s/veh	0.0	0.0	15.1				25.8	0.0	4.5	0.0	12.0	12.5
LnGrp LOS			B				C		A		B	B
Approach Vol, veh/h		269						388			999	
Approach Delay, s/veh		15.1						8.2			12.2	
Approach LOS		B						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		24.4		12.0	6.0	18.5		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		26.0		31.0	5.0	17.0		
Max Q Clear Time (g_c+I1), s		5.5		7.0	3.4	11.0		
Green Ext Time (p_c), s		7.4		1.6	0.0	3.5		

Intersection Summary	
HCM 2010 Ctrl Delay	11.7
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	40	20	10	40	30	340	10	110	20	300	390	40
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	43	22	11	43	33	370	11	120	22	326	424	43
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	378	179	67	144	66	467	128	613	106	753	691	70
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	611	507	189	84	188	1326	40	1474	254	1239	1660	168
Grp Volume(v), veh/h	76	0	0	446	0	0	153	0	0	326	0	467
Grp Sat Flow(s),veh/h/ln	1308	0	0	1598	0	0	1768	0	0	1239	0	1829
Q Serve(g_s), s	0.0	0.0	0.0	3.2	0.0	0.0	0.0	0.0	0.0	4.3	0.0	6.9
Cycle Q Clear(g_c), s	1.0	0.0	0.0	8.6	0.0	0.0	1.9	0.0	0.0	6.1	0.0	6.9
Prop In Lane	0.57		0.14	0.10		0.83	0.07		0.14	1.00		0.09
Lane Grp Cap(c), veh/h	624	0	0	677	0	0	847	0	0	753	0	761
V/C Ratio(X)	0.12	0.00	0.00	0.66	0.00	0.00	0.18	0.00	0.00	0.43	0.00	0.61
Avail Cap(c_a), veh/h	758	0	0	852	0	0	975	0	0	1528	0	1905
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.6	0.0	0.0	10.0	0.0	0.0	6.4	0.0	0.0	7.5	0.0	7.9
Incr Delay (d2), s/veh	0.1	0.0	0.0	1.3	0.0	0.0	0.1	0.0	0.0	0.4	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	4.0	0.0	0.0	0.9	0.0	0.0	2.3	0.0	3.5
LnGrp Delay(d),s/veh	7.7	0.0	0.0	11.3	0.0	0.0	6.5	0.0	0.0	7.9	0.0	8.7
LnGrp LOS	A			B			A			A		A
Approach Vol, veh/h		76			446			153			793	
Approach Delay, s/veh		7.7			11.3			6.5			8.4	
Approach LOS		A			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		18.4		16.2		18.4		16.2
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		17.0		16.0		36.0		16.0
Max Q Clear Time (g_c+I1), s		3.9		3.0		8.9		10.6
Green Ext Time (p_c), s		4.2		3.0		5.4		1.7

Intersection Summary	
HCM 2010 Ctrl Delay	9.0
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	380	150	260	450	160	150	180	100	170	470	140
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.96	0.99		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	59	447	124	306	529	162	176	212	89	200	553	146
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	266	699	194	549	679	208	131	447	188	376	512	135
Arrive On Green	1.00	1.00	1.00	0.50	0.50	0.50	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	748	1398	388	835	1358	416	744	1229	516	1063	1407	371
Grp Volume(v), veh/h	59	0	571	306	0	691	176	0	301	200	0	699
Grp Sat Flow(s),veh/h/ln	748	0	1785	835	0	1774	744	0	1745	1063	0	1779
Q Serve(g_s), s	3.3	0.0	0.0	15.9	0.0	17.6	0.0	0.0	7.3	9.8	0.0	20.0
Cycle Q Clear(g_c), s	20.8	0.0	0.0	15.9	0.0	17.6	20.0	0.0	7.3	17.1	0.0	20.0
Prop In Lane	1.00		0.22	1.00		0.23	1.00		0.30	1.00		0.21
Lane Grp Cap(c), veh/h	266	0	893	549	0	887	131	0	634	376	0	647
V/C Ratio(X)	0.22	0.00	0.64	0.56	0.00	0.78	1.34	0.00	0.47	0.53	0.00	1.08
Avail Cap(c_a), veh/h	266	0	893	549	0	887	131	0	634	376	0	647
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.78	0.00	0.78	1.00	0.00	1.00	0.92	0.00	0.92	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.7	0.0	0.0	10.8	0.0	11.3	27.5	0.0	13.5	20.0	0.0	17.5
Incr Delay (d2), s/veh	1.5	0.0	2.7	4.1	0.0	6.7	194.3	0.0	0.2	0.7	0.0	59.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.7	4.2	0.0	10.1	9.0	0.0	3.5	2.9	0.0	20.3
LnGrp Delay(d),s/veh	8.1	0.0	2.7	14.9	0.0	18.0	221.8	0.0	13.6	20.8	0.0	76.7
LnGrp LOS	A		A	B		B	F		B	C		F
Approach Vol, veh/h		630			997			477			899	
Approach Delay, s/veh		3.2			17.0			90.4			64.3	
Approach LOS		A			B			F			E	

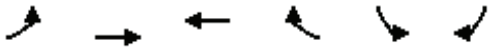
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		31.0		24.0		31.0		24.0
Change Period (Y+Rc), s		3.5		4.0		3.5		4.0
Max Green Setting (Gmax), s		27.5		20.0		27.5		20.0
Max Q Clear Time (g_c+I1), s		22.8		22.0		19.6		22.0
Green Ext Time (p_c), s		3.6		0.0		5.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	39.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	190	180	100	210	100	140	310	70	210	640	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	12	224	151	118	247	98	165	365	57	247	753	22
Adj No. of Lanes	0	1	0	0	1	1	1	1	0	1	1	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	58	291	187	157	284	645	181	746	117	416	858	25
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.48	0.48	0.48	0.48	0.48	0.48
Sat Flow, veh/h	2	713	458	205	698	1583	693	1565	244	958	1799	53
Grp Volume(v), veh/h	387	0	0	365	0	98	165	0	422	247	0	775
Grp Sat Flow(s),veh/h/ln	1173	0	0	903	0	1583	693	0	1809	958	0	1851
Q Serve(g_s), s	1.0	0.0	0.0	0.0	0.0	2.5	6.6	0.0	10.3	15.4	0.0	24.5
Cycle Q Clear(g_c), s	26.5	0.0	0.0	26.3	0.0	2.5	31.0	0.0	10.3	25.7	0.0	24.5
Prop In Lane	0.03		0.39	0.32		1.00	1.00		0.14	1.00		0.03
Lane Grp Cap(c), veh/h	535	0	0	441	0	645	181	0	863	416	0	883
V/C Ratio(X)	0.72	0.00	0.00	0.83	0.00	0.15	0.91	0.00	0.49	0.59	0.00	0.88
Avail Cap(c_a), veh/h	535	0	0	442	0	646	181	0	863	416	0	883
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.4	0.0	0.0	17.2	0.0	12.2	31.1	0.0	11.6	20.4	0.0	15.3
Incr Delay (d2), s/veh	4.8	0.0	0.0	12.3	0.0	0.1	42.9	0.0	0.4	2.3	0.0	10.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	0.0	0.0	8.0	0.0	1.1	5.1	0.0	5.3	4.3	0.0	14.7
LnGrp Delay(d),s/veh	20.1	0.0	0.0	29.4	0.0	12.3	74.0	0.0	12.0	22.6	0.0	25.3
LnGrp LOS	C			C		B	E		B	C		C
Approach Vol, veh/h		387			463			587			1022	
Approach Delay, s/veh		20.1			25.8			29.5			24.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		35.0		30.0		35.0		30.0
Change Period (Y+Rc), s		4.0		3.5		4.0		3.5
Max Green Setting (Gmax), s		31.0		26.5		31.0		26.5
Max Q Clear Time (g_c+I1), s		33.0		28.5		27.7		28.3
Green Ext Time (p_c), s		0.0		0.0		2.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	25.3
HCM 2010 LOS	C



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	260	40	80	160	240	400
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1583	1770	1583
Flt Permitted	0.70	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1304	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	286	44	88	176	264	440
RTOR Reduction (vph)	0	0	0	116	0	270
Lane Group Flow (vph)	286	44	88	60	264	170
Confl. Peds. (#/hr)					8	
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)	10.2	10.2	10.2	10.2	11.5	11.5
Effective Green, g (s)	10.2	10.2	10.2	10.2	11.5	11.5
Actuated g/C Ratio	0.34	0.34	0.34	0.34	0.39	0.39
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	447	639	639	543	685	612
v/s Ratio Prot		0.02	0.05		c0.15	
v/s Ratio Perm	c0.22			0.04		0.11
v/c Ratio	0.64	0.07	0.14	0.11	0.39	0.28
Uniform Delay, d1	8.2	6.6	6.7	6.7	6.6	6.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0	0.0	0.1	0.1	0.4	0.2
Delay (s)	11.2	6.6	6.8	6.7	6.9	6.5
Level of Service	B	A	A	A	A	A
Approach Delay (s)		10.6	6.8		6.7	
Approach LOS		B	A		A	

Intersection Summary			
HCM 2000 Control Delay	7.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	29.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	41.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	130	400	140	300	430	120	120	470	170	90	1080	200
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	143	440	69	330	473	55	132	516	152	99	1187	205
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	530	474	391	659	610	498	129	1012	296	124	1120	192
Arrive On Green	0.30	0.25	0.25	0.37	0.33	0.33	0.07	0.38	0.38	0.07	0.37	0.37
Sat Flow, veh/h	1774	1863	1535	1774	1863	1522	1774	2694	789	1774	3005	516
Grp Volume(v), veh/h	143	440	69	330	473	55	132	338	330	99	696	696
Grp Sat Flow(s),veh/h/ln	1774	1863	1535	1774	1863	1522	1774	1770	1713	1774	1770	1751
Q Serve(g_s), s	6.8	25.4	4.2	15.8	25.2	3.1	8.0	16.2	16.4	6.0	41.0	41.0
Cycle Q Clear(g_c), s	6.8	25.4	4.2	15.8	25.2	3.1	8.0	16.2	16.4	6.0	41.0	41.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.46	1.00		0.29
Lane Grp Cap(c), veh/h	530	474	391	659	610	498	129	665	643	124	660	653
V/C Ratio(X)	0.27	0.93	0.18	0.50	0.78	0.11	1.02	0.51	0.51	0.80	1.05	1.07
Avail Cap(c_a), veh/h	530	474	391	659	610	498	129	665	643	194	660	653
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.4	40.0	38.4	26.7	33.4	31.8	51.0	26.5	26.6	50.4	34.5	34.5
Incr Delay (d2), s/veh	0.1	26.8	1.0	0.2	9.4	0.4	85.5	0.3	0.3	5.5	50.4	54.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	16.6	1.9	7.7	14.5	1.4	7.0	7.9	7.8	3.2	29.2	29.6
LnGrp Delay(d),s/veh	29.5	66.8	39.4	26.9	42.7	32.3	136.8	26.8	26.9	55.9	84.9	88.8
LnGrp LOS	C	E	D	C	D	C	F	C	C	E	F	F
Approach Vol, veh/h		652			858			800			1491	
Approach Delay, s/veh		55.7			36.0			45.0			84.8	
Approach LOS		E			D			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	45.9	32.0	11.0	44.0	37.9	40.0	10.7	44.3
Change Period (Y+Rc), s	5.0	* 4	3.0	3.0	5.0	4.0	3.0	3.0
Max Green Setting (Gmax), s	20.0	* 28	8.0	41.0	10.0	36.0	12.0	37.0
Max Q Clear Time (g_c+I1), s	17.8	27.4	10.0	43.0	8.8	27.2	8.0	18.4
Green Ext Time (p_c), s	0.2	0.3	0.0	0.0	0.1	2.7	0.0	10.4

Intersection Summary	
HCM 2010 Ctrl Delay	60.4
HCM 2010 LOS	E

Notes

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	390	10	300	0	460	240	0	1220	300
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	0	1863	1863	0	1863	1900
Adj Flow Rate, veh/h				479	0	131	0	489	255	0	1298	267
Adj No. of Lanes				2	0	1	0	2	1	0	2	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				2	2	2	0	2	2	0	2	2
Cap, veh/h				706	0	314	0	2363	1032	0	1949	395
Arrive On Green				0.20	0.00	0.20	0.00	0.22	0.22	0.00	0.67	0.67
Sat Flow, veh/h				3548	0	1579	0	3632	1546	0	3012	592
Grp Volume(v), veh/h				479	0	131	0	489	255	0	779	786
Grp Sat Flow(s),veh/h/ln				1774	0	1579	0	1770	1546	0	1770	1741
Q Serve(g_s), s				7.5	0.0	4.3	0.0	6.8	8.2	0.0	15.7	16.4
Cycle Q Clear(g_c), s				7.5	0.0	4.3	0.0	6.8	8.2	0.0	15.7	16.4
Prop In Lane				1.00		1.00	0.00		1.00	0.00		0.34
Lane Grp Cap(c), veh/h				706	0	314	0	2363	1032	0	1182	1163
V/C Ratio(X)				0.68	0.00	0.42	0.00	0.21	0.25	0.00	0.66	0.68
Avail Cap(c_a), veh/h				1715	0	763	0	2363	1032	0	1182	1163
HCM Platoon Ratio				1.00	1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	0.72	0.72	0.00	1.00	1.00
Uniform Delay (d), s/veh				22.3	0.0	21.0	0.0	10.4	11.0	0.0	5.9	6.0
Incr Delay (d2), s/veh				1.2	0.0	0.9	0.0	0.1	0.4	0.0	2.9	3.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.8	0.0	2.0	0.0	3.4	3.6	0.0	8.3	8.7
LnGrp Delay(d),s/veh				23.4	0.0	21.9	0.0	10.6	11.4	0.0	8.8	9.2
LnGrp LOS				C		C		B	B		A	A
Approach Vol, veh/h					610			744			1565	
Approach Delay, s/veh					23.1			10.8			9.0	
Approach LOS					C			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		44.1				44.1		15.9
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		23.0				23.0		29.0
Max Q Clear Time (g_c+I1), s		10.2				18.4		9.5
Green Ext Time (p_c), s		10.6				4.2		2.1

Intersection Summary	
HCM 2010 Ctrl Delay	12.4
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

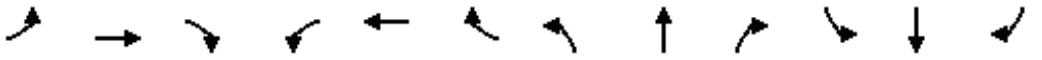
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	140	0	560	0	0	0	0	560	490	0	880	730
Number	3	8	18				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863				0	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	159	335	382				0	636	312	0	1000	830
Adj No. of Lanes	0	1	1				0	2	0	0	2	1
Peak Hour Factor	0.88	0.88	0.88				0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2				0	2	2	0	2	2
Cap, veh/h	201	423	539				0	1199	588	0	1863	832
Arrive On Green	0.34	0.34	0.34				0.00	1.00	1.00	0.00	0.35	0.35
Sat Flow, veh/h	590	1243	1583				0	2371	1117	0	3632	1580
Grp Volume(v), veh/h	494	0	382				0	494	454	0	1000	830
Grp Sat Flow(s),veh/h/ln	1833	0	1583				0	1770	1625	0	1770	1580
Q Serve(g_s), s	14.6	0.0	12.6				0.0	0.0	0.0	0.0	13.5	31.5
Cycle Q Clear(g_c), s	14.6	0.0	12.6				0.0	0.0	0.0	0.0	13.5	31.5
Prop In Lane	0.32		1.00				0.00		0.69	0.00		1.00
Lane Grp Cap(c), veh/h	624	0	539				0	931	855	0	1863	832
V/C Ratio(X)	0.79	0.00	0.71				0.00	0.53	0.53	0.00	0.54	1.00
Avail Cap(c_a), veh/h	917	0	792				0	931	855	0	1863	832
HCM Platoon Ratio	1.00	1.00	1.00				1.00	2.00	2.00	1.00	0.67	0.67
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.09	0.09	0.00	0.56	0.56
Uniform Delay (d), s/veh	17.9	0.0	17.2				0.0	0.0	0.0	0.0	13.6	19.4
Incr Delay (d2), s/veh	2.9	0.0	1.7				0.0	0.2	0.2	0.0	0.6	22.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	0.0	5.7				0.0	0.1	0.1	0.0	6.7	19.0
LnGrp Delay(d),s/veh	20.8	0.0	18.9				0.0	0.2	0.2	0.0	14.2	42.2
LnGrp LOS	C		B					A	A		B	D
Approach Vol, veh/h		876						948			1830	
Approach Delay, s/veh		20.0						0.2			26.9	
Approach LOS		B						A			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		35.6				35.6		24.4
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		22.0				22.0		30.0
Max Q Clear Time (g_c+I1), s		2.0				33.5		16.6
Green Ext Time (p_c), s		16.3				0.0		3.8

Intersection Summary	
HCM 2010 Ctrl Delay	18.3
HCM 2010 LOS	B

Notes

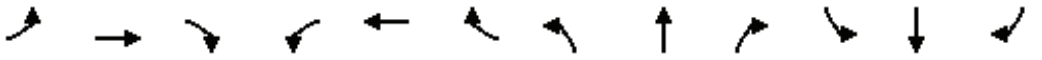
User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	100	20	80	10	10	30	100	920	50	300	910	230
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	109	22	41	11	11	0	109	1000	52	326	989	233
Adj No. of Lanes	1	1	0	1	1	0	0	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	89	65	120	58	178	0	170	1443	75	237	2124	499
Arrive On Green	0.05	0.11	0.11	0.03	0.10	0.00	0.58	0.58	0.58	0.27	1.00	1.00
Sat Flow, veh/h	1774	575	1071	1774	1863	0	228	2472	128	1774	2830	665
Grp Volume(v), veh/h	109	0	63	11	11	0	482	0	679	326	617	605
Grp Sat Flow(s),veh/h/ln	1774	0	1646	1774	1863	0	1156	0	1672	1774	1770	1726
Q Serve(g_s), s	6.0	0.0	4.2	0.7	0.6	0.0	26.7	0.0	34.2	16.0	0.0	0.0
Cycle Q Clear(g_c), s	6.0	0.0	4.2	0.7	0.6	0.0	32.2	0.0	34.2	16.0	0.0	0.0
Prop In Lane	1.00		0.65	1.00		0.00	0.23		0.08	1.00		0.39
Lane Grp Cap(c), veh/h	89	0	185	58	178	0	712	0	976	237	1328	1295
V/C Ratio(X)	1.23	0.00	0.34	0.19	0.06	0.00	0.68	0.00	0.70	1.38	0.46	0.47
Avail Cap(c_a), veh/h	89	0	521	74	574	0	712	0	976	237	1328	1295
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	0.29	0.00	0.29	0.77	0.77	0.77
Uniform Delay (d), s/veh	57.0	0.0	49.1	56.5	49.4	0.0	16.1	0.0	17.5	44.0	0.0	0.0
Incr Delay (d2), s/veh	169.3	0.0	0.4	0.6	0.1	0.0	1.5	0.0	1.2	189.4	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	0.0	1.9	0.4	0.3	0.0	11.1	0.0	16.0	20.2	0.3	0.3
LnGrp Delay(d),s/veh	226.3	0.0	49.5	57.0	49.4	0.0	17.6	0.0	18.7	233.4	0.9	0.9
LnGrp LOS	F		D	E	D		B		B	F	A	A
Approach Vol, veh/h		172			22			1161			1548	
Approach Delay, s/veh		161.5			53.2			18.3			49.9	
Approach LOS		F			D			B			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	20.0	74.6	10.0	15.4		94.6	7.9	17.5
Change Period (Y+Rc), s	4.0	4.5	4.0	4.0		4.5	4.0	4.0
Max Green Setting (Gmax), s	16.0	44.5	6.0	37.0		64.5	5.0	38.0
Max Q Clear Time (g_c+I1), s	18.0	36.2	8.0	2.6		2.0	2.7	6.2
Green Ext Time (p_c), s	0.0	7.9	0.0	0.3		48.2	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	43.9
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	350	220	90	60	80	140	40	450	250	270	290	220
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	368	232	0	63	84	18	42	474	228	284	305	0
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	412	1033	462	80	305	63	57	555	265	337	1408	0
Arrive On Green	0.23	0.29	0.00	0.05	0.11	0.11	0.03	0.24	0.24	0.19	0.40	0.00
Sat Flow, veh/h	1774	3539	1583	1774	2907	603	1774	2313	1105	1774	3632	0
Grp Volume(v), veh/h	368	232	0	63	50	52	42	362	340	284	305	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1740	1774	1770	1648	1774	1770	0
Q Serve(g_s), s	13.8	3.4	0.0	2.4	1.8	1.9	1.6	13.4	13.6	10.6	3.9	0.0
Cycle Q Clear(g_c), s	13.8	3.4	0.0	2.4	1.8	1.9	1.6	13.4	13.6	10.6	3.9	0.0
Prop In Lane	1.00		1.00	1.00		0.35	1.00		0.67	1.00		0.00
Lane Grp Cap(c), veh/h	412	1033	462	80	186	183	57	424	395	337	1408	0
V/C Ratio(X)	0.89	0.22	0.00	0.78	0.27	0.28	0.74	0.85	0.86	0.84	0.22	0.00
Avail Cap(c_a), veh/h	439	1699	760	206	618	607	155	438	408	516	1596	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.6	18.4	0.0	32.5	28.3	28.4	33.0	25.0	25.0	26.8	13.6	0.0
Incr Delay (d2), s/veh	19.4	0.1	0.0	15.2	0.8	0.8	16.8	14.7	16.5	7.6	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	1.7	0.0	1.5	0.9	1.0	1.0	8.3	7.9	5.9	1.9	0.0
LnGrp Delay(d),s/veh	45.0	18.5	0.0	47.7	29.1	29.2	49.8	39.6	41.5	34.4	13.7	0.0
LnGrp LOS	D	B		D	C	C	D	D	D	C	B	
Approach Vol, veh/h		600			165			744			589	
Approach Delay, s/veh		34.8			36.2			41.0			23.7	
Approach LOS		C			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.1	20.5	7.1	24.1	6.2	31.3	20.0	11.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	20.0	17.0	8.0	33.0	6.0	31.0	17.0	24.0
Max Q Clear Time (g_c+I1), s	12.6	15.6	4.4	5.4	3.6	5.9	15.8	3.9
Green Ext Time (p_c), s	0.5	0.9	0.0	2.1	0.0	7.6	0.2	2.0

Intersection Summary	
HCM 2010 Ctrl Delay	34.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	70	760	420	70	880	120	210	340	40	110	420	120
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.92	1.00		0.95	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	74	800	281	74	926	118	221	358	29	116	442	95
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	65	999	779	163	860	110	177	464	38	142	377	81
Arrive On Green	0.54	0.54	0.54	0.54	0.54	0.54	0.10	0.27	0.27	0.08	0.25	0.25
Sat Flow, veh/h	538	1863	1452	520	1603	204	1774	1692	137	1774	1480	318
Grp Volume(v), veh/h	74	800	281	74	0	1044	221	0	387	116	0	537
Grp Sat Flow(s),veh/h/ln	538	1863	1452	520	0	1807	1774	0	1829	1774	0	1798
Q Serve(g_s), s	0.0	38.4	12.2	14.8	0.0	59.0	11.0	0.0	21.4	7.1	0.0	28.0
Cycle Q Clear(g_c), s	59.0	38.4	12.2	53.2	0.0	59.0	11.0	0.0	21.4	7.1	0.0	28.0
Prop In Lane	1.00		1.00	1.00		0.11	1.00		0.07	1.00		0.18
Lane Grp Cap(c), veh/h	65	999	779	163	0	969	177	0	502	142	0	458
V/C Ratio(X)	1.13	0.80	0.36	0.45	0.00	1.08	1.25	0.00	0.77	0.82	0.00	1.17
Avail Cap(c_a), veh/h	65	999	779	163	0	969	177	0	502	145	0	458
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	55.0	20.7	14.7	42.4	0.0	25.5	49.5	0.0	36.7	49.8	0.0	41.0
Incr Delay (d2), s/veh	151.2	6.7	1.3	8.9	0.0	52.0	148.8	0.0	7.2	28.6	0.0	99.1
Initial Q Delay(d3),s/veh	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	21.4	5.1	2.5	0.0	43.1	12.7	0.0	11.9	4.6	0.0	26.4
LnGrp Delay(d),s/veh	206.5	27.5	16.0	51.2	0.0	77.5	198.3	0.0	44.0	78.4	0.0	140.1
LnGrp LOS	F	C	B	D		F	F		D	E		F
Approach Vol, veh/h		1155			1118			608			653	
Approach Delay, s/veh		36.1			75.8			100.1			129.1	
Approach LOS		D			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		63.0	15.0	32.0		63.0	12.8	34.2
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		59.0	11.0	28.0		59.0	9.0	30.0
Max Q Clear Time (g_c+I1), s		61.0	13.0	30.0		61.0	9.1	23.4
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	3.1

Intersection Summary	
HCM 2010 Ctrl Delay	76.9
HCM 2010 LOS	E

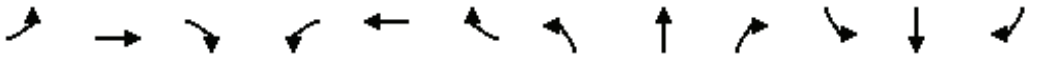
Notes

User approved ignoring U-Turning movement.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	780	180	360	180	150	350
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	867	200	400	200	167	0
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	902	750	432	1451	210	187
Arrive On Green	0.48	0.48	0.24	0.78	0.12	0.00
Sat Flow, veh/h	1863	1549	1774	1863	1774	1583
Grp Volume(v), veh/h	867	200	400	200	167	0
Grp Sat Flow(s),veh/h/ln	1863	1549	1774	1863	1774	1583
Q Serve(g_s), s	35.0	6.0	17.2	2.1	7.1	0.0
Cycle Q Clear(g_c), s	35.0	6.0	17.2	2.1	7.1	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	902	750	432	1451	210	187
V/C Ratio(X)	0.96	0.27	0.93	0.14	0.80	0.00
Avail Cap(c_a), veh/h	908	755	432	1457	250	223
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	19.4	11.9	28.8	2.1	33.5	0.0
Incr Delay (d2), s/veh	20.9	0.2	25.8	0.0	13.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.1	2.6	11.4	1.1	4.3	0.0
LnGrp Delay(d),s/veh	40.4	12.1	54.6	2.2	47.4	0.0
LnGrp LOS	D	B	D	A	D	
Approach Vol, veh/h	1067			600	167	
Approach Delay, s/veh	35.1			37.1	47.4	
Approach LOS	D			D	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		13.2	23.0	41.7				64.7
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		11.0	19.0	38.0				61.0
Max Q Clear Time (g_c+I1), s		9.1	19.2	37.0				4.1
Green Ext Time (p_c), s		0.1	0.0	0.7				11.9

Intersection Summary	
HCM 2010 Ctrl Delay	36.8
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	150	450	220	190	180	280	80	110	200	530	270	330
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1863	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	163	489	194	207	196	183	87	120	-47	576	293	339
Adj No. of Lanes	1	1	0	0	1	1	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	426	305	121	155	147	264	503	956	0	386	178	206
Arrive On Green	0.24	0.24	0.24	0.06	0.06	0.06	0.51	0.51	0.00	0.51	0.51	0.51
Sat Flow, veh/h	1774	1270	504	933	883	1583	791	1863	0	683	348	402
Grp Volume(v), veh/h	163	0	683	403	0	183	87	73	0	1208	0	0
Grp Sat Flow(s),veh/h/ln	1774	0	1774	1816	0	1583	791	1863	0	1433	0	0
Q Serve(g_s), s	11.5	0.0	36.0	25.0	0.0	17.0	0.0	3.0	0.0	74.0	0.0	0.0
Cycle Q Clear(g_c), s	11.5	0.0	36.0	25.0	0.0	17.0	7.9	3.0	0.0	77.0	0.0	0.0
Prop In Lane	1.00		0.28	0.51		1.00	1.00		0.00	0.48		0.28
Lane Grp Cap(c), veh/h	426	0	426	303	0	264	503	956	0	771	0	0
V/C Ratio(X)	0.38	0.00	1.60	1.33	0.00	0.69	0.17	0.08	0.00	1.57	0.00	0.00
Avail Cap(c_a), veh/h	426	0	426	303	0	264	503	956	0	771	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.84	0.00	0.84	1.00	1.00	0.00	0.33	0.00	0.00
Uniform Delay (d), s/veh	47.7	0.0	57.0	70.9	0.0	67.1	19.7	18.5	0.0	39.7	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	282.7	167.1	0.0	12.0	0.2	0.0	0.0	256.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	0.0	51.1	26.6	0.0	8.4	2.0	1.5	0.0	87.0	0.0	0.0
LnGrp Delay(d),s/veh	48.3	0.0	339.7	238.0	0.0	79.1	19.9	18.5	0.0	296.6	0.0	0.0
LnGrp LOS	D		F	F		E	B	B		F		
Approach Vol, veh/h		846			586			160			1208	
Approach Delay, s/veh		283.6			188.4			19.2			296.6	
Approach LOS		F			F			B			F	

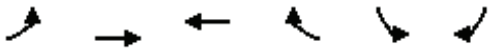
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		81.0		40.0		81.0		29.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		77.0		36.0		77.0		25.0
Max Q Clear Time (g_c+I1), s		9.9		38.0		79.0		27.0
Green Ext Time (p_c), s		23.6		0.0		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	254.2
HCM 2010 LOS	F

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	770	410	80	450	200	230
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	837	446	87	489	217	250
Adj No. of Lanes	1	0	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	840	448	95	1527	225	201
Arrive On Green	0.74	0.74	0.05	0.82	0.13	0.13
Sat Flow, veh/h	1135	605	1774	1863	1774	1583
Grp Volume(v), veh/h	0	1283	87	489	217	250
Grp Sat Flow(s),veh/h/ln	0	1740	1774	1863	1774	1583
Q Serve(g_s), s	0.0	109.4	7.3	9.6	18.3	19.0
Cycle Q Clear(g_c), s	0.0	109.4	7.3	9.6	18.3	19.0
Prop In Lane		0.35	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	1288	95	1527	225	201
V/C Ratio(X)	0.00	1.00	0.92	0.32	0.97	1.25
Avail Cap(c_a), veh/h	0	1288	95	1527	225	201
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.09	0.87	0.87	1.00	1.00
Uniform Delay (d), s/veh	0.0	19.3	70.7	3.3	65.2	65.5
Incr Delay (d2), s/veh	0.0	6.7	61.2	0.5	50.2	145.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	54.1	5.2	5.1	12.1	16.4
LnGrp Delay(d),s/veh	0.0	26.0	131.9	3.8	115.4	211.0
LnGrp LOS		C	F	A	F	F
Approach Vol, veh/h	1283			576	467	
Approach Delay, s/veh	26.0			23.1	166.6	
Approach LOS	C			C	F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		23.0	12.0	115.0				127.0
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		19.0	8.0	111.0				123.0
Max Q Clear Time (g_c+I1), s		21.0	9.3	111.4				11.6
Green Ext Time (p_c), s		0.0	0.0	0.0				39.8

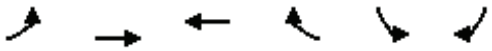
Intersection Summary	
HCM 2010 Ctrl Delay	53.5
HCM 2010 LOS	D



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	↱
Volume (veh/h)	0	860	520	0	950	520
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	0	905	547	0	1000	470
Adj No. of Lanes	0	1	1	0	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	779	779	0	742	662
Arrive On Green	0.00	0.42	0.56	0.00	0.42	0.42
Sat Flow, veh/h	0	1863	1863	0	1774	1583
Grp Volume(v), veh/h	0	905	547	0	1000	470
Grp Sat Flow(s),veh/h/ln	0	1863	1863	0	1774	1583
Q Serve(g_s), s	0.0	23.0	11.8	0.0	23.0	13.5
Cycle Q Clear(g_c), s	0.0	23.0	11.8	0.0	23.0	13.5
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	779	779	0	742	662
V/C Ratio(X)	0.00	1.16	0.70	0.00	1.35	0.71
Avail Cap(c_a), veh/h	0	779	779	0	742	662
HCM Platoon Ratio	1.00	1.00	1.33	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.98	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	16.0	9.7	0.0	16.0	13.2
Incr Delay (d2), s/veh	0.0	86.7	5.1	0.0	165.5	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	30.5	7.0	0.0	45.2	6.5
LnGrp Delay(d),s/veh	0.0	102.7	14.9	0.0	181.5	16.8
LnGrp LOS		F	B		F	B
Approach Vol, veh/h		905	547		1470	
Approach Delay, s/veh		102.7	14.9		128.8	
Approach LOS		F	B		F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		28.0		27.0		28.0		
Change Period (Y+Rc), s		5.0		4.0		5.0		
Max Green Setting (Gmax), s		23.0		23.0		23.0		
Max Q Clear Time (g_c+I1), s		25.0		25.0		13.8		
Green Ext Time (p_c), s		0.0		0.0		6.3		

Intersection Summary	
HCM 2010 Ctrl Delay	99.4
HCM 2010 LOS	F



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	20	1790	440	50	310	80
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98			0.92	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	21	1884	463	42	326	67
Adj No. of Lanes	0	2	2	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	76	2128	2013	182	340	70
Arrive On Green	1.00	1.00	0.62	0.62	0.24	0.24
Sat Flow, veh/h	14	3527	3350	294	1439	296
Grp Volume(v), veh/h	1022	883	250	255	394	0
Grp Sat Flow(s),veh/h/ln	1846	1610	1770	1781	1739	0
Q Serve(g_s), s	0.0	0.0	3.5	3.5	12.3	0.0
Cycle Q Clear(g_c), s	0.0	0.0	3.5	3.5	12.3	0.0
Prop In Lane	0.02			0.16	0.83	0.17
Lane Grp Cap(c), veh/h	1208	995	1094	1101	411	0
V/C Ratio(X)	0.85	0.89	0.23	0.23	0.96	0.00
Avail Cap(c_a), veh/h	1208	995	1094	1101	411	0
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	4.7	4.7	20.7	0.0
Incr Delay (d2), s/veh	0.7	1.2	0.5	0.5	33.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.3	1.8	1.8	9.7	0.0
LnGrp Delay(d),s/veh	0.7	1.2	5.2	5.2	54.3	0.0
LnGrp LOS	A	A	A	A	D	
Approach Vol, veh/h		1905	505		394	
Approach Delay, s/veh		1.0	5.2		54.3	
Approach LOS		A	A		D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		38.0		17.0		38.0		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		34.0		13.0		34.0		
Max Q Clear Time (g_c+I1), s		2.0		14.3		5.5		
Green Ext Time (p_c), s		24.3		0.0		22.2		

Intersection Summary	
HCM 2010 Ctrl Delay	9.2
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	210	30	880	120	440	90	520	570	0	0	730	240
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.62	1.00		0.88	1.00		1.00	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	221	0	721	126	463	16	547	600	0	0	768	149
Adj No. of Lanes	1	0	2	1	2	1	2	3	0	0	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	0	2	2
Cap, veh/h	244	0	819	485	968	380	597	2529	0	0	1058	447
Arrive On Green	0.14	0.00	0.14	0.27	0.27	0.27	0.17	0.50	0.00	0.00	0.30	0.30
Sat Flow, veh/h	1774	0	1964	1774	3539	1390	3442	5253	0	0	3632	1494
Grp Volume(v), veh/h	221	0	721	126	463	16	547	600	0	0	768	149
Grp Sat Flow(s),veh/h/ln	1774	0	982	1774	1770	1390	1721	1695	0	0	1770	1494
Q Serve(g_s), s	14.7	0.0	16.5	6.7	13.1	1.0	18.7	8.1	0.0	0.0	23.3	9.3
Cycle Q Clear(g_c), s	14.7	0.0	16.5	6.7	13.1	1.0	18.7	8.1	0.0	0.0	23.3	9.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	244	0	819	485	968	380	597	2529	0	0	1058	447
V/C Ratio(X)	0.91	0.00	0.88	0.26	0.48	0.04	0.92	0.24	0.00	0.00	0.73	0.33
Avail Cap(c_a), veh/h	244	0	819	532	1062	417	602	2529	0	0	1058	447
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	51.0	0.0	41.5	34.1	36.4	32.0	48.7	17.2	0.0	0.0	37.7	32.8
Incr Delay (d2), s/veh	33.7	0.0	10.9	0.3	0.4	0.0	18.8	0.2	0.0	0.0	4.4	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.5	0.0	12.7	3.3	6.5	0.4	10.5	3.8	0.0	0.0	12.1	4.1
LnGrp Delay(d),s/veh	84.7	0.0	52.4	34.4	36.8	32.1	67.6	17.4	0.0	0.0	42.0	34.8
LnGrp LOS	F		D	C	D	C	E	B			D	C
Approach Vol, veh/h		942			605			1147			917	
Approach Delay, s/veh		60.0			36.2			41.3			40.8	
Approach LOS		E			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		63.7		20.0	23.8	39.9		36.3
Change Period (Y+Rc), s		4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s		56.5		16.5	21.0	32.5		36.0
Max Q Clear Time (g_c+I1), s		10.1		18.5	20.7	25.3		15.1
Green Ext Time (p_c), s		14.5		0.0	0.1	5.0		3.5

Intersection Summary	
HCM 2010 Ctrl Delay	45.2
HCM 2010 LOS	D

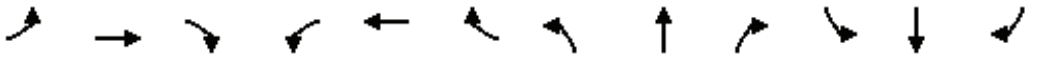
Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	350	300	470	690	60	70
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	368	316	495	726	63	74
Adj No. of Lanes	1	0	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	519	445	602	1460	147	132
Arrive On Green	0.56	0.56	0.16	0.78	0.08	0.08
Sat Flow, veh/h	927	796	1774	1863	1774	1583
Grp Volume(v), veh/h	0	684	495	726	63	74
Grp Sat Flow(s),veh/h/ln	0	1722	1774	1863	1774	1583
Q Serve(g_s), s	0.0	17.4	5.8	8.3	2.0	2.7
Cycle Q Clear(g_c), s	0.0	17.4	5.8	8.3	2.0	2.7
Prop In Lane		0.46	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	964	602	1460	147	132
V/C Ratio(X)	0.00	0.71	0.82	0.50	0.43	0.56
Avail Cap(c_a), veh/h	0	1666	1270	2920	533	475
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	9.6	9.8	2.3	26.1	26.4
Incr Delay (d2), s/veh	0.0	1.0	2.9	0.3	2.0	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.4	5.3	4.1	1.1	1.3
LnGrp Delay(d),s/veh	0.0	10.6	12.7	2.6	28.1	30.2
LnGrp LOS		B	B	A	C	C
Approach Vol, veh/h	684			1221	137	
Approach Delay, s/veh	10.6			6.7	29.2	
Approach LOS	B			A	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		9.0	13.4	37.6				51.0
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		18.0	32.0	58.0				94.0
Max Q Clear Time (g_c+I1), s		4.7	7.8	19.4				10.3
Green Ext Time (p_c), s		0.3	1.6	14.2				16.4

Intersection Summary	
HCM 2010 Ctrl Delay	9.5
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	70	90	100	450	190	50	130	1160	190	280	240	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	76	98	109	489	207	54	141	1261	207	304	261	33
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	2	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	97	74	82	473	433	113	169	1270	207	315	670	85
Arrive On Green	0.05	0.09	0.09	0.27	0.30	0.30	0.10	0.42	0.42	0.09	0.41	0.41
Sat Flow, veh/h	1774	807	897	1774	1425	372	1774	3048	497	3442	1622	205
Grp Volume(v), veh/h	76	0	207	489	0	261	141	728	740	304	0	294
Grp Sat Flow(s),veh/h/ln	1774	0	1704	1774	0	1797	1774	1770	1775	1721	0	1827
Q Serve(g_s), s	5.1	0.0	11.0	32.0	0.0	14.2	9.4	49.0	50.0	10.6	0.0	13.5
Cycle Q Clear(g_c), s	5.1	0.0	11.0	32.0	0.0	14.2	9.4	49.0	50.0	10.6	0.0	13.5
Prop In Lane	1.00		0.53	1.00		0.21	1.00		0.28	1.00		0.11
Lane Grp Cap(c), veh/h	97	0	156	473	0	546	169	737	740	315	0	755
V/C Ratio(X)	0.78	0.00	1.32	1.03	0.00	0.48	0.83	0.99	1.00	0.96	0.00	0.39
Avail Cap(c_a), veh/h	163	0	156	473	0	546	251	737	740	315	0	755
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.0	0.0	54.5	44.0	0.0	34.0	53.4	34.7	35.0	54.3	0.0	24.6
Incr Delay (d2), s/veh	12.9	0.0	183.6	50.3	0.0	0.7	14.1	30.0	33.1	40.8	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	13.1	22.2	0.0	7.1	5.2	30.0	31.2	6.8	0.0	6.8
LnGrp Delay(d),s/veh	68.9	0.0	238.1	94.3	0.0	34.7	67.5	64.7	68.1	95.1	0.0	25.0
LnGrp LOS	E		F	F		C	E	E	F	F		C
Approach Vol, veh/h		283			750			1609			598	
Approach Delay, s/veh		192.7			73.6			66.5			60.6	
Approach LOS		F			E			E			E	

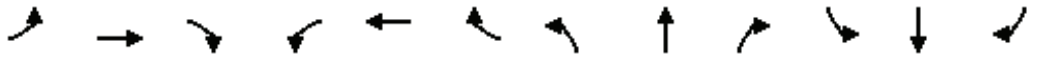
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	54.0	36.0	15.0	15.4	53.6	10.6	40.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	50.0	32.0	11.0	17.0	44.0	11.0	32.0
Max Q Clear Time (g_c+I1), s	12.6	52.0	34.0	13.0	11.4	15.5	7.1	16.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.2	15.7	0.0	2.6

Intersection Summary	
HCM 2010 Ctrl Delay	78.1
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	440	260	900	180	60	90	100	670	60	140	40
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	33	489	193	1000	200	60	100	111	252	67	156	36
Adj No. of Lanes	1	1	0	1	1	0	1	1	1	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	60	317	125	579	743	223	240	252	728	77	179	41
Arrive On Green	0.03	0.25	0.25	0.33	0.54	0.54	0.14	0.14	0.14	0.17	0.17	0.17
Sat Flow, veh/h	1774	1266	499	1774	1368	411	1774	1863	1560	462	1075	248
Grp Volume(v), veh/h	33	0	682	1000	0	260	100	111	252	259	0	0
Grp Sat Flow(s),veh/h/ln	1774	0	1765	1774	0	1779	1774	1863	1560	1785	0	0
Q Serve(g_s), s	2.4	0.0	33.0	43.0	0.0	10.3	6.8	7.2	13.7	18.6	0.0	0.0
Cycle Q Clear(g_c), s	2.4	0.0	33.0	43.0	0.0	10.3	6.8	7.2	13.7	18.6	0.0	0.0
Prop In Lane	1.00		0.28	1.00		0.23	1.00		1.00	0.26		0.14
Lane Grp Cap(c), veh/h	60	0	442	579	0	966	240	252	728	296	0	0
V/C Ratio(X)	0.55	0.00	1.54	1.73	0.00	0.27	0.42	0.44	0.35	0.87	0.00	0.00
Avail Cap(c_a), veh/h	418	0	442	579	0	966	391	410	861	393	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	62.6	0.0	49.3	44.3	0.0	16.1	52.2	52.4	22.7	53.6	0.0	0.0
Incr Delay (d2), s/veh	7.6	0.0	254.9	334.0	0.0	0.1	1.2	1.2	0.3	15.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	47.3	74.7	0.0	5.1	3.4	3.8	5.9	10.5	0.0	0.0
LnGrp Delay(d),s/veh	70.2	0.0	304.2	378.3	0.0	16.2	53.3	53.6	23.0	68.9	0.0	0.0
LnGrp LOS	E		F	F		B	D	D	C	E		
Approach Vol, veh/h		715			1260			463			259	
Approach Delay, s/veh		293.4			303.6			36.9			68.9	
Approach LOS		F			F			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	47.0	37.0		25.9	8.5	75.5		21.8
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	43.0	33.0		29.0	31.0	45.0		29.0
Max Q Clear Time (g_c+I1), s	45.0	35.0		20.6	4.4	12.3		15.7
Green Ext Time (p_c), s	0.0	0.0		0.9	0.1	7.8		1.5

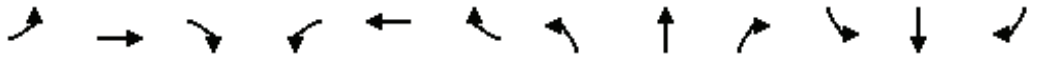
Intersection Summary	
HCM 2010 Ctrl Delay	232.6
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	650	10	150	80	710	0	0	750	550
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1900	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				739	11	22	91	807	0	0	852	0
Adj No. of Lanes				1	1	0	1	2	0	0	2	0
Peak Hour Factor				0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				720	225	451	107	1677	0	0	1252	0
Arrive On Green				0.41	0.41	0.41	0.06	0.47	0.00	0.00	0.35	0.00
Sat Flow, veh/h				1774	556	1111	1774	3632	0	0	3725	0
Grp Volume(v), veh/h				739	0	33	91	807	0	0	852	0
Grp Sat Flow(s),veh/h/ln				1774	0	1667	1774	1770	0	0	1770	0
Q Serve(g_s), s				27.0	0.0	0.8	3.4	10.3	0.0	0.0	13.6	0.0
Cycle Q Clear(g_c), s				27.0	0.0	0.8	3.4	10.3	0.0	0.0	13.6	0.0
Prop In Lane				1.00		0.67	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				720	0	676	107	1677	0	0	1252	0
V/C Ratio(X)				1.03	0.00	0.05	0.85	0.48	0.00	0.00	0.68	0.00
Avail Cap(c_a), veh/h				720	0	676	107	1862	0	0	1436	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				19.8	0.0	12.0	31.0	11.9	0.0	0.0	18.3	0.0
Incr Delay (d2), s/veh				40.4	0.0	0.0	44.9	0.2	0.0	0.0	1.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				21.1	0.0	0.4	3.0	5.1	0.0	0.0	6.8	0.0
LnGrp Delay(d),s/veh				60.2	0.0	12.0	75.9	12.1	0.0	0.0	19.4	0.0
LnGrp LOS				F		B	E	B			B	
Approach Vol, veh/h					772			898			852	
Approach Delay, s/veh					58.2			18.6			19.4	
Approach LOS					E			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		35.5			8.0	27.5		31.0
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		35.0			4.0	27.0		27.0
Max Q Clear Time (g_c+I1), s		12.3			5.4	15.6		29.0
Green Ext Time (p_c), s		12.8			0.0	7.9		0.0

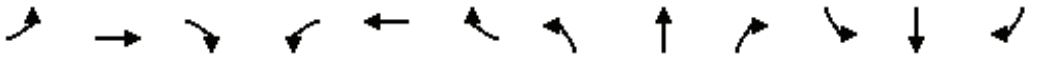
Intersection Summary	
HCM 2010 Ctrl Delay	31.0
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	950	280	170	420	0	0	0	0	520	40	720
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1863	1863	1900
Adj Flow Rate, veh/h	0	1033	249	185	457	0				565	43	719
Adj No. of Lanes	0	1	0	1	1	0				1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	908	219	96	1167	0				473	24	402
Arrive On Green	0.00	0.63	0.63	1.00	1.00	0.00				0.27	0.27	0.27
Sat Flow, veh/h	0	1448	349	429	1863	0				1774	90	1507
Grp Volume(v), veh/h	0	0	1282	185	457	0				565	0	762
Grp Sat Flow(s),veh/h/ln	0	0	1798	429	1863	0				1774	0	1597
Q Serve(g_s), s	0.0	0.0	47.0	0.0	0.0	0.0				20.0	0.0	20.0
Cycle Q Clear(g_c), s	0.0	0.0	47.0	47.0	0.0	0.0				20.0	0.0	20.0
Prop In Lane	0.00		0.19	1.00		0.00				1.00		0.94
Lane Grp Cap(c), veh/h	0	0	1126	96	1167	0				473	0	426
V/C Ratio(X)	0.00	0.00	1.14	1.93	0.39	0.00				1.19	0.00	1.79
Avail Cap(c_a), veh/h	0	0	1126	96	1167	0				473	0	426
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	0.57	0.57	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	14.0	23.5	0.0	0.0				27.5	0.0	27.5
Incr Delay (d2), s/veh	0.0	0.0	73.3	438.2	0.1	0.0				106.6	0.0	364.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	45.8	13.6	0.0	0.0				23.7	0.0	51.9
LnGrp Delay(d),s/veh	0.0	0.0	87.3	461.7	0.1	0.0				134.1	0.0	392.1
LnGrp LOS			F	F	A					F		F
Approach Vol, veh/h		1282			642						1327	
Approach Delay, s/veh		87.3			133.1						282.3	
Approach LOS		F			F						F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				51.0		24.0		51.0
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				47.0		20.0		47.0
Max Q Clear Time (g_c+I1), s				49.0		22.0		49.0
Green Ext Time (p_c), s				0.0		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	175.9
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	340	1130	0	0	510	480	80	20	120	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1900			
Adj Flow Rate, veh/h	382	1270	0	0	573	349	90	22	55			
Adj No. of Lanes	1	1	0	0	1	0	1	1	0			
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	459	1515	0	0	876	534	142	37	94			
Arrive On Green	1.00	1.00	0.00	0.00	0.81	0.81	0.08	0.08	0.08			
Sat Flow, veh/h	603	1863	0	0	1077	656	1774	468	1171			
Grp Volume(v), veh/h	382	1270	0	0	0	922	90	0	77			
Grp Sat Flow(s),veh/h/ln	603	1863	0	0	0	1733	1774	0	1639			
Q Serve(g_s), s	45.1	0.0	0.0	0.0	0.0	15.9	3.7	0.0	3.4			
Cycle Q Clear(g_c), s	61.0	0.0	0.0	0.0	0.0	15.9	3.7	0.0	3.4			
Prop In Lane	1.00		0.00	0.00		0.38	1.00		0.71			
Lane Grp Cap(c), veh/h	459	1515	0	0	0	1410	142	0	131			
V/C Ratio(X)	0.83	0.84	0.00	0.00	0.00	0.65	0.63	0.00	0.59			
Avail Cap(c_a), veh/h	459	1515	0	0	0	1410	142	0	131			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	0.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	9.1	0.0	0.0	0.0	0.0	2.8	33.4	0.0	33.3			
Incr Delay (d2), s/veh	1.3	0.4	0.0	0.0	0.0	1.1	19.6	0.0	17.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	8.0	0.2	0.0	0.0	0.0	7.6	2.6	0.0	2.2			
LnGrp Delay(d),s/veh	10.4	0.4	0.0	0.0	0.0	3.9	53.1	0.0	51.1			
LnGrp LOS	B	A				A	D		D			
Approach Vol, veh/h		1652			922			167				
Approach Delay, s/veh		2.7			3.9			52.2				
Approach LOS		A			A			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		10.0		65.0				65.0
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		6.0		61.0				61.0
Max Q Clear Time (g_c+I1), s		5.7		63.0				17.9
Green Ext Time (p_c), s		0.0		0.0				37.3

Intersection Summary	
HCM 2010 Ctrl Delay	6.1
HCM 2010 LOS	A

Notes

User approved changes to right turn type.

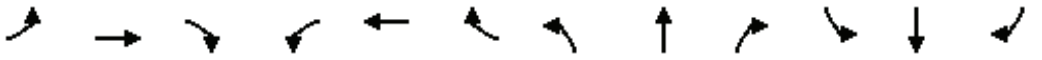
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	550	270	30	580	100	230	230	30	150	920	160
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.95	0.99		0.96	1.00		0.96	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	32	579	208	32	611	93	242	242	24	158	968	153
Adj No. of Lanes	0	2	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	73	1190	583	69	1087	162	272	1283	126	189	1059	167
Arrive On Green	0.39	0.39	0.39	0.39	0.39	0.39	0.15	0.40	0.40	0.11	0.35	0.35
Sat Flow, veh/h	93	3077	1507	85	2809	420	1774	3244	318	1774	3039	480
Grp Volume(v), veh/h	302	309	208	382	0	354	242	131	135	158	563	558
Grp Sat Flow(s),veh/h/ln	1560	1610	1507	1715	0	1598	1774	1770	1792	1774	1770	1749
Q Serve(g_s), s	0.8	15.7	10.6	1.6	0.0	18.8	14.4	5.2	5.3	9.4	32.9	32.9
Cycle Q Clear(g_c), s	19.7	15.7	10.6	17.3	0.0	18.8	14.4	5.2	5.3	9.4	32.9	32.9
Prop In Lane	0.11		1.00	0.08		0.26	1.00		0.18	1.00		0.27
Lane Grp Cap(c), veh/h	640	623	583	700	0	618	272	700	709	189	617	610
V/C Ratio(X)	0.47	0.50	0.36	0.55	0.00	0.57	0.89	0.19	0.19	0.84	0.91	0.91
Avail Cap(c_a), veh/h	640	623	583	700	0	618	345	700	709	427	639	632
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.00	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.3	25.1	23.6	25.5	0.0	26.1	44.8	21.3	21.3	47.3	33.6	33.7
Incr Delay (d2), s/veh	2.5	2.8	1.7	0.3	0.0	0.4	17.6	0.2	0.2	3.7	17.7	18.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	7.4	4.7	8.9	0.0	8.3	8.4	2.6	2.7	4.8	19.0	18.9
LnGrp Delay(d),s/veh	26.8	27.9	25.3	25.8	0.0	26.4	62.4	21.5	21.5	51.0	51.4	51.7
LnGrp LOS	C	C	C	C		C	E	C	C	D	D	D
Approach Vol, veh/h		819			736			508			1279	
Approach Delay, s/veh		26.8			26.1			41.0			51.5	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	20.6	41.6		45.8	15.5	46.7		45.8
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	21.0	39.0		36.0	26.0	34.0		36.0
Max Q Clear Time (g_c+I1), s	16.4	34.9		21.7	11.4	7.3		20.8
Green Ext Time (p_c), s	0.2	2.7		10.0	0.2	14.8		10.5

Intersection Summary	
HCM 2010 Ctrl Delay	38.3
HCM 2010 LOS	D

Notes

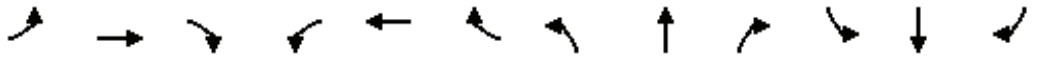
User approved ignoring U-Turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	320	140	120	250	90	60	600	70	100	1030	20
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90	1.00		0.92	1.00		0.96	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	30	323	125	121	253	80	61	606	64	101	1040	19
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	107	298	115	176	370	117	138	1424	150	156	1608	29
Arrive On Green	0.06	0.24	0.24	0.10	0.28	0.28	0.08	0.44	0.44	0.03	0.15	0.15
Sat Flow, veh/h	1774	1236	478	1774	1324	419	1774	3219	339	1774	3551	65
Grp Volume(v), veh/h	30	0	448	121	0	333	61	333	337	101	518	541
Grp Sat Flow(s),veh/h/ln	1774	0	1715	1774	0	1743	1774	1770	1788	1774	1770	1846
Q Serve(g_s), s	1.7	0.0	26.0	7.1	0.0	18.4	3.5	13.9	14.0	6.1	29.8	29.8
Cycle Q Clear(g_c), s	1.7	0.0	26.0	7.1	0.0	18.4	3.5	13.9	14.0	6.1	29.8	29.8
Prop In Lane	1.00		0.28	1.00		0.24	1.00		0.19	1.00		0.04
Lane Grp Cap(c), veh/h	107	0	413	176	0	487	138	783	791	156	801	836
V/C Ratio(X)	0.28	0.00	1.09	0.69	0.00	0.68	0.44	0.42	0.43	0.65	0.65	0.65
Avail Cap(c_a), veh/h	197	0	413	197	0	487	197	783	791	197	801	836
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.72	0.72	0.72
Uniform Delay (d), s/veh	48.5	0.0	41.0	47.0	0.0	34.7	47.6	20.7	20.7	50.8	37.8	37.8
Incr Delay (d2), s/veh	0.5	0.0	69.1	6.3	0.0	7.6	0.8	1.7	1.7	1.5	2.9	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	20.2	3.8	0.0	9.9	1.8	7.2	7.3	3.1	15.3	15.9
LnGrp Delay(d),s/veh	49.0	0.0	110.1	53.3	0.0	42.2	48.4	22.4	22.4	52.3	40.7	40.6
LnGrp LOS	D		F	D		D	D	C	C	D	D	D
Approach Vol, veh/h		478			454			731			1160	
Approach Delay, s/veh		106.3			45.2			24.5			41.7	
Approach LOS		F			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.4	52.9	13.7	30.0	12.5	51.8	9.5	34.2
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	12.0	44.0	12.0	26.0	12.0	44.0	12.0	26.0
Max Q Clear Time (g_c+I1), s	5.5	31.8	9.1	28.0	8.1	16.0	3.7	20.4
Green Ext Time (p_c), s	0.0	9.7	0.0	0.0	0.0	18.4	0.0	1.8

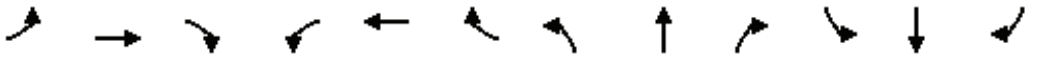
Intersection Summary	
HCM 2010 Ctrl Delay	48.7
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	720	180	150	800	0	0	0	0	200	1040	160
Number	7	4	14	3	8	18				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		1.00				1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	735	181	153	816	0				204	1061	150
Adj No. of Lanes	0	2	0	1	2	0				0	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1295	319	280	1659	0				199	1077	159
Arrive On Green	0.00	0.47	0.47	0.47	0.47	0.00				0.40	0.40	0.40
Sat Flow, veh/h	0	2857	680	605	3632	0				498	2704	399
Grp Volume(v), veh/h	0	471	445	153	816	0				753	0	662
Grp Sat Flow(s),veh/h/ln	0	1770	1674	605	1770	0				1838	0	1763
Q Serve(g_s), s	0.0	12.3	12.3	15.7	10.2	0.0				25.5	0.0	23.2
Cycle Q Clear(g_c), s	0.0	12.3	12.3	28.0	10.2	0.0				25.5	0.0	23.2
Prop In Lane	0.00		0.41	1.00		0.00				0.27		0.23
Lane Grp Cap(c), veh/h	0	830	785	280	1659	0				732	0	703
V/C Ratio(X)	0.00	0.57	0.57	0.55	0.49	0.00				1.03	0.00	0.94
Avail Cap(c_a), veh/h	0	830	785	280	1659	0				732	0	703
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	12.3	12.3	22.4	11.7	0.0				19.3	0.0	18.5
Incr Delay (d2), s/veh	0.0	0.6	0.6	1.3	0.1	0.0				40.5	0.0	20.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.0	5.7	2.7	4.9	0.0				21.1	0.0	15.3
LnGrp Delay(d),s/veh	0.0	12.9	12.9	23.7	11.8	0.0				59.8	0.0	39.4
LnGrp LOS		B	B	C	B					F		D
Approach Vol, veh/h		916			969						1415	
Approach Delay, s/veh		12.9			13.7						50.2	
Approach LOS		B			B						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		30.0		34.0				34.0
Change Period (Y+Rc), s		4.5		4.0				4.0
Max Green Setting (Gmax), s		25.5		30.0				30.0
Max Q Clear Time (g_c+I1), s		27.5		14.3				30.0
Green Ext Time (p_c), s		0.0		8.6				0.0

Intersection Summary	
HCM 2010 Ctrl Delay	29.1
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	210	700	0	0	730	130	210	900	100	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.93	1.00		0.93			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1900	1863	1900			
Adj Flow Rate, veh/h	221	737	0	0	768	116	221	947	92			
Adj No. of Lanes	1	2	0	0	2	0	0	3	0			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	285	1886	0	0	947	143	299	1374	137			
Arrive On Green	0.16	0.53	0.00	0.00	0.31	0.31	0.34	0.34	0.34			
Sat Flow, veh/h	1774	3632	0	0	3145	461	870	4003	398			
Grp Volume(v), veh/h	221	737	0	0	445	439	462	392	406			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1743	1819	1695	1757			
Q Serve(g_s), s	6.7	6.9	0.0	0.0	13.1	13.1	12.6	11.2	11.2			
Cycle Q Clear(g_c), s	6.7	6.9	0.0	0.0	13.1	13.1	12.6	11.2	11.2			
Prop In Lane	1.00		0.00	0.00		0.26	0.48		0.23			
Lane Grp Cap(c), veh/h	285	1886	0	0	549	541	624	582	603			
V/C Ratio(X)	0.78	0.39	0.00	0.00	0.81	0.81	0.74	0.67	0.67			
Avail Cap(c_a), veh/h	628	1886	0	0	642	632	805	750	777			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	22.7	7.8	0.0	0.0	18.0	18.0	16.3	15.9	15.9			
Incr Delay (d2), s/veh	1.7	0.0	0.0	0.0	5.7	5.8	1.8	0.8	0.7			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.5	3.4	0.0	0.0	7.2	7.1	6.6	5.3	5.5			
LnGrp Delay(d),s/veh	24.5	7.8	0.0	0.0	23.7	23.8	18.1	16.6	16.6			
LnGrp LOS	C	A			C	C	B	B	B			
Approach Vol, veh/h		958			884			1260				
Approach Delay, s/veh		11.7			23.7			17.2				
Approach LOS		B			C			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		22.9	12.6	21.0				33.6
Change Period (Y+Rc), s		3.5	3.5	3.5				3.5
Max Green Setting (Gmax), s		25.0	20.0	20.5				20.5
Max Q Clear Time (g_c+I1), s		14.6	8.7	15.1				8.9
Green Ext Time (p_c), s		4.4	0.7	2.0				3.1

Intersection Summary	
HCM 2010 Ctrl Delay	17.3
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	80	310	100	120	310	90	220	400	190	120	620	30
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90	1.00		0.89	1.00		0.94	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	86	333	51	129	333	84	237	430	141	129	667	30
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	1	1	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	108	452	346	156	376	95	266	843	677	159	690	31
Arrive On Green	0.06	0.24	0.24	0.09	0.27	0.27	0.15	0.45	0.45	0.09	0.39	0.39
Sat Flow, veh/h	1774	1863	1428	1774	1396	352	1774	1863	1496	1774	1764	79
Grp Volume(v), veh/h	86	333	51	129	0	417	237	430	141	129	0	697
Grp Sat Flow(s),veh/h/ln	1774	1863	1428	1774	0	1749	1774	1863	1496	1774	0	1843
Q Serve(g_s), s	5.5	19.0	3.2	8.2	0.0	26.3	15.1	18.9	6.6	8.2	0.0	42.6
Cycle Q Clear(g_c), s	5.5	19.0	3.2	8.2	0.0	26.3	15.1	18.9	6.6	8.2	0.0	42.6
Prop In Lane	1.00		1.00	1.00		0.20	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	108	452	346	156	0	471	266	843	677	159	0	721
V/C Ratio(X)	0.79	0.74	0.15	0.83	0.00	0.89	0.89	0.51	0.21	0.81	0.00	0.97
Avail Cap(c_a), veh/h	111	487	374	167	0	512	290	843	677	282	0	729
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.3	40.2	34.2	51.6	0.0	40.3	48.0	22.4	19.0	51.4	0.0	34.3
Incr Delay (d2), s/veh	31.8	5.7	0.2	27.6	0.0	16.3	26.5	0.6	0.2	11.4	0.0	25.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	10.4	1.3	5.2	0.0	14.9	9.3	9.8	2.7	4.5	0.0	26.7
LnGrp Delay(d),s/veh	85.1	45.8	34.4	79.2	0.0	56.6	74.4	23.0	19.2	62.8	0.0	59.5
LnGrp LOS	F	D	C	E		E	E	C	B	E		E
Approach Vol, veh/h		470			546			808			826	
Approach Delay, s/veh		51.8			62.0			37.4			60.0	
Approach LOS		D			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.7	32.0	13.8	55.5	10.6	35.1	20.8	48.5
Change Period (Y+Rc), s	3.6	4.1	3.5	3.5	3.6	4.1	3.6	3.5
Max Green Setting (Gmax), s	10.8	30.1	18.3	46.1	7.2	33.7	18.8	45.5
Max Q Clear Time (g_c+I1), s	10.2	21.0	10.2	20.9	7.5	28.3	17.1	44.6
Green Ext Time (p_c), s	0.0	4.0	0.2	11.6	0.0	2.7	0.2	0.4

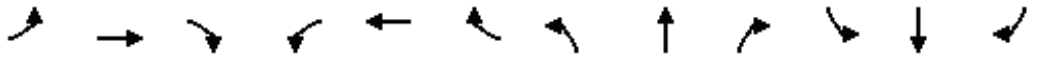
Intersection Summary	
HCM 2010 Ctrl Delay	52.1
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	110	730	20	60	850	90	10	70	50	200	210	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.98			1.00	0.95		1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		0.99	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99	1.00		0.98	1.00
Satd. Flow (prot)	1770	1849		1770	1806			1851	1497		1797	1559
Flt Permitted	0.10	1.00		0.22	1.00			0.82	1.00		0.80	1.00
Satd. Flow (perm)	192	1849		408	1806			1535	1497		1476	1559
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	117	777	21	64	904	96	11	74	53	213	223	117
RTOR Reduction (vph)	0	1	0	0	4	0	0	0	38	0	0	32
Lane Group Flow (vph)	117	797	0	64	996	0	0	85	15	0	436	85
Confl. Peds. (#/hr)	72		56	56		72	2		16	16		2
Confl. Bikes (#/hr)			6						6			2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	70.0	70.0		70.0	70.0			32.0	32.0		32.0	32.0
Effective Green, g (s)	70.0	70.0		70.0	70.0			32.0	32.0		32.0	32.0
Actuated g/C Ratio	0.64	0.64		0.64	0.64			0.29	0.29		0.29	0.29
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	2.0		2.0	2.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	122	1176		259	1149			446	435		429	453
v/s Ratio Prot		0.43			0.55							
v/s Ratio Perm	c0.61			0.16				0.06	0.01		c0.30	0.05
v/c Ratio	0.96	0.68		0.25	0.87			0.19	0.04		1.02	0.19
Uniform Delay, d1	18.7	12.8		8.6	16.2			29.3	27.9		39.0	29.3
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	71.1	3.2		2.3	8.9			0.2	0.0		47.6	0.2
Delay (s)	89.8	15.9		10.9	25.1			29.5	28.0		86.6	29.5
Level of Service	F	B		B	C			C	C		F	C
Approach Delay (s)		25.4			24.3			28.9			74.5	
Approach LOS		C			C			C			E	

Intersection Summary			
HCM 2000 Control Delay	35.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	97.3%	ICU Level of Service	F
Analysis Period (min)	15		

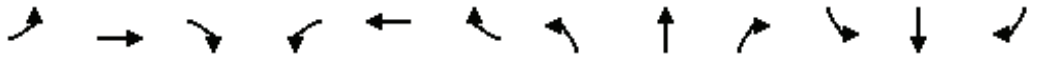
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	200	70	270	240	90	70	10	250	80	70	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1900	1900	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	11	230	80	310	276	103	80	11	287	92	80	23
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	586	1188	402	590	1152	418	513	61	537	449	482	139
Arrive On Green	0.47	0.47	0.47	0.78	0.78	0.78	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	979	2547	862	1044	2469	895	1021	172	1511	1056	1356	390
Grp Volume(v), veh/h	11	155	155	310	192	187	91	0	287	92	0	103
Grp Sat Flow(s),veh/h/ln	979	1736	1673	1044	1736	1629	1193	0	1511	1056	0	1746
Q Serve(g_s), s	0.3	2.3	2.5	8.3	1.3	1.4	1.9	0.0	6.8	3.1	0.0	1.8
Cycle Q Clear(g_c), s	1.7	2.3	2.5	10.7	1.3	1.4	3.7	0.0	6.8	6.8	0.0	1.8
Prop In Lane	1.00		0.52	1.00		0.55	0.88		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	586	810	781	590	810	760	574	0	537	449	0	621
V/C Ratio(X)	0.02	0.19	0.20	0.53	0.24	0.25	0.16	0.00	0.53	0.21	0.00	0.17
Avail Cap(c_a), veh/h	586	810	781	590	810	760	574	0	537	449	0	621
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.85	0.85	0.85	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.3	7.0	7.1	4.6	2.8	2.8	10.9	0.0	11.5	13.0	0.0	9.9
Incr Delay (d2), s/veh	0.1	0.5	0.6	2.8	0.6	0.7	0.6	0.0	3.8	1.0	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.2	1.2	2.6	0.7	0.7	0.9	0.0	3.4	1.0	0.0	1.0
LnGrp Delay(d),s/veh	7.3	7.6	7.6	7.4	3.4	3.5	11.5	0.0	15.3	14.1	0.0	10.5
LnGrp LOS	A	A	A	A	A	A	B		B	B		B
Approach Vol, veh/h		321			689			378			195	
Approach Delay, s/veh		7.6			5.2			14.4			12.2	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		20.0		25.0		20.0		25.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		16.0		21.0		16.0		21.0
Max Q Clear Time (g_c+I1), s		8.8		4.5		8.8		12.7
Green Ext Time (p_c), s		1.6		5.4		1.6		3.7

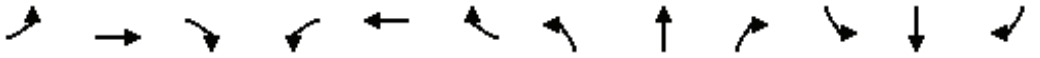
Intersection Summary	
HCM 2010 Ctrl Delay	8.7
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	90	440	0	0	470	340	130	0	100	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1845	1845	0	0	1845	1900	1845	1845	1900			
Adj Flow Rate, veh/h	105	512	0	0	547	395	151	0	116			
Adj No. of Lanes	1	2	0	0	2	0	1	1	0			
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	276	1636	0	0	889	642	625	0	557			
Arrive On Green	0.93	0.93	0.00	0.00	0.15	0.15	0.36	0.00	0.36			
Sat Flow, veh/h	586	3597	0	0	1996	1375	1757	0	1568			
Grp Volume(v), veh/h	105	512	0	0	503	439	151	0	116			
Grp Sat Flow(s),veh/h/ln	586	1752	0	0	1752	1526	1757	0	1568			
Q Serve(g_s), s	7.6	0.6	0.0	0.0	12.1	12.1	2.7	0.0	2.3			
Cycle Q Clear(g_c), s	19.7	0.6	0.0	0.0	12.1	12.1	2.7	0.0	2.3			
Prop In Lane	1.00		0.00	0.00		0.90	1.00		1.00			
Lane Grp Cap(c), veh/h	276	1636	0	0	818	712	625	0	557			
V/C Ratio(X)	0.38	0.31	0.00	0.00	0.62	0.62	0.24	0.00	0.21			
Avail Cap(c_a), veh/h	276	1636	0	0	818	712	625	0	557			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00			
Upstream Filter(I)	0.97	0.97	0.00	0.00	0.97	0.97	1.00	0.00	1.00			
Uniform Delay (d), s/veh	7.1	0.8	0.0	0.0	15.3	15.3	10.2	0.0	10.1			
Incr Delay (d2), s/veh	3.8	0.5	0.0	0.0	3.4	3.8	0.9	0.0	0.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.5	0.3	0.0	0.0	6.6	5.8	1.5	0.0	1.1			
LnGrp Delay(d),s/veh	11.0	1.3	0.0	0.0	18.6	19.1	11.1	0.0	10.9			
LnGrp LOS	B	A			B	B	B		B			
Approach Vol, veh/h		617			942			267				
Approach Delay, s/veh		3.0			18.8			11.1				
Approach LOS		A			B			B				

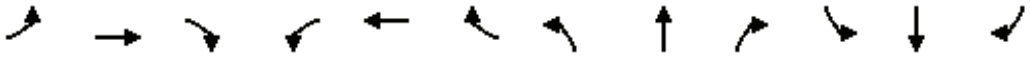
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		20.0		25.0				25.0
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		16.0		21.0				21.0
Max Q Clear Time (g_c+I1), s		4.7		21.7				14.1
Green Ext Time (p_c), s		0.9		0.0				5.1

Intersection Summary	
HCM 2010 Ctrl Delay	12.3
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	490	110	270	480	60	30	40	50	80	200	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0		3.0	4.0			2.0			2.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00			1.00			0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.98			0.94			0.95	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	
Satd. Flow (prot)	1719	3320		1719	3371			1687			1699	
Flt Permitted	0.95	1.00		0.95	1.00			0.80			0.93	
Satd. Flow (perm)	1719	3320		1719	3371			1359			1592	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	52	510	115	281	500	62	31	42	52	83	208	156
RTOR Reduction (vph)	0	21	0	0	10	0	0	0	0	0	21	0
Lane Group Flow (vph)	52	604	0	281	552	0	0	125	0	0	426	0
Confl. Peds. (#/hr)			6			10						4
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1 3	3 6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	4.0	17.6		38.9	52.5			24.5			24.5	
Effective Green, g (s)	4.0	17.6		34.9	52.5			24.5			24.5	
Actuated g/C Ratio	0.04	0.20		0.39	0.58			0.27			0.27	
Clearance Time (s)	3.0	4.0						2.0			2.0	
Vehicle Extension (s)	3.0	3.0						3.0			3.0	
Lane Grp Cap (vph)	76	649		666	1966			369			433	
v/s Ratio Prot	0.03	c0.18		c0.16	0.16							
v/s Ratio Perm								0.09			c0.27	
v/c Ratio	0.68	0.93		0.42	0.28			0.34			0.98	
Uniform Delay, d1	42.4	35.6		20.2	9.3			26.3			32.6	
Progression Factor	0.87	0.85		0.85	0.16			1.00			1.00	
Incremental Delay, d2	22.1	21.6		0.2	0.0			0.5			38.7	
Delay (s)	58.9	51.7		17.5	1.5			26.8			71.2	
Level of Service	E	D		B	A			C			E	
Approach Delay (s)		52.3			6.8			26.8			71.2	
Approach LOS		D			A			C			E	

Intersection Summary			
HCM 2000 Control Delay	36.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	140	620	0	0	730	240	70	10	280	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Lane Util. Factor	1.00	0.95			*1.00		1.00	0.95	0.95			
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Frt	1.00	1.00			0.96		1.00	0.86	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	1752	3505			3520		1752	1507	1490			
Flt Permitted	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	1752	3505			3520		1752	1507	1490			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	146	646	0	0	760	250	73	10	292	0	0	0
RTOR Reduction (vph)	0	0	0	0	33	0	0	129	135	0	0	0
Lane Group Flow (vph)	146	646	0	0	977	0	73	24	14	0	0	0
Confl. Peds. (#/hr)			8	8		16						
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	12.7	73.9			58.2		8.6	8.6	8.6			
Effective Green, g (s)	12.7	73.9			58.2		8.6	8.6	8.6			
Actuated g/C Ratio	0.14	0.82			0.65		0.10	0.10	0.10			
Clearance Time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	247	2877			2276		167	144	142			
v/s Ratio Prot	c0.08	0.18			c0.28			0.02				
v/s Ratio Perm							c0.04		0.01			
v/c Ratio	0.59	0.22			0.43		0.44	0.16	0.10			
Uniform Delay, d1	36.2	1.8			7.8		38.4	37.4	37.2			
Progression Factor	0.51	0.23			1.00		1.00	1.00	1.00			
Incremental Delay, d2	3.5	0.2			0.6		1.8	0.5	0.3			
Delay (s)	21.9	0.6			8.4		40.2	37.9	37.5			
Level of Service	C	A			A		D	D	D			
Approach Delay (s)		4.5			8.4			38.2			0.0	
Approach LOS		A			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	12.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	52.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	170	350	160	100	400	40	90	590	70	60	820	190
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	1.00		0.87	1.00		0.95	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	181	372	58	106	426	37	96	628	67	64	872	183
Adj No. of Lanes	1	1	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	197	673	518	0	723	62	155	1470	157	140	1303	273
Arrive On Green	0.04	0.12	0.12	0.00	0.22	0.22	0.03	0.15	0.15	0.08	0.45	0.45
Sat Flow, veh/h	1774	1863	1433	0	3252	280	1774	3210	342	1774	2899	608
Grp Volume(v), veh/h	181	372	58	0	230	233	96	346	349	64	532	523
Grp Sat Flow(s),veh/h/ln	1774	1863	1433	0	1770	1762	1774	1770	1783	1774	1770	1738
Q Serve(g_s), s	11.0	20.3	3.9	0.0	12.6	12.8	5.8	19.1	19.2	3.7	25.6	25.6
Cycle Q Clear(g_c), s	11.0	20.3	3.9	0.0	12.6	12.8	5.8	19.1	19.2	3.7	25.6	25.6
Prop In Lane	1.00		1.00	0.00		0.16	1.00		0.19	1.00		0.35
Lane Grp Cap(c), veh/h	197	673	518	0	393	392	155	810	816	140	795	781
V/C Ratio(X)	0.92	0.55	0.11	0.00	0.59	0.59	0.62	0.43	0.43	0.46	0.67	0.67
Avail Cap(c_a), veh/h	197	673	518	0	426	424	197	810	816	197	795	781
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.76	0.76	0.76	0.00	1.00	1.00	0.89	0.89	0.89	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.5	39.3	32.1	0.0	37.5	37.6	50.7	33.0	33.0	47.5	23.4	23.4
Incr Delay (d2), s/veh	34.3	0.4	0.0	0.0	1.0	1.1	1.3	1.5	1.5	0.9	4.4	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	10.6	1.6	0.0	6.2	6.3	2.9	9.7	9.8	1.9	13.4	13.2
LnGrp Delay(d),s/veh	85.8	39.8	32.1	0.0	38.5	38.8	52.0	34.4	34.5	48.4	27.8	27.9
LnGrp LOS	F	D	C		D	D	D	C	C	D	C	C
Approach Vol, veh/h		611			463			791			1119	
Approach Delay, s/veh		52.7			38.6			36.6			29.1	
Approach LOS		D			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.5	53.5	0.0	43.0	12.4	52.5	15.0	28.0
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	12.0	44.0	12.0	26.0	12.0	44.0	12.0	26.0
Max Q Clear Time (g_c+I1), s	5.7	21.2	0.0	22.3	7.8	27.6	13.0	14.8
Green Ext Time (p_c), s	0.0	16.2	0.0	1.4	0.0	12.5	0.0	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	37.4
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	280	290	50	80	230	40	30	190	90	180	220	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1787	3496		1770	3539	1583	1128	2137		1340	1405	1244
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1787	3496		1770	3539	1583	1128	2137		1340	1405	1244
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	326	337	58	93	267	47	35	221	105	209	256	314
RTOR Reduction (vph)	0	13	0	0	0	39	0	54	0	0	0	230
Lane Group Flow (vph)	326	382	0	93	267	8	35	272	0	188	277	84
Confl. Bikes (#/hr)									2			2
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	60%	60%	60%	28%	28%	28%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases						2						8
Actuated Green, G (s)	14.8	22.4		6.6	14.2	14.2	17.2	17.2		23.3	23.3	23.3
Effective Green, g (s)	14.8	22.4		6.6	14.2	14.2	17.2	17.2		23.3	23.3	23.3
Actuated g/C Ratio	0.17	0.26		0.08	0.16	0.16	0.20	0.20		0.27	0.27	0.27
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Vehicle Extension (s)	2.0	4.0		2.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Grp Cap (vph)	303	900		134	577	258	223	422		358	376	333
v/s Ratio Prot	c0.18	c0.11		0.05	0.08		0.03	c0.13		0.14	c0.20	
v/s Ratio Perm						0.00						0.07
v/c Ratio	1.08	0.42		0.69	0.46	0.03	0.16	0.65		0.53	0.74	0.25
Uniform Delay, d1	36.1	26.9		39.2	32.9	30.6	28.9	32.1		27.1	29.1	25.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	73.4	0.4		11.8	0.8	0.1	0.5	3.8		1.8	7.8	0.5
Delay (s)	109.5	27.4		51.1	33.8	30.7	29.3	35.9		28.9	36.9	25.6
Level of Service	F	C		D	C	C	C	D		C	D	C
Approach Delay (s)		64.5			37.3			35.2			30.4	
Approach LOS		E			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	43.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	87.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	510	110	310	490	0	0	0	0	250	40	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			3.0						4.0	4.0
Lane Util. Factor		0.95			*1.00						1.00	1.00
Frpb, ped/bikes		0.99			1.00						1.00	1.00
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.97			1.00						1.00	0.85
Flt Protected		1.00			0.98						0.96	1.00
Satd. Flow (prot)		3293			5275						1718	1524
Flt Permitted		1.00			0.76						0.96	1.00
Satd. Flow (perm)		3293			4104						1718	1524
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	531	115	323	510	0	0	0	0	260	42	333
RTOR Reduction (vph)	0	19	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	627	0	0	833	0	0	0	0	0	302	333
Confl. Peds. (#/hr)			6			5						
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Turn Type		NA		Prot	NA					Split	NA	Perm
Protected Phases		2 4		1	1 6					3	3	
Permitted Phases												3
Actuated Green, G (s)		46.1			23.6						24.9	24.9
Effective Green, g (s)		46.1			23.6						24.9	24.9
Actuated g/C Ratio		0.51			0.26						0.28	0.28
Clearance Time (s)											4.0	4.0
Vehicle Extension (s)											3.0	3.0
Lane Grp Cap (vph)		1686			1206						475	421
v/s Ratio Prot		c0.19			c0.08						0.18	
v/s Ratio Perm					c0.10							c0.22
v/c Ratio		0.37			1.71dl						0.64	0.79
Uniform Delay, d1		13.2			29.9						28.6	30.1
Progression Factor		0.08			0.92						1.00	1.00
Incremental Delay, d2		0.1			1.6						2.8	9.8
Delay (s)		1.1			29.2						31.4	39.9
Level of Service		A			C						C	D
Approach Delay (s)		1.1			29.2			0.0			35.8	
Approach LOS		A			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	22.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	640	170	140	620	0	0	0	0	180	750	140
Number	3	8	18	7	4	14				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00				1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1900	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	640	120	140	620	0				180	750	122
Adj No. of Lanes	0	2	1	0	2	0				0	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1413	611	207	900	0				285	1244	212
Arrive On Green	0.00	0.40	0.40	0.40	0.40	0.00				0.48	0.48	0.48
Sat Flow, veh/h	0	3632	1530	305	2339	0				588	2570	438
Grp Volume(v), veh/h	0	640	120	337	423	0				561	0	491
Grp Sat Flow(s),veh/h/ln	0	1770	1530	950	1610	0				1833	0	1763
Q Serve(g_s), s	0.0	8.0	3.1	12.7	12.8	0.0				13.6	0.0	11.9
Cycle Q Clear(g_c), s	0.0	8.0	3.1	20.7	12.8	0.0				13.6	0.0	11.9
Prop In Lane	0.00		1.00	0.41		0.00				0.32		0.25
Lane Grp Cap(c), veh/h	0	1413	611	464	643	0				888	0	854
V/C Ratio(X)	0.00	0.45	0.20	0.73	0.66	0.00				0.63	0.00	0.58
Avail Cap(c_a), veh/h	0	1445	625	474	658	0				888	0	854
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.94	0.94	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	13.2	11.8	17.5	14.7	0.0				11.5	0.0	11.1
Incr Delay (d2), s/veh	0.0	0.1	0.1	4.4	1.7	0.0				3.4	0.0	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.8	1.3	5.8	5.9	0.0				7.7	0.0	6.4
LnGrp Delay(d),s/veh	0.0	13.3	11.8	22.0	16.4	0.0				14.9	0.0	13.9
LnGrp LOS		B	B	C	B					B		B
Approach Vol, veh/h		760			760						1052	
Approach Delay, s/veh		13.1			18.9						14.4	
Approach LOS		B			B						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		32.5		27.5				27.5
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		28.5		24.5				24.5
Max Q Clear Time (g_c+I1), s		15.6		22.7				10.0
Green Ext Time (p_c), s		4.0		1.3				6.4

Intersection Summary	
HCM 2010 Ctrl Delay	15.3
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	230	590	0	0	510	250	250	1600	210	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	0.98		1.00	1.00		0.90	1.00		0.97			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1863	1900	1863	1900			
Adj Flow Rate, veh/h	235	602	0	0	520	250	255	1633	194			
Adj No. of Lanes	0	2	0	0	2	1	0	3	0			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	308	811	0	0	1590	637	272	1858	226			
Arrive On Green	0.45	0.45	0.00	0.00	0.45	0.45	0.45	0.45	0.45			
Sat Flow, veh/h	476	1889	0	0	3632	1417	610	4166	506			
Grp Volume(v), veh/h	319	518	0	0	520	250	766	643	673			
Grp Sat Flow(s),veh/h/ln	670	1610	0	0	1770	1417	1832	1695	1754			
Q Serve(g_s), s	23.7	17.4	0.0	0.0	6.3	7.9	26.6	22.6	23.0			
Cycle Q Clear(g_c), s	30.0	17.4	0.0	0.0	6.3	7.9	26.6	22.6	23.0			
Prop In Lane	0.74		0.00	0.00		1.00	0.33		0.29			
Lane Grp Cap(c), veh/h	395	723	0	0	1590	637	817	756	782			
V/C Ratio(X)	0.81	0.72	0.00	0.00	0.33	0.39	0.94	0.85	0.86			
Avail Cap(c_a), veh/h	395	723	0	0	1590	637	823	762	788			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	21.6	14.9	0.0	0.0	11.9	12.3	17.6	16.5	16.6			
Incr Delay (d2), s/veh	11.0	2.9	0.0	0.0	0.0	0.1	17.7	8.6	9.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	7.0	8.2	0.0	0.0	3.0	3.1	17.2	12.3	13.0			
LnGrp Delay(d),s/veh	32.7	17.9	0.0	0.0	11.9	12.4	35.4	25.1	25.7			
LnGrp LOS	C	B			B	B	D	C	C			
Approach Vol, veh/h		837			770			2082				
Approach Delay, s/veh		23.5			12.1			29.1				
Approach LOS		C			B			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		33.3		33.5				33.5
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		30.0		30.0				30.0
Max Q Clear Time (g_c+I1), s		28.6		9.9				32.0
Green Ext Time (p_c), s		1.2		8.2				0.0

Intersection Summary	
HCM 2010 Ctrl Delay	24.3
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	300	150	40	260	0	90	0	50	260	110	50
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1845	1900	1845	1845	0	1900	1845	1900	1845	1845	1845
Adj Flow Rate, veh/h	0	337	124	45	292	0	101	0	4	208	242	45
Adj No. of Lanes	0	2	0	1	2	0	0	1	0	1	1	1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	3	3	3	3	0	3	3	3	3	3	3
Cap, veh/h	0	449	162	681	2149	0	176	0	7	272	286	243
Arrive On Green	0.00	0.18	0.18	0.39	0.61	0.00	0.10	0.00	0.10	0.15	0.15	0.15
Sat Flow, veh/h	0	2586	898	1757	3597	0	1682	0	67	1757	1845	1568
Grp Volume(v), veh/h	0	235	226	45	292	0	105	0	0	208	242	45
Grp Sat Flow(s),veh/h/ln	0	1752	1639	1757	1752	0	1749	0	0	1757	1845	1568
Q Serve(g_s), s	0.0	13.9	14.5	1.8	3.9	0.0	6.3	0.0	0.0	12.5	14.0	2.7
Cycle Q Clear(g_c), s	0.0	13.9	14.5	1.8	3.9	0.0	6.3	0.0	0.0	12.5	14.0	2.7
Prop In Lane	0.00		0.55	1.00		0.00	0.96		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	0	316	295	681	2149	0	183	0	0	272	286	243
V/C Ratio(X)	0.00	0.74	0.77	0.07	0.14	0.00	0.57	0.00	0.00	0.76	0.85	0.19
Avail Cap(c_a), veh/h	0	510	477	681	2149	0	286	0	0	479	503	428
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	42.7	42.9	21.2	9.0	0.0	46.9	0.0	0.0	44.6	45.2	40.4
Incr Delay (d2), s/veh	0.0	14.7	17.3	0.0	0.1	0.0	2.8	0.0	0.0	1.7	2.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.0	8.0	0.9	1.9	0.0	3.2	0.0	0.0	6.2	7.3	1.2
LnGrp Delay(d),s/veh	0.0	57.4	60.2	21.2	9.1	0.0	49.7	0.0	0.0	46.2	47.9	40.6
LnGrp LOS		E	E	C	A		D			D	D	D
Approach Vol, veh/h		461			337			105			495	
Approach Delay, s/veh		58.7			10.7			49.7			46.5	
Approach LOS		E			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		72.4		16.5	47.6	24.8		21.0
Change Period (Y+Rc), s		5.0		5.0	5.0	* 5		4.0
Max Green Setting (Gmax), s		48.0		18.0	12.5	* 32		30.0
Max Q Clear Time (g_c+I1), s		5.9		8.3	3.8	16.5		16.0
Green Ext Time (p_c), s		2.0		0.3	1.2	2.7		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	42.2
HCM 2010 LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	610	0	0	160	460	140	0	180	0	0	0
Number	1	6	16	5	2	12	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1863	0	0	1863	1863	1863	0	1863			
Adj Flow Rate, veh/h	0	718	0	0	188	208	165	0	126			
Adj No. of Lanes	0	2	0	0	1	1	1	0	1			
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85			
Percent Heavy Veh, %	0	2	0	0	2	2	2	0	2			
Cap, veh/h	0	2858	0	0	1504	1251	196	0	175			
Arrive On Green	0.00	0.81	0.00	0.00	1.00	1.00	0.11	0.00	0.11			
Sat Flow, veh/h	0	3725	0	0	1863	1549	1774	0	1583			
Grp Volume(v), veh/h	0	718	0	0	188	208	165	0	126			
Grp Sat Flow(s),veh/h/ln	0	1770	0	0	1863	1549	1774	0	1583			
Q Serve(g_s), s	0.0	5.4	0.0	0.0	0.0	0.0	10.0	0.0	8.5			
Cycle Q Clear(g_c), s	0.0	5.4	0.0	0.0	0.0	0.0	10.0	0.0	8.5			
Prop In Lane	0.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2858	0	0	1504	1251	196	0	175			
V/C Ratio(X)	0.00	0.25	0.00	0.00	0.12	0.17	0.84	0.00	0.72			
Avail Cap(c_a), veh/h	0	2858	0	0	1504	1251	581	0	518			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.67	1.67	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.18	0.18	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	2.6	0.0	0.0	0.0	0.0	48.0	0.0	47.3			
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.0	0.1	3.7	0.0	2.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	2.7	0.0	0.0	0.0	0.0	5.1	0.0	3.8			
LnGrp Delay(d),s/veh	0.0	2.8	0.0	0.0	0.0	0.1	51.6	0.0	49.3			
LnGrp LOS		A			A	A	D		D			
Approach Vol, veh/h		718			396			291				
Approach Delay, s/veh		2.8			0.0			50.6				
Approach LOS		A			A			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		92.8		17.2		92.8		
Change Period (Y+Rc), s		4.0		5.0		4.0		
Max Green Setting (Gmax), s		65.0		36.0		65.0		
Max Q Clear Time (g_c+I1), s		2.0		12.0		7.4		
Green Ext Time (p_c), s		13.1		0.1		13.0		

Intersection Summary	
HCM 2010 Ctrl Delay	11.9
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	110	530	150	160	360	120	170	690	190	180	730	90
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	117	564	4	170	383	95	181	734	24	191	777	89
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	124	567	470	153	458	114	153	693	578	179	633	73
Arrive On Green	0.07	0.30	0.30	0.17	0.64	0.64	0.09	0.37	0.37	0.10	0.39	0.39
Sat Flow, veh/h	1774	1863	1544	1774	1428	354	1774	1863	1554	1774	1639	188
Grp Volume(v), veh/h	117	564	4	170	0	478	181	734	24	191	0	866
Grp Sat Flow(s),veh/h/ln	1774	1863	1544	1774	0	1783	1774	1863	1554	1774	0	1827
Q Serve(g_s), s	7.2	33.2	0.2	9.5	0.0	22.8	9.5	40.9	1.1	11.1	0.0	42.5
Cycle Q Clear(g_c), s	7.2	33.2	0.2	9.5	0.0	22.8	9.5	40.9	1.1	11.1	0.0	42.5
Prop In Lane	1.00		1.00	1.00		0.20	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	124	567	470	153	0	572	153	693	578	179	0	706
V/C Ratio(X)	0.94	0.99	0.01	1.11	0.00	0.84	1.18	1.06	0.04	1.07	0.00	1.23
Avail Cap(c_a), veh/h	124	567	470	153	0	572	153	693	578	179	0	706
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96	0.74	0.00	0.74	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.9	38.2	26.7	45.5	0.0	17.5	50.3	34.6	22.0	49.5	0.0	33.8
Incr Delay (d2), s/veh	60.6	35.6	0.0	94.9	0.0	10.3	129.7	51.1	0.0	86.2	0.0	114.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	22.7	0.1	8.6	0.0	12.5	10.2	30.8	0.5	9.7	0.0	43.8
LnGrp Delay(d),s/veh	111.5	73.7	26.7	140.4	0.0	27.8	180.0	85.7	22.1	135.6	0.0	148.1
LnGrp LOS	F	E	C	F		C	F	F	C	F		F
Approach Vol, veh/h		685			648			939			1057	
Approach Delay, s/veh		79.9			57.3			102.2			145.8	
Approach LOS		E			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	38.0	13.0	46.0	11.2	39.8	14.6	44.4
Change Period (Y+Rc), s	3.5	4.5	3.5	3.5	3.5	4.5	3.5	3.5
Max Green Setting (Gmax), s	9.5	33.5	9.5	42.5	7.7	35.3	11.1	40.9
Max Q Clear Time (g_c+I1), s	11.5	35.2	11.5	44.5	9.2	24.8	13.1	42.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	5.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	102.7
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	140	120	0	0	0	90	500	460	0	550	490
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900				1863	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	35	165	-7				106	588	336	0	647	550
Adj No. of Lanes	1	1	0				1	1	0	0	1	1
Peak Hour Factor	0.85	0.85	0.85				0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2				2	2	2	0	2	2
Cap, veh/h	244	257	0				133	719	411	0	863	732
Arrive On Green	0.14	0.14	0.00				0.08	0.65	0.65	0.00	0.46	0.46
Sat Flow, veh/h	1774	1863	0				1774	1112	635	0	1863	1580
Grp Volume(v), veh/h	35	158	0				106	0	924	0	647	550
Grp Sat Flow(s),veh/h/ln	1774	1863	0				1774	0	1747	0	1863	1580
Q Serve(g_s), s	0.6	3.0	0.0				2.2	0.0	14.7	0.0	10.6	10.6
Cycle Q Clear(g_c), s	0.6	3.0	0.0				2.2	0.0	14.7	0.0	10.6	10.6
Prop In Lane	1.00		0.00				1.00		0.36	0.00		1.00
Lane Grp Cap(c), veh/h	244	257	0				133	0	1129	0	863	732
V/C Ratio(X)	0.14	0.62	0.00				0.79	0.00	0.82	0.00	0.75	0.75
Avail Cap(c_a), veh/h	1484	1558	0				239	0	1226	0	863	732
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00				1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	14.1	15.1	0.0				16.9	0.0	4.9	0.0	8.2	8.2
Incr Delay (d2), s/veh	0.3	2.4	0.0				10.2	0.0	4.2	0.0	3.7	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.7	0.0				1.4	0.0	8.0	0.0	6.1	5.3
LnGrp Delay(d),s/veh	14.3	17.5	0.0				27.0	0.0	9.1	0.0	11.9	12.6
LnGrp LOS	B	B					C		A		B	B
Approach Vol, veh/h		193						1030			1197	
Approach Delay, s/veh		16.9						10.9			12.2	
Approach LOS		B						B			B	

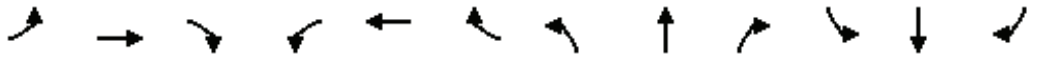
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		28.0		9.1	6.8	21.2		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		26.0		31.0	5.0	17.0		
Max Q Clear Time (g_c+I1), s		16.7		5.0	4.2	12.6		
Green Ext Time (p_c), s		7.2		1.0	0.0	3.8		

Intersection Summary	
HCM 2010 Ctrl Delay	12.0
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	70	20	10	20	20	440	10	520	30	410	210	30
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	76	22	11	22	22	478	11	565	33	446	228	33
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	174	46	15	60	25	367	57	1110	64	575	1020	148
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.64	0.64	0.64	0.64	0.64	0.64
Sat Flow, veh/h	367	186	62	36	101	1486	11	1725	99	817	1586	230
Grp Volume(v), veh/h	109	0	0	522	0	0	609	0	0	446	0	261
Grp Sat Flow(s),veh/h/ln	615	0	0	1622	0	0	1835	0	0	817	0	1815
Q Serve(g_s), s	0.0	0.0	0.0	7.0	0.0	0.0	0.0	0.0	0.0	28.2	0.0	4.4
Cycle Q Clear(g_c), s	11.0	0.0	0.0	18.0	0.0	0.0	12.8	0.0	0.0	41.0	0.0	4.4
Prop In Lane	0.70		0.10	0.04		0.92	0.02		0.05	1.00		0.13
Lane Grp Cap(c), veh/h	235	0	0	452	0	0	1231	0	0	575	0	1168
V/C Ratio(X)	0.46	0.00	0.00	1.16	0.00	0.00	0.49	0.00	0.00	0.78	0.00	0.22
Avail Cap(c_a), veh/h	235	0	0	452	0	0	1283	0	0	598	0	1220
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.1	0.0	0.0	28.5	0.0	0.0	6.9	0.0	0.0	13.5	0.0	5.4
Incr Delay (d2), s/veh	1.4	0.0	0.0	92.3	0.0	0.0	0.3	0.0	0.0	6.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	0.0	20.6	0.0	0.0	6.5	0.0	0.0	9.0	0.0	2.2
LnGrp Delay(d),s/veh	25.5	0.0	0.0	120.8	0.0	0.0	7.2	0.0	0.0	19.7	0.0	5.5
LnGrp LOS	C			F			A			B		A
Approach Vol, veh/h		109			522			609			707	
Approach Delay, s/veh		25.5			120.8			7.2			14.5	
Approach LOS		C			F			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		50.9		22.0		50.9		22.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		49.0		18.0		49.0		18.0
Max Q Clear Time (g_c+I1), s		14.8		13.0		43.0		20.0
Green Ext Time (p_c), s		11.2		2.0		3.9		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	41.3
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	140	600	150	120	370	140	170	590	290	120	250	70
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	0.99		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	149	638	133	128	394	106	181	628	271	128	266	60
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	325	651	136	141	614	165	441	519	224	131	622	140
Arrive On Green	0.44	0.44	0.44	0.44	0.44	0.44	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	894	1491	311	696	1407	378	1036	1214	524	617	1456	328
Grp Volume(v), veh/h	149	0	771	128	0	500	181	0	899	128	0	326
Grp Sat Flow(s),veh/h/ln	894	0	1802	696	0	1785	1036	0	1737	617	0	1785
Q Serve(g_s), s	8.6	0.0	23.2	0.8	0.0	12.1	8.2	0.0	23.5	0.0	0.0	7.0
Cycle Q Clear(g_c), s	20.7	0.0	23.2	24.0	0.0	12.1	15.2	0.0	23.5	23.5	0.0	7.0
Prop In Lane	1.00		0.17	1.00		0.21	1.00		0.30	1.00		0.18
Lane Grp Cap(c), veh/h	325	0	786	141	0	779	441	0	742	131	0	763
V/C Ratio(X)	0.46	0.00	0.98	0.91	0.00	0.64	0.41	0.00	1.21	0.98	0.00	0.43
Avail Cap(c_a), veh/h	325	0	786	141	0	779	441	0	742	131	0	763
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.38	0.00	0.38	1.00	0.00	1.00	0.40	0.00	0.40	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.2	0.0	15.3	27.5	0.0	12.1	16.4	0.0	15.8	27.5	0.0	11.0
Incr Delay (d2), s/veh	1.8	0.0	15.7	53.9	0.0	4.0	0.1	0.0	100.2	71.3	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	14.8	4.0	0.0	6.7	2.3	0.0	31.8	4.5	0.0	3.5
LnGrp Delay(d),s/veh	22.0	0.0	31.0	81.4	0.0	16.2	16.5	0.0	116.0	98.8	0.0	11.2
LnGrp LOS	C		C	F		B	B		F	F		B
Approach Vol, veh/h		920			628			1080			454	
Approach Delay, s/veh		29.5			29.5			99.3			35.9	
Approach LOS		C			C			F			D	

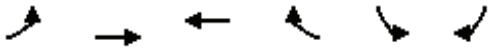
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		27.5		27.5		27.5		27.5
Change Period (Y+Rc), s		3.5		4.0		3.5		4.0
Max Green Setting (Gmax), s		24.0		23.5		24.0		23.5
Max Q Clear Time (g_c+I1), s		25.2		25.5		26.0		25.5
Green Ext Time (p_c), s		0.0		0.0		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	54.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	190	100	110	290	350	160	670	110	130	320	50
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.96	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	23	218	87	126	333	354	184	770	105	149	368	46
Adj No. of Lanes	0	1	0	0	1	1	1	1	0	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	59	285	103	154	317	646	423	761	104	111	771	96
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.48	0.48	0.48	0.48	0.48	0.48
Sat Flow, veh/h	0	698	252	204	778	1583	966	1597	218	631	1617	202
Grp Volume(v), veh/h	328	0	0	459	0	354	184	0	875	149	0	414
Grp Sat Flow(s),veh/h/ln	951	0	0	982	0	1583	966	0	1814	631	0	1819
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	11.1	10.4	0.0	31.0	0.0	0.0	10.0
Cycle Q Clear(g_c), s	26.5	0.0	0.0	26.5	0.0	11.1	20.4	0.0	31.0	31.0	0.0	10.0
Prop In Lane	0.07		0.27	0.27		1.00	1.00		0.12	1.00		0.11
Lane Grp Cap(c), veh/h	447	0	0	471	0	646	423	0	865	111	0	868
V/C Ratio(X)	0.73	0.00	0.00	0.97	0.00	0.55	0.44	0.00	1.01	1.35	0.00	0.48
Avail Cap(c_a), veh/h	447	0	0	471	0	646	423	0	865	111	0	868
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.6	0.0	0.0	19.6	0.0	14.7	18.4	0.0	17.0	32.5	0.0	11.5
Incr Delay (d2), s/veh	6.2	0.0	0.0	34.7	0.0	1.0	0.7	0.0	33.4	203.6	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	0.0	0.0	12.7	0.0	5.0	2.8	0.0	23.4	8.2	0.0	5.0
LnGrp Delay(d),s/veh	21.8	0.0	0.0	54.4	0.0	15.7	19.1	0.0	50.4	236.1	0.0	11.9
LnGrp LOS	C			D		B	B		F	F		B
Approach Vol, veh/h		328			813			1059			563	
Approach Delay, s/veh		21.8			37.5			45.0			71.3	
Approach LOS		C			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		35.0		30.0		35.0		30.0
Change Period (Y+Rc), s		4.0		3.5		4.0		3.5
Max Green Setting (Gmax), s		31.0		26.5		31.0		26.5
Max Q Clear Time (g_c+I1), s		33.0		28.5		33.0		28.5
Green Ext Time (p_c), s		0.0		0.0		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	45.4
HCM 2010 LOS	D



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	450	80	40	500	250	420
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1583	1770	1583
Flt Permitted	0.73	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1353	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	529	94	47	588	294	494
RTOR Reduction (vph)	0	0	0	267	0	350
Lane Group Flow (vph)	529	94	47	321	294	144
Confl. Peds. (#/hr)					5	
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)	26.9	26.9	26.9	26.9	14.3	14.3
Effective Green, g (s)	26.9	26.9	26.9	26.9	14.3	14.3
Actuated g/C Ratio	0.55	0.55	0.55	0.55	0.29	0.29
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	739	1018	1018	865	514	460
v/s Ratio Prot		0.05	0.03		c0.17	
v/s Ratio Perm	c0.39			0.20		0.09
v/c Ratio	0.72	0.09	0.05	0.37	0.57	0.31
Uniform Delay, d1	8.3	5.3	5.2	6.3	14.8	13.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.3	0.0	0.0	0.3	1.5	0.4
Delay (s)	11.6	5.4	5.2	6.6	16.4	14.0
Level of Service	B	A	A	A	B	B
Approach Delay (s)		10.7	6.5		14.9	
Approach LOS		B	A		B	

Intersection Summary			
HCM 2000 Control Delay	11.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	49.2	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	140	810	120	220	540	160	150	1300	280	140	530	80
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.98	1.00		0.94	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	156	900	54	244	600	104	167	1444	292	156	589	77
Adj No. of Lanes	1	1	1	1	1	1	1	2	0	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	161	677	558	161	643	535	197	1060	208	113	995	130
Arrive On Green	0.09	0.36	0.36	0.09	0.35	0.35	0.11	0.36	0.36	0.06	0.32	0.32
Sat Flow, veh/h	1774	1863	1534	1774	1863	1549	1774	2916	573	1774	3144	410
Grp Volume(v), veh/h	156	900	54	244	600	104	167	859	877	156	331	335
Grp Sat Flow(s),veh/h/ln	1774	1863	1534	1774	1863	1549	1774	1770	1719	1774	1770	1784
Q Serve(g_s), s	9.6	40.0	2.6	10.0	34.2	5.2	10.2	40.0	40.0	7.0	17.3	17.4
Cycle Q Clear(g_c), s	9.6	40.0	2.6	10.0	34.2	5.2	10.2	40.0	40.0	7.0	17.3	17.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.33	1.00		0.23
Lane Grp Cap(c), veh/h	161	677	558	161	643	535	197	643	625	113	560	565
V/C Ratio(X)	0.97	1.33	0.10	1.51	0.93	0.19	0.85	1.34	1.40	1.38	0.59	0.59
Avail Cap(c_a), veh/h	161	677	558	161	643	535	274	643	625	113	560	565
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.8	35.0	23.1	50.0	34.8	25.3	48.0	35.0	35.0	51.5	31.6	31.6
Incr Delay (d2), s/veh	60.6	158.0	0.3	260.0	22.3	0.8	12.3	161.5	190.6	217.4	1.1	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	50.2	1.1	16.5	21.5	2.3	5.6	48.3	52.0	10.2	8.6	8.7
LnGrp Delay(d),s/veh	110.4	193.0	23.4	310.0	57.0	26.1	60.3	196.5	225.6	268.9	32.7	32.8
LnGrp LOS	F	F	C	F	E	C	E	F	F	F	C	C
Approach Vol, veh/h		1110			948			1903			822	
Approach Delay, s/veh		173.1			118.8			197.9			77.6	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	44.0	15.2	37.8	15.0	42.0	10.0	43.0
Change Period (Y+Rc), s	3.0	4.0	3.0	3.0	5.0	4.0	3.0	3.0
Max Green Setting (Gmax), s	10.0	40.0	17.0	30.0	10.0	38.0	7.0	40.0
Max Q Clear Time (g_c+I1), s	12.0	42.0	12.2	19.4	11.6	36.2	9.0	42.0
Green Ext Time (p_c), s	0.0	0.0	0.1	8.2	0.0	1.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	155.8
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	300	10	800	0	930	440	0	690	180
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	0	1863	1863	0	1863	1900
Adj Flow Rate, veh/h				216	0	957	0	989	468	0	734	117
Adj No. of Lanes				1	0	2	0	2	1	0	2	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				2	2	2	0	2	2	0	2	2
Cap, veh/h				653	0	1166	0	1764	771	0	1524	243
Arrive On Green				0.37	0.00	0.37	0.00	0.16	0.16	0.00	0.50	0.50
Sat Flow, veh/h				1774	0	3167	0	3632	1547	0	3152	487
Grp Volume(v), veh/h				216	0	957	0	989	468	0	424	427
Grp Sat Flow(s),veh/h/ln				1774	0	1583	0	1770	1547	0	1770	1777
Q Serve(g_s), s				5.3	0.0	16.4	0.0	15.4	16.8	0.0	9.5	9.5
Cycle Q Clear(g_c), s				5.3	0.0	16.4	0.0	15.4	16.8	0.0	9.5	9.5
Prop In Lane				1.00		1.00	0.00		1.00	0.00		0.27
Lane Grp Cap(c), veh/h				653	0	1166	0	1764	771	0	882	885
V/C Ratio(X)				0.33	0.00	0.82	0.00	0.56	0.61	0.00	0.48	0.48
Avail Cap(c_a), veh/h				828	0	1478	0	1764	771	0	882	885
HCM Platoon Ratio				1.00	1.00	1.00	1.00	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	0.09	0.09	0.00	1.00	1.00
Uniform Delay (d), s/veh				13.6	0.0	17.2	0.0	19.0	19.6	0.0	9.9	9.9
Incr Delay (d2), s/veh				0.3	0.0	3.0	0.0	0.1	0.3	0.0	1.9	1.9
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.6	0.0	7.7	0.0	7.6	7.3	0.0	5.1	5.1
LnGrp Delay(d),s/veh				13.9	0.0	20.2	0.0	19.1	19.9	0.0	11.8	11.8
LnGrp LOS				B		C		B	B		B	B
Approach Vol, veh/h					1173			1457			851	
Approach Delay, s/veh					19.0			19.4			11.8	
Approach LOS					B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		33.9				33.9		26.1
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		24.0				24.0		28.0
Max Q Clear Time (g_c+I1), s		18.8				11.5		18.4
Green Ext Time (p_c), s		4.5				9.9		3.7

Intersection Summary	
HCM 2010 Ctrl Delay	17.4
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

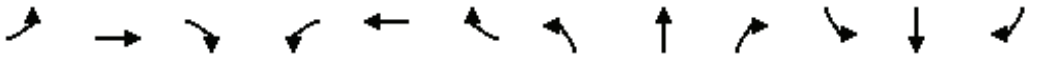
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	380	0	400	0	0	0	0	990	530	0	580	410
Number	3	8	18				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863				0	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	442	0	366				0	1151	480	0	674	477
Adj No. of Lanes	0	1	1				0	2	0	0	2	1
Peak Hour Factor	0.86	0.86	0.86				0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2				0	2	2	0	2	2
Cap, veh/h	566	0	506				0	1338	538	0	1937	860
Arrive On Green	0.32	0.00	0.32				0.00	0.73	0.73	0.00	0.18	0.18
Sat Flow, veh/h	1774	0	1583				0	2537	982	0	3632	1572
Grp Volume(v), veh/h	442	0	366				0	821	810	0	674	477
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1770	1657	0	1770	1572
Q Serve(g_s), s	13.6	0.0	12.3				0.0	19.8	22.8	0.0	10.0	16.6
Cycle Q Clear(g_c), s	13.6	0.0	12.3				0.0	19.8	22.8	0.0	10.0	16.6
Prop In Lane	1.00		1.00				0.00		0.59	0.00		1.00
Lane Grp Cap(c), veh/h	566	0	506				0	969	907	0	1937	860
V/C Ratio(X)	0.78	0.00	0.72				0.00	0.85	0.89	0.00	0.35	0.55
Avail Cap(c_a), veh/h	887	0	792				0	969	907	0	1937	860
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.33	1.33	1.00	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00				0.00	0.09	0.09	0.00	0.83	0.83
Uniform Delay (d), s/veh	18.5	0.0	18.1				0.0	6.4	6.8	0.0	15.2	17.9
Incr Delay (d2), s/veh	2.4	0.0	2.0				0.0	0.9	1.4	0.0	0.4	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	0.0	5.6				0.0	9.4	10.3	0.0	5.0	7.7
LnGrp Delay(d),s/veh	20.9	0.0	20.1				0.0	7.3	8.2	0.0	15.6	20.1
LnGrp LOS	C		C					A	A		B	C
Approach Vol, veh/h		808						1631			1151	
Approach Delay, s/veh		20.5						7.8			17.5	
Approach LOS		C						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		36.8				36.8		23.2
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		22.0				22.0		30.0
Max Q Clear Time (g_c+I1), s		24.8				18.6		15.6
Green Ext Time (p_c), s		0.0				3.3		3.6

Intersection Summary	
HCM 2010 Ctrl Delay	13.7
HCM 2010 LOS	B

Notes

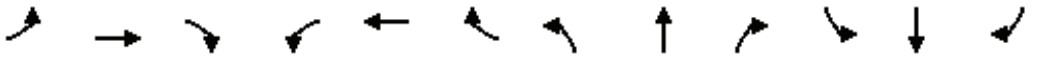
User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	270	20	200	40	20	260	110	990	0	40	800	140
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.96	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	293	22	193	43	22	65	120	1076	0	43	870	139
Adj No. of Lanes	1	1	0	1	1	0	0	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	207	33	292	72	52	154	187	1532	0	55	1982	317
Arrive On Green	0.12	0.20	0.20	0.04	0.13	0.13	0.59	0.59	0.00	0.06	1.00	1.00
Sat Flow, veh/h	1774	163	1428	1774	405	1196	257	2698	0	1774	3047	487
Grp Volume(v), veh/h	293	0	215	43	0	87	533	663	0	43	505	504
Grp Sat Flow(s),veh/h/ln	1774	0	1591	1774	0	1600	1260	1610	0	1774	1770	1764
Q Serve(g_s), s	14.0	0.0	14.9	2.9	0.0	6.0	29.9	34.7	0.0	2.9	0.0	0.0
Cycle Q Clear(g_c), s	14.0	0.0	14.9	2.9	0.0	6.0	34.4	34.7	0.0	2.9	0.0	0.0
Prop In Lane	1.00		0.90	1.00		0.75	0.23		0.00	1.00		0.28
Lane Grp Cap(c), veh/h	207	0	326	72	0	206	775	944	0	55	1151	1148
V/C Ratio(X)	1.42	0.00	0.66	0.60	0.00	0.42	0.69	0.70	0.00	0.78	0.44	0.44
Avail Cap(c_a), veh/h	207	0	557	103	0	467	775	944	0	59	1151	1148
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.67	0.67	0.00	0.86	0.86	0.86
Uniform Delay (d), s/veh	53.0	0.0	43.9	56.6	0.0	48.2	16.7	17.5	0.0	55.9	0.0	0.0
Incr Delay (d2), s/veh	213.0	0.0	0.9	2.9	0.0	0.5	3.3	2.9	0.0	37.1	1.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.1	0.0	6.6	1.5	0.0	2.7	13.0	16.1	0.0	2.0	0.3	0.3
LnGrp Delay(d),s/veh	266.0	0.0	44.7	59.5	0.0	48.7	20.0	20.4	0.0	93.0	1.0	1.1
LnGrp LOS	F		D	E		D	C	C		F	A	A
Approach Vol, veh/h		508			130			1196			1052	
Approach Delay, s/veh		172.4			52.3			20.2			4.8	
Approach LOS		F			D			C			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	7.7	74.9	18.0	19.4		82.6	8.9	28.6
Change Period (Y+Rc), s	4.0	4.5	4.0	4.0		4.5	4.0	4.0
Max Green Setting (Gmax), s	4.0	50.5	14.0	35.0		58.5	7.0	42.0
Max Q Clear Time (g_c+I1), s	4.9	36.7	16.0	8.0		2.0	4.9	16.9
Green Ext Time (p_c), s	0.0	12.4	0.0	1.3		40.7	0.0	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	42.8
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	330	460	100	90	190	410	70	310	170	130	570	260
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	347	484	0	95	200	255	74	326	82	137	600	0
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	395	1374	615	123	415	371	95	651	161	173	979	0
Arrive On Green	0.22	0.39	0.00	0.07	0.23	0.23	0.05	0.23	0.23	0.10	0.28	0.00
Sat Flow, veh/h	1774	3539	1583	1774	1770	1583	1774	2801	693	1774	3632	0
Grp Volume(v), veh/h	347	484	0	95	200	255	74	204	204	137	600	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1725	1774	1770	0
Q Serve(g_s), s	14.2	7.3	0.0	4.0	7.3	11.1	3.1	7.5	7.7	5.7	11.1	0.0
Cycle Q Clear(g_c), s	14.2	7.3	0.0	4.0	7.3	11.1	3.1	7.5	7.7	5.7	11.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.40	1.00		0.00
Lane Grp Cap(c), veh/h	395	1374	615	123	415	371	95	411	401	173	979	0
V/C Ratio(X)	0.88	0.35	0.00	0.77	0.48	0.69	0.78	0.50	0.51	0.79	0.61	0.00
Avail Cap(c_a), veh/h	519	1695	758	236	565	505	118	494	482	260	1271	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.2	16.3	0.0	34.4	24.8	26.3	35.2	25.0	25.1	33.2	23.7	0.0
Incr Delay (d2), s/veh	12.7	0.2	0.0	9.9	0.9	2.3	23.0	0.9	1.0	9.3	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	3.6	0.0	2.3	3.7	5.1	2.1	3.8	3.8	3.2	5.5	0.0
LnGrp Delay(d),s/veh	40.9	16.5	0.0	44.4	25.7	28.6	58.1	26.0	26.1	42.5	24.3	0.0
LnGrp LOS	D	B		D	C	C	E	C	C	D	C	
Approach Vol, veh/h		831			550			482			737	
Approach Delay, s/veh		26.7			30.3			31.0			27.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.3	21.5	9.2	33.2	8.0	24.8	20.8	21.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	21.0	10.0	36.0	5.0	27.0	22.0	24.0
Max Q Clear Time (g_c+I1), s	7.7	9.7	6.0	9.3	5.1	13.1	16.2	13.1
Green Ext Time (p_c), s	0.1	5.1	0.1	6.9	0.0	5.8	0.6	4.6

Intersection Summary	
HCM 2010 Ctrl Delay	28.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	150	1220	170	10	700	160	180	460	40	60	340	110
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.95	1.00		0.95	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	163	1326	155	11	761	157	196	500	36	65	370	85
Adj No. of Lanes	1	1	1	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	173	1118	898	65	890	184	129	435	31	65	316	73
Arrive On Green	0.60	0.60	0.60	0.60	0.60	0.60	0.07	0.25	0.25	0.04	0.22	0.22
Sat Flow, veh/h	606	1863	1497	355	1483	306	1774	1710	123	1774	1447	332
Grp Volume(v), veh/h	163	1326	155	11	0	918	196	0	536	65	0	455
Grp Sat Flow(s),veh/h/ln	606	1863	1497	355	0	1788	1774	0	1834	1774	0	1779
Q Serve(g_s), s	19.6	66.0	5.1	0.0	0.0	46.4	8.0	0.0	28.0	4.0	0.0	24.0
Cycle Q Clear(g_c), s	66.0	66.0	5.1	66.0	0.0	46.4	8.0	0.0	28.0	4.0	0.0	24.0
Prop In Lane	1.00		1.00	1.00		0.17	1.00		0.07	1.00		0.19
Lane Grp Cap(c), veh/h	173	1118	898	65	0	1073	129	0	467	65	0	388
V/C Ratio(X)	0.94	1.19	0.17	0.17	0.00	0.86	1.52	0.00	1.15	1.01	0.00	1.17
Avail Cap(c_a), veh/h	173	1118	898	65	0	1073	129	0	467	65	0	388
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	48.5	22.0	9.8	55.0	0.0	18.1	51.0	0.0	41.0	53.0	0.0	43.0
Incr Delay (d2), s/veh	54.1	93.1	0.4	5.5	0.0	8.8	269.1	0.0	89.1	114.2	0.0	101.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	62.4	2.2	0.4	0.0	25.3	13.5	0.0	25.7	4.0	0.0	22.7
LnGrp Delay(d),s/veh	102.6	115.1	10.2	60.5	0.0	26.8	320.1	0.0	130.1	167.2	0.0	144.6
LnGrp LOS	F	F	B	E		C	F		F	F		F
Approach Vol, veh/h		1644			929			732			520	
Approach Delay, s/veh		104.0			27.2			181.0			147.4	
Approach LOS		F			C			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		70.0	12.0	28.0		70.0	8.0	32.0
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		66.0	8.0	24.0		66.0	4.0	28.0
Max Q Clear Time (g_c+I1), s		68.0	10.0	26.0		68.0	6.0	30.0
Green Ext Time (p_c), s		0.0	0.0	0.0		0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	106.0
HCM 2010 LOS	F

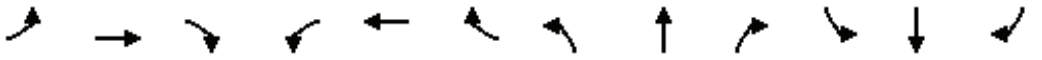
Notes

User approved ignoring U-Turning movement.

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	370	140	520	520	280	250
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	407	154	571	571	308	0
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	500	416	626	1266	361	322
Arrive On Green	0.27	0.27	0.35	0.68	0.20	0.00
Sat Flow, veh/h	1863	1547	1774	1863	1774	1583
Grp Volume(v), veh/h	407	154	571	571	308	0
Grp Sat Flow(s),veh/h/ln	1863	1547	1774	1863	1774	1583
Q Serve(g_s), s	14.0	5.5	21.0	9.7	11.5	0.0
Cycle Q Clear(g_c), s	14.0	5.5	21.0	9.7	11.5	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	500	416	626	1266	361	322
V/C Ratio(X)	0.81	0.37	0.91	0.45	0.85	0.00
Avail Cap(c_a), veh/h	544	452	752	1442	492	439
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	23.4	20.3	21.1	5.1	26.3	0.0
Incr Delay (d2), s/veh	8.6	0.5	13.8	0.3	10.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	2.4	12.6	5.0	6.6	0.0
LnGrp Delay(d),s/veh	32.0	20.9	35.0	5.3	36.7	0.0
LnGrp LOS	C	C	C	A	D	
Approach Vol, veh/h	561			1142	308	
Approach Delay, s/veh	29.0			20.1	36.7	
Approach LOS	C			C	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		17.9	28.1	22.4				50.5
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		19.0	29.0	20.0				53.0
Max Q Clear Time (g_c+I1), s		13.5	23.0	16.0				11.7
Green Ext Time (p_c), s		0.5	1.1	2.4				8.7

Intersection Summary	
HCM 2010 Ctrl Delay	25.1
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	140	100	120	330	520	650	200	250	200	350	180	90
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1863	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	152	109	54	359	565	641	217	272	155	380	196	90
Adj No. of Lanes	1	1	0	0	1	1	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	189	126	62	218	343	486	586	560	319	272	121	56
Arrive On Green	0.11	0.11	0.11	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51
Sat Flow, veh/h	1774	1177	583	710	1117	1583	1089	1104	629	463	239	110
Grp Volume(v), veh/h	152	0	163	924	0	641	217	0	427	666	0	0
Grp Sat Flow(s),veh/h/ln	1774	0	1760	1827	0	1583	1089	0	1734	812	0	0
Q Serve(g_s), s	12.6	0.0	13.7	46.0	0.0	46.0	0.0	0.0	24.2	51.8	0.0	0.0
Cycle Q Clear(g_c), s	12.6	0.0	13.7	46.0	0.0	46.0	19.0	0.0	24.2	76.0	0.0	0.0
Prop In Lane	1.00		0.33	0.39		1.00	1.00		0.36	0.57		0.14
Lane Grp Cap(c), veh/h	189	0	188	560	0	486	586	0	878	449	0	0
V/C Ratio(X)	0.80	0.00	0.87	1.65	0.00	1.32	0.37	0.00	0.49	1.48	0.00	0.00
Avail Cap(c_a), veh/h	189	0	188	560	0	486	586	0	878	449	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.23	0.00	0.23	1.00	0.00	1.00	0.64	0.00	0.00
Uniform Delay (d), s/veh	65.5	0.0	66.0	36.6	0.0	36.6	22.9	0.0	24.2	51.3	0.0	0.0
Incr Delay (d2), s/veh	21.6	0.0	32.4	293.9	0.0	147.5	0.4	0.0	0.4	224.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	0.0	8.3	68.6	0.0	39.7	5.6	0.0	11.6	46.6	0.0	0.0
LnGrp Delay(d),s/veh	87.1	0.0	98.4	330.5	0.0	184.1	23.3	0.0	24.6	276.2	0.0	0.0
LnGrp LOS	F		F	F		F	C		C	F		
Approach Vol, veh/h		315			1565			644			666	
Approach Delay, s/veh		92.9			270.5			24.2			276.2	
Approach LOS		F			F			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		80.0		20.0		80.0		50.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		76.0		16.0		76.0		46.0
Max Q Clear Time (g_c+I1), s		26.2		15.7		78.0		48.0
Green Ext Time (p_c), s		13.9		0.0		0.0		0.0

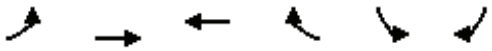
Intersection Summary	
HCM 2010 Ctrl Delay	204.4
HCM 2010 LOS	F



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	360	290	150	1060	440	210
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	391	315	163	1152	478	228
Adj No. of Lanes	1	0	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	510	411	185	1237	501	447
Arrive On Green	0.53	0.53	0.10	0.66	0.28	0.28
Sat Flow, veh/h	956	770	1774	1863	1774	1583
Grp Volume(v), veh/h	0	706	163	1152	478	228
Grp Sat Flow(s),veh/h/ln	0	1727	1774	1863	1774	1583
Q Serve(g_s), s	0.0	48.4	13.6	81.6	39.7	18.1
Cycle Q Clear(g_c), s	0.0	48.4	13.6	81.6	39.7	18.1
Prop In Lane		0.45	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	921	185	1237	501	447
V/C Ratio(X)	0.00	0.77	0.88	0.93	0.95	0.51
Avail Cap(c_a), veh/h	0	921	213	1237	520	464
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.09	0.77	0.77	1.00	1.00
Uniform Delay (d), s/veh	0.0	27.7	66.2	22.2	52.9	45.1
Incr Delay (d2), s/veh	0.0	0.6	24.1	11.2	27.7	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	23.1	7.9	45.4	23.4	8.0
LnGrp Delay(d),s/veh	0.0	28.2	90.3	33.4	80.6	46.0
LnGrp LOS		C	F	C	F	D
Approach Vol, veh/h	706			1315	706	
Approach Delay, s/veh	28.2			40.4	69.4	
Approach LOS	C			D	E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		46.4	19.7	84.0				103.6
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		44.0	18.0	76.0				98.0
Max Q Clear Time (g_c+I1), s		41.7	15.6	50.4				83.6
Green Ext Time (p_c), s		0.7	0.1	17.8				11.3

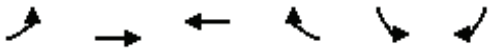
Intersection Summary	
HCM 2010 Ctrl Delay	44.8
HCM 2010 LOS	D



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↰	↱
Volume (veh/h)	0	1320	440	0	560	610
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	0	1419	473	0	602	529
Adj No. of Lanes	0	1	1	0	1	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1016	1016	0	516	461
Arrive On Green	0.00	0.55	0.73	0.00	0.29	0.29
Sat Flow, veh/h	0	1863	1863	0	1774	1583
Grp Volume(v), veh/h	0	1419	473	0	602	529
Grp Sat Flow(s),veh/h/ln	0	1863	1863	0	1774	1583
Q Serve(g_s), s	0.0	30.0	5.8	0.0	16.0	16.0
Cycle Q Clear(g_c), s	0.0	30.0	5.8	0.0	16.0	16.0
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1016	1016	0	516	461
V/C Ratio(X)	0.00	1.40	0.47	0.00	1.17	1.15
Avail Cap(c_a), veh/h	0	1016	1016	0	516	461
HCM Platoon Ratio	1.00	1.00	1.33	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.99	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	12.5	4.2	0.0	19.5	19.5
Incr Delay (d2), s/veh	0.0	184.5	1.5	0.0	94.3	89.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	67.0	3.3	0.0	21.3	18.3
LnGrp Delay(d),s/veh	0.0	197.0	5.7	0.0	113.8	108.9
LnGrp LOS		F	A		F	F
Approach Vol, veh/h		1419	473		1131	
Approach Delay, s/veh		197.0	5.7		111.5	
Approach LOS		F	A		F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		35.0		20.0		35.0		
Change Period (Y+Rc), s		5.0		4.0		5.0		
Max Green Setting (Gmax), s		30.0		16.0		30.0		
Max Q Clear Time (g_c+I1), s		32.0		18.0		7.8		
Green Ext Time (p_c), s		0.0		0.0		18.0		

Intersection Summary	
HCM 2010 Ctrl Delay	135.1
HCM 2010 LOS	F



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	50	1830	410	130	60	30
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98			0.93	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	53	1926	432	113	63	1
Adj No. of Lanes	0	2	2	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	110	2718	2215	572	79	1
Arrive On Green	1.00	1.00	0.81	0.81	0.05	0.05
Sat Flow, veh/h	51	3446	2832	707	1718	27
Grp Volume(v), veh/h	1063	916	277	268	65	0
Grp Sat Flow(s),veh/h/ln	1802	1610	1770	1676	1772	0
Q Serve(g_s), s	0.0	0.0	2.0	2.0	2.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	2.0	2.0	2.0	0.0
Prop In Lane	0.05			0.42	0.97	0.02
Lane Grp Cap(c), veh/h	1526	1302	1431	1356	81	0
V/C Ratio(X)	0.70	0.70	0.19	0.20	0.80	0.00
Avail Cap(c_a), veh/h	1526	1302	1431	1356	161	0
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	1.2	1.2	26.0	0.0
Incr Delay (d2), s/veh	0.2	0.3	0.3	0.3	6.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	1.0	1.0	1.1	0.0
LnGrp Delay(d),s/veh	0.2	0.3	1.5	1.5	32.6	0.0
LnGrp LOS	A	A	A	A	C	
Approach Vol, veh/h		1979	545		65	
Approach Delay, s/veh		0.3	1.5		32.6	
Approach LOS		A	A		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		48.5		6.5		48.5		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		42.0		5.0		42.0		
Max Q Clear Time (g_c+I1), s		2.0		4.0		4.0		
Green Ext Time (p_c), s		30.5		0.0		29.4		

Intersection Summary	
HCM 2010 Ctrl Delay	1.3
HCM 2010 LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	210	30	590	120	470	170	570	930	0	0	810	200
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.48	1.00		0.84	1.00		1.00	1.00		0.90
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	216	0	410	124	485	120	588	959	0	0	835	127
Adj No. of Lanes	1	0	2	1	2	1	2	3	0	0	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	0	2	2
Cap, veh/h	244	0	762	510	1017	384	602	2458	0	0	1003	403
Arrive On Green	0.14	0.00	0.14	0.29	0.29	0.29	0.17	0.48	0.00	0.00	0.28	0.28
Sat Flow, veh/h	1774	0	1512	1774	3539	1336	3442	5253	0	0	3632	1422
Grp Volume(v), veh/h	216	0	410	124	485	120	588	959	0	0	835	127
Grp Sat Flow(s),veh/h/ln	1774	0	756	1774	1770	1336	1721	1695	0	0	1770	1422
Q Serve(g_s), s	14.3	0.0	16.5	6.4	13.6	8.4	20.4	14.4	0.0	0.0	26.6	8.4
Cycle Q Clear(g_c), s	14.3	0.0	16.5	6.4	13.6	8.4	20.4	14.4	0.0	0.0	26.6	8.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	244	0	762	510	1017	384	602	2458	0	0	1003	403
V/C Ratio(X)	0.89	0.00	0.54	0.24	0.48	0.31	0.98	0.39	0.00	0.00	0.83	0.32
Avail Cap(c_a), veh/h	244	0	762	532	1062	401	602	2458	0	0	1003	403
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	50.8	0.0	37.6	32.8	35.3	33.5	49.3	19.7	0.0	0.0	40.3	33.8
Incr Delay (d2), s/veh	29.7	0.0	0.8	0.2	0.3	0.5	30.6	0.5	0.0	0.0	8.1	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	0.0	6.0	3.2	6.7	3.1	12.3	6.9	0.0	0.0	14.1	3.5
LnGrp Delay(d),s/veh	80.5	0.0	38.3	33.0	35.7	33.9	79.9	20.2	0.0	0.0	48.4	35.9
LnGrp LOS	F		D	C	D	C	E	C			D	D
Approach Vol, veh/h		626			729			1547			962	
Approach Delay, s/veh		52.9			34.9			42.9			46.7	
Approach LOS		D			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		62.0		20.0	24.0	38.0		38.0
Change Period (Y+Rc), s		4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s		56.5		16.5	21.0	32.5		36.0
Max Q Clear Time (g_c+I1), s		16.4		18.5	22.4	28.6		15.6
Green Ext Time (p_c), s		19.8		0.0	0.0	3.4		4.1

Intersection Summary	
HCM 2010 Ctrl Delay	44.0
HCM 2010 LOS	D

Notes

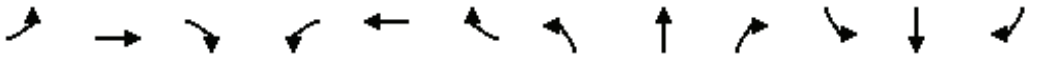
User approved volume balancing among the lanes for turning movement.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	650	50	80	590	310	430
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	684	53	84	621	326	453
Adj No. of Lanes	1	0	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	861	67	277	1099	565	504
Arrive On Green	0.50	0.50	0.04	0.59	0.32	0.32
Sat Flow, veh/h	1707	132	1774	1863	1774	1583
Grp Volume(v), veh/h	0	737	84	621	326	453
Grp Sat Flow(s),veh/h/ln	0	1839	1774	1863	1774	1583
Q Serve(g_s), s	0.0	28.9	1.9	17.9	13.4	23.8
Cycle Q Clear(g_c), s	0.0	28.9	1.9	17.9	13.4	23.8
Prop In Lane		0.07	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	927	277	1099	565	504
V/C Ratio(X)	0.00	0.79	0.30	0.57	0.58	0.90
Avail Cap(c_a), veh/h	0	1477	288	1667	692	618
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	17.9	14.8	11.0	24.8	28.4
Incr Delay (d2), s/veh	0.0	1.6	0.6	0.5	0.9	14.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	14.9	0.9	9.3	6.7	12.3
LnGrp Delay(d),s/veh	0.0	19.5	15.4	11.4	25.8	42.5
LnGrp LOS		B	B	B	C	D
Approach Vol, veh/h	737			705	779	
Approach Delay, s/veh	19.5			11.9	35.5	
Approach LOS	B			B	D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		31.7	7.5	48.0				55.4
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		34.0	4.0	70.0				78.0
Max Q Clear Time (g_c+I1), s		25.8	3.9	30.9				19.9
Green Ext Time (p_c), s		1.9	0.0	13.1				14.2

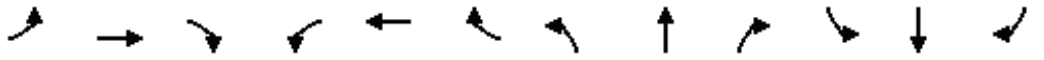
Intersection Summary	
HCM 2010 Ctrl Delay	22.7
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	90	110	110	550	130	90	120	300	120	500	590	40
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	98	120	120	598	141	98	130	326	130	543	641	43
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	2	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	122	91	91	577	373	259	133	629	246	620	619	42
Arrive On Green	0.07	0.11	0.11	0.32	0.36	0.36	0.08	0.25	0.25	0.18	0.36	0.36
Sat Flow, veh/h	1774	841	841	1774	1023	711	1774	2487	973	3442	1726	116
Grp Volume(v), veh/h	98	0	240	598	0	239	130	230	226	543	0	684
Grp Sat Flow(s),veh/h/ln	1774	0	1682	1774	0	1734	1774	1770	1691	1721	0	1842
Q Serve(g_s), s	6.5	0.0	13.0	39.0	0.0	12.2	8.8	13.4	13.8	18.4	0.0	43.0
Cycle Q Clear(g_c), s	6.5	0.0	13.0	39.0	0.0	12.2	8.8	13.4	13.8	18.4	0.0	43.0
Prop In Lane	1.00		0.50	1.00		0.41	1.00		0.58	1.00		0.06
Lane Grp Cap(c), veh/h	122	0	182	577	0	632	133	448	428	620	0	660
V/C Ratio(X)	0.80	0.00	1.32	1.04	0.00	0.38	0.98	0.51	0.53	0.88	0.00	1.04
Avail Cap(c_a), veh/h	192	0	182	577	0	632	133	448	428	774	0	660
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	55.0	0.0	53.5	40.5	0.0	28.1	55.4	38.5	38.6	47.9	0.0	38.5
Incr Delay (d2), s/veh	12.1	0.0	176.0	47.4	0.0	0.4	70.7	1.0	1.2	9.3	0.0	44.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	14.9	26.7	0.0	5.9	6.9	6.6	6.6	9.5	0.0	30.0
LnGrp Delay(d),s/veh	67.1	0.0	229.5	87.9	0.0	28.5	126.1	39.5	39.8	57.2	0.0	83.2
LnGrp LOS	E		F	F		C	F	D	D	E		F
Approach Vol, veh/h		338			837			586			1227	
Approach Delay, s/veh		182.4			71.0			58.8			71.7	
Approach LOS		F			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.6	34.4	43.0	17.0	13.0	47.0	12.3	47.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	27.0	25.0	39.0	13.0	9.0	43.0	13.0	39.0
Max Q Clear Time (g_c+I1), s	20.4	15.8	41.0	15.0	10.8	45.0	8.5	14.2
Green Ext Time (p_c), s	1.2	4.9	0.0	0.0	0.0	0.0	0.1	3.1

Intersection Summary	
HCM 2010 Ctrl Delay	81.5
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	70	450	130	410	340	60	260	190	940	40	70	70
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	72	464	109	423	351	54	268	196	512	41	72	47
Adj No. of Lanes	1	1	0	1	1	0	1	1	1	0	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	101	491	115	458	847	130	290	304	664	49	87	57
Arrive On Green	0.06	0.34	0.34	0.26	0.54	0.54	0.16	0.16	0.16	0.11	0.11	0.11
Sat Flow, veh/h	1774	1459	343	1774	1577	243	1774	1863	1564	442	776	506
Grp Volume(v), veh/h	72	0	573	423	0	405	268	196	512	160	0	0
Grp Sat Flow(s),veh/h/ln	1774	0	1802	1774	0	1820	1774	1863	1564	1724	0	0
Q Serve(g_s), s	4.9	0.0	37.9	28.4	0.0	16.2	18.2	12.0	20.0	11.1	0.0	0.0
Cycle Q Clear(g_c), s	4.9	0.0	37.9	28.4	0.0	16.2	18.2	12.0	20.0	11.1	0.0	0.0
Prop In Lane	1.00		0.19	1.00		0.13	1.00		1.00	0.26		0.29
Lane Grp Cap(c), veh/h	101	0	606	458	0	978	290	304	664	193	0	0
V/C Ratio(X)	0.71	0.00	0.95	0.92	0.00	0.41	0.92	0.64	0.77	0.83	0.00	0.00
Avail Cap(c_a), veh/h	261	0	618	637	0	1011	290	304	664	253	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	56.8	0.0	39.6	44.3	0.0	16.9	50.5	47.9	30.4	53.2	0.0	0.0
Incr Delay (d2), s/veh	8.9	0.0	23.4	15.5	0.0	0.3	33.8	4.6	5.6	15.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	22.7	16.0	0.0	8.2	11.7	6.6	15.8	6.1	0.0	0.0
LnGrp Delay(d),s/veh	65.6	0.0	63.0	59.8	0.0	17.2	84.3	52.5	36.0	69.1	0.0	0.0
LnGrp LOS	E		E	E		B	F	D	D	E		
Approach Vol, veh/h		645			828			976			160	
Approach Delay, s/veh		63.3			38.9			52.6			69.1	
Approach LOS		E			D			D			E	

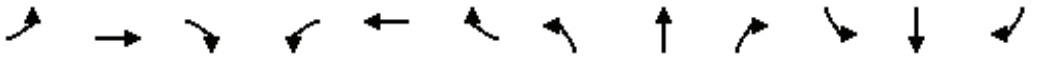
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	35.6	45.2		17.7	11.0	69.8		24.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	44.0	42.0		18.0	18.0	68.0		20.0
Max Q Clear Time (g_c+I1), s	30.4	39.9		13.1	6.9	18.2		22.0
Green Ext Time (p_c), s	1.2	1.3		0.3	0.1	8.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	51.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	230	10	500	360	890	0	0	310	300
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1900	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				242	11	460	379	937	0	0	326	0
Adj No. of Lanes				1	1	0	1	2	0	0	2	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				590	12	516	441	1881	0	0	761	0
Arrive On Green				0.33	0.33	0.33	0.25	0.53	0.00	0.00	0.21	0.00
Sat Flow, veh/h				1774	37	1552	1774	3632	0	0	3725	0
Grp Volume(v), veh/h				242	0	471	379	937	0	0	326	0
Grp Sat Flow(s),veh/h/ln				1774	0	1589	1774	1770	0	0	1770	0
Q Serve(g_s), s				6.2	0.0	16.6	12.0	9.9	0.0	0.0	4.7	0.0
Cycle Q Clear(g_c), s				6.2	0.0	16.6	12.0	9.9	0.0	0.0	4.7	0.0
Prop In Lane				1.00		0.98	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				590	0	528	441	1881	0	0	761	0
V/C Ratio(X)				0.41	0.00	0.89	0.86	0.50	0.00	0.00	0.43	0.00
Avail Cap(c_a), veh/h				633	0	567	603	2466	0	0	1022	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				15.2	0.0	18.6	21.1	8.8	0.0	0.0	20.0	0.0
Incr Delay (d2), s/veh				0.5	0.0	15.6	9.1	0.2	0.0	0.0	0.4	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.1	0.0	9.5	7.0	4.9	0.0	0.0	2.3	0.0
LnGrp Delay(d),s/veh				15.6	0.0	34.2	30.2	9.0	0.0	0.0	20.4	0.0
LnGrp LOS				B		C	C	A			C	
Approach Vol, veh/h					713			1316			326	
Approach Delay, s/veh					27.9			15.1			20.4	
Approach LOS					C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		35.3			18.6	16.7		23.6
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		41.0			20.0	17.0		21.0
Max Q Clear Time (g_c+I1), s		11.9			14.0	6.7		18.6
Green Ext Time (p_c), s		10.7			0.7	6.0		1.0

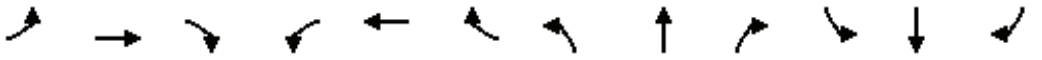
Intersection Summary	
HCM 2010 Ctrl Delay	19.7
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	970	420	190	500	0	0	0	0	590	20	450
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1863	1863	1900
Adj Flow Rate, veh/h	0	1010	369	198	521	0				615	21	430
Adj No. of Lanes	0	1	0	1	1	0				1	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	815	298	96	1167	0				473	20	405
Arrive On Green	0.00	0.63	0.63	1.00	1.00	0.00				0.27	0.27	0.27
Sat Flow, veh/h	0	1300	475	391	1863	0				1774	74	1520
Grp Volume(v), veh/h	0	0	1379	198	521	0				615	0	451
Grp Sat Flow(s),veh/h/ln	0	0	1775	391	1863	0				1774	0	1594
Q Serve(g_s), s	0.0	0.0	47.0	0.0	0.0	0.0				20.0	0.0	20.0
Cycle Q Clear(g_c), s	0.0	0.0	47.0	47.0	0.0	0.0				20.0	0.0	20.0
Prop In Lane	0.00		0.27	1.00		0.00				1.00		0.95
Lane Grp Cap(c), veh/h	0	0	1112	96	1167	0				473	0	425
V/C Ratio(X)	0.00	0.00	1.24	2.06	0.45	0.00				1.30	0.00	1.06
Avail Cap(c_a), veh/h	0	0	1112	96	1167	0				473	0	425
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	0.43	0.43	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	14.0	23.5	0.0	0.0				27.5	0.0	27.5
Incr Delay (d2), s/veh	0.0	0.0	115.8	493.3	0.1	0.0				149.9	0.0	60.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	58.3	15.1	0.0	0.0				29.4	0.0	15.9
LnGrp Delay(d),s/veh	0.0	0.0	129.8	516.8	0.1	0.0				177.4	0.0	88.1
LnGrp LOS			F	F	A					F		F
Approach Vol, veh/h		1379			719						1066	
Approach Delay, s/veh		129.8			142.4						139.6	
Approach LOS		F			F						F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				51.0		24.0		51.0
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				47.0		20.0		47.0
Max Q Clear Time (g_c+I1), s				49.0		22.0		49.0
Green Ext Time (p_c), s				0.0		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	136.0
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	640	920	0	0	600	540	90	160	210	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1900			
Adj Flow Rate, veh/h	667	958	0	0	625	454	94	167	134			
Adj No. of Lanes	1	1	0	0	1	0	1	1	0			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	282	1416	0	0	758	551	237	128	103			
Arrive On Green	1.00	1.00	0.00	0.00	0.76	0.76	0.13	0.13	0.13			
Sat Flow, veh/h	521	1863	0	0	997	724	1774	958	769			
Grp Volume(v), veh/h	667	958	0	0	0	1079	94	0	301			
Grp Sat Flow(s),veh/h/ln	521	1863	0	0	0	1722	1774	0	1727			
Q Serve(g_s), s	26.8	0.0	0.0	0.0	0.0	30.2	3.6	0.0	10.0			
Cycle Q Clear(g_c), s	57.0	0.0	0.0	0.0	0.0	30.2	3.6	0.0	10.0			
Prop In Lane	1.00		0.00	0.00		0.42	1.00		0.45			
Lane Grp Cap(c), veh/h	282	1416	0	0	0	1308	237	0	230			
V/C Ratio(X)	2.37	0.68	0.00	0.00	0.00	0.82	0.40	0.00	1.31			
Avail Cap(c_a), veh/h	282	1416	0	0	0	1308	237	0	230			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.09	0.09	0.00	0.00	0.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	19.7	0.0	0.0	0.0	0.0	5.8	29.7	0.0	32.5			
Incr Delay (d2), s/veh	615.8	0.1	0.0	0.0	0.0	4.4	4.9	0.0	165.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	54.0	0.0	0.0	0.0	0.0	15.4	2.1	0.0	15.3			
LnGrp Delay(d),s/veh	635.5	0.1	0.0	0.0	0.0	10.2	34.7	0.0	198.4			
LnGrp LOS	F	A				B	C		F			
Approach Vol, veh/h		1625			1079			395				
Approach Delay, s/veh		260.9			10.2			159.5				
Approach LOS		F			B			F				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		14.0		61.0				61.0
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		10.0		57.0				57.0
Max Q Clear Time (g_c+I1), s		12.0		59.0				32.2
Green Ext Time (p_c), s		0.0		0.0				23.3

Intersection Summary	
HCM 2010 Ctrl Delay	160.7
HCM 2010 LOS	F

Notes

User approved changes to right turn type.

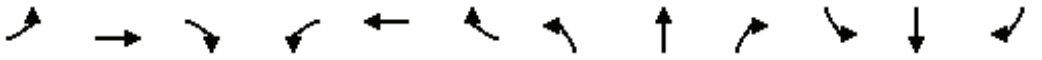
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	70	710	440	40	590	120	300	640	40	90	350	50
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.95	1.00		0.95	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	73	740	376	42	615	108	312	667	38	94	365	38
Adj No. of Lanes	0	2	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	133	1267	731	81	1172	216	339	1144	65	119	686	71
Arrive On Green	0.48	0.48	0.48	0.48	0.48	0.48	0.19	0.34	0.34	0.07	0.21	0.21
Sat Flow, veh/h	192	2614	1509	91	2419	445	1774	3393	193	1774	3219	332
Grp Volume(v), veh/h	351	462	376	379	0	386	312	348	357	94	199	204
Grp Sat Flow(s),veh/h/ln	1196	1610	1509	1365	0	1591	1774	1770	1817	1774	1770	1782
Q Serve(g_s), s	11.1	22.4	18.5	2.5	0.0	17.8	18.6	17.5	17.5	5.6	10.8	11.0
Cycle Q Clear(g_c), s	28.9	22.4	18.5	24.9	0.0	17.8	18.6	17.5	17.5	5.6	10.8	11.0
Prop In Lane	0.21		1.00	0.11		0.28	1.00		0.11	1.00		0.19
Lane Grp Cap(c), veh/h	620	780	731	698	0	771	339	596	612	119	377	380
V/C Ratio(X)	0.57	0.59	0.51	0.54	0.00	0.50	0.92	0.58	0.58	0.79	0.53	0.54
Avail Cap(c_a), veh/h	620	780	731	698	0	771	345	596	612	427	639	643
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.00	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.5	20.1	19.1	18.3	0.0	18.9	42.9	29.5	29.5	49.6	37.7	37.8
Incr Delay (d2), s/veh	3.7	3.3	2.6	0.3	0.0	0.2	28.1	1.8	1.7	4.3	1.6	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	10.6	8.2	7.3	0.0	7.9	11.7	8.8	9.0	2.9	5.4	5.6
LnGrp Delay(d),s/veh	25.2	23.4	21.7	18.6	0.0	19.2	70.9	31.3	31.3	53.9	39.3	39.4
LnGrp LOS	C	C	C	B		B	E	C	C	D	D	D
Approach Vol, veh/h		1189			765			1017			497	
Approach Delay, s/veh		23.4			18.9			43.5			42.1	
Approach LOS		C			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	24.7	27.0		56.3	11.3	40.4		56.3
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	21.0	39.0		36.0	26.0	34.0		36.0
Max Q Clear Time (g_c+I1), s	20.6	13.0		30.9	7.6	19.5		26.9
Green Ext Time (p_c), s	0.0	6.5		4.6	0.1	7.7		7.8

Intersection Summary	
HCM 2010 Ctrl Delay	31.0
HCM 2010 LOS	C

Notes

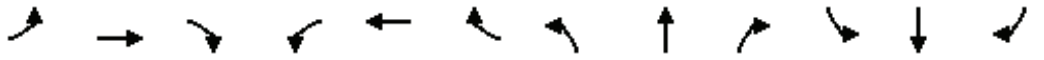
User approved ignoring U-Turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	210	80	100	330	100	120	1030	90	130	990	60
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.88	1.00		0.90	1.00		0.93	1.00		0.88
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	20	214	69	102	337	93	122	1051	86	133	1010	57
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	82	313	101	172	400	110	160	1451	119	163	1494	84
Arrive On Green	0.05	0.24	0.24	0.10	0.29	0.29	0.09	0.44	0.44	0.03	0.15	0.15
Sat Flow, veh/h	1774	1302	420	1774	1370	378	1774	3291	269	1774	3378	191
Grp Volume(v), veh/h	20	0	283	102	0	430	122	565	572	133	529	538
Grp Sat Flow(s),veh/h/ln	1774	0	1722	1774	0	1748	1774	1770	1790	1774	1770	1799
Q Serve(g_s), s	1.2	0.0	16.1	5.9	0.0	25.0	7.3	28.3	28.4	8.1	30.6	30.6
Cycle Q Clear(g_c), s	1.2	0.0	16.1	5.9	0.0	25.0	7.3	28.3	28.4	8.1	30.6	30.6
Prop In Lane	1.00		0.24	1.00		0.22	1.00		0.15	1.00		0.11
Lane Grp Cap(c), veh/h	82	0	415	172	0	510	160	780	789	163	783	796
V/C Ratio(X)	0.25	0.00	0.68	0.59	0.00	0.84	0.76	0.72	0.72	0.82	0.68	0.68
Avail Cap(c_a), veh/h	197	0	415	197	0	510	197	780	789	197	783	796
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.61	0.61	0.61
Uniform Delay (d), s/veh	49.7	0.0	37.3	46.7	0.0	35.9	48.0	24.8	24.8	51.5	38.8	38.8
Incr Delay (d2), s/veh	0.6	0.0	8.8	1.7	0.0	15.5	9.9	5.8	5.7	10.7	2.8	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	8.6	3.0	0.0	14.3	4.0	15.1	15.2	4.5	15.6	15.9
LnGrp Delay(d),s/veh	50.3	0.0	46.1	48.4	0.0	51.4	57.9	30.6	30.5	62.2	41.6	41.6
LnGrp LOS	D		D	D		D	E	C	C	E	D	D
Approach Vol, veh/h		303			532			1259			1200	
Approach Delay, s/veh		46.3			50.9			33.2			43.9	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	51.8	13.5	30.0	12.9	51.6	8.0	35.5
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	12.0	44.0	12.0	26.0	12.0	44.0	12.0	26.0
Max Q Clear Time (g_c+I1), s	9.3	32.6	7.9	18.1	10.1	30.4	3.2	27.0
Green Ext Time (p_c), s	0.0	10.3	0.0	2.0	0.0	12.1	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	41.2
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	880	160	120	620	0	0	0	0	170	740	130
Number	7	4	14	3	8	18				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		1.00				1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	907	146	124	639	0				175	763	119
Adj No. of Lanes	0	2	0	1	2	0				0	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1582	255	288	1854	0				192	879	144
Arrive On Green	0.00	0.52	0.52	0.52	0.52	0.00				0.34	0.34	0.34
Sat Flow, veh/h	0	3112	486	533	3632	0				571	2609	426
Grp Volume(v), veh/h	0	532	521	124	639	0				562	0	495
Grp Sat Flow(s),veh/h/ln	0	1770	1734	533	1770	0				1834	0	1772
Q Serve(g_s), s	0.0	12.5	12.5	12.6	6.4	0.0				17.9	0.0	15.7
Cycle Q Clear(g_c), s	0.0	12.5	12.5	25.1	6.4	0.0				17.9	0.0	15.7
Prop In Lane	0.00		0.28	1.00		0.00				0.31		0.24
Lane Grp Cap(c), veh/h	0	927	909	288	1854	0				618	0	597
V/C Ratio(X)	0.00	0.57	0.57	0.43	0.34	0.00				0.91	0.00	0.83
Avail Cap(c_a), veh/h	0	998	979	309	1997	0				630	0	608
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	9.9	9.9	18.5	8.5	0.0				19.4	0.0	18.6
Incr Delay (d2), s/veh	0.0	0.4	0.4	0.4	0.0	0.0				16.7	0.0	8.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.1	6.0	1.9	3.1	0.0				11.9	0.0	9.0
LnGrp Delay(d),s/veh	0.0	10.3	10.3	18.8	8.5	0.0				36.1	0.0	27.2
LnGrp LOS		B	B	B	A					D		C
Approach Vol, veh/h		1053			763						1057	
Approach Delay, s/veh		10.3			10.2						31.9	
Approach LOS		B			B						C	

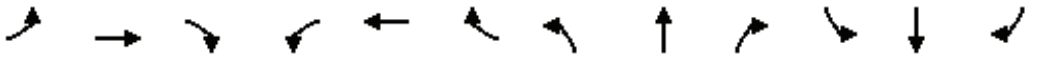
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		25.1		36.0				36.0
Change Period (Y+Rc), s		4.5		4.0				4.0
Max Green Setting (Gmax), s		21.0		34.5				34.5
Max Q Clear Time (g_c+I1), s		19.9		14.5				27.1
Green Ext Time (p_c), s		0.6		9.5				4.9

Intersection Summary	
HCM 2010 Ctrl Delay	18.2
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	270	780	0	0	450	160	290	1660	150	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.93	1.00		0.95			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1900	1863	1900			
Adj Flow Rate, veh/h	276	796	0	0	459	112	296	1694	143			
Adj No. of Lanes	1	2	0	0	2	0	0	3	0			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	340	1706	0	0	650	157	280	1715	148			
Arrive On Green	0.19	0.48	0.00	0.00	0.23	0.23	0.40	0.40	0.40			
Sat Flow, veh/h	1774	3632	0	0	2873	671	692	4239	365			
Grp Volume(v), veh/h	276	796	0	0	290	281	782	657	694			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1682	1828	1695	1774			
Q Serve(g_s), s	9.2	9.3	0.0	0.0	9.3	9.5	25.0	23.3	23.7			
Cycle Q Clear(g_c), s	9.2	9.3	0.0	0.0	9.3	9.5	25.0	23.3	23.7			
Prop In Lane	1.00		0.00	0.00		0.40	0.38		0.21			
Lane Grp Cap(c), veh/h	340	1706	0	0	414	393	740	686	718			
V/C Ratio(X)	0.81	0.47	0.00	0.00	0.70	0.71	1.06	0.96	0.97			
Avail Cap(c_a), veh/h	574	1706	0	0	587	558	740	686	718			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	23.9	10.7	0.0	0.0	21.7	21.8	18.4	17.9	18.0			
Incr Delay (d2), s/veh	1.8	0.1	0.0	0.0	0.8	1.0	49.1	24.2	25.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.7	4.4	0.0	0.0	4.6	4.5	22.4	15.4	16.5			
LnGrp Delay(d),s/veh	25.7	10.8	0.0	0.0	22.5	22.7	67.5	42.0	43.6			
LnGrp LOS	C	B			C	C	F	D	D			
Approach Vol, veh/h		1072			571			2133				
Approach Delay, s/veh		14.6			22.6			51.9				
Approach LOS		B			C			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		28.5	15.3	17.9				33.3
Change Period (Y+Rc), s		3.5	3.5	3.5				3.5
Max Green Setting (Gmax), s		25.0	20.0	20.5				20.5
Max Q Clear Time (g_c+I1), s		27.0	11.2	11.5				11.3
Green Ext Time (p_c), s		0.0	0.8	1.7				3.1

Intersection Summary	
HCM 2010 Ctrl Delay	36.9
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	300	90	100	360	130	150	620	160	160	620	30
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.90	1.00		0.92	1.00		0.94	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	52	309	36	103	371	123	155	639	108	165	639	29
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	1	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	533	408	128	419	139	183	747	596	194	717	33
Arrive On Green	0.04	0.29	0.29	0.07	0.32	0.32	0.10	0.40	0.40	0.11	0.41	0.41
Sat Flow, veh/h	1774	1863	1428	1774	1308	434	1774	1863	1485	1774	1766	80
Grp Volume(v), veh/h	52	309	36	103	0	494	155	639	108	165	0	668
Grp Sat Flow(s),veh/h/ln	1774	1863	1428	1774	0	1741	1774	1863	1485	1774	0	1846
Q Serve(g_s), s	3.2	15.9	2.1	6.4	0.0	30.1	9.6	35.0	5.3	10.2	0.0	37.7
Cycle Q Clear(g_c), s	3.2	15.9	2.1	6.4	0.0	30.1	9.6	35.0	5.3	10.2	0.0	37.7
Prop In Lane	1.00		1.00	1.00		0.25	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	67	533	408	128	0	558	183	747	596	194	0	750
V/C Ratio(X)	0.78	0.58	0.09	0.80	0.00	0.88	0.85	0.86	0.18	0.85	0.00	0.89
Avail Cap(c_a), veh/h	86	585	448	162	0	622	197	775	618	214	0	784
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.3	34.2	29.2	51.1	0.0	36.0	49.2	30.5	21.6	48.9	0.0	30.9
Incr Delay (d2), s/veh	30.5	1.4	0.1	21.2	0.0	13.6	26.7	9.2	0.2	25.5	0.0	12.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	8.4	0.8	3.9	0.0	16.5	6.1	19.8	2.2	6.4	0.0	21.7
LnGrp Delay(d),s/veh	83.8	35.6	29.4	72.3	0.0	49.6	76.0	39.8	21.8	74.4	0.0	43.2
LnGrp LOS	F	D	C	E		D	E	D	C	E		D
Approach Vol, veh/h		397			597			902			833	
Approach Delay, s/veh		41.3			53.5			43.8			49.4	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	36.1	15.7	48.3	7.8	39.9	15.1	48.9
Change Period (Y+Rc), s	3.6	4.1	3.5	3.5	3.6	4.1	3.6	3.5
Max Green Setting (Gmax), s	10.2	35.1	13.5	46.5	5.4	39.9	12.4	47.5
Max Q Clear Time (g_c+I1), s	8.4	17.9	12.2	37.0	5.2	32.1	11.6	39.7
Green Ext Time (p_c), s	0.0	6.2	0.1	6.8	0.0	3.8	0.0	5.7

Intersection Summary	
HCM 2010 Ctrl Delay	47.3
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	180	1130	20	40	680	100	20	330	60	110	100	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00	0.95		1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		0.99	1.00
Frt	1.00	1.00		1.00	0.98			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		0.97	1.00
Satd. Flow (prot)	1770	1856		1770	1802			1857	1510		1803	1553
Flt Permitted	0.20	1.00		0.06	1.00			0.98	1.00		0.37	1.00
Satd. Flow (perm)	381	1856		108	1802			1817	1510		692	1553
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	188	1177	21	42	708	104	21	344	62	115	104	115
RTOR Reduction (vph)	0	1	0	0	5	0	0	0	19	0	0	62
Lane Group Flow (vph)	188	1197	0	42	807	0	0	365	43	0	219	53
Confl. Peds. (#/hr)	38		20	20		38	4		16	16		4
Confl. Bikes (#/hr)			10			16						4
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	69.0	69.0		69.0	69.0			33.0	33.0		33.0	33.0
Effective Green, g (s)	69.0	69.0		69.0	69.0			33.0	33.0		33.0	33.0
Actuated g/C Ratio	0.63	0.63		0.63	0.63			0.30	0.30		0.30	0.30
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	2.0		2.0	2.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	238	1164		67	1130			545	453		207	465
v/s Ratio Prot		c0.65			0.45							
v/s Ratio Perm	0.49			0.39				0.20	0.03		c0.32	0.03
v/c Ratio	0.79	1.03		0.63	0.71			0.67	0.10		1.06	0.11
Uniform Delay, d1	15.1	20.5		12.6	13.8			33.7	27.7		38.5	27.9
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	22.9	33.9		37.0	3.9			3.1	0.1		78.7	0.1
Delay (s)	38.0	54.4		49.6	17.7			36.8	27.8		117.2	28.0
Level of Service	D	D		D	B			D	C		F	C
Approach Delay (s)		52.2			19.3			35.5			86.5	
Approach LOS		D			B			D			F	

Intersection Summary			
HCM 2000 Control Delay	44.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	114.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	650	220	60	560	120	170	20	270	150	70	50
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.96	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	30	657	222	61	566	121	172	20	273	152	71	51
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	1	1	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	434	1206	407	339	1345	286	510	51	548	371	352	253
Arrive On Green	0.47	0.47	0.47	0.62	0.62	0.62	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	751	2585	873	628	2882	614	1008	144	1543	1082	990	711
Grp Volume(v), veh/h	30	450	429	61	347	340	192	0	273	152	0	122
Grp Sat Flow(s),veh/h/ln	751	1770	1688	628	1770	1726	1152	0	1543	1082	0	1702
Q Serve(g_s), s	1.2	8.2	8.2	3.1	4.5	4.6	5.0	0.0	6.2	5.9	0.0	2.2
Cycle Q Clear(g_c), s	5.7	8.2	8.2	11.3	4.5	4.6	7.2	0.0	6.2	13.1	0.0	2.2
Prop In Lane	1.00		0.52	1.00		0.36	0.90		1.00	1.00		0.42
Lane Grp Cap(c), veh/h	434	826	788	339	826	806	561	0	548	371	0	605
V/C Ratio(X)	0.07	0.54	0.54	0.18	0.42	0.42	0.34	0.00	0.50	0.41	0.00	0.20
Avail Cap(c_a), veh/h	434	826	788	339	826	806	561	0	548	371	0	605
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.83	0.83	0.83	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.4	8.6	8.6	9.6	5.4	5.4	12.3	0.0	11.4	17.0	0.0	10.1
Incr Delay (d2), s/veh	0.3	2.6	2.7	1.0	1.3	1.4	1.7	0.0	3.2	3.3	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	4.5	4.3	0.6	2.5	2.4	2.2	0.0	3.1	2.1	0.0	1.2
LnGrp Delay(d),s/veh	9.7	11.2	11.3	10.6	6.7	6.8	14.0	0.0	14.6	20.3	0.0	10.8
LnGrp LOS	A	B	B	B	A	A	B		B	C		B
Approach Vol, veh/h		909			748			465			274	
Approach Delay, s/veh		11.2			7.1			14.3			16.1	
Approach LOS		B			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		20.0		25.0		20.0		25.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		16.0		21.0		16.0		21.0
Max Q Clear Time (g_c+I1), s		9.2		10.2		15.1		13.3
Green Ext Time (p_c), s		2.2		7.3		0.4		5.6

Intersection Summary	
HCM 2010 Ctrl Delay	11.1
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	260	810	0	0	450	460	290	10	210	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.95	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1900			
Adj Flow Rate, veh/h	274	853	0	0	474	484	305	11	221			
Adj No. of Lanes	1	2	0	0	2	0	1	1	0			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	309	1652	0	0	826	705	631	27	540			
Arrive On Green	0.47	0.47	0.00	0.00	0.62	0.62	0.36	0.36	0.36			
Sat Flow, veh/h	582	3632	0	0	1863	1511	1774	76	1519			
Grp Volume(v), veh/h	274	853	0	0	474	484	305	0	232			
Grp Sat Flow(s),veh/h/ln	582	1770	0	0	1770	1511	1774	0	1595			
Q Serve(g_s), s	11.5	7.6	0.0	0.0	7.1	9.5	6.0	0.0	4.9			
Cycle Q Clear(g_c), s	21.0	7.6	0.0	0.0	7.1	9.5	6.0	0.0	4.9			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		0.95			
Lane Grp Cap(c), veh/h	309	1652	0	0	826	705	631	0	567			
V/C Ratio(X)	0.89	0.52	0.00	0.00	0.57	0.69	0.48	0.00	0.41			
Avail Cap(c_a), veh/h	309	1652	0	0	826	705	631	0	567			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.33	1.33	1.00	1.00	1.00			
Upstream Filter(I)	0.87	0.87	0.00	0.00	0.89	0.89	1.00	0.00	1.00			
Uniform Delay (d), s/veh	19.4	8.4	0.0	0.0	5.9	6.4	11.3	0.0	10.9			
Incr Delay (d2), s/veh	26.4	1.0	0.0	0.0	2.6	4.8	2.6	0.0	2.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.6	3.9	0.0	0.0	3.9	4.7	3.3	0.0	2.5			
LnGrp Delay(d),s/veh	45.8	9.4	0.0	0.0	8.5	11.2	13.9	0.0	13.1			
LnGrp LOS	D	A			A	B	B		B			
Approach Vol, veh/h		1127			958			537				
Approach Delay, s/veh		18.3			9.8			13.6				
Approach LOS		B			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		20.0		25.0				25.0
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		16.0		21.0				21.0
Max Q Clear Time (g_c+I1), s		8.0		23.0				11.5
Green Ext Time (p_c), s		1.6		0.0				8.0

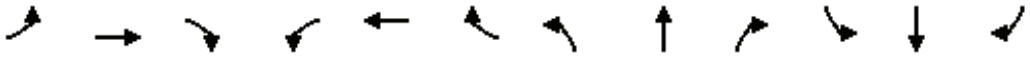
Intersection Summary	
HCM 2010 Ctrl Delay	14.2
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	900	60	80	790	100	70	80	90	70	50	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0		3.0	4.0			2.0			2.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.98			0.95			0.97	
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.98	
Satd. Flow (prot)	1770	3497		1770	3469			1743			1753	
Flt Permitted	0.95	1.00		0.95	1.00			0.88			0.76	
Satd. Flow (perm)	1770	3497		1770	3469			1558			1360	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	62	938	62	83	823	104	73	83	94	73	52	42
RTOR Reduction (vph)	0	5	0	0	10	0	0	0	0	0	14	0
Lane Group Flow (vph)	62	995	0	83	917	0	0	250	0	0	153	0
Confl. Peds. (#/hr)			8			8						6
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1 3	3 6			4			4	
Permitted Phases							4			4		
Actuated Green, G (s)	4.4	24.2		32.0	51.8			24.8			24.8	
Effective Green, g (s)	4.4	24.2		28.0	51.8			24.8			24.8	
Actuated g/C Ratio	0.05	0.27		0.31	0.58			0.28			0.28	
Clearance Time (s)	3.0	4.0						2.0			2.0	
Vehicle Extension (s)	3.0	3.0						3.0			3.0	
Lane Grp Cap (vph)	86	940		550	1996			429			374	
v/s Ratio Prot	0.04	c0.28		0.05	c0.26							
v/s Ratio Perm								c0.16			0.11	
v/c Ratio	0.72	1.06		0.15	0.46			0.58			0.41	
Uniform Delay, d1	42.2	32.9		22.4	11.0			28.1			26.6	
Progression Factor	0.98	0.96		1.18	0.26			1.00			1.00	
Incremental Delay, d2	23.0	44.5		0.1	0.1			2.0			0.7	
Delay (s)	64.5	76.0		26.5	3.0			30.2			27.4	
Level of Service	E	E		C	A			C			C	
Approach Delay (s)		75.3			4.9			30.2			27.4	
Approach LOS		E			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	39.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	320	1020	0	0	860	320	170	60	580	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Lane Util. Factor	1.00	0.95			*1.00		1.00	0.95	0.95			
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Frt	1.00	1.00			0.96		1.00	0.88	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	1770	3539			3532		1770	1553	1504			
Flt Permitted	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	1770	3539			3532		1770	1553	1504			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	333	1062	0	0	896	333	177	62	604	0	0	0
RTOR Reduction (vph)	0	0	0	0	47	0	0	167	167	0	0	0
Lane Group Flow (vph)	333	1062	0	0	1182	0	177	173	159	0	0	0
Confl. Peds. (#/hr)	20		10	10		20						
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	17.5	72.5			52.0		10.0	10.0	10.0			
Effective Green, g (s)	17.5	72.5			52.0		10.0	10.0	10.0			
Actuated g/C Ratio	0.19	0.81			0.58		0.11	0.11	0.11			
Clearance Time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	344	2850			2040		196	172	167			
v/s Ratio Prot	c0.19	0.30			c0.33			c0.11				
v/s Ratio Perm							0.10		0.11			
v/c Ratio	0.97	0.37			0.58		0.90	1.01	0.95			
Uniform Delay, d1	36.0	2.4			12.1		39.5	40.0	39.8			
Progression Factor	0.50	1.24			1.00		1.00	1.00	1.00			
Incremental Delay, d2	36.2	0.3			1.2		38.3	70.0	55.1			
Delay (s)	54.0	3.3			13.3		77.8	110.0	94.9			
Level of Service	D	A			B		E	F	F			
Approach Delay (s)		15.4			13.3			97.4			0.0	
Approach LOS		B			B			F			A	

Intersection Summary			
HCM 2000 Control Delay	34.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	77.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	350	350	180	90	350	80	190	980	50	70	860	210
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	1.00		0.86	1.00		0.90	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	368	368	134	95	368	26	200	1032	9	74	905	195
Adj No. of Lanes	1	1	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	197	666	516	0	725	51	197	1645	14	146	1233	265
Arrive On Green	0.04	0.12	0.12	0.00	0.22	0.22	0.11	0.46	0.46	0.08	0.43	0.43
Sat Flow, veh/h	1774	1863	1444	0	3314	232	1774	3591	31	1774	2871	618
Grp Volume(v), veh/h	368	368	134	0	195	199	200	509	532	74	558	542
Grp Sat Flow(s),veh/h/ln	1774	1863	1444	0	1770	1776	1774	1770	1853	1774	1770	1720
Q Serve(g_s), s	12.0	20.1	9.1	0.0	10.5	10.6	12.0	23.6	23.6	4.3	28.3	28.4
Cycle Q Clear(g_c), s	12.0	20.1	9.1	0.0	10.5	10.6	12.0	23.6	23.6	4.3	28.3	28.4
Prop In Lane	1.00		1.00	0.00		0.13	1.00		0.02	1.00		0.36
Lane Grp Cap(c), veh/h	197	666	516	0	387	388	197	811	849	146	760	738
V/C Ratio(X)	1.87	0.55	0.26	0.00	0.50	0.51	1.01	0.63	0.63	0.51	0.73	0.73
Avail Cap(c_a), veh/h	197	666	516	0	426	428	197	811	849	197	760	738
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.59	0.59	0.59	0.00	1.00	1.00	0.52	0.52	0.52	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.0	39.5	34.6	0.0	37.0	37.1	48.0	22.3	22.3	47.4	25.7	25.7
Incr Delay (d2), s/veh	401.5	0.3	0.1	0.0	0.4	0.4	49.8	1.9	1.8	1.0	6.2	6.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	27.9	10.5	3.7	0.0	5.1	5.2	8.6	11.9	12.4	2.2	15.1	14.7
LnGrp Delay(d),s/veh	453.5	39.8	34.7	0.0	37.4	37.5	97.9	24.2	24.1	48.4	31.9	32.1
LnGrp LOS	F	D	C		D	D	F	C	C	D	C	C
Approach Vol, veh/h		870			394			1241			1174	
Approach Delay, s/veh		214.0			37.5			36.0			33.0	
Approach LOS		F			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	53.5	0.0	42.6	15.0	50.4	15.0	27.6
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	12.0	44.0	12.0	26.0	12.0	44.0	12.0	26.0
Max Q Clear Time (g_c+I1), s	6.3	25.6	0.0	22.1	14.0	30.4	14.0	12.6
Green Ext Time (p_c), s	0.0	15.6	0.0	1.4	0.0	11.9	0.0	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	77.3
HCM 2010 LOS	E

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	260	210	30	90	300	120	20	260	70	110	160	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3473		1770	3539	1583	1530	2953		1618	1697	1502
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3473		1770	3539	1583	1530	2953		1618	1697	1502
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	286	231	33	99	330	132	22	286	77	121	176	264
RTOR Reduction (vph)	0	10	0	0	0	106	0	23	0	0	0	210
Lane Group Flow (vph)	286	254	0	99	330	26	22	340	0	109	188	54
Confl. Bikes (#/hr)									2			2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	18%	18%	18%	6%	6%	6%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases						2						8
Actuated Green, G (s)	14.9	24.2		6.6	15.9	15.9	15.9	15.9		16.5	16.5	16.5
Effective Green, g (s)	14.9	24.2		6.6	15.9	15.9	15.9	15.9		16.5	16.5	16.5
Actuated g/C Ratio	0.18	0.30		0.08	0.20	0.20	0.20	0.20		0.20	0.20	0.20
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Vehicle Extension (s)	2.0	4.0		2.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Grp Cap (vph)	326	1041		144	697	311	301	581		330	346	307
v/s Ratio Prot	c0.16	0.07		0.06	c0.09		0.01	c0.12		0.07	c0.11	
v/s Ratio Perm						0.02						0.04
v/c Ratio	0.88	0.24		0.69	0.47	0.08	0.07	0.58		0.33	0.54	0.18
Uniform Delay, d1	32.0	21.3		36.0	28.7	26.5	26.4	29.4		27.4	28.7	26.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	21.7	0.2		10.3	0.7	0.2	0.1	1.8		0.8	2.2	0.4
Delay (s)	53.7	21.5		46.4	29.4	26.6	26.5	31.2		28.2	30.9	26.9
Level of Service	D	C		D	C	C	C	C		C	C	C
Approach Delay (s)		38.3			31.7			30.9			28.5	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	32.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	80.7	Sum of lost time (s)	17.5
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1000	60	280	750	0	0	0	0	340	10	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			3.0						4.0	4.0
Lane Util. Factor		0.95			*1.00						1.00	1.00
Frpb, ped/bikes		1.00			1.00						1.00	1.00
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.99			1.00						1.00	0.85
Flt Protected		1.00			0.99						0.95	1.00
Satd. Flow (prot)		3502			5513						1776	1583
Flt Permitted		1.00			0.72						0.95	1.00
Satd. Flow (perm)		3502			4038						1776	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	1042	62	292	781	0	0	0	0	354	10	229
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1099	0	0	1073	0	0	0	0	0	364	229
Confl. Peds. (#/hr)			6			5						
Turn Type		NA		Prot	NA					Split	NA	Perm
Protected Phases		2 4		1	1 6					3	3	
Permitted Phases												3
Actuated Green, G (s)		53.0			29.8						18.0	18.0
Effective Green, g (s)		53.0			29.8						18.0	18.0
Actuated g/C Ratio		0.59			0.33						0.20	0.20
Clearance Time (s)											4.0	4.0
Vehicle Extension (s)											3.0	3.0
Lane Grp Cap (vph)		2062			1500						355	316
v/s Ratio Prot		c0.31			c0.08						c0.20	
v/s Ratio Perm					c0.16							0.14
v/c Ratio		0.53			1.49dl						1.03	0.72
Uniform Delay, d1		11.1			26.4						36.0	33.7
Progression Factor		0.14			0.82						1.00	1.00
Incremental Delay, d2		0.1			1.2						54.4	8.0
Delay (s)		1.7			23.0						90.4	41.7
Level of Service		A			C						F	D
Approach Delay (s)		1.7			23.0			0.0			71.6	
Approach LOS		A			C			A			E	

Intersection Summary			
HCM 2000 Control Delay	24.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

Appendix E-11

Existing Plus Sub-Area 4 Project Conditions Intersection LOS Calculations

FEHR PEERS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	334	133	134	370	0	0	0	0	83	928	82
Future Volume (veh/h)	0	334	133	134	370	0	0	0	0	83	928	82
Number	3	8	18	7	4	14				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	0.99		1.00				1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1900	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	359	95	144	398	0				89	998	79
Adj No. of Lanes	0	2	1	0	2	0				0	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93				0.93	0.93	0.93
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1122	487	253	685	0				151	1774	147
Arrive On Green	0.00	0.32	0.32	0.32	0.32	0.00				0.57	0.57	0.57
Sat Flow, veh/h	0	3632	1536	504	2245	0				267	3133	260
Grp Volume(v), veh/h	0	359	95	257	285	0				616	0	550
Grp Sat Flow(s),veh/h/ln	0	1770	1536	1054	1610	0				1849	0	1811
Q Serve(g_s), s	0.0	4.6	2.7	9.4	8.8	0.0				13.0	0.0	11.3
Cycle Q Clear(g_c), s	0.0	4.6	2.7	14.1	8.8	0.0				13.0	0.0	11.3
Prop In Lane	0.00		1.00	0.56		0.00				0.14		0.14
Lane Grp Cap(c), veh/h	0	1122	487	428	510	0				1047	0	1025
V/C Ratio(X)	0.00	0.32	0.20	0.60	0.56	0.00				0.59	0.00	0.54
Avail Cap(c_a), veh/h	0	1445	627	536	658	0				1047	0	1025
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.95	0.95	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	15.6	14.9	19.3	17.0	0.0				8.5	0.0	8.1
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.5	0.3	0.0				2.4	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.3	1.1	3.9	3.9	0.0				7.2	0.0	6.2
LnGrp Delay(d),s/veh	0.0	15.6	15.0	19.8	17.3	0.0				10.9	0.0	10.1
LnGrp LOS		B	B	B	B					B		B
Approach Vol, veh/h		454			542						1166	
Approach Delay, s/veh		15.5			18.5						10.5	
Approach LOS		B			B						B	

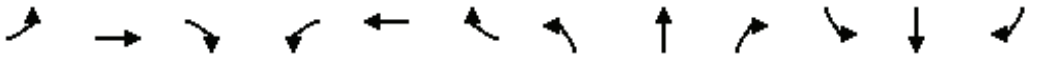
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		37.5		22.5				22.5
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		28.5		24.5				24.5
Max Q Clear Time (g_c+I1), s		15.0		16.1				6.6
Green Ext Time (p_c), s		4.6		3.0				4.2

Intersection Summary	
HCM 2010 Ctrl Delay	13.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	484	147	105	443	0	0	0	0	138	520	115
Future Volume (veh/h)	0	484	147	105	443	0	0	0	0	138	520	115
Number	3	8	18	7	4	14				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00				1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1881	1881	1900	1881	0				1900	1881	1900
Adj Flow Rate, veh/h	0	484	102	105	443	0				138	520	107
Adj No. of Lanes	0	2	1	0	2	0				0	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Percent Heavy Veh, %	0	1	1	1	1	0				0	1	0
Cap, veh/h	0	1155	504	186	769	0				357	1407	303
Arrive On Green	0.00	0.32	0.32	0.32	0.32	0.00				0.57	0.57	0.57
Sat Flow, veh/h	0	3668	1558	339	2465	0				625	2465	532
Grp Volume(v), veh/h	0	484	102	259	289	0				408	0	357
Grp Sat Flow(s),veh/h/ln	0	1787	1558	1092	1626	0				1850	0	1772
Q Serve(g_s), s	0.0	7.0	3.1	8.0	9.7	0.0				8.0	0.0	7.1
Cycle Q Clear(g_c), s	0.0	7.0	3.1	15.0	9.7	0.0				8.0	0.0	7.1
Prop In Lane	0.00		1.00	0.41		0.00				0.34		0.30
Lane Grp Cap(c), veh/h	0	1155	504	430	526	0				1056	0	1011
V/C Ratio(X)	0.00	0.42	0.20	0.60	0.55	0.00				0.39	0.00	0.35
Avail Cap(c_a), veh/h	0	1652	720	603	752	0				1056	0	1011
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.96	0.96	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	17.5	16.2	20.3	18.4	0.0				7.8	0.0	7.6
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.5	0.3	0.0				1.1	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.4	1.3	4.3	4.4	0.0				4.4	0.0	3.7
LnGrp Delay(d),s/veh	0.0	17.6	16.2	20.8	18.7	0.0				8.9	0.0	8.6
LnGrp LOS		B	B	C	B					A		A
Approach Vol, veh/h		586			548						765	
Approach Delay, s/veh		17.3			19.7						8.7	
Approach LOS		B			B						A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		41.2		24.8				24.8
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		28.5		30.5				30.5
Max Q Clear Time (g_c+I1), s		10.0		17.0				9.0
Green Ext Time (p_c), s		3.1		4.3				5.1

Intersection Summary	
HCM 2010 Ctrl Delay	14.6
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	329	0	0	398	97	127	545	159	0	0	0
Future Volume (veh/h)	88	329	0	0	398	97	127	545	159	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	0.98		1.00	1.00		0.94	1.00		0.97			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1863	1900	1863	1900			
Adj Flow Rate, veh/h	100	374	0	0	452	41	144	619	107			
Adj No. of Lanes	0	2	0	0	2	1	0	3	0			
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	339	1067	0	0	1450	611	292	1344	237			
Arrive On Green	0.41	0.41	0.00	0.00	0.41	0.41	0.36	0.36	0.36			
Sat Flow, veh/h	413	2689	0	0	3632	1490	818	3761	662			
Grp Volume(v), veh/h	241	233	0	0	452	41	321	271	279			
Grp Sat Flow(s),veh/h/ln	1407	1610	0	0	1770	1490	1822	1695	1723			
Q Serve(g_s), s	0.0	3.0	0.0	0.0	2.6	0.5	4.1	3.7	3.7			
Cycle Q Clear(g_c), s	2.6	3.0	0.0	0.0	2.6	0.5	4.1	3.7	3.7			
Prop In Lane	0.41		0.00	0.00		1.00	0.45		0.38			
Lane Grp Cap(c), veh/h	746	660	0	0	1450	611	651	606	616			
V/C Ratio(X)	0.32	0.35	0.00	0.00	0.31	0.07	0.49	0.45	0.45			
Avail Cap(c_a), veh/h	1497	1607	0	0	3533	1487	1818	1692	1720			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	6.0	6.1	0.0	0.0	6.0	5.4	7.5	7.4	7.4			
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.2	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.4	1.3	0.0	0.0	1.3	0.2	2.1	1.7	1.7			
LnGrp Delay(d),s/veh	6.1	6.2	0.0	0.0	6.0	5.4	7.8	7.6	7.6			
LnGrp LOS	A	A			A	A	A	A	A			
Approach Vol, veh/h		474			493			870				
Approach Delay, s/veh		6.2			6.0			7.6				
Approach LOS		A			A			A				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		14.2		15.8				15.8
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		30.0		30.0				30.0
Max Q Clear Time (g_c+I1), s		6.1		4.6				5.0
Green Ext Time (p_c), s		3.7		4.5				4.5

Intersection Summary	
HCM 2010 Ctrl Delay	6.8
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	458	0	0	381	200	162	1166	165	0	0	0
Future Volume (veh/h)	156	458	0	0	381	200	162	1166	165	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	0.98		1.00	1.00		0.93	1.00		0.98			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1881	0	0	1881	1881	1900	1881	1900			
Adj Flow Rate, veh/h	159	467	0	0	389	142	165	1190	102			
Adj No. of Lanes	0	2	0	0	2	1	0	3	0			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	1	1	0	0	1	1	0	1	0			
Cap, veh/h	338	913	0	0	1458	609	245	1890	167			
Arrive On Green	0.41	0.41	0.00	0.00	0.41	0.41	0.43	0.43	0.43			
Sat Flow, veh/h	512	2323	0	0	3668	1492	572	4406	389			
Grp Volume(v), veh/h	293	333	0	0	389	142	534	449	473			
Grp Sat Flow(s),veh/h/ln	1123	1626	0	0	1787	1492	1853	1712	1802			
Q Serve(g_s), s	6.1	6.5	0.0	0.0	3.1	2.7	9.9	8.7	8.7			
Cycle Q Clear(g_c), s	9.2	6.5	0.0	0.0	3.1	2.7	9.9	8.7	8.7			
Prop In Lane	0.54		0.00	0.00		1.00	0.31		0.22			
Lane Grp Cap(c), veh/h	588	664	0	0	1458	609	795	734	773			
V/C Ratio(X)	0.50	0.50	0.00	0.00	0.27	0.23	0.67	0.61	0.61			
Avail Cap(c_a), veh/h	920	1136	0	0	2496	1042	1294	1196	1259			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	10.2	9.5	0.0	0.0	8.4	8.3	9.8	9.5	9.5			
Incr Delay (d2), s/veh	0.2	0.2	0.0	0.0	0.0	0.1	0.4	0.3	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.8	2.9	0.0	0.0	1.5	1.1	5.1	4.2	4.4			
LnGrp Delay(d),s/veh	10.4	9.7	0.0	0.0	8.5	8.4	10.2	9.8	9.8			
LnGrp LOS	B	A			A	A	B	A	A			
Approach Vol, veh/h		626			531			1457				
Approach Delay, s/veh		10.0			8.5			9.9				
Approach LOS		B			A			A				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		21.9		21.0				21.0
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		30.0		30.0				30.0
Max Q Clear Time (g_c+I1), s		11.9		5.1				11.2
Green Ext Time (p_c), s		6.4		5.5				5.1

Intersection Summary	
HCM 2010 Ctrl Delay	9.7
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	191	148	16	230	0	22	0	9	204	119	17
Future Volume (veh/h)	0	191	148	16	230	0	22	0	9	204	119	17
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1792	1900	1792	1792	0	1792	0	1792	1792	1792	1900
Adj Flow Rate, veh/h	0	199	53	17	240	0	23	0	0	237	89	13
Adj No. of Lanes	0	2	0	1	2	0	1	0	1	2	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	6	6	6	6	0	6	0	6	6	6	6
Cap, veh/h	0	1071	278	83	1918	0	0	0	0	491	220	32
Arrive On Green	0.00	0.40	0.40	0.05	0.56	0.00	0.00	0.00	0.00	0.14	0.14	0.14
Sat Flow, veh/h	0	2759	692	1707	3495	0		0		3414	1530	223
Grp Volume(v), veh/h	0	125	127	17	240	0		0.0		237	0	102
Grp Sat Flow(s),veh/h/ln	0	1703	1659	1707	1703	0				1707	0	1753
Q Serve(g_s), s	0.0	1.5	1.5	0.3	1.0	0.0				2.0	0.0	1.6
Cycle Q Clear(g_c), s	0.0	1.5	1.5	0.3	1.0	0.0				2.0	0.0	1.6
Prop In Lane	0.00		0.42	1.00		0.00				1.00		0.13
Lane Grp Cap(c), veh/h	0	683	665	83	1918	0				491	0	252
V/C Ratio(X)	0.00	0.18	0.19	0.21	0.13	0.00				0.48	0.00	0.40
Avail Cap(c_a), veh/h	0	1773	1727	1444	3545	0				2888	0	1483
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.0	6.0	14.1	3.2	0.0				12.1	0.0	12.0
Incr Delay (d2), s/veh	0.0	0.1	0.2	0.5	0.0	0.0				0.3	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.7	0.7	0.1	0.5	0.0				0.9	0.0	0.8
LnGrp Delay(d),s/veh	0.0	6.1	6.1	14.5	3.2	0.0				12.4	0.0	12.3
LnGrp LOS		A	A	B	A					B		B
Approach Vol, veh/h		252			257						339	
Approach Delay, s/veh		6.1			3.9						12.4	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		22.3			5.0	17.3		8.4
Change Period (Y+Rc), s		5.0			3.5	5.0		4.0
Max Green Setting (Gmax), s		32.0			26.0	32.0		26.0
Max Q Clear Time (g_c+I1), s		3.0			2.3	3.5		4.0
Green Ext Time (p_c), s		3.3			0.0	3.3		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	8.0
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	165	119	17	152	0	35	0	3	243	58	18
Future Volume (veh/h)	0	165	119	17	152	0	35	0	3	243	58	18
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1810	1900	1810	1810	0	1810	0	1810	1810	1810	1900
Adj Flow Rate, veh/h	0	185	25	19	171	0	39	0	-7	273	65	14
Adj No. of Lanes	0	2	0	1	2	0	1	0	1	2	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	5	5	5	5	0	5	0	5	5	5	5
Cap, veh/h	0	1201	160	92	1925	0	0	0	0	524	220	47
Arrive On Green	0.00	0.39	0.39	0.05	0.56	0.00	0.00	0.00	0.00	0.15	0.15	0.15
Sat Flow, veh/h	0	3135	405	1723	3529	0		0		3447	1444	311
Grp Volume(v), veh/h	0	103	107	19	171	0		0.0		273	0	79
Grp Sat Flow(s),veh/h/ln	0	1719	1731	1723	1719	0				1723	0	1755
Q Serve(g_s), s	0.0	1.2	1.2	0.3	0.7	0.0				2.3	0.0	1.2
Cycle Q Clear(g_c), s	0.0	1.2	1.2	0.3	0.7	0.0				2.3	0.0	1.2
Prop In Lane	0.00		0.23	1.00		0.00				1.00		0.18
Lane Grp Cap(c), veh/h	0	678	683	92	1925	0				524	0	267
V/C Ratio(X)	0.00	0.15	0.16	0.21	0.09	0.00				0.52	0.00	0.30
Avail Cap(c_a), veh/h	0	1760	1771	1433	3519	0				2866	0	1459
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.1	6.1	14.2	3.2	0.0				12.2	0.0	11.8
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.4	0.0	0.0				0.3	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.6	0.6	0.2	0.3	0.0				1.1	0.0	0.6
LnGrp Delay(d),s/veh	0.0	6.2	6.2	14.6	3.2	0.0				12.5	0.0	12.0
LnGrp LOS		A	A	B	A					B		B
Approach Vol, veh/h		210			190						352	
Approach Delay, s/veh		6.2			4.3						12.4	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		22.5			5.2	17.3		8.8
Change Period (Y+Rc), s		5.0			3.5	5.0		4.0
Max Green Setting (Gmax), s		32.0			26.0	32.0		26.0
Max Q Clear Time (g_c+I1), s		2.7			2.3	3.2		4.3
Green Ext Time (p_c), s		2.5			0.0	2.5		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	8.6
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	250	0	0	148	771	98	0	160	0	0	0
Future Volume (veh/h)	154	250	0	0	148	771	98	0	160	0	0	0
Number	1	6	16	5	2	12	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1827	0	0	1827	1900	1827	0	1827			
Adj Flow Rate, veh/h	169	275	0	0	163	355	108	0	50			
Adj No. of Lanes	0	2	0	0	3	0	1	0	1			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	4	4	0	0	4	4	4	0	4			
Cap, veh/h	502	948	0	0	1827	835	369	0	329			
Arrive On Green	0.55	0.55	0.00	0.00	0.55	0.55	0.21	0.00	0.21			
Sat Flow, veh/h	594	1808	0	0	3489	1520	1740	0	1553			
Grp Volume(v), veh/h	201	243	0	0	163	355	108	0	50			
Grp Sat Flow(s),veh/h/ln	740	1579	0	0	1663	1520	1740	0	1553			
Q Serve(g_s), s	5.1	3.1	0.0	0.0	0.9	5.2	2.0	0.0	1.0			
Cycle Q Clear(g_c), s	10.3	3.1	0.0	0.0	0.9	5.2	2.0	0.0	1.0			
Prop In Lane	0.84		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	582	868	0	0	1827	835	369	0	329			
V/C Ratio(X)	0.35	0.28	0.00	0.00	0.09	0.43	0.29	0.00	0.15			
Avail Cap(c_a), veh/h	838	1298	0	0	2908	1329	1291	0	1152			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	7.3	4.5	0.0	0.0	4.0	5.0	12.5	0.0	12.1			
Incr Delay (d2), s/veh	0.5	0.2	0.0	0.0	0.0	0.5	0.2	0.0	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.6	1.4	0.0	0.0	0.4	2.3	0.9	0.0	0.4			
LnGrp Delay(d),s/veh	7.8	4.8	0.0	0.0	4.1	5.5	12.7	0.0	12.2			
LnGrp LOS	A	A			A	A	B		B			
Approach Vol, veh/h		444			518			158				
Approach Delay, s/veh		6.2			5.0			12.5				
Approach LOS		A			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		24.7		13.0		24.7		
Change Period (Y+Rc), s		4.0		5.0		4.0		
Max Green Setting (Gmax), s		33.0		28.0		31.0		
Max Q Clear Time (g_c+I1), s		7.2		4.0		12.3		
Green Ext Time (p_c), s		10.0		0.1		8.5		

Intersection Summary	
HCM 2010 Ctrl Delay	6.5
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	413	0	0	117	273	55	0	74	0	0	0
Future Volume (veh/h)	0	413	0	0	117	273	55	0	74	0	0	0
Number	1	6	16	5	2	12	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1845	0	0	1845	1900	1845	0	1845			
Adj Flow Rate, veh/h	0	498	0	0	141	-211	66	0	-50			
Adj No. of Lanes	0	2	0	0	3	0	1	0	1			
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83			
Percent Heavy Veh, %	0	3	0	0	3	3	3	0	3			
Cap, veh/h	0	1377	0	0	1661	739	502	0	448			
Arrive On Green	0.00	0.39	0.00	0.00	0.39	0.00	0.29	0.00	0.00			
Sat Flow, veh/h	0	3689	0	0	5368	0	1757	0	1568			
Grp Volume(v), veh/h	0	498	0	0	-70	-211	66	0	-50			
Grp Sat Flow(s),veh/h/ln	0	1752	0	0	1679	1568	1757	0	1568			
Q Serve(g_s), s	0.0	2.8	0.0	0.0	1.5	0.0	0.8	0.0	0.0			
Cycle Q Clear(g_c), s	0.0	2.8	0.0	0.0	1.5	0.0	0.8	0.0	0.0			
Prop In Lane	0.00		0.00	0.00		0.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	1377	0	0	0	0	502	0	448			
V/C Ratio(X)	0.00	0.36	0.00	0.00	0.00	0.00	0.13	0.00	-0.11			
Avail Cap(c_a), veh/h	0	3880	0	0	0	0	1757	0	1568			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	0.0	6.0	0.0	0.0	0.0	0.0	7.4	0.0	0.0			
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	1.4	0.0	0.0	0.0	0.0	0.4	0.0	0.0			
LnGrp Delay(d),s/veh	0.0	6.2	0.0	0.0	0.0	0.0	7.5	0.0	0.0			
LnGrp LOS		A					A					
Approach Vol, veh/h		498			-281			16				
Approach Delay, s/veh		6.2			0.0			30.8				
Approach LOS		A			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		15.0		13.0		15.0		
Change Period (Y+Rc), s		4.0		5.0		4.0		
Max Green Setting (Gmax), s		33.0		28.0		31.0		
Max Q Clear Time (g_c+I1), s		0.0		2.8		4.8		
Green Ext Time (p_c), s		0.0		0.0		4.7		

Intersection Summary	
HCM 2010 Ctrl Delay	15.5
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	149	193	63	227	122	32	345	86	136	341	80
Future Volume (veh/h)	68	149	193	63	227	122	32	345	86	136	341	80
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1900	1900	1827	1827	1900	1827	1900
Adj Flow Rate, veh/h	72	159	86	67	241	76	34	367	9	145	363	70
Adj No. of Lanes	1	2	1	1	2	0	0	2	1	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	92	1599	704	86	1193	367	43	483	227	174	459	92
Arrive On Green	0.05	0.46	0.46	0.03	0.31	0.31	0.15	0.15	0.15	0.21	0.21	0.21
Sat Flow, veh/h	1740	3471	1530	1740	2608	801	287	3261	1534	847	2233	448
Grp Volume(v), veh/h	72	159	86	67	158	159	215	186	9	305	0	273
Grp Sat Flow(s),veh/h/ln	1740	1736	1530	1740	1736	1674	1813	1736	1534	1785	0	1743
Q Serve(g_s), s	4.5	2.8	3.5	4.2	7.4	7.7	12.6	11.3	0.6	18.0	0.0	16.2
Cycle Q Clear(g_c), s	4.5	2.8	3.5	4.2	7.4	7.7	12.6	11.3	0.6	18.0	0.0	16.2
Prop In Lane	1.00		1.00	1.00		0.48	0.16		1.00	0.47		0.26
Lane Grp Cap(c), veh/h	92	1599	704	86	794	765	269	257	227	367	0	358
V/C Ratio(X)	0.79	0.10	0.12	0.78	0.20	0.21	0.80	0.73	0.04	0.83	0.00	0.76
Avail Cap(c_a), veh/h	166	1599	704	277	794	765	404	387	342	495	0	483
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.91	0.99	0.99	0.99	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.5	16.8	17.0	52.6	23.3	23.4	45.3	44.7	40.1	41.9	0.0	41.2
Incr Delay (d2), s/veh	5.0	0.1	0.3	5.5	0.6	0.6	3.5	1.5	0.0	6.7	0.0	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	1.4	1.5	2.2	3.7	3.7	6.6	5.5	0.2	9.6	0.0	8.1
LnGrp Delay(d),s/veh	56.5	16.9	17.3	58.1	23.8	24.0	48.8	46.2	40.2	48.6	0.0	44.2
LnGrp LOS	E	B	B	E	C	C	D	D	D	D		D
Approach Vol, veh/h		317			384			410			578	
Approach Delay, s/veh		26.0			29.9			47.4			46.5	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.9	55.2		26.1	9.3	54.8		19.8
Change Period (Y+Rc), s	3.5	4.5		3.5	3.5	4.5		3.5
Max Green Setting (Gmax), s	17.5	22.5		30.5	10.5	29.5		24.5
Max Q Clear Time (g_c+I1), s	6.2	5.5		20.0	6.5	9.7		14.6
Green Ext Time (p_c), s	0.0	3.9		1.9	0.0	4.1		1.1

Intersection Summary		
HCM 2010 Ctrl Delay		39.1
HCM 2010 LOS		D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	237	84	61	208	112	101	351	96	102	334	47
Future Volume (veh/h)	95	237	84	61	208	112	101	351	96	102	334	47
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1900	1900	1827	1827	1900	1827	1900
Adj Flow Rate, veh/h	101	252	-30	65	221	65	107	373	20	109	355	35
Adj No. of Lanes	1	2	1	1	2	0	0	2	1	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	125	1601	716	83	1160	332	128	475	262	137	470	48
Arrive On Green	0.07	0.46	0.00	0.05	0.44	0.44	0.17	0.17	0.17	0.18	0.18	0.18
Sat Flow, veh/h	1740	3471	1553	1740	2654	760	749	2776	1534	745	2560	262
Grp Volume(v), veh/h	101	252	-30	65	142	144	256	224	20	262	0	237
Grp Sat Flow(s),veh/h/ln	1740	1736	1553	1740	1736	1678	1789	1736	1534	1790	0	1777
Q Serve(g_s), s	6.3	4.6	0.0	4.1	5.5	5.8	15.2	13.5	1.2	15.4	0.0	13.8
Cycle Q Clear(g_c), s	6.3	4.6	0.0	4.1	5.5	5.8	15.2	13.5	1.2	15.4	0.0	13.8
Prop In Lane	1.00		1.00	1.00		0.45	0.42		1.00	0.42		0.15
Lane Grp Cap(c), veh/h	125	1601	716	83	758	733	306	297	262	328	0	326
V/C Ratio(X)	0.81	0.16	-0.04	0.78	0.19	0.20	0.84	0.76	0.08	0.80	0.00	0.73
Avail Cap(c_a), veh/h	166	1601	716	277	758	733	399	387	342	496	0	493
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.3	17.2	0.0	51.8	19.0	19.1	44.1	43.4	38.3	42.9	0.0	42.3
Incr Delay (d2), s/veh	13.7	0.2	0.0	5.8	0.5	0.6	9.0	4.1	0.0	2.8	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	2.2	0.0	2.1	2.8	2.8	8.3	6.8	0.5	7.9	0.0	6.9
LnGrp Delay(d),s/veh	64.0	17.4	0.0	57.6	19.5	19.7	53.1	47.6	38.3	45.7	0.0	43.5
LnGrp LOS	E	B		E	B	B	D	D	D	D		D
Approach Vol, veh/h		323			351			500			499	
Approach Delay, s/veh		33.6			26.6			50.0			44.6	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.8	55.2		23.7	11.4	52.6		22.3
Change Period (Y+Rc), s	3.5	4.5		3.5	3.5	4.5		3.5
Max Green Setting (Gmax), s	17.5	22.5		30.5	10.5	29.5		24.5
Max Q Clear Time (g_c+I1), s	6.1	6.6		17.4	8.3	7.8		17.2
Green Ext Time (p_c), s	0.0	3.8		1.8	0.0	4.3		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	40.3
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	77	136	0	0	0	25	29	56	0	224	8
Future Volume (veh/h)	0	77	136	0	0	0	25	29	56	0	224	8
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900				1827	1827	1827	0	1827	1827
Adj Flow Rate, veh/h	0	87	18				28	33	35	0	252	2
Adj No. of Lanes	1	2	0				1	1	1	0	2	1
Peak Hour Factor	0.89	0.89	0.89				0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	4	4	4				4	4	4	0	4	4
Cap, veh/h	156	259	52				50	887	754	0	849	380
Arrive On Green	0.00	0.09	0.09				0.03	0.49	0.49	0.00	0.24	0.24
Sat Flow, veh/h	1740	2880	580				1740	1827	1553	0	3563	1553
Grp Volume(v), veh/h	0	51	54				28	33	35	0	252	2
Grp Sat Flow(s),veh/h/ln	1740	1736	1725				1740	1827	1553	0	1736	1553
Q Serve(g_s), s	0.0	0.5	0.5				0.3	0.2	0.2	0.0	1.1	0.0
Cycle Q Clear(g_c), s	0.0	0.5	0.5				0.3	0.2	0.2	0.0	1.1	0.0
Prop In Lane	1.00		0.34				1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	156	156	155				50	887	754	0	849	380
V/C Ratio(X)	0.00	0.33	0.35				0.56	0.04	0.05	0.00	0.30	0.01
Avail Cap(c_a), veh/h	2862	2855	2837				462	2520	2142	0	3131	1401
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00				1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	8.0	8.1				9.0	2.5	2.5	0.0	5.8	5.4
Incr Delay (d2), s/veh	0.0	1.2	1.3				9.2	0.0	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.3				0.3	0.1	0.1	0.0	0.5	0.0
LnGrp Delay(d),s/veh	0.0	9.3	9.4				18.3	2.6	2.6	0.0	6.0	5.4
LnGrp LOS		A	A				B	A	A		A	A
Approach Vol, veh/h		105						96			254	
Approach Delay, s/veh		9.3						7.1			6.0	
Approach LOS		A						A			A	

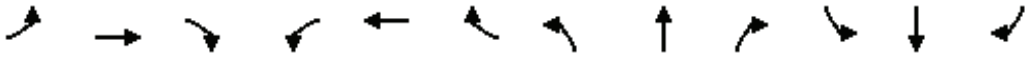
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		13.2		5.7	4.5	8.6		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		26.0		31.0	5.0	17.0		
Max Q Clear Time (g_c+I1), s		2.2		2.5	2.3	3.1		
Green Ext Time (p_c), s		1.8		0.5	0.0	1.5		

Intersection Summary	
HCM 2010 Ctrl Delay	7.0
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	82	47	0	0	0	26	177	217	0	100	1
Future Volume (veh/h)	4	82	47	0	0	0	26	177	217	0	100	1
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900				1827	1827	1827	0	1827	1827
Adj Flow Rate, veh/h	5	96	-86				31	208	226	0	118	-6
Adj No. of Lanes	1	2	0				1	1	1	0	2	1
Peak Hour Factor	0.85	0.85	0.85				0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	4	4	4				4	4	4	0	4	4
Cap, veh/h	28	56	7363				56	974	826	0	957	428
Arrive On Green	0.02	0.02	0.00				0.03	0.53	0.53	0.00	0.28	0.00
Sat Flow, veh/h	1740	3563	0				1740	1827	1550	0	3563	1553
Grp Volume(v), veh/h	5	10	0				31	208	226	0	118	-6
Grp Sat Flow(s),veh/h/ln	1740	1736	0				1740	1827	1550	0	1736	1553
Q Serve(g_s), s	0.1	0.1	0.0				0.3	1.1	1.4	0.0	0.5	0.0
Cycle Q Clear(g_c), s	0.1	0.1	0.0				0.3	1.1	1.4	0.0	0.5	0.0
Prop In Lane	1.00		0.00				1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	28	56	0				56	974	826	0	957	428
V/C Ratio(X)	0.18	0.18	0.00				0.56	0.21	0.27	0.00	0.12	-0.01
Avail Cap(c_a), veh/h	3040	6065	0				490	2677	2272	0	3326	1488
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00				1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	8.6	8.6	0.0				8.5	2.2	2.3	0.0	4.8	0.0
Incr Delay (d2), s/veh	3.0	1.5	0.0				8.5	0.1	0.2	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0				0.3	0.5	0.6	0.0	0.2	0.0
LnGrp Delay(d),s/veh	11.6	10.1	0.0				16.9	2.3	2.4	0.0	4.9	0.0
LnGrp LOS	B	B					B	A	A		A	
Approach Vol, veh/h		15						465			112	
Approach Delay, s/veh		10.6						3.3			5.1	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		13.5		4.3	4.6	8.9		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		26.0		31.0	5.0	17.0		
Max Q Clear Time (g_c+I1), s		3.4		2.1	2.3	2.5		
Green Ext Time (p_c), s		2.6		0.0	0.0	2.3		

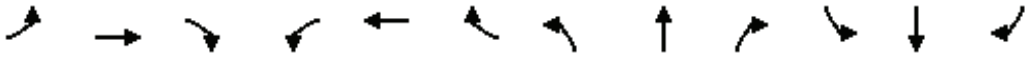
Intersection Summary	
HCM 2010 Ctrl Delay	3.9
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	0	6	5	1	39	3	46	2	61	278	20
Future Volume (Veh/h)	25	0	6	5	1	39	3	46	2	61	278	20
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	29	0	7	6	1	46	4	54	2	72	327	24
Pedestrians					1							
Lane Width (ft)					12.0							
Walking Speed (ft/s)					4.0							
Percent Blockage					0							
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											499	
pX, platoon unblocked	0.95	0.95	0.95	0.95	0.95		0.95					
vC, conflicting volume	592	548	339	554	559	56	351			57		
vC1, stage 1 conf vol	483	483		64	64							
vC2, stage 2 conf vol	110	65		490	495							
vCu, unblocked vol	546	499	279	505	511	56	292			57		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	100	99	99	100	95	100			95		
cM capacity (veh/h)	514	507	718	513	498	1004	1197			1533		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	36	53	60	423
Volume Left	29	6	4	72
Volume Right	7	46	2	24
cSH	544	891	1197	1533
Volume to Capacity	0.07	0.06	0.00	0.05
Queue Length 95th (ft)	5	5	0	4
Control Delay (s)	12.1	9.3	0.6	1.6
Lane LOS	B	A	A	A
Approach Delay (s)	12.1	9.3	0.6	1.6
Approach LOS	B	A		

Intersection Summary				
Average Delay	2.9			
Intersection Capacity Utilization	40.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	1	3	2	2	68	3	303	1	29	100	9
Future Volume (Veh/h)	43	1	3	2	2	68	3	303	1	29	100	9
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	51	1	4	2	2	80	4	356	1	34	118	11
Pedestrians		1			1			1				
Lane Width (ft)		12.0			12.0			12.0				
Walking Speed (ft/s)		4.0			4.0			4.0				
Percent Blockage		0			0			0				
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											499	
pX, platoon unblocked												
vC, conflicting volume	638	558	126	562	564	358	130			358		
vC1, stage 1 conf vol	192	192		366	366							
vC2, stage 2 conf vol	446	366		197	198							
vCu, unblocked vol	638	558	126	562	564	358	130			358		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	89	100	100	100	100	88	100			97		
cM capacity (veh/h)	459	543	918	587	560	682	1442			1189		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	56	84	361	163
Volume Left	51	2	4	34
Volume Right	4	80	1	11
cSH	477	676	1442	1189
Volume to Capacity	0.12	0.12	0.00	0.03
Queue Length 95th (ft)	10	11	0	2
Control Delay (s)	13.5	11.1	0.1	1.9
Lane LOS	B	B	A	A
Approach Delay (s)	13.5	11.1	0.1	1.9
Approach LOS	B	B		

Intersection Summary				
Average Delay	3.1			
Intersection Capacity Utilization	42.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	224	55	72	279	123	32	25	15	107	25	79
Future Volume (veh/h)	50	224	55	72	279	123	32	25	15	107	25	79
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		1.00	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	59	264	57	85	328	123	38	29	0	126	29	0
Adj No. of Lanes	1	2	0	1	2	0	0	2	0	0	2	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	771	2283	484	895	1988	731	240	232	0	240	232	0
Arrive On Green	1.00	1.00	1.00	0.79	0.79	0.79	0.14	0.14	0.00	0.14	0.14	0.00
Sat Flow, veh/h	935	2898	615	1053	2525	928	1209	1695	0	1209	1695	0
Grp Volume(v), veh/h	59	159	162	85	228	223	38	29	0	126	29	0
Grp Sat Flow(s),veh/h/ln	935	1770	1744	1053	1770	1683	1209	1610	0	1209	1610	0
Q Serve(g_s), s	0.3	0.0	0.0	2.1	3.5	3.6	2.8	1.7	0.0	9.8	1.7	0.0
Cycle Q Clear(g_c), s	3.9	0.0	0.0	2.1	3.5	3.6	4.5	1.7	0.0	11.5	1.7	0.0
Prop In Lane	1.00		0.35	1.00		0.55	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	771	1394	1373	895	1394	1326	240	232	0	240	232	0
V/C Ratio(X)	0.08	0.11	0.12	0.09	0.16	0.17	0.16	0.12	0.00	0.53	0.12	0.00
Avail Cap(c_a), veh/h	771	1394	1373	895	1394	1326	673	747	0	673	747	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.1	0.0	0.0	2.7	2.8	2.9	43.0	41.0	0.0	46.0	41.0	0.0
Incr Delay (d2), s/veh	0.2	0.2	0.2	0.2	0.3	0.3	0.1	0.1	0.0	0.7	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.1	0.6	1.7	1.7	1.0	0.8	0.0	3.7	0.8	0.0
LnGrp Delay(d),s/veh	0.3	0.2	0.2	2.9	3.1	3.1	43.1	41.1	0.0	46.7	41.1	0.0
LnGrp LOS	A	A	A	A	A	A	D	D		D	D	
Approach Vol, veh/h		380			536			67			155	
Approach Delay, s/veh		0.2			3.1			42.2			45.7	
Approach LOS		A			A			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		90.1		19.9		90.1		19.9
Change Period (Y+Rc), s		3.5		4.0		3.5		4.0
Max Green Setting (Gmax), s		51.5		51.0		51.5		51.0
Max Q Clear Time (g_c+I1), s		5.9		13.5		5.6		6.5
Green Ext Time (p_c), s		6.1		0.9		6.1		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	10.2
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	287	43	60	229	80	63	45	71	73	40	47
Future Volume (veh/h)	80	287	43	60	229	80	63	45	71	73	40	47
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.97		0.96	0.98		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	85	305	39	64	244	65	67	48	60	78	43	-34
Adj No. of Lanes	1	2	0	1	2	0	0	2	0	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	907	2551	323	900	2241	584	172	109	138	613	1785	0
Arrive On Green	1.00	1.00	1.00	0.81	0.81	0.81	0.12	0.12	0.12	0.12	0.12	0.00
Sat Flow, veh/h	1066	3156	400	1032	2772	722	948	883	1119	750	1695	0
Grp Volume(v), veh/h	85	170	174	64	154	155	98	0	77	78	9	0
Grp Sat Flow(s),veh/h/ln	1066	1770	1786	1032	1770	1724	1512	0	1437	750	1610	0
Q Serve(g_s), s	0.2	0.0	0.0	1.4	2.0	2.1	5.6	0.0	5.5	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.3	0.0	0.0	1.4	2.0	2.1	6.6	0.0	5.5	0.0	0.0	0.0
Prop In Lane	1.00		0.22	1.00		0.42	0.68		0.78	1.00		0.00
Lane Grp Cap(c), veh/h	907	1431	1444	900	1431	1394	242	0	177	0	0	0
V/C Ratio(X)	0.09	0.12	0.12	0.07	0.11	0.11	0.41	0.00	0.43	0.00	0.00	0.00
Avail Cap(c_a), veh/h	907	1431	1444	900	1431	1394	748	0	666	0	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.99	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	2.2	2.2	2.2	45.0	0.0	44.7	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.0	0.6	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.1	0.4	1.0	1.1	2.8	0.0	2.2	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.2	0.2	0.2	2.3	2.4	2.4	45.4	0.0	45.3	0.0	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D		D			
Approach Vol, veh/h		429			373			175			87	
Approach Delay, s/veh		0.2			2.4			45.4			0.0	
Approach LOS		A			A			D			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		92.4		17.6		92.4		17.6
Change Period (Y+Rc), s		3.5		4.0		3.5		4.0
Max Green Setting (Gmax), s		51.5		51.0		51.5		51.0
Max Q Clear Time (g_c+I1), s		4.3		2.0		4.1		8.6
Green Ext Time (p_c), s		5.0		1.2		5.0		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	8.4
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	7	39	23	5	3	24	52	4	13	116	12
Future Volume (veh/h)	5	7	39	23	5	3	24	52	4	13	116	12
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1827	1900	1900	1827	1900	1900	1827	1900	1900	1827	1900
Adj Flow Rate, veh/h	6	8	0	27	6	0	28	61	4	15	136	9
Adj No. of Lanes	0	1	0	0	1	0	0	2	0	0	2	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	182	41	0	245	11	0	723	1598	110	273	2192	142
Arrive On Green	0.04	0.04	0.00	0.04	0.04	0.00	0.74	0.74	0.74	0.74	0.74	0.74
Sat Flow, veh/h	726	968	0	1224	272	0	756	2169	149	201	2975	193
Grp Volume(v), veh/h	14	0	0	33	0	0	49	0	44	84	0	76
Grp Sat Flow(s),veh/h/ln	1694	0	0	1496	0	0	1442	0	1632	1746	0	1623
Q Serve(g_s), s	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.4
Cycle Q Clear(g_c), s	0.3	0.0	0.0	0.7	0.0	0.0	0.2	0.0	0.2	0.4	0.0	0.4
Prop In Lane	0.43		0.00	0.82		0.00	0.57		0.09	0.18		0.12
Lane Grp Cap(c), veh/h	223	0	0	256	0	0	1229	0	1202	1411	0	1196
V/C Ratio(X)	0.06	0.00	0.00	0.13	0.00	0.00	0.04	0.00	0.04	0.06	0.00	0.06
Avail Cap(c_a), veh/h	1407	0	0	1319	0	0	1480	0	1491	1713	0	1483
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.7	0.0	0.0	15.9	0.0	0.0	1.2	0.0	1.2	1.2	0.0	1.2
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	0.3	0.0	0.0	0.1	0.0	0.1	0.2	0.0	0.2
LnGrp Delay(d),s/veh	15.8	0.0	0.0	16.1	0.0	0.0	1.2	0.0	1.2	1.2	0.0	1.3
LnGrp LOS	B			B			A		A	A		A
Approach Vol, veh/h		14			33			93			160	
Approach Delay, s/veh		15.8			16.1			1.2			1.3	
Approach LOS		B			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		29.0		4.9		29.0		4.9
Change Period (Y+Rc), s		4.0		3.5		4.0		3.5
Max Green Setting (Gmax), s		31.0		26.5		31.0		26.5
Max Q Clear Time (g_c+I1), s		2.2		2.3		2.4		2.7
Green Ext Time (p_c), s		1.4		0.2		1.4		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	3.6
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	10	17	15	13	19	39	136	11	6	114	11
Future Volume (veh/h)	11	10	17	15	13	19	39	136	11	6	114	11
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1827	1900	1900	1827	1900	1900	1827	1900	1900	1827	1900
Adj Flow Rate, veh/h	13	11	-25	17	15	19	45	156	12	7	131	8
Adj No. of Lanes	0	1	0	0	1	0	0	2	0	0	2	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	0	0	0	164	21	26	548	1795	140	167	2318	138
Arrive On Green	0.04	0.04	0.00	0.04	0.04	0.04	0.73	0.73	0.73	0.73	0.73	0.73
Sat Flow, veh/h	-58010	-49086	111557	520	458	581	544	2443	191	71	3155	188
Grp Volume(v), veh/h	0	0	0	51	0	0	111	0	102	77	0	69
Grp Sat Flow(s),veh/h/ln	0	0	0	1559	0	0	1555	0	1623	1789	0	1624
Q Serve(g_s), s	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.4
Cycle Q Clear(g_c), s	0.0	0.0	0.0	1.1	0.0	0.0	0.6	0.0	0.6	0.4	0.0	0.4
Prop In Lane	-13.00		25.00	0.33		0.37	0.41		0.12	0.09		0.12
Lane Grp Cap(c), veh/h	0	0	0	211	0	0	1291	0	1192	1430	0	1193
V/C Ratio(X)	0.00	0.00	0.00	0.24	0.00	0.00	0.09	0.00	0.09	0.05	0.00	0.06
Avail Cap(c_a), veh/h	0	0	0	1355	0	0	1559	0	1479	1737	0	1480
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	16.0	0.0	0.0	1.3	0.0	1.3	1.3	0.0	1.3
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.5	0.0	0.0	0.3	0.0	0.3	0.2	0.0	0.2
LnGrp Delay(d),s/veh	0.0	0.0	0.0	16.6	0.0	0.0	1.3	0.0	1.3	1.3	0.0	1.3
LnGrp LOS				B			A		A	A		A
Approach Vol, veh/h		0			51			213			146	
Approach Delay, s/veh		0.0			16.6			1.3			1.3	
Approach LOS					B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		29.0		5.0		29.0		5.0
Change Period (Y+Rc), s		4.0		3.5		4.0		3.5
Max Green Setting (Gmax), s		31.0		26.5		31.0		26.5
Max Q Clear Time (g_c+I1), s		2.6		0.0		2.4		3.1
Green Ext Time (p_c), s		2.1		0.0		2.1		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	3.2
HCM 2010 LOS	A



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	29	61	14	16	33	71
Future Volume (Veh/h)	29	61	14	16	33	71
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	32	67	15	18	36	78
Pedestrians	3					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	138	20			36	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	138	20			36	
tC, single (s)	6.9	7.0			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	94			98	
cM capacity (veh/h)	814	1045			1555	

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	32	34	34	10	23	36	39	39
Volume Left	32	0	0	0	0	36	0	0
Volume Right	0	34	34	0	18	0	0	0
cSH	814	1045	1045	1700	1700	1555	1700	1700
Volume to Capacity	0.04	0.03	0.03	0.01	0.01	0.02	0.02	0.02
Queue Length 95th (ft)	3	2	2	0	0	2	0	0
Control Delay (s)	9.6	8.6	8.6	0.0	0.0	7.4	0.0	0.0
Lane LOS	A	A	A			A		
Approach Delay (s)	8.9			0.0		2.3		
Approach LOS	A							

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	18.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	24	30	101	37	36	95
Future Volume (Veh/h)	24	30	101	37	36	95
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	28	35	119	44	42	112
Pedestrians	2					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	283	84			165	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	283	84			165	
tC, single (s)	6.9	7.0			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	96			97	
cM capacity (veh/h)	657	951			1394	

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	28	18	18	79	84	42	56	56
Volume Left	28	0	0	0	0	42	0	0
Volume Right	0	18	18	0	44	0	0	0
cSH	657	951	951	1700	1700	1394	1700	1700
Volume to Capacity	0.04	0.02	0.02	0.05	0.05	0.03	0.03	0.03
Queue Length 95th (ft)	3	1	1	0	0	2	0	0
Control Delay (s)	10.7	8.9	8.9	0.0	0.0	7.7	0.0	0.0
Lane LOS	B	A	A			A		
Approach Delay (s)	9.7			0.0		2.1		
Approach LOS	A							

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	21.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	280	61	238	349	95	43	246	132	88	620	41
Future Volume (veh/h)	60	280	61	238	349	95	43	246	132	88	620	41
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1827	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	66	308	10	262	384	37	47	270	69	97	681	41
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	83	899	396	316	1246	544	63	736	185	125	1008	61
Arrive On Green	0.05	0.26	0.26	0.18	0.36	0.36	0.04	0.27	0.27	0.07	0.30	0.30
Sat Flow, veh/h	1740	3471	1530	1740	3471	1516	1740	2748	689	1740	3323	200
Grp Volume(v), veh/h	66	308	10	262	384	37	47	169	170	97	355	367
Grp Sat Flow(s),veh/h/ln	1740	1736	1530	1740	1736	1516	1740	1736	1702	1740	1736	1788
Q Serve(g_s), s	2.2	4.3	0.3	8.6	4.7	0.9	1.6	4.7	4.8	3.2	10.6	10.6
Cycle Q Clear(g_c), s	2.2	4.3	0.3	8.6	4.7	0.9	1.6	4.7	4.8	3.2	10.6	10.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.41	1.00		0.11
Lane Grp Cap(c), veh/h	83	899	396	316	1246	544	63	465	456	125	526	542
V/C Ratio(X)	0.79	0.34	0.03	0.83	0.31	0.07	0.74	0.36	0.37	0.78	0.68	0.68
Avail Cap(c_a), veh/h	588	1876	827	735	2052	896	441	879	862	588	1026	1057
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.9	17.8	16.4	23.3	13.7	12.5	28.3	17.6	17.6	27.0	18.1	18.1
Incr Delay (d2), s/veh	6.2	0.3	0.0	2.2	0.2	0.1	6.2	0.2	0.2	3.8	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	2.1	0.1	4.3	2.3	0.4	0.9	2.2	2.3	1.7	5.1	5.3
LnGrp Delay(d),s/veh	34.1	18.2	16.4	25.5	13.9	12.5	34.5	17.8	17.8	30.8	18.6	18.6
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		384			683			386			819	
Approach Delay, s/veh		20.9			18.3			19.8			20.1	
Approach LOS		C			B			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.8	19.3	5.2	21.0	7.8	25.3	7.3	18.9
Change Period (Y+Rc), s	3.0	4.0	3.0	3.0	5.0	4.0	3.0	3.0
Max Green Setting (Gmax), s	25.0	32.0	15.0	35.0	20.0	35.0	20.0	30.0
Max Q Clear Time (g_c+I1), s	10.6	6.3	3.6	12.6	4.2	6.7	5.2	6.8
Green Ext Time (p_c), s	0.3	6.9	0.0	4.8	0.1	7.1	0.1	4.9

Intersection Summary	
HCM 2010 Ctrl Delay	19.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	343	53	150	388	115	96	741	165	70	276	41
Future Volume (veh/h)	81	343	53	150	388	115	96	741	165	70	276	41
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	90	381	1	167	431	60	107	823	106	78	307	42
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	117	960	420	212	1039	456	138	1096	141	101	1025	139
Arrive On Green	0.07	0.27	0.27	0.12	0.29	0.29	0.08	0.35	0.35	0.06	0.33	0.33
Sat Flow, veh/h	1774	3539	1550	1774	3539	1555	1774	3144	405	1774	3131	424
Grp Volume(v), veh/h	90	381	1	167	431	60	107	463	466	78	172	177
Grp Sat Flow(s),veh/h/ln	1774	1770	1550	1774	1770	1555	1774	1770	1779	1774	1770	1786
Q Serve(g_s), s	3.2	5.6	0.0	5.8	6.2	1.8	3.8	14.7	14.7	2.8	4.6	4.7
Cycle Q Clear(g_c), s	3.2	5.6	0.0	5.8	6.2	1.8	3.8	14.7	14.7	2.8	4.6	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.23	1.00		0.24
Lane Grp Cap(c), veh/h	117	960	420	212	1039	456	138	617	620	101	579	585
V/C Ratio(X)	0.77	0.40	0.00	0.79	0.42	0.13	0.77	0.75	0.75	0.77	0.30	0.30
Avail Cap(c_a), veh/h	557	1777	778	696	1943	854	417	833	837	557	972	981
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.3	19.0	16.9	27.3	18.1	16.6	28.8	18.3	18.3	29.7	16.0	16.0
Incr Delay (d2), s/veh	4.0	0.4	0.0	2.5	0.4	0.2	3.4	1.6	1.6	4.7	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	2.7	0.0	3.0	3.1	0.8	2.0	7.3	7.4	1.5	2.3	2.3
LnGrp Delay(d),s/veh	33.3	19.3	16.9	29.8	18.5	16.7	32.3	19.9	19.9	34.4	16.1	16.1
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		472			658			1036			427	
Approach Delay, s/veh		22.0			21.2			21.2			19.4	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	21.3	8.0	23.9	9.2	22.7	6.6	25.2
Change Period (Y+Rc), s	3.0	4.0	3.0	3.0	5.0	4.0	3.0	3.0
Max Green Setting (Gmax), s	25.0	32.0	15.0	35.0	20.0	35.0	20.0	30.0
Max Q Clear Time (g_c+I1), s	7.8	7.6	5.8	6.7	5.2	8.2	4.8	16.7
Green Ext Time (p_c), s	0.2	8.1	0.1	6.5	0.1	8.4	0.1	5.0

Intersection Summary	
HCM 2010 Ctrl Delay	21.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	328	2	183	0	235	130	0	715	231
Future Volume (veh/h)	0	0	0	328	2	183	0	235	130	0	715	231
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1845	1845	1845	0	1845	1845	0	1845	1900
Adj Flow Rate, veh/h				375	0	54	0	250	0	0	761	157
Adj No. of Lanes				2	0	1	0	3	1	0	3	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				3	3	3	0	3	3	0	3	3
Cap, veh/h				768	0	342	0	2449	762	0	2031	415
Arrive On Green				0.22	0.00	0.22	0.00	0.49	0.00	0.00	0.49	0.49
Sat Flow, veh/h				3514	0	1566	0	5202	1568	0	4342	852
Grp Volume(v), veh/h				375	0	54	0	250	0	0	610	308
Grp Sat Flow(s),veh/h/ln				1757	0	1566	0	1679	1568	0	1679	1671
Q Serve(g_s), s				2.5	0.0	0.8	0.0	0.7	0.0	0.0	3.1	3.1
Cycle Q Clear(g_c), s				2.5	0.0	0.8	0.0	0.7	0.0	0.0	3.1	3.1
Prop In Lane				1.00		1.00	0.00		1.00	0.00		0.51
Lane Grp Cap(c), veh/h				768	0	342	0	2449	762	0	1633	812
V/C Ratio(X)				0.49	0.00	0.16	0.00	0.10	0.00	0.00	0.37	0.38
Avail Cap(c_a), veh/h				4147	0	1848	0	4644	1446	0	3096	1541
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				9.3	0.0	8.6	0.0	3.8	0.0	0.0	4.4	4.4
Incr Delay (d2), s/veh				0.5	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.2	0.0	0.3	0.0	0.3	0.0	0.0	1.4	1.4
LnGrp Delay(d),s/veh				9.7	0.0	8.8	0.0	3.8	0.0	0.0	4.5	4.7
LnGrp LOS				A		A		A			A	A
Approach Vol, veh/h					429			250			918	
Approach Delay, s/veh					9.6			3.8			4.6	
Approach LOS					A			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		17.2				17.2		9.9
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		25.0				25.0		32.0
Max Q Clear Time (g_c+I1), s		2.7				5.1		4.5
Green Ext Time (p_c), s		8.5				8.0		1.5

Intersection Summary	
HCM 2010 Ctrl Delay	5.8
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	347	2	643	0	406	108	0	379	113
Future Volume (veh/h)	0	0	0	347	2	643	0	406	108	0	379	113
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1881	1881	1881	0	1881	1881	0	1881	1900
Adj Flow Rate, veh/h				247	0	702	0	432	0	0	403	31
Adj No. of Lanes				1	0	2	0	3	1	0	3	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				1	1	1	0	1	1	0	1	1
Cap, veh/h				686	0	1224	0	1729	538	0	1640	125
Arrive On Green				0.38	0.00	0.38	0.00	0.34	0.00	0.00	0.34	0.34
Sat Flow, veh/h				1792	0	3198	0	5305	1599	0	5039	370
Grp Volume(v), veh/h				247	0	702	0	432	0	0	282	152
Grp Sat Flow(s),veh/h/ln				1792	0	1599	0	1712	1599	0	1712	1816
Q Serve(g_s), s				2.8	0.0	4.9	0.0	1.7	0.0	0.0	1.7	1.7
Cycle Q Clear(g_c), s				2.8	0.0	4.9	0.0	1.7	0.0	0.0	1.7	1.7
Prop In Lane				1.00		1.00	0.00		1.00	0.00		0.20
Lane Grp Cap(c), veh/h				686	0	1224	0	1729	538	0	1153	611
V/C Ratio(X)				0.36	0.00	0.57	0.00	0.25	0.00	0.00	0.24	0.25
Avail Cap(c_a), veh/h				2011	0	3590	0	4504	1402	0	3003	1593
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				6.3	0.0	7.0	0.0	6.8	0.0	0.0	6.8	6.8
Incr Delay (d2), s/veh				0.3	0.0	0.4	0.0	0.1	0.0	0.0	0.1	0.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.4	0.0	2.2	0.0	0.8	0.0	0.0	0.8	0.9
LnGrp Delay(d),s/veh				6.6	0.0	7.4	0.0	6.9	0.0	0.0	6.9	7.1
LnGrp LOS				A		A		A			A	A
Approach Vol, veh/h					949			432			434	
Approach Delay, s/veh					7.2			6.9			7.0	
Approach LOS					A			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		13.6				13.6		14.9
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		25.0				25.0		32.0
Max Q Clear Time (g_c+I1), s		3.7				3.7		6.9
Green Ext Time (p_c), s		5.9				5.9		4.0

Intersection Summary	
HCM 2010 Ctrl Delay	7.1
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	0	93	0	0	0	0	298	353	0	551	492
Future Volume (veh/h)	67	0	93	0	0	0	0	298	353	0	551	492
Number	3	8	18				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845				0	1845	1900	0	1845	1845
Adj Flow Rate, veh/h	76	0	33				0	339	0	0	626	0
Adj No. of Lanes	0	1	1				0	3	0	0	2	1
Peak Hour Factor	0.88	0.88	0.88				0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3				0	3	3	0	3	3
Cap, veh/h	155	0	139				0	2763	0	0	1923	860
Arrive On Green	0.09	0.00	0.09				0.00	0.55	0.00	0.00	0.55	0.00
Sat Flow, veh/h	1757	0	1568				0	5368	0	0	3597	1568
Grp Volume(v), veh/h	76	0	33				0	339	0	0	626	0
Grp Sat Flow(s),veh/h/ln	1757	0	1568				0	1679	0	0	1752	1568
Q Serve(g_s), s	0.9	0.0	0.4				0.0	0.7	0.0	0.0	2.2	0.0
Cycle Q Clear(g_c), s	0.9	0.0	0.4				0.0	0.7	0.0	0.0	2.2	0.0
Prop In Lane	1.00		1.00				0.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	155	0	139				0	2763	0	0	1923	860
V/C Ratio(X)	0.49	0.00	0.24				0.00	0.12	0.00	0.00	0.33	0.00
Avail Cap(c_a), veh/h	2391	0	2134				0	8454	0	0	5883	2632
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	9.6	0.0	9.4				0.0	2.4	0.0	0.0	2.7	0.0
Incr Delay (d2), s/veh	2.4	0.0	0.9				0.0	0.0	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.2				0.0	0.3	0.0	0.0	1.0	0.0
LnGrp Delay(d),s/veh	12.0	0.0	10.2				0.0	2.4	0.0	0.0	2.8	0.0
LnGrp LOS	B		B					A			A	
Approach Vol, veh/h		109						339			626	
Approach Delay, s/veh		11.4						2.4			2.8	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		16.1				16.1		5.9
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		37.0				37.0		30.0
Max Q Clear Time (g_c+I1), s		2.7				4.2		2.9
Green Ext Time (p_c), s		7.9				7.9		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	3.6
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	213	0	131	0	0	0	0	301	404	0	486	240
Future Volume (veh/h)	213	0	131	0	0	0	0	301	404	0	486	240
Number	3	8	18				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863				0	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	248	0	78				0	350	0	0	565	0
Adj No. of Lanes	0	1	1				0	3	0	0	2	1
Peak Hour Factor	0.86	0.86	0.86				0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2				0	2	2	0	2	2
Cap, veh/h	423	0	378				0	2339	0	0	1628	728
Arrive On Green	0.24	0.00	0.24				0.00	0.46	0.00	0.00	0.46	0.00
Sat Flow, veh/h	1774	0	1583				0	5421	0	0	3632	1583
Grp Volume(v), veh/h	248	0	78				0	350	0	0	565	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1695	0	0	1770	1583
Q Serve(g_s), s	3.3	0.0	1.0				0.0	1.1	0.0	0.0	2.7	0.0
Cycle Q Clear(g_c), s	3.3	0.0	1.0				0.0	1.1	0.0	0.0	2.7	0.0
Prop In Lane	1.00		1.00				0.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	423	0	378				0	2339	0	0	1628	728
V/C Ratio(X)	0.59	0.00	0.21				0.00	0.15	0.00	0.00	0.35	0.00
Avail Cap(c_a), veh/h	2006	0	1790				0	7091	0	0	4935	2208
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	8.9	0.0	8.1				0.0	4.2	0.0	0.0	4.6	0.0
Incr Delay (d2), s/veh	1.3	0.0	0.3				0.0	0.0	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.5				0.0	0.5	0.0	0.0	1.3	0.0
LnGrp Delay(d),s/veh	10.2	0.0	8.4				0.0	4.2	0.0	0.0	4.7	0.0
LnGrp LOS	B		A					A			A	
Approach Vol, veh/h		326						350			565	
Approach Delay, s/veh		9.8						4.2			4.7	
Approach LOS		A						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		16.2				16.2		10.3
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		37.0				37.0		30.0
Max Q Clear Time (g_c+I1), s		3.1				4.7		5.3
Green Ext Time (p_c), s		7.4				7.3		1.7

Intersection Summary	
HCM 2010 Ctrl Delay	5.9
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	7	15	0	1	21	15	579	10	275	261	108
Future Volume (veh/h)	51	7	15	0	1	21	15	579	10	275	261	108
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1827	1900	1827	1827	1900	1900	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	71	10	6	0	1	0	21	804	13	382	362	119
Adj No. of Lanes	0	1	0	1	1	0	0	2	0	1	2	0
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	93	13	8	35	37	0	91	1126	18	403	1670	540
Arrive On Green	0.07	0.07	0.07	0.00	0.02	0.00	0.34	0.34	0.34	0.23	0.65	0.65
Sat Flow, veh/h	1415	199	120	1740	1827	0	35	3354	54	1740	2564	830
Grp Volume(v), veh/h	87	0	0	0	1	0	437	0	401	382	243	238
Grp Sat Flow(s),veh/h/ln	1734	0	0	1740	1827	0	1790	0	1653	1740	1736	1658
Q Serve(g_s), s	2.3	0.0	0.0	0.0	0.0	0.0	0.8	0.0	10.1	10.3	2.7	2.8
Cycle Q Clear(g_c), s	2.3	0.0	0.0	0.0	0.0	0.0	10.0	0.0	10.1	10.3	2.7	2.8
Prop In Lane	0.82		0.07	1.00		0.00	0.05		0.03	1.00		0.50
Lane Grp Cap(c), veh/h	114	0	0	35	37	0	680	0	555	403	1130	1080
V/C Ratio(X)	0.77	0.00	0.00	0.00	0.03	0.00	0.64	0.00	0.72	0.95	0.22	0.22
Avail Cap(c_a), veh/h	766	0	0	1648	1730	0	847	0	713	403	1130	1080
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.8	0.0	0.0	0.0	22.8	0.0	13.8	0.0	13.8	18.0	3.4	3.4
Incr Delay (d2), s/veh	4.0	0.0	0.0	0.0	0.1	0.0	1.6	0.0	3.2	31.5	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.0	0.0	0.0	0.0	5.3	0.0	5.1	8.4	1.3	1.3
LnGrp Delay(d),s/veh	25.8	0.0	0.0	0.0	22.9	0.0	15.3	0.0	17.1	49.5	3.5	3.5
LnGrp LOS	C				C		B		B	D	A	A
Approach Vol, veh/h		87			1			838			863	
Approach Delay, s/veh		25.8			22.9			16.2			23.9	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	15.0	20.4		5.0		35.4		7.1
Change Period (Y+Rc), s	4.0	4.5		4.0		4.5		4.0
Max Green Setting (Gmax), s	11.0	20.5		45.0		23.0		21.0
Max Q Clear Time (g_c+I1), s	12.3	12.1		2.0		4.8		4.3
Green Ext Time (p_c), s	0.0	3.8		0.0		10.7		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	20.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	1	59	9	8	216	21	333	0	11	505	101
Future Volume (veh/h)	156	1	59	9	8	216	21	333	0	11	505	101
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1900	1845	1845	1900	1900	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	184	1	56	11	9	229	25	392	-1	13	594	93
Adj No. of Lanes	0	1	0	1	1	0	0	2	0	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	238	1	72	375	13	318	37	581	0	23	1069	167
Arrive On Green	0.18	0.18	0.18	0.21	0.21	0.21	0.26	0.26	0.00	0.01	0.35	0.35
Sat Flow, veh/h	1303	7	397	1757	59	1492	88	3305	0	1757	3029	473
Grp Volume(v), veh/h	241	0	0	11	0	238	220	196	0	13	343	344
Grp Sat Flow(s),veh/h/ln	1707	0	0	1757	0	1551	1714	1595	0	1757	1752	1749
Q Serve(g_s), s	6.7	0.0	0.0	0.2	0.0	7.1	0.0	0.0	0.0	0.4	7.8	7.9
Cycle Q Clear(g_c), s	6.7	0.0	0.0	0.2	0.0	7.1	0.0	0.0	0.0	0.4	7.8	7.9
Prop In Lane	0.76		0.23	1.00		0.96	0.11		0.00	1.00		0.27
Lane Grp Cap(c), veh/h	311	0	0	375	0	331	0	0	0	23	619	618
V/C Ratio(X)	0.77	0.00	0.00	0.03	0.00	0.72	0.00	0.00	0.00	0.56	0.55	0.56
Avail Cap(c_a), veh/h	720	0	0	1588	0	1402	0	0	0	388	810	808
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.4	0.0	0.0	15.5	0.0	18.2	0.0	0.0	0.0	24.4	13.0	13.0
Incr Delay (d2), s/veh	1.6	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	7.6	1.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	0.0	0.1	0.0	3.1	0.0	0.0	0.0	0.2	3.9	3.9
LnGrp Delay(d),s/veh	20.9	0.0	0.0	15.5	0.0	19.3	0.0	0.0	0.0	32.0	14.1	14.1
LnGrp LOS	C			B		B				C	B	B
Approach Vol, veh/h		241			249			416			700	
Approach Delay, s/veh		20.9			19.1			0.0			14.4	
Approach LOS		C			B			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	4.7	17.4		14.6		22.1		13.1
Change Period (Y+Rc), s	4.0	4.5		4.0		4.5		4.0
Max Green Setting (Gmax), s	11.0	20.5		45.0		23.0		21.0
Max Q Clear Time (g_c+I1), s	2.4	2.0		9.1		9.9		8.7
Green Ext Time (p_c), s	0.0	9.4		1.1		7.5		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	12.4
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	193	36	11	9	15	41	5	370	96	31	89	156
Future Volume (veh/h)	193	36	11	9	15	41	5	370	96	31	89	156
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	244	46	0	11	19	13	6	468	90	39	113	0
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	206	637	285	21	159	98	11	947	181	44	1199	0
Arrive On Green	0.12	0.18	0.00	0.01	0.08	0.08	0.01	0.32	0.32	0.02	0.34	0.00
Sat Flow, veh/h	1774	3539	1583	1774	2101	1292	1774	2959	565	1774	3632	0
Grp Volume(v), veh/h	244	46	0	11	16	16	6	279	279	39	113	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1623	1774	1770	1754	1774	1770	0
Q Serve(g_s), s	4.0	0.4	0.0	0.2	0.3	0.3	0.1	4.4	4.4	0.8	0.8	0.0
Cycle Q Clear(g_c), s	4.0	0.4	0.0	0.2	0.3	0.3	0.1	4.4	4.4	0.8	0.8	0.0
Prop In Lane	1.00		1.00	1.00		0.80	1.00		0.32	1.00		0.00
Lane Grp Cap(c), veh/h	206	637	285	21	134	123	11	567	562	44	1199	0
V/C Ratio(X)	1.19	0.07	0.00	0.53	0.12	0.13	0.52	0.49	0.50	0.88	0.09	0.00
Avail Cap(c_a), veh/h	206	3997	1788	206	1999	1833	206	1589	1575	206	3177	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	15.3	11.8	0.0	17.0	14.9	14.9	17.1	9.5	9.5	16.8	7.8	0.0
Incr Delay (d2), s/veh	122.5	0.0	0.0	19.8	0.4	0.5	32.2	0.7	0.7	38.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	0.2	0.0	0.2	0.2	0.2	0.2	2.2	2.2	0.8	0.4	0.0
LnGrp Delay(d),s/veh	137.7	11.8	0.0	36.8	15.3	15.4	49.3	10.1	10.2	54.8	7.8	0.0
LnGrp LOS	F	B		D	B	B	D	B	B	D	A	
Approach Vol, veh/h		290			43			564			152	
Approach Delay, s/veh		117.8			20.8			10.6			19.9	
Approach LOS		F			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.9	15.1	4.4	10.2	4.2	15.7	8.0	6.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	31.0	4.0	39.0	4.0	31.0	4.0	39.0
Max Q Clear Time (g_c+I1), s	2.8	6.4	2.2	2.4	2.1	2.8	6.0	2.3
Green Ext Time (p_c), s	0.0	4.6	0.0	0.4	0.0	4.8	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	42.0
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	17	13	36	18	32	14	151	15	6	327	185
Future Volume (veh/h)	166	17	13	36	18	32	14	151	15	6	327	185
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	175	18	0	38	19	1	15	159	-10	6	344	0
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	221	533	238	64	211	11	28	1063	0	6	1020	0
Arrive On Green	0.12	0.15	0.00	0.04	0.06	0.06	0.02	0.30	0.00	0.00	0.29	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3422	179	1774	3632	0	1774	3632	0
Grp Volume(v), veh/h	175	18	0	38	10	10	15	149	0	6	344	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1831	1774	1770	0	1774	1770	0
Q Serve(g_s), s	3.0	0.1	0.0	0.7	0.2	0.2	0.3	1.0	0.0	0.1	2.4	0.0
Cycle Q Clear(g_c), s	3.0	0.1	0.0	0.7	0.2	0.2	0.3	1.0	0.0	0.1	2.4	0.0
Prop In Lane	1.00		1.00	1.00		0.10	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	221	533	238	64	109	113	28	1063	0	6	1020	0
V/C Ratio(X)	0.79	0.03	0.00	0.60	0.09	0.09	0.54	0.14	0.00	0.99	0.34	0.00
Avail Cap(c_a), veh/h	226	4396	1967	226	2198	2275	226	3494	0	226	3494	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.3	11.4	0.0	14.9	13.9	13.9	15.3	8.0	0.0	15.6	8.8	0.0
Incr Delay (d2), s/veh	16.8	0.0	0.0	8.6	0.3	0.3	15.4	0.1	0.0	166.4	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.1	0.0	0.5	0.1	0.1	0.2	0.5	0.0	0.3	1.2	0.0
LnGrp Delay(d),s/veh	30.1	11.4	0.0	23.5	14.2	14.2	30.7	8.1	0.0	182.0	9.0	0.0
LnGrp LOS	C	B		C	B	B	C	A		F	A	
Approach Vol, veh/h		193			58			164			350	
Approach Delay, s/veh		28.4			20.3			10.2			12.0	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.1	13.4	5.1	8.7	4.5	13.1	7.9	5.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	31.0	4.0	39.0	4.0	31.0	4.0	39.0
Max Q Clear Time (g_c+I1), s	2.1	3.0	2.7	2.1	2.3	4.4	5.0	2.2
Green Ext Time (p_c), s	0.0	3.6	0.0	0.2	0.0	3.6	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	16.4
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	713	423	47	719	87	146	224	15	102	443	116
Future Volume (veh/h)	55	713	423	47	719	87	146	224	15	102	443	116
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	58	751	311	49	757	84	154	236	10	107	466	97
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	316	1868	809	280	1690	187	187	958	40	135	724	150
Arrive On Green	0.53	0.53	0.53	0.53	0.53	0.53	0.11	0.28	0.28	0.08	0.25	0.25
Sat Flow, veh/h	650	3539	1534	528	3202	355	1774	3457	146	1774	2917	603
Grp Volume(v), veh/h	58	751	311	49	418	423	154	120	126	107	281	282
Grp Sat Flow(s),veh/h/ln	650	1770	1534	528	1770	1788	1774	1770	1833	1774	1770	1751
Q Serve(g_s), s	6.4	13.4	12.6	6.4	15.3	15.4	8.9	5.5	5.6	6.2	14.9	15.1
Cycle Q Clear(g_c), s	21.7	13.4	12.6	19.8	15.3	15.4	8.9	5.5	5.6	6.2	14.9	15.1
Prop In Lane	1.00		1.00	1.00		0.20	1.00		0.08	1.00		0.34
Lane Grp Cap(c), veh/h	316	1868	809	280	934	943	187	490	508	135	439	434
V/C Ratio(X)	0.18	0.40	0.38	0.17	0.45	0.45	0.83	0.25	0.25	0.79	0.64	0.65
Avail Cap(c_a), veh/h	316	1868	809	280	934	943	329	615	637	279	565	559
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.1	14.9	14.7	20.8	15.3	15.3	46.0	29.4	29.5	47.7	35.3	35.4
Incr Delay (d2), s/veh	1.3	0.6	1.4	1.4	1.6	1.5	8.9	0.9	0.9	9.9	5.6	5.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	6.6	5.6	1.0	7.8	7.9	4.8	2.8	3.0	3.4	8.0	8.0
LnGrp Delay(d),s/veh	23.3	15.5	16.1	22.2	16.9	16.9	54.9	30.4	30.4	57.6	40.9	41.2
LnGrp LOS	C	B	B	C	B	B	D	C	C	E	D	D
Approach Vol, veh/h		1120			890			400			670	
Approach Delay, s/veh		16.1			17.2			39.8			43.7	
Approach LOS		B			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		59.9	14.5	30.5		59.9	11.5	33.6
Change Period (Y+Rc), s		4.5	3.5	4.5		4.5	3.5	4.5
Max Green Setting (Gmax), s		39.5	19.5	33.5		39.5	16.5	36.5
Max Q Clear Time (g_c+I1), s		23.7	10.9	17.1		21.8	8.2	7.6
Green Ext Time (p_c), s		14.8	0.2	8.9		16.5	0.1	12.6

Intersection Summary	
HCM 2010 Ctrl Delay	25.5
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	791	131	14	562	90	127	386	22	52	252	104
Future Volume (veh/h)	107	791	131	14	562	90	127	386	22	52	252	104
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	116	860	4	15	611	89	138	420	17	57	274	87
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	425	2074	907	355	1812	263	168	867	35	73	521	162
Arrive On Green	0.59	0.59	0.59	0.59	0.59	0.59	0.10	0.25	0.25	0.04	0.20	0.20
Sat Flow, veh/h	734	3505	1533	630	3062	445	1757	3431	139	1757	2618	811
Grp Volume(v), veh/h	116	860	4	15	349	351	138	214	223	57	181	180
Grp Sat Flow(s),veh/h/ln	734	1752	1533	630	1752	1754	1757	1752	1817	1757	1752	1677
Q Serve(g_s), s	10.5	14.6	0.1	1.5	11.2	11.2	8.5	11.4	11.5	3.5	10.2	10.6
Cycle Q Clear(g_c), s	21.8	14.6	0.1	16.0	11.2	11.2	8.5	11.4	11.5	3.5	10.2	10.6
Prop In Lane	1.00		1.00	1.00		0.25	1.00		0.08	1.00		0.48
Lane Grp Cap(c), veh/h	425	2074	907	355	1037	1038	168	443	459	73	349	334
V/C Ratio(X)	0.27	0.41	0.00	0.04	0.34	0.34	0.82	0.48	0.49	0.78	0.52	0.54
Avail Cap(c_a), veh/h	425	2074	907	355	1037	1038	279	581	603	184	486	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.0	12.1	9.2	16.5	11.4	11.5	48.8	35.0	35.0	52.2	39.3	39.5
Incr Delay (d2), s/veh	1.6	0.6	0.0	0.2	0.9	0.9	9.6	3.0	2.9	15.9	4.3	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	7.2	0.1	0.3	5.6	5.6	4.5	5.9	6.1	2.0	5.3	5.3
LnGrp Delay(d),s/veh	18.6	12.8	9.2	16.7	12.3	12.3	58.4	37.9	37.9	68.1	43.6	44.4
LnGrp LOS	B	B	A	B	B	B	E	D	D	E	D	D
Approach Vol, veh/h		980			715			575			418	
Approach Delay, s/veh		13.4			12.4			42.8			47.3	
Approach LOS		B			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		69.6	14.0	26.4		69.6	8.1	32.3
Change Period (Y+Rc), s		4.5	3.5	4.5		4.5	3.5	4.5
Max Green Setting (Gmax), s		49.5	17.5	30.5		49.5	11.5	36.5
Max Q Clear Time (g_c+I1), s		23.8	10.5	12.6		18.0	5.5	13.5
Green Ext Time (p_c), s		22.1	0.2	9.3		26.3	0.0	10.9

Intersection Summary	
HCM 2010 Ctrl Delay	24.7
HCM 2010 LOS	C

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	265	107	79	147	45	60
Future Volume (Veh/h)	265	107	79	147	45	60
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	294	119	88	163	50	67
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						19
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1062		
pX, platoon unblocked						
vC, conflicting volume			413		633	294
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			413		633	294
tC, single (s)			4.2		6.5	6.3
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.4
p0 queue free %			92		87	91
cM capacity (veh/h)			1104		397	727

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	294	119	88	163	117
Volume Left	0	0	88	0	50
Volume Right	0	119	0	0	67
cSH	1700	1700	1104	1700	929
Volume to Capacity	0.17	0.07	0.08	0.10	0.13
Queue Length 95th (ft)	0	0	6	0	11
Control Delay (s)	0.0	0.0	8.5	0.0	12.6
Lane LOS			A		B
Approach Delay (s)	0.0		3.0		12.6
Approach LOS					B

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	31.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	188	40	136	263	131	52
Future Volume (Veh/h)	188	40	136	263	131	52
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	207	44	149	289	144	57
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						19
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1062		
pX, platoon unblocked						
vC, conflicting volume			251		794	207
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			251		794	207
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			89		54	93
cM capacity (veh/h)			1303		314	828

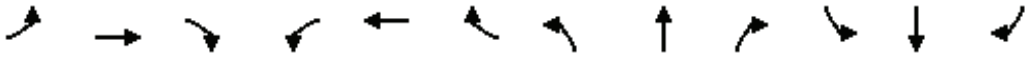
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	207	44	149	289	201
Volume Left	0	0	149	0	144
Volume Right	0	44	0	0	57
cSH	1700	1700	1303	1700	438
Volume to Capacity	0.12	0.03	0.11	0.17	0.46
Queue Length 95th (ft)	0	0	10	0	59
Control Delay (s)	0.0	0.0	8.1	0.0	21.3
Lane LOS			A		C
Approach Delay (s)	0.0		2.8		21.3
Approach LOS					C

Intersection Summary			
Average Delay	6.2		
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	156	13	57	111	170	3	11	55	205	21	99
Future Volume (vph)	45	156	13	57	111	170	3	11	55	205	21	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frt	1.00	0.99		1.00	0.91		1.00	0.87			0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	
Satd. Flow (prot)	1556	1619		1556	1489		1556	1403			1520	
Flt Permitted	0.95	1.00		0.95	1.00		0.57	1.00			0.76	
Satd. Flow (perm)	1556	1619		1556	1489		933	1403			1188	
Peak-hour factor, PHF	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Adj. Flow (vph)	59	205	17	75	146	224	4	14	72	270	28	130
RTOR Reduction (vph)	0	6	0	0	108	0	0	45	0	0	23	0
Lane Group Flow (vph)	59	216	0	75	262	0	4	41	0	0	405	0
Confl. Peds. (#/hr)									2	2		
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	16%	16%	16%	16%	16%	16%	16%	16%	16%	16%	16%	16%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	2.3	13.2		3.6	14.5		17.0	17.0			17.0	
Effective Green, g (s)	2.3	13.2		3.6	14.5		17.0	17.0			17.0	
Actuated g/C Ratio	0.05	0.29		0.08	0.32		0.37	0.37			0.37	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	78	466		122	471		346	520			440	
v/s Ratio Prot	0.04	0.13		c0.05	c0.18			0.03				
v/s Ratio Perm							0.00				c0.34	
v/c Ratio	0.76	0.46		0.61	0.56		0.01	0.08			0.92	
Uniform Delay, d1	21.5	13.4		20.4	13.0		9.1	9.3			13.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	33.5	0.7		8.9	1.4		0.0	0.1			24.6	
Delay (s)	55.0	14.1		29.3	14.4		9.1	9.4			38.4	
Level of Service	D	B		C	B		A	A			D	
Approach Delay (s)		22.7			16.9			9.4			38.4	
Approach LOS		C			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	45.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	158	1	71	217	282	8	11	62	188	8	44
Future Volume (vph)	106	158	1	71	217	282	8	11	62	188	8	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frt	1.00	1.00		1.00	0.92		1.00	0.87			0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.96	
Satd. Flow (prot)	1626	1710		1626	1567		1626	1467			1606	
Flt Permitted	0.95	1.00		0.95	1.00		0.67	1.00			0.72	
Satd. Flow (perm)	1626	1710		1626	1567		1152	1467			1198	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	120	180	1	81	247	320	9	12	70	214	9	50
RTOR Reduction (vph)	0	1	0	0	80	0	0	50	0	0	13	0
Lane Group Flow (vph)	120	180	0	81	487	0	9	33	0	0	260	0
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	5.0	22.4		3.7	21.1		14.9	14.9			14.9	
Effective Green, g (s)	5.0	22.4		3.7	21.1		14.9	14.9			14.9	
Actuated g/C Ratio	0.09	0.42		0.07	0.40		0.28	0.28			0.28	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	153	722		113	623		323	412			336	
v/s Ratio Prot	c0.07	0.11		0.05	c0.31			0.02				
v/s Ratio Perm							0.01				c0.22	
v/c Ratio	0.78	0.25		0.72	0.78		0.03	0.08			0.77	
Uniform Delay, d1	23.5	9.9		24.1	13.9		13.8	14.0			17.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	22.6	0.2		19.4	6.3		0.0	0.1			10.6	
Delay (s)	46.1	10.1		43.5	20.3		13.8	14.1			28.1	
Level of Service	D	B		D	C		B	B			C	
Approach Delay (s)		24.4			23.2			14.1			28.1	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	23.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	53.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	290	126	44	260	78	158
Future Volume (Veh/h)	290	126	44	260	78	158
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	341	148	52	306	92	186
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						3
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	337					
pX, platoon unblocked			0.96		0.96	0.96
vC, conflicting volume			341		825	415
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			290		795	367
tC, single (s)			4.2		6.5	6.3
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.4
p0 queue free %			96		71	70
cM capacity (veh/h)			1165		314	629

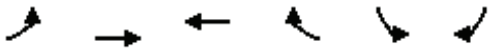
Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	489	52	306	278
Volume Left	0	52	0	92
Volume Right	148	0	0	186
cSH	1700	1165	1700	940
Volume to Capacity	0.29	0.04	0.18	0.30
Queue Length 95th (ft)	0	3	0	31
Control Delay (s)	0.0	8.2	0.0	15.8
Lane LOS		A		C
Approach Delay (s)	0.0	1.2		15.8
Approach LOS				C

Intersection Summary			
Average Delay	4.3		
Intersection Capacity Utilization	40.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	329	79	116	521	49	97
Future Volume (Veh/h)	329	79	116	521	49	97
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69
Hourly flow rate (vph)	477	114	168	755	71	141
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						3
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	337					
pX, platoon unblocked			0.96		0.96	0.96
vC, conflicting volume			477		1625	534
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			437		1630	496
tC, single (s)			4.2		6.5	6.3
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.4
p0 queue free %			84		17	74
cM capacity (veh/h)			1036		86	535

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	591	168	755	212
Volume Left	0	168	0	71
Volume Right	114	0	0	141
cSH	1700	1036	1700	241
Volume to Capacity	0.35	0.16	0.44	0.88
Queue Length 95th (ft)	0	14	0	183
Control Delay (s)	0.0	9.1	0.0	74.7
Lane LOS		A		F
Approach Delay (s)	0.0	1.7		74.7
Approach LOS				F

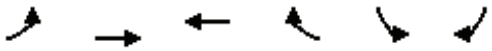
Intersection Summary			
Average Delay	10.1		
Intersection Capacity Utilization	41.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	758	347	0	888	519
Future Volume (veh/h)	0	758	347	0	888	519
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	0	798	365	0	935	303
Adj No. of Lanes	0	2	2	0	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1847	1847	0	1129	520
Arrive On Green	0.00	0.52	0.17	0.00	0.33	0.33
Sat Flow, veh/h	0	3725	3725	0	3442	1583
Grp Volume(v), veh/h	0	798	365	0	935	303
Grp Sat Flow(s),veh/h/ln	0	1770	1770	0	1721	1583
Q Serve(g_s), s	0.0	8.4	5.3	0.0	15.0	9.5
Cycle Q Clear(g_c), s	0.0	8.4	5.3	0.0	15.0	9.5
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1847	1847	0	1129	520
V/C Ratio(X)	0.00	0.43	0.20	0.00	0.83	0.58
Avail Cap(c_a), veh/h	0	1847	1847	0	1319	607
HCM Platoon Ratio	1.00	1.00	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.99	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	8.9	14.1	0.0	18.6	16.7
Incr Delay (d2), s/veh	0.0	0.7	0.2	0.0	4.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.2	2.7	0.0	7.8	4.3
LnGrp Delay(d),s/veh	0.0	9.6	14.3	0.0	22.6	17.8
LnGrp LOS		A	B		C	B
Approach Vol, veh/h		798	365		1238	
Approach Delay, s/veh		9.6	14.3		21.4	
Approach LOS		A	B		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		36.3		23.7		36.3		
Change Period (Y+Rc), s		5.0		4.0		5.0		
Max Green Setting (Gmax), s		28.0		23.0		28.0		
Max Q Clear Time (g_c+I1), s		10.4		17.0		7.3		
Green Ext Time (p_c), s		7.7		2.7		8.3		

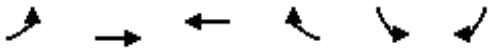
Intersection Summary	
HCM 2010 Ctrl Delay	16.4
HCM 2010 LOS	B



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	818	344	0	469	450
Future Volume (veh/h)	0	818	344	0	469	450
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1881	1881	0	1881	1881
Adj Flow Rate, veh/h	0	880	370	0	504	236
Adj No. of Lanes	0	2	2	0	2	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	1	1	0	1	1
Cap, veh/h	0	2297	2297	0	721	332
Arrive On Green	0.00	0.64	1.00	0.00	0.21	0.21
Sat Flow, veh/h	0	3762	3762	0	3476	1599
Grp Volume(v), veh/h	0	880	370	0	504	236
Grp Sat Flow(s),veh/h/ln	0	1787	1787	0	1738	1599
Q Serve(g_s), s	0.0	7.0	0.0	0.0	8.1	8.2
Cycle Q Clear(g_c), s	0.0	7.0	0.0	0.0	8.1	8.2
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	2297	2297	0	721	332
V/C Ratio(X)	0.00	0.38	0.16	0.00	0.70	0.71
Avail Cap(c_a), veh/h	0	2297	2297	0	1274	586
HCM Platoon Ratio	1.00	1.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.99	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	5.1	0.0	0.0	22.0	22.1
Incr Delay (d2), s/veh	0.0	0.5	0.1	0.0	1.2	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.6	0.0	0.0	4.0	3.9
LnGrp Delay(d),s/veh	0.0	5.6	0.1	0.0	23.3	24.9
LnGrp LOS		A	A		C	C
Approach Vol, veh/h		880	370		740	
Approach Delay, s/veh		5.6	0.1		23.8	
Approach LOS		A	A		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		43.6		16.4		43.6		
Change Period (Y+Rc), s		5.0		4.0		5.0		
Max Green Setting (Gmax), s		29.0		22.0		29.0		
Max Q Clear Time (g_c+I1), s		9.0		10.2		2.0		
Green Ext Time (p_c), s		8.9		2.2		10.2		

Intersection Summary	
HCM 2010 Ctrl Delay	11.3
HCM 2010 LOS	B

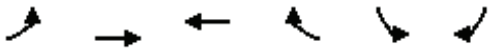


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	1642	300	20	291	47
Future Volume (veh/h)	4	1642	300	20	291	47
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99			0.95	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1900	1845	1900
Adj Flow Rate, veh/h	4	1728	316	13	306	38
Adj No. of Lanes	0	2	2	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	0	0
Cap, veh/h	61	2193	2185	90	351	44
Arrive On Green	0.85	0.85	0.21	0.21	0.23	0.23
Sat Flow, veh/h	1	3521	3516	140	1538	191
Grp Volume(v), veh/h	929	803	161	168	345	0
Grp Sat Flow(s),veh/h/ln	1844	1595	1752	1811	1734	0
Q Serve(g_s), s	0.0	13.8	4.5	4.5	11.5	0.0
Cycle Q Clear(g_c), s	13.8	13.8	4.5	4.5	11.5	0.0
Prop In Lane	0.00			0.08	0.89	0.11
Lane Grp Cap(c), veh/h	1237	1018	1118	1156	396	0
V/C Ratio(X)	0.75	0.79	0.14	0.15	0.87	0.00
Avail Cap(c_a), veh/h	1237	1018	1118	1156	520	0
HCM Platoon Ratio	1.33	1.33	0.33	0.33	1.00	1.00
Upstream Filter(I)	0.75	0.75	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	2.7	2.7	10.3	10.4	22.3	0.0
Incr Delay (d2), s/veh	3.2	4.7	0.3	0.3	9.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	6.7	2.3	2.4	6.6	0.0
LnGrp Delay(d),s/veh	5.9	7.4	10.6	10.6	32.2	0.0
LnGrp LOS	A	A	B	B	C	
Approach Vol, veh/h		1732	329		345	
Approach Delay, s/veh		6.6	10.6		32.2	
Approach LOS		A	B		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		42.3		17.7		42.3		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		34.0		18.0		34.0		
Max Q Clear Time (g_c+I1), s		15.8		13.5		6.5		
Green Ext Time (p_c), s		13.7		0.3		18.6		

Intersection Summary	
HCM 2010 Ctrl Delay	10.8
HCM 2010 LOS	B

Notes



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	1281	341	99	59	3
Future Volume (veh/h)	6	1281	341	99	59	3
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1900	1845	1900
Adj Flow Rate, veh/h	6	1348	359	96	62	-8
Adj No. of Lanes	0	2	2	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	0	0
Cap, veh/h	63	3205	2538	668	450	0
Arrive On Green	1.00	1.00	0.63	0.63	0.00	0.00
Sat Flow, veh/h	3	3517	2811	715	2018	-260
Grp Volume(v), veh/h	726	628	229	226	0	0
Grp Sat Flow(s),veh/h/ln	1842	1595	1752	1682	0	0
Q Serve(g_s), s	0.0	0.0	3.2	3.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	3.2	3.3	0.0	0.0
Prop In Lane	0.01			0.43	1.13	-0.15
Lane Grp Cap(c), veh/h	1779	1488	1636	1570	0	0
V/C Ratio(X)	0.41	0.42	0.14	0.14	0.00	0.00
Avail Cap(c_a), veh/h	1779	1488	1636	1570	0	0
HCM Platoon Ratio	2.00	2.00	0.67	0.67	1.00	1.00
Upstream Filter(I)	0.88	0.88	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	1.4	1.4	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.8	0.2	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.3	1.6	1.6	0.0	0.0
LnGrp Delay(d),s/veh	0.6	0.8	1.5	1.6	0.0	0.0
LnGrp LOS	A	A	A	A		
Approach Vol, veh/h		1354	455		0	
Approach Delay, s/veh		0.7	1.5		0.0	
Approach LOS		A	A			

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		60.0		0.0		60.0		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		37.0		15.0		37.0		
Max Q Clear Time (g_c+I1), s		2.0		0.0		5.3		
Green Ext Time (p_c), s		17.3		0.0		16.4		

Intersection Summary	
HCM 2010 Ctrl Delay	0.9
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	185	25	895	99	250	58	392	309	0	0	646	123
Future Volume (veh/h)	185	25	895	99	250	58	392	309	0	0	646	123
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.80	1.00		0.92	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	0	1845	1845
Adj Flow Rate, veh/h	195	0	674	104	263	8	413	325	0	0	680	89
Adj No. of Lanes	1	0	2	1	2	1	2	3	0	0	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	242	0	787	377	752	309	480	2802	0	0	1368	599
Arrive On Green	0.14	0.00	0.14	0.21	0.21	0.21	0.14	0.56	0.00	0.00	0.39	0.39
Sat Flow, veh/h	1757	0	2508	1757	3505	1439	3408	5202	0	0	3597	1534
Grp Volume(v), veh/h	195	0	674	104	263	8	413	325	0	0	680	89
Grp Sat Flow(s),veh/h/ln	1757	0	1254	1757	1752	1439	1704	1679	0	0	1752	1534
Q Serve(g_s), s	12.9	0.0	16.5	5.9	7.6	0.5	14.2	3.7	0.0	0.0	17.6	4.5
Cycle Q Clear(g_c), s	12.9	0.0	16.5	5.9	7.6	0.5	14.2	3.7	0.0	0.0	17.6	4.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	242	0	787	377	752	309	480	2802	0	0	1368	599
V/C Ratio(X)	0.81	0.00	0.86	0.28	0.35	0.03	0.86	0.12	0.00	0.00	0.50	0.15
Avail Cap(c_a), veh/h	242	0	787	527	1051	432	596	2802	0	0	1368	599
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	50.2	0.0	42.0	39.3	40.0	37.2	50.4	12.6	0.0	0.0	27.7	23.7
Incr Delay (d2), s/veh	18.0	0.0	9.3	0.4	0.3	0.0	10.3	0.1	0.0	0.0	1.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	0.0	11.6	2.9	3.7	0.2	7.4	1.7	0.0	0.0	8.7	2.0
LnGrp Delay(d),s/veh	68.2	0.0	51.3	39.7	40.3	37.3	60.6	12.7	0.0	0.0	29.0	24.2
LnGrp LOS	E		D	D	D	D	E	B			C	C
Approach Vol, veh/h		869			375			738			769	
Approach Delay, s/veh		55.1			40.1			39.5			28.4	
Approach LOS		E			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		70.8		20.0	19.9	50.8		29.2
Change Period (Y+Rc), s		4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s		56.5		16.5	21.0	32.5		36.0
Max Q Clear Time (g_c+I1), s		5.7		18.5	16.2	19.6		9.6
Green Ext Time (p_c), s		9.3		0.0	0.7	5.8		2.0

Intersection Summary	
HCM 2010 Ctrl Delay	41.4
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	216	26	566	88	372	95	507	810	0	0	506	150
Future Volume (veh/h)	216	26	566	88	372	95	507	810	0	0	506	150
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.72	1.00		0.90	1.00		1.00	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	0	1845	1845
Adj Flow Rate, veh/h	223	0	323	91	384	46	523	835	0	0	522	116
Adj No. of Lanes	1	0	2	1	2	1	2	3	0	0	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	242	0	842	438	874	354	577	2626	0	0	1147	487
Arrive On Green	0.14	0.00	0.14	0.25	0.25	0.25	0.17	0.52	0.00	0.00	0.33	0.33
Sat Flow, veh/h	1757	0	2266	1757	3505	1419	3408	5202	0	0	3597	1488
Grp Volume(v), veh/h	223	0	323	91	384	46	523	835	0	0	522	116
Grp Sat Flow(s),veh/h/ln	1757	0	1133	1757	1752	1419	1704	1679	0	0	1752	1488
Q Serve(g_s), s	15.0	0.0	13.8	4.9	11.1	3.0	18.1	11.4	0.0	0.0	14.1	6.8
Cycle Q Clear(g_c), s	15.0	0.0	13.8	4.9	11.1	3.0	18.1	11.4	0.0	0.0	14.1	6.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	242	0	842	438	874	354	577	2626	0	0	1147	487
V/C Ratio(X)	0.92	0.00	0.38	0.21	0.44	0.13	0.91	0.32	0.00	0.00	0.46	0.24
Avail Cap(c_a), veh/h	242	0	842	527	1051	426	596	2626	0	0	1147	487
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	51.1	0.0	33.6	35.6	38.0	34.9	48.9	16.5	0.0	0.0	31.9	29.5
Incr Delay (d2), s/veh	37.7	0.0	0.3	0.2	0.3	0.2	17.4	0.3	0.0	0.0	1.3	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	0.0	4.3	2.4	5.4	1.2	9.9	5.3	0.0	0.0	7.0	3.0
LnGrp Delay(d),s/veh	88.8	0.0	33.9	35.9	38.3	35.1	66.3	16.8	0.0	0.0	33.2	30.6
LnGrp LOS	F		C	D	D	D	E	B			C	C
Approach Vol, veh/h		546			521			1358			638	
Approach Delay, s/veh		56.3			37.6			35.9			32.7	
Approach LOS		E			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		66.6		20.0	23.3	43.3		33.4
Change Period (Y+Rc), s		4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s		56.5		16.5	21.0	32.5		36.0
Max Q Clear Time (g_c+I1), s		13.4		17.0	20.1	16.1		13.1
Green Ext Time (p_c), s		13.8		0.0	0.2	8.9		3.0

Intersection Summary	
HCM 2010 Ctrl Delay	39.2
HCM 2010 LOS	D

Notes



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	438	10	34	302	2	4
Future Volume (Veh/h)	438	10	34	302	2	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	515	12	40	355	2	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			527		956	521
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			527		956	521
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		99	99
cM capacity (veh/h)			1025		272	550

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	527	40	355	7
Volume Left	0	40	0	2
Volume Right	12	0	0	5
cSH	1700	1025	1700	425
Volume to Capacity	0.31	0.04	0.21	0.02
Queue Length 95th (ft)	0	3	0	1
Control Delay (s)	0.0	8.7	0.0	13.6
Lane LOS		A		B
Approach Delay (s)	0.0	0.9		13.6
Approach LOS				B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	38.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	424	2	4	626	11	36
Future Volume (Veh/h)	424	2	4	626	11	36
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	544	3	5	803	14	46
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			547		1358	546
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			547		1358	546
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		91	91
cM capacity (veh/h)			1022		163	538

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	547	5	803	60
Volume Left	0	5	0	14
Volume Right	3	0	0	46
cSH	1700	1022	1700	350
Volume to Capacity	0.32	0.00	0.47	0.17
Queue Length 95th (ft)	0	0	0	15
Control Delay (s)	0.0	8.5	0.0	17.4
Lane LOS		A		C
Approach Delay (s)	0.0	0.1		17.4
Approach LOS				C

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	216.3
Intersection LOS	F

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	95	106	147	0	412	367	135	0	176	400	146
Future Vol, veh/h	0	95	106	147	0	412	367	135	0	176	400	146
Peak Hour Factor	0.92	0.88	0.88	0.88	0.92	0.88	0.88	0.88	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	4	4	4	2	4	4	4	2	4	4	4
Mvmt Flow	0	108	120	167	0	468	417	153	0	200	455	166
Number of Lanes	0	0	1	0	0	1	1	0	0	1	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	1	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	3	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	3	3	2
HCM Control Delay	238	399.9	77.4
HCM LOS	F	F	F

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	27%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	48%	30%	0%	73%	0%	100%	68%
Vol Right, %	0%	0%	52%	42%	0%	27%	0%	0%	32%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	176	267	279	348	412	502	224	141	104
LT Vol	176	0	0	95	412	0	224	0	0
Through Vol	0	267	133	106	0	367	0	141	71
RT Vol	0	0	146	147	0	135	0	0	33
Lane Flow Rate	200	303	317	395	468	570	255	161	118
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.676	0.982	0.997	1.406	1.651	1.903	0.929	0.564	0.406
Departure Headway (Hd)	13.638	13.104	12.713	13.648	13.852	13.117	15.252	14.718	14.48
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	266	279	289	269	267	285	239	247	251
Service Time	11.338	10.804	10.413	11.348	11.552	10.817	12.952	12.418	12.18
HCM Lane V/C Ratio	0.752	1.086	1.097	1.468	1.753	2	1.067	0.652	0.47
HCM Control Delay	40.7	88	90.3	238	341.2	448.1	83.4	34.9	26.7
HCM Lane LOS	E	F	F	F	F	F	F	D	D
HCM 95th-tile Q	4.4	9.8	10.2	20.3	27.1	36.4	8.1	3.1	1.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	224	212	33
Future Vol, veh/h	0	224	212	33
Peak Hour Factor	0.92	0.88	0.88	0.88
Heavy Vehicles, %	2	4	4	4
Mvmt Flow	0	255	241	38
Number of Lanes	0	1	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	3
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	56.3
HCM LOS	F

Intersection	
Intersection Delay, s/veh	143.4
Intersection LOS	F

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	90	230	137	0	400	150	85	0	139	245	62
Future Vol, veh/h	0	90	230	137	0	400	150	85	0	139	245	62
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	98	250	149	0	435	163	92	0	151	266	67
Number of Lanes	0	0	1	0	0	1	1	0	0	1	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	1	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	3	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	3	3	2
HCM Control Delay	334.5	177	31.9
HCM LOS	F	F	D

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	20%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	57%	50%	0%	64%	0%	100%	76%
Vol Right, %	0%	0%	43%	30%	0%	36%	0%	0%	24%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	139	163	144	457	400	235	211	277	181
LT Vol	139	0	0	90	400	0	211	0	0
Through Vol	0	163	82	230	0	150	0	277	138
RT Vol	0	0	62	137	0	85	0	0	43
Lane Flow Rate	151	178	156	497	435	255	229	301	197
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.517	0.583	0.5	1.644	1.439	0.792	0.738	0.926	0.598
Departure Headway (Hd)	14.495	13.948	13.618	12.662	13.558	12.75	13.85	13.305	13.124
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	251	261	267	293	274	286	264	274	278
Service Time	12.195	11.648	11.318	10.362	11.258	10.45	11.55	11.005	10.824
HCM Lane V/C Ratio	0.602	0.682	0.584	1.696	1.588	0.892	0.867	1.099	0.709
HCM Control Delay	31.7	34.5	29.2	334.5	251.2	50.7	47.5	75.7	33.6
HCM Lane LOS	D	D	D	F	F	F	E	F	D
HCM 95th-tile Q	2.7	3.4	2.6	28.9	21.3	6.2	5.2	8.5	3.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	211	415	43
Future Vol, veh/h	0	211	415	43
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	229	451	47
Number of Lanes	0	1	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	3
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	55.4
HCM LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	363	257	436	78	18	85	74	585	45	139	15
Future Volume (veh/h)	8	363	257	436	78	18	85	74	585	45	139	15
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1900	1845	1900
Adj Flow Rate, veh/h	9	403	233	484	87	13	88	90	166	50	154	14
Adj No. of Lanes	1	2	0	2	1	0	1	1	1	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	416	507	290	664	295	44	276	290	246	64	198	18
Arrive On Green	0.24	0.24	0.24	0.19	0.19	0.19	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1757	2139	1221	3514	1563	234	1757	1845	1562	413	1272	116
Grp Volume(v), veh/h	9	329	307	484	0	100	88	90	166	218	0	0
Grp Sat Flow(s),veh/h/ln	1757	1752	1608	1757	0	1797	1757	1845	1562	1801	0	0
Q Serve(g_s), s	0.2	10.8	11.0	7.9	0.0	2.9	2.7	2.6	6.1	7.1	0.0	0.0
Cycle Q Clear(g_c), s	0.2	10.8	11.0	7.9	0.0	2.9	2.7	2.6	6.1	7.1	0.0	0.0
Prop In Lane	1.00		0.76	1.00		0.13	1.00		1.00	0.23		0.06
Lane Grp Cap(c), veh/h	416	415	381	664	0	339	276	290	246	280	0	0
V/C Ratio(X)	0.02	0.79	0.80	0.73	0.00	0.29	0.32	0.31	0.68	0.78	0.00	0.00
Avail Cap(c_a), veh/h	488	487	447	1034	0	529	804	844	715	471	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.9	21.9	22.0	23.3	0.0	21.3	22.9	22.8	24.3	24.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	7.5	9.0	1.6	0.0	0.5	0.7	0.6	3.2	4.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	6.1	5.8	4.0	0.0	1.5	1.4	1.4	2.8	3.9	0.0	0.0
LnGrp Delay(d),s/veh	17.9	29.5	31.0	24.9	0.0	21.8	23.5	23.4	27.5	29.5	0.0	0.0
LnGrp LOS	B	C	C	C		C	C	C	C	C		
Approach Vol, veh/h		645			584			344			218	
Approach Delay, s/veh		30.0			24.4			25.4			29.5	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		13.6		18.5		13.5		15.6
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		28.0		17.0		16.0		18.0
Max Q Clear Time (g_c+I1), s		8.1		13.0		9.1		9.9
Green Ext Time (p_c), s		1.2		1.5		0.6		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	27.2
HCM 2010 LOS	C

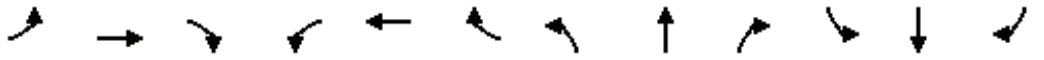
Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	163	129	413	252	39	366	185	607	15	47	38
Future Volume (veh/h)	25	163	129	413	252	39	366	185	607	15	47	38
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1881	1881	1881	1900	1881	1900
Adj Flow Rate, veh/h	26	168	84	491	169	34	284	321	177	15	48	36
Adj No. of Lanes	1	2	0	2	1	0	1	1	1	0	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	233	306	146	755	320	64	469	493	418	20	64	48
Arrive On Green	0.13	0.13	0.13	0.21	0.21	0.21	0.26	0.26	0.26	0.08	0.08	0.08
Sat Flow, veh/h	1792	2348	1122	3583	1521	306	1792	1881	1595	264	843	633
Grp Volume(v), veh/h	26	126	126	491	0	203	284	321	177	99	0	0
Grp Sat Flow(s),veh/h/ln	1792	1787	1683	1792	0	1827	1792	1881	1595	1740	0	0
Q Serve(g_s), s	0.6	3.3	3.5	6.2	0.0	4.9	6.9	7.6	4.6	2.8	0.0	0.0
Cycle Q Clear(g_c), s	0.6	3.3	3.5	6.2	0.0	4.9	6.9	7.6	4.6	2.8	0.0	0.0
Prop In Lane	1.00		0.67	1.00		0.17	1.00		1.00	0.15		0.36
Lane Grp Cap(c), veh/h	233	233	219	755	0	385	469	493	418	132	0	0
V/C Ratio(X)	0.11	0.54	0.58	0.65	0.00	0.53	0.61	0.65	0.42	0.75	0.00	0.00
Avail Cap(c_a), veh/h	611	610	574	1295	0	660	1007	1057	897	559	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	19.1	20.3	20.4	18.0	0.0	17.5	16.1	16.4	15.3	22.5	0.0	0.0
Incr Delay (d2), s/veh	0.2	2.0	2.4	1.0	0.0	1.1	1.3	1.5	0.7	8.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.7	1.8	3.2	0.0	2.6	3.6	4.1	2.1	1.6	0.0	0.0
LnGrp Delay(d),s/veh	19.3	22.2	22.7	18.9	0.0	18.6	17.4	17.8	15.9	30.7	0.0	0.0
LnGrp LOS	B	C	C	B		B	B	B	B	C		
Approach Vol, veh/h		278			694			782			99	
Approach Delay, s/veh		22.2			18.8			17.2			30.7	
Approach LOS		C			B			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		17.0		10.5		7.8		14.5
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		28.0		17.0		16.0		18.0
Max Q Clear Time (g_c+I1), s		9.6		5.5		4.8		8.2
Green Ext Time (p_c), s		3.3		1.1		0.3		2.2

Intersection Summary	
HCM 2010 Ctrl Delay	19.3
HCM 2010 LOS	B

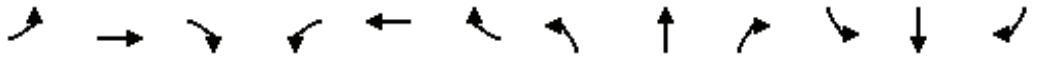
Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	263	0	63	90	681	0	0	459	373
Future Volume (veh/h)	0	0	0	263	0	63	90	681	0	0	459	373
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1827	1827	1900	1827	1827	0	0	1827	1900
Adj Flow Rate, veh/h				299	0	0	102	774	0	0	522	0
Adj No. of Lanes				1	1	0	1	2	0	0	2	0
Peak Hour Factor				0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %				4	4	4	4	4	0	0	4	4
Cap, veh/h				377	396	0	127	2050	0	0	1461	0
Arrive On Green				0.22	0.00	0.00	0.07	0.59	0.00	0.00	0.42	0.00
Sat Flow, veh/h				1740	1827	0	1740	3563	0	0	3654	0
Grp Volume(v), veh/h				299	0	0	102	774	0	0	522	0
Grp Sat Flow(s),veh/h/ln				1740	1827	0	1740	1736	0	0	1736	0
Q Serve(g_s), s				6.7	0.0	0.0	2.4	4.9	0.0	0.0	4.3	0.0
Cycle Q Clear(g_c), s				6.7	0.0	0.0	2.4	4.9	0.0	0.0	4.3	0.0
Prop In Lane				1.00		0.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				377	396	0	127	2050	0	0	1461	0
V/C Ratio(X)				0.79	0.00	0.00	0.80	0.38	0.00	0.00	0.36	0.00
Avail Cap(c_a), veh/h				671	705	0	168	2510	0	0	3179	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				15.4	0.0	0.0	18.9	4.5	0.0	0.0	8.2	0.0
Incr Delay (d2), s/veh				3.8	0.0	0.0	18.2	0.1	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.6	0.0	0.0	1.8	2.3	0.0	0.0	2.1	0.0
LnGrp Delay(d),s/veh				19.2	0.0	0.0	37.1	4.6	0.0	0.0	8.3	0.0
LnGrp LOS				B			D	A			A	
Approach Vol, veh/h					299			876			522	
Approach Delay, s/veh					19.2			8.4			8.3	
Approach LOS					B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		28.5			7.0	21.5		13.0
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		30.0			4.0	38.0		16.0
Max Q Clear Time (g_c+I1), s		6.9			4.4	6.3		8.7
Green Ext Time (p_c), s		9.9			0.0	11.2		0.5

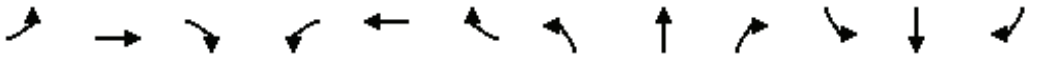
Intersection Summary	
HCM 2010 Ctrl Delay	10.3
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	144	0	432	226	726	0	0	302	287
Future Volume (veh/h)	0	0	0	144	0	432	226	726	0	0	302	287
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1881	1881	1900	1881	1881	0	0	1881	1900
Adj Flow Rate, veh/h				152	0	389	238	764	0	0	318	0
Adj No. of Lanes				1	1	0	1	2	0	0	2	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				1	1	1	1	1	0	0	1	1
Cap, veh/h				559	0	499	310	1825	0	0	889	0
Arrive On Green				0.31	0.00	0.31	0.17	0.51	0.00	0.00	0.25	0.00
Sat Flow, veh/h				1792	0	1599	1792	3668	0	0	3762	0
Grp Volume(v), veh/h				152	0	389	238	764	0	0	318	0
Grp Sat Flow(s),veh/h/ln				1792	0	1599	1792	1787	0	0	1787	0
Q Serve(g_s), s				2.9	0.0	10.0	5.7	6.0	0.0	0.0	3.3	0.0
Cycle Q Clear(g_c), s				2.9	0.0	10.0	5.7	6.0	0.0	0.0	3.3	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				559	0	499	310	1825	0	0	889	0
V/C Ratio(X)				0.27	0.00	0.78	0.77	0.42	0.00	0.00	0.36	0.00
Avail Cap(c_a), veh/h				834	0	745	755	3250	0	0	1427	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				11.7	0.0	14.1	17.8	6.9	0.0	0.0	14.0	0.0
Incr Delay (d2), s/veh				0.3	0.0	3.1	4.0	0.2	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.4	0.0	4.8	3.1	2.9	0.0	0.0	1.7	0.0
LnGrp Delay(d),s/veh				11.9	0.0	17.2	21.8	7.0	0.0	0.0	14.2	0.0
LnGrp LOS				B		B	C	A			B	
Approach Vol, veh/h					541			1002			318	
Approach Delay, s/veh					15.7			10.5			14.2	
Approach LOS					B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		27.0			11.8	15.2		18.1
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		41.0			19.0	18.0		21.0
Max Q Clear Time (g_c+I1), s		8.0			7.7	5.3		12.0
Green Ext Time (p_c), s		9.0			0.5	5.9		2.1

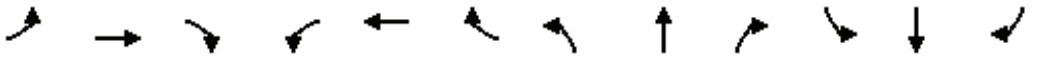
Intersection Summary	
HCM 2010 Ctrl Delay	12.7
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	886	172	78	366	0	0	0	0	388	23	271
Future Volume (veh/h)	0	886	172	78	366	0	0	0	0	388	23	271
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1900	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	963	158	85	398	0				422	25	279
Adj No. of Lanes	0	2	0	0	2	0				0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1217	199	118	751	0				487	29	322
Arrive On Green	0.00	0.40	0.40	0.13	0.13	0.00				0.49	0.49	0.49
Sat Flow, veh/h	0	3135	499	117	1963	0				987	58	653
Grp Volume(v), veh/h	0	560	561	179	304	0				726	0	0
Grp Sat Flow(s),veh/h/ln	0	1770	1771	385	1610	0				1698	0	0
Q Serve(g_s), s	0.0	20.8	20.9	9.1	13.1	0.0				28.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	20.8	20.9	30.0	13.1	0.0				28.4	0.0	0.0
Prop In Lane	0.00		0.28	0.47		0.00				0.58		0.38
Lane Grp Cap(c), veh/h	0	708	708	225	644	0				838	0	0
V/C Ratio(X)	0.00	0.79	0.79	0.80	0.47	0.00				0.87	0.00	0.00
Avail Cap(c_a), veh/h	0	708	708	225	644	0				838	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.94	0.94	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	19.7	19.8	36.2	25.2	0.0				16.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	6.1	6.1	17.0	0.5	0.0				11.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	11.3	11.3	4.8	5.9	0.0				15.8	0.0	0.0
LnGrp Delay(d),s/veh	0.0	25.8	25.9	53.2	25.7	0.0				28.5	0.0	0.0
LnGrp LOS		C	C	D	C					C		
Approach Vol, veh/h		1121			483						726	
Approach Delay, s/veh		25.9			35.9						28.5	
Approach LOS		C			D						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				34.0		41.0		34.0
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				30.0		37.0		30.0
Max Q Clear Time (g_c+I1), s				22.9		30.4		32.0
Green Ext Time (p_c), s				5.3		2.9		0.0

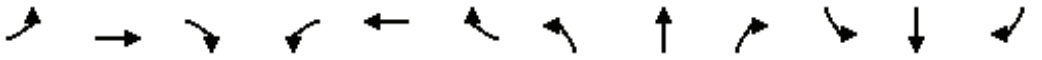
Intersection Summary	
HCM 2010 Ctrl Delay	28.8
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	701	140	53	496	0	0	0	0	283	1	277
Future Volume (veh/h)	0	701	140	53	496	0	0	0	0	283	1	277
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1881	1900	1900	1881	0				1900	1881	1900
Adj Flow Rate, veh/h	0	730	118	55	517	0				295	1	273
Adj No. of Lanes	0	2	0	0	2	0				0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	1	1	1	1	0				0	1	0
Cap, veh/h	0	1283	207	122	1133	0				419	1	387
Arrive On Green	0.00	0.42	0.42	0.83	0.83	0.00				0.48	0.48	0.48
Sat Flow, veh/h	0	3174	498	154	2804	0				878	3	813
Grp Volume(v), veh/h	0	423	425	277	295	0				569	0	0
Grp Sat Flow(s),veh/h/ln	0	1787	1790	1246	1626	0				1694	0	0
Q Serve(g_s), s	0.0	13.6	13.6	3.9	3.6	0.0				19.9	0.0	0.0
Cycle Q Clear(g_c), s	0.0	13.6	13.6	17.5	3.6	0.0				19.9	0.0	0.0
Prop In Lane	0.00		0.28	0.20		0.00				0.52		0.48
Lane Grp Cap(c), veh/h	0	745	746	577	678	0				808	0	0
V/C Ratio(X)	0.00	0.57	0.57	0.48	0.43	0.00				0.70	0.00	0.00
Avail Cap(c_a), veh/h	0	1215	1217	937	1106	0				808	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.93	0.93	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	16.7	16.7	4.6	3.9	0.0				15.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.7	0.7	0.6	0.4	0.0				5.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.8	6.9	1.3	1.5	0.0				10.3	0.0	0.0
LnGrp Delay(d),s/veh	0.0	17.4	17.4	5.2	4.4	0.0				20.6	0.0	0.0
LnGrp LOS		B	B	A	A					C		
Approach Vol, veh/h		848			572						569	
Approach Delay, s/veh		17.4			4.8						20.6	
Approach LOS		B			A						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				35.2		39.8		35.2
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				51.0		16.0		51.0
Max Q Clear Time (g_c+I1), s				15.6		21.9		19.5
Green Ext Time (p_c), s				12.2		0.0		11.8

Intersection Summary	
HCM 2010 Ctrl Delay	14.7
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	1044	0	0	411	381	33	2	54	0	0	0
Future Volume (veh/h)	230	1044	0	0	411	381	33	2	54	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	258	1173	0	0	462	277	38	0	7			
Adj No. of Lanes	0	2	0	0	2	0	2	0	1			
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	335	1474	0	0	1422	847	793	0	353			
Arrive On Green	1.00	1.00	0.00	0.00	0.67	0.67	0.22	0.00	0.22			
Sat Flow, veh/h	399	2285	0	0	2215	1264	3548	0	1581			
Grp Volume(v), veh/h	624	807	0	0	385	354	38	0	7			
Grp Sat Flow(s),veh/h/ln	990	1610	0	0	1770	1617	1774	0	1581			
Q Serve(g_s), s	31.0	0.0	0.0	0.0	6.9	6.9	0.6	0.0	0.3			
Cycle Q Clear(g_c), s	38.0	0.0	0.0	0.0	6.9	6.9	0.6	0.0	0.3			
Prop In Lane	0.41		0.00	0.00		0.78	1.00		1.00			
Lane Grp Cap(c), veh/h	731	1079	0	0	1185	1083	793	0	353			
V/C Ratio(X)	0.85	0.75	0.00	0.00	0.32	0.33	0.05	0.00	0.02			
Avail Cap(c_a), veh/h	757	1117	0	0	1227	1121	793	0	353			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.42	0.42	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	2.3	0.0	0.0	0.0	5.2	5.2	22.9	0.0	22.7			
Incr Delay (d2), s/veh	4.1	1.2	0.0	0.0	0.2	0.2	0.1	0.0	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	9.1	0.3	0.0	0.0	3.4	3.1	0.3	0.0	0.1			
LnGrp Delay(d),s/veh	6.4	1.2	0.0	0.0	5.4	5.4	23.0	0.0	22.8			
LnGrp LOS	A	A			A	A	C		C			
Approach Vol, veh/h		1431			739			45				
Approach Delay, s/veh		3.5			5.4			22.9				
Approach LOS		A			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		20.8		54.2				54.2
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		15.0		52.0				52.0
Max Q Clear Time (g_c+I1), s		2.6		40.0				8.9
Green Ext Time (p_c), s		0.1		10.3				28.2

Intersection Summary	
HCM 2010 Ctrl Delay	4.5
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	284	700	0	0	478	377	71	141	100	0	0	0
Future Volume (veh/h)	284	700	0	0	478	377	71	141	100	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1881	0	0	1881	1900	1881	1881	1881			
Adj Flow Rate, veh/h	296	729	0	0	498	253	74	147	54			
Adj No. of Lanes	0	2	0	0	2	0	1	1	1			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	1	1	0	0	1	1	1	1	1			
Cap, veh/h	416	1087	0	0	1408	712	498	523	444			
Arrive On Green	1.00	1.00	0.00	0.00	0.62	0.62	0.28	0.28	0.28			
Sat Flow, veh/h	537	1853	0	0	2382	1157	1792	1881	1599			
Grp Volume(v), veh/h	374	651	0	0	388	363	74	147	54			
Grp Sat Flow(s),veh/h/ln	677	1626	0	0	1787	1658	1792	1881	1599			
Q Serve(g_s), s	22.9	0.0	0.0	0.0	8.0	8.1	2.3	4.6	1.9			
Cycle Q Clear(g_c), s	31.0	0.0	0.0	0.0	8.0	8.1	2.3	4.6	1.9			
Prop In Lane	0.79		0.00	0.00		0.70	1.00		1.00			
Lane Grp Cap(c), veh/h	503	1001	0	0	1100	1020	498	523	444			
V/C Ratio(X)	0.74	0.65	0.00	0.00	0.35	0.36	0.15	0.28	0.12			
Avail Cap(c_a), veh/h	567	1128	0	0	1239	1149	498	523	444			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.69	0.69	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	2.7	0.0	0.0	0.0	7.1	7.1	20.4	21.2	20.2			
Incr Delay (d2), s/veh	3.2	0.8	0.0	0.0	0.2	0.2	0.6	1.3	0.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.2	0.2	0.0	0.0	3.9	3.7	1.2	2.6	0.9			
LnGrp Delay(d),s/veh	5.9	0.8	0.0	0.0	7.3	7.3	21.0	22.5	20.8			
LnGrp LOS	A	A			A	A	C	C	C			
Approach Vol, veh/h		1025			751			275				
Approach Delay, s/veh		2.7			7.3			21.8				
Approach LOS		A			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		24.8		50.2				50.2
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		15.0		52.0				52.0
Max Q Clear Time (g_c+I1), s		6.6		33.0				10.1
Green Ext Time (p_c), s		0.7		13.2				21.6

Intersection Summary	
HCM 2010 Ctrl Delay	6.9
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	352	193	21	429	87	149	169	14	169	881	112
Future Volume (veh/h)	17	352	193	21	429	87	149	169	14	169	881	112
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	0.99		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1900	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	18	371	104	22	452	79	157	178	8	178	927	111
Adj No. of Lanes	0	2	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	76	1437	675	68	1238	212	187	1116	50	209	1067	128
Arrive On Green	0.44	0.44	0.44	0.44	0.44	0.44	0.11	0.33	0.33	0.12	0.34	0.34
Sat Flow, veh/h	90	3245	1524	73	2797	478	1757	3413	152	1757	3141	376
Grp Volume(v), veh/h	205	184	104	292	0	261	157	91	95	178	517	521
Grp Sat Flow(s),veh/h/ln	1740	1595	1524	1768	0	1579	1757	1752	1813	1757	1752	1764
Q Serve(g_s), s	0.0	7.9	4.4	0.0	0.0	11.9	9.5	4.0	4.0	10.7	29.9	29.9
Cycle Q Clear(g_c), s	7.5	7.9	4.4	11.3	0.0	11.9	9.5	4.0	4.0	10.7	29.9	29.9
Prop In Lane	0.09		1.00	0.08		0.30	1.00		0.08	1.00		0.21
Lane Grp Cap(c), veh/h	807	706	675	819	0	699	187	573	593	209	595	599
V/C Ratio(X)	0.25	0.26	0.15	0.36	0.00	0.37	0.84	0.16	0.16	0.85	0.87	0.87
Avail Cap(c_a), veh/h	807	706	675	819	0	699	342	573	593	423	633	637
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.00	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.9	19.0	18.0	19.9	0.0	20.1	47.3	25.8	25.8	46.6	33.4	33.4
Incr Delay (d2), s/veh	0.8	0.9	0.5	0.1	0.0	0.1	3.8	0.2	0.2	3.7	12.4	12.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	3.6	1.9	5.8	0.0	5.2	4.8	1.9	2.0	5.4	16.4	16.5
LnGrp Delay(d),s/veh	19.6	19.9	18.5	20.0	0.0	20.2	51.2	26.0	26.0	50.4	45.8	45.7
LnGrp LOS	B	B	B	C		C	D	C	C	D	D	D
Approach Vol, veh/h		493			553			343			1216	
Approach Delay, s/veh		19.5			20.1			37.5			46.4	
Approach LOS		B			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.5	40.7		51.8	16.9	39.3		51.8
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	21.0	39.0		36.0	26.0	34.0		36.0
Max Q Clear Time (g_c+I1), s	11.5	31.9		9.9	12.7	6.0		13.9
Green Ext Time (p_c), s	0.1	4.8		9.8	0.2	13.2		9.1

Intersection Summary	
HCM 2010 Ctrl Delay	34.6
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	476	306	18	330	110	205	544	36	80	286	31
Future Volume (veh/h)	47	476	306	18	330	110	205	544	36	80	286	31
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	1.00		0.97	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1881	1881	1900	1881	1900	1881	1881	1900	1881	1881	1900
Adj Flow Rate, veh/h	49	496	221	19	344	103	214	567	31	83	298	25
Adj No. of Lanes	0	2	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	172	1680	864	81	1386	406	242	931	51	106	650	54
Arrive On Green	0.56	0.56	0.56	0.56	0.56	0.56	0.13	0.27	0.27	0.06	0.20	0.20
Sat Flow, veh/h	243	3023	1555	85	2494	730	1792	3439	188	1792	3330	277
Grp Volume(v), veh/h	275	270	221	246	0	220	214	294	304	83	159	164
Grp Sat Flow(s),veh/h/ln	1640	1626	1555	1750	0	1559	1792	1787	1840	1792	1787	1820
Q Serve(g_s), s	0.0	10.1	8.4	0.0	0.0	8.3	13.4	16.4	16.4	5.2	8.9	9.1
Cycle Q Clear(g_c), s	8.7	10.1	8.4	7.6	0.0	8.3	13.4	16.4	16.4	5.2	8.9	9.1
Prop In Lane	0.18		1.00	0.08		0.47	1.00		0.10	1.00		0.15
Lane Grp Cap(c), veh/h	948	904	864	1006	0	866	242	484	498	106	349	355
V/C Ratio(X)	0.29	0.30	0.26	0.24	0.00	0.25	0.89	0.61	0.61	0.78	0.46	0.46
Avail Cap(c_a), veh/h	948	904	864	1006	0	866	251	484	498	456	674	687
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.00	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.2	13.5	13.1	12.9	0.0	13.1	48.4	36.3	36.3	52.9	40.5	40.6
Incr Delay (d2), s/veh	0.8	0.8	0.7	0.1	0.0	0.1	27.3	2.6	2.6	4.6	1.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	4.7	3.8	4.0	0.0	3.6	8.4	8.4	8.7	2.7	4.5	4.7
LnGrp Delay(d),s/veh	13.9	14.3	13.8	13.0	0.0	13.2	75.7	38.9	38.9	57.5	41.8	41.9
LnGrp LOS	B	B	B	B		B	E	D	D	E	D	D
Approach Vol, veh/h		766			466			812			406	
Approach Delay, s/veh		14.0			13.1			48.6			45.1	
Approach LOS		B			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	19.4	27.3		67.4	10.8	35.9		67.4
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0
Max Green Setting (Gmax), s	16.0	43.0		42.0	29.0	30.0		42.0
Max Q Clear Time (g_c+I1), s	15.4	11.1		12.1	7.2	18.4		10.3
Green Ext Time (p_c), s	0.0	7.7		12.3	0.1	5.6		12.6

Intersection Summary	
HCM 2010 Ctrl Delay	30.4
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	210	116	113	146	41	39	293	51	92	996	7
Future Volume (veh/h)	4	210	116	113	146	41	39	293	51	92	996	7
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.96	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	4	212	99	114	147	33	39	296	39	93	1006	6
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	20	281	131	173	474	106	112	1381	180	153	1669	10
Arrive On Green	0.01	0.24	0.24	0.10	0.33	0.33	0.06	0.44	0.44	0.06	0.31	0.31
Sat Flow, veh/h	1757	1166	544	1757	1446	325	1757	3109	405	1757	3571	21
Grp Volume(v), veh/h	4	0	311	114	0	180	39	165	170	93	494	518
Grp Sat Flow(s),veh/h/ln	1757	0	1710	1757	0	1770	1757	1752	1762	1757	1752	1840
Q Serve(g_s), s	0.2	0.0	18.2	6.8	0.0	8.2	2.3	6.3	6.4	5.6	25.8	25.8
Cycle Q Clear(g_c), s	0.2	0.0	18.2	6.8	0.0	8.2	2.3	6.3	6.4	5.6	25.8	25.8
Prop In Lane	1.00		0.32	1.00		0.18	1.00		0.23	1.00		0.01
Lane Grp Cap(c), veh/h	20	0	412	173	0	580	112	778	782	153	819	860
V/C Ratio(X)	0.20	0.00	0.76	0.66	0.00	0.31	0.35	0.21	0.22	0.61	0.60	0.60
Avail Cap(c_a), veh/h	195	0	412	195	0	580	195	778	782	195	819	860
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.75	0.75	0.75
Uniform Delay (d), s/veh	52.9	0.0	38.1	46.9	0.0	27.2	48.4	18.4	18.5	49.1	28.6	28.6
Incr Delay (d2), s/veh	1.8	0.0	12.2	4.6	0.0	1.4	0.7	0.6	0.6	1.1	2.5	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	10.0	3.5	0.0	4.2	1.1	3.2	3.2	2.8	13.1	13.7
LnGrp Delay(d),s/veh	54.6	0.0	50.2	51.5	0.0	28.6	49.1	19.0	19.1	50.2	31.1	31.0
LnGrp LOS	D		D	D		C	D	B	B	D	C	C
Approach Vol, veh/h		315			294			374			1105	
Approach Delay, s/veh		50.3			37.5			22.2			32.6	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	54.5	13.6	30.0	12.4	52.0	4.2	39.4
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	12.0	44.0	12.0	26.0	12.0	44.0	12.0	26.0
Max Q Clear Time (g_c+I1), s	4.3	27.8	8.8	20.2	7.6	8.4	2.2	10.2
Green Ext Time (p_c), s	0.0	10.2	0.0	1.1	0.0	16.1	0.0	1.8

Intersection Summary	
HCM 2010 Ctrl Delay	34.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	119	24	85	159	98	88	844	83	95	611	14
Future Volume (veh/h)	6	119	24	85	159	98	88	844	83	95	611	14
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.95	1.00		0.96	1.00		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	6	121	6	87	162	92	90	861	72	97	623	13
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	30	431	21	160	349	198	147	1507	126	148	1623	34
Arrive On Green	0.02	0.25	0.25	0.09	0.32	0.32	0.08	0.46	0.46	0.17	0.92	0.92
Sat Flow, veh/h	1774	1753	87	1774	1093	621	1774	3294	275	1774	3539	74
Grp Volume(v), veh/h	6	0	127	87	0	254	90	463	470	97	311	325
Grp Sat Flow(s),veh/h/ln	1774	0	1840	1774	0	1714	1774	1770	1800	1774	1770	1843
Q Serve(g_s), s	0.4	0.0	6.4	5.3	0.0	13.5	5.6	21.9	21.9	5.8	2.6	2.6
Cycle Q Clear(g_c), s	0.4	0.0	6.4	5.3	0.0	13.5	5.6	21.9	21.9	5.8	2.6	2.6
Prop In Lane	1.00		0.05	1.00		0.36	1.00		0.15	1.00		0.04
Lane Grp Cap(c), veh/h	30	0	452	160	0	547	147	810	824	148	812	845
V/C Ratio(X)	0.20	0.00	0.28	0.54	0.00	0.46	0.61	0.57	0.57	0.65	0.38	0.38
Avail Cap(c_a), veh/h	187	0	452	187	0	547	171	810	824	171	812	845
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92
Uniform Delay (d), s/veh	55.3	0.0	34.8	49.6	0.0	31.0	50.5	22.7	22.7	45.9	2.7	2.7
Incr Delay (d2), s/veh	1.2	0.0	1.5	1.1	0.0	2.8	2.5	2.9	2.9	4.2	1.3	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	3.4	2.7	0.0	6.8	2.9	11.3	11.5	3.0	1.3	1.4
LnGrp Delay(d),s/veh	56.5	0.0	36.4	50.7	0.0	33.8	53.0	25.6	25.6	50.1	3.9	3.9
LnGrp LOS	E		D	D		C	D	C	C	D	A	A
Approach Vol, veh/h		133			341			1023			733	
Approach Delay, s/veh		37.3			38.1			28.0			10.0	
Approach LOS		D			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	56.3	13.3	32.0	12.5	56.2	4.9	40.4
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	11.0	49.0	12.0	28.0	11.0	49.0	12.0	28.0
Max Q Clear Time (g_c+I1), s	7.6	4.6	7.3	8.4	7.8	23.9	2.4	15.5
Green Ext Time (p_c), s	0.0	21.3	0.0	1.4	0.0	15.5	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	24.2
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	485	129	91	461	0	0	0	0	170	780	128
Future Volume (veh/h)	0	485	129	91	461	0	0	0	0	170	780	128
Number	7	4	14	3	8	18				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	0.99		1.00				1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1881	1900	1881	1881	0				1900	1881	1900
Adj Flow Rate, veh/h	0	495	104	93	470	0				173	796	117
Adj No. of Lanes	0	2	0	1	2	0				0	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	1	1	1	1	0				0	1	0
Cap, veh/h	0	1144	239	387	1404	0				226	1090	168
Arrive On Green	0.00	0.39	0.39	0.39	0.39	0.00				0.41	0.41	0.41
Sat Flow, veh/h	0	3006	607	815	3668	0				555	2677	412
Grp Volume(v), veh/h	0	302	297	93	470	0				578	0	508
Grp Sat Flow(s),veh/h/ln	0	1787	1732	815	1787	0				1853	0	1791
Q Serve(g_s), s	0.0	5.3	5.3	4.0	3.9	0.0				11.4	0.0	10.0
Cycle Q Clear(g_c), s	0.0	5.3	5.3	9.3	3.9	0.0				11.4	0.0	10.0
Prop In Lane	0.00		0.35	1.00		0.00				0.30		0.23
Lane Grp Cap(c), veh/h	0	702	681	387	1404	0				755	0	729
V/C Ratio(X)	0.00	0.43	0.44	0.24	0.33	0.00				0.77	0.00	0.70
Avail Cap(c_a), veh/h	0	1450	1406	728	2901	0				916	0	885
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	9.4	9.5	12.9	9.0	0.0				10.9	0.0	10.4
Incr Delay (d2), s/veh	0.0	0.2	0.2	0.1	0.1	0.0				2.4	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.6	2.6	0.9	1.9	0.0				6.3	0.0	5.0
LnGrp Delay(d),s/veh	0.0	9.6	9.6	13.0	9.1	0.0				13.3	0.0	11.7
LnGrp LOS		A	A	B	A					B		B
Approach Vol, veh/h		599			563						1086	
Approach Delay, s/veh		9.6			9.7						12.5	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		21.8		20.7				20.7
Change Period (Y+Rc), s		4.5		4.0				4.0
Max Green Setting (Gmax), s		21.0		34.5				34.5
Max Q Clear Time (g_c+I1), s		13.4		7.3				11.3
Green Ext Time (p_c), s		3.2		5.6				5.4

Intersection Summary	
HCM 2010 Ctrl Delay	11.0
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	672	102	90	425	0	0	0	0	129	563	97
Future Volume (veh/h)	0	672	102	90	425	0	0	0	0	129	563	97
Number	7	4	14	3	8	18				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	0.99		1.00				1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1881	1900	1881	1881	0				1900	1881	1900
Adj Flow Rate, veh/h	0	693	83	93	438	0				133	580	82
Adj No. of Lanes	0	2	0	1	2	0				0	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	1	1	1	1	0				0	1	0
Cap, veh/h	0	1469	176	394	1643	0				192	880	130
Arrive On Green	0.00	0.46	0.46	0.46	0.46	0.00				0.33	0.33	0.33
Sat Flow, veh/h	0	3290	382	695	3668	0				584	2673	395
Grp Volume(v), veh/h	0	387	389	93	438	0				422	0	373
Grp Sat Flow(s),veh/h/ln	0	1787	1791	695	1787	0				1852	0	1801
Q Serve(g_s), s	0.0	6.0	6.0	4.3	3.0	0.0				8.0	0.0	7.1
Cycle Q Clear(g_c), s	0.0	6.0	6.0	10.3	3.0	0.0				8.0	0.0	7.1
Prop In Lane	0.00		0.21	1.00		0.00				0.32		0.22
Lane Grp Cap(c), veh/h	0	822	823	394	1643	0				609	0	593
V/C Ratio(X)	0.00	0.47	0.47	0.24	0.27	0.00				0.69	0.00	0.63
Avail Cap(c_a), veh/h	0	1532	1535	670	3063	0				966	0	940
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	7.5	7.5	11.1	6.7	0.0				11.7	0.0	11.4
Incr Delay (d2), s/veh	0.0	0.2	0.2	0.1	0.0	0.0				0.5	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.9	3.0	0.8	1.5	0.0				4.1	0.0	3.5
LnGrp Delay(d),s/veh	0.0	7.7	7.7	11.2	6.7	0.0				12.3	0.0	11.8
LnGrp LOS		A	A	B	A					B		B
Approach Vol, veh/h		776			531						795	
Approach Delay, s/veh		7.7			7.5						12.1	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		17.7		22.5				22.5
Change Period (Y+Rc), s		4.5		4.0				4.0
Max Green Setting (Gmax), s		21.0		34.5				34.5
Max Q Clear Time (g_c+I1), s		10.0		8.0				12.3
Green Ext Time (p_c), s		2.8		6.5				6.2

Intersection Summary	
HCM 2010 Ctrl Delay	9.3
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	516	0	0	444	73	95	604	63	0	0	0
Future Volume (veh/h)	124	516	0	0	444	73	95	604	63	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.95	1.00		0.96			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1900	1863	1900			
Adj Flow Rate, veh/h	131	543	0	0	467	59	100	636	51			
Adj No. of Lanes	1	2	0	0	2	0	0	3	0			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	247	1731	0	0	795	100	201	1368	112			
Arrive On Green	0.14	0.49	0.00	0.00	0.25	0.25	0.32	0.32	0.32			
Sat Flow, veh/h	1774	3632	0	0	3237	395	635	4318	354			
Grp Volume(v), veh/h	131	543	0	0	262	264	288	242	257			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1769	1831	1695	1781			
Q Serve(g_s), s	2.5	3.3	0.0	0.0	4.7	4.7	4.6	4.1	4.1			
Cycle Q Clear(g_c), s	2.5	3.3	0.0	0.0	4.7	4.7	4.6	4.1	4.1			
Prop In Lane	1.00		0.00	0.00		0.22	0.35		0.20			
Lane Grp Cap(c), veh/h	247	1731	0	0	448	448	580	537	564			
V/C Ratio(X)	0.53	0.31	0.00	0.00	0.58	0.59	0.50	0.45	0.46			
Avail Cap(c_a), veh/h	984	2012	0	0	1006	1006	1269	1175	1235			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	14.4	5.6	0.0	0.0	11.8	11.8	10.0	9.8	9.8			
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.0	0.5	0.5	0.2	0.2	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.2	1.6	0.0	0.0	2.3	2.3	2.4	1.9	2.0			
LnGrp Delay(d),s/veh	15.1	5.6	0.0	0.0	12.3	12.3	10.2	10.0	10.1			
LnGrp LOS	B	A			B	B	B	B	B			
Approach Vol, veh/h		674			526			787				
Approach Delay, s/veh		7.4			12.3			10.1				
Approach LOS		A			B			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		14.9	8.5	12.6				21.1
Change Period (Y+Rc), s		3.5	3.5	3.5				3.5
Max Green Setting (Gmax), s		25.0	20.0	20.5				20.5
Max Q Clear Time (g_c+I1), s		6.6	4.5	6.7				5.3
Green Ext Time (p_c), s		3.3	2.4	1.8				2.4

Intersection Summary	
HCM 2010 Ctrl Delay	9.8
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	209	596	0	0	344	130	168	1340	84	0	0	0
Future Volume (veh/h)	209	596	0	0	344	130	168	1340	84	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.95	1.00		0.97			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1881	1881	0	0	1881	1900	1900	1881	1900			
Adj Flow Rate, veh/h	213	608	0	0	351	76	171	1367	79			
Adj No. of Lanes	1	2	0	0	2	0	0	3	0			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	1	1	0	0	1	1	0	1	0			
Cap, veh/h	290	1548	0	0	579	123	227	1937	115			
Arrive On Green	0.16	0.43	0.00	0.00	0.20	0.20	0.42	0.42	0.42			
Sat Flow, veh/h	1792	3668	0	0	2995	619	536	4580	272			
Grp Volume(v), veh/h	213	608	0	0	214	213	591	497	529			
Grp Sat Flow(s),veh/h/ln	1792	1787	0	0	1787	1733	1854	1712	1822			
Q Serve(g_s), s	5.5	5.7	0.0	0.0	5.3	5.5	13.1	11.5	11.5			
Cycle Q Clear(g_c), s	5.5	5.7	0.0	0.0	5.3	5.5	13.1	11.5	11.5			
Prop In Lane	1.00		0.00	0.00		0.36	0.29		0.15			
Lane Grp Cap(c), veh/h	290	1548	0	0	357	346	784	724	771			
V/C Ratio(X)	0.74	0.39	0.00	0.00	0.60	0.62	0.75	0.69	0.69			
Avail Cap(c_a), veh/h	736	1548	0	0	753	730	953	879	936			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	19.4	9.4	0.0	0.0	17.7	17.8	11.9	11.4	11.4			
Incr Delay (d2), s/veh	1.4	0.1	0.0	0.0	0.6	0.7	2.1	1.1	1.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.8	2.8	0.0	0.0	2.7	2.7	7.0	5.6	5.9			
LnGrp Delay(d),s/veh	20.8	9.5	0.0	0.0	18.3	18.4	14.0	12.5	12.4			
LnGrp LOS	C	A			B	B	B	B	B			
Approach Vol, veh/h		821			427			1617				
Approach Delay, s/veh		12.4			18.4			13.0				
Approach LOS		B			B			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		24.1	11.4	13.2				24.6
Change Period (Y+Rc), s		3.5	3.5	3.5				3.5
Max Green Setting (Gmax), s		25.0	20.0	20.5				20.5
Max Q Clear Time (g_c+I1), s		15.1	7.5	7.5				7.7
Green Ext Time (p_c), s		5.4	0.9	1.4				2.6

Intersection Summary	
HCM 2010 Ctrl Delay	13.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	217	54	82	191	63	189	287	143	82	490	16
Future Volume (veh/h)	37	217	54	82	191	63	189	287	143	82	490	16
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.96	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1900	1845	1900
Adj Flow Rate, veh/h	40	233	10	88	205	58	203	309	80	88	527	16
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	0	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	67	397	316	115	332	94	436	458	369	131	828	26
Arrive On Green	0.04	0.22	0.22	0.07	0.24	0.24	0.25	0.25	0.25	0.27	0.27	0.27
Sat Flow, veh/h	1757	1845	1467	1757	1369	387	1757	1845	1486	485	3060	97
Grp Volume(v), veh/h	40	233	10	88	0	263	203	309	80	330	0	301
Grp Sat Flow(s),veh/h/ln	1757	1845	1467	1757	0	1756	1757	1845	1486	1820	0	1822
Q Serve(g_s), s	1.6	8.3	0.4	3.6	0.0	9.8	7.2	11.1	3.1	11.8	0.0	10.6
Cycle Q Clear(g_c), s	1.6	8.3	0.4	3.6	0.0	9.8	7.2	11.1	3.1	11.8	0.0	10.6
Prop In Lane	1.00		1.00	1.00		0.22	1.00		1.00	0.27		0.05
Lane Grp Cap(c), veh/h	67	397	316	115	0	426	436	458	369	492	0	493
V/C Ratio(X)	0.60	0.59	0.03	0.76	0.00	0.62	0.47	0.68	0.22	0.67	0.00	0.61
Avail Cap(c_a), veh/h	360	756	601	360	0	719	720	756	609	746	0	746
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.7	25.8	22.7	33.7	0.0	24.7	23.4	24.9	21.9	23.8	0.0	23.3
Incr Delay (d2), s/veh	9.9	1.7	0.0	11.9	0.0	1.8	0.9	2.1	0.4	1.9	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	4.4	0.2	2.1	0.0	5.0	3.6	5.8	1.3	6.2	0.0	5.5
LnGrp Delay(d),s/veh	44.6	27.5	22.8	45.6	0.0	26.5	24.3	27.0	22.2	25.7	0.0	24.8
LnGrp LOS	D	C	C	D		C	C	C	C	C		C
Approach Vol, veh/h		283			351			592			631	
Approach Delay, s/veh		29.7			31.2			25.4			25.3	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.4	19.9		21.7	6.4	21.9		23.3
Change Period (Y+Rc), s	3.6	4.1		3.5	3.6	4.1		3.5
Max Green Setting (Gmax), s	15.0	30.0		30.0	15.0	30.0		30.0
Max Q Clear Time (g_c+I1), s	5.6	10.3		13.1	3.6	11.8		13.8
Green Ext Time (p_c), s	0.2	3.7		3.2	0.1	3.6		4.4

Intersection Summary	
HCM 2010 Ctrl Delay	27.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	197	51	78	264	100	82	328	118	112	267	16
Future Volume (veh/h)	25	197	51	78	264	100	82	328	118	112	267	16
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.97	1.00		0.95	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	26	203	13	80	272	93	85	338	65	115	275	14
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	0	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	51	473	376	105	374	128	476	500	403	187	477	25
Arrive On Green	0.03	0.25	0.25	0.06	0.28	0.28	0.27	0.27	0.27	0.19	0.19	0.19
Sat Flow, veh/h	1774	1863	1482	1774	1316	450	1774	1863	1502	990	2525	133
Grp Volume(v), veh/h	26	203	13	80	0	365	85	338	65	211	0	193
Grp Sat Flow(s),veh/h/ln	1774	1863	1482	1774	0	1766	1774	1863	1502	1813	0	1835
Q Serve(g_s), s	0.9	5.8	0.4	2.8	0.0	12.0	2.4	10.4	2.1	6.8	0.0	6.1
Cycle Q Clear(g_c), s	0.9	5.8	0.4	2.8	0.0	12.0	2.4	10.4	2.1	6.8	0.0	6.1
Prop In Lane	1.00		1.00	1.00		0.25	1.00		1.00	0.55		0.07
Lane Grp Cap(c), veh/h	51	473	376	105	0	502	476	500	403	342	0	346
V/C Ratio(X)	0.51	0.43	0.03	0.76	0.00	0.73	0.18	0.68	0.16	0.62	0.00	0.56
Avail Cap(c_a), veh/h	415	872	694	415	0	827	831	872	703	849	0	859
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.7	20.0	18.0	29.7	0.0	20.7	18.0	20.9	17.9	23.9	0.0	23.6
Incr Delay (d2), s/veh	9.0	0.7	0.0	12.7	0.0	2.4	0.2	1.9	0.2	2.2	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.1	0.2	1.8	0.0	6.1	1.2	5.6	0.9	3.6	0.0	3.3
LnGrp Delay(d),s/veh	39.7	20.8	18.0	42.4	0.0	23.1	18.2	22.9	18.1	26.0	0.0	25.3
LnGrp LOS	D	C	B	D		C	B	C	B	C		C
Approach Vol, veh/h		242			445			488			404	
Approach Delay, s/veh		22.6			26.6			21.4			25.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.4	20.4		20.7	5.5	22.3		15.6
Change Period (Y+Rc), s	3.6	4.1		3.5	3.6	4.1		3.5
Max Green Setting (Gmax), s	15.0	30.0		30.0	15.0	30.0		30.0
Max Q Clear Time (g_c+I1), s	4.8	7.8		12.4	2.9	14.0		8.8
Green Ext Time (p_c), s	0.1	4.6		3.0	0.0	4.0		2.9

Intersection Summary	
HCM 2010 Ctrl Delay	24.2
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	625	12	55	690	98	1	69	39	198	199	82
Future Volume (vph)	70	625	12	55	690	98	1	69	39	198	199	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00	0.98		1.00	0.99
Flpb, ped/bikes	0.98	1.00		0.98	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.98			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		0.98	1.00
Satd. Flow (prot)	1721	3490		1719	3401			1843	1536		1794	1547
Flt Permitted	0.28	1.00		0.35	1.00			1.00	1.00		0.80	1.00
Satd. Flow (perm)	502	3490		629	3401			1839	1536		1479	1547
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	74	665	13	59	734	104	1	73	41	211	212	87
RTOR Reduction (vph)	0	1	0	0	8	0	0	0	27	0	0	31
Lane Group Flow (vph)	74	677	0	59	830	0	0	74	14	0	423	56
Confl. Peds. (#/hr)	36		28	28		36	1		8	8		1
Confl. Bikes (#/hr)			3						3			1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	60.1	60.1		60.1	60.1			36.9	36.9		36.9	36.9
Effective Green, g (s)	60.1	60.1		60.1	60.1			36.9	36.9		36.9	36.9
Actuated g/C Ratio	0.57	0.57		0.57	0.57			0.35	0.35		0.35	0.35
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	2.0		2.0	2.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	287	1997		360	1946			646	539		519	543
v/s Ratio Prot		0.19			c0.24							
v/s Ratio Perm	0.15			0.09				0.04	0.01		c0.29	0.04
v/c Ratio	0.26	0.34		0.16	0.43			0.11	0.03		0.82	0.10
Uniform Delay, d1	11.3	11.9		10.6	12.7			23.0	22.3		30.9	22.9
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	2.2	0.5		1.0	0.7			0.1	0.0		9.5	0.1
Delay (s)	13.4	12.4		11.6	13.4			23.1	22.3		40.5	23.0
Level of Service	B	B		B	B			C	C		D	C
Approach Delay (s)		12.5			13.3			22.8			37.5	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	170	635	8	37	541	107	10	310	48	85	89	83
Future Volume (vph)	170	635	8	37	541	107	10	310	48	85	89	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00	0.98		1.00	0.98
Flpb, ped/bikes	0.99	1.00		0.99	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.98			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		0.98	1.00
Satd. Flow (prot)	1744	3531		1756	3416			1860	1549		1814	1558
Flt Permitted	0.37	1.00		0.37	1.00			0.99	1.00		0.36	1.00
Satd. Flow (perm)	680	3531		690	3416			1845	1549		677	1558
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	177	661	8	39	564	111	10	323	50	89	93	86
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	27	0	0	65
Lane Group Flow (vph)	177	669	0	39	667	0	0	333	23	0	182	21
Confl. Peds. (#/hr)	19		10	10		19	2		8	8		2
Confl. Bikes (#/hr)			5			8						2
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	74.8	74.8		74.8	74.8			27.2	27.2		27.2	27.2
Effective Green, g (s)	74.8	74.8		74.8	74.8			27.2	27.2		27.2	27.2
Actuated g/C Ratio	0.68	0.68		0.68	0.68			0.25	0.25		0.25	0.25
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	2.0		2.0	2.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	462	2401		469	2322			456	383		167	385
v/s Ratio Prot		0.19			0.20							
v/s Ratio Perm	c0.26			0.06				0.18	0.01		c0.27	0.01
v/c Ratio	0.38	0.28		0.08	0.29			0.73	0.06		1.09	0.06
Uniform Delay, d1	7.6	6.9		6.0	7.0			38.0	31.6		41.4	31.6
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	2.4	0.3		0.3	0.3			5.9	0.1		95.7	0.1
Delay (s)	10.0	7.2		6.3	7.3			44.0	31.7		137.1	31.7
Level of Service	B	A		A	A			D	C		F	C
Approach Delay (s)		7.8			7.3			42.4			103.2	
Approach LOS		A			A			D			F	

Intersection Summary			
HCM 2000 Control Delay	25.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	12.7
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	2	96	65	0	231	191	68	0	60	8	175
Future Vol, veh/h	0	2	96	65	0	231	191	68	0	60	8	175
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	0	2	110	75	0	266	220	78	0	69	9	201
Number of Lanes	0	1	2	0	0	1	2	0	0	0	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	3	3	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	3
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	3
HCM Control Delay	11.2	13.6	12.2
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	88%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	12%	0%	0%	100%	33%	0%	100%	48%	0%	93%
Vol Right, %	0%	100%	0%	0%	67%	0%	0%	52%	0%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	68	175	2	64	97	231	127	132	30	28
LT Vol	60	0	2	0	0	231	0	0	30	0
Through Vol	8	0	0	64	32	0	127	64	0	26
RT Vol	0	175	0	0	65	0	0	68	0	2
Lane Flow Rate	78	201	2	74	111	266	146	151	34	32
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.161	0.35	0.005	0.146	0.207	0.506	0.258	0.252	0.077	0.067
Departure Headway (Hd)	7.409	6.266	7.652	7.144	6.668	6.861	6.355	5.988	8.011	7.458
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	482	571	465	499	535	523	563	596	444	477
Service Time	5.186	4.043	5.439	4.93	4.453	4.626	4.12	3.753	5.809	5.255
HCM Lane V/C Ratio	0.162	0.352	0.004	0.148	0.207	0.509	0.259	0.253	0.077	0.067
HCM Control Delay	11.6	12.4	10.5	11.2	11.2	16.5	11.3	10.8	11.5	10.8
HCM Lane LOS	B	B	B	B	B	C	B	B	B	B
HCM 95th-tile Q	0.6	1.6	0	0.5	0.8	2.8	1	1	0.2	0.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	30	26	2
Future Vol, veh/h	0	30	26	2
Peak Hour Factor	0.87	0.87	0.87	0.87
Heavy Vehicles, %	6	6	6	6
Mvmt Flow	0	34	30	2
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	3
Conflicting Approach Right	EB
Conflicting Lanes Right	3
HCM Control Delay	11.2
HCM LOS	B

Intersection	
Intersection Delay, s/veh	25.9
Intersection LOS	D

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	5	468	185	0	26	457	102	0	122	11	227
Future Vol, veh/h	0	5	468	185	0	26	457	102	0	122	11	227
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	473	187	0	26	462	103	0	123	11	229
Number of Lanes	0	1	2	0	0	1	2	0	0	0	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	3	3	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	3
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	3
HCM Control Delay	31.1	25.9	18.9
HCM LOS	D	D	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	92%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	8%	0%	0%	100%	46%	0%	100%	60%	0%	84%
Vol Right, %	0%	100%	0%	0%	54%	0%	0%	40%	0%	16%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	133	227	5	312	341	26	305	254	47	38
LT Vol	122	0	5	0	0	26	0	0	47	0
Through Vol	11	0	0	312	156	0	305	152	0	32
RT Vol	0	227	0	0	185	0	0	102	0	6
Lane Flow Rate	134	229	5	315	344	26	308	257	47	38
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.353	0.527	0.012	0.73	0.761	0.066	0.724	0.584	0.139	0.106
Departure Headway (Hd)	9.449	8.274	8.856	8.342	7.952	8.983	8.469	8.18	10.574	9.948
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	382	436	405	435	455	399	428	442	339	360
Service Time	7.192	6.017	6.597	6.082	5.692	6.723	6.208	5.919	8.334	7.708
HCM Lane V/C Ratio	0.351	0.525	0.012	0.724	0.756	0.065	0.72	0.581	0.139	0.106
HCM Control Delay	17.3	19.9	11.7	30.6	31.9	12.4	30.5	21.8	15	13.9
HCM Lane LOS	C	C	B	D	D	B	D	C	B	B
HCM 95th-tile Q	1.6	3	0	5.8	6.5	0.2	5.7	3.6	0.5	0.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	47	32	6
Future Vol, veh/h	0	47	32	6
Peak Hour Factor	0.99	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	47	32	6
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	3
Conflicting Approach Right	EB
Conflicting Lanes Right	3
HCM Control Delay	14.5
HCM LOS	B

Intersection	
Intersection Delay, s/veh	14.7
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	31	270	0	0	0	384	222	0	106	0	65
Future Vol, veh/h	0	31	270	0	0	0	384	222	0	106	0	65
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	0	36	314	0	0	0	447	258	0	123	0	76
Number of Lanes	0	1	2	0	0	0	2	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	3	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	3
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	10.9	17.2	12.4
HCM LOS	B	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2
Vol Left, %	100%	0%	100%	0%	0%	0%	0%
Vol Thru, %	0%	0%	0%	100%	100%	100%	37%
Vol Right, %	0%	100%	0%	0%	0%	0%	63%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	106	65	31	135	135	256	350
LT Vol	106	0	31	0	0	0	0
Through Vol	0	0	0	135	135	256	128
RT Vol	0	65	0	0	0	0	222
Lane Flow Rate	123	76	36	157	157	298	407
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	0.269	0.14	0.074	0.3	0.221	0.513	0.65
Departure Headway (Hd)	7.859	6.647	7.385	6.878	5.066	6.203	5.754
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	456	537	483	521	703	580	627
Service Time	5.633	4.42	5.154	4.647	2.834	3.959	3.509
HCM Lane V/C Ratio	0.27	0.142	0.075	0.301	0.223	0.514	0.649
HCM Control Delay	13.5	10.5	10.7	12.6	9.3	15.4	18.6
HCM Lane LOS	B	B	B	B	A	C	C
HCM 95th-tile Q	1.1	0.5	0.2	1.3	0.8	2.9	4.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	0	0	0
Future Vol, veh/h	0	0	0	0
Peak Hour Factor	0.86	0.86	0.86	0.86
Heavy Vehicles, %	5	5	5	5
Mvmt Flow	0	0	0	0
Number of Lanes	0	0	0	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	

Intersection	
Intersection Delay, s/veh	30.7
Intersection LOS	D

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	195	547	0	0	0	342	312	0	243	1	74
Future Vol, veh/h	0	195	547	0	0	0	342	312	0	243	1	74
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	205	576	0	0	0	360	328	0	256	1	78
Number of Lanes	0	1	2	0	0	0	2	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	3	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	3
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	19.6	45.5	26.3
HCM LOS	C	E	D

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2
Vol Left, %	100%	0%	100%	0%	0%	0%	0%
Vol Thru, %	0%	1%	0%	100%	100%	100%	27%
Vol Right, %	0%	99%	0%	0%	0%	0%	73%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	243	75	195	274	274	228	426
LT Vol	243	0	195	0	0	0	0
Through Vol	0	1	0	274	274	228	114
RT Vol	0	74	0	0	0	0	312
Lane Flow Rate	256	79	205	288	288	240	448
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	0.68	0.183	0.486	0.64	0.498	0.547	0.957
Departure Headway (Hd)	9.572	8.352	8.637	8.123	6.339	8.212	7.683
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	379	431	421	446	573	442	475
Service Time	7.298	6.077	6.337	5.823	4.039	5.912	5.383
HCM Lane V/C Ratio	0.675	0.183	0.487	0.646	0.503	0.543	0.943
HCM Control Delay	30.4	12.9	19.2	24.2	15.2	20.4	59
HCM Lane LOS	D	B	C	C	C	C	F
HCM 95th-tile Q	4.8	0.7	2.6	4.4	2.8	3.2	11.8

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	0	0	0
Future Vol, veh/h	0	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	0	0	0
Number of Lanes	0	0	0	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	



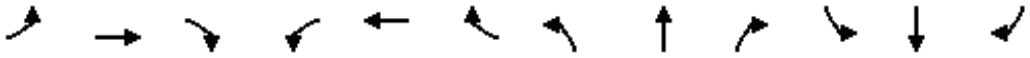
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	306	84	207	351	31	11	11	34	66	167	111
Future Volume (vph)	21	306	84	207	351	31	11	11	34	66	167	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0		3.0	4.0			2.0			2.0	2.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00			1.00			1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.97		1.00	0.99			0.92			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	1.00
Satd. Flow (prot)	1687	3244		1687	3327			1613			1751	1488
Flt Permitted	0.95	1.00		0.95	1.00			0.95			0.91	1.00
Satd. Flow (perm)	1687	3244		1687	3327			1540			1611	1488
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	22	319	88	216	366	32	11	11	35	69	174	116
RTOR Reduction (vph)	0	25	0	0	6	0	0	0	0	0	0	90
Lane Group Flow (vph)	22	382	0	216	392	0	0	57	0	0	243	26
Confl. Peds. (#/hr)			3			5						2
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1 3	3 6			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	2.0	23.8		37.1	58.9			20.1			20.1	20.1
Effective Green, g (s)	2.0	23.8		33.1	58.9			20.1			20.1	20.1
Actuated g/C Ratio	0.02	0.26		0.37	0.65			0.22			0.22	0.22
Clearance Time (s)	3.0	4.0						2.0			2.0	2.0
Vehicle Extension (s)	3.0	3.0						3.0			3.0	3.0
Lane Grp Cap (vph)	37	857		620	2177			343			359	332
v/s Ratio Prot	0.01	c0.12		c0.13	0.12							
v/s Ratio Perm								0.04			c0.15	0.02
v/c Ratio	0.59	0.45		0.35	0.18			0.17			0.68	0.08
Uniform Delay, d1	43.6	27.6		20.6	6.1			28.2			32.0	27.6
Progression Factor	1.00	1.00		0.55	0.05			1.00			1.00	1.00
Incremental Delay, d2	23.1	1.7		0.3	0.0			0.2			5.0	0.1
Delay (s)	66.7	29.3		11.7	0.3			28.4			37.0	27.7
Level of Service	E	C		B	A			C			D	C
Approach Delay (s)		31.2			4.3			28.4			34.0	
Approach LOS		C			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	544	40	46	549	83	34	41	59	49	17	23
Future Volume (vph)	37	544	40	46	549	83	34	41	59	49	17	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0		3.0	2.5			3.5			3.5	3.5
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.99		1.00	0.98			0.94			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.96	1.00
Satd. Flow (prot)	1770	3495		1770	3460			1731			1796	1558
Flt Permitted	0.95	1.00		0.95	1.00			0.90			0.43	1.00
Satd. Flow (perm)	1770	3495		1770	3460			1575			808	1558
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	39	567	42	48	572	86	35	43	61	51	18	24
RTOR Reduction (vph)	0	5	0	0	12	0	0	0	0	0	0	22
Lane Group Flow (vph)	39	604	0	48	646	0	0	139	0	0	69	2
Confl. Peds. (#/hr)			4			4						3
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1 3	3 6			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	3.0	43.7		36.3	77.0			9.5			9.5	9.5
Effective Green, g (s)	3.0	43.7		33.8	77.0			9.5			9.5	9.5
Actuated g/C Ratio	0.03	0.44		0.34	0.77			0.10			0.10	0.10
Clearance Time (s)	3.0	4.0						3.5			3.5	3.5
Vehicle Extension (s)	3.0	3.0						3.0			3.0	3.0
Lane Grp Cap (vph)	53	1527		598	2664			149			76	148
v/s Ratio Prot	c0.02	c0.17		0.03	c0.19							
v/s Ratio Perm								c0.09			0.09	0.00
v/c Ratio	0.74	0.40		0.08	0.24			0.93			0.91	0.02
Uniform Delay, d1	48.1	19.2		22.5	3.3			44.9			44.8	41.0
Progression Factor	1.00	1.00		0.57	0.18			1.00			1.00	1.00
Incremental Delay, d2	41.0	0.8		0.1	0.0			53.7			71.8	0.0
Delay (s)	89.1	19.9		12.8	0.6			98.6			116.6	41.1
Level of Service	F	B		B	A			F			F	D
Approach Delay (s)		24.1			1.5			98.6			97.1	
Approach LOS		C			A			F			F	

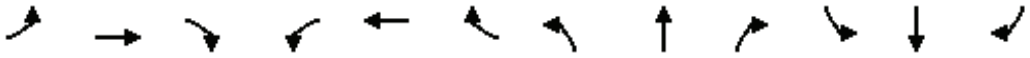
Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	46.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	426	0	0	512	155	42	1	253	0	0	0
Future Volume (vph)	118	426	0	0	512	155	42	1	253	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Lane Util. Factor	1.00	0.95			*1.00		1.00	0.95	0.95			
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Frt	1.00	1.00			0.97		1.00	0.85	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	1719	3438			3473		1719	1463	1461			
Flt Permitted	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	1719	3438			3473		1719	1463	1461			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	123	444	0	0	533	161	44	1	264	0	0	0
RTOR Reduction (vph)	0	0	0	0	27	0	0	121	121	0	0	0
Lane Group Flow (vph)	123	444	0	0	667	0	44	12	11	0	0	0
Confl. Peds. (#/hr)			4	4		8						
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	11.7	74.7			60.0		7.8	7.8	7.8			
Effective Green, g (s)	11.7	74.7			60.0		7.8	7.8	7.8			
Actuated g/C Ratio	0.13	0.83			0.67		0.09	0.09	0.09			
Clearance Time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	223	2853			2315		148	126	126			
v/s Ratio Prot	c0.07	0.13			c0.19			0.01				
v/s Ratio Perm							c0.03		0.01			
v/c Ratio	0.55	0.16			0.29		0.30	0.10	0.09			
Uniform Delay, d1	36.7	1.5			6.2		38.5	37.9	37.8			
Progression Factor	0.60	0.45			1.00		1.00	1.00	1.00			
Incremental Delay, d2	2.9	0.1			0.3		1.1	0.3	0.3			
Delay (s)	25.0	0.8			6.5		39.7	38.2	38.1			
Level of Service	C	A			A		D	D	D			
Approach Delay (s)		6.0			6.5			38.4			0.0	
Approach LOS		A			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	12.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	214	680	0	0	587	226	157	52	506	0	0	0
Future Volume (vph)	214	680	0	0	587	226	157	52	506	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Lane Util. Factor	1.00	0.95			0.95		1.00	0.95	0.95			
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Frt	1.00	1.00			0.96		1.00	0.88	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	1770	3539			3364		1770	1553	1504			
Flt Permitted	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	1770	3539			3364		1770	1553	1504			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	223	708	0	0	611	235	164	54	527	0	0	0
RTOR Reduction (vph)	0	0	0	0	35	0	0	161	257	0	0	0
Lane Group Flow (vph)	223	708	0	0	811	0	164	135	29	0	0	0
Confl. Peds. (#/hr)	10		5	5		10						
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	17.7	82.5			61.8		10.0	10.0	10.0			
Effective Green, g (s)	17.7	82.5			61.8		10.0	10.0	10.0			
Actuated g/C Ratio	0.18	0.82			0.62		0.10	0.10	0.10			
Clearance Time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	313	2919			2078		177	155	150			
v/s Ratio Prot	c0.13	0.20			c0.24			0.09				
v/s Ratio Perm							c0.09		0.02			
v/c Ratio	0.71	0.24			0.39		0.93	0.87	0.19			
Uniform Delay, d1	38.8	1.9			9.6		44.6	44.4	41.3			
Progression Factor	0.72	1.36			1.00		1.00	1.00	1.00			
Incremental Delay, d2	7.2	0.2			0.6		46.5	37.6	0.6			
Delay (s)	35.0	2.8			10.2		91.1	81.9	41.9			
Level of Service	C	A			B		F	F	D			
Approach Delay (s)		10.5			10.2			68.6			0.0	
Approach LOS		B			B			E			A	

Intersection Summary			
HCM 2000 Control Delay	27.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	152	252	97	77	303	27	60	270	29	45	821	135
Future Volume (veh/h)	152	252	97	77	303	27	60	270	29	45	821	135
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.92	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	162	268	41	82	322	23	64	287	24	48	873	132
Adj No. of Lanes	1	1	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	192	630	505	0	674	48	139	1588	132	124	1455	220
Arrive On Green	0.04	0.11	0.11	0.00	0.20	0.20	0.03	0.16	0.16	0.07	0.48	0.48
Sat Flow, veh/h	1757	1845	1480	0	3299	234	1757	3267	271	1757	3046	460
Grp Volume(v), veh/h	162	268	41	0	170	175	64	153	158	48	502	503
Grp Sat Flow(s),veh/h/ln	1757	1845	1480	0	1752	1780	1757	1752	1786	1757	1752	1754
Q Serve(g_s), s	9.9	14.6	2.7	0.0	9.2	9.4	3.9	8.1	8.3	2.8	22.7	22.7
Cycle Q Clear(g_c), s	9.9	14.6	2.7	0.0	9.2	9.4	3.9	8.1	8.3	2.8	22.7	22.7
Prop In Lane	1.00		1.00	0.00		0.13	1.00		0.15	1.00		0.26
Lane Grp Cap(c), veh/h	192	630	505	0	358	363	139	852	868	124	837	838
V/C Ratio(X)	0.84	0.43	0.08	0.00	0.47	0.48	0.46	0.18	0.18	0.39	0.60	0.60
Avail Cap(c_a), veh/h	195	630	505	0	422	428	195	852	868	195	837	838
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.90	0.90	0.00	1.00	1.00	0.98	0.98	0.98	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.1	38.0	32.8	0.0	37.9	37.9	50.3	26.7	26.8	47.9	20.6	20.6
Incr Delay (d2), s/veh	23.3	0.2	0.0	0.0	0.4	0.4	0.9	0.5	0.5	0.7	3.2	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	7.5	1.1	0.0	4.5	4.7	1.9	4.1	4.2	1.4	11.6	11.6
LnGrp Delay(d),s/veh	74.5	38.2	32.8	0.0	38.2	38.3	51.2	27.2	27.2	48.7	23.8	23.8
LnGrp LOS	E	D	C		D	D	D	C	C	D	C	C
Approach Vol, veh/h		471			345			375			1053	
Approach Delay, s/veh		50.2			38.3			31.3			24.9	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	56.5	0.0	40.9	11.5	55.6	14.8	26.1
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	12.0	44.0	12.0	26.0	12.0	44.0	12.0	26.0
Max Q Clear Time (g_c+I1), s	4.8	10.3	0.0	16.6	5.9	24.7	11.9	11.4
Green Ext Time (p_c), s	0.0	15.5	0.0	1.9	0.0	11.3	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	33.4
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	278	249	109	54	225	58	123	846	36	57	509	122
Future Volume (veh/h)	278	249	109	54	225	58	123	846	36	57	509	122
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.92	1.00		0.94	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	278	284	47	57	237	42	129	891	35	60	536	111
Adj No. of Lanes	1	1	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	187	620	499	0	598	103	154	1718	67	132	1408	290
Arrive On Green	0.03	0.11	0.11	0.00	0.20	0.20	0.17	0.99	0.99	0.07	0.48	0.48
Sat Flow, veh/h	1774	1863	1499	0	2972	514	1774	3462	136	1774	2908	599
Grp Volume(v), veh/h	278	284	47	0	139	140	129	455	471	60	325	322
Grp Sat Flow(s),veh/h/ln	1774	1863	1499	0	1770	1716	1774	1770	1829	1774	1770	1738
Q Serve(g_s), s	12.0	16.3	3.2	0.0	7.8	8.1	8.0	0.5	0.5	3.7	13.2	13.4
Cycle Q Clear(g_c), s	12.0	16.3	3.2	0.0	7.8	8.1	8.0	0.5	0.5	3.7	13.2	13.4
Prop In Lane	1.00		1.00	0.00		0.30	1.00		0.07	1.00		0.34
Lane Grp Cap(c), veh/h	187	620	499	0	356	345	154	878	907	132	857	842
V/C Ratio(X)	1.49	0.46	0.09	0.00	0.39	0.41	0.84	0.52	0.52	0.45	0.38	0.38
Avail Cap(c_a), veh/h	187	620	499	0	435	422	171	878	907	171	857	842
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.92	0.00	1.00	1.00	0.74	0.74	0.74	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.0	41.1	35.3	0.0	39.5	39.6	46.4	0.2	0.2	50.5	18.6	18.6
Incr Delay (d2), s/veh	244.2	0.2	0.0	0.0	0.3	0.3	19.6	1.6	1.6	0.9	1.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.6	8.5	1.3	0.0	3.8	3.9	4.8	0.5	0.5	1.8	6.7	6.7
LnGrp Delay(d),s/veh	299.2	41.3	35.3	0.0	39.7	39.9	66.0	1.8	1.8	51.4	19.9	19.9
LnGrp LOS	F	D	D		D	D	E	A	A	D	B	B
Approach Vol, veh/h		609			279			1055			707	
Approach Delay, s/veh		158.6			39.8			9.7			22.6	
Approach LOS		F			D			A			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.5	60.6	0.0	41.9	12.9	59.2	15.0	26.9
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	11.0	49.0	12.0	28.0	11.0	49.0	12.0	28.0
Max Q Clear Time (g_c+I1), s	5.7	2.5	0.0	18.3	10.0	15.4	14.0	10.1
Green Ext Time (p_c), s	0.0	21.9	0.0	1.8	0.0	18.6	0.0	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	50.5
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	132	19	33	130	27	7	123	31	120	136	189
Future Volume (vph)	196	132	19	33	130	27	7	123	31	120	136	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1787	3507		1770	3539	1583	1128	2182		1340	1404	1245
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1787	3507		1770	3539	1583	1128	2182		1340	1404	1245
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	228	153	22	38	151	31	8	143	36	140	158	220
RTOR Reduction (vph)	0	10	0	0	0	26	0	23	0	0	0	171
Lane Group Flow (vph)	228	165	0	38	151	5	8	156	0	126	172	49
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	60%	60%	60%	28%	28%	28%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases						2						8
Actuated Green, G (s)	14.5	22.4		3.9	11.8	11.8	11.5	11.5		15.9	15.9	15.9
Effective Green, g (s)	14.5	22.4		3.9	11.8	11.8	11.5	11.5		15.9	15.9	15.9
Actuated g/C Ratio	0.20	0.31		0.05	0.17	0.17	0.16	0.16		0.22	0.22	0.22
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Vehicle Extension (s)	2.0	4.0		2.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Grp Cap (vph)	363	1103		96	586	262	182	352		299	313	278
v/s Ratio Prot	c0.13	0.05		0.02	c0.04		0.01	c0.07		0.09	c0.12	
v/s Ratio Perm						0.00						0.04
v/c Ratio	0.63	0.15		0.40	0.26	0.02	0.04	0.44		0.42	0.55	0.18
Uniform Delay, d1	25.9	17.6		32.5	25.9	24.9	25.2	27.0		23.7	24.5	22.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.4	0.1		1.0	0.3	0.0	0.1	1.2		1.3	2.5	0.4
Delay (s)	28.3	17.6		33.5	26.2	24.9	25.3	28.2		25.0	26.9	22.8
Level of Service	C	B		C	C	C	C	C		C	C	C
Approach Delay (s)		23.7			27.3			28.1			24.7	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	25.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	71.2	Sum of lost time (s)	17.5
Intersection Capacity Utilization	40.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	183	107	9	29	120	91	16	179	34	67	80	127
Future Volume (vph)	183	107	9	29	120	91	16	179	34	67	80	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3498		1770	3539	1583	1530	2980		1618	1697	1503
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3498		1770	3539	1583	1530	2980		1618	1697	1503
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	201	118	10	32	132	100	18	197	37	74	88	140
RTOR Reduction (vph)	0	5	0	0	0	81	0	15	0	0	0	117
Lane Group Flow (vph)	201	123	0	32	132	19	18	219	0	67	95	23
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	18%	18%	18%	6%	6%	6%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases						2						8
Actuated Green, G (s)	12.5	21.9		2.4	11.8	11.8	10.9	10.9		10.1	10.1	10.1
Effective Green, g (s)	12.5	21.9		2.4	11.8	11.8	10.9	10.9		10.1	10.1	10.1
Actuated g/C Ratio	0.20	0.35		0.04	0.19	0.19	0.17	0.17		0.16	0.16	0.16
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Vehicle Extension (s)	2.0	4.0		2.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Grp Cap (vph)	352	1219		67	664	297	265	517		260	272	241
v/s Ratio Prot	c0.11	0.04		0.02	c0.04		0.01	c0.07		0.04	c0.06	
v/s Ratio Perm						0.01						0.01
v/c Ratio	0.57	0.10		0.48	0.20	0.06	0.07	0.42		0.26	0.35	0.09
Uniform Delay, d1	22.7	13.8		29.6	21.5	21.0	21.7	23.1		23.1	23.4	22.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.4	0.0		1.9	0.2	0.1	0.1	0.8		0.7	1.1	0.2
Delay (s)	24.1	13.9		31.5	21.7	21.1	21.9	23.9		23.8	24.5	22.7
Level of Service	C	B		C	C	C	C	C		C	C	C
Approach Delay (s)		20.1			22.7			23.8			23.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	62.8	Sum of lost time (s)	17.5
Intersection Capacity Utilization	37.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	346	60	240	314	0	0	0	0	198	21	275
Future Volume (vph)	0	346	60	240	314	0	0	0	0	198	21	275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			3.0						4.0	4.0
Lane Util. Factor		0.95			*1.00						1.00	1.00
Frpb, ped/bikes		0.99			1.00						1.00	1.00
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.98			1.00						1.00	0.85
Flt Protected		1.00			0.98						0.96	1.00
Satd. Flow (prot)		3311			5263						1715	1524
Flt Permitted		1.00			0.70						0.96	1.00
Satd. Flow (perm)		3311			3757						1715	1524
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	360	62	250	327	0	0	0	0	206	22	286
RTOR Reduction (vph)	0	14	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	409	0	0	577	0	0	0	0	0	228	286
Confl. Peds. (#/hr)			6			5						
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Turn Type		NA		Prot	NA					Split	NA	Perm
Protected Phases		2 4		1	1 6					3	3	
Permitted Phases												3
Actuated Green, G (s)		47.9			31.7						23.2	23.2
Effective Green, g (s)		47.9			31.7						23.2	23.2
Actuated g/C Ratio		0.53			0.35						0.26	0.26
Clearance Time (s)											4.0	4.0
Vehicle Extension (s)											3.0	3.0
Lane Grp Cap (vph)		1762			1488						442	392
v/s Ratio Prot		c0.12			c0.04						0.13	
v/s Ratio Perm					c0.09							c0.19
v/c Ratio		0.23			1.34dl						0.52	0.73
Uniform Delay, d1		11.2			21.9						28.6	30.5
Progression Factor		0.05			1.04						1.00	1.00
Incremental Delay, d2		0.1			0.2						1.0	6.7
Delay (s)		0.6			23.0						29.6	37.2
Level of Service		A			C						C	D
Approach Delay (s)		0.6			23.0			0.0			33.8	
Approach LOS		A			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	620	32	217	527	0	0	0	0	274	2	151
Future Volume (vph)	0	620	32	217	527	0	0	0	0	274	2	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			3.0						2.5	2.5
Lane Util. Factor		0.95			0.91						1.00	1.00
Frpb, ped/bikes		1.00			1.00						1.00	1.00
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.99			1.00						1.00	0.85
Flt Protected		1.00			0.99						0.95	1.00
Satd. Flow (prot)		3507			5012						1775	1583
Flt Permitted		1.00			0.66						0.95	1.00
Satd. Flow (perm)		3507			3379						1775	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	646	33	226	549	0	0	0	0	285	2	157
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	676	0	0	775	0	0	0	0	0	287	157
Confl. Peds. (#/hr)			6			8						
Turn Type		NA		Prot	NA					Split	NA	Perm
Protected Phases		2 4		1	1 6					3	3	
Permitted Phases												3
Actuated Green, G (s)		57.2			57.0						17.5	17.5
Effective Green, g (s)		57.2			57.0						17.5	17.5
Actuated g/C Ratio		0.57			0.57						0.18	0.18
Clearance Time (s)											2.5	2.5
Vehicle Extension (s)											3.0	3.0
Lane Grp Cap (vph)		2006			2192						310	277
v/s Ratio Prot		c0.19			c0.06						c0.16	
v/s Ratio Perm					c0.14							0.10
v/c Ratio		0.34			0.35						0.93	0.57
Uniform Delay, d1		11.3			11.6						40.6	37.8
Progression Factor		0.17			1.10						1.00	1.00
Incremental Delay, d2		0.1			0.1						32.2	2.7
Delay (s)		2.0			12.8						72.8	40.4
Level of Service		A			B						E	D
Approach Delay (s)		2.0			12.8			0.0			61.3	
Approach LOS		A			B			A			E	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	334	133	134	370	0	0	0	0	83	928	82
Future Volume (veh/h)	0	334	133	134	370	0	0	0	0	83	928	82
Number	3	8	18	7	4	14				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	0.99		1.00				1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1900	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	359	95	144	398	0				89	998	79
Adj No. of Lanes	0	2	1	0	2	0				0	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93				0.93	0.93	0.93
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1122	487	253	685	0				151	1774	147
Arrive On Green	0.00	0.32	0.32	0.32	0.32	0.00				0.57	0.57	0.57
Sat Flow, veh/h	0	3632	1536	504	2245	0				267	3133	260
Grp Volume(v), veh/h	0	359	95	257	285	0				616	0	550
Grp Sat Flow(s),veh/h/ln	0	1770	1536	1054	1610	0				1849	0	1811
Q Serve(g_s), s	0.0	4.6	2.7	9.4	8.8	0.0				13.0	0.0	11.3
Cycle Q Clear(g_c), s	0.0	4.6	2.7	14.1	8.8	0.0				13.0	0.0	11.3
Prop In Lane	0.00		1.00	0.56		0.00				0.14		0.14
Lane Grp Cap(c), veh/h	0	1122	487	428	510	0				1047	0	1025
V/C Ratio(X)	0.00	0.32	0.20	0.60	0.56	0.00				0.59	0.00	0.54
Avail Cap(c_a), veh/h	0	1445	627	536	658	0				1047	0	1025
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.95	0.95	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	15.6	14.9	19.3	17.0	0.0				8.5	0.0	8.1
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.5	0.3	0.0				2.4	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.3	1.1	3.9	3.9	0.0				7.2	0.0	6.2
LnGrp Delay(d),s/veh	0.0	15.6	15.0	19.8	17.3	0.0				10.9	0.0	10.1
LnGrp LOS		B	B	B	B					B		B
Approach Vol, veh/h		454			542						1166	
Approach Delay, s/veh		15.5			18.5						10.5	
Approach LOS		B			B						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		37.5		22.5				22.5
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		28.5		24.5				24.5
Max Q Clear Time (g_c+I1), s		15.0		16.1				6.6
Green Ext Time (p_c), s		4.6		3.0				4.2

Intersection Summary	
HCM 2010 Ctrl Delay	13.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	484	147	105	443	0	0	0	0	138	520	115
Future Volume (veh/h)	0	484	147	105	443	0	0	0	0	138	520	115
Number	3	8	18	7	4	14				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00				1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1881	1881	1900	1881	0				1900	1881	1900
Adj Flow Rate, veh/h	0	484	102	105	443	0				138	520	107
Adj No. of Lanes	0	2	1	0	2	0				0	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Percent Heavy Veh, %	0	1	1	1	1	0				0	1	0
Cap, veh/h	0	1155	504	186	769	0				357	1407	303
Arrive On Green	0.00	0.32	0.32	0.32	0.32	0.00				0.57	0.57	0.57
Sat Flow, veh/h	0	3668	1558	339	2465	0				625	2465	532
Grp Volume(v), veh/h	0	484	102	259	289	0				408	0	357
Grp Sat Flow(s),veh/h/ln	0	1787	1558	1092	1626	0				1850	0	1772
Q Serve(g_s), s	0.0	7.0	3.1	8.0	9.7	0.0				8.0	0.0	7.1
Cycle Q Clear(g_c), s	0.0	7.0	3.1	15.0	9.7	0.0				8.0	0.0	7.1
Prop In Lane	0.00		1.00	0.41		0.00				0.34		0.30
Lane Grp Cap(c), veh/h	0	1155	504	430	526	0				1056	0	1011
V/C Ratio(X)	0.00	0.42	0.20	0.60	0.55	0.00				0.39	0.00	0.35
Avail Cap(c_a), veh/h	0	1652	720	603	752	0				1056	0	1011
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.96	0.96	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	17.5	16.2	20.3	18.4	0.0				7.8	0.0	7.6
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.5	0.3	0.0				1.1	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.4	1.3	4.3	4.4	0.0				4.4	0.0	3.7
LnGrp Delay(d),s/veh	0.0	17.6	16.2	20.8	18.7	0.0				8.9	0.0	8.6
LnGrp LOS		B	B	C	B					A		A
Approach Vol, veh/h		586			548						765	
Approach Delay, s/veh		17.3			19.7						8.7	
Approach LOS		B			B						A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		41.2		24.8				24.8
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		28.5		30.5				30.5
Max Q Clear Time (g_c+I1), s		10.0		17.0				9.0
Green Ext Time (p_c), s		3.1		4.3				5.1

Intersection Summary	
HCM 2010 Ctrl Delay	14.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	329	0	0	398	97	127	545	159	0	0	0
Future Volume (veh/h)	88	329	0	0	398	97	127	545	159	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	0.98		1.00	1.00		0.94	1.00		0.97			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1863	1900	1863	1900			
Adj Flow Rate, veh/h	100	374	0	0	452	41	144	619	107			
Adj No. of Lanes	0	2	0	0	2	1	0	3	0			
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	339	1067	0	0	1450	611	292	1344	237			
Arrive On Green	0.41	0.41	0.00	0.00	0.41	0.41	0.36	0.36	0.36			
Sat Flow, veh/h	413	2689	0	0	3632	1490	818	3761	662			
Grp Volume(v), veh/h	241	233	0	0	452	41	321	271	279			
Grp Sat Flow(s),veh/h/ln	1407	1610	0	0	1770	1490	1822	1695	1723			
Q Serve(g_s), s	0.0	3.0	0.0	0.0	2.6	0.5	4.1	3.7	3.7			
Cycle Q Clear(g_c), s	2.6	3.0	0.0	0.0	2.6	0.5	4.1	3.7	3.7			
Prop In Lane	0.41		0.00	0.00		1.00	0.45		0.38			
Lane Grp Cap(c), veh/h	746	660	0	0	1450	611	651	606	616			
V/C Ratio(X)	0.32	0.35	0.00	0.00	0.31	0.07	0.49	0.45	0.45			
Avail Cap(c_a), veh/h	1497	1607	0	0	3533	1487	1818	1692	1720			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	6.0	6.1	0.0	0.0	6.0	5.4	7.5	7.4	7.4			
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.2	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.4	1.3	0.0	0.0	1.3	0.2	2.1	1.7	1.7			
LnGrp Delay(d),s/veh	6.1	6.2	0.0	0.0	6.0	5.4	7.8	7.6	7.6			
LnGrp LOS	A	A			A	A	A	A	A			
Approach Vol, veh/h		474			493			870				
Approach Delay, s/veh		6.2			6.0			7.6				
Approach LOS		A			A			A				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		14.2		15.8				15.8
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		30.0		30.0				30.0
Max Q Clear Time (g_c+I1), s		6.1		4.6				5.0
Green Ext Time (p_c), s		3.7		4.5				4.5

Intersection Summary	
HCM 2010 Ctrl Delay	6.8
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	458	0	0	381	200	162	1166	165	0	0	0
Future Volume (veh/h)	156	458	0	0	381	200	162	1166	165	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	0.98		1.00	1.00		0.93	1.00		0.98			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1881	0	0	1881	1881	1900	1881	1900			
Adj Flow Rate, veh/h	159	467	0	0	389	142	165	1190	102			
Adj No. of Lanes	0	2	0	0	2	1	0	3	0			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	1	1	0	0	1	1	0	1	0			
Cap, veh/h	338	913	0	0	1458	609	245	1890	167			
Arrive On Green	0.41	0.41	0.00	0.00	0.41	0.41	0.43	0.43	0.43			
Sat Flow, veh/h	512	2323	0	0	3668	1492	572	4406	389			
Grp Volume(v), veh/h	293	333	0	0	389	142	534	449	473			
Grp Sat Flow(s),veh/h/ln	1123	1626	0	0	1787	1492	1853	1712	1802			
Q Serve(g_s), s	6.1	6.5	0.0	0.0	3.1	2.7	9.9	8.7	8.7			
Cycle Q Clear(g_c), s	9.2	6.5	0.0	0.0	3.1	2.7	9.9	8.7	8.7			
Prop In Lane	0.54		0.00	0.00		1.00	0.31		0.22			
Lane Grp Cap(c), veh/h	588	664	0	0	1458	609	795	734	773			
V/C Ratio(X)	0.50	0.50	0.00	0.00	0.27	0.23	0.67	0.61	0.61			
Avail Cap(c_a), veh/h	920	1136	0	0	2496	1042	1294	1196	1259			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	10.2	9.5	0.0	0.0	8.4	8.3	9.8	9.5	9.5			
Incr Delay (d2), s/veh	0.2	0.2	0.0	0.0	0.0	0.1	0.4	0.3	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.8	2.9	0.0	0.0	1.5	1.1	5.1	4.2	4.4			
LnGrp Delay(d),s/veh	10.4	9.7	0.0	0.0	8.5	8.4	10.2	9.8	9.8			
LnGrp LOS	B	A			A	A	B	A	A			
Approach Vol, veh/h		626			531			1457				
Approach Delay, s/veh		10.0			8.5			9.9				
Approach LOS		B			A			A				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		21.9		21.0				21.0
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		30.0		30.0				30.0
Max Q Clear Time (g_c+I1), s		11.9		5.1				11.2
Green Ext Time (p_c), s		6.4		5.5				5.1

Intersection Summary	
HCM 2010 Ctrl Delay	9.7
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	191	148	16	230	0	22	0	9	204	119	17
Future Volume (veh/h)	0	191	148	16	230	0	22	0	9	204	119	17
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1792	1900	1792	1792	0	1792	0	1792	1792	1792	1900
Adj Flow Rate, veh/h	0	199	53	17	240	0	23	0	0	237	89	13
Adj No. of Lanes	0	2	0	1	2	0	1	0	1	2	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	6	6	6	6	0	6	0	6	6	6	6
Cap, veh/h	0	1071	278	83	1918	0	0	0	0	491	220	32
Arrive On Green	0.00	0.40	0.40	0.05	0.56	0.00	0.00	0.00	0.00	0.14	0.14	0.14
Sat Flow, veh/h	0	2759	692	1707	3495	0		0		3414	1530	223
Grp Volume(v), veh/h	0	125	127	17	240	0		0.0		237	0	102
Grp Sat Flow(s),veh/h/ln	0	1703	1659	1707	1703	0				1707	0	1753
Q Serve(g_s), s	0.0	1.5	1.5	0.3	1.0	0.0				2.0	0.0	1.6
Cycle Q Clear(g_c), s	0.0	1.5	1.5	0.3	1.0	0.0				2.0	0.0	1.6
Prop In Lane	0.00		0.42	1.00		0.00				1.00		0.13
Lane Grp Cap(c), veh/h	0	683	665	83	1918	0				491	0	252
V/C Ratio(X)	0.00	0.18	0.19	0.21	0.13	0.00				0.48	0.00	0.40
Avail Cap(c_a), veh/h	0	1773	1727	1444	3545	0				2888	0	1483
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.0	6.0	14.1	3.2	0.0				12.1	0.0	12.0
Incr Delay (d2), s/veh	0.0	0.1	0.2	0.5	0.0	0.0				0.3	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.7	0.7	0.1	0.5	0.0				0.9	0.0	0.8
LnGrp Delay(d),s/veh	0.0	6.1	6.1	14.5	3.2	0.0				12.4	0.0	12.3
LnGrp LOS		A	A	B	A					B		B
Approach Vol, veh/h		252			257						339	
Approach Delay, s/veh		6.1			3.9						12.4	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		22.3			5.0	17.3		8.4
Change Period (Y+Rc), s		5.0			3.5	5.0		4.0
Max Green Setting (Gmax), s		32.0			26.0	32.0		26.0
Max Q Clear Time (g_c+I1), s		3.0			2.3	3.5		4.0
Green Ext Time (p_c), s		3.3			0.0	3.3		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	8.0
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	165	119	17	152	0	35	0	3	243	58	18
Future Volume (veh/h)	0	165	119	17	152	0	35	0	3	243	58	18
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1810	1900	1810	1810	0	1810	0	1810	1810	1810	1900
Adj Flow Rate, veh/h	0	185	25	19	171	0	39	0	-7	273	65	14
Adj No. of Lanes	0	2	0	1	2	0	1	0	1	2	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	5	5	5	5	0	5	0	5	5	5	5
Cap, veh/h	0	1201	160	92	1925	0	0	0	0	524	220	47
Arrive On Green	0.00	0.39	0.39	0.05	0.56	0.00	0.00	0.00	0.00	0.15	0.15	0.15
Sat Flow, veh/h	0	3135	405	1723	3529	0		0		3447	1444	311
Grp Volume(v), veh/h	0	103	107	19	171	0		0.0		273	0	79
Grp Sat Flow(s),veh/h/ln	0	1719	1731	1723	1719	0				1723	0	1755
Q Serve(g_s), s	0.0	1.2	1.2	0.3	0.7	0.0				2.3	0.0	1.2
Cycle Q Clear(g_c), s	0.0	1.2	1.2	0.3	0.7	0.0				2.3	0.0	1.2
Prop In Lane	0.00		0.23	1.00		0.00				1.00		0.18
Lane Grp Cap(c), veh/h	0	678	683	92	1925	0				524	0	267
V/C Ratio(X)	0.00	0.15	0.16	0.21	0.09	0.00				0.52	0.00	0.30
Avail Cap(c_a), veh/h	0	1760	1771	1433	3519	0				2866	0	1459
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.1	6.1	14.2	3.2	0.0				12.2	0.0	11.8
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.4	0.0	0.0				0.3	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.6	0.6	0.2	0.3	0.0				1.1	0.0	0.6
LnGrp Delay(d),s/veh	0.0	6.2	6.2	14.6	3.2	0.0				12.5	0.0	12.0
LnGrp LOS		A	A	B	A					B		B
Approach Vol, veh/h		210			190						352	
Approach Delay, s/veh		6.2			4.3						12.4	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		22.5			5.2	17.3		8.8
Change Period (Y+Rc), s		5.0			3.5	5.0		4.0
Max Green Setting (Gmax), s		32.0			26.0	32.0		26.0
Max Q Clear Time (g_c+I1), s		2.7			2.3	3.2		4.3
Green Ext Time (p_c), s		2.5			0.0	2.5		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	8.6
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	250	0	0	148	771	98	0	160	0	0	0
Future Volume (veh/h)	154	250	0	0	148	771	98	0	160	0	0	0
Number	1	6	16	5	2	12	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1827	0	0	1827	1900	1827	0	1827			
Adj Flow Rate, veh/h	169	275	0	0	163	355	108	0	50			
Adj No. of Lanes	0	2	0	0	3	0	1	0	1			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	4	4	0	0	4	4	4	0	4			
Cap, veh/h	502	948	0	0	1827	835	369	0	329			
Arrive On Green	0.55	0.55	0.00	0.00	0.55	0.55	0.21	0.00	0.21			
Sat Flow, veh/h	594	1808	0	0	3489	1520	1740	0	1553			
Grp Volume(v), veh/h	201	243	0	0	163	355	108	0	50			
Grp Sat Flow(s),veh/h/ln	740	1579	0	0	1663	1520	1740	0	1553			
Q Serve(g_s), s	5.1	3.1	0.0	0.0	0.9	5.2	2.0	0.0	1.0			
Cycle Q Clear(g_c), s	10.3	3.1	0.0	0.0	0.9	5.2	2.0	0.0	1.0			
Prop In Lane	0.84		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	582	868	0	0	1827	835	369	0	329			
V/C Ratio(X)	0.35	0.28	0.00	0.00	0.09	0.43	0.29	0.00	0.15			
Avail Cap(c_a), veh/h	838	1298	0	0	2908	1329	1291	0	1152			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	7.3	4.5	0.0	0.0	4.0	5.0	12.5	0.0	12.1			
Incr Delay (d2), s/veh	0.5	0.2	0.0	0.0	0.0	0.5	0.2	0.0	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.6	1.4	0.0	0.0	0.4	2.3	0.9	0.0	0.4			
LnGrp Delay(d),s/veh	7.8	4.8	0.0	0.0	4.1	5.5	12.7	0.0	12.2			
LnGrp LOS	A	A			A	A	B		B			
Approach Vol, veh/h		444			518			158				
Approach Delay, s/veh		6.2			5.0			12.5				
Approach LOS		A			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		24.7		13.0		24.7		
Change Period (Y+Rc), s		4.0		5.0		4.0		
Max Green Setting (Gmax), s		33.0		28.0		31.0		
Max Q Clear Time (g_c+I1), s		7.2		4.0		12.3		
Green Ext Time (p_c), s		10.0		0.1		8.5		

Intersection Summary	
HCM 2010 Ctrl Delay	6.5
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	413	0	0	117	273	55	0	74	0	0	0
Future Volume (veh/h)	0	413	0	0	117	273	55	0	74	0	0	0
Number	1	6	16	5	2	12	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1845	0	0	1845	1900	1845	0	1845			
Adj Flow Rate, veh/h	0	498	0	0	141	-211	66	0	-50			
Adj No. of Lanes	0	2	0	0	3	0	1	0	1			
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83			
Percent Heavy Veh, %	0	3	0	0	3	3	3	0	3			
Cap, veh/h	0	1377	0	0	1661	739	502	0	448			
Arrive On Green	0.00	0.39	0.00	0.00	0.39	0.00	0.29	0.00	0.00			
Sat Flow, veh/h	0	3689	0	0	5368	0	1757	0	1568			
Grp Volume(v), veh/h	0	498	0	0	-70	-211	66	0	-50			
Grp Sat Flow(s),veh/h/ln	0	1752	0	0	1679	1568	1757	0	1568			
Q Serve(g_s), s	0.0	2.8	0.0	0.0	1.5	0.0	0.8	0.0	0.0			
Cycle Q Clear(g_c), s	0.0	2.8	0.0	0.0	1.5	0.0	0.8	0.0	0.0			
Prop In Lane	0.00		0.00	0.00		0.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	1377	0	0	0	0	502	0	448			
V/C Ratio(X)	0.00	0.36	0.00	0.00	0.00	0.00	0.13	0.00	-0.11			
Avail Cap(c_a), veh/h	0	3880	0	0	0	0	1757	0	1568			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00			
Uniform Delay (d), s/veh	0.0	6.0	0.0	0.0	0.0	0.0	7.4	0.0	0.0			
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	1.4	0.0	0.0	0.0	0.0	0.4	0.0	0.0			
LnGrp Delay(d),s/veh	0.0	6.2	0.0	0.0	0.0	0.0	7.5	0.0	0.0			
LnGrp LOS		A					A					
Approach Vol, veh/h		498			-281			16				
Approach Delay, s/veh		6.2			0.0			30.8				
Approach LOS		A			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		15.0		13.0		15.0		
Change Period (Y+Rc), s		4.0		5.0		4.0		
Max Green Setting (Gmax), s		33.0		28.0		31.0		
Max Q Clear Time (g_c+I1), s		0.0		2.8		4.8		
Green Ext Time (p_c), s		0.0		0.0		4.7		

Intersection Summary	
HCM 2010 Ctrl Delay	15.5
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	149	193	63	227	122	32	345	86	136	341	80
Future Volume (veh/h)	68	149	193	63	227	122	32	345	86	136	341	80
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1900	1900	1827	1827	1900	1827	1900
Adj Flow Rate, veh/h	72	159	86	67	241	76	34	367	9	145	363	70
Adj No. of Lanes	1	2	1	1	2	0	0	2	1	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	92	1599	704	86	1193	367	43	483	227	174	459	92
Arrive On Green	0.05	0.46	0.46	0.03	0.31	0.31	0.15	0.15	0.15	0.21	0.21	0.21
Sat Flow, veh/h	1740	3471	1530	1740	2608	801	287	3261	1534	847	2233	448
Grp Volume(v), veh/h	72	159	86	67	158	159	215	186	9	305	0	273
Grp Sat Flow(s),veh/h/ln	1740	1736	1530	1740	1736	1674	1813	1736	1534	1785	0	1743
Q Serve(g_s), s	4.5	2.8	3.5	4.2	7.4	7.7	12.6	11.3	0.6	18.0	0.0	16.2
Cycle Q Clear(g_c), s	4.5	2.8	3.5	4.2	7.4	7.7	12.6	11.3	0.6	18.0	0.0	16.2
Prop In Lane	1.00		1.00	1.00		0.48	0.16		1.00	0.47		0.26
Lane Grp Cap(c), veh/h	92	1599	704	86	794	765	269	257	227	367	0	358
V/C Ratio(X)	0.79	0.10	0.12	0.78	0.20	0.21	0.80	0.73	0.04	0.83	0.00	0.76
Avail Cap(c_a), veh/h	166	1599	704	277	794	765	404	387	342	495	0	483
HCM Platoon Ratio	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.91	0.99	0.99	0.99	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.5	16.8	17.0	52.6	23.3	23.4	45.3	44.7	40.1	41.9	0.0	41.2
Incr Delay (d2), s/veh	5.0	0.1	0.3	5.5	0.6	0.6	3.5	1.5	0.0	6.7	0.0	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	1.4	1.5	2.2	3.7	3.7	6.6	5.5	0.2	9.6	0.0	8.1
LnGrp Delay(d),s/veh	56.5	16.9	17.3	58.1	23.8	24.0	48.8	46.2	40.2	48.6	0.0	44.2
LnGrp LOS	E	B	B	E	C	C	D	D	D	D		D
Approach Vol, veh/h		317			384			410			578	
Approach Delay, s/veh		26.0			29.9			47.4			46.5	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.9	55.2		26.1	9.3	54.8		19.8
Change Period (Y+Rc), s	3.5	4.5		3.5	3.5	4.5		3.5
Max Green Setting (Gmax), s	17.5	22.5		30.5	10.5	29.5		24.5
Max Q Clear Time (g_c+I1), s	6.2	5.5		20.0	6.5	9.7		14.6
Green Ext Time (p_c), s	0.0	3.9		1.9	0.0	4.1		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	39.1
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	237	84	61	208	112	101	351	96	102	334	47
Future Volume (veh/h)	95	237	84	61	208	112	101	351	96	102	334	47
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1900	1900	1827	1827	1900	1827	1900
Adj Flow Rate, veh/h	101	252	-30	65	221	65	107	373	20	109	355	35
Adj No. of Lanes	1	2	1	1	2	0	0	2	1	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	125	1601	716	83	1160	332	128	475	262	137	470	48
Arrive On Green	0.07	0.46	0.00	0.05	0.44	0.44	0.17	0.17	0.17	0.18	0.18	0.18
Sat Flow, veh/h	1740	3471	1553	1740	2654	760	749	2776	1534	745	2560	262
Grp Volume(v), veh/h	101	252	-30	65	142	144	256	224	20	262	0	237
Grp Sat Flow(s),veh/h/ln	1740	1736	1553	1740	1736	1678	1789	1736	1534	1790	0	1777
Q Serve(g_s), s	6.3	4.6	0.0	4.1	5.5	5.8	15.2	13.5	1.2	15.4	0.0	13.8
Cycle Q Clear(g_c), s	6.3	4.6	0.0	4.1	5.5	5.8	15.2	13.5	1.2	15.4	0.0	13.8
Prop In Lane	1.00		1.00	1.00		0.45	0.42		1.00	0.42		0.15
Lane Grp Cap(c), veh/h	125	1601	716	83	758	733	306	297	262	328	0	326
V/C Ratio(X)	0.81	0.16	-0.04	0.78	0.19	0.20	0.84	0.76	0.08	0.80	0.00	0.73
Avail Cap(c_a), veh/h	166	1601	716	277	758	733	399	387	342	496	0	493
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.3	17.2	0.0	51.8	19.0	19.1	44.1	43.4	38.3	42.9	0.0	42.3
Incr Delay (d2), s/veh	13.7	0.2	0.0	5.8	0.5	0.6	9.0	4.1	0.0	2.8	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	2.2	0.0	2.1	2.8	2.8	8.3	6.8	0.5	7.9	0.0	6.9
LnGrp Delay(d),s/veh	64.0	17.4	0.0	57.6	19.5	19.7	53.1	47.6	38.3	45.7	0.0	43.5
LnGrp LOS	E	B		E	B	B	D	D	D	D		D
Approach Vol, veh/h		323			351			500			499	
Approach Delay, s/veh		33.6			26.6			50.0			44.6	
Approach LOS		C			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.8	55.2		23.7	11.4	52.6		22.3
Change Period (Y+Rc), s	3.5	4.5		3.5	3.5	4.5		3.5
Max Green Setting (Gmax), s	17.5	22.5		30.5	10.5	29.5		24.5
Max Q Clear Time (g_c+I1), s	6.1	6.6		17.4	8.3	7.8		17.2
Green Ext Time (p_c), s	0.0	3.8		1.8	0.0	4.3		1.1

Intersection Summary	
HCM 2010 Ctrl Delay	40.3
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	77	136	0	0	0	25	29	56	0	224	8
Future Volume (veh/h)	0	77	136	0	0	0	25	29	56	0	224	8
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900				1827	1827	1827	0	1827	1827
Adj Flow Rate, veh/h	0	87	18				28	33	35	0	252	2
Adj No. of Lanes	1	2	0				1	1	1	0	2	1
Peak Hour Factor	0.89	0.89	0.89				0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	4	4	4				4	4	4	0	4	4
Cap, veh/h	156	259	52				50	887	754	0	849	380
Arrive On Green	0.00	0.09	0.09				0.03	0.49	0.49	0.00	0.24	0.24
Sat Flow, veh/h	1740	2880	580				1740	1827	1553	0	3563	1553
Grp Volume(v), veh/h	0	51	54				28	33	35	0	252	2
Grp Sat Flow(s),veh/h/ln	1740	1736	1725				1740	1827	1553	0	1736	1553
Q Serve(g_s), s	0.0	0.5	0.5				0.3	0.2	0.2	0.0	1.1	0.0
Cycle Q Clear(g_c), s	0.0	0.5	0.5				0.3	0.2	0.2	0.0	1.1	0.0
Prop In Lane	1.00		0.34				1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	156	156	155				50	887	754	0	849	380
V/C Ratio(X)	0.00	0.33	0.35				0.56	0.04	0.05	0.00	0.30	0.01
Avail Cap(c_a), veh/h	2862	2855	2837				462	2520	2142	0	3131	1401
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00				1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	8.0	8.1				9.0	2.5	2.5	0.0	5.8	5.4
Incr Delay (d2), s/veh	0.0	1.2	1.3				9.2	0.0	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.3	0.3				0.3	0.1	0.1	0.0	0.5	0.0
LnGrp Delay(d),s/veh	0.0	9.3	9.4				18.3	2.6	2.6	0.0	6.0	5.4
LnGrp LOS		A	A				B	A	A		A	A
Approach Vol, veh/h		105						96			254	
Approach Delay, s/veh		9.3						7.1			6.0	
Approach LOS		A						A			A	

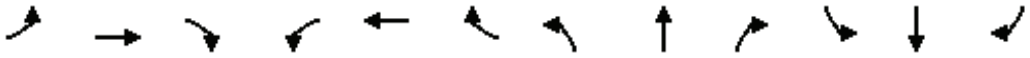
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		13.2		5.7	4.5	8.6		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		26.0		31.0	5.0	17.0		
Max Q Clear Time (g_c+I1), s		2.2		2.5	2.3	3.1		
Green Ext Time (p_c), s		1.8		0.5	0.0	1.5		

Intersection Summary	
HCM 2010 Ctrl Delay	7.0
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	82	47	0	0	0	26	177	217	0	100	1
Future Volume (veh/h)	4	82	47	0	0	0	26	177	217	0	100	1
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900				1827	1827	1827	0	1827	1827
Adj Flow Rate, veh/h	5	96	-86				31	208	226	0	118	-6
Adj No. of Lanes	1	2	0				1	1	1	0	2	1
Peak Hour Factor	0.85	0.85	0.85				0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	4	4	4				4	4	4	0	4	4
Cap, veh/h	28	56	7363				56	974	826	0	957	428
Arrive On Green	0.02	0.02	0.00				0.03	0.53	0.53	0.00	0.28	0.00
Sat Flow, veh/h	1740	3563	0				1740	1827	1550	0	3563	1553
Grp Volume(v), veh/h	5	10	0				31	208	226	0	118	-6
Grp Sat Flow(s),veh/h/ln	1740	1736	0				1740	1827	1550	0	1736	1553
Q Serve(g_s), s	0.1	0.1	0.0				0.3	1.1	1.4	0.0	0.5	0.0
Cycle Q Clear(g_c), s	0.1	0.1	0.0				0.3	1.1	1.4	0.0	0.5	0.0
Prop In Lane	1.00		0.00				1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	28	56	0				56	974	826	0	957	428
V/C Ratio(X)	0.18	0.18	0.00				0.56	0.21	0.27	0.00	0.12	-0.01
Avail Cap(c_a), veh/h	3040	6065	0				490	2677	2272	0	3326	1488
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00				1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	8.6	8.6	0.0				8.5	2.2	2.3	0.0	4.8	0.0
Incr Delay (d2), s/veh	3.0	1.5	0.0				8.5	0.1	0.2	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0				0.3	0.5	0.6	0.0	0.2	0.0
LnGrp Delay(d),s/veh	11.6	10.1	0.0				16.9	2.3	2.4	0.0	4.9	0.0
LnGrp LOS	B	B					B	A	A		A	
Approach Vol, veh/h		15						465			112	
Approach Delay, s/veh		10.6						3.3			5.1	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		13.5		4.3	4.6	8.9		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		26.0		31.0	5.0	17.0		
Max Q Clear Time (g_c+I1), s		3.4		2.1	2.3	2.5		
Green Ext Time (p_c), s		2.6		0.0	0.0	2.3		

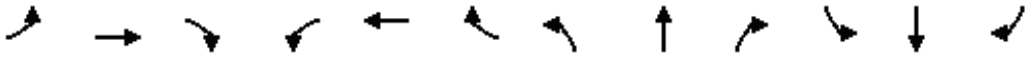
Intersection Summary	
HCM 2010 Ctrl Delay	3.9
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	0	6	5	1	39	3	46	2	61	278	20
Future Volume (Veh/h)	25	0	6	5	1	39	3	46	2	61	278	20
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	29	0	7	6	1	46	4	54	2	72	327	24
Pedestrians					1							
Lane Width (ft)					12.0							
Walking Speed (ft/s)					4.0							
Percent Blockage					0							
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											499	
pX, platoon unblocked	0.95	0.95	0.95	0.95	0.95		0.95					
vC, conflicting volume	592	548	339	554	559	56	351			57		
vC1, stage 1 conf vol	483	483		64	64							
vC2, stage 2 conf vol	110	65		490	495							
vCu, unblocked vol	546	499	279	505	511	56	292			57		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	100	99	99	100	95	100			95		
cM capacity (veh/h)	514	507	718	513	498	1004	1197			1533		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	36	53	60	423
Volume Left	29	6	4	72
Volume Right	7	46	2	24
cSH	544	891	1197	1533
Volume to Capacity	0.07	0.06	0.00	0.05
Queue Length 95th (ft)	5	5	0	4
Control Delay (s)	12.1	9.3	0.6	1.6
Lane LOS	B	A	A	A
Approach Delay (s)	12.1	9.3	0.6	1.6
Approach LOS	B	A		

Intersection Summary				
Average Delay	2.9			
Intersection Capacity Utilization	40.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	43	1	3	2	2	68	3	303	1	29	100	9
Future Volume (Veh/h)	43	1	3	2	2	68	3	303	1	29	100	9
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	51	1	4	2	2	80	4	356	1	34	118	11
Pedestrians		1			1			1				
Lane Width (ft)		12.0			12.0			12.0				
Walking Speed (ft/s)		4.0			4.0			4.0				
Percent Blockage		0			0			0				
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											499	
pX, platoon unblocked												
vC, conflicting volume	638	558	126	562	564	358	130			358		
vC1, stage 1 conf vol	192	192		366	366							
vC2, stage 2 conf vol	446	366		197	198							
vCu, unblocked vol	638	558	126	562	564	358	130			358		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	89	100	100	100	100	88	100			97		
cM capacity (veh/h)	459	543	918	587	560	682	1442			1189		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	56	84	361	163
Volume Left	51	2	4	34
Volume Right	4	80	1	11
cSH	477	676	1442	1189
Volume to Capacity	0.12	0.12	0.00	0.03
Queue Length 95th (ft)	10	11	0	2
Control Delay (s)	13.5	11.1	0.1	1.9
Lane LOS	B	B	A	A
Approach Delay (s)	13.5	11.1	0.1	1.9
Approach LOS	B	B		

Intersection Summary				
Average Delay	3.1			
Intersection Capacity Utilization	42.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	224	55	72	279	123	32	25	15	107	25	79
Future Volume (veh/h)	50	224	55	72	279	123	32	25	15	107	25	79
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.99		1.00	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	59	264	57	85	328	123	38	29	0	126	29	0
Adj No. of Lanes	1	2	0	1	2	0	0	2	0	0	2	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	771	2283	484	895	1988	731	240	232	0	240	232	0
Arrive On Green	1.00	1.00	1.00	0.79	0.79	0.79	0.14	0.14	0.00	0.14	0.14	0.00
Sat Flow, veh/h	935	2898	615	1053	2525	928	1209	1695	0	1209	1695	0
Grp Volume(v), veh/h	59	159	162	85	228	223	38	29	0	126	29	0
Grp Sat Flow(s),veh/h/ln	935	1770	1744	1053	1770	1683	1209	1610	0	1209	1610	0
Q Serve(g_s), s	0.3	0.0	0.0	2.1	3.5	3.6	2.8	1.7	0.0	9.8	1.7	0.0
Cycle Q Clear(g_c), s	3.9	0.0	0.0	2.1	3.5	3.6	4.5	1.7	0.0	11.5	1.7	0.0
Prop In Lane	1.00		0.35	1.00		0.55	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	771	1394	1373	895	1394	1326	240	232	0	240	232	0
V/C Ratio(X)	0.08	0.11	0.12	0.09	0.16	0.17	0.16	0.12	0.00	0.53	0.12	0.00
Avail Cap(c_a), veh/h	771	1394	1373	895	1394	1326	673	747	0	673	747	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.1	0.0	0.0	2.7	2.8	2.9	43.0	41.0	0.0	46.0	41.0	0.0
Incr Delay (d2), s/veh	0.2	0.2	0.2	0.2	0.3	0.3	0.1	0.1	0.0	0.7	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.1	0.6	1.7	1.7	1.0	0.8	0.0	3.7	0.8	0.0
LnGrp Delay(d),s/veh	0.3	0.2	0.2	2.9	3.1	3.1	43.1	41.1	0.0	46.7	41.1	0.0
LnGrp LOS	A	A	A	A	A	A	D	D		D	D	
Approach Vol, veh/h		380			536			67			155	
Approach Delay, s/veh		0.2			3.1			42.2			45.7	
Approach LOS		A			A			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		90.1		19.9		90.1		19.9
Change Period (Y+Rc), s		3.5		4.0		3.5		4.0
Max Green Setting (Gmax), s		51.5		51.0		51.5		51.0
Max Q Clear Time (g_c+I1), s		5.9		13.5		5.6		6.5
Green Ext Time (p_c), s		6.1		0.9		6.1		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	10.2
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	287	43	60	229	80	63	45	71	73	40	47
Future Volume (veh/h)	80	287	43	60	229	80	63	45	71	73	40	47
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	0.97		0.96	0.98		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	85	305	39	64	244	65	67	48	60	78	43	-34
Adj No. of Lanes	1	2	0	1	2	0	0	2	0	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	907	2551	323	900	2241	584	172	109	138	613	1785	0
Arrive On Green	1.00	1.00	1.00	0.81	0.81	0.81	0.12	0.12	0.12	0.12	0.12	0.00
Sat Flow, veh/h	1066	3156	400	1032	2772	722	948	883	1119	750	1695	0
Grp Volume(v), veh/h	85	170	174	64	154	155	98	0	77	78	9	0
Grp Sat Flow(s),veh/h/ln	1066	1770	1786	1032	1770	1724	1512	0	1437	750	1610	0
Q Serve(g_s), s	0.2	0.0	0.0	1.4	2.0	2.1	5.6	0.0	5.5	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.3	0.0	0.0	1.4	2.0	2.1	6.6	0.0	5.5	0.0	0.0	0.0
Prop In Lane	1.00		0.22	1.00		0.42	0.68		0.78	1.00		0.00
Lane Grp Cap(c), veh/h	907	1431	1444	900	1431	1394	242	0	177	0	0	0
V/C Ratio(X)	0.09	0.12	0.12	0.07	0.11	0.11	0.41	0.00	0.43	0.00	0.00	0.00
Avail Cap(c_a), veh/h	907	1431	1444	900	1431	1394	748	0	666	0	0	0
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.99	0.99	0.99	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	2.2	2.2	2.2	45.0	0.0	44.7	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.0	0.6	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.1	0.1	0.4	1.0	1.1	2.8	0.0	2.2	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.2	0.2	0.2	2.3	2.4	2.4	45.4	0.0	45.3	0.0	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D		D			
Approach Vol, veh/h		429			373			175			87	
Approach Delay, s/veh		0.2			2.4			45.4			0.0	
Approach LOS		A			A			D			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		92.4		17.6		92.4		17.6
Change Period (Y+Rc), s		3.5		4.0		3.5		4.0
Max Green Setting (Gmax), s		51.5		51.0		51.5		51.0
Max Q Clear Time (g_c+I1), s		4.3		2.0		4.1		8.6
Green Ext Time (p_c), s		5.0		1.2		5.0		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	8.4
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	7	39	23	5	3	24	52	4	13	116	12
Future Volume (veh/h)	5	7	39	23	5	3	24	52	4	13	116	12
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1827	1900	1900	1827	1900	1900	1827	1900	1900	1827	1900
Adj Flow Rate, veh/h	6	8	0	27	6	0	28	61	4	15	136	9
Adj No. of Lanes	0	1	0	0	1	0	0	2	0	0	2	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	182	41	0	245	11	0	723	1598	110	273	2192	142
Arrive On Green	0.04	0.04	0.00	0.04	0.04	0.00	0.74	0.74	0.74	0.74	0.74	0.74
Sat Flow, veh/h	726	968	0	1224	272	0	756	2169	149	201	2975	193
Grp Volume(v), veh/h	14	0	0	33	0	0	49	0	44	84	0	76
Grp Sat Flow(s),veh/h/ln	1694	0	0	1496	0	0	1442	0	1632	1746	0	1623
Q Serve(g_s), s	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.4
Cycle Q Clear(g_c), s	0.3	0.0	0.0	0.7	0.0	0.0	0.2	0.0	0.2	0.4	0.0	0.4
Prop In Lane	0.43		0.00	0.82		0.00	0.57		0.09	0.18		0.12
Lane Grp Cap(c), veh/h	223	0	0	256	0	0	1229	0	1202	1411	0	1196
V/C Ratio(X)	0.06	0.00	0.00	0.13	0.00	0.00	0.04	0.00	0.04	0.06	0.00	0.06
Avail Cap(c_a), veh/h	1407	0	0	1319	0	0	1480	0	1491	1713	0	1483
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	15.7	0.0	0.0	15.9	0.0	0.0	1.2	0.0	1.2	1.2	0.0	1.2
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	0.3	0.0	0.0	0.1	0.0	0.1	0.2	0.0	0.2
LnGrp Delay(d),s/veh	15.8	0.0	0.0	16.1	0.0	0.0	1.2	0.0	1.2	1.2	0.0	1.3
LnGrp LOS	B			B			A		A	A		A
Approach Vol, veh/h		14			33			93			160	
Approach Delay, s/veh		15.8			16.1			1.2			1.3	
Approach LOS		B			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		29.0		4.9		29.0		4.9
Change Period (Y+Rc), s		4.0		3.5		4.0		3.5
Max Green Setting (Gmax), s		31.0		26.5		31.0		26.5
Max Q Clear Time (g_c+I1), s		2.2		2.3		2.4		2.7
Green Ext Time (p_c), s		1.4		0.2		1.4		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	3.6
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	10	17	15	13	19	39	136	11	6	114	11
Future Volume (veh/h)	11	10	17	15	13	19	39	136	11	6	114	11
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1827	1900	1900	1827	1900	1900	1827	1900	1900	1827	1900
Adj Flow Rate, veh/h	13	11	-25	17	15	19	45	156	12	7	131	8
Adj No. of Lanes	0	1	0	0	1	0	0	2	0	0	2	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	0	0	0	164	21	26	548	1795	140	167	2318	138
Arrive On Green	0.04	0.04	0.00	0.04	0.04	0.04	0.73	0.73	0.73	0.73	0.73	0.73
Sat Flow, veh/h	-58010	-49086	111557	520	458	581	544	2443	191	71	3155	188
Grp Volume(v), veh/h	0	0	0	51	0	0	111	0	102	77	0	69
Grp Sat Flow(s),veh/h/ln	0	0	0	1559	0	0	1555	0	1623	1789	0	1624
Q Serve(g_s), s	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.4
Cycle Q Clear(g_c), s	0.0	0.0	0.0	1.1	0.0	0.0	0.6	0.0	0.6	0.4	0.0	0.4
Prop In Lane	-13.00		25.00	0.33		0.37	0.41		0.12	0.09		0.12
Lane Grp Cap(c), veh/h	0	0	0	211	0	0	1291	0	1192	1430	0	1193
V/C Ratio(X)	0.00	0.00	0.00	0.24	0.00	0.00	0.09	0.00	0.09	0.05	0.00	0.06
Avail Cap(c_a), veh/h	0	0	0	1355	0	0	1559	0	1479	1737	0	1480
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	16.0	0.0	0.0	1.3	0.0	1.3	1.3	0.0	1.3
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.5	0.0	0.0	0.3	0.0	0.3	0.2	0.0	0.2
LnGrp Delay(d),s/veh	0.0	0.0	0.0	16.6	0.0	0.0	1.3	0.0	1.3	1.3	0.0	1.3
LnGrp LOS				B			A		A	A		A
Approach Vol, veh/h		0			51			213			146	
Approach Delay, s/veh		0.0			16.6			1.3			1.3	
Approach LOS					B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		29.0		5.0		29.0		5.0
Change Period (Y+Rc), s		4.0		3.5		4.0		3.5
Max Green Setting (Gmax), s		31.0		26.5		31.0		26.5
Max Q Clear Time (g_c+I1), s		2.6		0.0		2.4		3.1
Green Ext Time (p_c), s		2.1		0.0		2.1		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	3.2
HCM 2010 LOS	A



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	29	61	14	16	33	71
Future Volume (Veh/h)	29	61	14	16	33	71
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	32	67	15	18	36	78
Pedestrians	3					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	138	20			36	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	138	20			36	
tC, single (s)	6.9	7.0			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	94			98	
cM capacity (veh/h)	814	1045			1555	

Direction, Lane #	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	32	34	34	10	23	36	39	39
Volume Left	32	0	0	0	0	36	0	0
Volume Right	0	34	34	0	18	0	0	0
cSH	814	1045	1045	1700	1700	1555	1700	1700
Volume to Capacity	0.04	0.03	0.03	0.01	0.01	0.02	0.02	0.02
Queue Length 95th (ft)	3	2	2	0	0	2	0	0
Control Delay (s)	9.6	8.6	8.6	0.0	0.0	7.4	0.0	0.0
Lane LOS	A	A	A			A		
Approach Delay (s)	8.9			0.0		2.3		
Approach LOS	A							

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	18.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	24	30	101	37	36	95
Future Volume (Veh/h)	24	30	101	37	36	95
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	28	35	119	44	42	112
Pedestrians	2					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	283	84			165	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	283	84			165	
tC, single (s)	6.9	7.0			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	96			97	
cM capacity (veh/h)	657	951			1394	

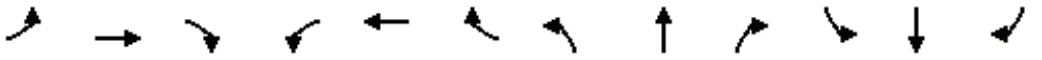
Direction, Lane #	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	28	18	18	79	84	42	56	56
Volume Left	28	0	0	0	0	42	0	0
Volume Right	0	18	18	0	44	0	0	0
cSH	657	951	951	1700	1700	1394	1700	1700
Volume to Capacity	0.04	0.02	0.02	0.05	0.05	0.03	0.03	0.03
Queue Length 95th (ft)	3	1	1	0	0	2	0	0
Control Delay (s)	10.7	8.9	8.9	0.0	0.0	7.7	0.0	0.0
Lane LOS	B	A	A			A		
Approach Delay (s)	9.7			0.0		2.1		
Approach LOS	A							

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	21.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	280	61	238	349	95	43	246	132	88	620	41
Future Volume (veh/h)	60	280	61	238	349	95	43	246	132	88	620	41
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1827	1827	1827	1827	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	66	308	10	262	384	37	47	270	69	97	681	41
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	83	899	396	316	1246	544	63	736	185	125	1008	61
Arrive On Green	0.05	0.26	0.26	0.18	0.36	0.36	0.04	0.27	0.27	0.07	0.30	0.30
Sat Flow, veh/h	1740	3471	1530	1740	3471	1516	1740	2748	689	1740	3323	200
Grp Volume(v), veh/h	66	308	10	262	384	37	47	169	170	97	355	367
Grp Sat Flow(s),veh/h/ln	1740	1736	1530	1740	1736	1516	1740	1736	1702	1740	1736	1788
Q Serve(g_s), s	2.2	4.3	0.3	8.6	4.7	0.9	1.6	4.7	4.8	3.2	10.6	10.6
Cycle Q Clear(g_c), s	2.2	4.3	0.3	8.6	4.7	0.9	1.6	4.7	4.8	3.2	10.6	10.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.41	1.00		0.11
Lane Grp Cap(c), veh/h	83	899	396	316	1246	544	63	465	456	125	526	542
V/C Ratio(X)	0.79	0.34	0.03	0.83	0.31	0.07	0.74	0.36	0.37	0.78	0.68	0.68
Avail Cap(c_a), veh/h	588	1876	827	735	2052	896	441	879	862	588	1026	1057
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.9	17.8	16.4	23.3	13.7	12.5	28.3	17.6	17.6	27.0	18.1	18.1
Incr Delay (d2), s/veh	6.2	0.3	0.0	2.2	0.2	0.1	6.2	0.2	0.2	3.8	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	2.1	0.1	4.3	2.3	0.4	0.9	2.2	2.3	1.7	5.1	5.3
LnGrp Delay(d),s/veh	34.1	18.2	16.4	25.5	13.9	12.5	34.5	17.8	17.8	30.8	18.6	18.6
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		384			683			386			819	
Approach Delay, s/veh		20.9			18.3			19.8			20.1	
Approach LOS		C			B			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.8	19.3	5.2	21.0	7.8	25.3	7.3	18.9
Change Period (Y+Rc), s	3.0	4.0	3.0	3.0	5.0	4.0	3.0	3.0
Max Green Setting (Gmax), s	25.0	32.0	15.0	35.0	20.0	35.0	20.0	30.0
Max Q Clear Time (g_c+I1), s	10.6	6.3	3.6	12.6	4.2	6.7	5.2	6.8
Green Ext Time (p_c), s	0.3	6.9	0.0	4.8	0.1	7.1	0.1	4.9

Intersection Summary	
HCM 2010 Ctrl Delay	19.6
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	343	53	150	388	115	96	741	165	70	276	41
Future Volume (veh/h)	81	343	53	150	388	115	96	741	165	70	276	41
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	90	381	1	167	431	60	107	823	106	78	307	42
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	117	960	420	212	1039	456	138	1096	141	101	1025	139
Arrive On Green	0.07	0.27	0.27	0.12	0.29	0.29	0.08	0.35	0.35	0.06	0.33	0.33
Sat Flow, veh/h	1774	3539	1550	1774	3539	1555	1774	3144	405	1774	3131	424
Grp Volume(v), veh/h	90	381	1	167	431	60	107	463	466	78	172	177
Grp Sat Flow(s),veh/h/ln	1774	1770	1550	1774	1770	1555	1774	1770	1779	1774	1770	1786
Q Serve(g_s), s	3.2	5.6	0.0	5.8	6.2	1.8	3.8	14.7	14.7	2.8	4.6	4.7
Cycle Q Clear(g_c), s	3.2	5.6	0.0	5.8	6.2	1.8	3.8	14.7	14.7	2.8	4.6	4.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.23	1.00		0.24
Lane Grp Cap(c), veh/h	117	960	420	212	1039	456	138	617	620	101	579	585
V/C Ratio(X)	0.77	0.40	0.00	0.79	0.42	0.13	0.77	0.75	0.75	0.77	0.30	0.30
Avail Cap(c_a), veh/h	557	1777	778	696	1943	854	417	833	837	557	972	981
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.3	19.0	16.9	27.3	18.1	16.6	28.8	18.3	18.3	29.7	16.0	16.0
Incr Delay (d2), s/veh	4.0	0.4	0.0	2.5	0.4	0.2	3.4	1.6	1.6	4.7	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	2.7	0.0	3.0	3.1	0.8	2.0	7.3	7.4	1.5	2.3	2.3
LnGrp Delay(d),s/veh	33.3	19.3	16.9	29.8	18.5	16.7	32.3	19.9	19.9	34.4	16.1	16.1
LnGrp LOS	C	B	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		472			658			1036			427	
Approach Delay, s/veh		22.0			21.2			21.2			19.4	
Approach LOS		C			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	21.3	8.0	23.9	9.2	22.7	6.6	25.2
Change Period (Y+Rc), s	3.0	4.0	3.0	3.0	5.0	4.0	3.0	3.0
Max Green Setting (Gmax), s	25.0	32.0	15.0	35.0	20.0	35.0	20.0	30.0
Max Q Clear Time (g_c+I1), s	7.8	7.6	5.8	6.7	5.2	8.2	4.8	16.7
Green Ext Time (p_c), s	0.2	8.1	0.1	6.5	0.1	8.4	0.1	5.0

Intersection Summary	
HCM 2010 Ctrl Delay	21.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	328	2	183	0	235	130	0	715	231
Future Volume (veh/h)	0	0	0	328	2	183	0	235	130	0	715	231
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1845	1845	1845	0	1845	1845	0	1845	1900
Adj Flow Rate, veh/h				375	0	54	0	250	0	0	761	157
Adj No. of Lanes				2	0	1	0	3	1	0	3	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				3	3	3	0	3	3	0	3	3
Cap, veh/h				768	0	342	0	2449	762	0	2031	415
Arrive On Green				0.22	0.00	0.22	0.00	0.49	0.00	0.00	0.49	0.49
Sat Flow, veh/h				3514	0	1566	0	5202	1568	0	4342	852
Grp Volume(v), veh/h				375	0	54	0	250	0	0	610	308
Grp Sat Flow(s),veh/h/ln				1757	0	1566	0	1679	1568	0	1679	1671
Q Serve(g_s), s				2.5	0.0	0.8	0.0	0.7	0.0	0.0	3.1	3.1
Cycle Q Clear(g_c), s				2.5	0.0	0.8	0.0	0.7	0.0	0.0	3.1	3.1
Prop In Lane				1.00		1.00	0.00		1.00	0.00		0.51
Lane Grp Cap(c), veh/h				768	0	342	0	2449	762	0	1633	812
V/C Ratio(X)				0.49	0.00	0.16	0.00	0.10	0.00	0.00	0.37	0.38
Avail Cap(c_a), veh/h				4147	0	1848	0	4644	1446	0	3096	1541
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				9.3	0.0	8.6	0.0	3.8	0.0	0.0	4.4	4.4
Incr Delay (d2), s/veh				0.5	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.3
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.2	0.0	0.3	0.0	0.3	0.0	0.0	1.4	1.4
LnGrp Delay(d),s/veh				9.7	0.0	8.8	0.0	3.8	0.0	0.0	4.5	4.7
LnGrp LOS				A		A		A			A	A
Approach Vol, veh/h					429			250			918	
Approach Delay, s/veh					9.6			3.8			4.6	
Approach LOS					A			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		17.2				17.2		9.9
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		25.0				25.0		32.0
Max Q Clear Time (g_c+I1), s		2.7				5.1		4.5
Green Ext Time (p_c), s		8.5				8.0		1.5

Intersection Summary	
HCM 2010 Ctrl Delay	5.8
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	347	2	643	0	406	108	0	379	113
Future Volume (veh/h)	0	0	0	347	2	643	0	406	108	0	379	113
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1881	1881	1881	0	1881	1881	0	1881	1900
Adj Flow Rate, veh/h				247	0	702	0	432	0	0	403	31
Adj No. of Lanes				1	0	2	0	3	1	0	3	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				1	1	1	0	1	1	0	1	1
Cap, veh/h				686	0	1224	0	1729	538	0	1640	125
Arrive On Green				0.38	0.00	0.38	0.00	0.34	0.00	0.00	0.34	0.34
Sat Flow, veh/h				1792	0	3198	0	5305	1599	0	5039	370
Grp Volume(v), veh/h				247	0	702	0	432	0	0	282	152
Grp Sat Flow(s),veh/h/ln				1792	0	1599	0	1712	1599	0	1712	1816
Q Serve(g_s), s				2.8	0.0	4.9	0.0	1.7	0.0	0.0	1.7	1.7
Cycle Q Clear(g_c), s				2.8	0.0	4.9	0.0	1.7	0.0	0.0	1.7	1.7
Prop In Lane				1.00		1.00	0.00		1.00	0.00		0.20
Lane Grp Cap(c), veh/h				686	0	1224	0	1729	538	0	1153	611
V/C Ratio(X)				0.36	0.00	0.57	0.00	0.25	0.00	0.00	0.24	0.25
Avail Cap(c_a), veh/h				2011	0	3590	0	4504	1402	0	3003	1593
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				6.3	0.0	7.0	0.0	6.8	0.0	0.0	6.8	6.8
Incr Delay (d2), s/veh				0.3	0.0	0.4	0.0	0.1	0.0	0.0	0.1	0.2
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.4	0.0	2.2	0.0	0.8	0.0	0.0	0.8	0.9
LnGrp Delay(d),s/veh				6.6	0.0	7.4	0.0	6.9	0.0	0.0	6.9	7.1
LnGrp LOS				A		A		A			A	A
Approach Vol, veh/h					949			432			434	
Approach Delay, s/veh					7.2			6.9			7.0	
Approach LOS					A			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		13.6				13.6		14.9
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		25.0				25.0		32.0
Max Q Clear Time (g_c+I1), s		3.7				3.7		6.9
Green Ext Time (p_c), s		5.9				5.9		4.0

Intersection Summary	
HCM 2010 Ctrl Delay	7.1
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	0	93	0	0	0	0	298	353	0	551	492
Future Volume (veh/h)	67	0	93	0	0	0	0	298	353	0	551	492
Number	3	8	18				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845				0	1845	1900	0	1845	1845
Adj Flow Rate, veh/h	76	0	33				0	339	0	0	626	0
Adj No. of Lanes	0	1	1				0	3	0	0	2	1
Peak Hour Factor	0.88	0.88	0.88				0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	3	3	3				0	3	3	0	3	3
Cap, veh/h	155	0	139				0	2763	0	0	1923	860
Arrive On Green	0.09	0.00	0.09				0.00	0.55	0.00	0.00	0.55	0.00
Sat Flow, veh/h	1757	0	1568				0	5368	0	0	3597	1568
Grp Volume(v), veh/h	76	0	33				0	339	0	0	626	0
Grp Sat Flow(s),veh/h/ln	1757	0	1568				0	1679	0	0	1752	1568
Q Serve(g_s), s	0.9	0.0	0.4				0.0	0.7	0.0	0.0	2.2	0.0
Cycle Q Clear(g_c), s	0.9	0.0	0.4				0.0	0.7	0.0	0.0	2.2	0.0
Prop In Lane	1.00		1.00				0.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	155	0	139				0	2763	0	0	1923	860
V/C Ratio(X)	0.49	0.00	0.24				0.00	0.12	0.00	0.00	0.33	0.00
Avail Cap(c_a), veh/h	2391	0	2134				0	8454	0	0	5883	2632
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	9.6	0.0	9.4				0.0	2.4	0.0	0.0	2.7	0.0
Incr Delay (d2), s/veh	2.4	0.0	0.9				0.0	0.0	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.2				0.0	0.3	0.0	0.0	1.0	0.0
LnGrp Delay(d),s/veh	12.0	0.0	10.2				0.0	2.4	0.0	0.0	2.8	0.0
LnGrp LOS	B		B					A			A	
Approach Vol, veh/h		109						339			626	
Approach Delay, s/veh		11.4						2.4			2.8	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		16.1				16.1		5.9
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		37.0				37.0		30.0
Max Q Clear Time (g_c+I1), s		2.7				4.2		2.9
Green Ext Time (p_c), s		7.9				7.9		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	3.6
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	213	0	131	0	0	0	0	301	404	0	486	240
Future Volume (veh/h)	213	0	131	0	0	0	0	301	404	0	486	240
Number	3	8	18				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863				0	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	248	0	78				0	350	0	0	565	0
Adj No. of Lanes	0	1	1				0	3	0	0	2	1
Peak Hour Factor	0.86	0.86	0.86				0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2				0	2	2	0	2	2
Cap, veh/h	423	0	378				0	2339	0	0	1628	728
Arrive On Green	0.24	0.00	0.24				0.00	0.46	0.00	0.00	0.46	0.00
Sat Flow, veh/h	1774	0	1583				0	5421	0	0	3632	1583
Grp Volume(v), veh/h	248	0	78				0	350	0	0	565	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583				0	1695	0	0	1770	1583
Q Serve(g_s), s	3.3	0.0	1.0				0.0	1.1	0.0	0.0	2.7	0.0
Cycle Q Clear(g_c), s	3.3	0.0	1.0				0.0	1.1	0.0	0.0	2.7	0.0
Prop In Lane	1.00		1.00				0.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	423	0	378				0	2339	0	0	1628	728
V/C Ratio(X)	0.59	0.00	0.21				0.00	0.15	0.00	0.00	0.35	0.00
Avail Cap(c_a), veh/h	2006	0	1790				0	7091	0	0	4935	2208
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	8.9	0.0	8.1				0.0	4.2	0.0	0.0	4.6	0.0
Incr Delay (d2), s/veh	1.3	0.0	0.3				0.0	0.0	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.5				0.0	0.5	0.0	0.0	1.3	0.0
LnGrp Delay(d),s/veh	10.2	0.0	8.4				0.0	4.2	0.0	0.0	4.7	0.0
LnGrp LOS	B		A					A			A	
Approach Vol, veh/h		326						350			565	
Approach Delay, s/veh		9.8						4.2			4.7	
Approach LOS		A						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		16.2				16.2		10.3
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		37.0				37.0		30.0
Max Q Clear Time (g_c+I1), s		3.1				4.7		5.3
Green Ext Time (p_c), s		7.4				7.3		1.7

Intersection Summary	
HCM 2010 Ctrl Delay	5.9
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	7	15	0	1	21	15	579	10	275	261	108
Future Volume (veh/h)	51	7	15	0	1	21	15	579	10	275	261	108
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1827	1900	1827	1827	1900	1900	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	71	10	6	0	1	0	21	804	13	382	362	119
Adj No. of Lanes	0	1	0	1	1	0	0	2	0	1	2	0
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	93	13	8	35	37	0	91	1126	18	403	1670	540
Arrive On Green	0.07	0.07	0.07	0.00	0.02	0.00	0.34	0.34	0.34	0.23	0.65	0.65
Sat Flow, veh/h	1415	199	120	1740	1827	0	35	3354	54	1740	2564	830
Grp Volume(v), veh/h	87	0	0	0	1	0	437	0	401	382	243	238
Grp Sat Flow(s),veh/h/ln	1734	0	0	1740	1827	0	1790	0	1653	1740	1736	1658
Q Serve(g_s), s	2.3	0.0	0.0	0.0	0.0	0.0	0.8	0.0	10.1	10.3	2.7	2.8
Cycle Q Clear(g_c), s	2.3	0.0	0.0	0.0	0.0	0.0	10.0	0.0	10.1	10.3	2.7	2.8
Prop In Lane	0.82		0.07	1.00		0.00	0.05		0.03	1.00		0.50
Lane Grp Cap(c), veh/h	114	0	0	35	37	0	680	0	555	403	1130	1080
V/C Ratio(X)	0.77	0.00	0.00	0.00	0.03	0.00	0.64	0.00	0.72	0.95	0.22	0.22
Avail Cap(c_a), veh/h	766	0	0	1648	1730	0	847	0	713	403	1130	1080
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.8	0.0	0.0	0.0	22.8	0.0	13.8	0.0	13.8	18.0	3.4	3.4
Incr Delay (d2), s/veh	4.0	0.0	0.0	0.0	0.1	0.0	1.6	0.0	3.2	31.5	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.0	0.0	0.0	0.0	5.3	0.0	5.1	8.4	1.3	1.3
LnGrp Delay(d),s/veh	25.8	0.0	0.0	0.0	22.9	0.0	15.3	0.0	17.1	49.5	3.5	3.5
LnGrp LOS	C				C		B		B	D	A	A
Approach Vol, veh/h		87			1			838			863	
Approach Delay, s/veh		25.8			22.9			16.2			23.9	
Approach LOS		C			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	15.0	20.4		5.0		35.4		7.1
Change Period (Y+Rc), s	4.0	4.5		4.0		4.5		4.0
Max Green Setting (Gmax), s	11.0	20.5		45.0		23.0		21.0
Max Q Clear Time (g_c+I1), s	12.3	12.1		2.0		4.8		4.3
Green Ext Time (p_c), s	0.0	3.8		0.0		10.7		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	20.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	156	1	59	9	8	216	21	333	0	11	505	101
Future Volume (veh/h)	156	1	59	9	8	216	21	333	0	11	505	101
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1900	1845	1845	1900	1900	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	184	1	56	11	9	229	25	392	-1	13	594	93
Adj No. of Lanes	0	1	0	1	1	0	0	2	0	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	238	1	72	375	13	318	37	581	0	23	1069	167
Arrive On Green	0.18	0.18	0.18	0.21	0.21	0.21	0.26	0.26	0.00	0.01	0.35	0.35
Sat Flow, veh/h	1303	7	397	1757	59	1492	88	3305	0	1757	3029	473
Grp Volume(v), veh/h	241	0	0	11	0	238	220	196	0	13	343	344
Grp Sat Flow(s),veh/h/ln	1707	0	0	1757	0	1551	1714	1595	0	1757	1752	1749
Q Serve(g_s), s	6.7	0.0	0.0	0.2	0.0	7.1	0.0	0.0	0.0	0.4	7.8	7.9
Cycle Q Clear(g_c), s	6.7	0.0	0.0	0.2	0.0	7.1	0.0	0.0	0.0	0.4	7.8	7.9
Prop In Lane	0.76		0.23	1.00		0.96	0.11		0.00	1.00		0.27
Lane Grp Cap(c), veh/h	311	0	0	375	0	331	0	0	0	23	619	618
V/C Ratio(X)	0.77	0.00	0.00	0.03	0.00	0.72	0.00	0.00	0.00	0.56	0.55	0.56
Avail Cap(c_a), veh/h	720	0	0	1588	0	1402	0	0	0	388	810	808
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.4	0.0	0.0	15.5	0.0	18.2	0.0	0.0	0.0	24.4	13.0	13.0
Incr Delay (d2), s/veh	1.6	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	7.6	1.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	0.0	0.1	0.0	3.1	0.0	0.0	0.0	0.2	3.9	3.9
LnGrp Delay(d),s/veh	20.9	0.0	0.0	15.5	0.0	19.3	0.0	0.0	0.0	32.0	14.1	14.1
LnGrp LOS	C			B		B				C	B	B
Approach Vol, veh/h		241			249			416			700	
Approach Delay, s/veh		20.9			19.1			0.0			14.4	
Approach LOS		C			B			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	4.7	17.4		14.6		22.1		13.1
Change Period (Y+Rc), s	4.0	4.5		4.0		4.5		4.0
Max Green Setting (Gmax), s	11.0	20.5		45.0		23.0		21.0
Max Q Clear Time (g_c+I1), s	2.4	2.0		9.1		9.9		8.7
Green Ext Time (p_c), s	0.0	9.4		1.1		7.5		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	12.4
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	193	36	11	9	15	41	5	370	96	31	89	156
Future Volume (veh/h)	193	36	11	9	15	41	5	370	96	31	89	156
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	244	46	0	11	19	13	6	468	90	39	113	0
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	206	637	285	21	159	98	11	947	181	44	1199	0
Arrive On Green	0.12	0.18	0.00	0.01	0.08	0.08	0.01	0.32	0.32	0.02	0.34	0.00
Sat Flow, veh/h	1774	3539	1583	1774	2101	1292	1774	2959	565	1774	3632	0
Grp Volume(v), veh/h	244	46	0	11	16	16	6	279	279	39	113	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1623	1774	1770	1754	1774	1770	0
Q Serve(g_s), s	4.0	0.4	0.0	0.2	0.3	0.3	0.1	4.4	4.4	0.8	0.8	0.0
Cycle Q Clear(g_c), s	4.0	0.4	0.0	0.2	0.3	0.3	0.1	4.4	4.4	0.8	0.8	0.0
Prop In Lane	1.00		1.00	1.00		0.80	1.00		0.32	1.00		0.00
Lane Grp Cap(c), veh/h	206	637	285	21	134	123	11	567	562	44	1199	0
V/C Ratio(X)	1.19	0.07	0.00	0.53	0.12	0.13	0.52	0.49	0.50	0.88	0.09	0.00
Avail Cap(c_a), veh/h	206	3997	1788	206	1999	1833	206	1589	1575	206	3177	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	15.3	11.8	0.0	17.0	14.9	14.9	17.1	9.5	9.5	16.8	7.8	0.0
Incr Delay (d2), s/veh	122.5	0.0	0.0	19.8	0.4	0.5	32.2	0.7	0.7	38.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	0.2	0.0	0.2	0.2	0.2	0.2	2.2	2.2	0.8	0.4	0.0
LnGrp Delay(d),s/veh	137.7	11.8	0.0	36.8	15.3	15.4	49.3	10.1	10.2	54.8	7.8	0.0
LnGrp LOS	F	B		D	B	B	D	B	B	D	A	
Approach Vol, veh/h		290			43			564			152	
Approach Delay, s/veh		117.8			20.8			10.6			19.9	
Approach LOS		F			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.9	15.1	4.4	10.2	4.2	15.7	8.0	6.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	31.0	4.0	39.0	4.0	31.0	4.0	39.0
Max Q Clear Time (g_c+I1), s	2.8	6.4	2.2	2.4	2.1	2.8	6.0	2.3
Green Ext Time (p_c), s	0.0	4.6	0.0	0.4	0.0	4.8	0.0	0.4

Intersection Summary	
HCM 2010 Ctrl Delay	42.0
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	17	13	36	18	32	14	151	15	6	327	185
Future Volume (veh/h)	166	17	13	36	18	32	14	151	15	6	327	185
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	175	18	0	38	19	1	15	159	-10	6	344	0
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	221	533	238	64	211	11	28	1063	0	6	1020	0
Arrive On Green	0.12	0.15	0.00	0.04	0.06	0.06	0.02	0.30	0.00	0.00	0.29	0.00
Sat Flow, veh/h	1774	3539	1583	1774	3422	179	1774	3632	0	1774	3632	0
Grp Volume(v), veh/h	175	18	0	38	10	10	15	149	0	6	344	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1831	1774	1770	0	1774	1770	0
Q Serve(g_s), s	3.0	0.1	0.0	0.7	0.2	0.2	0.3	1.0	0.0	0.1	2.4	0.0
Cycle Q Clear(g_c), s	3.0	0.1	0.0	0.7	0.2	0.2	0.3	1.0	0.0	0.1	2.4	0.0
Prop In Lane	1.00		1.00	1.00		0.10	1.00		0.00	1.00		0.00
Lane Grp Cap(c), veh/h	221	533	238	64	109	113	28	1063	0	6	1020	0
V/C Ratio(X)	0.79	0.03	0.00	0.60	0.09	0.09	0.54	0.14	0.00	0.99	0.34	0.00
Avail Cap(c_a), veh/h	226	4396	1967	226	2198	2275	226	3494	0	226	3494	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	13.3	11.4	0.0	14.9	13.9	13.9	15.3	8.0	0.0	15.6	8.8	0.0
Incr Delay (d2), s/veh	16.8	0.0	0.0	8.6	0.3	0.3	15.4	0.1	0.0	166.4	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.1	0.0	0.5	0.1	0.1	0.2	0.5	0.0	0.3	1.2	0.0
LnGrp Delay(d),s/veh	30.1	11.4	0.0	23.5	14.2	14.2	30.7	8.1	0.0	182.0	9.0	0.0
LnGrp LOS	C	B		C	B	B	C	A		F	A	
Approach Vol, veh/h		193			58			164			350	
Approach Delay, s/veh		28.4			20.3			10.2			12.0	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	4.1	13.4	5.1	8.7	4.5	13.1	7.9	5.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	4.0	31.0	4.0	39.0	4.0	31.0	4.0	39.0
Max Q Clear Time (g_c+I1), s	2.1	3.0	2.7	2.1	2.3	4.4	5.0	2.2
Green Ext Time (p_c), s	0.0	3.6	0.0	0.2	0.0	3.6	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	16.4
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	713	423	47	719	87	146	224	15	102	443	116
Future Volume (veh/h)	55	713	423	47	719	87	146	224	15	102	443	116
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	58	751	311	49	757	84	154	236	10	107	466	97
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	316	1868	809	280	1690	187	187	958	40	135	724	150
Arrive On Green	0.53	0.53	0.53	0.53	0.53	0.53	0.11	0.28	0.28	0.08	0.25	0.25
Sat Flow, veh/h	650	3539	1534	528	3202	355	1774	3457	146	1774	2917	603
Grp Volume(v), veh/h	58	751	311	49	418	423	154	120	126	107	281	282
Grp Sat Flow(s),veh/h/ln	650	1770	1534	528	1770	1788	1774	1770	1833	1774	1770	1751
Q Serve(g_s), s	6.4	13.4	12.6	6.4	15.3	15.4	8.9	5.5	5.6	6.2	14.9	15.1
Cycle Q Clear(g_c), s	21.7	13.4	12.6	19.8	15.3	15.4	8.9	5.5	5.6	6.2	14.9	15.1
Prop In Lane	1.00		1.00	1.00		0.20	1.00		0.08	1.00		0.34
Lane Grp Cap(c), veh/h	316	1868	809	280	934	943	187	490	508	135	439	434
V/C Ratio(X)	0.18	0.40	0.38	0.17	0.45	0.45	0.83	0.25	0.25	0.79	0.64	0.65
Avail Cap(c_a), veh/h	316	1868	809	280	934	943	329	615	637	279	565	559
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.1	14.9	14.7	20.8	15.3	15.3	46.0	29.4	29.5	47.7	35.3	35.4
Incr Delay (d2), s/veh	1.3	0.6	1.4	1.4	1.6	1.5	8.9	0.9	0.9	9.9	5.6	5.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	6.6	5.6	1.0	7.8	7.9	4.8	2.8	3.0	3.4	8.0	8.0
LnGrp Delay(d),s/veh	23.3	15.5	16.1	22.2	16.9	16.9	54.9	30.4	30.4	57.6	40.9	41.2
LnGrp LOS	C	B	B	C	B	B	D	C	C	E	D	D
Approach Vol, veh/h		1120			890			400			670	
Approach Delay, s/veh		16.1			17.2			39.8			43.7	
Approach LOS		B			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		59.9	14.5	30.5		59.9	11.5	33.6
Change Period (Y+Rc), s		4.5	3.5	4.5		4.5	3.5	4.5
Max Green Setting (Gmax), s		39.5	19.5	33.5		39.5	16.5	36.5
Max Q Clear Time (g_c+I1), s		23.7	10.9	17.1		21.8	8.2	7.6
Green Ext Time (p_c), s		14.8	0.2	8.9		16.5	0.1	12.6

Intersection Summary	
HCM 2010 Ctrl Delay	25.5
HCM 2010 LOS	C

Notes

User approved ignoring U-Turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	791	131	14	562	90	127	386	22	52	252	104
Future Volume (veh/h)	107	791	131	14	562	90	127	386	22	52	252	104
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	116	860	4	15	611	89	138	420	17	57	274	87
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	425	2074	907	355	1812	263	168	867	35	73	521	162
Arrive On Green	0.59	0.59	0.59	0.59	0.59	0.59	0.10	0.25	0.25	0.04	0.20	0.20
Sat Flow, veh/h	734	3505	1533	630	3062	445	1757	3431	139	1757	2618	811
Grp Volume(v), veh/h	116	860	4	15	349	351	138	214	223	57	181	180
Grp Sat Flow(s),veh/h/ln	734	1752	1533	630	1752	1754	1757	1752	1817	1757	1752	1677
Q Serve(g_s), s	10.5	14.6	0.1	1.5	11.2	11.2	8.5	11.4	11.5	3.5	10.2	10.6
Cycle Q Clear(g_c), s	21.8	14.6	0.1	16.0	11.2	11.2	8.5	11.4	11.5	3.5	10.2	10.6
Prop In Lane	1.00		1.00	1.00		0.25	1.00		0.08	1.00		0.48
Lane Grp Cap(c), veh/h	425	2074	907	355	1037	1038	168	443	459	73	349	334
V/C Ratio(X)	0.27	0.41	0.00	0.04	0.34	0.34	0.82	0.48	0.49	0.78	0.52	0.54
Avail Cap(c_a), veh/h	425	2074	907	355	1037	1038	279	581	603	184	486	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.0	12.1	9.2	16.5	11.4	11.5	48.8	35.0	35.0	52.2	39.3	39.5
Incr Delay (d2), s/veh	1.6	0.6	0.0	0.2	0.9	0.9	9.6	3.0	2.9	15.9	4.3	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	7.2	0.1	0.3	5.6	5.6	4.5	5.9	6.1	2.0	5.3	5.3
LnGrp Delay(d),s/veh	18.6	12.8	9.2	16.7	12.3	12.3	58.4	37.9	37.9	68.1	43.6	44.4
LnGrp LOS	B	B	A	B	B	B	E	D	D	E	D	D
Approach Vol, veh/h		980			715			575			418	
Approach Delay, s/veh		13.4			12.4			42.8			47.3	
Approach LOS		B			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		69.6	14.0	26.4		69.6	8.1	32.3
Change Period (Y+Rc), s		4.5	3.5	4.5		4.5	3.5	4.5
Max Green Setting (Gmax), s		49.5	17.5	30.5		49.5	11.5	36.5
Max Q Clear Time (g_c+I1), s		23.8	10.5	12.6		18.0	5.5	13.5
Green Ext Time (p_c), s		22.1	0.2	9.3		26.3	0.0	10.9

Intersection Summary	
HCM 2010 Ctrl Delay	24.7
HCM 2010 LOS	C

Notes



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	265	107	79	147	45	60
Future Volume (Veh/h)	265	107	79	147	45	60
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	294	119	88	163	50	67
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						19
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1062		
pX, platoon unblocked						
vC, conflicting volume			413		633	294
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			413		633	294
tC, single (s)			4.2		6.5	6.3
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.4
p0 queue free %			92		87	91
cM capacity (veh/h)			1104		397	727

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	294	119	88	163	117
Volume Left	0	0	88	0	50
Volume Right	0	119	0	0	67
cSH	1700	1700	1104	1700	929
Volume to Capacity	0.17	0.07	0.08	0.10	0.13
Queue Length 95th (ft)	0	0	6	0	11
Control Delay (s)	0.0	0.0	8.5	0.0	12.6
Lane LOS			A		B
Approach Delay (s)	0.0		3.0		12.6
Approach LOS					B

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	31.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	188	40	136	263	131	52
Future Volume (Veh/h)	188	40	136	263	131	52
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	207	44	149	289	144	57
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						19
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1062		
pX, platoon unblocked						
vC, conflicting volume			251		794	207
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			251		794	207
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			89		54	93
cM capacity (veh/h)			1303		314	828

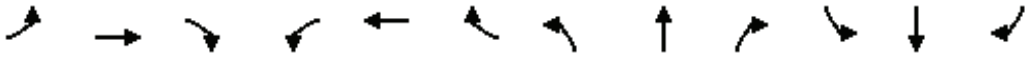
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	207	44	149	289	201
Volume Left	0	0	149	0	144
Volume Right	0	44	0	0	57
cSH	1700	1700	1303	1700	438
Volume to Capacity	0.12	0.03	0.11	0.17	0.46
Queue Length 95th (ft)	0	0	10	0	59
Control Delay (s)	0.0	0.0	8.1	0.0	21.3
Lane LOS			A		C
Approach Delay (s)	0.0		2.8		21.3
Approach LOS					C

Intersection Summary			
Average Delay	6.2		
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	156	13	57	111	170	3	11	55	205	21	99
Future Volume (vph)	45	156	13	57	111	170	3	11	55	205	21	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frt	1.00	0.99		1.00	0.91		1.00	0.87			0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	
Satd. Flow (prot)	1556	1619		1556	1489		1556	1403			1520	
Flt Permitted	0.95	1.00		0.95	1.00		0.57	1.00			0.76	
Satd. Flow (perm)	1556	1619		1556	1489		933	1403			1188	
Peak-hour factor, PHF	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Adj. Flow (vph)	59	205	17	75	146	224	4	14	72	270	28	130
RTOR Reduction (vph)	0	6	0	0	108	0	0	45	0	0	23	0
Lane Group Flow (vph)	59	216	0	75	262	0	4	41	0	0	405	0
Confl. Peds. (#/hr)									2	2		
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	16%	16%	16%	16%	16%	16%	16%	16%	16%	16%	16%	16%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	2.3	13.2		3.6	14.5		17.0	17.0			17.0	
Effective Green, g (s)	2.3	13.2		3.6	14.5		17.0	17.0			17.0	
Actuated g/C Ratio	0.05	0.29		0.08	0.32		0.37	0.37			0.37	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	78	466		122	471		346	520			440	
v/s Ratio Prot	0.04	0.13		c0.05	c0.18			0.03				
v/s Ratio Perm							0.00				c0.34	
v/c Ratio	0.76	0.46		0.61	0.56		0.01	0.08			0.92	
Uniform Delay, d1	21.5	13.4		20.4	13.0		9.1	9.3			13.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	33.5	0.7		8.9	1.4		0.0	0.1			24.6	
Delay (s)	55.0	14.1		29.3	14.4		9.1	9.4			38.4	
Level of Service	D	B		C	B		A	A			D	
Approach Delay (s)		22.7			16.9			9.4			38.4	
Approach LOS		C			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	45.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	158	1	71	217	282	8	11	62	188	8	44
Future Volume (vph)	106	158	1	71	217	282	8	11	62	188	8	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.98			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Frt	1.00	1.00		1.00	0.92		1.00	0.87			0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.96	
Satd. Flow (prot)	1626	1710		1626	1567		1626	1467			1606	
Flt Permitted	0.95	1.00		0.95	1.00		0.67	1.00			0.72	
Satd. Flow (perm)	1626	1710		1626	1567		1152	1467			1198	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	120	180	1	81	247	320	9	12	70	214	9	50
RTOR Reduction (vph)	0	1	0	0	80	0	0	50	0	0	13	0
Lane Group Flow (vph)	120	180	0	81	487	0	9	33	0	0	260	0
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		
Actuated Green, G (s)	5.0	22.4		3.7	21.1		14.9	14.9			14.9	
Effective Green, g (s)	5.0	22.4		3.7	21.1		14.9	14.9			14.9	
Actuated g/C Ratio	0.09	0.42		0.07	0.40		0.28	0.28			0.28	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	153	722		113	623		323	412			336	
v/s Ratio Prot	c0.07	0.11		0.05	c0.31			0.02				
v/s Ratio Perm							0.01				c0.22	
v/c Ratio	0.78	0.25		0.72	0.78		0.03	0.08			0.77	
Uniform Delay, d1	23.5	9.9		24.1	13.9		13.8	14.0			17.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	22.6	0.2		19.4	6.3		0.0	0.1			10.6	
Delay (s)	46.1	10.1		43.5	20.3		13.8	14.1			28.1	
Level of Service	D	B		D	C		B	B			C	
Approach Delay (s)		24.4			23.2			14.1			28.1	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	23.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	53.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	290	126	44	260	78	158
Future Volume (Veh/h)	290	126	44	260	78	158
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	341	148	52	306	92	186
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						3
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	337					
pX, platoon unblocked			0.96		0.96	0.96
vC, conflicting volume			341		825	415
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			290		795	367
tC, single (s)			4.2		6.5	6.3
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.4
p0 queue free %			96		71	70
cM capacity (veh/h)			1165		314	629

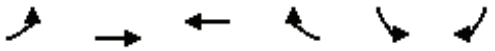
Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	489	52	306	278
Volume Left	0	52	0	92
Volume Right	148	0	0	186
cSH	1700	1165	1700	940
Volume to Capacity	0.29	0.04	0.18	0.30
Queue Length 95th (ft)	0	3	0	31
Control Delay (s)	0.0	8.2	0.0	15.8
Lane LOS		A		C
Approach Delay (s)	0.0	1.2		15.8
Approach LOS				C

Intersection Summary			
Average Delay	4.3		
Intersection Capacity Utilization	40.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	329	79	116	521	49	97
Future Volume (Veh/h)	329	79	116	521	49	97
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69
Hourly flow rate (vph)	477	114	168	755	71	141
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						3
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	337					
pX, platoon unblocked			0.96		0.96	0.96
vC, conflicting volume			477		1625	534
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			437		1630	496
tC, single (s)			4.2		6.5	6.3
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.4
p0 queue free %			84		17	74
cM capacity (veh/h)			1036		86	535

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	591	168	755	212
Volume Left	0	168	0	71
Volume Right	114	0	0	141
cSH	1700	1036	1700	241
Volume to Capacity	0.35	0.16	0.44	0.88
Queue Length 95th (ft)	0	14	0	183
Control Delay (s)	0.0	9.1	0.0	74.7
Lane LOS		A		F
Approach Delay (s)	0.0	1.7		74.7
Approach LOS				F

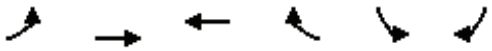
Intersection Summary			
Average Delay	10.1		
Intersection Capacity Utilization	41.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	758	347	0	888	519
Future Volume (veh/h)	0	758	347	0	888	519
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	0	798	365	0	935	303
Adj No. of Lanes	0	2	2	0	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1847	1847	0	1129	520
Arrive On Green	0.00	0.52	0.17	0.00	0.33	0.33
Sat Flow, veh/h	0	3725	3725	0	3442	1583
Grp Volume(v), veh/h	0	798	365	0	935	303
Grp Sat Flow(s),veh/h/ln	0	1770	1770	0	1721	1583
Q Serve(g_s), s	0.0	8.4	5.3	0.0	15.0	9.5
Cycle Q Clear(g_c), s	0.0	8.4	5.3	0.0	15.0	9.5
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1847	1847	0	1129	520
V/C Ratio(X)	0.00	0.43	0.20	0.00	0.83	0.58
Avail Cap(c_a), veh/h	0	1847	1847	0	1319	607
HCM Platoon Ratio	1.00	1.00	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.99	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	8.9	14.1	0.0	18.6	16.7
Incr Delay (d2), s/veh	0.0	0.7	0.2	0.0	4.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.2	2.7	0.0	7.8	4.3
LnGrp Delay(d),s/veh	0.0	9.6	14.3	0.0	22.6	17.8
LnGrp LOS		A	B		C	B
Approach Vol, veh/h		798	365		1238	
Approach Delay, s/veh		9.6	14.3		21.4	
Approach LOS		A	B		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		36.3		23.7		36.3		
Change Period (Y+Rc), s		5.0		4.0		5.0		
Max Green Setting (Gmax), s		28.0		23.0		28.0		
Max Q Clear Time (g_c+I1), s		10.4		17.0		7.3		
Green Ext Time (p_c), s		7.7		2.7		8.3		

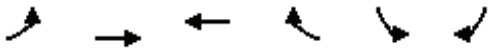
Intersection Summary	
HCM 2010 Ctrl Delay	16.4
HCM 2010 LOS	B



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	818	344	0	469	450
Future Volume (veh/h)	0	818	344	0	469	450
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1881	1881	0	1881	1881
Adj Flow Rate, veh/h	0	880	370	0	504	236
Adj No. of Lanes	0	2	2	0	2	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	1	1	0	1	1
Cap, veh/h	0	2297	2297	0	721	332
Arrive On Green	0.00	0.64	1.00	0.00	0.21	0.21
Sat Flow, veh/h	0	3762	3762	0	3476	1599
Grp Volume(v), veh/h	0	880	370	0	504	236
Grp Sat Flow(s),veh/h/ln	0	1787	1787	0	1738	1599
Q Serve(g_s), s	0.0	7.0	0.0	0.0	8.1	8.2
Cycle Q Clear(g_c), s	0.0	7.0	0.0	0.0	8.1	8.2
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	2297	2297	0	721	332
V/C Ratio(X)	0.00	0.38	0.16	0.00	0.70	0.71
Avail Cap(c_a), veh/h	0	2297	2297	0	1274	586
HCM Platoon Ratio	1.00	1.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.99	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	5.1	0.0	0.0	22.0	22.1
Incr Delay (d2), s/veh	0.0	0.5	0.1	0.0	1.2	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.6	0.0	0.0	4.0	3.9
LnGrp Delay(d),s/veh	0.0	5.6	0.1	0.0	23.3	24.9
LnGrp LOS		A	A		C	C
Approach Vol, veh/h		880	370		740	
Approach Delay, s/veh		5.6	0.1		23.8	
Approach LOS		A	A		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		43.6		16.4		43.6		
Change Period (Y+Rc), s		5.0		4.0		5.0		
Max Green Setting (Gmax), s		29.0		22.0		29.0		
Max Q Clear Time (g_c+I1), s		9.0		10.2		2.0		
Green Ext Time (p_c), s		8.9		2.2		10.2		

Intersection Summary	
HCM 2010 Ctrl Delay	11.3
HCM 2010 LOS	B

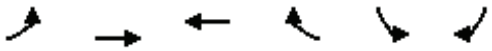


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	1642	300	20	291	47
Future Volume (veh/h)	4	1642	300	20	291	47
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99			0.95	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1900	1845	1900
Adj Flow Rate, veh/h	4	1728	316	13	306	38
Adj No. of Lanes	0	2	2	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	0	0
Cap, veh/h	61	2193	2185	90	351	44
Arrive On Green	0.85	0.85	0.21	0.21	0.23	0.23
Sat Flow, veh/h	1	3521	3516	140	1538	191
Grp Volume(v), veh/h	929	803	161	168	345	0
Grp Sat Flow(s),veh/h/ln	1844	1595	1752	1811	1734	0
Q Serve(g_s), s	0.0	13.8	4.5	4.5	11.5	0.0
Cycle Q Clear(g_c), s	13.8	13.8	4.5	4.5	11.5	0.0
Prop In Lane	0.00			0.08	0.89	0.11
Lane Grp Cap(c), veh/h	1237	1018	1118	1156	396	0
V/C Ratio(X)	0.75	0.79	0.14	0.15	0.87	0.00
Avail Cap(c_a), veh/h	1237	1018	1118	1156	520	0
HCM Platoon Ratio	1.33	1.33	0.33	0.33	1.00	1.00
Upstream Filter(I)	0.75	0.75	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	2.7	2.7	10.3	10.4	22.3	0.0
Incr Delay (d2), s/veh	3.2	4.7	0.3	0.3	9.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	6.7	2.3	2.4	6.6	0.0
LnGrp Delay(d),s/veh	5.9	7.4	10.6	10.6	32.2	0.0
LnGrp LOS	A	A	B	B	C	
Approach Vol, veh/h		1732	329		345	
Approach Delay, s/veh		6.6	10.6		32.2	
Approach LOS		A	B		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		42.3		17.7		42.3		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		34.0		18.0		34.0		
Max Q Clear Time (g_c+I1), s		15.8		13.5		6.5		
Green Ext Time (p_c), s		13.7		0.3		18.6		

Intersection Summary	
HCM 2010 Ctrl Delay	10.8
HCM 2010 LOS	B

Notes

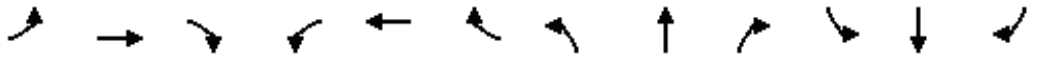


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	6	1281	341	99	59	3
Future Volume (veh/h)	6	1281	341	99	59	3
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1900	1845	1900
Adj Flow Rate, veh/h	6	1348	359	96	62	-8
Adj No. of Lanes	0	2	2	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	0	0
Cap, veh/h	63	3205	2538	668	450	0
Arrive On Green	1.00	1.00	0.63	0.63	0.00	0.00
Sat Flow, veh/h	3	3517	2811	715	2018	-260
Grp Volume(v), veh/h	726	628	229	226	0	0
Grp Sat Flow(s),veh/h/ln	1842	1595	1752	1682	0	0
Q Serve(g_s), s	0.0	0.0	3.2	3.3	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	3.2	3.3	0.0	0.0
Prop In Lane	0.01			0.43	1.13	-0.15
Lane Grp Cap(c), veh/h	1779	1488	1636	1570	0	0
V/C Ratio(X)	0.41	0.42	0.14	0.14	0.00	0.00
Avail Cap(c_a), veh/h	1779	1488	1636	1570	0	0
HCM Platoon Ratio	2.00	2.00	0.67	0.67	1.00	1.00
Upstream Filter(I)	0.88	0.88	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	1.4	1.4	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.8	0.2	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.3	1.6	1.6	0.0	0.0
LnGrp Delay(d),s/veh	0.6	0.8	1.5	1.6	0.0	0.0
LnGrp LOS	A	A	A	A		
Approach Vol, veh/h		1354	455		0	
Approach Delay, s/veh		0.7	1.5		0.0	
Approach LOS		A	A			

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		60.0		0.0		60.0		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		37.0		15.0		37.0		
Max Q Clear Time (g_c+I1), s		2.0		0.0		5.3		
Green Ext Time (p_c), s		17.3		0.0		16.4		

Intersection Summary	
HCM 2010 Ctrl Delay	0.9
HCM 2010 LOS	A

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	185	25	895	99	250	58	392	309	0	0	646	123
Future Volume (veh/h)	185	25	895	99	250	58	392	309	0	0	646	123
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.80	1.00		0.92	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	0	1845	1845
Adj Flow Rate, veh/h	195	0	674	104	263	8	413	325	0	0	680	89
Adj No. of Lanes	1	0	2	1	2	1	2	3	0	0	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	242	0	787	377	752	309	480	2802	0	0	1368	599
Arrive On Green	0.14	0.00	0.14	0.21	0.21	0.21	0.14	0.56	0.00	0.00	0.39	0.39
Sat Flow, veh/h	1757	0	2508	1757	3505	1439	3408	5202	0	0	3597	1534
Grp Volume(v), veh/h	195	0	674	104	263	8	413	325	0	0	680	89
Grp Sat Flow(s),veh/h/ln	1757	0	1254	1757	1752	1439	1704	1679	0	0	1752	1534
Q Serve(g_s), s	12.9	0.0	16.5	5.9	7.6	0.5	14.2	3.7	0.0	0.0	17.6	4.5
Cycle Q Clear(g_c), s	12.9	0.0	16.5	5.9	7.6	0.5	14.2	3.7	0.0	0.0	17.6	4.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	242	0	787	377	752	309	480	2802	0	0	1368	599
V/C Ratio(X)	0.81	0.00	0.86	0.28	0.35	0.03	0.86	0.12	0.00	0.00	0.50	0.15
Avail Cap(c_a), veh/h	242	0	787	527	1051	432	596	2802	0	0	1368	599
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	50.2	0.0	42.0	39.3	40.0	37.2	50.4	12.6	0.0	0.0	27.7	23.7
Incr Delay (d2), s/veh	18.0	0.0	9.3	0.4	0.3	0.0	10.3	0.1	0.0	0.0	1.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	0.0	11.6	2.9	3.7	0.2	7.4	1.7	0.0	0.0	8.7	2.0
LnGrp Delay(d),s/veh	68.2	0.0	51.3	39.7	40.3	37.3	60.6	12.7	0.0	0.0	29.0	24.2
LnGrp LOS	E		D	D	D	D	E	B			C	C
Approach Vol, veh/h		869			375			738			769	
Approach Delay, s/veh		55.1			40.1			39.5			28.4	
Approach LOS		E			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		70.8		20.0	19.9	50.8		29.2
Change Period (Y+Rc), s		4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s		56.5		16.5	21.0	32.5		36.0
Max Q Clear Time (g_c+I1), s		5.7		18.5	16.2	19.6		9.6
Green Ext Time (p_c), s		9.3		0.0	0.7	5.8		2.0

Intersection Summary	
HCM 2010 Ctrl Delay	41.4
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	216	26	566	88	372	95	507	810	0	0	506	150
Future Volume (veh/h)	216	26	566	88	372	95	507	810	0	0	506	150
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.72	1.00		0.90	1.00		1.00	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1845	1845	1845	1900	0	1845	1845
Adj Flow Rate, veh/h	223	0	323	91	384	46	523	835	0	0	522	116
Adj No. of Lanes	1	0	2	1	2	1	2	3	0	0	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	242	0	842	438	874	354	577	2626	0	0	1147	487
Arrive On Green	0.14	0.00	0.14	0.25	0.25	0.25	0.17	0.52	0.00	0.00	0.33	0.33
Sat Flow, veh/h	1757	0	2266	1757	3505	1419	3408	5202	0	0	3597	1488
Grp Volume(v), veh/h	223	0	323	91	384	46	523	835	0	0	522	116
Grp Sat Flow(s),veh/h/ln	1757	0	1133	1757	1752	1419	1704	1679	0	0	1752	1488
Q Serve(g_s), s	15.0	0.0	13.8	4.9	11.1	3.0	18.1	11.4	0.0	0.0	14.1	6.8
Cycle Q Clear(g_c), s	15.0	0.0	13.8	4.9	11.1	3.0	18.1	11.4	0.0	0.0	14.1	6.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	242	0	842	438	874	354	577	2626	0	0	1147	487
V/C Ratio(X)	0.92	0.00	0.38	0.21	0.44	0.13	0.91	0.32	0.00	0.00	0.46	0.24
Avail Cap(c_a), veh/h	242	0	842	527	1051	426	596	2626	0	0	1147	487
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	51.1	0.0	33.6	35.6	38.0	34.9	48.9	16.5	0.0	0.0	31.9	29.5
Incr Delay (d2), s/veh	37.7	0.0	0.3	0.2	0.3	0.2	17.4	0.3	0.0	0.0	1.3	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	0.0	4.3	2.4	5.4	1.2	9.9	5.3	0.0	0.0	7.0	3.0
LnGrp Delay(d),s/veh	88.8	0.0	33.9	35.9	38.3	35.1	66.3	16.8	0.0	0.0	33.2	30.6
LnGrp LOS	F		C	D	D	D	E	B			C	C
Approach Vol, veh/h		546			521			1358			638	
Approach Delay, s/veh		56.3			37.6			35.9			32.7	
Approach LOS		E			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		66.6		20.0	23.3	43.3		33.4
Change Period (Y+Rc), s		4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s		56.5		16.5	21.0	32.5		36.0
Max Q Clear Time (g_c+I1), s		13.4		17.0	20.1	16.1		13.1
Green Ext Time (p_c), s		13.8		0.0	0.2	8.9		3.0

Intersection Summary	
HCM 2010 Ctrl Delay	39.2
HCM 2010 LOS	D

Notes



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	438	10	34	302	2	4
Future Volume (Veh/h)	438	10	34	302	2	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	515	12	40	355	2	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			527		956	521
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			527		956	521
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		99	99
cM capacity (veh/h)			1025		272	550

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	527	40	355	7
Volume Left	0	40	0	2
Volume Right	12	0	0	5
cSH	1700	1025	1700	425
Volume to Capacity	0.31	0.04	0.21	0.02
Queue Length 95th (ft)	0	3	0	1
Control Delay (s)	0.0	8.7	0.0	13.6
Lane LOS		A		B
Approach Delay (s)	0.0	0.9		13.6
Approach LOS				B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	38.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	424	2	4	626	11	36
Future Volume (Veh/h)	424	2	4	626	11	36
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	544	3	5	803	14	46
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			547		1358	546
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			547		1358	546
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		91	91
cM capacity (veh/h)			1022		163	538

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	547	5	803	60
Volume Left	0	5	0	14
Volume Right	3	0	0	46
cSH	1700	1022	1700	350
Volume to Capacity	0.32	0.00	0.47	0.17
Queue Length 95th (ft)	0	0	0	15
Control Delay (s)	0.0	8.5	0.0	17.4
Lane LOS		A		C
Approach Delay (s)	0.0	0.1		17.4
Approach LOS				C

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	106	147	412	367	135	176	400	146	224	212	33
Future Volume (veh/h)	95	106	147	412	367	135	176	400	146	224	212	33
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1900	1827	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	108	120	167	468	417	153	200	455	166	255	241	38
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	2	1	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	136	143	199	507	536	197	231	615	222	329	325	51
Arrive On Green	0.08	0.21	0.21	0.29	0.42	0.42	0.13	0.25	0.25	0.10	0.21	0.21
Sat Flow, veh/h	1740	693	964	1740	1276	468	1740	2499	904	3375	1541	243
Grp Volume(v), veh/h	108	0	287	468	0	570	200	315	306	255	0	279
Grp Sat Flow(s),veh/h/ln	1740	0	1657	1740	0	1744	1740	1736	1667	1688	0	1784
Q Serve(g_s), s	6.2	0.0	16.8	26.4	0.0	28.5	11.4	16.9	17.1	7.5	0.0	14.8
Cycle Q Clear(g_c), s	6.2	0.0	16.8	26.4	0.0	28.5	11.4	16.9	17.1	7.5	0.0	14.8
Prop In Lane	1.00		0.58	1.00		0.27	1.00		0.54	1.00		0.14
Lane Grp Cap(c), veh/h	136	0	343	507	0	733	231	427	410	329	0	376
V/C Ratio(X)	0.80	0.00	0.84	0.92	0.00	0.78	0.87	0.74	0.75	0.77	0.00	0.74
Avail Cap(c_a), veh/h	258	0	377	637	0	777	258	498	478	501	0	512
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	45.8	0.0	38.4	34.7	0.0	25.2	42.9	35.1	35.2	44.5	0.0	37.3
Incr Delay (d2), s/veh	10.0	0.0	14.2	16.8	0.0	4.8	23.4	4.8	5.4	4.2	0.0	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	9.0	15.0	0.0	14.6	6.9	8.6	8.5	3.7	0.0	7.7
LnGrp Delay(d),s/veh	55.8	0.0	52.6	51.6	0.0	30.0	66.3	39.9	40.6	48.7	0.0	41.1
LnGrp LOS	E		D	D		C	E	D	D	D		D
Approach Vol, veh/h		395			1038			821			534	
Approach Delay, s/veh		53.5			39.7			46.6			44.7	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	28.9	33.4	24.9	17.4	25.3	11.9	46.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	15.0	29.0	37.0	23.0	15.0	29.0	15.0	45.0
Max Q Clear Time (g_c+I1), s	9.5	19.1	28.4	18.8	13.4	16.8	8.2	30.5
Green Ext Time (p_c), s	0.4	4.0	1.1	2.1	0.1	4.5	0.1	5.1

Intersection Summary	
HCM 2010 Ctrl Delay	44.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	230	137	400	150	85	139	245	62	211	415	43
Future Volume (veh/h)	90	230	137	400	150	85	139	245	62	211	415	43
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	98	250	149	435	163	92	151	266	67	229	451	47
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	2	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	124	226	135	462	446	252	169	873	216	285	495	52
Arrive On Green	0.07	0.21	0.21	0.26	0.40	0.40	0.10	0.31	0.31	0.08	0.30	0.30
Sat Flow, veh/h	1774	1088	648	1774	1119	631	1774	2814	696	3442	1659	173
Grp Volume(v), veh/h	98	0	399	435	0	255	151	165	168	229	0	498
Grp Sat Flow(s),veh/h/ln	1774	0	1736	1774	0	1750	1774	1770	1740	1721	0	1832
Q Serve(g_s), s	6.3	0.0	24.0	27.8	0.0	11.9	9.7	8.2	8.5	7.6	0.0	30.3
Cycle Q Clear(g_c), s	6.3	0.0	24.0	27.8	0.0	11.9	9.7	8.2	8.5	7.6	0.0	30.3
Prop In Lane	1.00		0.37	1.00		0.36	1.00		0.40	1.00		0.09
Lane Grp Cap(c), veh/h	124	0	360	462	0	697	169	549	540	285	0	546
V/C Ratio(X)	0.79	0.00	1.11	0.94	0.00	0.37	0.89	0.30	0.31	0.80	0.00	0.91
Avail Cap(c_a), veh/h	307	0	360	491	0	697	169	582	572	298	0	587
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.9	0.0	45.8	41.9	0.0	24.5	51.7	30.3	30.4	52.1	0.0	39.1
Incr Delay (d2), s/veh	10.6	0.0	79.4	25.8	0.0	0.3	40.6	0.3	0.3	14.1	0.0	17.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.0	19.4	16.8	0.0	5.8	6.7	4.0	4.1	4.2	0.0	18.1
LnGrp Delay(d),s/veh	63.5	0.0	125.2	67.6	0.0	24.8	92.3	30.6	30.7	66.2	0.0	57.0
LnGrp LOS	E		F	E		C	F	C	C	E		E
Approach Vol, veh/h		497			690			484			727	
Approach Delay, s/veh		113.0			51.8			49.9			59.9	
Approach LOS		F			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.6	39.9	34.1	28.0	15.0	38.5	12.1	50.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	38.0	32.0	24.0	11.0	37.0	20.0	36.0
Max Q Clear Time (g_c+I1), s	9.6	10.5	29.8	26.0	11.7	32.3	8.3	13.9
Green Ext Time (p_c), s	0.0	5.8	0.4	0.0	0.0	2.2	0.2	4.3

Intersection Summary	
HCM 2010 Ctrl Delay	66.6
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	363	257	436	78	18	85	74	585	45	139	15
Future Volume (veh/h)	8	363	257	436	78	18	85	74	585	45	139	15
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1845	1900	1845	1900
Adj Flow Rate, veh/h	9	403	233	484	87	13	88	90	166	50	154	14
Adj No. of Lanes	1	2	0	2	1	0	1	1	1	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	416	507	290	664	295	44	276	290	246	64	198	18
Arrive On Green	0.24	0.24	0.24	0.19	0.19	0.19	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1757	2139	1221	3514	1563	234	1757	1845	1562	413	1272	116
Grp Volume(v), veh/h	9	329	307	484	0	100	88	90	166	218	0	0
Grp Sat Flow(s),veh/h/ln	1757	1752	1608	1757	0	1797	1757	1845	1562	1801	0	0
Q Serve(g_s), s	0.2	10.8	11.0	7.9	0.0	2.9	2.7	2.6	6.1	7.1	0.0	0.0
Cycle Q Clear(g_c), s	0.2	10.8	11.0	7.9	0.0	2.9	2.7	2.6	6.1	7.1	0.0	0.0
Prop In Lane	1.00		0.76	1.00		0.13	1.00		1.00	0.23		0.06
Lane Grp Cap(c), veh/h	416	415	381	664	0	339	276	290	246	280	0	0
V/C Ratio(X)	0.02	0.79	0.80	0.73	0.00	0.29	0.32	0.31	0.68	0.78	0.00	0.00
Avail Cap(c_a), veh/h	488	487	447	1034	0	529	804	844	715	471	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.9	21.9	22.0	23.3	0.0	21.3	22.9	22.8	24.3	24.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	7.5	9.0	1.6	0.0	0.5	0.7	0.6	3.2	4.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	6.1	5.8	4.0	0.0	1.5	1.4	1.4	2.8	3.9	0.0	0.0
LnGrp Delay(d),s/veh	17.9	29.5	31.0	24.9	0.0	21.8	23.5	23.4	27.5	29.5	0.0	0.0
LnGrp LOS	B	C	C	C		C	C	C	C	C		
Approach Vol, veh/h		645			584			344			218	
Approach Delay, s/veh		30.0			24.4			25.4			29.5	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		13.6		18.5		13.5		15.6
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		28.0		17.0		16.0		18.0
Max Q Clear Time (g_c+I1), s		8.1		13.0		9.1		9.9
Green Ext Time (p_c), s		1.2		1.5		0.6		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	27.2
HCM 2010 LOS	C

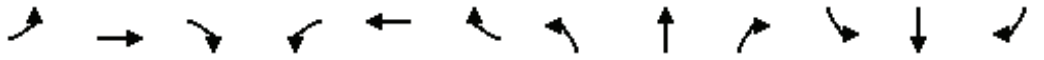
Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	163	129	413	252	39	366	185	607	15	47	38
Future Volume (veh/h)	25	163	129	413	252	39	366	185	607	15	47	38
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1881	1881	1881	1900	1881	1900
Adj Flow Rate, veh/h	26	168	84	491	169	34	284	321	177	15	48	36
Adj No. of Lanes	1	2	0	2	1	0	1	1	1	0	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	233	306	146	755	320	64	469	493	418	20	64	48
Arrive On Green	0.13	0.13	0.13	0.21	0.21	0.21	0.26	0.26	0.26	0.08	0.08	0.08
Sat Flow, veh/h	1792	2348	1122	3583	1521	306	1792	1881	1595	264	843	633
Grp Volume(v), veh/h	26	126	126	491	0	203	284	321	177	99	0	0
Grp Sat Flow(s),veh/h/ln	1792	1787	1683	1792	0	1827	1792	1881	1595	1740	0	0
Q Serve(g_s), s	0.6	3.3	3.5	6.2	0.0	4.9	6.9	7.6	4.6	2.8	0.0	0.0
Cycle Q Clear(g_c), s	0.6	3.3	3.5	6.2	0.0	4.9	6.9	7.6	4.6	2.8	0.0	0.0
Prop In Lane	1.00		0.67	1.00		0.17	1.00		1.00	0.15		0.36
Lane Grp Cap(c), veh/h	233	233	219	755	0	385	469	493	418	132	0	0
V/C Ratio(X)	0.11	0.54	0.58	0.65	0.00	0.53	0.61	0.65	0.42	0.75	0.00	0.00
Avail Cap(c_a), veh/h	611	610	574	1295	0	660	1007	1057	897	559	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	19.1	20.3	20.4	18.0	0.0	17.5	16.1	16.4	15.3	22.5	0.0	0.0
Incr Delay (d2), s/veh	0.2	2.0	2.4	1.0	0.0	1.1	1.3	1.5	0.7	8.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.7	1.8	3.2	0.0	2.6	3.6	4.1	2.1	1.6	0.0	0.0
LnGrp Delay(d),s/veh	19.3	22.2	22.7	18.9	0.0	18.6	17.4	17.8	15.9	30.7	0.0	0.0
LnGrp LOS	B	C	C	B		B	B	B	B	C		
Approach Vol, veh/h		278			694			782			99	
Approach Delay, s/veh		22.2			18.8			17.2			30.7	
Approach LOS		C			B			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		17.0		10.5		7.8		14.5
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		28.0		17.0		16.0		18.0
Max Q Clear Time (g_c+I1), s		9.6		5.5		4.8		8.2
Green Ext Time (p_c), s		3.3		1.1		0.3		2.2

Intersection Summary	
HCM 2010 Ctrl Delay	19.3
HCM 2010 LOS	B

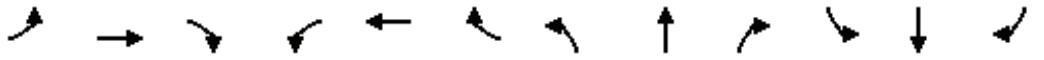
Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	263	0	63	90	681	0	0	459	373
Future Volume (veh/h)	0	0	0	263	0	63	90	681	0	0	459	373
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1827	1827	1900	1827	1827	0	0	1827	1900
Adj Flow Rate, veh/h				299	0	0	102	774	0	0	522	0
Adj No. of Lanes				1	1	0	1	2	0	0	2	0
Peak Hour Factor				0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %				4	4	4	4	4	0	0	4	4
Cap, veh/h				377	396	0	127	2050	0	0	1461	0
Arrive On Green				0.22	0.00	0.00	0.07	0.59	0.00	0.00	0.42	0.00
Sat Flow, veh/h				1740	1827	0	1740	3563	0	0	3654	0
Grp Volume(v), veh/h				299	0	0	102	774	0	0	522	0
Grp Sat Flow(s),veh/h/ln				1740	1827	0	1740	1736	0	0	1736	0
Q Serve(g_s), s				6.7	0.0	0.0	2.4	4.9	0.0	0.0	4.3	0.0
Cycle Q Clear(g_c), s				6.7	0.0	0.0	2.4	4.9	0.0	0.0	4.3	0.0
Prop In Lane				1.00		0.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				377	396	0	127	2050	0	0	1461	0
V/C Ratio(X)				0.79	0.00	0.00	0.80	0.38	0.00	0.00	0.36	0.00
Avail Cap(c_a), veh/h				671	705	0	168	2510	0	0	3179	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				15.4	0.0	0.0	18.9	4.5	0.0	0.0	8.2	0.0
Incr Delay (d2), s/veh				3.8	0.0	0.0	18.2	0.1	0.0	0.0	0.1	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.6	0.0	0.0	1.8	2.3	0.0	0.0	2.1	0.0
LnGrp Delay(d),s/veh				19.2	0.0	0.0	37.1	4.6	0.0	0.0	8.3	0.0
LnGrp LOS				B			D	A			A	
Approach Vol, veh/h					299			876			522	
Approach Delay, s/veh					19.2			8.4			8.3	
Approach LOS					B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		28.5			7.0	21.5		13.0
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		30.0			4.0	38.0		16.0
Max Q Clear Time (g_c+I1), s		6.9			4.4	6.3		8.7
Green Ext Time (p_c), s		9.9			0.0	11.2		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	10.3
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	144	0	432	226	726	0	0	302	287
Future Volume (veh/h)	0	0	0	144	0	432	226	726	0	0	302	287
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1881	1881	1900	1881	1881	0	0	1881	1900
Adj Flow Rate, veh/h				152	0	389	238	764	0	0	318	0
Adj No. of Lanes				1	1	0	1	2	0	0	2	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				1	1	1	1	1	0	0	1	1
Cap, veh/h				559	0	499	310	1825	0	0	889	0
Arrive On Green				0.31	0.00	0.31	0.17	0.51	0.00	0.00	0.25	0.00
Sat Flow, veh/h				1792	0	1599	1792	3668	0	0	3762	0
Grp Volume(v), veh/h				152	0	389	238	764	0	0	318	0
Grp Sat Flow(s),veh/h/ln				1792	0	1599	1792	1787	0	0	1787	0
Q Serve(g_s), s				2.9	0.0	10.0	5.7	6.0	0.0	0.0	3.3	0.0
Cycle Q Clear(g_c), s				2.9	0.0	10.0	5.7	6.0	0.0	0.0	3.3	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				559	0	499	310	1825	0	0	889	0
V/C Ratio(X)				0.27	0.00	0.78	0.77	0.42	0.00	0.00	0.36	0.00
Avail Cap(c_a), veh/h				834	0	745	755	3250	0	0	1427	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				11.7	0.0	14.1	17.8	6.9	0.0	0.0	14.0	0.0
Incr Delay (d2), s/veh				0.3	0.0	3.1	4.0	0.2	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.4	0.0	4.8	3.1	2.9	0.0	0.0	1.7	0.0
LnGrp Delay(d),s/veh				11.9	0.0	17.2	21.8	7.0	0.0	0.0	14.2	0.0
LnGrp LOS				B		B	C	A			B	
Approach Vol, veh/h					541			1002			318	
Approach Delay, s/veh					15.7			10.5			14.2	
Approach LOS					B			B			B	

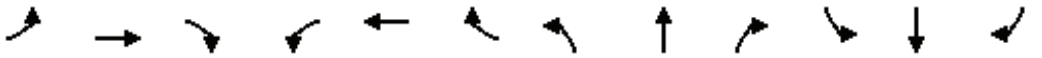
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		27.0			11.8	15.2		18.1
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		41.0			19.0	18.0		21.0
Max Q Clear Time (g_c+I1), s		8.0			7.7	5.3		12.0
Green Ext Time (p_c), s		9.0			0.5	5.9		2.1

Intersection Summary	
HCM 2010 Ctrl Delay	12.7
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	886	172	78	366	0	0	0	0	388	23	271
Future Volume (veh/h)	0	886	172	78	366	0	0	0	0	388	23	271
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1900	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	963	158	85	398	0				422	25	279
Adj No. of Lanes	0	2	0	0	2	0				0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1217	199	118	751	0				487	29	322
Arrive On Green	0.00	0.40	0.40	0.13	0.13	0.00				0.49	0.49	0.49
Sat Flow, veh/h	0	3135	499	117	1963	0				987	58	653
Grp Volume(v), veh/h	0	560	561	179	304	0				726	0	0
Grp Sat Flow(s),veh/h/ln	0	1770	1771	385	1610	0				1698	0	0
Q Serve(g_s), s	0.0	20.8	20.9	9.1	13.1	0.0				28.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	20.8	20.9	30.0	13.1	0.0				28.4	0.0	0.0
Prop In Lane	0.00		0.28	0.47		0.00				0.58		0.38
Lane Grp Cap(c), veh/h	0	708	708	225	644	0				838	0	0
V/C Ratio(X)	0.00	0.79	0.79	0.80	0.47	0.00				0.87	0.00	0.00
Avail Cap(c_a), veh/h	0	708	708	225	644	0				838	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.94	0.94	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	19.7	19.8	36.2	25.2	0.0				16.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	6.1	6.1	17.0	0.5	0.0				11.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	11.3	11.3	4.8	5.9	0.0				15.8	0.0	0.0
LnGrp Delay(d),s/veh	0.0	25.8	25.9	53.2	25.7	0.0				28.5	0.0	0.0
LnGrp LOS		C	C	D	C					C		
Approach Vol, veh/h		1121			483						726	
Approach Delay, s/veh		25.9			35.9						28.5	
Approach LOS		C			D						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				34.0		41.0		34.0
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				30.0		37.0		30.0
Max Q Clear Time (g_c+I1), s				22.9		30.4		32.0
Green Ext Time (p_c), s				5.3		2.9		0.0

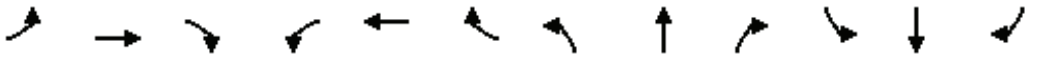
Intersection Summary	
HCM 2010 Ctrl Delay	28.8
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	701	140	53	496	0	0	0	0	283	1	277
Future Volume (veh/h)	0	701	140	53	496	0	0	0	0	283	1	277
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1881	1900	1900	1881	0				1900	1881	1900
Adj Flow Rate, veh/h	0	730	118	55	517	0				295	1	273
Adj No. of Lanes	0	2	0	0	2	0				0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	1	1	1	1	0				0	1	0
Cap, veh/h	0	1283	207	122	1133	0				419	1	387
Arrive On Green	0.00	0.42	0.42	0.83	0.83	0.00				0.48	0.48	0.48
Sat Flow, veh/h	0	3174	498	154	2804	0				878	3	813
Grp Volume(v), veh/h	0	423	425	277	295	0				569	0	0
Grp Sat Flow(s),veh/h/ln	0	1787	1790	1246	1626	0				1694	0	0
Q Serve(g_s), s	0.0	13.6	13.6	3.9	3.6	0.0				19.9	0.0	0.0
Cycle Q Clear(g_c), s	0.0	13.6	13.6	17.5	3.6	0.0				19.9	0.0	0.0
Prop In Lane	0.00		0.28	0.20		0.00				0.52		0.48
Lane Grp Cap(c), veh/h	0	745	746	577	678	0				808	0	0
V/C Ratio(X)	0.00	0.57	0.57	0.48	0.43	0.00				0.70	0.00	0.00
Avail Cap(c_a), veh/h	0	1215	1217	937	1106	0				808	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.93	0.93	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	16.7	16.7	4.6	3.9	0.0				15.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.7	0.7	0.6	0.4	0.0				5.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.8	6.9	1.3	1.5	0.0				10.3	0.0	0.0
LnGrp Delay(d),s/veh	0.0	17.4	17.4	5.2	4.4	0.0				20.6	0.0	0.0
LnGrp LOS		B	B	A	A					C		
Approach Vol, veh/h		848			572						569	
Approach Delay, s/veh		17.4			4.8						20.6	
Approach LOS		B			A						C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				35.2		39.8		35.2
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				51.0		16.0		51.0
Max Q Clear Time (g_c+I1), s				15.6		21.9		19.5
Green Ext Time (p_c), s				12.2		0.0		11.8

Intersection Summary	
HCM 2010 Ctrl Delay	14.7
HCM 2010 LOS	B

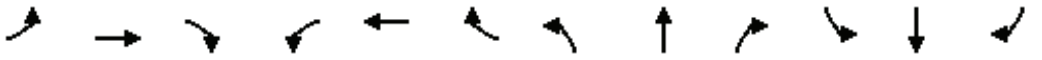


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	1044	0	0	411	381	33	2	54	0	0	0
Future Volume (veh/h)	230	1044	0	0	411	381	33	2	54	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	258	1173	0	0	462	277	38	0	7			
Adj No. of Lanes	0	2	0	0	2	0	2	0	1			
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	335	1474	0	0	1422	847	793	0	353			
Arrive On Green	1.00	1.00	0.00	0.00	0.67	0.67	0.22	0.00	0.22			
Sat Flow, veh/h	399	2285	0	0	2215	1264	3548	0	1581			
Grp Volume(v), veh/h	624	807	0	0	385	354	38	0	7			
Grp Sat Flow(s),veh/h/ln	990	1610	0	0	1770	1617	1774	0	1581			
Q Serve(g_s), s	31.0	0.0	0.0	0.0	6.9	6.9	0.6	0.0	0.3			
Cycle Q Clear(g_c), s	38.0	0.0	0.0	0.0	6.9	6.9	0.6	0.0	0.3			
Prop In Lane	0.41		0.00	0.00		0.78	1.00		1.00			
Lane Grp Cap(c), veh/h	731	1079	0	0	1185	1083	793	0	353			
V/C Ratio(X)	0.85	0.75	0.00	0.00	0.32	0.33	0.05	0.00	0.02			
Avail Cap(c_a), veh/h	757	1117	0	0	1227	1121	793	0	353			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.42	0.42	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	2.3	0.0	0.0	0.0	5.2	5.2	22.9	0.0	22.7			
Incr Delay (d2), s/veh	4.1	1.2	0.0	0.0	0.2	0.2	0.1	0.0	0.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	9.1	0.3	0.0	0.0	3.4	3.1	0.3	0.0	0.1			
LnGrp Delay(d),s/veh	6.4	1.2	0.0	0.0	5.4	5.4	23.0	0.0	22.8			
LnGrp LOS	A	A			A	A	C		C			
Approach Vol, veh/h		1431			739			45				
Approach Delay, s/veh		3.5			5.4			22.9				
Approach LOS		A			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		20.8		54.2				54.2
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		15.0		52.0				52.0
Max Q Clear Time (g_c+I1), s		2.6		40.0				8.9
Green Ext Time (p_c), s		0.1		10.3				28.2

Intersection Summary	
HCM 2010 Ctrl Delay	4.5
HCM 2010 LOS	A

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	284	700	0	0	478	377	71	141	100	0	0	0
Future Volume (veh/h)	284	700	0	0	478	377	71	141	100	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1881	0	0	1881	1900	1881	1881	1881			
Adj Flow Rate, veh/h	296	729	0	0	498	253	74	147	54			
Adj No. of Lanes	0	2	0	0	2	0	1	1	1			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	1	1	0	0	1	1	1	1	1			
Cap, veh/h	416	1087	0	0	1408	712	498	523	444			
Arrive On Green	1.00	1.00	0.00	0.00	0.62	0.62	0.28	0.28	0.28			
Sat Flow, veh/h	537	1853	0	0	2382	1157	1792	1881	1599			
Grp Volume(v), veh/h	374	651	0	0	388	363	74	147	54			
Grp Sat Flow(s),veh/h/ln	677	1626	0	0	1787	1658	1792	1881	1599			
Q Serve(g_s), s	22.9	0.0	0.0	0.0	8.0	8.1	2.3	4.6	1.9			
Cycle Q Clear(g_c), s	31.0	0.0	0.0	0.0	8.0	8.1	2.3	4.6	1.9			
Prop In Lane	0.79		0.00	0.00		0.70	1.00		1.00			
Lane Grp Cap(c), veh/h	503	1001	0	0	1100	1020	498	523	444			
V/C Ratio(X)	0.74	0.65	0.00	0.00	0.35	0.36	0.15	0.28	0.12			
Avail Cap(c_a), veh/h	567	1128	0	0	1239	1149	498	523	444			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.69	0.69	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	2.7	0.0	0.0	0.0	7.1	7.1	20.4	21.2	20.2			
Incr Delay (d2), s/veh	3.2	0.8	0.0	0.0	0.2	0.2	0.6	1.3	0.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	5.2	0.2	0.0	0.0	3.9	3.7	1.2	2.6	0.9			
LnGrp Delay(d),s/veh	5.9	0.8	0.0	0.0	7.3	7.3	21.0	22.5	20.8			
LnGrp LOS	A	A			A	A	C	C	C			
Approach Vol, veh/h		1025			751			275				
Approach Delay, s/veh		2.7			7.3			21.8				
Approach LOS		A			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		24.8		50.2				50.2
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		15.0		52.0				52.0
Max Q Clear Time (g_c+I1), s		6.6		33.0				10.1
Green Ext Time (p_c), s		0.7		13.2				21.6

Intersection Summary	
HCM 2010 Ctrl Delay	6.9
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	352	193	21	429	87	149	169	14	169	881	112
Future Volume (veh/h)	17	352	193	21	429	87	149	169	14	169	881	112
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	0.99		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1845	1845	1900	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	18	371	104	22	452	79	157	178	8	178	927	111
Adj No. of Lanes	0	2	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	76	1437	675	68	1238	212	187	1116	50	209	1067	128
Arrive On Green	0.44	0.44	0.44	0.44	0.44	0.44	0.11	0.33	0.33	0.12	0.34	0.34
Sat Flow, veh/h	90	3245	1524	73	2797	478	1757	3413	152	1757	3141	376
Grp Volume(v), veh/h	205	184	104	292	0	261	157	91	95	178	517	521
Grp Sat Flow(s),veh/h/ln	1740	1595	1524	1768	0	1579	1757	1752	1813	1757	1752	1764
Q Serve(g_s), s	0.0	7.9	4.4	0.0	0.0	11.9	9.5	4.0	4.0	10.7	29.9	29.9
Cycle Q Clear(g_c), s	7.5	7.9	4.4	11.3	0.0	11.9	9.5	4.0	4.0	10.7	29.9	29.9
Prop In Lane	0.09		1.00	0.08		0.30	1.00		0.08	1.00		0.21
Lane Grp Cap(c), veh/h	807	706	675	819	0	699	187	573	593	209	595	599
V/C Ratio(X)	0.25	0.26	0.15	0.36	0.00	0.37	0.84	0.16	0.16	0.85	0.87	0.87
Avail Cap(c_a), veh/h	807	706	675	819	0	699	342	573	593	423	633	637
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.00	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.9	19.0	18.0	19.9	0.0	20.1	47.3	25.8	25.8	46.6	33.4	33.4
Incr Delay (d2), s/veh	0.8	0.9	0.5	0.1	0.0	0.1	3.8	0.2	0.2	3.7	12.4	12.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	3.6	1.9	5.8	0.0	5.2	4.8	1.9	2.0	5.4	16.4	16.5
LnGrp Delay(d),s/veh	19.6	19.9	18.5	20.0	0.0	20.2	51.2	26.0	26.0	50.4	45.8	45.7
LnGrp LOS	B	B	B	C		C	D	C	C	D	D	D
Approach Vol, veh/h		493			553			343			1216	
Approach Delay, s/veh		19.5			20.1			37.5			46.4	
Approach LOS		B			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.5	40.7		51.8	16.9	39.3		51.8
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	21.0	39.0		36.0	26.0	34.0		36.0
Max Q Clear Time (g_c+I1), s	11.5	31.9		9.9	12.7	6.0		13.9
Green Ext Time (p_c), s	0.1	4.8		9.8	0.2	13.2		9.1

Intersection Summary	
HCM 2010 Ctrl Delay	34.6
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	476	306	18	330	110	205	544	36	80	286	31
Future Volume (veh/h)	47	476	306	18	330	110	205	544	36	80	286	31
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	1.00		0.97	1.00		0.96	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1881	1881	1900	1881	1900	1881	1881	1900	1881	1881	1900
Adj Flow Rate, veh/h	49	496	221	19	344	103	214	567	31	83	298	25
Adj No. of Lanes	0	2	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	172	1680	864	81	1386	406	242	931	51	106	650	54
Arrive On Green	0.56	0.56	0.56	0.56	0.56	0.56	0.13	0.27	0.27	0.06	0.20	0.20
Sat Flow, veh/h	243	3023	1555	85	2494	730	1792	3439	188	1792	3330	277
Grp Volume(v), veh/h	275	270	221	246	0	220	214	294	304	83	159	164
Grp Sat Flow(s),veh/h/ln	1640	1626	1555	1750	0	1559	1792	1787	1840	1792	1787	1820
Q Serve(g_s), s	0.0	10.1	8.4	0.0	0.0	8.3	13.4	16.4	16.4	5.2	8.9	9.1
Cycle Q Clear(g_c), s	8.7	10.1	8.4	7.6	0.0	8.3	13.4	16.4	16.4	5.2	8.9	9.1
Prop In Lane	0.18		1.00	0.08		0.47	1.00		0.10	1.00		0.15
Lane Grp Cap(c), veh/h	948	904	864	1006	0	866	242	484	498	106	349	355
V/C Ratio(X)	0.29	0.30	0.26	0.24	0.00	0.25	0.89	0.61	0.61	0.78	0.46	0.46
Avail Cap(c_a), veh/h	948	904	864	1006	0	866	251	484	498	456	674	687
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.00	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.2	13.5	13.1	12.9	0.0	13.1	48.4	36.3	36.3	52.9	40.5	40.6
Incr Delay (d2), s/veh	0.8	0.8	0.7	0.1	0.0	0.1	27.3	2.6	2.6	4.6	1.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	4.7	3.8	4.0	0.0	3.6	8.4	8.4	8.7	2.7	4.5	4.7
LnGrp Delay(d),s/veh	13.9	14.3	13.8	13.0	0.0	13.2	75.7	38.9	38.9	57.5	41.8	41.9
LnGrp LOS	B	B	B	B		B	E	D	D	E	D	D
Approach Vol, veh/h		766			466			812			406	
Approach Delay, s/veh		14.0			13.1			48.6			45.1	
Approach LOS		B			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	19.4	27.3		67.4	10.8	35.9		67.4
Change Period (Y+Rc), s	4.0	5.0		4.0	4.0	5.0		4.0
Max Green Setting (Gmax), s	16.0	43.0		42.0	29.0	30.0		42.0
Max Q Clear Time (g_c+I1), s	15.4	11.1		12.1	7.2	18.4		10.3
Green Ext Time (p_c), s	0.0	7.7		12.3	0.1	5.6		12.6

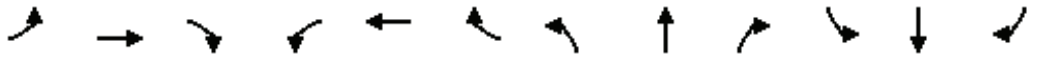
Intersection Summary	
HCM 2010 Ctrl Delay	30.4
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	210	116	113	146	41	39	293	51	92	996	7
Future Volume (veh/h)	4	210	116	113	146	41	39	293	51	92	996	7
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.96	1.00		0.98	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	4	212	99	114	147	33	39	296	39	93	1006	6
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	20	281	131	173	474	106	112	1381	180	153	1669	10
Arrive On Green	0.01	0.24	0.24	0.10	0.33	0.33	0.06	0.44	0.44	0.06	0.31	0.31
Sat Flow, veh/h	1757	1166	544	1757	1446	325	1757	3109	405	1757	3571	21
Grp Volume(v), veh/h	4	0	311	114	0	180	39	165	170	93	494	518
Grp Sat Flow(s),veh/h/ln	1757	0	1710	1757	0	1770	1757	1752	1762	1757	1752	1840
Q Serve(g_s), s	0.2	0.0	18.2	6.8	0.0	8.2	2.3	6.3	6.4	5.6	25.8	25.8
Cycle Q Clear(g_c), s	0.2	0.0	18.2	6.8	0.0	8.2	2.3	6.3	6.4	5.6	25.8	25.8
Prop In Lane	1.00		0.32	1.00		0.18	1.00		0.23	1.00		0.01
Lane Grp Cap(c), veh/h	20	0	412	173	0	580	112	778	782	153	819	860
V/C Ratio(X)	0.20	0.00	0.76	0.66	0.00	0.31	0.35	0.21	0.22	0.61	0.60	0.60
Avail Cap(c_a), veh/h	195	0	412	195	0	580	195	778	782	195	819	860
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.75	0.75	0.75
Uniform Delay (d), s/veh	52.9	0.0	38.1	46.9	0.0	27.2	48.4	18.4	18.5	49.1	28.6	28.6
Incr Delay (d2), s/veh	1.8	0.0	12.2	4.6	0.0	1.4	0.7	0.6	0.6	1.1	2.5	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	10.0	3.5	0.0	4.2	1.1	3.2	3.2	2.8	13.1	13.7
LnGrp Delay(d),s/veh	54.6	0.0	50.2	51.5	0.0	28.6	49.1	19.0	19.1	50.2	31.1	31.0
LnGrp LOS	D		D	D		C	D	B	B	D	C	C
Approach Vol, veh/h		315			294			374			1105	
Approach Delay, s/veh		50.3			37.5			22.2			32.6	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.9	54.5	13.6	30.0	12.4	52.0	4.2	39.4
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	12.0	44.0	12.0	26.0	12.0	44.0	12.0	26.0
Max Q Clear Time (g_c+I1), s	4.3	27.8	8.8	20.2	7.6	8.4	2.2	10.2
Green Ext Time (p_c), s	0.0	10.2	0.0	1.1	0.0	16.1	0.0	1.8

Intersection Summary	
HCM 2010 Ctrl Delay	34.1
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	119	24	85	159	98	88	844	83	95	611	14
Future Volume (veh/h)	6	119	24	85	159	98	88	844	83	95	611	14
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.95	1.00		0.96	1.00		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	6	121	6	87	162	92	90	861	72	97	623	13
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	30	431	21	160	349	198	147	1507	126	148	1623	34
Arrive On Green	0.02	0.25	0.25	0.09	0.32	0.32	0.08	0.46	0.46	0.17	0.92	0.92
Sat Flow, veh/h	1774	1753	87	1774	1093	621	1774	3294	275	1774	3539	74
Grp Volume(v), veh/h	6	0	127	87	0	254	90	463	470	97	311	325
Grp Sat Flow(s),veh/h/ln	1774	0	1840	1774	0	1714	1774	1770	1800	1774	1770	1843
Q Serve(g_s), s	0.4	0.0	6.4	5.3	0.0	13.5	5.6	21.9	21.9	5.8	2.6	2.6
Cycle Q Clear(g_c), s	0.4	0.0	6.4	5.3	0.0	13.5	5.6	21.9	21.9	5.8	2.6	2.6
Prop In Lane	1.00		0.05	1.00		0.36	1.00		0.15	1.00		0.04
Lane Grp Cap(c), veh/h	30	0	452	160	0	547	147	810	824	148	812	845
V/C Ratio(X)	0.20	0.00	0.28	0.54	0.00	0.46	0.61	0.57	0.57	0.65	0.38	0.38
Avail Cap(c_a), veh/h	187	0	452	187	0	547	171	810	824	171	812	845
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.92	0.92	0.92
Uniform Delay (d), s/veh	55.3	0.0	34.8	49.6	0.0	31.0	50.5	22.7	22.7	45.9	2.7	2.7
Incr Delay (d2), s/veh	1.2	0.0	1.5	1.1	0.0	2.8	2.5	2.9	2.9	4.2	1.3	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	3.4	2.7	0.0	6.8	2.9	11.3	11.5	3.0	1.3	1.4
LnGrp Delay(d),s/veh	56.5	0.0	36.4	50.7	0.0	33.8	53.0	25.6	25.6	50.1	3.9	3.9
LnGrp LOS	E		D	D		C	D	C	C	D	A	A
Approach Vol, veh/h		133			341			1023			733	
Approach Delay, s/veh		37.3			38.1			28.0			10.0	
Approach LOS		D			D			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	56.3	13.3	32.0	12.5	56.2	4.9	40.4
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	11.0	49.0	12.0	28.0	11.0	49.0	12.0	28.0
Max Q Clear Time (g_c+I1), s	7.6	4.6	7.3	8.4	7.8	23.9	2.4	15.5
Green Ext Time (p_c), s	0.0	21.3	0.0	1.4	0.0	15.5	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	24.2
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	485	129	91	461	0	0	0	0	170	780	128
Future Volume (veh/h)	0	485	129	91	461	0	0	0	0	170	780	128
Number	7	4	14	3	8	18				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	0.99		1.00				1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1881	1900	1881	1881	0				1900	1881	1900
Adj Flow Rate, veh/h	0	495	104	93	470	0				173	796	117
Adj No. of Lanes	0	2	0	1	2	0				0	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	1	1	1	1	0				0	1	0
Cap, veh/h	0	1144	239	387	1404	0				226	1090	168
Arrive On Green	0.00	0.39	0.39	0.39	0.39	0.00				0.41	0.41	0.41
Sat Flow, veh/h	0	3006	607	815	3668	0				555	2677	412
Grp Volume(v), veh/h	0	302	297	93	470	0				578	0	508
Grp Sat Flow(s),veh/h/ln	0	1787	1732	815	1787	0				1853	0	1791
Q Serve(g_s), s	0.0	5.3	5.3	4.0	3.9	0.0				11.4	0.0	10.0
Cycle Q Clear(g_c), s	0.0	5.3	5.3	9.3	3.9	0.0				11.4	0.0	10.0
Prop In Lane	0.00		0.35	1.00		0.00				0.30		0.23
Lane Grp Cap(c), veh/h	0	702	681	387	1404	0				755	0	729
V/C Ratio(X)	0.00	0.43	0.44	0.24	0.33	0.00				0.77	0.00	0.70
Avail Cap(c_a), veh/h	0	1450	1406	728	2901	0				916	0	885
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	9.4	9.5	12.9	9.0	0.0				10.9	0.0	10.4
Incr Delay (d2), s/veh	0.0	0.2	0.2	0.1	0.1	0.0				2.4	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.6	2.6	0.9	1.9	0.0				6.3	0.0	5.0
LnGrp Delay(d),s/veh	0.0	9.6	9.6	13.0	9.1	0.0				13.3	0.0	11.7
LnGrp LOS		A	A	B	A					B		B
Approach Vol, veh/h		599			563						1086	
Approach Delay, s/veh		9.6			9.7						12.5	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		21.8		20.7				20.7
Change Period (Y+Rc), s		4.5		4.0				4.0
Max Green Setting (Gmax), s		21.0		34.5				34.5
Max Q Clear Time (g_c+I1), s		13.4		7.3				11.3
Green Ext Time (p_c), s		3.2		5.6				5.4

Intersection Summary	
HCM 2010 Ctrl Delay	11.0
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	672	102	90	425	0	0	0	0	129	563	97
Future Volume (veh/h)	0	672	102	90	425	0	0	0	0	129	563	97
Number	7	4	14	3	8	18				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	0.99		1.00				1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1881	1900	1881	1881	0				1900	1881	1900
Adj Flow Rate, veh/h	0	693	83	93	438	0				133	580	82
Adj No. of Lanes	0	2	0	1	2	0				0	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	1	1	1	1	0				0	1	0
Cap, veh/h	0	1469	176	394	1643	0				192	880	130
Arrive On Green	0.00	0.46	0.46	0.46	0.46	0.00				0.33	0.33	0.33
Sat Flow, veh/h	0	3290	382	695	3668	0				584	2673	395
Grp Volume(v), veh/h	0	387	389	93	438	0				422	0	373
Grp Sat Flow(s),veh/h/ln	0	1787	1791	695	1787	0				1852	0	1801
Q Serve(g_s), s	0.0	6.0	6.0	4.3	3.0	0.0				8.0	0.0	7.1
Cycle Q Clear(g_c), s	0.0	6.0	6.0	10.3	3.0	0.0				8.0	0.0	7.1
Prop In Lane	0.00		0.21	1.00		0.00				0.32		0.22
Lane Grp Cap(c), veh/h	0	822	823	394	1643	0				609	0	593
V/C Ratio(X)	0.00	0.47	0.47	0.24	0.27	0.00				0.69	0.00	0.63
Avail Cap(c_a), veh/h	0	1532	1535	670	3063	0				966	0	940
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	7.5	7.5	11.1	6.7	0.0				11.7	0.0	11.4
Incr Delay (d2), s/veh	0.0	0.2	0.2	0.1	0.0	0.0				0.5	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.9	3.0	0.8	1.5	0.0				4.1	0.0	3.5
LnGrp Delay(d),s/veh	0.0	7.7	7.7	11.2	6.7	0.0				12.3	0.0	11.8
LnGrp LOS		A	A	B	A					B		B
Approach Vol, veh/h		776			531						795	
Approach Delay, s/veh		7.7			7.5						12.1	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		17.7		22.5				22.5
Change Period (Y+Rc), s		4.5		4.0				4.0
Max Green Setting (Gmax), s		21.0		34.5				34.5
Max Q Clear Time (g_c+I1), s		10.0		8.0				12.3
Green Ext Time (p_c), s		2.8		6.5				6.2

Intersection Summary	
HCM 2010 Ctrl Delay	9.3
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	516	0	0	444	73	95	604	63	0	0	0
Future Volume (veh/h)	124	516	0	0	444	73	95	604	63	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.95	1.00		0.96			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1900	1863	1900			
Adj Flow Rate, veh/h	131	543	0	0	467	59	100	636	51			
Adj No. of Lanes	1	2	0	0	2	0	0	3	0			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	247	1731	0	0	795	100	201	1368	112			
Arrive On Green	0.14	0.49	0.00	0.00	0.25	0.25	0.32	0.32	0.32			
Sat Flow, veh/h	1774	3632	0	0	3237	395	635	4318	354			
Grp Volume(v), veh/h	131	543	0	0	262	264	288	242	257			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1769	1831	1695	1781			
Q Serve(g_s), s	2.5	3.3	0.0	0.0	4.7	4.7	4.6	4.1	4.1			
Cycle Q Clear(g_c), s	2.5	3.3	0.0	0.0	4.7	4.7	4.6	4.1	4.1			
Prop In Lane	1.00		0.00	0.00		0.22	0.35		0.20			
Lane Grp Cap(c), veh/h	247	1731	0	0	448	448	580	537	564			
V/C Ratio(X)	0.53	0.31	0.00	0.00	0.58	0.59	0.50	0.45	0.46			
Avail Cap(c_a), veh/h	984	2012	0	0	1006	1006	1269	1175	1235			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	14.4	5.6	0.0	0.0	11.8	11.8	10.0	9.8	9.8			
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.0	0.5	0.5	0.2	0.2	0.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.2	1.6	0.0	0.0	2.3	2.3	2.4	1.9	2.0			
LnGrp Delay(d),s/veh	15.1	5.6	0.0	0.0	12.3	12.3	10.2	10.0	10.1			
LnGrp LOS	B	A			B	B	B	B	B			
Approach Vol, veh/h		674			526			787				
Approach Delay, s/veh		7.4			12.3			10.1				
Approach LOS		A			B			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		14.9	8.5	12.6				21.1
Change Period (Y+Rc), s		3.5	3.5	3.5				3.5
Max Green Setting (Gmax), s		25.0	20.0	20.5				20.5
Max Q Clear Time (g_c+I1), s		6.6	4.5	6.7				5.3
Green Ext Time (p_c), s		3.3	2.4	1.8				2.4

Intersection Summary	
HCM 2010 Ctrl Delay	9.8
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	209	596	0	0	344	130	168	1340	84	0	0	0
Future Volume (veh/h)	209	596	0	0	344	130	168	1340	84	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.95	1.00		0.97			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1881	1881	0	0	1881	1900	1900	1881	1900			
Adj Flow Rate, veh/h	213	608	0	0	351	76	171	1367	79			
Adj No. of Lanes	1	2	0	0	2	0	0	3	0			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	1	1	0	0	1	1	0	1	0			
Cap, veh/h	290	1548	0	0	579	123	227	1937	115			
Arrive On Green	0.16	0.43	0.00	0.00	0.20	0.20	0.42	0.42	0.42			
Sat Flow, veh/h	1792	3668	0	0	2995	619	536	4580	272			
Grp Volume(v), veh/h	213	608	0	0	214	213	591	497	529			
Grp Sat Flow(s),veh/h/ln	1792	1787	0	0	1787	1733	1854	1712	1822			
Q Serve(g_s), s	5.5	5.7	0.0	0.0	5.3	5.5	13.1	11.5	11.5			
Cycle Q Clear(g_c), s	5.5	5.7	0.0	0.0	5.3	5.5	13.1	11.5	11.5			
Prop In Lane	1.00		0.00	0.00		0.36	0.29		0.15			
Lane Grp Cap(c), veh/h	290	1548	0	0	357	346	784	724	771			
V/C Ratio(X)	0.74	0.39	0.00	0.00	0.60	0.62	0.75	0.69	0.69			
Avail Cap(c_a), veh/h	736	1548	0	0	753	730	953	879	936			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	19.4	9.4	0.0	0.0	17.7	17.8	11.9	11.4	11.4			
Incr Delay (d2), s/veh	1.4	0.1	0.0	0.0	0.6	0.7	2.1	1.1	1.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	2.8	2.8	0.0	0.0	2.7	2.7	7.0	5.6	5.9			
LnGrp Delay(d),s/veh	20.8	9.5	0.0	0.0	18.3	18.4	14.0	12.5	12.4			
LnGrp LOS	C	A			B	B	B	B	B			
Approach Vol, veh/h		821			427			1617				
Approach Delay, s/veh		12.4			18.4			13.0				
Approach LOS		B			B			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		24.1	11.4	13.2				24.6
Change Period (Y+Rc), s		3.5	3.5	3.5				3.5
Max Green Setting (Gmax), s		25.0	20.0	20.5				20.5
Max Q Clear Time (g_c+I1), s		15.1	7.5	7.5				7.7
Green Ext Time (p_c), s		5.4	0.9	1.4				2.6

Intersection Summary	
HCM 2010 Ctrl Delay	13.6
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	217	54	82	191	63	189	287	143	82	490	16
Future Volume (veh/h)	37	217	54	82	191	63	189	287	143	82	490	16
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.96	1.00		0.95	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1900	1845	1900
Adj Flow Rate, veh/h	40	233	10	88	205	58	203	309	80	88	527	16
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	0	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	67	397	316	115	332	94	436	458	369	131	828	26
Arrive On Green	0.04	0.22	0.22	0.07	0.24	0.24	0.25	0.25	0.25	0.27	0.27	0.27
Sat Flow, veh/h	1757	1845	1467	1757	1369	387	1757	1845	1486	485	3060	97
Grp Volume(v), veh/h	40	233	10	88	0	263	203	309	80	330	0	301
Grp Sat Flow(s),veh/h/ln	1757	1845	1467	1757	0	1756	1757	1845	1486	1820	0	1822
Q Serve(g_s), s	1.6	8.3	0.4	3.6	0.0	9.8	7.2	11.1	3.1	11.8	0.0	10.6
Cycle Q Clear(g_c), s	1.6	8.3	0.4	3.6	0.0	9.8	7.2	11.1	3.1	11.8	0.0	10.6
Prop In Lane	1.00		1.00	1.00		0.22	1.00		1.00	0.27		0.05
Lane Grp Cap(c), veh/h	67	397	316	115	0	426	436	458	369	492	0	493
V/C Ratio(X)	0.60	0.59	0.03	0.76	0.00	0.62	0.47	0.68	0.22	0.67	0.00	0.61
Avail Cap(c_a), veh/h	360	756	601	360	0	719	720	756	609	746	0	746
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.7	25.8	22.7	33.7	0.0	24.7	23.4	24.9	21.9	23.8	0.0	23.3
Incr Delay (d2), s/veh	9.9	1.7	0.0	11.9	0.0	1.8	0.9	2.1	0.4	1.9	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	4.4	0.2	2.1	0.0	5.0	3.6	5.8	1.3	6.2	0.0	5.5
LnGrp Delay(d),s/veh	44.6	27.5	22.8	45.6	0.0	26.5	24.3	27.0	22.2	25.7	0.0	24.8
LnGrp LOS	D	C	C	D		C	C	C	C	C		C
Approach Vol, veh/h		283			351			592			631	
Approach Delay, s/veh		29.7			31.2			25.4			25.3	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.4	19.9		21.7	6.4	21.9		23.3
Change Period (Y+Rc), s	3.6	4.1		3.5	3.6	4.1		3.5
Max Green Setting (Gmax), s	15.0	30.0		30.0	15.0	30.0		30.0
Max Q Clear Time (g_c+I1), s	5.6	10.3		13.1	3.6	11.8		13.8
Green Ext Time (p_c), s	0.2	3.7		3.2	0.1	3.6		4.4

Intersection Summary	
HCM 2010 Ctrl Delay	27.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	197	51	78	264	100	82	328	118	112	267	16
Future Volume (veh/h)	25	197	51	78	264	100	82	328	118	112	267	16
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.97	1.00		0.95	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	26	203	13	80	272	93	85	338	65	115	275	14
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	0	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	51	473	376	105	374	128	476	500	403	187	477	25
Arrive On Green	0.03	0.25	0.25	0.06	0.28	0.28	0.27	0.27	0.27	0.19	0.19	0.19
Sat Flow, veh/h	1774	1863	1482	1774	1316	450	1774	1863	1502	990	2525	133
Grp Volume(v), veh/h	26	203	13	80	0	365	85	338	65	211	0	193
Grp Sat Flow(s),veh/h/ln	1774	1863	1482	1774	0	1766	1774	1863	1502	1813	0	1835
Q Serve(g_s), s	0.9	5.8	0.4	2.8	0.0	12.0	2.4	10.4	2.1	6.8	0.0	6.1
Cycle Q Clear(g_c), s	0.9	5.8	0.4	2.8	0.0	12.0	2.4	10.4	2.1	6.8	0.0	6.1
Prop In Lane	1.00		1.00	1.00		0.25	1.00		1.00	0.55		0.07
Lane Grp Cap(c), veh/h	51	473	376	105	0	502	476	500	403	342	0	346
V/C Ratio(X)	0.51	0.43	0.03	0.76	0.00	0.73	0.18	0.68	0.16	0.62	0.00	0.56
Avail Cap(c_a), veh/h	415	872	694	415	0	827	831	872	703	849	0	859
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.7	20.0	18.0	29.7	0.0	20.7	18.0	20.9	17.9	23.9	0.0	23.6
Incr Delay (d2), s/veh	9.0	0.7	0.0	12.7	0.0	2.4	0.2	1.9	0.2	2.2	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	3.1	0.2	1.8	0.0	6.1	1.2	5.6	0.9	3.6	0.0	3.3
LnGrp Delay(d),s/veh	39.7	20.8	18.0	42.4	0.0	23.1	18.2	22.9	18.1	26.0	0.0	25.3
LnGrp LOS	D	C	B	D		C	B	C	B	C		C
Approach Vol, veh/h		242			445			488			404	
Approach Delay, s/veh		22.6			26.6			21.4			25.7	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.4	20.4		20.7	5.5	22.3		15.6
Change Period (Y+Rc), s	3.6	4.1		3.5	3.6	4.1		3.5
Max Green Setting (Gmax), s	15.0	30.0		30.0	15.0	30.0		30.0
Max Q Clear Time (g_c+I1), s	4.8	7.8		12.4	2.9	14.0		8.8
Green Ext Time (p_c), s	0.1	4.6		3.0	0.0	4.0		2.9

Intersection Summary	
HCM 2010 Ctrl Delay	24.2
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	625	12	55	690	98	1	69	39	198	199	82
Future Volume (vph)	70	625	12	55	690	98	1	69	39	198	199	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00	0.98		1.00	0.99
Flpb, ped/bikes	0.98	1.00		0.98	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.98			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		0.98	1.00
Satd. Flow (prot)	1721	3490		1719	3401			1843	1536		1794	1547
Flt Permitted	0.28	1.00		0.35	1.00			1.00	1.00		0.80	1.00
Satd. Flow (perm)	502	3490		629	3401			1839	1536		1479	1547
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	74	665	13	59	734	104	1	73	41	211	212	87
RTOR Reduction (vph)	0	1	0	0	8	0	0	0	27	0	0	31
Lane Group Flow (vph)	74	677	0	59	830	0	0	74	14	0	423	56
Confl. Peds. (#/hr)	36		28	28		36	1		8	8		1
Confl. Bikes (#/hr)			3						3			1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	60.1	60.1		60.1	60.1			36.9	36.9		36.9	36.9
Effective Green, g (s)	60.1	60.1		60.1	60.1			36.9	36.9		36.9	36.9
Actuated g/C Ratio	0.57	0.57		0.57	0.57			0.35	0.35		0.35	0.35
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	2.0		2.0	2.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	287	1997		360	1946			646	539		519	543
v/s Ratio Prot		0.19			c0.24							
v/s Ratio Perm	0.15			0.09				0.04	0.01		c0.29	0.04
v/c Ratio	0.26	0.34		0.16	0.43			0.11	0.03		0.82	0.10
Uniform Delay, d1	11.3	11.9		10.6	12.7			23.0	22.3		30.9	22.9
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	2.2	0.5		1.0	0.7			0.1	0.0		9.5	0.1
Delay (s)	13.4	12.4		11.6	13.4			23.1	22.3		40.5	23.0
Level of Service	B	B		B	B			C	C		D	C
Approach Delay (s)		12.5			13.3			22.8			37.5	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	170	635	8	37	541	107	10	310	48	85	89	83
Future Volume (vph)	170	635	8	37	541	107	10	310	48	85	89	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00	0.98		1.00	0.98
Flpb, ped/bikes	0.99	1.00		0.99	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.98			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		0.98	1.00
Satd. Flow (prot)	1744	3531		1756	3416			1860	1549		1814	1558
Flt Permitted	0.37	1.00		0.37	1.00			0.99	1.00		0.36	1.00
Satd. Flow (perm)	680	3531		690	3416			1845	1549		677	1558
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	177	661	8	39	564	111	10	323	50	89	93	86
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	27	0	0	65
Lane Group Flow (vph)	177	669	0	39	667	0	0	333	23	0	182	21
Confl. Peds. (#/hr)	19		10	10		19	2		8	8		2
Confl. Bikes (#/hr)			5			8						2
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	74.8	74.8		74.8	74.8			27.2	27.2		27.2	27.2
Effective Green, g (s)	74.8	74.8		74.8	74.8			27.2	27.2		27.2	27.2
Actuated g/C Ratio	0.68	0.68		0.68	0.68			0.25	0.25		0.25	0.25
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	2.0		2.0	2.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	462	2401		469	2322			456	383		167	385
v/s Ratio Prot		0.19			0.20							
v/s Ratio Perm	c0.26			0.06				0.18	0.01		c0.27	0.01
v/c Ratio	0.38	0.28		0.08	0.29			0.73	0.06		1.09	0.06
Uniform Delay, d1	7.6	6.9		6.0	7.0			38.0	31.6		41.4	31.6
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	2.4	0.3		0.3	0.3			5.9	0.1		95.7	0.1
Delay (s)	10.0	7.2		6.3	7.3			44.0	31.7		137.1	31.7
Level of Service	B	A		A	A			D	C		F	C
Approach Delay (s)		7.8			7.3			42.4			103.2	
Approach LOS		A			A			D			F	

Intersection Summary			
HCM 2000 Control Delay	25.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	12.7
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	2	96	65	0	231	191	68	0	60	8	175
Future Vol, veh/h	0	2	96	65	0	231	191	68	0	60	8	175
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6
Mvmt Flow	0	2	110	75	0	266	220	78	0	69	9	201
Number of Lanes	0	1	2	0	0	1	2	0	0	0	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	3	3	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	3
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	3
HCM Control Delay	11.2	13.6	12.2
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	88%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	12%	0%	0%	100%	33%	0%	100%	48%	0%	93%
Vol Right, %	0%	100%	0%	0%	67%	0%	0%	52%	0%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	68	175	2	64	97	231	127	132	30	28
LT Vol	60	0	2	0	0	231	0	0	30	0
Through Vol	8	0	0	64	32	0	127	64	0	26
RT Vol	0	175	0	0	65	0	0	68	0	2
Lane Flow Rate	78	201	2	74	111	266	146	151	34	32
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.161	0.35	0.005	0.146	0.207	0.506	0.258	0.252	0.077	0.067
Departure Headway (Hd)	7.409	6.266	7.652	7.144	6.668	6.861	6.355	5.988	8.011	7.458
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	482	571	465	499	535	523	563	596	444	477
Service Time	5.186	4.043	5.439	4.93	4.453	4.626	4.12	3.753	5.809	5.255
HCM Lane V/C Ratio	0.162	0.352	0.004	0.148	0.207	0.509	0.259	0.253	0.077	0.067
HCM Control Delay	11.6	12.4	10.5	11.2	11.2	16.5	11.3	10.8	11.5	10.8
HCM Lane LOS	B	B	B	B	B	C	B	B	B	B
HCM 95th-tile Q	0.6	1.6	0	0.5	0.8	2.8	1	1	0.2	0.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	30	26	2
Future Vol, veh/h	0	30	26	2
Peak Hour Factor	0.87	0.87	0.87	0.87
Heavy Vehicles, %	6	6	6	6
Mvmt Flow	0	34	30	2
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	3
Conflicting Approach Right	EB
Conflicting Lanes Right	3
HCM Control Delay	11.2
HCM LOS	B

Intersection	
Intersection Delay, s/veh	25.9
Intersection LOS	D

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	5	468	185	0	26	457	102	0	122	11	227
Future Vol, veh/h	0	5	468	185	0	26	457	102	0	122	11	227
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	5	473	187	0	26	462	103	0	123	11	229
Number of Lanes	0	1	2	0	0	1	2	0	0	0	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	3	3	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	3
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	3
HCM Control Delay	31.1	25.9	18.9
HCM LOS	D	D	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBLn1	SBLn2
Vol Left, %	92%	0%	100%	0%	0%	100%	0%	0%	100%	0%
Vol Thru, %	8%	0%	0%	100%	46%	0%	100%	60%	0%	84%
Vol Right, %	0%	100%	0%	0%	54%	0%	0%	40%	0%	16%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	133	227	5	312	341	26	305	254	47	38
LT Vol	122	0	5	0	0	26	0	0	47	0
Through Vol	11	0	0	312	156	0	305	152	0	32
RT Vol	0	227	0	0	185	0	0	102	0	6
Lane Flow Rate	134	229	5	315	344	26	308	257	47	38
Geometry Grp	8	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.353	0.527	0.012	0.73	0.761	0.066	0.724	0.584	0.139	0.106
Departure Headway (Hd)	9.449	8.274	8.856	8.342	7.952	8.983	8.469	8.18	10.574	9.948
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	382	436	405	435	455	399	428	442	339	360
Service Time	7.192	6.017	6.597	6.082	5.692	6.723	6.208	5.919	8.334	7.708
HCM Lane V/C Ratio	0.351	0.525	0.012	0.724	0.756	0.065	0.72	0.581	0.139	0.106
HCM Control Delay	17.3	19.9	11.7	30.6	31.9	12.4	30.5	21.8	15	13.9
HCM Lane LOS	C	C	B	D	D	B	D	C	B	B
HCM 95th-tile Q	1.6	3	0	5.8	6.5	0.2	5.7	3.6	0.5	0.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	47	32	6
Future Vol, veh/h	0	47	32	6
Peak Hour Factor	0.99	0.99	0.99	0.99
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	47	32	6
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	3
Conflicting Approach Right	EB
Conflicting Lanes Right	3
HCM Control Delay	14.5
HCM LOS	B

Intersection	
Intersection Delay, s/veh	14.7
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	31	270	0	0	0	384	222	0	106	0	65
Future Vol, veh/h	0	31	270	0	0	0	384	222	0	106	0	65
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	0	36	314	0	0	0	447	258	0	123	0	76
Number of Lanes	0	1	2	0	0	0	2	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	3	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	3
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	10.9	17.2	12.4
HCM LOS	B	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2
Vol Left, %	100%	0%	100%	0%	0%	0%	0%
Vol Thru, %	0%	0%	0%	100%	100%	100%	37%
Vol Right, %	0%	100%	0%	0%	0%	0%	63%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	106	65	31	135	135	256	350
LT Vol	106	0	31	0	0	0	0
Through Vol	0	0	0	135	135	256	128
RT Vol	0	65	0	0	0	0	222
Lane Flow Rate	123	76	36	157	157	298	407
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	0.269	0.14	0.074	0.3	0.221	0.513	0.65
Departure Headway (Hd)	7.859	6.647	7.385	6.878	5.066	6.203	5.754
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	456	537	483	521	703	580	627
Service Time	5.633	4.42	5.154	4.647	2.834	3.959	3.509
HCM Lane V/C Ratio	0.27	0.142	0.075	0.301	0.223	0.514	0.649
HCM Control Delay	13.5	10.5	10.7	12.6	9.3	15.4	18.6
HCM Lane LOS	B	B	B	B	A	C	C
HCM 95th-tile Q	1.1	0.5	0.2	1.3	0.8	2.9	4.7

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	0	0	0
Future Vol, veh/h	0	0	0	0
Peak Hour Factor	0.86	0.86	0.86	0.86
Heavy Vehicles, %	5	5	5	5
Mvmt Flow	0	0	0	0
Number of Lanes	0	0	0	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	

Intersection	
Intersection Delay, s/veh	30.7
Intersection LOS	D

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	195	547	0	0	0	342	312	0	243	1	74
Future Vol, veh/h	0	195	547	0	0	0	342	312	0	243	1	74
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	205	576	0	0	0	360	328	0	256	1	78
Number of Lanes	0	1	2	0	0	0	2	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	2	3	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	3
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	2
HCM Control Delay	19.6	45.5	26.3
HCM LOS	C	E	D

Lane	NBLn1	NBLn2	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2
Vol Left, %	100%	0%	100%	0%	0%	0%	0%
Vol Thru, %	0%	1%	0%	100%	100%	100%	27%
Vol Right, %	0%	99%	0%	0%	0%	0%	73%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	243	75	195	274	274	228	426
LT Vol	243	0	195	0	0	0	0
Through Vol	0	1	0	274	274	228	114
RT Vol	0	74	0	0	0	0	312
Lane Flow Rate	256	79	205	288	288	240	448
Geometry Grp	8	8	8	8	8	8	8
Degree of Util (X)	0.68	0.183	0.486	0.64	0.498	0.547	0.957
Departure Headway (Hd)	9.572	8.352	8.637	8.123	6.339	8.212	7.683
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	379	431	421	446	573	442	475
Service Time	7.298	6.077	6.337	5.823	4.039	5.912	5.383
HCM Lane V/C Ratio	0.675	0.183	0.487	0.646	0.503	0.543	0.943
HCM Control Delay	30.4	12.9	19.2	24.2	15.2	20.4	59
HCM Lane LOS	D	B	C	C	C	C	F
HCM 95th-tile Q	4.8	0.7	2.6	4.4	2.8	3.2	11.8

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	0	0	0
Future Vol, veh/h	0	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	0	0	0
Number of Lanes	0	0	0	0

Approach	
Opposing Approach	
Opposing Lanes	
Conflicting Approach Left	
Conflicting Lanes Left	
Conflicting Approach Right	
Conflicting Lanes Right	
HCM Control Delay	
HCM LOS	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	306	84	207	351	31	11	11	34	66	167	111
Future Volume (vph)	21	306	84	207	351	31	11	11	34	66	167	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0		3.0	4.0			2.0			2.0	2.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00			1.00			1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.97		1.00	0.99			0.92			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	1.00
Satd. Flow (prot)	1687	3244		1687	3327			1613			1751	1488
Flt Permitted	0.95	1.00		0.95	1.00			0.95			0.91	1.00
Satd. Flow (perm)	1687	3244		1687	3327			1540			1611	1488
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	22	319	88	216	366	32	11	11	35	69	174	116
RTOR Reduction (vph)	0	25	0	0	6	0	0	0	0	0	0	90
Lane Group Flow (vph)	22	382	0	216	392	0	0	57	0	0	243	26
Confl. Peds. (#/hr)			3			5						2
Heavy Vehicles (%)	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1 3	3 6			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	2.0	23.8		37.1	58.9			20.1			20.1	20.1
Effective Green, g (s)	2.0	23.8		33.1	58.9			20.1			20.1	20.1
Actuated g/C Ratio	0.02	0.26		0.37	0.65			0.22			0.22	0.22
Clearance Time (s)	3.0	4.0						2.0			2.0	2.0
Vehicle Extension (s)	3.0	3.0						3.0			3.0	3.0
Lane Grp Cap (vph)	37	857		620	2177			343			359	332
v/s Ratio Prot	0.01	c0.12		c0.13	0.12							
v/s Ratio Perm								0.04			c0.15	0.02
v/c Ratio	0.59	0.45		0.35	0.18			0.17			0.68	0.08
Uniform Delay, d1	43.6	27.6		20.6	6.1			28.2			32.0	27.6
Progression Factor	1.00	1.00		0.55	0.05			1.00			1.00	1.00
Incremental Delay, d2	23.1	1.7		0.3	0.0			0.2			5.0	0.1
Delay (s)	66.7	29.3		11.7	0.3			28.4			37.0	27.7
Level of Service	E	C		B	A			C			D	C
Approach Delay (s)		31.2			4.3			28.4			34.0	
Approach LOS		C			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	544	40	46	549	83	34	41	59	49	17	23
Future Volume (vph)	37	544	40	46	549	83	34	41	59	49	17	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0		3.0	2.5			3.5			3.5	3.5
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.99		1.00	0.98			0.94			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.96	1.00
Satd. Flow (prot)	1770	3495		1770	3460			1731			1796	1558
Flt Permitted	0.95	1.00		0.95	1.00			0.90			0.43	1.00
Satd. Flow (perm)	1770	3495		1770	3460			1575			808	1558
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	39	567	42	48	572	86	35	43	61	51	18	24
RTOR Reduction (vph)	0	5	0	0	12	0	0	0	0	0	0	22
Lane Group Flow (vph)	39	604	0	48	646	0	0	139	0	0	69	2
Confl. Peds. (#/hr)			4			4						3
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1 3	3 6			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	3.0	43.7		36.3	77.0			9.5			9.5	9.5
Effective Green, g (s)	3.0	43.7		33.8	77.0			9.5			9.5	9.5
Actuated g/C Ratio	0.03	0.44		0.34	0.77			0.10			0.10	0.10
Clearance Time (s)	3.0	4.0						3.5			3.5	3.5
Vehicle Extension (s)	3.0	3.0						3.0			3.0	3.0
Lane Grp Cap (vph)	53	1527		598	2664			149			76	148
v/s Ratio Prot	c0.02	c0.17		0.03	c0.19							
v/s Ratio Perm								c0.09			0.09	0.00
v/c Ratio	0.74	0.40		0.08	0.24			0.93			0.91	0.02
Uniform Delay, d1	48.1	19.2		22.5	3.3			44.9			44.8	41.0
Progression Factor	1.00	1.00		0.57	0.18			1.00			1.00	1.00
Incremental Delay, d2	41.0	0.8		0.1	0.0			53.7			71.8	0.0
Delay (s)	89.1	19.9		12.8	0.6			98.6			116.6	41.1
Level of Service	F	B		B	A			F			F	D
Approach Delay (s)		24.1			1.5			98.6			97.1	
Approach LOS		C			A			F			F	

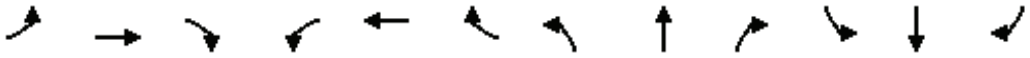
Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	46.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	426	0	0	512	155	42	1	253	0	0	0
Future Volume (vph)	118	426	0	0	512	155	42	1	253	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Lane Util. Factor	1.00	0.95			*1.00		1.00	0.95	0.95			
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Frt	1.00	1.00			0.97		1.00	0.85	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	1719	3438			3473		1719	1463	1461			
Flt Permitted	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	1719	3438			3473		1719	1463	1461			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	123	444	0	0	533	161	44	1	264	0	0	0
RTOR Reduction (vph)	0	0	0	0	27	0	0	121	121	0	0	0
Lane Group Flow (vph)	123	444	0	0	667	0	44	12	11	0	0	0
Confl. Peds. (#/hr)			4	4		8						
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	11.7	74.7			60.0		7.8	7.8	7.8			
Effective Green, g (s)	11.7	74.7			60.0		7.8	7.8	7.8			
Actuated g/C Ratio	0.13	0.83			0.67		0.09	0.09	0.09			
Clearance Time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	223	2853			2315		148	126	126			
v/s Ratio Prot	c0.07	0.13			c0.19			0.01				
v/s Ratio Perm							c0.03		0.01			
v/c Ratio	0.55	0.16			0.29		0.30	0.10	0.09			
Uniform Delay, d1	36.7	1.5			6.2		38.5	37.9	37.8			
Progression Factor	0.60	0.45			1.00		1.00	1.00	1.00			
Incremental Delay, d2	2.9	0.1			0.3		1.1	0.3	0.3			
Delay (s)	25.0	0.8			6.5		39.7	38.2	38.1			
Level of Service	C	A			A		D	D	D			
Approach Delay (s)		6.0			6.5			38.4			0.0	
Approach LOS		A			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	12.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	214	680	0	0	587	226	157	52	506	0	0	0
Future Volume (vph)	214	680	0	0	587	226	157	52	506	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Lane Util. Factor	1.00	0.95			0.95		1.00	0.95	0.95			
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Frt	1.00	1.00			0.96		1.00	0.88	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	1770	3539			3364		1770	1553	1504			
Flt Permitted	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	1770	3539			3364		1770	1553	1504			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	223	708	0	0	611	235	164	54	527	0	0	0
RTOR Reduction (vph)	0	0	0	0	35	0	0	161	257	0	0	0
Lane Group Flow (vph)	223	708	0	0	811	0	164	135	29	0	0	0
Confl. Peds. (#/hr)	10		5	5		10						
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	17.7	82.5			61.8		10.0	10.0	10.0			
Effective Green, g (s)	17.7	82.5			61.8		10.0	10.0	10.0			
Actuated g/C Ratio	0.18	0.82			0.62		0.10	0.10	0.10			
Clearance Time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	313	2919			2078		177	155	150			
v/s Ratio Prot	c0.13	0.20			c0.24			0.09				
v/s Ratio Perm							c0.09		0.02			
v/c Ratio	0.71	0.24			0.39		0.93	0.87	0.19			
Uniform Delay, d1	38.8	1.9			9.6		44.6	44.4	41.3			
Progression Factor	0.72	1.36			1.00		1.00	1.00	1.00			
Incremental Delay, d2	7.2	0.2			0.6		46.5	37.6	0.6			
Delay (s)	35.0	2.8			10.2		91.1	81.9	41.9			
Level of Service	C	A			B		F	F	D			
Approach Delay (s)		10.5			10.2			68.6			0.0	
Approach LOS		B			B			E			A	

Intersection Summary			
HCM 2000 Control Delay	27.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	152	252	97	77	303	27	60	270	29	45	821	135
Future Volume (veh/h)	152	252	97	77	303	27	60	270	29	45	821	135
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.92	1.00		0.97	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1900	1845	1900	1845	1845	1900	1845	1845	1900
Adj Flow Rate, veh/h	162	268	41	82	322	23	64	287	24	48	873	132
Adj No. of Lanes	1	1	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	192	630	505	0	674	48	139	1588	132	124	1455	220
Arrive On Green	0.04	0.11	0.11	0.00	0.20	0.20	0.03	0.16	0.16	0.07	0.48	0.48
Sat Flow, veh/h	1757	1845	1480	0	3299	234	1757	3267	271	1757	3046	460
Grp Volume(v), veh/h	162	268	41	0	170	175	64	153	158	48	502	503
Grp Sat Flow(s),veh/h/ln	1757	1845	1480	0	1752	1780	1757	1752	1786	1757	1752	1754
Q Serve(g_s), s	9.9	14.6	2.7	0.0	9.2	9.4	3.9	8.1	8.3	2.8	22.7	22.7
Cycle Q Clear(g_c), s	9.9	14.6	2.7	0.0	9.2	9.4	3.9	8.1	8.3	2.8	22.7	22.7
Prop In Lane	1.00		1.00	0.00		0.13	1.00		0.15	1.00		0.26
Lane Grp Cap(c), veh/h	192	630	505	0	358	363	139	852	868	124	837	838
V/C Ratio(X)	0.84	0.43	0.08	0.00	0.47	0.48	0.46	0.18	0.18	0.39	0.60	0.60
Avail Cap(c_a), veh/h	195	630	505	0	422	428	195	852	868	195	837	838
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.90	0.90	0.00	1.00	1.00	0.98	0.98	0.98	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.1	38.0	32.8	0.0	37.9	37.9	50.3	26.7	26.8	47.9	20.6	20.6
Incr Delay (d2), s/veh	23.3	0.2	0.0	0.0	0.4	0.4	0.9	0.5	0.5	0.7	3.2	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	7.5	1.1	0.0	4.5	4.7	1.9	4.1	4.2	1.4	11.6	11.6
LnGrp Delay(d),s/veh	74.5	38.2	32.8	0.0	38.2	38.3	51.2	27.2	27.2	48.7	23.8	23.8
LnGrp LOS	E	D	C		D	D	D	C	C	D	C	C
Approach Vol, veh/h		471			345			375			1053	
Approach Delay, s/veh		50.2			38.3			31.3			24.9	
Approach LOS		D			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	56.5	0.0	40.9	11.5	55.6	14.8	26.1
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	12.0	44.0	12.0	26.0	12.0	44.0	12.0	26.0
Max Q Clear Time (g_c+I1), s	4.8	10.3	0.0	16.6	5.9	24.7	11.9	11.4
Green Ext Time (p_c), s	0.0	15.5	0.0	1.9	0.0	11.3	0.0	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	33.4
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	278	249	109	54	225	58	123	846	36	57	509	122
Future Volume (veh/h)	278	249	109	54	225	58	123	846	36	57	509	122
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.92	1.00		0.94	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	278	284	47	57	237	42	129	891	35	60	536	111
Adj No. of Lanes	1	1	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	187	620	499	0	598	103	154	1718	67	132	1408	290
Arrive On Green	0.03	0.11	0.11	0.00	0.20	0.20	0.17	0.99	0.99	0.07	0.48	0.48
Sat Flow, veh/h	1774	1863	1499	0	2972	514	1774	3462	136	1774	2908	599
Grp Volume(v), veh/h	278	284	47	0	139	140	129	455	471	60	325	322
Grp Sat Flow(s),veh/h/ln	1774	1863	1499	0	1770	1716	1774	1770	1829	1774	1770	1738
Q Serve(g_s), s	12.0	16.3	3.2	0.0	7.8	8.1	8.0	0.5	0.5	3.7	13.2	13.4
Cycle Q Clear(g_c), s	12.0	16.3	3.2	0.0	7.8	8.1	8.0	0.5	0.5	3.7	13.2	13.4
Prop In Lane	1.00		1.00	0.00		0.30	1.00		0.07	1.00		0.34
Lane Grp Cap(c), veh/h	187	620	499	0	356	345	154	878	907	132	857	842
V/C Ratio(X)	1.49	0.46	0.09	0.00	0.39	0.41	0.84	0.52	0.52	0.45	0.38	0.38
Avail Cap(c_a), veh/h	187	620	499	0	435	422	171	878	907	171	857	842
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.92	0.00	1.00	1.00	0.74	0.74	0.74	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.0	41.1	35.3	0.0	39.5	39.6	46.4	0.2	0.2	50.5	18.6	18.6
Incr Delay (d2), s/veh	244.2	0.2	0.0	0.0	0.3	0.3	19.6	1.6	1.6	0.9	1.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.6	8.5	1.3	0.0	3.8	3.9	4.8	0.5	0.5	1.8	6.7	6.7
LnGrp Delay(d),s/veh	299.2	41.3	35.3	0.0	39.7	39.9	66.0	1.8	1.8	51.4	19.9	19.9
LnGrp LOS	F	D	D		D	D	E	A	A	D	B	B
Approach Vol, veh/h		609			279			1055			707	
Approach Delay, s/veh		158.6			39.8			9.7			22.6	
Approach LOS		F			D			A			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.5	60.6	0.0	41.9	12.9	59.2	15.0	26.9
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	11.0	49.0	12.0	28.0	11.0	49.0	12.0	28.0
Max Q Clear Time (g_c+I1), s	5.7	2.5	0.0	18.3	10.0	15.4	14.0	10.1
Green Ext Time (p_c), s	0.0	21.9	0.0	1.8	0.0	18.6	0.0	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	50.5
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	132	19	33	130	27	7	123	31	120	136	189
Future Volume (vph)	196	132	19	33	130	27	7	123	31	120	136	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1787	3507		1770	3539	1583	1128	2182		1340	1404	1245
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1787	3507		1770	3539	1583	1128	2182		1340	1404	1245
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	228	153	22	38	151	31	8	143	36	140	158	220
RTOR Reduction (vph)	0	10	0	0	0	26	0	23	0	0	0	171
Lane Group Flow (vph)	228	165	0	38	151	5	8	156	0	126	172	49
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	60%	60%	60%	28%	28%	28%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases						2						8
Actuated Green, G (s)	14.5	22.4		3.9	11.8	11.8	11.5	11.5		15.9	15.9	15.9
Effective Green, g (s)	14.5	22.4		3.9	11.8	11.8	11.5	11.5		15.9	15.9	15.9
Actuated g/C Ratio	0.20	0.31		0.05	0.17	0.17	0.16	0.16		0.22	0.22	0.22
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Vehicle Extension (s)	2.0	4.0		2.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Grp Cap (vph)	363	1103		96	586	262	182	352		299	313	278
v/s Ratio Prot	c0.13	0.05		0.02	c0.04		0.01	c0.07		0.09	c0.12	
v/s Ratio Perm						0.00						0.04
v/c Ratio	0.63	0.15		0.40	0.26	0.02	0.04	0.44		0.42	0.55	0.18
Uniform Delay, d1	25.9	17.6		32.5	25.9	24.9	25.2	27.0		23.7	24.5	22.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.4	0.1		1.0	0.3	0.0	0.1	1.2		1.3	2.5	0.4
Delay (s)	28.3	17.6		33.5	26.2	24.9	25.3	28.2		25.0	26.9	22.8
Level of Service	C	B		C	C	C	C	C		C	C	C
Approach Delay (s)		23.7			27.3			28.1			24.7	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	25.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	71.2	Sum of lost time (s)	17.5
Intersection Capacity Utilization	40.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	183	107	9	29	120	91	16	179	34	67	80	127
Future Volume (vph)	183	107	9	29	120	91	16	179	34	67	80	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3498		1770	3539	1583	1530	2980		1618	1697	1503
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3498		1770	3539	1583	1530	2980		1618	1697	1503
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	201	118	10	32	132	100	18	197	37	74	88	140
RTOR Reduction (vph)	0	5	0	0	0	81	0	15	0	0	0	117
Lane Group Flow (vph)	201	123	0	32	132	19	18	219	0	67	95	23
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	18%	18%	18%	6%	6%	6%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases						2						8
Actuated Green, G (s)	12.5	21.9		2.4	11.8	11.8	10.9	10.9		10.1	10.1	10.1
Effective Green, g (s)	12.5	21.9		2.4	11.8	11.8	10.9	10.9		10.1	10.1	10.1
Actuated g/C Ratio	0.20	0.35		0.04	0.19	0.19	0.17	0.17		0.16	0.16	0.16
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Vehicle Extension (s)	2.0	4.0		2.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Grp Cap (vph)	352	1219		67	664	297	265	517		260	272	241
v/s Ratio Prot	c0.11	0.04		0.02	c0.04		0.01	c0.07		0.04	c0.06	
v/s Ratio Perm						0.01						0.01
v/c Ratio	0.57	0.10		0.48	0.20	0.06	0.07	0.42		0.26	0.35	0.09
Uniform Delay, d1	22.7	13.8		29.6	21.5	21.0	21.7	23.1		23.1	23.4	22.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.4	0.0		1.9	0.2	0.1	0.1	0.8		0.7	1.1	0.2
Delay (s)	24.1	13.9		31.5	21.7	21.1	21.9	23.9		23.8	24.5	22.7
Level of Service	C	B		C	C	C	C	C		C	C	C
Approach Delay (s)		20.1			22.7			23.8			23.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	62.8	Sum of lost time (s)	17.5
Intersection Capacity Utilization	37.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	346	60	240	314	0	0	0	0	198	21	275
Future Volume (vph)	0	346	60	240	314	0	0	0	0	198	21	275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			3.0						4.0	4.0
Lane Util. Factor		0.95			*1.00						1.00	1.00
Frpb, ped/bikes		0.99			1.00						1.00	1.00
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.98			1.00						1.00	0.85
Flt Protected		1.00			0.98						0.96	1.00
Satd. Flow (prot)		3311			5263						1715	1524
Flt Permitted		1.00			0.70						0.96	1.00
Satd. Flow (perm)		3311			3757						1715	1524
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	360	62	250	327	0	0	0	0	206	22	286
RTOR Reduction (vph)	0	14	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	409	0	0	577	0	0	0	0	0	228	286
Confl. Peds. (#/hr)			6			5						
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Turn Type		NA		Prot	NA					Split	NA	Perm
Protected Phases		2 4		1	1 6					3	3	
Permitted Phases												3
Actuated Green, G (s)		47.9			31.7						23.2	23.2
Effective Green, g (s)		47.9			31.7						23.2	23.2
Actuated g/C Ratio		0.53			0.35						0.26	0.26
Clearance Time (s)											4.0	4.0
Vehicle Extension (s)											3.0	3.0
Lane Grp Cap (vph)		1762			1488						442	392
v/s Ratio Prot		c0.12			c0.04						0.13	
v/s Ratio Perm					c0.09							c0.19
v/c Ratio		0.23			1.34dl						0.52	0.73
Uniform Delay, d1		11.2			21.9						28.6	30.5
Progression Factor		0.05			1.04						1.00	1.00
Incremental Delay, d2		0.1			0.2						1.0	6.7
Delay (s)		0.6			23.0						29.6	37.2
Level of Service		A			C						C	D
Approach Delay (s)		0.6			23.0			0.0			33.8	
Approach LOS		A			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	620	32	217	527	0	0	0	0	274	2	151
Future Volume (vph)	0	620	32	217	527	0	0	0	0	274	2	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			3.0						2.5	2.5
Lane Util. Factor		0.95			0.91						1.00	1.00
Frpb, ped/bikes		1.00			1.00						1.00	1.00
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.99			1.00						1.00	0.85
Flt Protected		1.00			0.99						0.95	1.00
Satd. Flow (prot)		3507			5012						1775	1583
Flt Permitted		1.00			0.66						0.95	1.00
Satd. Flow (perm)		3507			3379						1775	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	646	33	226	549	0	0	0	0	285	2	157
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	676	0	0	775	0	0	0	0	0	287	157
Confl. Peds. (#/hr)			6			8						
Turn Type		NA		Prot	NA					Split	NA	Perm
Protected Phases		2 4		1	1 6					3	3	
Permitted Phases												3
Actuated Green, G (s)		57.2			57.0						17.5	17.5
Effective Green, g (s)		57.2			57.0						17.5	17.5
Actuated g/C Ratio		0.57			0.57						0.18	0.18
Clearance Time (s)											2.5	2.5
Vehicle Extension (s)											3.0	3.0
Lane Grp Cap (vph)		2006			2192						310	277
v/s Ratio Prot		c0.19			c0.06						c0.16	
v/s Ratio Perm					c0.14							0.10
v/c Ratio		0.34			0.35						0.93	0.57
Uniform Delay, d1		11.3			11.6						40.6	37.8
Progression Factor		0.17			1.10						1.00	1.00
Incremental Delay, d2		0.1			0.1						32.2	2.7
Delay (s)		2.0			12.8						72.8	40.4
Level of Service		A			B						E	D
Approach Delay (s)		2.0			12.8			0.0			61.3	
Approach LOS		A			B			A			E	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Appendix E-12
2040 No Sub-Area 4 Conditions
Intersection LOS Calculations

FEHR PEERS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	540	210	200	510	0	0	0	0	150	1320	120
Future Volume (veh/h)	0	540	210	200	510	0	0	0	0	150	1320	120
Number	3	8	18	7	4	14				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00				1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1900	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	581	215	215	548	0				161	1419	118
Adj No. of Lanes	0	2	1	0	2	0				0	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93				0.93	0.93	0.93
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1445	628	276	749	0				158	1452	126
Arrive On Green	0.00	0.41	0.41	0.41	0.41	0.00				0.47	0.47	0.47
Sat Flow, veh/h	0	3632	1538	423	1918	0				333	3057	265
Grp Volume(v), veh/h	0	581	215	301	462	0				893	0	805
Grp Sat Flow(s),veh/h/ln	0	1770	1538	646	1610	0				1846	0	1808
Q Serve(g_s), s	0.0	7.0	5.8	17.5	14.3	0.0				28.5	0.0	25.3
Cycle Q Clear(g_c), s	0.0	7.0	5.8	24.5	14.3	0.0				28.5	0.0	25.3
Prop In Lane	0.00		1.00	0.71		0.00				0.18		0.15
Lane Grp Cap(c), veh/h	0	1445	628	367	658	0				877	0	859
V/C Ratio(X)	0.00	0.40	0.34	0.82	0.70	0.00				1.02	0.00	0.94
Avail Cap(c_a), veh/h	0	1445	628	367	658	0				877	0	859
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.92	0.92	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	12.6	12.2	21.2	14.7	0.0				15.8	0.0	14.9
Incr Delay (d2), s/veh	0.0	0.1	0.1	12.1	2.6	0.0				35.1	0.0	18.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.4	2.5	6.2	6.8	0.0				22.9	0.0	16.8
LnGrp Delay(d),s/veh	0.0	12.6	12.3	33.3	17.4	0.0				50.8	0.0	33.7
LnGrp LOS		B	B	C	B					F		C
Approach Vol, veh/h		796			763						1698	
Approach Delay, s/veh		12.5			23.6						42.7	
Approach LOS		B			C						D	

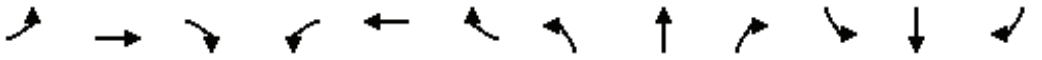
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		32.0		28.0				28.0
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		28.5		24.5				24.5
Max Q Clear Time (g_c+I1), s		30.5		26.5				9.0
Green Ext Time (p_c), s		0.0		0.0				7.0

Intersection Summary	
HCM 2010 Ctrl Delay	30.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	620	170	150	610	0	0	0	0	180	800	140
Future Volume (veh/h)	0	620	170	150	610	0	0	0	0	180	800	140
Number	3	8	18	7	4	14				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1900	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	620	120	150	610	0				180	800	122
Adj No. of Lanes	0	2	1	0	2	0				0	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1421	620	220	885	0				271	1265	202
Arrive On Green	0.00	0.40	0.40	0.40	0.40	0.00				0.48	0.48	0.48
Sat Flow, veh/h	0	3632	1544	332	2288	0				563	2625	419
Grp Volume(v), veh/h	0	620	120	334	426	0				586	0	516
Grp Sat Flow(s),veh/h/ln	0	1770	1544	925	1610	0				1835	0	1774
Q Serve(g_s), s	0.0	7.6	3.0	13.5	12.9	0.0				14.6	0.0	12.8
Cycle Q Clear(g_c), s	0.0	7.6	3.0	21.1	12.9	0.0				14.6	0.0	12.8
Prop In Lane	0.00		1.00	0.45		0.00				0.31		0.24
Lane Grp Cap(c), veh/h	0	1421	620	458	647	0				884	0	854
V/C Ratio(X)	0.00	0.44	0.19	0.73	0.66	0.00				0.66	0.00	0.60
Avail Cap(c_a), veh/h	0	1445	630	466	658	0				884	0	854
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.95	0.95	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	13.0	11.6	17.8	14.6	0.0				11.8	0.0	11.4
Incr Delay (d2), s/veh	0.0	0.1	0.1	4.6	1.8	0.0				3.9	0.0	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.7	1.3	5.8	6.0	0.0				8.3	0.0	6.9
LnGrp Delay(d),s/veh	0.0	13.1	11.7	22.4	16.4	0.0				15.7	0.0	14.5
LnGrp LOS		B	B	C	B					B		B
Approach Vol, veh/h		740			760						1102	
Approach Delay, s/veh		12.9			19.0						15.2	
Approach LOS		B			B						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		32.4		27.6				27.6
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		28.5		24.5				24.5
Max Q Clear Time (g_c+I1), s		16.6		23.1				9.6
Green Ext Time (p_c), s		4.1		1.0				6.4

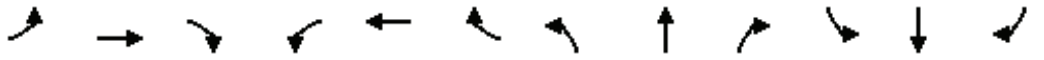
Intersection Summary	
HCM 2010 Ctrl Delay	15.6
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	490	0	0	540	200	190	900	180	0	0	0
Future Volume (veh/h)	200	490	0	0	540	200	190	900	180	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	0.99		1.00	1.00		0.94	1.00		0.97			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1863	1900	1863	1900			
Adj Flow Rate, veh/h	227	557	0	0	614	200	216	1023	166			
Adj No. of Lanes	0	2	0	0	2	1	0	3	0			
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	347	903	0	0	1779	750	286	1448	241			
Arrive On Green	0.50	0.50	0.00	0.00	0.50	0.50	0.38	0.38	0.38			
Sat Flow, veh/h	473	1880	0	0	3632	1492	759	3846	641			
Grp Volume(v), veh/h	297	487	0	0	614	200	519	439	447			
Grp Sat Flow(s),veh/h/ln	658	1610	0	0	1770	1492	1825	1695	1726			
Q Serve(g_s), s	19.0	12.5	0.0	0.0	6.0	4.5	14.4	12.6	12.6			
Cycle Q Clear(g_c), s	25.1	12.5	0.0	0.0	6.0	4.5	14.4	12.6	12.6			
Prop In Lane	0.76		0.00	0.00		1.00	0.42		0.37			
Lane Grp Cap(c), veh/h	440	810	0	0	1779	750	687	638	650			
V/C Ratio(X)	0.67	0.60	0.00	0.00	0.35	0.27	0.76	0.69	0.69			
Avail Cap(c_a), veh/h	452	834	0	0	1832	773	945	877	894			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	15.2	10.3	0.0	0.0	8.7	8.3	15.7	15.2	15.2			
Incr Delay (d2), s/veh	3.1	0.8	0.0	0.0	0.0	0.1	1.4	0.5	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.7	5.6	0.0	0.0	2.9	1.8	7.5	5.9	6.0			
LnGrp Delay(d),s/veh	18.2	11.1	0.0	0.0	8.7	8.3	17.1	15.7	15.7			
LnGrp LOS	B	B			A	A	B	B	B			
Approach Vol, veh/h		784			814			1405				
Approach Delay, s/veh		13.8			8.6			16.2				
Approach LOS		B			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		25.3		32.6				32.6
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		30.0		30.0				30.0
Max Q Clear Time (g_c+I1), s		16.4		8.0				27.1
Green Ext Time (p_c), s		5.4		8.6				2.1

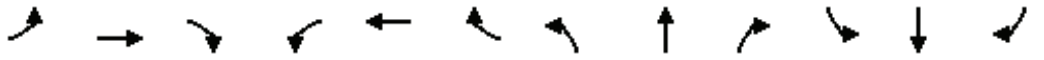
Intersection Summary	
HCM 2010 Ctrl Delay	13.5
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	570	0	0	490	250	270	1670	220	0	0	0
Future Volume (veh/h)	230	570	0	0	490	250	270	1670	220	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	0.99		1.00	1.00		0.93	1.00		0.98			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1863	1900	1863	1900			
Adj Flow Rate, veh/h	235	582	0	0	500	250	276	1704	204			
Adj No. of Lanes	0	2	0	0	2	1	0	3	0			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	316	806	0	0	1585	658	282	1858	227			
Arrive On Green	0.45	0.45	0.00	0.00	0.45	0.45	0.45	0.45	0.45			
Sat Flow, veh/h	495	1886	0	0	3632	1471	630	4149	507			
Grp Volume(v), veh/h	315	502	0	0	500	250	803	673	708			
Grp Sat Flow(s),veh/h/ln	686	1610	0	0	1770	1471	1831	1695	1759			
Q Serve(g_s), s	23.9	16.8	0.0	0.0	6.1	7.6	28.9	24.4	24.9			
Cycle Q Clear(g_c), s	30.0	16.8	0.0	0.0	6.1	7.6	28.9	24.4	24.9			
Prop In Lane	0.75		0.00	0.00		1.00	0.34		0.29			
Lane Grp Cap(c), veh/h	401	721	0	0	1585	658	820	759	788			
V/C Ratio(X)	0.78	0.70	0.00	0.00	0.32	0.38	0.98	0.89	0.90			
Avail Cap(c_a), veh/h	401	721	0	0	1585	658	820	759	788			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	21.3	14.8	0.0	0.0	11.9	12.3	18.2	16.9	17.1			
Incr Delay (d2), s/veh	9.0	2.5	0.0	0.0	0.0	0.1	26.1	11.9	12.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.8	7.9	0.0	0.0	2.9	3.1	20.4	13.7	14.8			
LnGrp Delay(d),s/veh	30.3	17.3	0.0	0.0	11.9	12.4	44.3	28.9	30.0			
LnGrp LOS	C	B			B	B	D	C	C			
Approach Vol, veh/h		817			750			2184				
Approach Delay, s/veh		22.3			12.1			34.9				
Approach LOS		C			B			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		33.5		33.5				33.5
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		30.0		30.0				30.0
Max Q Clear Time (g_c+I1), s		30.9		9.6				32.0
Green Ext Time (p_c), s		0.0		7.9				0.0

Intersection Summary	
HCM 2010 Ctrl Delay	27.6
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	400	220	50	310	0	70	0	30	290	320	40
Future Volume (veh/h)	0	400	220	50	310	0	70	0	30	290	320	40
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1845	1900	1845	1845	0	1845	0	1845	1845	1845	1900
Adj Flow Rate, veh/h	0	417	171	52	323	0	73	0	2	224	443	36
Adj No. of Lanes	0	2	0	1	2	0	1	0	1	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	3	3	3	3	0	3	0	3	3	3	3
Cap, veh/h	0	863	350	211	1972	0	0	0	0	377	723	59
Arrive On Green	0.00	0.36	0.36	0.12	0.56	0.00	0.00	0.00	0.00	0.21	0.21	0.21
Sat Flow, veh/h	0	2517	983	1757	3597	0		0		1757	3368	273
Grp Volume(v), veh/h	0	300	288	52	323	0		0.0		224	242	237
Grp Sat Flow(s),veh/h/ln	0	1752	1655	1757	1752	0				1757	1845	1797
Q Serve(g_s), s	0.0	5.4	5.5	1.1	1.8	0.0				4.6	4.8	4.8
Cycle Q Clear(g_c), s	0.0	5.4	5.5	1.1	1.8	0.0				4.6	4.8	4.8
Prop In Lane	0.00		0.59	1.00		0.00				1.00		0.15
Lane Grp Cap(c), veh/h	0	624	589	211	1972	0				377	396	386
V/C Ratio(X)	0.00	0.48	0.49	0.25	0.16	0.00				0.59	0.61	0.62
Avail Cap(c_a), veh/h	0	1387	1310	1130	2774	0				1130	1186	1155
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	10.1	10.2	16.1	4.3	0.0				14.3	14.4	14.4
Incr Delay (d2), s/veh	0.0	0.6	0.7	0.2	0.0	0.0				0.6	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.7	2.6	0.5	0.9	0.0				2.3	2.5	2.4
LnGrp Delay(d),s/veh	0.0	10.8	10.9	16.3	4.3	0.0				14.9	14.9	15.0
LnGrp LOS		B	B	B	A					B	B	B
Approach Vol, veh/h		588			375						703	
Approach Delay, s/veh		10.8			6.0						14.9	
Approach LOS		B			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		27.8			8.4	19.4		12.7
Change Period (Y+Rc), s		5.0			3.5	5.0		4.0
Max Green Setting (Gmax), s		32.0			26.0	32.0		26.0
Max Q Clear Time (g_c+I1), s		3.8			3.1	7.5		6.8
Green Ext Time (p_c), s		6.8			0.0	6.5		1.9

Intersection Summary	
HCM 2010 Ctrl Delay	11.5
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	360	160	40	300	0	100	0	50	370	120	50
Future Volume (veh/h)	0	360	160	40	300	0	100	0	50	370	120	50
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1845	1900	1845	1845	0	1845	0	1845	1845	1845	1900
Adj Flow Rate, veh/h	0	404	135	45	337	0	112	0	4	416	135	45
Adj No. of Lanes	0	2	0	1	2	0	1	0	1	2	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	3	3	3	3	0	3	0	3	3	3	3
Cap, veh/h	0	915	302	193	1961	0	0	0	0	693	261	87
Arrive On Green	0.00	0.35	0.35	0.11	0.56	0.00	0.00	0.00	0.00	0.20	0.20	0.20
Sat Flow, veh/h	0	2671	851	1757	3597	0		0		3514	1325	442
Grp Volume(v), veh/h	0	273	266	45	337	0		0.0		416	0	180
Grp Sat Flow(s),veh/h/ln	0	1752	1678	1757	1752	0				1757	0	1767
Q Serve(g_s), s	0.0	4.4	4.5	0.9	1.7	0.0				4.0	0.0	3.4
Cycle Q Clear(g_c), s	0.0	4.4	4.5	0.9	1.7	0.0				4.0	0.0	3.4
Prop In Lane	0.00		0.51	1.00		0.00				1.00		0.25
Lane Grp Cap(c), veh/h	0	622	595	193	1961	0				693	0	349
V/C Ratio(X)	0.00	0.44	0.45	0.23	0.17	0.00				0.60	0.00	0.52
Avail Cap(c_a), veh/h	0	1515	1451	1234	3031	0				2469	0	1241
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	9.1	9.2	15.0	4.0	0.0				13.5	0.0	13.3
Incr Delay (d2), s/veh	0.0	0.5	0.6	0.2	0.0	0.0				0.3	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.2	2.2	0.4	0.9	0.0				1.9	0.0	1.7
LnGrp Delay(d),s/veh	0.0	9.7	9.7	15.3	4.0	0.0				13.8	0.0	13.7
LnGrp LOS		A	A	B	A					B		B
Approach Vol, veh/h		539			382						596	
Approach Delay, s/veh		9.7			5.3						13.8	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		25.7			7.6	18.1		11.3
Change Period (Y+Rc), s		5.0			3.5	5.0		4.0
Max Green Setting (Gmax), s		32.0			26.0	32.0		26.0
Max Q Clear Time (g_c+I1), s		3.7			2.9	6.5		6.0
Green Ext Time (p_c), s		6.4			0.0	6.3		1.3

Intersection Summary	
HCM 2010 Ctrl Delay	10.2
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	500	0	0	210	870	150	0	300	0	0	0
Future Volume (veh/h)	220	500	0	0	210	870	150	0	300	0	0	0
Number	1	6	16	5	2	12	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1845	0	0	1845	1900	1845	0	1845			
Adj Flow Rate, veh/h	242	549	0	0	231	519	165	0	125			
Adj No. of Lanes	0	2	0	0	3	0	1	0	1			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	3	3	0	0	3	3	3	0	3			
Cap, veh/h	426	1113	0	0	2141	979	300	0	267			
Arrive On Green	0.64	0.64	0.00	0.00	0.64	0.64	0.17	0.00	0.17			
Sat Flow, veh/h	453	1830	0	0	3523	1535	1757	0	1568			
Grp Volume(v), veh/h	305	486	0	0	231	519	165	0	125			
Grp Sat Flow(s),veh/h/ln	604	1595	0	0	1679	1535	1757	0	1568			
Q Serve(g_s), s	13.7	7.4	0.0	0.0	1.3	8.7	4.0	0.0	3.4			
Cycle Q Clear(g_c), s	22.4	7.4	0.0	0.0	1.3	8.7	4.0	0.0	3.4			
Prop In Lane	0.79		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	523	1017	0	0	2141	979	300	0	267			
V/C Ratio(X)	0.58	0.48	0.00	0.00	0.11	0.53	0.55	0.00	0.47			
Avail Cap(c_a), veh/h	542	1054	0	0	2362	1080	1049	0	936			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	9.8	4.4	0.0	0.0	3.3	4.7	17.8	0.0	17.5			
Incr Delay (d2), s/veh	1.9	0.5	0.0	0.0	0.0	0.6	0.6	0.0	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.5	3.4	0.0	0.0	0.6	3.8	2.0	0.0	1.5			
LnGrp Delay(d),s/veh	11.7	4.9	0.0	0.0	3.3	5.3	18.4	0.0	18.0			
LnGrp LOS	B	A			A	A	B		B			
Approach Vol, veh/h		791			750			290				
Approach Delay, s/veh		7.5			4.7			18.2				
Approach LOS		A			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		33.9		13.0		33.9		
Change Period (Y+Rc), s		4.0		5.0		4.0		
Max Green Setting (Gmax), s		33.0		28.0		31.0		
Max Q Clear Time (g_c+I1), s		10.7		6.0		24.4		
Green Ext Time (p_c), s		15.3		0.1		5.5		

Intersection Summary	
HCM 2010 Ctrl Delay	8.1
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	780	0	0	190	500	150	0	190	0	0	0
Future Volume (veh/h)	0	780	0	0	190	500	150	0	190	0	0	0
Number	1	6	16	5	2	12	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1863	0	0	1863	1900	1863	0	1863			
Adj Flow Rate, veh/h	0	918	0	0	224	255	176	0	138			
Adj No. of Lanes	0	2	0	0	3	0	1	0	1			
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85			
Percent Heavy Veh, %	0	2	0	0	2	2	2	0	2			
Cap, veh/h	0	1975	0	0	1892	865	369	0	329			
Arrive On Green	0.00	0.56	0.00	0.00	0.56	0.56	0.21	0.00	0.21			
Sat Flow, veh/h	0	3725	0	0	3558	1550	1774	0	1583			
Grp Volume(v), veh/h	0	918	0	0	224	255	176	0	138			
Grp Sat Flow(s),veh/h/ln	0	1770	0	0	1695	1550	1774	0	1583			
Q Serve(g_s), s	0.0	6.0	0.0	0.0	1.2	3.3	3.4	0.0	2.9			
Cycle Q Clear(g_c), s	0.0	6.0	0.0	0.0	1.2	3.3	3.4	0.0	2.9			
Prop In Lane	0.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	1975	0	0	1892	865	369	0	329			
V/C Ratio(X)	0.00	0.46	0.00	0.00	0.12	0.29	0.48	0.00	0.42			
Avail Cap(c_a), veh/h	0	2852	0	0	2908	1329	1291	0	1152			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	5.1	0.0	0.0	4.0	4.5	13.4	0.0	13.2			
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.0	0.3	0.4	0.0	0.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	2.9	0.0	0.0	0.6	1.5	1.6	0.0	1.3			
LnGrp Delay(d),s/veh	0.0	5.3	0.0	0.0	4.1	4.8	13.8	0.0	13.5			
LnGrp LOS		A			A	A	B		B			
Approach Vol, veh/h		918			479			314				
Approach Delay, s/veh		5.3			4.4			13.7				
Approach LOS		A			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		25.5		13.0		25.5		
Change Period (Y+Rc), s		4.0		5.0		4.0		
Max Green Setting (Gmax), s		33.0		28.0		31.0		
Max Q Clear Time (g_c+I1), s		5.3		5.4		8.0		
Green Ext Time (p_c), s		15.1		0.2		13.5		

Intersection Summary		
HCM 2010 Ctrl Delay		6.6
HCM 2010 LOS		A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	370	320	120	750	180	170	550	130	200	550	160
Future Volume (veh/h)	110	370	320	120	750	180	170	550	130	200	550	160
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	117	394	60	128	798	170	181	585	24	213	585	153
Adj No. of Lanes	1	2	1	1	2	0	0	2	1	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	144	980	430	154	819	174	192	657	371	202	581	159
Arrive On Green	0.08	0.28	0.28	0.17	0.57	0.57	0.24	0.24	0.24	0.26	0.26	0.26
Sat Flow, veh/h	1774	3539	1555	1774	2897	617	811	2781	1569	765	2205	604
Grp Volume(v), veh/h	117	394	60	128	487	481	407	359	24	508	0	443
Grp Sat Flow(s),veh/h/ln	1774	1770	1555	1774	1770	1744	1822	1770	1569	1824	0	1750
Q Serve(g_s), s	7.1	10.0	3.2	7.7	29.3	29.3	24.1	21.4	1.3	29.0	0.0	27.5
Cycle Q Clear(g_c), s	7.1	10.0	3.2	7.7	29.3	29.3	24.1	21.4	1.3	29.0	0.0	27.5
Prop In Lane	1.00		1.00	1.00		0.35	0.44		1.00	0.42		0.35
Lane Grp Cap(c), veh/h	144	980	430	154	500	493	431	418	371	481	0	461
V/C Ratio(X)	0.82	0.40	0.14	0.83	0.97	0.97	0.94	0.86	0.06	1.06	0.00	0.96
Avail Cap(c_a), veh/h	169	980	430	282	500	493	431	418	371	481	0	461
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.66	0.66	0.66	0.72	0.72	0.72	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	49.7	32.4	29.9	44.7	23.5	23.5	41.3	40.2	32.6	40.5	0.0	39.9
Incr Delay (d2), s/veh	13.6	0.8	0.4	3.2	28.3	28.5	29.3	15.6	0.0	56.5	0.0	31.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	5.0	1.4	3.8	17.7	17.5	15.6	12.3	0.6	22.1	0.0	17.4
LnGrp Delay(d),s/veh	63.3	33.2	30.4	47.8	51.8	52.1	70.6	55.8	32.6	97.0	0.0	71.6
LnGrp LOS	E	C	C	D	D	D	E	E	C	F		E
Approach Vol, veh/h		571			1096			790			951	
Approach Delay, s/veh		39.1			51.5			62.7			85.1	
Approach LOS		D			D			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.1	34.9		32.5	12.4	35.6		29.5
Change Period (Y+Rc), s	3.5	4.5		3.5	3.5	4.5		3.5
Max Green Setting (Gmax), s	17.5	22.5		29.0	10.5	29.5		26.0
Max Q Clear Time (g_c+I1), s	9.7	12.0		31.0	9.1	31.3		26.1
Green Ext Time (p_c), s	0.1	7.3		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	61.4
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	690	160	170	400	140	200	700	220	210	740	90
Future Volume (veh/h)	120	690	160	170	400	140	200	700	220	210	740	90
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	128	734	14	181	426	116	213	745	56	223	787	89
Adj No. of Lanes	1	2	1	1	2	0	0	2	1	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	155	862	378	213	758	204	170	630	349	195	726	86
Arrive On Green	0.09	0.24	0.24	0.04	0.09	0.09	0.22	0.22	0.22	0.28	0.28	0.28
Sat Flow, veh/h	1774	3539	1550	1774	2744	740	764	2830	1566	704	2620	309
Grp Volume(v), veh/h	128	734	14	181	273	269	509	449	56	579	0	520
Grp Sat Flow(s),veh/h/ln	1774	1770	1550	1774	1770	1714	1825	1770	1566	1828	0	1805
Q Serve(g_s), s	7.8	21.8	0.8	11.2	16.3	16.5	24.5	24.5	3.2	30.5	0.0	30.5
Cycle Q Clear(g_c), s	7.8	21.8	0.8	11.2	16.3	16.5	24.5	24.5	3.2	30.5	0.0	30.5
Prop In Lane	1.00		1.00	1.00		0.43	0.42		1.00	0.39		0.17
Lane Grp Cap(c), veh/h	155	862	378	213	489	473	406	394	349	507	0	501
V/C Ratio(X)	0.83	0.85	0.04	0.85	0.56	0.57	1.25	1.14	0.16	1.14	0.00	1.04
Avail Cap(c_a), veh/h	169	862	378	282	489	473	406	394	349	507	0	501
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.85	0.94	0.94	0.94	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	49.4	39.7	31.7	51.8	43.6	43.7	42.8	42.8	34.5	39.8	0.0	39.8
Incr Delay (d2), s/veh	20.4	9.0	0.2	13.0	4.3	4.6	132.4	89.1	0.1	85.3	0.0	50.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	11.7	0.3	6.3	8.6	8.5	27.2	21.7	1.4	27.4	0.0	22.2
LnGrp Delay(d),s/veh	69.8	48.7	31.9	64.8	47.9	48.3	175.1	131.8	34.5	125.1	0.0	90.6
LnGrp LOS	E	D	C	E	D	D	F	F	C	F		F
Approach Vol, veh/h		876			723			1014			1099	
Approach Delay, s/veh		51.5			52.3			148.2			108.8	
Approach LOS		D			D			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.7	31.3		34.0	13.1	34.9		28.0
Change Period (Y+Rc), s	3.5	4.5		3.5	3.5	4.5		3.5
Max Green Setting (Gmax), s	17.5	22.5		30.5	10.5	29.5		24.5
Max Q Clear Time (g_c+I1), s	13.2	23.8		32.5	9.8	18.5		26.5
Green Ext Time (p_c), s	0.1	0.0		0.0	0.0	7.1		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		95.0
HCM 2010 LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	190	330	0	0	0	80	250	260	0	570	40
Future Volume (veh/h)	0	190	330	0	0	0	80	250	260	0	570	40
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900				1863	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	0	213	146				90	281	130	0	640	11
Adj No. of Lanes	1	2	0				1	1	1	0	2	1
Peak Hour Factor	0.89	0.89	0.89				0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2				2	2	2	0	2	2
Cap, veh/h	385	445	292				121	1000	850	0	1223	547
Arrive On Green	0.00	0.22	0.22				0.07	0.54	0.54	0.00	0.35	0.35
Sat Flow, veh/h	1774	2051	1344				1774	1863	1583	0	3632	1583
Grp Volume(v), veh/h	0	182	177				90	281	130	0	640	11
Grp Sat Flow(s),veh/h/ln	1774	1770	1626				1774	1863	1583	0	1770	1583
Q Serve(g_s), s	0.0	2.9	3.1				1.6	2.7	1.3	0.0	4.7	0.1
Cycle Q Clear(g_c), s	0.0	2.9	3.1				1.6	2.7	1.3	0.0	4.7	0.1
Prop In Lane	1.00		0.83				1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	385	384	353				121	1000	850	0	1223	547
V/C Ratio(X)	0.00	0.48	0.50				0.74	0.28	0.15	0.00	0.52	0.02
Avail Cap(c_a), veh/h	1691	1687	1550				273	1489	1266	0	1850	828
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00				1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	11.1	11.2				14.9	4.1	3.8	0.0	8.5	7.0
Incr Delay (d2), s/veh	0.0	0.9	1.1				8.5	0.2	0.1	0.0	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.5	1.5				1.1	1.4	0.6	0.0	2.3	0.1
LnGrp Delay(d),s/veh	0.0	12.0	12.3				23.4	4.3	3.9	0.0	8.8	7.0
LnGrp LOS		B	B				C	A	A		A	A
Approach Vol, veh/h		359						501			651	
Approach Delay, s/veh		12.2						7.6			8.8	
Approach LOS		B						A			A	

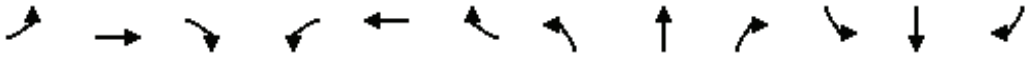
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		21.5		11.1	6.2	15.2		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		26.0		31.0	5.0	17.0		
Max Q Clear Time (g_c+I1), s		4.7		5.1	3.6	6.7		
Green Ext Time (p_c), s		6.6		2.2	0.0	4.5		

Intersection Summary	
HCM 2010 Ctrl Delay	9.2
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	140	140	0	0	0	100	570	520	0	590	30
Future Volume (veh/h)	30	140	140	0	0	0	100	570	520	0	590	30
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900				1863	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	35	165	17				118	671	407	0	694	9
Adj No. of Lanes	1	2	0				1	1	1	0	2	1
Peak Hour Factor	0.85	0.85	0.85				0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2				2	2	2	0	2	2
Cap, veh/h	219	400	41				148	1173	995	0	1496	668
Arrive On Green	0.12	0.12	0.12				0.08	0.63	0.63	0.00	0.42	0.42
Sat Flow, veh/h	1774	3244	330				1774	1863	1580	0	3632	1581
Grp Volume(v), veh/h	35	89	93				118	671	407	0	694	9
Grp Sat Flow(s),veh/h/ln	1774	1770	1804				1774	1863	1580	0	1770	1581
Q Serve(g_s), s	0.6	1.5	1.5				2.1	6.8	4.2	0.0	4.6	0.1
Cycle Q Clear(g_c), s	0.6	1.5	1.5				2.1	6.8	4.2	0.0	4.6	0.1
Prop In Lane	1.00		0.18				1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	219	218	222				148	1173	995	0	1496	668
V/C Ratio(X)	0.16	0.41	0.42				0.80	0.57	0.41	0.00	0.46	0.01
Avail Cap(c_a), veh/h	1698	1694	1728				274	1496	1269	0	1858	830
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	12.7	13.1	13.1				14.6	3.5	3.0	0.0	6.7	5.4
Incr Delay (d2), s/veh	0.3	1.2	1.2				9.3	0.4	0.3	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.8	0.8				1.4	3.5	1.8	0.0	2.3	0.0
LnGrp Delay(d),s/veh	13.0	14.3	14.4				23.9	3.9	3.3	0.0	6.9	5.4
LnGrp LOS	B	B	B				C	A	A		A	A
Approach Vol, veh/h		217						1196			703	
Approach Delay, s/veh		14.1						5.7			6.9	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		24.4		8.0	6.7	17.7		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		26.0		31.0	5.0	17.0		
Max Q Clear Time (g_c+I1), s		8.8		3.5	4.1	6.6		
Green Ext Time (p_c), s		10.0		1.1	0.0	7.0		

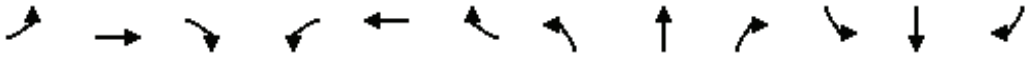
Intersection Summary	
HCM 2010 Ctrl Delay	6.9
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	20	10	40	30	450	10	100	20	480	380	40
Future Volume (Veh/h)	40	20	10	40	30	450	10	100	20	480	380	40
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	22	11	43	33	489	11	109	22	522	413	43
Pedestrians					1							
Lane Width (ft)					12.0							
Walking Speed (ft/s)					4.0							
Percent Blockage					0							
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											499	
pX, platoon unblocked	0.74	0.74	0.74	0.74	0.74		0.74					
vC, conflicting volume	2126	1632	434	1644	1643	121	456			132		
vC1, stage 1 conf vol	1478	1478		143	143							
vC2, stage 2 conf vol	648	154		1500	1500							
vCu, unblocked vol	2351	1680	51	1695	1694	121	80			132		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	74	99	0	56	47	99			64		
cM capacity (veh/h)	4	86	748	41	74	930	1116			1452		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	76	565	142	978
Volume Left	43	43	11	522
Volume Right	11	489	22	43
cSH	7	281	1116	1452
Volume to Capacity	10.56	2.01	0.01	0.36
Queue Length 95th (ft)	Err	1017	1	42
Control Delay (s)	Err	496.6	0.7	6.8
Lane LOS	F	F	A	A
Approach Delay (s)	Err	496.6	0.7	6.8
Approach LOS	F	F		

Intersection Summary				
Average Delay	594.7			
Intersection Capacity Utilization	93.7%	ICU Level of Service	F	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	20	10	20	20	590	10	510	30	490	190	30
Future Volume (Veh/h)	70	20	10	20	20	590	10	510	30	490	190	30
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	76	22	11	22	22	641	11	554	33	533	207	33
Pedestrians		1			1			1				
Lane Width (ft)		12.0			12.0			12.0				
Walking Speed (ft/s)		4.0			4.0			4.0				
Percent Blockage		0			0			0				
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											499	
pX, platoon unblocked	0.73	0.73	0.73	0.73	0.73		0.73					
vC, conflicting volume	2535	1900	226	1906	1900	572	241			588		
vC1, stage 1 conf vol	1290	1290		594	594							
vC2, stage 2 conf vol	1244	610		1312	1307							
vCu, unblocked vol	2909	2045	0	2053	2045	572	0			588		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	0	99	46	69	0	99			46		
cM capacity (veh/h)	0	19	795	40	70	520	1191			986		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	109	685	598	773
Volume Left	76	22	11	533
Volume Right	11	641	33	33
cSH	0	328	1191	986
Volume to Capacity	Err	2.09	0.01	0.54
Queue Length 95th (ft)	Err	1246	1	83
Control Delay (s)	Err	527.2	0.3	11.4
Lane LOS	F	F	A	B
Approach Delay (s)	Err	527.2	0.3	11.4
Approach LOS	F	F		

Intersection Summary				
Average Delay	Err			
Intersection Capacity Utilization	119.9%	ICU Level of Service	H	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	440	190	320	710	200	180	190	110	180	520	150
Future Volume (veh/h)	60	440	190	320	710	200	180	190	110	180	520	150
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	71	518	172	376	835	209	212	224	100	212	612	157
Adj No. of Lanes	1	2	0	1	2	0	0	2	0	0	2	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	196	1219	403	400	1309	328	209	512	229	254	761	224
Arrive On Green	0.94	0.94	0.94	0.47	0.47	0.47	0.46	0.46	0.46	0.46	0.46	0.46
Sat Flow, veh/h	538	2603	860	749	2796	700	309	1104	493	445	1641	484
Grp Volume(v), veh/h	71	351	339	376	528	516	212	0	324	462	0	519
Grp Sat Flow(s),veh/h/ln	538	1770	1694	749	1770	1726	309	0	1597	970	0	1600
Q Serve(g_s), s	10.2	2.3	2.3	49.2	24.9	24.9	22.6	0.0	15.0	36.0	0.0	28.4
Cycle Q Clear(g_c), s	35.1	2.3	2.3	51.5	24.9	24.9	51.0	0.0	15.0	51.0	0.0	28.4
Prop In Lane	1.00		0.51	1.00		0.41	1.00		0.31	0.46		0.30
Lane Grp Cap(c), veh/h	196	828	793	400	828	808	209	0	741	497	0	742
V/C Ratio(X)	0.36	0.42	0.43	0.94	0.64	0.64	1.02	0.00	0.44	0.93	0.00	0.70
Avail Cap(c_a), veh/h	196	828	793	400	828	808	209	0	741	497	0	742
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.92	1.00	1.00	1.00	0.50	0.00	0.50	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.7	1.9	1.9	33.1	22.2	22.2	47.2	0.0	19.8	37.5	0.0	23.4
Incr Delay (d2), s/veh	4.8	1.5	1.6	32.0	3.7	3.8	48.0	0.0	0.1	23.5	0.0	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	1.3	1.3	14.9	12.9	12.6	9.1	0.0	6.6	17.2	0.0	12.9
LnGrp Delay(d),s/veh	16.5	3.4	3.5	65.2	25.9	26.0	95.3	0.0	19.9	60.9	0.0	25.9
LnGrp LOS	B	A	A	E	C	C	F		B	E		C
Approach Vol, veh/h		761			1420			536			981	
Approach Delay, s/veh		4.7			36.3			49.7			42.4	
Approach LOS		A			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		55.0		55.0		55.0		55.0
Change Period (Y+Rc), s		3.5		4.0		3.5		4.0
Max Green Setting (Gmax), s		51.5		51.0		51.5		51.0
Max Q Clear Time (g_c+I1), s		37.1		53.0		53.5		53.0
Green Ext Time (p_c), s		11.2		0.0		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	33.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	740	220	140	350	150	260	710	370	130	260	70
Future Volume (veh/h)	150	740	220	140	350	150	260	710	370	130	260	70
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	160	787	207	149	372	117	277	755	356	138	277	60
Adj No. of Lanes	1	2	0	1	2	0	0	2	0	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	370	1194	314	258	1145	355	263	694	379	94	673	146
Arrive On Green	0.86	0.86	0.86	0.43	0.43	0.43	0.50	0.50	0.50	0.50	0.50	0.50
Sat Flow, veh/h	903	2765	727	564	2652	822	433	1388	757	57	1345	291
Grp Volume(v), veh/h	160	504	490	149	246	243	663	0	725	138	0	337
Grp Sat Flow(s),veh/h/ln	903	1770	1723	564	1770	1705	1035	0	1542	57	0	1636
Q Serve(g_s), s	9.8	9.9	9.9	26.0	10.1	10.4	40.7	0.0	48.8	6.2	0.0	14.3
Cycle Q Clear(g_c), s	20.2	9.9	9.9	35.9	10.1	10.4	55.0	0.0	48.8	55.0	0.0	14.3
Prop In Lane	1.00		0.42	1.00		0.48	0.42		0.49	1.00		0.18
Lane Grp Cap(c), veh/h	370	764	744	258	764	736	564	0	771	94	0	818
V/C Ratio(X)	0.43	0.66	0.66	0.58	0.32	0.33	1.18	0.00	0.94	1.47	0.00	0.41
Avail Cap(c_a), veh/h	370	764	744	258	764	736	564	0	771	94	0	818
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.51	0.51	0.51	1.00	1.00	1.00	0.09	0.00	0.09	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.2	4.9	4.9	32.4	20.6	20.7	36.3	0.0	25.9	54.1	0.0	17.3
Incr Delay (d2), s/veh	1.9	2.3	2.4	9.1	1.1	1.2	80.8	0.0	2.7	259.4	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	5.0	4.8	4.7	5.2	5.1	29.7	0.0	21.1	9.6	0.0	6.5
LnGrp Delay(d),s/veh	10.1	7.2	7.3	41.5	21.7	21.9	117.1	0.0	28.6	313.4	0.0	17.4
LnGrp LOS	B	A	A	D	C	C	F		C	F		B
Approach Vol, veh/h		1154			638			1388			475	
Approach Delay, s/veh		7.7			26.4			70.9			103.4	
Approach LOS		A			C			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		51.0		59.0		51.0		59.0
Change Period (Y+Rc), s		3.5		4.0		3.5		4.0
Max Green Setting (Gmax), s		47.5		55.0		47.5		55.0
Max Q Clear Time (g_c+I1), s		22.2		57.0		37.9		57.0
Green Ext Time (p_c), s		13.9		0.0		7.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	47.4
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	280	270	120	280	120	180	340	90	260	740	20
Future Volume (veh/h)	10	280	270	120	280	120	180	340	90	260	740	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	12	329	257	141	329	121	212	400	81	306	871	22
Adj No. of Lanes	0	1	0	0	1	0	0	2	0	0	2	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	62	402	307	163	299	101	173	656	139	278	904	26
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.48	0.48	0.48	0.48	0.48	0.48
Sat Flow, veh/h	13	986	753	231	734	248	145	1376	292	397	1896	54
Grp Volume(v), veh/h	598	0	0	591	0	0	240	0	453	512	0	687
Grp Sat Flow(s),veh/h/ln	1752	0	0	1213	0	0	180	0	1633	663	0	1684
Q Serve(g_s), s	0.0	0.0	0.0	6.2	0.0	0.0	7.5	0.0	13.0	18.0	0.0	23.5
Cycle Q Clear(g_c), s	20.3	0.0	0.0	26.5	0.0	0.0	31.0	0.0	13.0	31.0	0.0	23.5
Prop In Lane	0.02		0.43	0.24		0.20	0.88		0.18	0.60		0.03
Lane Grp Cap(c), veh/h	771	0	0	563	0	0	190	0	779	405	0	803
V/C Ratio(X)	0.78	0.00	0.00	1.05	0.00	0.00	1.26	0.00	0.58	1.26	0.00	0.86
Avail Cap(c_a), veh/h	771	0	0	563	0	0	190	0	779	405	0	803
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.5	0.0	0.0	20.6	0.0	0.0	29.7	0.0	12.3	25.5	0.0	15.0
Incr Delay (d2), s/veh	5.0	0.0	0.0	51.4	0.0	0.0	154.1	0.0	1.1	137.1	0.0	9.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.7	0.0	0.0	18.1	0.0	0.0	11.5	0.0	6.0	22.6	0.0	12.7
LnGrp Delay(d),s/veh	22.5	0.0	0.0	72.1	0.0	0.0	183.8	0.0	13.4	162.6	0.0	24.1
LnGrp LOS	C			F			F		B	F		C
Approach Vol, veh/h		598			591			693			1199	
Approach Delay, s/veh		22.5			72.1			72.5			83.2	
Approach LOS		C			E			E			F	

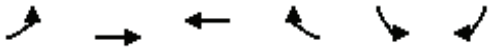
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		35.0		30.0		35.0		30.0
Change Period (Y+Rc), s		4.0		3.5		4.0		3.5
Max Green Setting (Gmax), s		31.0		26.5		31.0		26.5
Max Q Clear Time (g_c+I1), s		33.0		22.3		33.0		28.5
Green Ext Time (p_c), s		0.0		2.9		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	66.9
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	250	120	140	390	490	210	820	150	210	350	50
Future Volume (veh/h)	20	250	120	140	390	490	210	820	150	210	350	50
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	23	287	110	161	448	515	241	943	151	241	402	46
Adj No. of Lanes	0	1	0	0	1	0	0	2	0	0	2	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	76	505	186	144	265	292	226	856	162	141	710	81
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.48	0.48	0.48	0.48	0.48	0.48
Sat Flow, veh/h	43	1240	455	197	651	717	313	1796	340	64	1489	170
Grp Volume(v), veh/h	420	0	0	1124	0	0	614	0	721	241	0	448
Grp Sat Flow(s),veh/h/ln	1738	0	0	1565	0	0	826	0	1622	64	0	1659
Q Serve(g_s), s	0.0	0.0	0.0	14.6	0.0	0.0	18.4	0.0	27.2	3.8	0.0	12.6
Cycle Q Clear(g_c), s	11.9	0.0	0.0	26.5	0.0	0.0	31.0	0.0	27.2	31.0	0.0	12.6
Prop In Lane	0.05		0.26	0.14		0.46	0.39		0.21	1.00		0.10
Lane Grp Cap(c), veh/h	767	0	0	701	0	0	471	0	774	141	0	791
V/C Ratio(X)	0.55	0.00	0.00	1.60	0.00	0.00	1.30	0.00	0.93	1.71	0.00	0.57
Avail Cap(c_a), veh/h	767	0	0	701	0	0	471	0	774	141	0	791
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.9	0.0	0.0	20.3	0.0	0.0	24.2	0.0	16.0	32.1	0.0	12.2
Incr Delay (d2), s/veh	0.8	0.0	0.0	277.7	0.0	0.0	151.7	0.0	17.8	347.0	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	0.0	0.0	66.6	0.0	0.0	28.2	0.0	15.8	16.1	0.0	5.9
LnGrp Delay(d),s/veh	15.7	0.0	0.0	298.0	0.0	0.0	175.8	0.0	33.8	379.1	0.0	13.1
LnGrp LOS	B			F			F		C	F		B
Approach Vol, veh/h		420			1124			1335			689	
Approach Delay, s/veh		15.7			298.0			99.2			141.1	
Approach LOS		B			F			F			F	

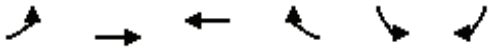
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		35.0		30.0		35.0		30.0
Change Period (Y+Rc), s		4.0		3.5		4.0		3.5
Max Green Setting (Gmax), s		31.0		26.5		31.0		26.5
Max Q Clear Time (g_c+I1), s		33.0		13.9		33.0		28.5
Green Ext Time (p_c), s		0.0		9.5		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	160.1
HCM 2010 LOS	F



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	260	30	70	180	310	460
Future Volume (vph)	260	30	70	180	310	460
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1583	1770	1583
Flt Permitted	0.71	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1317	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	286	33	77	198	341	505
RTOR Reduction (vph)	0	0	0	133	0	293
Lane Group Flow (vph)	286	33	77	65	341	212
Confl. Peds. (#/hr)					5	
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)	10.3	10.3	10.3	10.3	13.2	13.2
Effective Green, g (s)	10.3	10.3	10.3	10.3	13.2	13.2
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.42	0.42
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	430	609	609	517	741	663
v/s Ratio Prot		0.02	0.04		c0.19	
v/s Ratio Perm	c0.22			0.04		0.13
v/c Ratio	0.67	0.05	0.13	0.13	0.46	0.32
Uniform Delay, d1	9.1	7.3	7.4	7.4	6.6	6.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.9	0.0	0.1	0.1	0.5	0.3
Delay (s)	13.0	7.3	7.5	7.5	7.0	6.4
Level of Service	B	A	A	A	A	A
Approach Delay (s)		12.4	7.5		6.7	
Approach LOS		B	A		A	

Intersection Summary			
HCM 2000 Control Delay	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	31.5	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



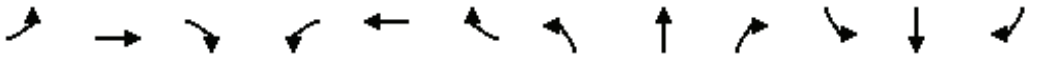
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	450	80	30	680	300	420
Future Volume (vph)	450	80	30	680	300	420
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1583	1770	1583
Flt Permitted	0.73	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1368	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	529	94	35	800	353	494
RTOR Reduction (vph)	0	0	0	378	0	336
Lane Group Flow (vph)	529	94	35	422	353	158
Confl. Peds. (#/hr)					3	
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)	27.4	27.4	27.4	27.4	16.6	16.6
Effective Green, g (s)	27.4	27.4	27.4	27.4	16.6	16.6
Actuated g/C Ratio	0.53	0.53	0.53	0.53	0.32	0.32
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	720	981	981	834	565	505
v/s Ratio Prot		0.05	0.02		c0.20	
v/s Ratio Perm	c0.39			0.27		0.10
v/c Ratio	0.73	0.10	0.04	0.51	0.62	0.31
Uniform Delay, d1	9.5	6.1	5.9	7.9	15.1	13.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.9	0.0	0.0	0.5	2.2	0.4
Delay (s)	13.4	6.2	5.9	8.4	17.2	13.7
Level of Service	B	A	A	A	B	B
Approach Delay (s)		12.3	8.3		15.2	
Approach LOS		B	A		B	

Intersection Summary			
HCM 2000 Control Delay	11.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	52.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	460	150	370	710	130	140	470	190	140	1100	230
Future Volume (veh/h)	150	460	150	370	710	130	140	470	190	140	1100	230
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	165	505	80	407	780	66	154	516	174	154	1209	238
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	195	809	354	406	1164	506	183	832	279	184	943	184
Arrive On Green	0.11	0.23	0.23	0.23	0.33	0.33	0.10	0.32	0.32	0.10	0.32	0.32
Sat Flow, veh/h	1774	3539	1550	1774	3539	1539	1774	2601	873	1774	2944	575
Grp Volume(v), veh/h	165	505	80	407	780	66	154	350	340	154	722	725
Grp Sat Flow(s),veh/h/ln	1774	1770	1550	1774	1770	1539	1774	1770	1704	1774	1770	1749
Q Serve(g_s), s	10.0	14.0	4.6	25.0	20.7	3.3	9.3	18.3	18.5	9.3	35.0	35.0
Cycle Q Clear(g_c), s	10.0	14.0	4.6	25.0	20.7	3.3	9.3	18.3	18.5	9.3	35.0	35.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.51	1.00		0.33
Lane Grp Cap(c), veh/h	195	809	354	406	1164	506	183	566	545	184	567	561
V/C Ratio(X)	0.85	0.62	0.23	1.00	0.67	0.13	0.84	0.62	0.62	0.84	1.27	1.29
Avail Cap(c_a), veh/h	325	1037	454	406	1164	506	244	566	545	325	567	561
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.7	37.9	34.3	42.1	31.5	25.7	48.1	31.5	31.6	48.0	37.1	37.1
Incr Delay (d2), s/veh	4.5	1.1	0.5	45.3	1.7	0.2	14.0	1.5	1.7	3.8	136.6	144.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	7.0	2.0	17.3	10.3	1.4	5.3	9.2	8.9	4.8	38.5	39.3
LnGrp Delay(d),s/veh	52.2	39.1	34.7	87.4	33.2	25.9	62.1	33.0	33.2	51.9	173.7	181.7
LnGrp LOS	D	D	C	F	C	C	E	C	C	D	F	F
Approach Vol, veh/h		750			1253			844			1601	
Approach Delay, s/veh		41.5			50.4			38.4			165.6	
Approach LOS		D			D			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.0	29.0	14.3	38.0	17.0	39.9	14.3	37.9
Change Period (Y+Rc), s	3.0	4.0	3.0	3.0	5.0	4.0	3.0	3.0
Max Green Setting (Gmax), s	25.0	32.0	15.0	35.0	20.0	35.0	20.0	30.0
Max Q Clear Time (g_c+I1), s	27.0	16.0	11.3	37.0	12.0	22.7	11.3	20.5
Green Ext Time (p_c), s	0.0	8.9	0.1	0.0	0.1	8.5	0.1	6.8

Intersection Summary	
HCM 2010 Ctrl Delay	88.1
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	1030	130	270	520	170	170	1390	340	150	560	90
Future Volume (veh/h)	150	1030	130	270	520	170	170	1390	340	150	560	90
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	167	1144	65	300	578	115	189	1544	359	167	622	88
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	198	1049	458	330	1248	549	218	816	182	198	852	120
Arrive On Green	0.11	0.30	0.30	0.19	0.35	0.35	0.12	0.29	0.29	0.11	0.27	0.27
Sat Flow, veh/h	1774	3539	1546	1774	3539	1555	1774	2859	637	1774	3112	440
Grp Volume(v), veh/h	167	1144	65	300	578	115	189	930	973	167	353	357
Grp Sat Flow(s),veh/h/ln	1774	1770	1546	1774	1770	1555	1774	1770	1727	1774	1770	1782
Q Serve(g_s), s	10.0	32.0	3.3	17.9	13.6	5.6	11.3	30.8	30.8	10.0	19.5	19.6
Cycle Q Clear(g_c), s	10.0	32.0	3.3	17.9	13.6	5.6	11.3	30.8	30.8	10.0	19.5	19.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.37	1.00		0.25
Lane Grp Cap(c), veh/h	198	1049	458	330	1248	549	218	505	493	198	485	488
V/C Ratio(X)	0.85	1.09	0.14	0.91	0.46	0.21	0.87	1.84	1.97	0.84	0.73	0.73
Avail Cap(c_a), veh/h	329	1049	458	411	1248	549	246	505	493	329	574	578
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.1	38.0	27.9	43.0	27.0	24.4	46.5	38.6	38.6	47.0	35.6	35.6
Incr Delay (d2), s/veh	4.5	55.8	0.2	18.7	0.4	0.3	22.1	386.2	445.0	4.4	2.9	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	23.7	1.5	10.5	6.7	2.4	6.9	69.2	75.6	5.1	9.9	10.0
LnGrp Delay(d),s/veh	51.5	93.8	28.1	61.7	27.4	24.7	68.6	424.7	483.5	51.5	38.4	38.5
LnGrp LOS	D	F	C	E	C	C	E	F	F	D	D	D
Approach Vol, veh/h		1376			993			2092			877	
Approach Delay, s/veh		85.5			37.5			419.9			40.9	
Approach LOS		F			D			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.1	36.0	16.3	32.6	17.0	42.1	15.0	33.8
Change Period (Y+Rc), s	3.0	4.0	3.0	3.0	5.0	4.0	3.0	3.0
Max Green Setting (Gmax), s	25.0	32.0	15.0	35.0	20.0	35.0	20.0	30.0
Max Q Clear Time (g_c+I1), s	19.9	34.0	13.3	21.6	12.0	15.6	12.0	32.8
Green Ext Time (p_c), s	0.2	0.0	0.0	7.9	0.1	15.0	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	200.3
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	400	10	300	0	500	270	0	1300	320
Future Volume (veh/h)	0	0	0	400	10	300	0	500	270	0	1300	320
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	0	1863	1863	0	1863	1900
Adj Flow Rate, veh/h				490	0	131	0	532	0	0	1383	288
Adj No. of Lanes				2	0	1	0	3	1	0	3	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				2	2	2	0	2	2	0	2	2
Cap, veh/h				831	0	370	0	2859	890	0	2362	491
Arrive On Green				0.23	0.00	0.23	0.00	0.56	0.00	0.00	0.56	0.56
Sat Flow, veh/h				3548	0	1581	0	5253	1583	0	4369	874
Grp Volume(v), veh/h				490	0	131	0	532	0	0	1115	556
Grp Sat Flow(s),veh/h/ln				1774	0	1581	0	1695	1583	0	1695	1685
Q Serve(g_s), s				4.8	0.0	2.7	0.0	2.0	0.0	0.0	8.4	8.5
Cycle Q Clear(g_c), s				4.8	0.0	2.7	0.0	2.0	0.0	0.0	8.4	8.5
Prop In Lane				1.00		1.00	0.00		1.00	0.00		0.52
Lane Grp Cap(c), veh/h				831	0	370	0	2859	890	0	1906	947
V/C Ratio(X)				0.59	0.00	0.35	0.00	0.19	0.00	0.00	0.59	0.59
Avail Cap(c_a), veh/h				2888	0	1287	0	3234	1007	0	2156	1071
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				13.4	0.0	12.6	0.0	4.2	0.0	0.0	5.6	5.6
Incr Delay (d2), s/veh				0.7	0.0	0.6	0.0	0.0	0.0	0.0	0.3	0.7
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.4	0.0	1.2	0.0	0.9	0.0	0.0	4.0	4.0
LnGrp Delay(d),s/veh				14.0	0.0	13.1	0.0	4.2	0.0	0.0	5.9	6.3
LnGrp LOS				B		B		A			A	A
Approach Vol, veh/h					621			532			1671	
Approach Delay, s/veh					13.9			4.2			6.1	
Approach LOS					B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		26.1				26.1		13.2
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		25.0				25.0		32.0
Max Q Clear Time (g_c+I1), s		4.0				10.5		6.8
Green Ext Time (p_c), s		15.7				11.6		2.3

Intersection Summary	
HCM 2010 Ctrl Delay	7.4
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	290	10	900	0	1050	490	0	760	200
Future Volume (veh/h)	0	0	0	290	10	900	0	1050	490	0	760	200
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	0	1863	1863	0	1863	1900
Adj Flow Rate, veh/h				210	0	1059	0	1117	0	0	809	139
Adj No. of Lanes				1	0	2	0	3	1	0	3	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				2	2	2	0	2	2	0	2	2
Cap, veh/h				757	0	1351	0	2125	662	0	1828	312
Arrive On Green				0.43	0.00	0.43	0.00	0.42	0.00	0.00	0.42	0.42
Sat Flow, veh/h				1774	0	3167	0	5253	1583	0	4542	747
Grp Volume(v), veh/h				210	0	1059	0	1117	0	0	626	322
Grp Sat Flow(s),veh/h/ln				1774	0	1583	0	1695	1583	0	1695	1731
Q Serve(g_s), s				4.0	0.0	14.8	0.0	8.4	0.0	0.0	6.8	6.8
Cycle Q Clear(g_c), s				4.0	0.0	14.8	0.0	8.4	0.0	0.0	6.8	6.8
Prop In Lane				1.00		1.00	0.00		1.00	0.00		0.43
Lane Grp Cap(c), veh/h				757	0	1351	0	2125	662	0	1416	723
V/C Ratio(X)				0.28	0.00	0.78	0.00	0.53	0.00	0.00	0.44	0.45
Avail Cap(c_a), veh/h				1105	0	1972	0	2474	770	0	1649	842
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				9.6	0.0	12.7	0.0	11.2	0.0	0.0	10.7	10.7
Incr Delay (d2), s/veh				0.2	0.0	1.3	0.0	0.2	0.0	0.0	0.2	0.4
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.0	0.0	6.6	0.0	4.0	0.0	0.0	3.2	3.3
LnGrp Delay(d),s/veh				9.8	0.0	14.0	0.0	11.4	0.0	0.0	10.9	11.1
LnGrp LOS				A		B		B			B	B
Approach Vol, veh/h					1269			1117			948	
Approach Delay, s/veh					13.3			11.4			11.0	
Approach LOS					B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		25.5				25.5		25.9
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		25.0				25.0		32.0
Max Q Clear Time (g_c+I1), s		10.4				8.8		16.8
Green Ext Time (p_c), s		11.1				12.0		5.1

Intersection Summary	
HCM 2010 Ctrl Delay	12.0
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	0	750	0	0	0	0	630	500	0	990	710
Future Volume (veh/h)	140	0	750	0	0	0	0	630	500	0	990	710
Number	3	8	18				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863				0	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	0	0	992				0	716	0	0	1125	0
Adj No. of Lanes	0	1	2				0	3	0	0	2	1
Peak Hour Factor	0.88	0.88	0.88				0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2				0	2	2	0	2	2
Cap, veh/h	0	699	1188				0	2504	0	0	1743	780
Arrive On Green	0.00	0.00	0.38				0.00	0.49	0.00	0.00	0.49	0.00
Sat Flow, veh/h	0	1863	3167				0	5421	0	0	3632	1583
Grp Volume(v), veh/h	0	0	992				0	716	0	0	1125	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583				0	1695	0	0	1770	1583
Q Serve(g_s), s	0.0	0.0	17.2				0.0	5.0	0.0	0.0	14.3	0.0
Cycle Q Clear(g_c), s	0.0	0.0	17.2				0.0	5.0	0.0	0.0	14.3	0.0
Prop In Lane	0.00		1.00				0.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	0	699	1188				0	2504	0	0	1743	780
V/C Ratio(X)	0.00	0.00	0.83				0.00	0.29	0.00	0.00	0.65	0.00
Avail Cap(c_a), veh/h	0	924	1571				0	3111	0	0	2166	969
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	17.2				0.0	9.1	0.0	0.0	11.4	0.0
Incr Delay (d2), s/veh	0.0	0.0	3.1				0.0	0.1	0.0	0.0	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	8.0				0.0	2.3	0.0	0.0	7.0	0.0
LnGrp Delay(d),s/veh	0.0	0.0	20.3				0.0	9.1	0.0	0.0	11.9	0.0
LnGrp LOS			C					A			B	
Approach Vol, veh/h		992						716			1125	
Approach Delay, s/veh		20.3						9.1			11.9	
Approach LOS		C						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		33.8				33.8		26.7
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		37.0				37.0		30.0
Max Q Clear Time (g_c+I1), s		7.0				16.3		19.2
Green Ext Time (p_c), s		17.0				13.5		3.5

Intersection Summary	
HCM 2010 Ctrl Delay	14.1
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	380	0	480	0	0	0	0	1160	550	0	640	410
Future Volume (veh/h)	380	0	480	0	0	0	0	1160	550	0	640	410
Number	3	8	18				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863				0	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	442	13	451				0	1349	0	0	744	0
Adj No. of Lanes	0	1	1				0	3	0	0	2	1
Peak Hour Factor	0.86	0.86	0.86				0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2				0	2	2	0	2	2
Cap, veh/h	616	18	565				0	2569	0	0	1788	800
Arrive On Green	0.36	0.36	0.36				0.00	0.51	0.00	0.00	0.51	0.00
Sat Flow, veh/h	1726	51	1583				0	5421	0	0	3632	1583
Grp Volume(v), veh/h	455	0	451				0	1349	0	0	744	0
Grp Sat Flow(s),veh/h/ln	1776	0	1583				0	1695	0	0	1770	1583
Q Serve(g_s), s	12.9	0.0	14.9				0.0	10.4	0.0	0.0	7.6	0.0
Cycle Q Clear(g_c), s	12.9	0.0	14.9				0.0	10.4	0.0	0.0	7.6	0.0
Prop In Lane	0.97		1.00				0.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	634	0	565				0	2569	0	0	1788	800
V/C Ratio(X)	0.72	0.00	0.80				0.00	0.53	0.00	0.00	0.42	0.00
Avail Cap(c_a), veh/h	918	0	818				0	3242	0	0	2256	1009
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	16.1	0.0	16.8				0.0	9.7	0.0	0.0	9.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	3.6				0.0	0.2	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	0.0	7.0				0.0	4.8	0.0	0.0	3.8	0.0
LnGrp Delay(d),s/veh	17.7	0.0	20.4				0.0	9.8	0.0	0.0	9.2	0.0
LnGrp LOS	B		C					A			A	
Approach Vol, veh/h		906						1349			744	
Approach Delay, s/veh		19.0						9.8			9.2	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		33.3				33.3		24.7
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		37.0				37.0		30.0
Max Q Clear Time (g_c+I1), s		12.4				9.6		16.9
Green Ext Time (p_c), s		17.0				18.2		3.9

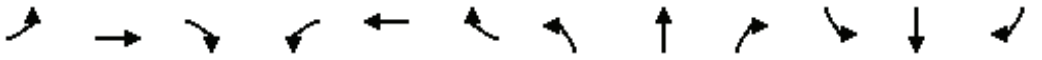
Intersection Summary	
HCM 2010 Ctrl Delay	12.4
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	20	100	10	10	30	120	1010	50	300	1150	290
Future Volume (veh/h)	90	20	100	10	10	30	120	1010	50	300	1150	290
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	98	22	63	11	11	0	130	1098	52	326	1250	298
Adj No. of Lanes	0	1	0	1	1	0	0	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	127	28	82	90	95	0	137	789	38	329	1697	398
Arrive On Green	0.14	0.14	0.14	0.05	0.05	0.00	0.35	0.35	0.35	0.19	0.60	0.60
Sat Flow, veh/h	914	205	587	1774	1863	0	175	2281	111	1774	2832	664
Grp Volume(v), veh/h	183	0	0	11	11	0	496	0	784	326	774	774
Grp Sat Flow(s),veh/h/ln	1706	0	0	1774	1863	0	892	0	1675	1774	1770	1727
Q Serve(g_s), s	6.1	0.0	0.0	0.4	0.3	0.0	16.2	0.0	20.5	10.9	18.4	19.3
Cycle Q Clear(g_c), s	6.1	0.0	0.0	0.4	0.3	0.0	20.5	0.0	20.5	10.9	18.4	19.3
Prop In Lane	0.54		0.34	1.00		0.00	0.26		0.07	1.00		0.38
Lane Grp Cap(c), veh/h	237	0	0	90	95	0	385	0	580	329	1060	1035
V/C Ratio(X)	0.77	0.00	0.00	0.12	0.12	0.00	1.29	0.00	1.35	0.99	0.73	0.75
Avail Cap(c_a), veh/h	605	0	0	1347	1415	0	385	0	580	329	1060	1035
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	0.0	0.0	26.9	26.8	0.0	20.9	0.0	19.4	24.1	8.5	8.6
Incr Delay (d2), s/veh	2.0	0.0	0.0	0.2	0.2	0.0	147.5	0.0	170.0	46.6	2.8	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	0.0	0.0	0.2	0.2	0.0	22.0	0.0	36.7	9.5	9.6	10.0
LnGrp Delay(d),s/veh	26.6	0.0	0.0	27.1	27.0	0.0	168.4	0.0	189.4	70.7	11.3	11.9
LnGrp LOS	C			C	C		F		F	E	B	B
Approach Vol, veh/h		183			22			1280			1874	
Approach Delay, s/veh		26.6			27.1			181.3			21.9	
Approach LOS		C			C			F			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	15.0	25.0		7.0		40.0		12.2
Change Period (Y+Rc), s	4.0	4.5		4.0		4.5		4.0
Max Green Setting (Gmax), s	11.0	20.5		45.0		23.0		21.0
Max Q Clear Time (g_c+I1), s	12.9	22.5		2.4		21.3		8.1
Green Ext Time (p_c), s	0.0	0.0		0.0		1.7		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	82.9
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	290	20	250	40	20	260	140	1160	0	40	910	170
Future Volume (veh/h)	290	20	250	40	20	260	140	1160	0	40	910	170
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	315	22	248	43	22	65	152	1261	0	43	989	172
Adj No. of Lanes	0	1	0	1	1	0	0	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	283	20	223	189	43	128	95	600	0	58	1191	207
Arrive On Green	0.31	0.31	0.31	0.11	0.11	0.11	0.30	0.30	0.00	0.03	0.40	0.40
Sat Flow, veh/h	908	63	715	1774	406	1201	91	2058	0	1774	3005	522
Grp Volume(v), veh/h	585	0	0	43	0	87	579	834	0	43	582	579
Grp Sat Flow(s),veh/h/ln	1687	0	0	1774	0	1607	454	1610	0	1774	1770	1757
Q Serve(g_s), s	21.0	0.0	0.0	1.5	0.0	3.4	6.7	20.5	0.0	1.6	19.9	20.0
Cycle Q Clear(g_c), s	21.0	0.0	0.0	1.5	0.0	3.4	20.5	20.5	0.0	1.6	19.9	20.0
Prop In Lane	0.54		0.42	1.00		0.75	0.26		0.00	1.00		0.30
Lane Grp Cap(c), veh/h	526	0	0	189	0	171	206	490	0	58	701	696
V/C Ratio(X)	1.11	0.00	0.00	0.23	0.00	0.51	2.81	1.70	0.00	0.74	0.83	0.83
Avail Cap(c_a), veh/h	526	0	0	1185	0	1073	206	490	0	290	701	696
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.2	0.0	0.0	27.6	0.0	28.4	28.8	23.4	0.0	32.3	18.3	18.3
Incr Delay (d2), s/veh	74.0	0.0	0.0	0.2	0.0	0.9	829.4	325.3	0.0	6.6	8.6	8.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.4	0.0	0.0	0.7	0.0	1.6	51.1	53.2	0.0	0.9	11.4	11.3
LnGrp Delay(d),s/veh	97.2	0.0	0.0	27.8	0.0	29.3	858.2	348.7	0.0	38.9	26.9	27.1
LnGrp LOS	F			C		C	F	F		D	C	C
Approach Vol, veh/h		585			130			1413			1204	
Approach Delay, s/veh		97.2			28.8			557.3			27.4	
Approach LOS		F			C			F			C	

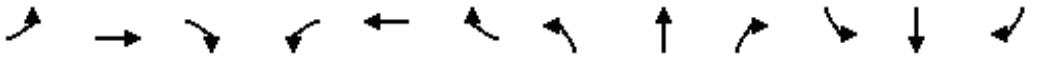
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	6.2	25.0		11.2		31.2		25.0
Change Period (Y+Rc), s	4.0	4.5		4.0		4.5		4.0
Max Green Setting (Gmax), s	11.0	20.5		45.0		23.0		21.0
Max Q Clear Time (g_c+I1), s	3.6	22.5		5.4		22.0		23.0
Green Ext Time (p_c), s	0.0	0.0		0.4		1.0		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		264.4
HCM 2010 LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	380	210	90	80	70	150	40	500	290	380	360	260
Future Volume (veh/h)	380	210	90	80	70	150	40	500	290	380	360	260
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	400	221	0	84	74	29	42	526	270	400	379	0
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	399	888	397	108	218	81	54	564	289	422	1619	0
Arrive On Green	0.23	0.25	0.00	0.06	0.09	0.09	0.03	0.25	0.25	0.24	0.46	0.00
Sat Flow, veh/h	1774	3539	1583	1774	2517	932	1774	2256	1154	1774	3632	0
Grp Volume(v), veh/h	400	221	0	84	51	52	42	412	384	400	379	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1679	1774	1770	1640	1774	1770	0
Q Serve(g_s), s	18.0	4.0	0.0	3.7	2.2	2.3	1.9	18.2	18.3	17.7	5.2	0.0
Cycle Q Clear(g_c), s	18.0	4.0	0.0	3.7	2.2	2.3	1.9	18.2	18.3	17.7	5.2	0.0
Prop In Lane	1.00		1.00	1.00		0.55	1.00		0.70	1.00		0.00
Lane Grp Cap(c), veh/h	399	888	397	108	154	146	54	443	410	422	1619	0
V/C Ratio(X)	1.00	0.25	0.00	0.78	0.33	0.36	0.78	0.93	0.93	0.95	0.23	0.00
Avail Cap(c_a), veh/h	399	1328	594	200	465	441	155	443	410	422	1619	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	31.0	23.9	0.0	37.0	34.3	34.4	38.5	29.3	29.3	30.0	13.2	0.0
Incr Delay (d2), s/veh	45.4	0.1	0.0	11.2	1.2	1.5	21.1	26.5	28.6	31.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.8	2.0	0.0	2.2	1.1	1.1	1.2	12.1	11.6	12.3	2.5	0.0
LnGrp Delay(d),s/veh	76.3	24.1	0.0	48.2	35.6	35.9	59.6	55.8	58.0	61.0	13.2	0.0
LnGrp LOS	F	C		D	D	D	E	E	E	E	B	
Approach Vol, veh/h		621			187			838			779	
Approach Delay, s/veh		57.7			41.3			57.0			37.7	
Approach LOS		E			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	24.0	8.9	24.1	6.4	40.6	22.0	10.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	19.0	20.0	9.0	30.0	7.0	32.0	18.0	21.0
Max Q Clear Time (g_c+I1), s	19.7	20.3	5.7	6.0	3.9	7.2	20.0	4.3
Green Ext Time (p_c), s	0.0	0.0	0.0	2.0	0.0	9.1	0.0	1.8

Intersection Summary	
HCM 2010 Ctrl Delay	49.8
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	410	450	100	90	230	500	70	350	220	210	590	320
Future Volume (veh/h)	410	450	100	90	230	500	70	350	220	210	590	320
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	432	474	0	95	242	349	74	368	135	221	621	0
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	463	1548	693	122	434	389	78	471	170	234	969	0
Arrive On Green	0.26	0.44	0.00	0.07	0.25	0.25	0.04	0.19	0.19	0.13	0.27	0.00
Sat Flow, veh/h	1774	3539	1583	1774	1770	1583	1774	2536	916	1774	3632	0
Grp Volume(v), veh/h	432	474	0	95	242	349	74	255	248	221	621	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1682	1774	1770	0
Q Serve(g_s), s	21.6	7.9	0.0	4.8	10.9	19.4	3.8	12.5	12.8	11.2	14.0	0.0
Cycle Q Clear(g_c), s	21.6	7.9	0.0	4.8	10.9	19.4	3.8	12.5	12.8	11.2	14.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.54	1.00		0.00
Lane Grp Cap(c), veh/h	463	1548	693	122	434	389	78	329	312	234	969	0
V/C Ratio(X)	0.93	0.31	0.00	0.78	0.56	0.90	0.95	0.78	0.79	0.94	0.64	0.00
Avail Cap(c_a), veh/h	469	1548	693	234	467	418	78	351	333	234	1013	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	32.8	16.6	0.0	41.6	30.0	33.2	43.3	35.2	35.3	39.1	29.1	0.0
Incr Delay (d2), s/veh	25.8	0.1	0.0	10.2	1.3	20.8	83.9	9.9	11.8	43.2	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.9	3.8	0.0	2.7	5.5	10.7	3.6	7.0	6.9	8.3	7.0	0.0
LnGrp Delay(d),s/veh	58.7	16.7	0.0	51.8	31.2	54.0	127.2	45.1	47.1	82.3	30.4	0.0
LnGrp LOS	E	B		D	C	D	F	D	D	F	C	
Approach Vol, veh/h		906			686			577			842	
Approach Delay, s/veh		36.7			45.7			56.5			44.0	
Approach LOS		D			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	20.9	10.2	43.8	8.0	28.9	27.7	26.3
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	18.0	12.0	36.0	4.0	26.0	24.0	24.0
Max Q Clear Time (g_c+I1), s	13.2	14.8	6.8	9.9	5.8	16.0	23.6	21.4
Green Ext Time (p_c), s	0.0	2.1	0.1	8.0	0.0	5.2	0.1	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	44.6
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	930	540	60	1210	140	230	350	60	130	540	170
Future Volume (veh/h)	90	930	540	60	1210	140	230	350	60	130	540	170
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	95	979	407	63	1274	139	242	368	50	137	568	148
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	92	1547	665	155	1402	152	274	1092	147	168	803	209
Arrive On Green	0.44	0.44	0.44	0.44	0.44	0.44	0.15	0.35	0.35	0.09	0.29	0.29
Sat Flow, veh/h	379	3539	1521	388	3207	348	1774	3126	421	1774	2777	721
Grp Volume(v), veh/h	95	979	407	63	700	713	242	207	211	137	361	355
Grp Sat Flow(s),veh/h/ln	379	1770	1521	388	1770	1786	1774	1770	1777	1774	1770	1729
Q Serve(g_s), s	6.6	22.6	21.6	15.8	38.7	39.3	14.0	9.0	9.2	8.0	19.1	19.3
Cycle Q Clear(g_c), s	45.9	22.6	21.6	38.4	38.7	39.3	14.0	9.0	9.2	8.0	19.1	19.3
Prop In Lane	1.00		1.00	1.00		0.20	1.00		0.24	1.00		0.42
Lane Grp Cap(c), veh/h	92	1547	665	155	773	780	274	618	621	168	512	500
V/C Ratio(X)	1.03	0.63	0.61	0.41	0.91	0.91	0.88	0.33	0.34	0.82	0.71	0.71
Avail Cap(c_a), veh/h	92	1547	665	155	773	780	329	618	621	279	565	552
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.6	23.0	22.7	38.0	27.5	27.7	43.4	25.2	25.2	46.6	33.3	33.4
Incr Delay (d2), s/veh	101.1	2.0	4.2	7.8	16.2	16.9	20.6	1.1	1.2	9.3	6.8	7.1
Initial Q Delay(d3),s/veh	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	11.4	9.8	2.0	22.3	22.9	8.4	4.6	4.7	4.3	10.3	10.1
LnGrp Delay(d),s/veh	153.2	25.0	26.9	45.7	43.7	44.6	64.1	26.3	26.4	55.9	40.1	40.4
LnGrp LOS	F	C	C	D	D	D	E	C	C	E	D	D
Approach Vol, veh/h		1481			1476			660			853	
Approach Delay, s/veh		33.7			44.2			40.2			42.8	
Approach LOS		C			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		50.4	19.7	34.9		50.4	13.4	41.2
Change Period (Y+Rc), s		4.5	3.5	4.5		4.5	3.5	4.5
Max Green Setting (Gmax), s		39.5	19.5	33.5		39.5	16.5	36.5
Max Q Clear Time (g_c+I1), s		47.9	16.0	21.3		41.3	10.0	11.2
Green Ext Time (p_c), s		0.0	0.2	9.1		0.0	0.2	16.2

Intersection Summary	
HCM 2010 Ctrl Delay	39.9
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	1600	180	0	750	180	190	550	50	70	360	110
Future Volume (veh/h)	220	1600	180	0	750	180	190	550	50	70	360	110
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	239	1739	166	0	815	179	207	598	47	76	391	85
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	227	1715	746	69	1391	306	240	1131	89	98	752	162
Arrive On Green	0.48	0.48	0.48	0.00	0.48	0.48	0.14	0.34	0.34	0.06	0.26	0.26
Sat Flow, veh/h	564	3539	1539	235	2870	630	1774	3320	260	1774	2885	620
Grp Volume(v), veh/h	239	1739	166	0	502	492	207	318	327	76	238	238
Grp Sat Flow(s),veh/h/ln	564	1770	1539	235	1770	1731	1774	1770	1811	1774	1770	1735
Q Serve(g_s), s	29.4	50.9	6.5	0.0	21.5	21.5	12.0	15.2	15.2	4.4	12.1	12.3
Cycle Q Clear(g_c), s	50.9	50.9	6.5	0.0	21.5	21.5	12.0	15.2	15.2	4.4	12.1	12.3
Prop In Lane	1.00		1.00	1.00		0.36	1.00		0.14	1.00		0.36
Lane Grp Cap(c), veh/h	227	1715	746	69	858	839	240	603	617	98	462	453
V/C Ratio(X)	1.05	1.01	0.22	0.00	0.59	0.59	0.86	0.53	0.53	0.77	0.52	0.53
Avail Cap(c_a), veh/h	227	1715	746	69	858	839	329	615	629	279	565	554
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.2	27.1	15.6	0.0	19.5	19.5	44.4	27.8	27.8	48.9	33.1	33.2
Incr Delay (d2), s/veh	75.0	25.2	0.7	0.0	2.9	3.0	15.6	2.6	2.6	12.0	3.2	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.3	30.8	2.9	0.0	11.2	10.9	6.9	7.9	8.1	2.5	6.3	6.3
LnGrp Delay(d),s/veh	117.2	52.2	16.3	0.0	22.4	22.5	60.0	30.4	30.4	61.0	36.4	36.6
LnGrp LOS	F	F	B		C	C	E	C	C	E	D	D
Approach Vol, veh/h		2144			994			852			552	
Approach Delay, s/veh		56.7			22.4			37.6			39.9	
Approach LOS		E			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		55.4	17.7	31.9		55.4	9.3	40.3
Change Period (Y+Rc), s		4.5	3.5	4.5		4.5	3.5	4.5
Max Green Setting (Gmax), s		39.5	19.5	33.5		39.5	16.5	36.5
Max Q Clear Time (g_c+I1), s		52.9	14.0	14.3		23.5	6.4	17.2
Green Ext Time (p_c), s		0.0	0.3	13.1		16.0	0.1	13.1

Intersection Summary	
HCM 2010 Ctrl Delay	43.6
HCM 2010 LOS	D

Notes



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	930	230	390	150	150	340
Future Volume (Veh/h)	930	230	390	150	150	340
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1033	256	433	167	167	378
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						19
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1062		
pX, platoon unblocked						
vC, conflicting volume			1289		2066	1033
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1289		2066	1033
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			20		0	0
cM capacity (veh/h)			538		12	282

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	1033	256	433	167	545
Volume Left	0	0	433	0	167
Volume Right	0	256	0	0	378
cSH	1700	1700	538	1700	35
Volume to Capacity	0.61	0.15	0.80	0.10	15.55
Queue Length 95th (ft)	0	0	194	0	Err
Control Delay (s)	0.0	0.0	33.7	0.0	Err
Lane LOS			D		F
Approach Delay (s)	0.0		24.4		Err
Approach LOS					F

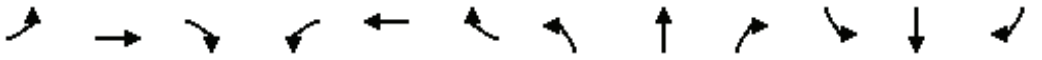
Intersection Summary			
Average Delay	2244.9		
Intersection Capacity Utilization	88.9%	ICU Level of Service	E
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	400	150	580	580	340	310
Future Volume (Veh/h)	400	150	580	580	340	310
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	440	165	637	637	374	341
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						19
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				1062		
pX, platoon unblocked						
vC, conflicting volume			605		2351	440
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			605		2351	440
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			35		0	45
cM capacity (veh/h)			973		14	617

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	440	165	637	637	715
Volume Left	0	0	637	0	374
Volume Right	0	165	0	0	341
cSH	1700	1700	973	1700	26
Volume to Capacity	0.26	0.10	0.65	0.37	27.98
Queue Length 95th (ft)	0	0	127	0	Err
Control Delay (s)	0.0	0.0	15.4	0.0	Err
Lane LOS			C		F
Approach Delay (s)	0.0		7.7		Err
Approach LOS					F

Intersection Summary			
Average Delay	2759.9		
Intersection Capacity Utilization	82.0%	ICU Level of Service	E
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	410	360	80	140	270	100	120	210	560	380	330
Future Volume (veh/h)	150	410	360	80	140	270	100	120	210	560	380	330
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	163	446	346	87	152	172	109	130	-36	609	413	339
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	204	431	334	111	311	352	381	527	0	256	111	91
Arrive On Green	0.12	0.44	0.44	0.06	0.39	0.39	0.28	0.28	0.00	0.28	0.28	0.28
Sat Flow, veh/h	1774	974	756	1774	799	904	708	1863	0	580	393	323
Grp Volume(v), veh/h	163	0	792	87	0	324	109	94	0	1361	0	0
Grp Sat Flow(s),veh/h/ln	1774	0	1729	1774	0	1703	708	1863	0	1296	0	0
Q Serve(g_s), s	5.1	0.0	25.0	2.7	0.0	8.1	0.0	2.2	0.0	13.8	0.0	0.0
Cycle Q Clear(g_c), s	5.1	0.0	25.0	2.7	0.0	8.1	5.6	2.2	0.0	16.0	0.0	0.0
Prop In Lane	1.00		0.44	1.00		0.53	1.00		0.00	0.45		0.25
Lane Grp Cap(c), veh/h	204	0	765	111	0	664	381	527	0	459	0	0
V/C Ratio(X)	0.80	0.00	1.04	0.78	0.00	0.49	0.29	0.18	0.00	2.97	0.00	0.00
Avail Cap(c_a), veh/h	220	0	765	220	0	753	381	527	0	459	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.4	0.0	15.8	26.1	0.0	13.0	16.5	15.3	0.0	22.7	0.0	0.0
Incr Delay (d2), s/veh	17.3	0.0	42.2	11.2	0.0	0.6	0.4	0.2	0.0	890.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	20.6	1.7	0.0	3.9	1.4	1.1	0.0	120.5	0.0	0.0
LnGrp Delay(d),s/veh	41.7	0.0	58.0	37.3	0.0	13.6	17.0	15.5	0.0	913.4	0.0	0.0
LnGrp LOS	D		F	D		B	B	B		F		
Approach Vol, veh/h		955			411			203			1361	
Approach Delay, s/veh		55.2			18.6			16.3			913.4	
Approach LOS		E			B			B			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		20.0	7.6	29.0		20.0	10.5	26.0
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		16.0	7.0	25.0		16.0	7.0	25.0
Max Q Clear Time (g_c+I1), s		7.6	4.7	27.0		18.0	7.1	10.1
Green Ext Time (p_c), s		7.2	0.0	0.0		0.0	0.0	7.2

Intersection Summary	
HCM 2010 Ctrl Delay	446.0
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	10	140	350	530	540	300	480	240	300	320	90
Future Volume (veh/h)	140	10	140	350	530	540	300	480	240	300	320	90
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	152	11	76	380	576	521	326	522	199	326	348	90
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	191	84	579	209	380	344	355	344	131	86	0	0
Arrive On Green	0.11	0.41	0.41	0.12	0.42	0.42	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1774	204	1410	1774	902	816	947	1276	487	0	0	0
Grp Volume(v), veh/h	152	0	87	380	0	1097	326	0	721	764	0	0
Grp Sat Flow(s),veh/h/ln	1774	0	1614	1774	0	1719	947	0	1763	0	0	0
Q Serve(g_s), s	5.0	0.0	2.0	7.0	0.0	25.0	0.0	0.0	16.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	5.0	0.0	2.0	7.0	0.0	25.0	16.0	0.0	16.0	16.0	0.0	0.0
Prop In Lane	1.00		0.87	1.00		0.47	1.00		0.28	0.43		0.12
Lane Grp Cap(c), veh/h	191	0	663	209	0	723	355	0	475	86	0	0
V/C Ratio(X)	0.80	0.00	0.13	1.82	0.00	1.52	0.92	0.00	1.52	8.84	0.00	0.00
Avail Cap(c_a), veh/h	209	0	679	209	0	723	355	0	475	86	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	25.9	0.0	10.9	26.2	0.0	17.2	24.0	0.0	21.7	29.7	0.0	0.0
Incr Delay (d2), s/veh	17.6	0.0	0.1	386.2	0.0	239.5	28.1	0.0	243.9	3549.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	0.9	25.8	0.0	59.8	8.0	0.0	39.8	86.6	0.0	0.0
LnGrp Delay(d),s/veh	43.4	0.0	11.0	412.4	0.0	256.7	52.1	0.0	265.6	3579.1	0.0	0.0
LnGrp LOS	D		B	F		F	D		F	F		
Approach Vol, veh/h		239			1477			1047			764	
Approach Delay, s/veh		31.6			296.8			199.2			3579.1	
Approach LOS		C			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		20.0	11.0	28.4		20.0	10.4	29.0
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0
Max Green Setting (Gmax), s		16.0	7.0	25.0		16.0	7.0	25.0
Max Q Clear Time (g_c+I1), s		18.0	9.0	4.0		18.0	7.0	27.0
Green Ext Time (p_c), s		0.0	0.0	11.1		0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	960.8
HCM 2010 LOS	F



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	670	510	70	240	250	250
Future Volume (Veh/h)	670	510	70	240	250	250
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	728	554	76	261	272	272
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						3
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	337					
pX, platoon unblocked			0.72		0.72	0.72
vC, conflicting volume			728		1418	1005
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			427		1386	812
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			91		0	0
cM capacity (veh/h)			815		103	273

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	1282	76	261	544
Volume Left	0	76	0	272
Volume Right	554	0	0	272
cSH	1700	815	1700	152
Volume to Capacity	0.75	0.09	0.15	3.58
Queue Length 95th (ft)	0	8	0	Err
Control Delay (s)	0.0	9.9	0.0	Err
Lane LOS		A		F
Approach Delay (s)	0.0	2.2		Err
Approach LOS				F

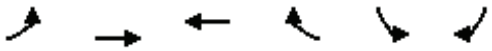
Intersection Summary			
Average Delay	2515.1		
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	140	370	140	780	640	260
Future Volume (Veh/h)	140	370	140	780	640	260
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	152	402	152	848	696	283
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						3
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	337					
pX, platoon unblocked						
vC, conflicting volume			152		1505	353
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			152		1505	353
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			89		0	59
cM capacity (veh/h)			1429		119	691

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	554	152	848	979
Volume Left	0	152	0	696
Volume Right	402	0	0	283
cSH	1700	1429	1700	157
Volume to Capacity	0.33	0.11	0.50	6.24
Queue Length 95th (ft)	0	9	0	Err
Control Delay (s)	0.0	7.8	0.0	Err
Lane LOS		A		F
Approach Delay (s)	0.0	1.2		Err
Approach LOS				F

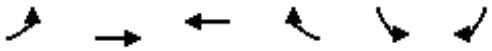
Intersection Summary			
Average Delay	3865.1		
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1030	640	0	1020	780
Future Volume (veh/h)	0	1030	640	0	1020	780
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	0	1084	674	0	1074	744
Adj No. of Lanes	0	2	2	0	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1652	1652	0	1319	607
Arrive On Green	0.00	0.47	0.15	0.00	0.38	0.38
Sat Flow, veh/h	0	3725	3725	0	3442	1583
Grp Volume(v), veh/h	0	1084	674	0	1074	744
Grp Sat Flow(s),veh/h/ln	0	1770	1770	0	1721	1583
Q Serve(g_s), s	0.0	14.1	10.3	0.0	16.8	23.0
Cycle Q Clear(g_c), s	0.0	14.1	10.3	0.0	16.8	23.0
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1652	1652	0	1319	607
V/C Ratio(X)	0.00	0.66	0.41	0.00	0.81	1.23
Avail Cap(c_a), veh/h	0	1652	1652	0	1319	607
HCM Platoon Ratio	1.00	1.00	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.96	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	12.3	17.9	0.0	16.6	18.5
Incr Delay (d2), s/veh	0.0	2.1	0.7	0.0	4.0	115.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.2	5.2	0.0	8.6	29.5
LnGrp Delay(d),s/veh	0.0	14.4	18.6	0.0	20.6	134.2
LnGrp LOS		B	B		C	F
Approach Vol, veh/h		1084	674		1818	
Approach Delay, s/veh		14.4	18.6		67.1	
Approach LOS		B	B		E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		33.0		27.0		33.0		
Change Period (Y+Rc), s		5.0		4.0		5.0		
Max Green Setting (Gmax), s		28.0		23.0		28.0		
Max Q Clear Time (g_c+I1), s		16.1		25.0		12.3		
Green Ext Time (p_c), s		8.6		0.0		10.6		

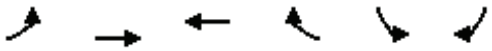
Intersection Summary	
HCM 2010 Ctrl Delay	42.0
HCM 2010 LOS	D



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1660	480	0	560	640
Future Volume (veh/h)	0	1660	480	0	560	640
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	0	1785	516	0	602	561
Adj No. of Lanes	0	2	2	0	2	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1666	1666	0	1305	600
Arrive On Green	0.00	0.47	0.16	0.00	0.38	0.38
Sat Flow, veh/h	0	3725	3725	0	3442	1583
Grp Volume(v), veh/h	0	1785	516	0	602	561
Grp Sat Flow(s),veh/h/ln	0	1770	1770	0	1721	1583
Q Serve(g_s), s	0.0	28.2	7.8	0.0	7.9	20.4
Cycle Q Clear(g_c), s	0.0	28.2	7.8	0.0	7.9	20.4
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1666	1666	0	1305	600
V/C Ratio(X)	0.00	1.07	0.31	0.00	0.46	0.93
Avail Cap(c_a), veh/h	0	1666	1666	0	1319	607
HCM Platoon Ratio	1.00	1.00	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.98	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	15.9	16.7	0.0	14.0	17.9
Incr Delay (d2), s/veh	0.0	43.9	0.5	0.0	0.3	21.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	23.8	3.9	0.0	3.7	12.5
LnGrp Delay(d),s/veh	0.0	59.8	17.2	0.0	14.3	39.6
LnGrp LOS		F	B		B	D
Approach Vol, veh/h		1785	516		1163	
Approach Delay, s/veh		59.8	17.2		26.5	
Approach LOS		E	B		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		33.2		26.8		33.2		
Change Period (Y+Rc), s		5.0		4.0		5.0		
Max Green Setting (Gmax), s		28.0		23.0		28.0		
Max Q Clear Time (g_c+I1), s		30.2		22.4		9.8		
Green Ext Time (p_c), s		0.0		0.3		15.0		

Intersection Summary	
HCM 2010 Ctrl Delay	42.3
HCM 2010 LOS	D

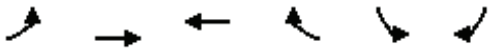


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	2030	560	50	310	80
Future Volume (veh/h)	20	2030	560	50	310	80
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99			0.94	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	21	2137	589	42	326	67
Adj No. of Lanes	0	2	2	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	69	2105	2041	145	367	75
Arrive On Green	0.61	0.61	0.61	0.61	0.25	0.25
Sat Flow, veh/h	13	3527	3430	237	1439	296
Grp Volume(v), veh/h	1158	1000	312	319	394	0
Grp Sat Flow(s),veh/h/ln	1845	1610	1770	1804	1739	0
Q Serve(g_s), s	14.5	36.7	5.0	5.0	13.1	0.0
Cycle Q Clear(g_c), s	36.7	36.7	5.0	5.0	13.1	0.0
Prop In Lane	0.02			0.13	0.83	0.17
Lane Grp Cap(c), veh/h	1190	985	1082	1104	443	0
V/C Ratio(X)	0.97	1.02	0.29	0.29	0.89	0.00
Avail Cap(c_a), veh/h	1190	985	1082	1104	522	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.60	0.60	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.0	11.6	5.5	5.5	21.5	0.0
Incr Delay (d2), s/veh	14.8	26.1	0.7	0.7	13.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.9	23.0	2.6	2.7	8.0	0.0
LnGrp Delay(d),s/veh	26.8	37.7	6.2	6.2	35.5	0.0
LnGrp LOS	C	F	A	A	D	
Approach Vol, veh/h		2158	631		394	
Approach Delay, s/veh		31.9	6.2		35.5	
Approach LOS		C	A		D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		40.7		19.3		40.7		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		34.0		18.0		34.0		
Max Q Clear Time (g_c+I1), s		38.7		15.1		7.0		
Green Ext Time (p_c), s		0.0		0.2		23.8		

Intersection Summary	
HCM 2010 Ctrl Delay	27.2
HCM 2010 LOS	C

Notes



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	70	2150	450	130	70	30
Future Volume (veh/h)	70	2150	450	130	70	30
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99			0.95	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	74	2263	474	113	74	1
Adj No. of Lanes	0	2	2	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	120	2690	2281	539	95	1
Arrive On Green	1.00	1.00	0.54	0.54	0.06	0.06
Sat Flow, veh/h	70	3399	2904	664	1726	23
Grp Volume(v), veh/h	1255	1082	297	290	76	0
Grp Sat Flow(s),veh/h/ln	1774	1610	1770	1705	1772	0
Q Serve(g_s), s	0.0	0.0	5.2	5.3	2.5	0.0
Cycle Q Clear(g_c), s	0.0	0.0	5.2	5.3	2.5	0.0
Prop In Lane	0.06			0.39	0.97	0.01
Lane Grp Cap(c), veh/h	1503	1307	1436	1384	98	0
V/C Ratio(X)	0.83	0.83	0.21	0.21	0.78	0.00
Avail Cap(c_a), veh/h	1503	1307	1436	1384	532	0
HCM Platoon Ratio	2.00	2.00	0.67	0.67	1.00	1.00
Upstream Filter(I)	0.28	0.28	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	3.8	3.8	28.0	0.0
Incr Delay (d2), s/veh	1.7	1.8	0.3	0.3	5.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.7	2.7	2.6	1.4	0.0
LnGrp Delay(d),s/veh	1.7	1.8	4.1	4.1	33.0	0.0
LnGrp LOS	A	A	A	A	C	
Approach Vol, veh/h		2337	587		76	
Approach Delay, s/veh		1.7	4.1		33.0	
Approach LOS		A	A		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		52.7		7.3		52.7		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		34.0		18.0		34.0		
Max Q Clear Time (g_c+I1), s		2.0		4.5		7.3		
Green Ext Time (p_c), s		29.1		0.1		24.6		

Intersection Summary	
HCM 2010 Ctrl Delay	3.0
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	30	1070	120	490	90	560	580	0	0	800	270
Future Volume (veh/h)	230	30	1070	120	490	90	560	580	0	0	800	270
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.76	1.00		0.92	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	242	0	921	126	516	16	589	611	0	0	842	180
Adj No. of Lanes	1	0	2	1	2	1	2	3	0	0	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	0	2	2
Cap, veh/h	244	0	887	452	902	370	602	2624	0	0	1118	484
Arrive On Green	0.14	0.00	0.14	0.25	0.25	0.25	0.17	0.52	0.00	0.00	0.32	0.32
Sat Flow, veh/h	1774	0	2420	1774	3539	1452	3442	5253	0	0	3632	1532
Grp Volume(v), veh/h	242	0	921	126	516	16	589	611	0	0	842	180
Grp Sat Flow(s),veh/h/ln	1774	0	1210	1774	1770	1452	1721	1695	0	0	1770	1532
Q Serve(g_s), s	16.3	0.0	16.5	6.8	15.3	1.0	20.4	7.9	0.0	0.0	25.6	10.9
Cycle Q Clear(g_c), s	16.3	0.0	16.5	6.8	15.3	1.0	20.4	7.9	0.0	0.0	25.6	10.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	244	0	887	452	902	370	602	2624	0	0	1118	484
V/C Ratio(X)	0.99	0.00	1.04	0.28	0.57	0.04	0.98	0.23	0.00	0.00	0.75	0.37
Avail Cap(c_a), veh/h	244	0	887	532	1062	436	602	2624	0	0	1118	484
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	0.0	42.5	35.9	39.0	33.7	49.3	16.0	0.0	0.0	36.8	31.8
Incr Delay (d2), s/veh	55.3	0.0	40.7	0.3	0.6	0.0	31.0	0.2	0.0	0.0	4.7	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.7	0.0	19.7	3.4	7.5	0.4	12.3	3.7	0.0	0.0	13.2	4.9
LnGrp Delay(d),s/veh	107.0	0.0	83.1	36.2	39.6	33.7	80.3	16.2	0.0	0.0	41.6	34.0
LnGrp LOS	F		F	D	D	C	F	B			D	C
Approach Vol, veh/h		1163			658			1200			1022	
Approach Delay, s/veh		88.1			38.8			47.6			40.2	
Approach LOS		F			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		65.9		20.0	24.0	41.9		34.1
Change Period (Y+Rc), s		4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s		56.5		16.5	21.0	32.5		36.0
Max Q Clear Time (g_c+I1), s		9.9		18.5	22.4	27.6		17.3
Green Ext Time (p_c), s		16.1		0.0	0.0	3.7		3.7

Intersection Summary	
HCM 2010 Ctrl Delay	56.0
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	260	40	740	120	470	170	580	920	0	0	790	210
Future Volume (veh/h)	260	40	740	120	470	170	580	920	0	0	790	210
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.67	1.00		0.90	1.00		1.00	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	268	0	572	124	485	120	598	948	0	0	814	137
Adj No. of Lanes	1	0	2	1	2	1	2	3	0	0	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	0	2	2
Cap, veh/h	244	0	846	475	948	380	602	2557	0	0	1072	450
Arrive On Green	0.14	0.00	0.14	0.27	0.27	0.27	0.17	0.50	0.00	0.00	0.30	0.30
Sat Flow, veh/h	1774	0	2126	1774	3539	1417	3442	5253	0	0	3632	1485
Grp Volume(v), veh/h	268	0	572	124	485	120	598	948	0	0	814	137
Grp Sat Flow(s),veh/h/ln	1774	0	1063	1774	1770	1417	1721	1695	0	0	1770	1485
Q Serve(g_s), s	16.5	0.0	16.5	6.6	13.9	8.1	20.8	13.7	0.0	0.0	25.0	8.5
Cycle Q Clear(g_c), s	16.5	0.0	16.5	6.6	13.9	8.1	20.8	13.7	0.0	0.0	25.0	8.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	244	0	846	475	948	380	602	2557	0	0	1072	450
V/C Ratio(X)	1.10	0.00	0.68	0.26	0.51	0.32	0.99	0.37	0.00	0.00	0.76	0.30
Avail Cap(c_a), veh/h	244	0	846	532	1062	425	602	2557	0	0	1072	450
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	0.0	37.9	34.6	37.3	35.1	49.4	18.2	0.0	0.0	37.9	32.1
Incr Delay (d2), s/veh	86.6	0.0	2.1	0.3	0.4	0.5	34.8	0.4	0.0	0.0	5.1	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.9	0.0	8.7	3.3	6.9	3.2	12.8	6.5	0.0	0.0	13.0	3.7
LnGrp Delay(d),s/veh	138.3	0.0	40.1	34.9	37.7	35.6	84.2	18.6	0.0	0.0	42.9	33.9
LnGrp LOS	F		D	C	D	D	F	B			D	C
Approach Vol, veh/h		840			729			1546			951	
Approach Delay, s/veh		71.4			36.9			44.0			41.6	
Approach LOS		E			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		64.3		20.0	24.0	40.3		35.7
Change Period (Y+Rc), s		4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s		56.5		16.5	21.0	32.5		36.0
Max Q Clear Time (g_c+I1), s		15.7		18.5	22.8	27.0		15.9
Green Ext Time (p_c), s		19.6		0.0	0.0	4.5		4.0

Intersection Summary	
HCM 2010 Ctrl Delay	47.8
HCM 2010 LOS	D

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	200	380	570	450	70	100
Future Volume (veh/h)	200	380	570	450	70	100
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	211	400	600	474	74	105
Adj No. of Lanes	1	0	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	276	524	673	1446	178	159
Arrive On Green	0.48	0.48	0.24	0.78	0.10	0.10
Sat Flow, veh/h	577	1093	1774	1863	1774	1583
Grp Volume(v), veh/h	0	611	600	474	74	105
Grp Sat Flow(s),veh/h/ln	0	1670	1774	1863	1774	1583
Q Serve(g_s), s	0.0	19.4	11.2	4.9	2.5	4.1
Cycle Q Clear(g_c), s	0.0	19.4	11.2	4.9	2.5	4.1
Prop In Lane		0.65	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	800	673	1446	178	159
V/C Ratio(X)	0.00	0.76	0.89	0.33	0.42	0.66
Avail Cap(c_a), veh/h	0	1523	1160	2765	439	392
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	13.8	12.4	2.2	27.3	28.0
Incr Delay (d2), s/veh	0.0	1.6	4.9	0.1	1.6	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	9.2	10.9	2.6	1.3	2.0
LnGrp Delay(d),s/veh	0.0	15.4	17.3	2.3	28.9	32.7
LnGrp LOS		B	B	A	C	C
Approach Vol, veh/h	611			1074	179	
Approach Delay, s/veh	15.4			10.7	31.1	
Approach LOS	B			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		10.5	19.2	35.0				54.2
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		16.0	33.0	59.0				96.0
Max Q Clear Time (g_c+I1), s		6.1	13.2	21.4				6.9
Green Ext Time (p_c), s		0.3	2.0	9.5				10.3

Intersection Summary	
HCM 2010 Ctrl Delay	14.2
HCM 2010 LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	470	60	90	220	360	560
Future Volume (veh/h)	470	60	90	220	360	560
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	495	63	95	232	379	589
Adj No. of Lanes	1	0	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	615	78	273	897	733	654
Arrive On Green	0.38	0.38	0.05	0.48	0.41	0.41
Sat Flow, veh/h	1620	206	1774	1863	1774	1583
Grp Volume(v), veh/h	0	558	95	232	379	589
Grp Sat Flow(s),veh/h/ln	0	1826	1774	1863	1774	1583
Q Serve(g_s), s	0.0	20.7	2.3	5.6	12.1	26.4
Cycle Q Clear(g_c), s	0.0	20.7	2.3	5.6	12.1	26.4
Prop In Lane		0.11	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	693	273	897	733	654
V/C Ratio(X)	0.00	0.81	0.35	0.26	0.52	0.90
Avail Cap(c_a), veh/h	0	1539	278	1765	934	834
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	21.1	15.7	11.7	16.6	20.8
Incr Delay (d2), s/veh	0.0	2.3	0.8	0.2	0.6	10.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	10.8	1.2	2.9	6.0	13.3
LnGrp Delay(d),s/veh	0.0	23.3	16.5	11.8	17.2	31.6
LnGrp LOS		C	B	B	B	C
Approach Vol, veh/h	558			327	968	
Approach Delay, s/veh	23.3			13.2	26.0	
Approach LOS	C			B	C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		35.4	7.8	32.8				40.6
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		40.0	4.0	64.0				72.0
Max Q Clear Time (g_c+I1), s		28.4	4.3	22.7				7.6
Green Ext Time (p_c), s		3.0	0.0	6.1				6.2

Intersection Summary	
HCM 2010 Ctrl Delay	22.9
HCM 2010 LOS	C

Intersection	
Intersection Delay, s/veh	168.6
Intersection LOS	F

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	30	30	30	0	450	20	20	0	30	880	190
Future Vol, veh/h	0	30	30	30	0	450	20	20	0	30	880	190
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	33	33	33	0	489	22	22	0	33	957	207
Number of Lanes	0	0	1	0	0	1	1	0	0	1	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	1	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	3	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	3	3	2
HCM Control Delay	20.2	201.7	225.3
HCM LOS	C	F	F

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	33%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	61%	33%	0%	50%	0%	100%	62%
Vol Right, %	0%	0%	39%	33%	0%	50%	0%	0%	38%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	30	587	483	90	450	40	220	133	107
LT Vol	30	0	0	30	450	0	220	0	0
Through Vol	0	587	293	30	0	20	0	133	67
RT Vol	0	0	190	30	0	20	0	0	40
Lane Flow Rate	33	638	525	98	489	43	239	145	116
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.084	1.561	1.246	0.3	1.381	0.113	0.667	0.384	0.299
Departure Headway (Hd)	10.466	9.937	9.646	12.293	10.952	10.084	11.661	11.132	10.854
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	344	370	384	294	337	358	313	326	334
Service Time	8.166	7.637	7.346	9.993	8.652	7.784	9.361	8.832	8.554
HCM Lane V/C Ratio	0.096	1.724	1.367	0.333	1.451	0.12	0.764	0.445	0.347
HCM Control Delay	14.1	290.2	159.7	20.2	218.4	14.1	34.9	20.6	18.1
HCM Lane LOS	B	F	F	C	F	B	D	C	C
HCM 95th-tile Q	0.3	32	20.1	1.2	23	0.4	4.5	1.7	1.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	220	200	40
Future Vol, veh/h	0	220	200	40
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	239	217	43
Number of Lanes	0	1	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	3
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	26.9
HCM LOS	D

Intersection	
Intersection Delay, s/veh	139.6
Intersection LOS	F

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Vol, veh/h	0	60	10	30	0	550	10	40	0	20	200	120
Future Vol, veh/h	0	60	10	30	0	550	10	40	0	20	200	120
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	65	11	33	0	598	11	43	0	22	217	130
Number of Lanes	0	0	1	0	0	1	1	0	0	1	2	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	2	1	3
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	3	3	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	3	3	2
HCM Control Delay	20.9	302.4	23.6
HCM LOS	C	F	C

Lane	NBLn1	NBLn2	NBLn3	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2	SBLn3
Vol Left, %	100%	0%	0%	60%	100%	0%	100%	0%	0%
Vol Thru, %	0%	100%	36%	10%	0%	20%	0%	100%	94%
Vol Right, %	0%	0%	64%	30%	0%	80%	0%	0%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	20	133	187	100	550	50	440	313	167
LT Vol	20	0	0	60	550	0	440	0	0
Through Vol	0	133	67	10	0	10	0	313	157
RT Vol	0	0	120	30	0	40	0	0	10
Lane Flow Rate	22	145	203	109	598	54	478	341	181
Geometry Grp	8	8	8	8	8	8	8	8	8
Degree of Util (X)	0.062	0.395	0.527	0.327	1.648	0.134	1.202	0.809	0.428
Departure Headway (Hd)	12.213	11.677	11.194	12.326	10.279	9.195	10.633	10.102	10.057
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	295	310	325	293	359	392	344	361	361
Service Time	9.913	9.377	8.894	10.026	7.979	6.895	8.333	7.802	7.757
HCM Lane V/C Ratio	0.075	0.468	0.625	0.372	1.666	0.138	1.39	0.945	0.501
HCM Control Delay	15.7	21.8	25.7	20.9	328.7	13.3	147.2	44.2	20.1
HCM Lane LOS	C	C	D	C	F	B	F	E	C
HCM 95th-tile Q	0.2	1.8	2.9	1.4	34.6	0.5	17.3	7	2.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Lane Configurations				
Traffic Vol, veh/h	0	440	470	10
Future Vol, veh/h	0	440	470	10
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	478	511	11
Number of Lanes	0	1	2	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	3
Conflicting Approach Left	WB
Conflicting Lanes Left	2
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	89.1
HCM LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	500	190	820	200	60	80	100	600	60	150	40
Future Volume (veh/h)	30	500	190	820	200	60	80	100	600	60	150	40
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	33	556	115	911	222	60	89	111	175	67	167	36
Adj No. of Lanes	1	2	0	2	1	0	1	1	1	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	387	635	131	847	335	91	273	287	243	79	197	42
Arrive On Green	0.22	0.22	0.22	0.24	0.24	0.24	0.15	0.15	0.15	0.18	0.18	0.18
Sat Flow, veh/h	1774	2915	601	3548	1405	380	1774	1863	1577	445	1109	239
Grp Volume(v), veh/h	33	337	334	911	0	282	89	111	175	270	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1746	1774	0	1785	1774	1863	1577	1794	0	0
Q Serve(g_s), s	1.1	13.9	14.0	18.0	0.0	10.8	3.4	4.0	8.0	11.0	0.0	0.0
Cycle Q Clear(g_c), s	1.1	13.9	14.0	18.0	0.0	10.8	3.4	4.0	8.0	11.0	0.0	0.0
Prop In Lane	1.00		0.34	1.00		0.21	1.00		1.00	0.25		0.13
Lane Grp Cap(c), veh/h	387	386	381	847	0	426	273	287	243	318	0	0
V/C Ratio(X)	0.09	0.87	0.88	1.08	0.00	0.66	0.33	0.39	0.72	0.85	0.00	0.00
Avail Cap(c_a), veh/h	400	399	394	847	0	426	659	691	585	380	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	23.5	28.5	28.5	28.7	0.0	26.0	28.4	28.7	30.4	30.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	18.4	19.3	53.5	0.0	3.8	0.7	0.9	4.0	14.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	8.7	8.7	15.0	0.0	5.8	1.7	2.1	3.7	6.7	0.0	0.0
LnGrp Delay(d),s/veh	23.6	46.9	47.8	82.2	0.0	29.8	29.1	29.6	34.4	44.4	0.0	0.0
LnGrp LOS	C	D	D	F		C	C	C	C	D		
Approach Vol, veh/h		704			1193			375			270	
Approach Delay, s/veh		46.2			69.8			31.7			44.4	
Approach LOS		D			E			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		15.6		20.4		17.4		22.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		28.0		17.0		16.0		18.0
Max Q Clear Time (g_c+I1), s		10.0		16.0		13.0		20.0
Green Ext Time (p_c), s		1.3		0.5		0.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	54.9
HCM 2010 LOS	D

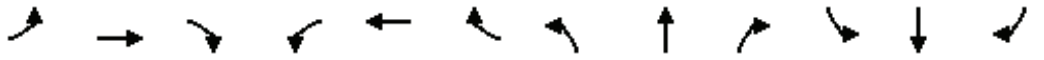
Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	590	80	330	420	60	280	190	850	40	80	80
Future Volume (veh/h)	70	590	80	330	420	60	280	190	850	40	80	80
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	72	608	57	276	523	54	242	261	419	41	82	57
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	0	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	352	649	61	338	633	65	527	553	469	50	101	70
Arrive On Green	0.20	0.20	0.20	0.19	0.19	0.19	0.30	0.30	0.30	0.13	0.13	0.13
Sat Flow, veh/h	1774	3272	306	1774	3323	342	1774	1863	1580	395	790	549
Grp Volume(v), veh/h	72	328	337	276	292	285	242	261	419	180	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1809	1774	1863	1802	1774	1863	1580	1734	0	0
Q Serve(g_s), s	2.9	15.6	15.7	12.8	12.9	13.0	9.5	9.8	21.7	8.7	0.0	0.0
Cycle Q Clear(g_c), s	2.9	15.6	15.7	12.8	12.9	13.0	9.5	9.8	21.7	8.7	0.0	0.0
Prop In Lane	1.00		0.17	1.00		0.19	1.00		1.00	0.23		0.32
Lane Grp Cap(c), veh/h	352	351	359	338	355	344	527	553	469	221	0	0
V/C Ratio(X)	0.20	0.94	0.94	0.82	0.82	0.83	0.46	0.47	0.89	0.81	0.00	0.00
Avail Cap(c_a), veh/h	352	351	359	373	391	379	580	609	516	324	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	28.7	33.8	33.8	33.2	33.3	33.3	24.5	24.6	28.8	36.4	0.0	0.0
Incr Delay (d2), s/veh	0.3	31.8	31.9	12.2	12.4	13.2	0.6	0.6	16.8	9.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	10.8	11.0	7.4	7.9	7.7	4.7	5.1	11.6	4.7	0.0	0.0
LnGrp Delay(d),s/veh	29.0	65.6	65.7	45.4	45.7	46.5	25.2	25.3	45.6	46.1	0.0	0.0
LnGrp LOS	C	E	E	D	D	D	C	C	D	D		
Approach Vol, veh/h		737			853			922			180	
Approach Delay, s/veh		62.1			45.9			34.5			46.1	
Approach LOS		E			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		29.4		21.0		14.9		20.3
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		28.0		17.0		16.0		18.0
Max Q Clear Time (g_c+I1), s		23.7		17.7		10.7		15.0
Green Ext Time (p_c), s		1.7		0.0		0.4		1.3

Intersection Summary	
HCM 2010 Ctrl Delay	46.4
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	510	10	150	50	630	0	0	590	570
Future Volume (veh/h)	0	0	0	510	10	150	50	630	0	0	590	570
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1900	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				580	11	22	57	716	0	0	670	0
Adj No. of Lanes				1	1	0	1	2	0	0	2	0
Peak Hour Factor				0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				661	207	414	76	1685	0	0	1265	0
Arrive On Green				0.37	0.37	0.37	0.04	0.48	0.00	0.00	0.36	0.00
Sat Flow, veh/h				1774	556	1111	1774	3632	0	0	3725	0
Grp Volume(v), veh/h				580	0	33	57	716	0	0	670	0
Grp Sat Flow(s),veh/h/ln				1774	0	1667	1774	1770	0	0	1770	0
Q Serve(g_s), s				16.1	0.0	0.7	1.7	7.0	0.0	0.0	7.9	0.0
Cycle Q Clear(g_c), s				16.1	0.0	0.7	1.7	7.0	0.0	0.0	7.9	0.0
Prop In Lane				1.00		0.67	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				661	0	621	76	1685	0	0	1265	0
V/C Ratio(X)				0.88	0.00	0.05	0.75	0.42	0.00	0.00	0.53	0.00
Avail Cap(c_a), veh/h				907	0	852	134	2345	0	0	1809	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				15.5	0.0	10.6	25.0	9.1	0.0	0.0	13.5	0.0
Incr Delay (d2), s/veh				7.5	0.0	0.0	13.6	0.2	0.0	0.0	0.3	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				9.1	0.0	0.3	1.1	3.4	0.0	0.0	3.9	0.0
LnGrp Delay(d),s/veh				22.9	0.0	10.6	38.6	9.3	0.0	0.0	13.8	0.0
LnGrp LOS				C		B	D	A			B	
Approach Vol, veh/h					613			773			670	
Approach Delay, s/veh					22.3			11.4			13.8	
Approach LOS					C			B			B	

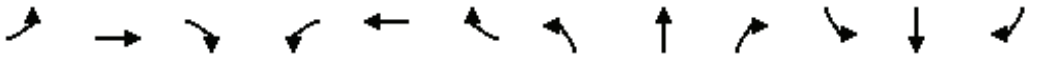
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		29.1			6.3	22.9		23.7
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		35.0			4.0	27.0		27.0
Max Q Clear Time (g_c+I1), s		9.0			3.7	9.9		18.1
Green Ext Time (p_c), s		11.2			0.0	9.0		1.6

Intersection Summary	
HCM 2010 Ctrl Delay	15.4
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	170	10	540	270	780	0	0	170	320
Future Volume (veh/h)	0	0	0	170	10	540	270	780	0	0	170	320
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1900	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				179	11	502	284	821	0	0	179	0
Adj No. of Lanes				1	1	0	1	2	0	0	2	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				656	13	575	355	1671	0	0	682	0
Arrive On Green				0.37	0.37	0.37	0.20	0.47	0.00	0.00	0.19	0.00
Sat Flow, veh/h				1774	34	1554	1774	3632	0	0	3725	0
Grp Volume(v), veh/h				179	0	513	284	821	0	0	179	0
Grp Sat Flow(s),veh/h/ln				1774	0	1588	1774	1770	0	0	1770	0
Q Serve(g_s), s				3.6	0.0	15.2	7.7	8.1	0.0	0.0	2.2	0.0
Cycle Q Clear(g_c), s				3.6	0.0	15.2	7.7	8.1	0.0	0.0	2.2	0.0
Prop In Lane				1.00		0.98	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				656	0	587	355	1671	0	0	682	0
V/C Ratio(X)				0.27	0.00	0.87	0.80	0.49	0.00	0.00	0.26	0.00
Avail Cap(c_a), veh/h				736	0	659	701	2868	0	0	1189	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				11.2	0.0	14.8	19.3	9.2	0.0	0.0	17.4	0.0
Incr Delay (d2), s/veh				0.2	0.0	11.5	4.2	0.2	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.8	0.0	8.4	4.2	3.9	0.0	0.0	1.1	0.0
LnGrp Delay(d),s/veh				11.4	0.0	26.3	23.4	9.4	0.0	0.0	17.6	0.0
LnGrp LOS				B		C	C	A			B	
Approach Vol, veh/h					692			1105			179	
Approach Delay, s/veh					22.5			13.0			17.6	
Approach LOS					C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		27.9			14.1	13.8		22.7
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		41.0			20.0	17.0		21.0
Max Q Clear Time (g_c+I1), s		10.1			9.7	4.2		17.2
Green Ext Time (p_c), s		8.2			0.6	5.6		1.5

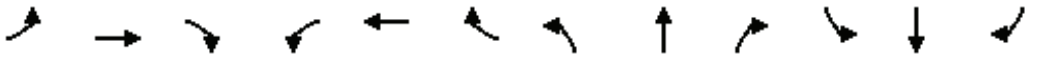
Intersection Summary	
HCM 2010 Ctrl Delay	16.7
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	950	270	170	390	0	0	0	0	520	40	690
Future Volume (veh/h)	0	950	270	170	390	0	0	0	0	520	40	690
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1900	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	1033	238	185	424	0				565	43	686
Adj No. of Lanes	0	2	0	0	2	0				0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1890	434	299	1065	0				169	13	205
Arrive On Green	0.00	0.66	0.66	1.00	1.00	0.00				0.23	0.23	0.23
Sat Flow, veh/h	0	2950	656	307	1695	0				729	55	885
Grp Volume(v), veh/h	0	638	633	185	424	0				1294	0	0
Grp Sat Flow(s),veh/h/ln	0	1770	1743	307	1610	0				1670	0	0
Q Serve(g_s), s	0.0	14.3	14.5	26.2	0.0	0.0				17.4	0.0	0.0
Cycle Q Clear(g_c), s	0.0	14.3	14.5	40.7	0.0	0.0				17.4	0.0	0.0
Prop In Lane	0.00		0.38	1.00		0.00				0.44		0.53
Lane Grp Cap(c), veh/h	0	1171	1153	299	1065	0				387	0	0
V/C Ratio(X)	0.00	0.55	0.55	0.62	0.40	0.00				3.34	0.00	0.00
Avail Cap(c_a), veh/h	0	1203	1185	307	1095	0				387	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.90	0.90	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	6.7	6.7	5.9	0.0	0.0				28.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.5	0.5	3.2	0.2	0.0				1060.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.1	7.0	3.3	0.1	0.0				122.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	7.2	7.3	9.2	0.2	0.0				1089.2	0.0	0.0
LnGrp LOS		A	A	A	A					F		
Approach Vol, veh/h		1271			609						1294	
Approach Delay, s/veh		7.2			2.9						1089.2	
Approach LOS		A			A						F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				53.6		21.4		53.6
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				51.0		16.0		51.0
Max Q Clear Time (g_c+I1), s				16.5		19.4		42.7
Green Ext Time (p_c), s				21.0		0.0		6.9

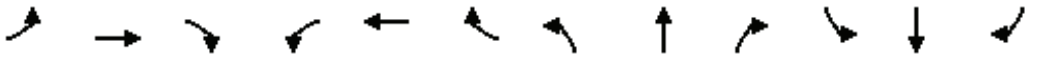
Intersection Summary	
HCM 2010 Ctrl Delay	447.5
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1030	410	190	540	0	0	0	0	630	20	420
Future Volume (veh/h)	0	1030	410	190	540	0	0	0	0	630	20	420
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1900	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	1073	358	198	562	0				656	21	399
Adj No. of Lanes	0	2	0	0	2	0				0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1778	586	264	1095	0				221	7	134
Arrive On Green	0.00	0.68	0.68	1.00	1.00	0.00				0.21	0.21	0.21
Sat Flow, veh/h	0	2708	861	248	1695	0				1036	33	630
Grp Volume(v), veh/h	0	722	709	198	562	0				1076	0	0
Grp Sat Flow(s),veh/h/ln	0	1770	1706	248	1610	0				1700	0	0
Q Serve(g_s), s	0.0	16.5	17.1	33.9	0.0	0.0				16.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	16.5	17.1	51.0	0.0	0.0				16.0	0.0	0.0
Prop In Lane	0.00		0.50	1.00		0.00				0.61		0.37
Lane Grp Cap(c), veh/h	0	1203	1160	264	1095	0				363	0	0
V/C Ratio(X)	0.00	0.60	0.61	0.75	0.51	0.00				2.97	0.00	0.00
Avail Cap(c_a), veh/h	0	1203	1160	264	1095	0				363	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.85	0.85	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	6.5	6.6	11.1	0.0	0.0				29.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.8	0.9	9.7	0.3	0.0				892.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	8.1	8.2	4.8	0.1	0.0				97.4	0.0	0.0
LnGrp Delay(d),s/veh	0.0	7.3	7.5	20.7	0.3	0.0				922.3	0.0	0.0
LnGrp LOS		A	A	C	A					F		
Approach Vol, veh/h		1431			760						1076	
Approach Delay, s/veh		7.4			5.7						922.3	
Approach LOS		A			A						F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				55.0		20.0		55.0
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				51.0		16.0		51.0
Max Q Clear Time (g_c+I1), s				19.1		18.0		53.0
Green Ext Time (p_c), s				23.9		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	308.3
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	360	1110	0	0	490	490	70	20	120	0	0	0
Future Volume (veh/h)	360	1110	0	0	490	490	70	20	120	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	404	1247	0	0	551	361	50	62	55			
Adj No. of Lanes	0	2	0	0	2	0	1	1	1			
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	366	1311	0	0	1413	925	355	373	316			
Arrive On Green	1.00	1.00	0.00	0.00	0.69	0.69	0.20	0.20	0.20			
Sat Flow, veh/h	417	1976	0	0	2131	1334	1774	1863	1581			
Grp Volume(v), veh/h	676	975	0	0	479	433	50	62	55			
Grp Sat Flow(s),veh/h/ln	698	1610	0	0	1770	1602	1774	1863	1581			
Q Serve(g_s), s	43.5	0.0	0.0	0.0	8.5	8.5	1.7	2.1	2.2			
Cycle Q Clear(g_c), s	52.0	0.0	0.0	0.0	8.5	8.5	1.7	2.1	2.2			
Prop In Lane	0.60		0.00	0.00		0.83	1.00		1.00			
Lane Grp Cap(c), veh/h	561	1117	0	0	1227	1111	355	373	316			
V/C Ratio(X)	1.21	0.87	0.00	0.00	0.39	0.39	0.14	0.17	0.17			
Avail Cap(c_a), veh/h	561	1117	0	0	1227	1111	355	373	316			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.67	0.67	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	7.2	0.0	0.0	0.0	4.8	4.8	24.7	24.8	24.9			
Incr Delay (d2), s/veh	103.6	5.5	0.0	0.0	0.2	0.2	0.8	1.0	1.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	27.6	1.7	0.0	0.0	4.2	3.8	0.9	1.2	1.1			
LnGrp Delay(d),s/veh	110.9	5.5	0.0	0.0	5.0	5.1	25.5	25.8	26.1			
LnGrp LOS	F	A			A	A	C	C	C			
Approach Vol, veh/h		1651			912			167				
Approach Delay, s/veh		48.6			5.0			25.8				
Approach LOS		D			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		19.0		56.0				56.0
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		15.0		52.0				52.0
Max Q Clear Time (g_c+I1), s		4.2		54.0				10.5
Green Ext Time (p_c), s		0.4		0.0				34.4

Intersection Summary	
HCM 2010 Ctrl Delay	32.7
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	620	1040	0	0	640	560	90	160	230	0	0	0
Future Volume (veh/h)	620	1040	0	0	640	560	90	160	230	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	646	1083	0	0	667	475	94	167	155			
Adj No. of Lanes	0	2	0	0	2	0	1	1	1			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	358	1117	0	0	1364	967	355	373	317			
Arrive On Green	1.00	1.00	0.00	0.00	0.69	0.69	0.20	0.20	0.20			
Sat Flow, veh/h	379	1695	0	0	2060	1395	1774	1863	1583			
Grp Volume(v), veh/h	646	1083	0	0	600	542	94	167	155			
Grp Sat Flow(s),veh/h/ln	379	1610	0	0	1770	1593	1774	1863	1583			
Q Serve(g_s), s	40.1	0.0	0.0	0.0	11.8	11.9	3.4	5.9	6.5			
Cycle Q Clear(g_c), s	52.0	0.0	0.0	0.0	11.8	11.9	3.4	5.9	6.5			
Prop In Lane	1.00		0.00	0.00		0.88	1.00		1.00			
Lane Grp Cap(c), veh/h	358	1117	0	0	1227	1104	355	373	317			
V/C Ratio(X)	1.80	0.97	0.00	0.00	0.49	0.49	0.26	0.45	0.49			
Avail Cap(c_a), veh/h	358	1117	0	0	1227	1104	355	373	317			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.63	0.63	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	11.3	0.0	0.0	0.0	5.3	5.3	25.3	26.4	26.6			
Incr Delay (d2), s/veh	368.0	14.8	0.0	0.0	0.3	0.3	1.8	3.9	5.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	44.0	4.6	0.0	0.0	5.8	5.2	1.8	3.4	3.3			
LnGrp Delay(d),s/veh	379.3	14.8	0.0	0.0	5.6	5.7	27.2	30.2	31.9			
LnGrp LOS	F	B			A	A	C	C	C			
Approach Vol, veh/h		1729			1142			416				
Approach Delay, s/veh		151.0			5.7			30.2				
Approach LOS		F			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		19.0		56.0				56.0
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		15.0		52.0				52.0
Max Q Clear Time (g_c+I1), s		8.5		54.0				13.9
Green Ext Time (p_c), s		1.0		0.0				35.8

Intersection Summary	
HCM 2010 Ctrl Delay	85.2
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	600	270	30	620	80	230	220	30	180	990	190
Future Volume (veh/h)	30	600	270	30	620	80	230	220	30	180	990	190
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	32	632	208	32	653	72	242	232	24	189	1042	185
Adj No. of Lanes	0	2	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	67	1141	572	64	1057	119	272	1262	129	221	1079	191
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.15	0.39	0.39	0.12	0.36	0.36
Sat Flow, veh/h	81	3050	1528	73	2825	318	1774	3233	331	1774	2988	529
Grp Volume(v), veh/h	324	340	208	388	0	369	242	126	130	189	616	611
Grp Sat Flow(s),veh/h/ln	1521	1610	1528	1590	0	1627	1774	1770	1794	1774	1770	1748
Q Serve(g_s), s	1.2	18.1	10.6	4.1	0.0	19.8	14.4	5.0	5.2	11.3	36.8	37.1
Cycle Q Clear(g_c), s	21.0	18.1	10.6	22.2	0.0	19.8	14.4	5.0	5.2	11.3	36.8	37.1
Prop In Lane	0.10		1.00	0.08		0.20	1.00		0.18	1.00		0.30
Lane Grp Cap(c), veh/h	606	603	572	631	0	609	272	691	700	221	639	631
V/C Ratio(X)	0.53	0.56	0.36	0.62	0.00	0.61	0.89	0.18	0.19	0.86	0.96	0.97
Avail Cap(c_a), veh/h	606	603	572	631	0	609	345	691	700	427	639	631
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.00	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.7	26.8	24.5	27.2	0.0	27.3	44.8	21.6	21.6	46.3	33.8	33.9
Incr Delay (d2), s/veh	3.4	3.8	1.8	0.4	0.0	0.4	17.6	0.2	0.2	3.7	26.9	28.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	8.7	4.8	9.7	0.0	9.0	8.4	2.5	2.6	5.7	22.7	22.7
LnGrp Delay(d),s/veh	29.1	30.6	26.3	27.6	0.0	27.8	62.4	21.8	21.8	50.0	60.7	61.9
LnGrp LOS	C	C	C	C		C	E	C	C	D	E	E
Approach Vol, veh/h		872			757			498			1416	
Approach Delay, s/veh		29.0			27.7			41.5			59.8	
Approach LOS		C			C			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	20.6	43.0		44.4	17.4	46.1		44.4
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	21.0	39.0		36.0	26.0	34.0		36.0
Max Q Clear Time (g_c+I1), s	16.4	39.1		23.0	13.3	7.2		24.2
Green Ext Time (p_c), s	0.2	0.0		9.6	0.2	16.1		8.9

Intersection Summary	
HCM 2010 Ctrl Delay	42.8
HCM 2010 LOS	D

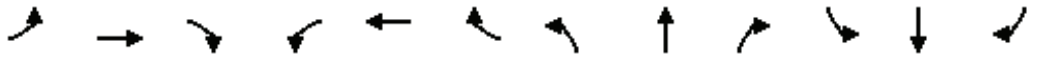
Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	710	440	40	560	130	280	660	40	80	370	60
Future Volume (veh/h)	90	710	440	40	560	130	280	660	40	80	370	60
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	94	740	376	42	583	118	292	688	38	83	385	48
Adj No. of Lanes	0	2	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	164	1206	756	81	1134	246	321	1142	63	106	678	84
Arrive On Green	0.49	0.49	0.49	0.49	0.49	0.49	0.18	0.34	0.34	0.06	0.21	0.21
Sat Flow, veh/h	246	2444	1532	89	2299	498	1774	3403	188	1774	3155	390
Grp Volume(v), veh/h	342	492	376	367	0	376	292	357	369	83	215	218
Grp Sat Flow(s),veh/h/ln	1080	1610	1532	1299	0	1587	1774	1770	1822	1774	1770	1776
Q Serve(g_s), s	15.1	24.1	17.8	3.2	0.0	17.0	17.4	18.2	18.2	5.0	11.7	11.9
Cycle Q Clear(g_c), s	32.1	24.1	17.8	27.3	0.0	17.0	17.4	18.2	18.2	5.0	11.7	11.9
Prop In Lane	0.27		1.00	0.11		0.31	1.00		0.10	1.00		0.22
Lane Grp Cap(c), veh/h	575	795	756	678	0	783	321	594	611	106	380	381
V/C Ratio(X)	0.59	0.62	0.50	0.54	0.00	0.48	0.91	0.60	0.60	0.78	0.56	0.57
Avail Cap(c_a), veh/h	575	795	756	678	0	783	345	594	611	427	639	641
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.00	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.0	20.0	18.4	17.8	0.0	18.2	43.4	29.9	29.9	50.1	37.9	38.0
Incr Delay (d2), s/veh	4.5	3.6	2.3	0.3	0.0	0.2	25.3	2.0	2.0	4.6	1.9	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	11.5	8.0	6.9	0.0	7.5	10.8	9.2	9.4	2.6	5.9	6.0
LnGrp Delay(d),s/veh	27.5	23.6	20.7	18.1	0.0	18.4	68.6	31.9	31.9	54.6	39.8	39.9
LnGrp LOS	C	C	C	B		B	E	C	C	D	D	D
Approach Vol, veh/h		1210			743			1018			516	
Approach Delay, s/veh		23.8			18.2			42.4			42.2	
Approach LOS		C			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	23.5	27.2		57.3	10.5	40.2		57.3
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	21.0	39.0		36.0	26.0	34.0		36.0
Max Q Clear Time (g_c+I1), s	19.4	13.9		34.1	7.0	20.2		29.3
Green Ext Time (p_c), s	0.1	7.3		1.8	0.1	7.8		5.9

Intersection Summary	
HCM 2010 Ctrl Delay	30.8
HCM 2010 LOS	C

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	320	160	130	250	90	50	670	70	110	1120	20
Future Volume (veh/h)	30	320	160	130	250	90	50	670	70	110	1120	20
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.94	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	30	323	146	131	253	80	51	677	64	111	1131	19
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	107	286	129	177	374	118	129	1436	136	158	1627	27
Arrive On Green	0.06	0.24	0.24	0.10	0.28	0.28	0.07	0.44	0.44	0.03	0.15	0.15
Sat Flow, veh/h	1774	1187	536	1774	1336	423	1774	3261	308	1774	3559	60
Grp Volume(v), veh/h	30	0	469	131	0	333	51	367	374	111	562	588
Grp Sat Flow(s),veh/h/ln	1774	0	1723	1774	0	1759	1774	1770	1799	1774	1770	1849
Q Serve(g_s), s	1.7	0.0	26.0	7.8	0.0	18.2	3.0	15.8	15.9	6.7	32.6	32.6
Cycle Q Clear(g_c), s	1.7	0.0	26.0	7.8	0.0	18.2	3.0	15.8	15.9	6.7	32.6	32.6
Prop In Lane	1.00		0.31	1.00		0.24	1.00		0.17	1.00		0.03
Lane Grp Cap(c), veh/h	107	0	415	177	0	493	129	780	792	158	809	845
V/C Ratio(X)	0.28	0.00	1.13	0.74	0.00	0.68	0.40	0.47	0.47	0.70	0.69	0.70
Avail Cap(c_a), veh/h	197	0	415	197	0	493	197	780	792	197	809	845
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.56	0.56	0.56
Uniform Delay (d), s/veh	48.5	0.0	41.0	47.2	0.0	34.5	47.8	21.3	21.3	51.0	38.7	38.7
Incr Delay (d2), s/veh	0.5	0.0	84.8	10.2	0.0	7.3	0.7	2.0	2.0	2.9	2.8	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	22.1	4.3	0.0	9.8	1.5	8.2	8.3	3.4	16.6	17.4
LnGrp Delay(d),s/veh	49.0	0.0	125.8	57.4	0.0	41.8	48.6	23.4	23.4	53.8	41.5	41.4
LnGrp LOS	D		F	E		D	D	C	C	D	D	D
Approach Vol, veh/h		499			464			792			1261	
Approach Delay, s/veh		121.2			46.2			25.0			42.5	
Approach LOS		F			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.8	53.4	13.8	30.0	12.6	51.6	9.5	34.3
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	12.0	44.0	12.0	26.0	12.0	44.0	12.0	26.0
Max Q Clear Time (g_c+I1), s	5.0	34.6	9.8	28.0	8.7	17.9	3.7	20.2
Green Ext Time (p_c), s	0.0	8.1	0.0	0.0	0.0	19.1	0.0	1.9

Intersection Summary	
HCM 2010 Ctrl Delay	51.5
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	210	80	100	330	100	110	1020	90	130	980	60
Future Volume (veh/h)	20	210	80	100	330	100	110	1020	90	130	980	60
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.94	1.00		0.95	1.00		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	20	214	69	102	337	93	112	1041	86	133	1000	57
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	82	318	102	172	404	111	159	1453	120	163	1501	86
Arrive On Green	0.05	0.24	0.24	0.10	0.29	0.29	0.09	0.44	0.44	0.03	0.15	0.15
Sat Flow, veh/h	1774	1320	426	1774	1383	382	1774	3296	272	1774	3386	193
Grp Volume(v), veh/h	20	0	283	102	0	430	112	559	568	133	523	534
Grp Sat Flow(s),veh/h/ln	1774	0	1746	1774	0	1765	1774	1770	1798	1774	1770	1809
Q Serve(g_s), s	1.2	0.0	15.9	5.9	0.0	24.6	6.6	27.9	27.9	8.1	30.2	30.2
Cycle Q Clear(g_c), s	1.2	0.0	15.9	5.9	0.0	24.6	6.6	27.9	27.9	8.1	30.2	30.2
Prop In Lane	1.00		0.24	1.00		0.22	1.00		0.15	1.00		0.11
Lane Grp Cap(c), veh/h	82	0	420	172	0	515	159	780	793	163	784	802
V/C Ratio(X)	0.25	0.00	0.67	0.59	0.00	0.83	0.71	0.72	0.72	0.82	0.67	0.67
Avail Cap(c_a), veh/h	197	0	420	197	0	515	197	780	793	197	784	802
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.65	0.65	0.65
Uniform Delay (d), s/veh	49.7	0.0	37.2	46.7	0.0	35.8	47.8	24.7	24.7	51.5	38.5	38.6
Incr Delay (d2), s/veh	0.6	0.0	8.3	1.7	0.0	14.7	5.4	5.6	5.5	11.5	2.9	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	8.6	3.0	0.0	14.1	3.5	14.7	14.9	4.5	15.5	15.8
LnGrp Delay(d),s/veh	50.3	0.0	45.5	48.4	0.0	50.5	53.2	30.2	30.2	62.9	41.5	41.4
LnGrp LOS	D		D	D		D	D	C	C	E	D	D
Approach Vol, veh/h		303			532			1239			1190	
Approach Delay, s/veh		45.8			50.1			32.3			43.9	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	51.9	13.5	30.0	12.9	51.6	8.0	35.5
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	12.0	44.0	12.0	26.0	12.0	44.0	12.0	26.0
Max Q Clear Time (g_c+I1), s	8.6	32.2	7.9	17.9	10.1	29.9	3.2	26.6
Green Ext Time (p_c), s	0.0	10.6	0.0	2.1	0.0	12.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	40.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	650	190	160	740	0	0	0	0	200	1130	160
Future Volume (veh/h)	0	650	190	160	740	0	0	0	0	200	1130	160
Number	7	4	14	3	8	18				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		1.00				1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	663	191	163	755	0				204	1153	150
Adj No. of Lanes	0	2	0	1	2	0				0	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1247	359	299	1650	0				188	1109	151
Arrive On Green	0.00	0.47	0.47	0.47	0.47	0.00				0.40	0.40	0.40
Sat Flow, veh/h	0	2767	769	642	3632	0				470	2771	376
Grp Volume(v), veh/h	0	439	415	163	755	0				798	0	709
Grp Sat Flow(s),veh/h/ln	0	1770	1674	642	1770	0				1839	0	1778
Q Serve(g_s), s	0.0	11.2	11.2	15.4	9.2	0.0				25.5	0.0	25.3
Cycle Q Clear(g_c), s	0.0	11.2	11.2	26.6	9.2	0.0				25.5	0.0	25.3
Prop In Lane	0.00		0.46	1.00		0.00				0.26		0.21
Lane Grp Cap(c), veh/h	0	825	780	299	1650	0				736	0	712
V/C Ratio(X)	0.00	0.53	0.53	0.54	0.46	0.00				1.08	0.00	1.00
Avail Cap(c_a), veh/h	0	833	788	302	1667	0				736	0	712
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	12.1	12.1	21.5	11.5	0.0				19.1	0.0	19.1
Incr Delay (d2), s/veh	0.0	0.3	0.3	1.1	0.1	0.0				58.2	0.0	32.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.4	5.2	2.8	4.4	0.0				24.6	0.0	18.7
LnGrp Delay(d),s/veh	0.0	12.4	12.4	22.6	11.6	0.0				77.3	0.0	51.7
LnGrp LOS		B	B	C	B					F		D
Approach Vol, veh/h		854			918						1507	
Approach Delay, s/veh		12.4			13.6						65.3	
Approach LOS		B			B						E	

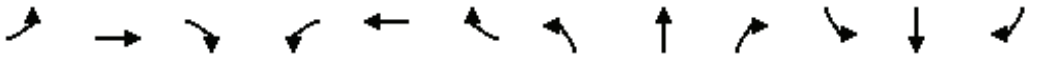
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		30.0		33.7				33.7
Change Period (Y+Rc), s		4.5		4.0				4.0
Max Green Setting (Gmax), s		25.5		30.0				30.0
Max Q Clear Time (g_c+I1), s		27.5		13.2				28.6
Green Ext Time (p_c), s		0.0		8.3				1.1

Intersection Summary	
HCM 2010 Ctrl Delay	37.0
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	860	160	130	610	0	0	0	0	170	780	130
Future Volume (veh/h)	0	860	160	130	610	0	0	0	0	170	780	130
Number	7	4	14	3	8	18				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		1.00				1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	887	146	134	629	0				175	804	119
Adj No. of Lanes	0	2	0	1	2	0				0	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1579	260	293	1852	0				187	900	140
Arrive On Green	0.00	0.52	0.52	0.52	0.52	0.00				0.34	0.34	0.34
Sat Flow, veh/h	0	3111	497	543	3632	0				551	2652	411
Grp Volume(v), veh/h	0	520	513	134	629	0				583	0	515
Grp Sat Flow(s),veh/h/ln	0	1770	1745	543	1770	0				1835	0	1779
Q Serve(g_s), s	0.0	12.3	12.3	13.7	6.4	0.0				19.0	0.0	16.6
Cycle Q Clear(g_c), s	0.0	12.3	12.3	26.0	6.4	0.0				19.0	0.0	16.6
Prop In Lane	0.00		0.28	1.00		0.00				0.30		0.23
Lane Grp Cap(c), veh/h	0	926	913	293	1852	0				623	0	604
V/C Ratio(X)	0.00	0.56	0.56	0.46	0.34	0.00				0.94	0.00	0.85
Avail Cap(c_a), veh/h	0	987	973	311	1973	0				623	0	604
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	10.0	10.0	18.7	8.6	0.0				19.8	0.0	19.0
Incr Delay (d2), s/veh	0.0	0.3	0.3	0.4	0.0	0.0				21.5	0.0	10.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.0	5.9	2.1	3.1	0.0				13.3	0.0	10.0
LnGrp Delay(d),s/veh	0.0	10.3	10.3	19.1	8.6	0.0				41.3	0.0	29.8
LnGrp LOS		B	B	B	A					D		C
Approach Vol, veh/h		1033			763						1098	
Approach Delay, s/veh		10.3			10.4						35.9	
Approach LOS		B			B						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		25.5		36.4				36.4
Change Period (Y+Rc), s		4.5		4.0				4.0
Max Green Setting (Gmax), s		21.0		34.5				34.5
Max Q Clear Time (g_c+I1), s		21.0		14.3				28.0
Green Ext Time (p_c), s		0.0		9.4				4.4

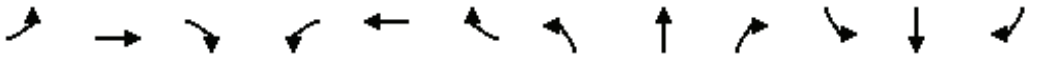
Intersection Summary	
HCM 2010 Ctrl Delay	20.1
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	630	0	0	680	130	210	950	100	0	0	0
Future Volume (veh/h)	210	630	0	0	680	130	210	950	100	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.95	1.00		0.95			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1900	1863	1900			
Adj Flow Rate, veh/h	221	663	0	0	716	116	221	1000	92			
Adj No. of Lanes	1	2	0	0	2	0	0	3	0			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	286	1847	0	0	901	146	295	1432	135			
Arrive On Green	0.16	0.52	0.00	0.00	0.30	0.30	0.35	0.35	0.35			
Sat Flow, veh/h	1774	3632	0	0	3120	490	838	4068	383			
Grp Volume(v), veh/h	221	663	0	0	418	414	480	407	426			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1747	1821	1695	1773			
Q Serve(g_s), s	6.6	6.1	0.0	0.0	12.1	12.1	12.9	11.4	11.4			
Cycle Q Clear(g_c), s	6.6	6.1	0.0	0.0	12.1	12.1	12.9	11.4	11.4			
Prop In Lane	1.00		0.00	0.00		0.28	0.46		0.22			
Lane Grp Cap(c), veh/h	286	1847	0	0	527	520	641	597	624			
V/C Ratio(X)	0.77	0.36	0.00	0.00	0.79	0.80	0.75	0.68	0.68			
Avail Cap(c_a), veh/h	639	1847	0	0	654	645	820	764	799			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	22.3	7.8	0.0	0.0	17.9	17.9	15.8	15.3	15.3			
Incr Delay (d2), s/veh	1.7	0.0	0.0	0.0	4.3	4.3	2.0	0.9	0.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.4	3.0	0.0	0.0	6.4	6.4	6.8	5.5	5.7			
LnGrp Delay(d),s/veh	24.0	7.8	0.0	0.0	22.2	22.3	17.8	16.2	16.2			
LnGrp LOS	C	A			C	C	B	B	B			
Approach Vol, veh/h		884			832			1313				
Approach Delay, s/veh		11.9			22.2			16.8				
Approach LOS		B			C			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		23.0	12.4	20.0				32.5
Change Period (Y+Rc), s		3.5	3.5	3.5				3.5
Max Green Setting (Gmax), s		25.0	20.0	20.5				20.5
Max Q Clear Time (g_c+I1), s		14.9	8.6	14.1				8.1
Green Ext Time (p_c), s		4.5	0.7	2.1				2.9

Intersection Summary	
HCM 2010 Ctrl Delay	16.9
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	760	0	0	440	160	300	1730	150	0	0	0
Future Volume (veh/h)	270	760	0	0	440	160	300	1730	150	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.95	1.00		0.96			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1900	1863	1900			
Adj Flow Rate, veh/h	276	776	0	0	449	112	306	1765	143			
Adj No. of Lanes	1	2	0	0	2	0	0	3	0			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	341	1678	0	0	624	154	284	1752	145			
Arrive On Green	0.19	0.47	0.00	0.00	0.22	0.22	0.41	0.41	0.41			
Sat Flow, veh/h	1774	3632	0	0	2873	686	691	4265	352			
Grp Volume(v), veh/h	276	776	0	0	284	277	810	680	724			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1697	1828	1695	1785			
Q Serve(g_s), s	9.1	9.0	0.0	0.0	9.0	9.2	25.0	24.0	24.5			
Cycle Q Clear(g_c), s	9.1	9.0	0.0	0.0	9.0	9.2	25.0	24.0	24.5			
Prop In Lane	1.00		0.00	0.00		0.40	0.38		0.20			
Lane Grp Cap(c), veh/h	341	1678	0	0	397	381	751	696	733			
V/C Ratio(X)	0.81	0.46	0.00	0.00	0.71	0.73	1.08	0.98	0.99			
Avail Cap(c_a), veh/h	583	1678	0	0	596	572	751	696	733			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	23.5	10.8	0.0	0.0	21.8	21.9	17.9	17.6	17.8			
Incr Delay (d2), s/veh	1.8	0.1	0.0	0.0	0.9	1.0	56.1	28.1	30.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.6	4.3	0.0	0.0	4.5	4.4	24.0	16.6	18.0			
LnGrp Delay(d),s/veh	25.3	10.8	0.0	0.0	22.7	22.9	74.0	45.8	47.8			
LnGrp LOS	C	B			C	C	F	D	D			
Approach Vol, veh/h		1052			561			2214				
Approach Delay, s/veh		14.6			22.8			56.7				
Approach LOS		B			C			E				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		28.5	15.2	17.2				32.4
Change Period (Y+Rc), s		3.5	3.5	3.5				3.5
Max Green Setting (Gmax), s		25.0	20.0	20.5				20.5
Max Q Clear Time (g_c+I1), s		27.0	11.1	11.2				11.0
Green Ext Time (p_c), s		0.0	0.8	1.7				3.0

Intersection Summary	
HCM 2010 Ctrl Delay	40.2
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	310	110	130	310	90	230	440	190	120	720	30
Future Volume (veh/h)	80	310	110	130	310	90	230	440	190	120	720	30
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.95	1.00		0.94	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	86	333	61	140	333	84	247	473	141	129	774	30
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	0	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	110	422	333	170	369	93	480	504	405	132	836	34
Arrive On Green	0.06	0.23	0.23	0.10	0.26	0.26	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1774	1863	1471	1774	1420	358	1774	1863	1495	485	3063	124
Grp Volume(v), veh/h	86	333	61	140	0	417	247	473	141	489	0	444
Grp Sat Flow(s),veh/h/ln	1774	1863	1471	1774	0	1779	1774	1863	1495	1839	0	1833
Q Serve(g_s), s	5.2	18.5	3.7	8.5	0.0	24.9	13.0	27.3	8.3	29.0	0.0	25.5
Cycle Q Clear(g_c), s	5.2	18.5	3.7	8.5	0.0	24.9	13.0	27.3	8.3	29.0	0.0	25.5
Prop In Lane	1.00		1.00	1.00		0.20	1.00		1.00	0.26		0.07
Lane Grp Cap(c), veh/h	110	422	333	170	0	462	480	504	405	502	0	501
V/C Ratio(X)	0.78	0.79	0.18	0.82	0.00	0.90	0.51	0.94	0.35	0.97	0.00	0.89
Avail Cap(c_a), veh/h	242	509	402	242	0	486	484	509	408	502	0	501
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.8	40.0	34.3	48.7	0.0	39.3	33.9	39.1	32.2	39.5	0.0	38.3
Incr Delay (d2), s/veh	13.2	7.3	0.3	15.5	0.0	19.6	1.1	25.3	0.6	33.5	0.0	17.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	10.4	1.5	4.9	0.0	14.7	6.5	17.6	3.5	19.4	0.0	15.4
LnGrp Delay(d),s/veh	64.0	47.3	34.6	64.3	0.0	58.9	35.0	64.4	32.9	73.1	0.0	55.7
LnGrp LOS	E	D	C	E		E	D	E	C	E		E
Approach Vol, veh/h		480			557			861			933	
Approach Delay, s/veh		48.7			60.2			50.8			64.8	
Approach LOS		D			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.1	29.0		33.2	10.4	32.7		33.5
Change Period (Y+Rc), s	3.6	4.1		3.5	3.6	4.1		3.5
Max Green Setting (Gmax), s	15.0	30.0		30.0	15.0	30.0		30.0
Max Q Clear Time (g_c+I1), s	10.5	20.5		29.3	7.2	26.9		31.0
Green Ext Time (p_c), s	0.2	4.1		0.4	0.1	1.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	56.9
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	280	100	110	340	130	160	660	160	160	650	30
Future Volume (veh/h)	50	280	100	110	340	130	160	660	160	160	650	30
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.96	1.00		0.94	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	52	289	46	113	351	123	165	680	108	165	670	29
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	0	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	68	440	345	142	362	127	493	518	415	180	774	35
Arrive On Green	0.04	0.24	0.24	0.08	0.28	0.28	0.28	0.28	0.28	0.27	0.27	0.27
Sat Flow, veh/h	1774	1863	1461	1774	1304	457	1774	1863	1493	668	2868	129
Grp Volume(v), veh/h	52	289	46	113	0	474	165	680	108	452	0	412
Grp Sat Flow(s),veh/h/ln	1774	1863	1461	1774	0	1761	1774	1863	1493	1829	0	1836
Q Serve(g_s), s	3.1	15.1	2.7	6.8	0.0	28.7	8.0	30.0	6.1	25.8	0.0	22.8
Cycle Q Clear(g_c), s	3.1	15.1	2.7	6.8	0.0	28.7	8.0	30.0	6.1	25.8	0.0	22.8
Prop In Lane	1.00		1.00	1.00		0.26	1.00		1.00	0.37		0.07
Lane Grp Cap(c), veh/h	68	440	345	142	0	489	493	518	415	494	0	496
V/C Ratio(X)	0.77	0.66	0.13	0.80	0.00	0.97	0.33	1.31	0.26	0.91	0.00	0.83
Avail Cap(c_a), veh/h	246	518	406	246	0	489	493	518	415	508	0	510
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.5	37.3	32.5	48.8	0.0	38.5	31.0	39.0	30.3	38.2	0.0	37.1
Incr Delay (d2), s/veh	19.5	2.7	0.2	11.6	0.0	32.6	0.5	154.5	0.4	21.0	0.0	11.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	8.1	1.1	3.8	0.0	18.4	4.0	37.6	2.6	15.9	0.0	13.1
LnGrp Delay(d),s/veh	71.0	40.0	32.7	60.4	0.0	71.1	31.5	193.5	30.7	59.2	0.0	48.3
LnGrp LOS	E	D	C	E		E	C	F	C	E		D
Approach Vol, veh/h		387			587			953			864	
Approach Delay, s/veh		43.3			69.1			147.0			54.0	
Approach LOS		D			E			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.2	29.6		33.5	7.7	34.1		32.7
Change Period (Y+Rc), s	3.6	4.1		3.5	3.6	4.1		3.5
Max Green Setting (Gmax), s	15.0	30.0		30.0	15.0	30.0		30.0
Max Q Clear Time (g_c+I1), s	8.8	17.1		32.0	5.1	30.7		27.8
Green Ext Time (p_c), s	0.2	5.0		0.0	0.1	0.0		1.3

Intersection Summary	
HCM 2010 Ctrl Delay	87.4
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	920	20	70	1170	120	10	80	50	220	240	110
Future Volume (vph)	130	920	20	70	1170	120	10	80	50	220	240	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00	0.98		1.00	0.99
Flpb, ped/bikes	1.00	1.00		0.99	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99	1.00		0.98	1.00
Satd. Flow (prot)	1770	3521		1749	3456			1852	1549		1813	1562
Flt Permitted	0.10	1.00		0.20	1.00			0.94	1.00		0.80	1.00
Satd. Flow (perm)	179	3521		375	3456			1758	1549		1485	1562
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	138	979	21	74	1245	128	11	85	53	234	255	117
RTOR Reduction (vph)	0	1	0	0	7	0	0	0	31	0	0	13
Lane Group Flow (vph)	138	999	0	74	1366	0	0	96	22	0	489	104
Confl. Peds. (#/hr)	43		34	34		43	1		10	10		1
Confl. Bikes (#/hr)			4						4			1
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	56.1	56.1		56.1	56.1			40.9	40.9		40.9	40.9
Effective Green, g (s)	56.1	56.1		56.1	56.1			40.9	40.9		40.9	40.9
Actuated g/C Ratio	0.53	0.53		0.53	0.53			0.39	0.39		0.39	0.39
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	2.0		2.0	2.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	95	1881		200	1846			684	603		578	608
v/s Ratio Prot		0.28			0.40							
v/s Ratio Perm	c0.77			0.20				0.05	0.01		c0.33	0.07
v/c Ratio	1.45	0.53		0.37	0.74			0.14	0.04		0.85	0.17
Uniform Delay, d1	24.4	15.9		14.2	18.8			20.7	19.8		29.2	21.0
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	252.7	1.1		5.2	2.7			0.1	0.0		11.0	0.1
Delay (s)	277.1	17.0		19.4	21.6			20.8	19.9		40.2	21.1
Level of Service	F	B		B	C			C	B		D	C
Approach Delay (s)		48.5			21.4			20.5			36.5	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	33.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	270	1460	20	50	730	120	20	350	70	110	110	110
Future Volume (vph)	270	1460	20	50	730	120	20	350	70	110	110	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00	0.98		1.00	0.98
Flpb, ped/bikes	0.99	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.98			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		0.98	1.00
Satd. Flow (prot)	1750	3530		1770	3429			1858	1548		1813	1559
Flt Permitted	0.28	1.00		0.10	1.00			0.98	1.00		0.32	1.00
Satd. Flow (perm)	510	3530		184	3429			1819	1548		596	1559
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	281	1521	21	52	760	125	21	365	73	115	115	115
RTOR Reduction (vph)	0	1	0	0	8	0	0	0	7	0	0	76
Lane Group Flow (vph)	281	1541	0	52	877	0	0	386	66	0	230	39
Confl. Peds. (#/hr)	23		12	12		23	2		10	10		2
Confl. Bikes (#/hr)			6			10						2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	67.0	67.0		67.0	67.0			30.0	30.0		30.0	30.0
Effective Green, g (s)	67.0	67.0		67.0	67.0			30.0	30.0		30.0	30.0
Actuated g/C Ratio	0.64	0.64		0.64	0.64			0.29	0.29		0.29	0.29
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	2.0		2.0	2.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	325	2252		117	2188			519	442		170	445
v/s Ratio Prot		0.44			0.26							
v/s Ratio Perm	c0.55			0.28				0.21	0.04		c0.39	0.03
v/c Ratio	0.86	0.68		0.44	0.40			0.74	0.15		1.35	0.09
Uniform Delay, d1	15.3	12.2		9.6	9.2			34.0	28.0		37.5	27.5
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	25.1	1.7		11.8	0.5			5.7	0.2		192.3	0.1
Delay (s)	40.4	13.9		21.4	9.8			39.7	28.1		229.8	27.6
Level of Service	D	B		C	A			D	C		F	C
Approach Delay (s)		18.0			10.4			37.9			162.4	
Approach LOS		B			B			D			F	

Intersection Summary			
HCM 2000 Control Delay	32.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	95.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	200	70	280	240	90	70	10	240	80	70	20
Future Volume (veh/h)	10	200	70	280	240	90	70	10	240	80	70	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1900	1900	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	11	230	80	322	276	103	80	11	276	92	80	23
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	587	1189	403	590	1154	419	513	61	541	452	483	139
Arrive On Green	0.47	0.47	0.47	0.78	0.78	0.78	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	980	2547	863	1044	2474	898	1021	172	1521	1067	1358	390
Grp Volume(v), veh/h	11	155	155	322	191	188	91	0	276	92	0	103
Grp Sat Flow(s),veh/h/ln	980	1736	1674	1044	1736	1636	1193	0	1521	1067	0	1749
Q Serve(g_s), s	0.3	2.3	2.5	8.9	1.3	1.4	1.9	0.0	6.4	3.1	0.0	1.8
Cycle Q Clear(g_c), s	1.7	2.3	2.5	11.4	1.3	1.4	3.7	0.0	6.4	6.8	0.0	1.8
Prop In Lane	1.00		0.52	1.00		0.55	0.88		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	587	810	781	590	810	763	575	0	541	452	0	622
V/C Ratio(X)	0.02	0.19	0.20	0.55	0.24	0.25	0.16	0.00	0.51	0.20	0.00	0.17
Avail Cap(c_a), veh/h	587	810	781	590	810	763	575	0	541	452	0	622
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.85	0.85	0.85	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.3	7.0	7.1	4.7	2.8	2.8	10.9	0.0	11.4	13.0	0.0	9.9
Incr Delay (d2), s/veh	0.1	0.5	0.6	3.1	0.6	0.7	0.6	0.0	3.4	1.0	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.2	1.2	2.9	0.7	0.7	0.9	0.0	3.2	1.0	0.0	1.0
LnGrp Delay(d),s/veh	7.3	7.6	7.6	7.8	3.4	3.5	11.5	0.0	14.8	14.0	0.0	10.5
LnGrp LOS	A	A	A	A	A	A	B		B	B		B
Approach Vol, veh/h		321			701			367			195	
Approach Delay, s/veh		7.6			5.4			14.0			12.2	
Approach LOS		A			A			B			B	

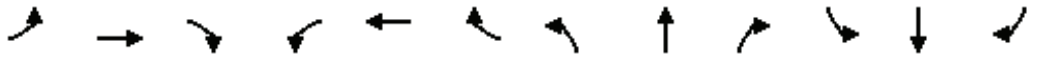
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		20.0		25.0		20.0		25.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		16.0		21.0		16.0		21.0
Max Q Clear Time (g_c+I1), s		8.4		4.5		8.8		13.4
Green Ext Time (p_c), s		1.7		5.5		1.6		3.5

Intersection Summary	
HCM 2010 Ctrl Delay	8.7
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	650	220	60	560	120	170	20	250	150	70	50
Future Volume (veh/h)	30	650	220	60	560	120	170	20	250	150	70	50
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	30	657	222	61	566	121	172	20	253	152	71	51
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	1	1	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	389	1092	369	302	1218	259	566	58	621	437	399	286
Arrive On Green	0.42	0.42	0.42	0.56	0.56	0.56	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	751	2587	873	628	2886	615	1037	145	1553	1102	997	716
Grp Volume(v), veh/h	30	449	430	61	346	341	192	0	253	152	0	122
Grp Sat Flow(s),veh/h/ln	751	1770	1690	628	1770	1731	1182	0	1553	1102	0	1713
Q Serve(g_s), s	1.3	8.8	8.9	3.5	5.2	5.3	4.6	0.0	5.3	5.4	0.0	2.1
Cycle Q Clear(g_c), s	6.6	8.8	8.9	12.4	5.2	5.3	6.7	0.0	5.3	12.1	0.0	2.1
Prop In Lane	1.00		0.52	1.00		0.36	0.90		1.00	1.00		0.42
Lane Grp Cap(c), veh/h	389	747	714	302	747	731	624	0	621	437	0	685
V/C Ratio(X)	0.08	0.60	0.60	0.20	0.46	0.47	0.31	0.00	0.41	0.35	0.00	0.18
Avail Cap(c_a), veh/h	389	747	714	302	747	731	624	0	621	437	0	685
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.85	0.85	0.85	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.3	10.1	10.1	12.0	6.8	6.9	10.7	0.0	9.7	14.6	0.0	8.7
Incr Delay (d2), s/veh	0.4	3.6	3.7	1.3	1.8	1.8	1.3	0.0	2.0	2.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	5.0	4.8	0.7	2.8	2.7	2.0	0.0	2.6	1.9	0.0	1.1
LnGrp Delay(d),s/veh	11.7	13.6	13.8	13.3	8.6	8.7	11.9	0.0	11.7	16.8	0.0	9.3
LnGrp LOS	B	B	B	B	A	A	B		B	B		A
Approach Vol, veh/h		909			748			445			274	
Approach Delay, s/veh		13.7			9.0			11.8			13.5	
Approach LOS		B			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		22.0		23.0		22.0		23.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		18.0		19.0		18.0		19.0
Max Q Clear Time (g_c+I1), s		8.7		10.9		14.1		14.4
Green Ext Time (p_c), s		2.6		5.8		1.4		3.6

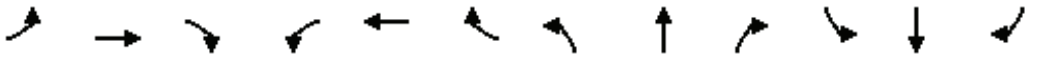
Intersection Summary	
HCM 2010 Ctrl Delay	11.8
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	430	0	0	480	340	130	0	110	0	0	0
Future Volume (veh/h)	90	430	0	0	480	340	130	0	110	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1845	1845	0	0	1845	1900	1845	1845	1900			
Adj Flow Rate, veh/h	105	500	0	0	558	395	151	0	128			
Adj No. of Lanes	1	2	0	0	2	0	1	1	0			
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	404	1636	0	0	901	638	625	0	557			
Arrive On Green	0.93	0.93	0.00	0.00	0.93	0.93	0.36	0.00	0.36			
Sat Flow, veh/h	580	3597	0	0	2023	1367	1757	0	1568			
Grp Volume(v), veh/h	105	500	0	0	506	447	151	0	128			
Grp Sat Flow(s),veh/h/ln	580	1752	0	0	1752	1545	1757	0	1568			
Q Serve(g_s), s	2.0	0.6	0.0	0.0	2.1	2.1	2.7	0.0	2.6			
Cycle Q Clear(g_c), s	4.1	0.6	0.0	0.0	2.1	2.1	2.7	0.0	2.6			
Prop In Lane	1.00		0.00	0.00		0.88	1.00		1.00			
Lane Grp Cap(c), veh/h	404	1636	0	0	818	721	625	0	557			
V/C Ratio(X)	0.26	0.31	0.00	0.00	0.62	0.62	0.24	0.00	0.23			
Avail Cap(c_a), veh/h	404	1636	0	0	818	721	625	0	557			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.97	0.97	0.00	0.00	0.97	0.97	1.00	0.00	1.00			
Uniform Delay (d), s/veh	1.2	0.8	0.0	0.0	0.9	0.9	10.2	0.0	10.2			
Incr Delay (d2), s/veh	1.5	0.5	0.0	0.0	3.4	3.8	0.9	0.0	1.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.4	0.3	0.0	0.0	1.2	1.1	1.5	0.0	1.3			
LnGrp Delay(d),s/veh	2.7	1.3	0.0	0.0	4.3	4.7	11.1	0.0	11.1			
LnGrp LOS	A	A			A	A	B		B			
Approach Vol, veh/h		605			953			279				
Approach Delay, s/veh		1.5			4.5			11.1				
Approach LOS		A			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		20.0		25.0				25.0
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		16.0		21.0				21.0
Max Q Clear Time (g_c+I1), s		4.7		6.1				4.1
Green Ext Time (p_c), s		0.9		9.3				10.1

Intersection Summary	
HCM 2010 Ctrl Delay	4.5
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	260	790	0	0	450	410	290	10	200	0	0	0
Future Volume (veh/h)	260	790	0	0	450	410	290	10	200	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1900			
Adj Flow Rate, veh/h	274	832	0	0	474	432	305	11	211			
Adj No. of Lanes	1	2	0	0	2	0	1	1	0			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	419	1652	0	0	826	713	631	28	539			
Arrive On Green	0.31	0.31	0.00	0.00	0.93	0.93	0.36	0.36	0.36			
Sat Flow, veh/h	612	3632	0	0	1863	1528	1774	79	1516			
Grp Volume(v), veh/h	274	832	0	0	474	432	305	0	222			
Grp Sat Flow(s),veh/h/ln	612	1770	0	0	1770	1528	1774	0	1595			
Q Serve(g_s), s	19.0	8.6	0.0	0.0	1.7	2.0	6.0	0.0	4.7			
Cycle Q Clear(g_c), s	21.0	8.6	0.0	0.0	1.7	2.0	6.0	0.0	4.7			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		0.95			
Lane Grp Cap(c), veh/h	419	1652	0	0	826	713	631	0	567			
V/C Ratio(X)	0.65	0.50	0.00	0.00	0.57	0.61	0.48	0.00	0.39			
Avail Cap(c_a), veh/h	419	1652	0	0	826	713	631	0	567			
HCM Platoon Ratio	0.67	0.67	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.85	0.85	0.00	0.00	0.91	0.91	1.00	0.00	1.00			
Uniform Delay (d), s/veh	17.0	11.2	0.0	0.0	0.9	0.9	11.3	0.0	10.9			
Incr Delay (d2), s/veh	6.6	0.9	0.0	0.0	2.6	3.5	2.6	0.0	2.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.1	4.4	0.0	0.0	1.0	1.0	3.3	0.0	2.4			
LnGrp Delay(d),s/veh	23.6	12.2	0.0	0.0	3.5	4.3	13.9	0.0	12.9			
LnGrp LOS	C	B			A	A	B		B			
Approach Vol, veh/h		1106			906			527				
Approach Delay, s/veh		15.0			3.9			13.5				
Approach LOS		B			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		20.0		25.0				25.0
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		16.0		21.0				21.0
Max Q Clear Time (g_c+I1), s		8.0		23.0				4.0
Green Ext Time (p_c), s		1.6		0.0				12.7

Intersection Summary	
HCM 2010 Ctrl Delay	10.7
HCM 2010 LOS	B



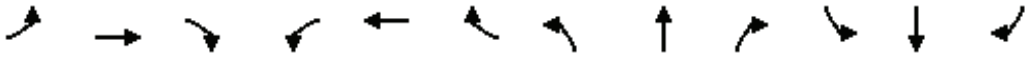
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	500	110	280	490	60	30	40	50	80	200	150
Future Volume (vph)	50	500	110	280	490	60	30	40	50	80	200	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0		3.0	4.0			2.0			2.0	2.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00			1.00			1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.97		1.00	0.98			0.94			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	1.00
Satd. Flow (prot)	1719	3326		1719	3372			1687			1784	1516
Flt Permitted	0.95	1.00		0.95	1.00			0.81			0.89	1.00
Satd. Flow (perm)	1719	3326		1719	3372			1387			1609	1516
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	52	521	115	292	510	62	31	42	52	83	208	156
RTOR Reduction (vph)	0	20	0	0	10	0	0	0	0	0	0	110
Lane Group Flow (vph)	52	616	0	292	563	0	0	125	0	0	291	46
Confl. Peds. (#/hr)			4			6						2
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1 3	3 6			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	4.0	19.6		38.9	54.5			22.5			22.5	22.5
Effective Green, g (s)	4.0	19.6		34.9	54.5			22.5			22.5	22.5
Actuated g/C Ratio	0.04	0.22		0.39	0.61			0.25			0.25	0.25
Clearance Time (s)	3.0	4.0						2.0			2.0	2.0
Vehicle Extension (s)	3.0	3.0						3.0			3.0	3.0
Lane Grp Cap (vph)	76	724		666	2041			346			402	379
v/s Ratio Prot	0.03	c0.19		c0.17	0.17							
v/s Ratio Perm								0.09			c0.18	0.03
v/c Ratio	0.68	0.85		0.44	0.28			0.36			0.72	0.12
Uniform Delay, d1	42.4	33.8		20.3	8.4			27.8			30.9	26.1
Progression Factor	1.07	1.06		0.88	0.18			1.00			1.00	1.00
Incremental Delay, d2	22.1	11.8		0.3	0.0			0.6			6.3	0.1
Delay (s)	67.4	47.5		18.0	1.6			28.5			37.2	26.2
Level of Service	E	D		B	A			C			D	C
Approach Delay (s)		49.0			7.1			28.5			33.4	
Approach LOS		D			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	27.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	870	60	80	740	100	70	80	90	70	50	40
Future Volume (vph)	60	870	60	80	740	100	70	80	90	70	50	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0		3.0	4.0			2.0			2.0	2.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.99		1.00	0.98			0.95			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.97	1.00
Satd. Flow (prot)	1770	3497		1770	3466			1743			1810	1557
Flt Permitted	0.95	1.00		0.95	1.00			0.89			0.71	1.00
Satd. Flow (perm)	1770	3497		1770	3466			1567			1318	1557
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	62	906	62	83	771	104	73	83	94	73	52	42
RTOR Reduction (vph)	0	5	0	0	11	0	0	0	0	0	0	31
Lane Group Flow (vph)	63	964	0	83	864	0	0	250	0	0	125	11
Confl. Peds. (#/hr)			5			5						4
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1 3	3 6			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	4.4	24.4		32.0	52.0			24.6			24.6	24.6
Effective Green, g (s)	4.4	24.4		28.0	52.0			24.6			24.6	24.6
Actuated g/C Ratio	0.05	0.27		0.31	0.58			0.27			0.27	0.27
Clearance Time (s)	3.0	4.0						2.0			2.0	2.0
Vehicle Extension (s)	3.0	3.0						3.0			3.0	3.0
Lane Grp Cap (vph)	86	948		550	2002			428			360	425
v/s Ratio Prot	0.04	c0.28		0.05	c0.25							
v/s Ratio Perm								c0.16			0.09	0.01
v/c Ratio	0.73	1.02		0.15	0.43			0.58			0.35	0.03
Uniform Delay, d1	42.2	32.8		22.4	10.7			28.3			26.3	23.9
Progression Factor	1.06	1.07		1.15	0.25			1.00			1.00	1.00
Incremental Delay, d2	24.8	31.9		0.1	0.1			2.0			0.6	0.0
Delay (s)	69.6	67.0		25.8	2.8			30.3			26.8	24.0
Level of Service	E	E		C	A			C			C	C
Approach Delay (s)		67.2			4.8			30.3			26.1	
Approach LOS		E			A			C			C	

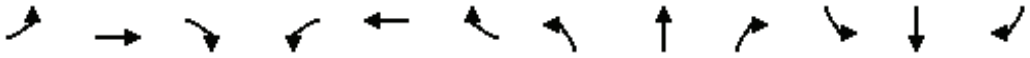
Intersection Summary			
HCM 2000 Control Delay	35.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	650	0	0	780	270	60	10	300	0	0	0
Future Volume (vph)	130	650	0	0	780	270	60	10	300	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Lane Util. Factor	1.00	0.95			*1.00		1.00	0.95	0.95			
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Frt	1.00	1.00			0.96		1.00	0.86	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	1752	3505			3522		1752	1506	1490			
Flt Permitted	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	1752	3505			3522		1752	1506	1490			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	135	677	0	0	812	281	62	10	312	0	0	0
RTOR Reduction (vph)	0	0	0	0	35	0	0	139	145	0	0	0
Lane Group Flow (vph)	135	677	0	0	1059	0	63	24	15	0	0	0
Confl. Peds. (#/hr)			5	5		10						
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	12.2	74.1			58.9		8.4	8.4	8.4			
Effective Green, g (s)	12.2	74.1			58.9		8.4	8.4	8.4			
Actuated g/C Ratio	0.14	0.82			0.65		0.09	0.09	0.09			
Clearance Time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	237	2885			2304		163	140	139			
v/s Ratio Prot	c0.08	0.19			c0.30			0.02				
v/s Ratio Perm							c0.04		0.01			
v/c Ratio	0.57	0.23			0.46		0.39	0.17	0.11			
Uniform Delay, d1	36.4	1.7			7.7		38.4	37.6	37.4			
Progression Factor	0.52	0.46			1.00		1.00	1.00	1.00			
Incremental Delay, d2	2.9	0.2			0.7		1.5	0.6	0.3			
Delay (s)	22.0	1.0			8.3		39.9	38.2	37.7			
Level of Service	C	A			A		D	D	D			
Approach Delay (s)		4.5			8.3			38.3			0.0	
Approach LOS		A			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	300	1010	0	0	830	300	150	60	570	0	0	0
Future Volume (vph)	300	1010	0	0	830	300	150	60	570	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Lane Util. Factor	1.00	0.95			*1.00		1.00	0.95	0.95			
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Frt	1.00	1.00			0.96		1.00	0.88	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	1770	3539			3548		1770	1555	1504			
Flt Permitted	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	1770	3539			3548		1770	1555	1504			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	312	1052	0	0	865	312	156	62	594	0	0	0
RTOR Reduction (vph)	0	0	0	0	45	0	0	170	172	0	0	0
Lane Group Flow (vph)	313	1052	0	0	1133	0	156	160	155	0	0	0
Confl. Peds. (#/hr)	12		6	6		12						
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	17.3	72.5			52.2		10.0	10.0	10.0			
Effective Green, g (s)	17.3	72.5			52.2		10.0	10.0	10.0			
Actuated g/C Ratio	0.19	0.81			0.58		0.11	0.11	0.11			
Clearance Time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	340	2850			2057		196	172	167			
v/s Ratio Prot	c0.18	0.30			c0.32			c0.10				
v/s Ratio Perm							0.09		0.10			
v/c Ratio	0.92	0.37			0.55		0.80	0.93	0.93			
Uniform Delay, d1	35.7	2.4			11.7		39.0	39.7	39.6			
Progression Factor	0.50	1.26			1.00		1.00	1.00	1.00			
Incremental Delay, d2	26.7	0.3			1.1		19.6	48.9	48.0			
Delay (s)	44.4	3.3			12.7		58.7	88.5	87.6			
Level of Service	D	A			B		E	F	F			
Approach Delay (s)		12.7			12.7			82.4			0.0	
Approach LOS		B			B			F			A	

Intersection Summary			
HCM 2000 Control Delay	29.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	400	150	100	390	40	100	650	70	60	930	200
Future Volume (veh/h)	220	400	150	100	390	40	100	650	70	60	930	200
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.91	1.00		0.96	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	234	426	48	106	415	37	106	691	67	64	989	194
Adj No. of Lanes	1	1	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	197	651	518	0	686	61	157	1526	148	140	1353	265
Arrive On Green	0.04	0.12	0.12	0.00	0.21	0.21	0.06	0.31	0.31	0.08	0.46	0.46
Sat Flow, veh/h	1774	1863	1482	0	3259	289	1774	3249	315	1774	2942	576
Grp Volume(v), veh/h	234	426	48	0	224	228	106	376	382	64	594	589
Grp Sat Flow(s),veh/h/ln	1774	1863	1482	0	1770	1778	1774	1770	1794	1774	1770	1748
Q Serve(g_s), s	12.0	23.6	3.1	0.0	12.4	12.5	6.3	18.3	18.4	3.7	29.5	29.6
Cycle Q Clear(g_c), s	12.0	23.6	3.1	0.0	12.4	12.5	6.3	18.3	18.4	3.7	29.5	29.6
Prop In Lane	1.00		1.00	0.00		0.16	1.00		0.18	1.00		0.33
Lane Grp Cap(c), veh/h	197	651	518	0	373	374	157	831	843	140	814	804
V/C Ratio(X)	1.19	0.65	0.09	0.00	0.60	0.61	0.67	0.45	0.45	0.46	0.73	0.73
Avail Cap(c_a), veh/h	197	651	518	0	426	428	197	831	843	197	814	804
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00
Upstream Filter(I)	0.64	0.64	0.64	0.00	1.00	1.00	0.86	0.86	0.86	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.0	41.5	32.5	0.0	38.5	38.6	49.3	25.9	25.9	47.5	23.7	23.7
Incr Delay (d2), s/veh	112.1	1.2	0.0	0.0	0.9	1.0	3.0	1.5	1.5	0.9	5.7	5.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.0	12.4	1.3	0.0	6.1	6.3	3.2	9.3	9.5	1.9	15.7	15.5
LnGrp Delay(d),s/veh	164.1	42.7	32.5	0.0	39.5	39.7	52.2	27.4	27.4	48.4	29.4	29.6
LnGrp LOS	F	D	C		D	D	D	C	C	D	C	C
Approach Vol, veh/h		708			452			864			1247	
Approach Delay, s/veh		82.2			39.6			30.5			30.5	
Approach LOS		F			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.5	54.7	0.0	41.7	12.6	53.7	15.0	26.7
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	12.0	44.0	12.0	26.0	12.0	44.0	12.0	26.0
Max Q Clear Time (g_c+I1), s	5.7	20.4	0.0	25.6	8.3	31.6	14.0	14.5
Green Ext Time (p_c), s	0.0	18.1	0.0	0.2	0.0	10.5	0.0	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	42.9
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	340	350	180	90	340	80	210	950	50	70	850	180
Future Volume (veh/h)	340	350	180	90	340	80	210	950	50	70	850	180
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.90	1.00		0.93	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	358	368	134	95	358	26	221	1000	9	74	895	163
Adj No. of Lanes	1	1	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	197	642	513	0	684	49	197	1691	15	146	1315	239
Arrive On Green	0.04	0.11	0.11	0.00	0.21	0.21	0.11	0.47	0.47	0.08	0.44	0.44
Sat Flow, veh/h	1774	1863	1488	0	3321	239	1774	3592	32	1774	2975	542
Grp Volume(v), veh/h	358	368	134	0	189	195	221	493	516	74	532	526
Grp Sat Flow(s),veh/h/ln	1774	1863	1488	0	1770	1791	1774	1770	1854	1774	1770	1747
Q Serve(g_s), s	12.0	20.2	8.9	0.0	10.3	10.5	12.0	22.1	22.1	4.3	25.9	25.9
Cycle Q Clear(g_c), s	12.0	20.2	8.9	0.0	10.3	10.5	12.0	22.1	22.1	4.3	25.9	25.9
Prop In Lane	1.00		1.00	0.00		0.13	1.00		0.02	1.00		0.31
Lane Grp Cap(c), veh/h	197	642	513	0	364	369	197	833	873	146	782	772
V/C Ratio(X)	1.82	0.57	0.26	0.00	0.52	0.53	1.12	0.59	0.59	0.51	0.68	0.68
Avail Cap(c_a), veh/h	197	642	513	0	426	431	197	833	873	197	782	772
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.51	0.51	0.51	0.00	1.00	1.00	0.54	0.54	0.54	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.0	40.3	35.3	0.0	38.1	38.2	48.0	21.0	21.0	47.4	24.0	24.0
Incr Delay (d2), s/veh	377.4	0.4	0.1	0.0	0.4	0.4	83.9	1.7	1.6	1.0	4.7	4.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.6	10.5	3.7	0.0	5.0	5.2	10.5	11.1	11.6	2.2	13.6	13.4
LnGrp Delay(d),s/veh	429.4	40.7	35.3	0.0	38.6	38.6	131.9	22.6	22.5	48.4	28.8	28.8
LnGrp LOS	F	D	D		D	D	F	C	C	D	C	C
Approach Vol, veh/h		860			384			1230			1132	
Approach Delay, s/veh		201.7			38.6			42.2			30.1	
Approach LOS		F			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	54.8	0.0	41.2	15.0	51.8	15.0	26.2
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	12.0	44.0	12.0	26.0	12.0	44.0	12.0	26.0
Max Q Clear Time (g_c+I1), s	6.3	24.1	0.0	22.2	14.0	27.9	14.0	12.5
Green Ext Time (p_c), s	0.0	16.4	0.0	1.4	0.0	13.6	0.0	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	76.1
HCM 2010 LOS	E

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	280	290	50	80	220	40	30	190	90	180	220	270
Future Volume (vph)	280	290	50	80	220	40	30	190	90	180	220	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1787	3496		1770	3539	1583	1128	2138		1340	1405	1246
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1787	3496		1770	3539	1583	1128	2138		1340	1405	1246
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	326	337	58	93	256	47	35	221	105	209	256	314
RTOR Reduction (vph)	0	13	0	0	0	39	0	54	0	0	0	230
Lane Group Flow (vph)	326	382	0	93	256	8	35	272	0	188	277	84
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	60%	60%	60%	28%	28%	28%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases						2						8
Actuated Green, G (s)	14.8	22.1		6.6	13.9	13.9	17.1	17.1		23.3	23.3	23.3
Effective Green, g (s)	14.8	22.1		6.6	13.9	13.9	17.1	17.1		23.3	23.3	23.3
Actuated g/C Ratio	0.17	0.26		0.08	0.16	0.16	0.20	0.20		0.27	0.27	0.27
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Vehicle Extension (s)	2.0	4.0		2.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Grp Cap (vph)	305	892		134	568	254	222	422		360	378	335
v/s Ratio Prot	c0.18	c0.11		0.05	0.07		0.03	c0.13		0.14	c0.20	
v/s Ratio Perm						0.00						0.07
v/c Ratio	1.07	0.43		0.69	0.45	0.03	0.16	0.65		0.52	0.73	0.25
Uniform Delay, d1	35.9	27.0		39.0	32.9	30.7	28.8	32.0		26.9	28.8	24.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	71.0	0.5		11.8	0.8	0.1	0.5	3.8		1.8	7.6	0.5
Delay (s)	106.9	27.4		50.9	33.7	30.7	29.2	35.7		28.7	36.5	25.4
Level of Service	F	C		D	C	C	C	D		C	D	C
Approach Delay (s)		63.3			37.4			35.1			30.1	
Approach LOS		E			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	42.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	86.6	Sum of lost time (s)	17.5
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	260	230	30	90	290	110	20	260	80	130	160	240
Future Volume (vph)	260	230	30	90	290	110	20	260	80	130	160	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3478		1770	3539	1583	1530	2942		1618	1697	1504
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3478		1770	3539	1583	1530	2942		1618	1697	1504
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	286	253	33	99	319	121	22	286	88	143	176	264
RTOR Reduction (vph)	0	9	0	0	0	98	0	28	0	0	0	209
Lane Group Flow (vph)	286	277	0	99	319	23	22	346	0	129	190	55
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	18%	18%	18%	6%	6%	6%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases						2						8
Actuated Green, G (s)	14.9	24.0		6.6	15.7	15.7	16.2	16.2		17.0	17.0	17.0
Effective Green, g (s)	14.9	24.0		6.6	15.7	15.7	16.2	16.2		17.0	17.0	17.0
Actuated g/C Ratio	0.18	0.30		0.08	0.19	0.19	0.20	0.20		0.21	0.21	0.21
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Vehicle Extension (s)	2.0	4.0		2.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Grp Cap (vph)	324	1026		143	683	305	304	586		338	354	314
v/s Ratio Prot	c0.16	0.08		0.06	c0.09		0.01	c0.12		0.08	c0.11	
v/s Ratio Perm						0.01						0.04
v/c Ratio	0.88	0.27		0.69	0.47	0.08	0.07	0.59		0.38	0.54	0.18
Uniform Delay, d1	32.3	21.9		36.4	29.1	26.9	26.4	29.5		27.6	28.6	26.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	22.9	0.2		11.1	0.7	0.1	0.1	1.9		1.0	2.0	0.4
Delay (s)	55.2	22.1		47.4	29.8	27.0	26.6	31.4		28.6	30.6	26.8
Level of Service	E	C		D	C	C	C	C		C	C	C
Approach Delay (s)		38.7			32.4			31.1			28.4	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	32.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	81.3	Sum of lost time (s)	17.5
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	520	110	330	510	0	0	0	0	260	40	320
Future Volume (vph)	0	520	110	330	510	0	0	0	0	260	40	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			3.0						4.0	4.0
Lane Util. Factor		0.95			*1.00						1.00	1.00
Frpb, ped/bikes		0.99			1.00						1.00	1.00
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.97			1.00						1.00	0.85
Flt Protected		1.00			0.98						0.96	1.00
Satd. Flow (prot)		3294			5274						1718	1524
Flt Permitted		1.00			0.75						0.96	1.00
Satd. Flow (perm)		3294			4019						1718	1524
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	542	115	344	531	0	0	0	0	271	42	333
RTOR Reduction (vph)	0	19	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	638	0	0	875	0	0	0	0	0	313	333
Confl. Peds. (#/hr)			6			5						
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Turn Type		NA		Prot	NA					Split	NA	Perm
Protected Phases		2 4		1	1 6					3	3	
Permitted Phases												3
Actuated Green, G (s)		46.1			25.6						24.9	24.9
Effective Green, g (s)		46.1			25.6						24.9	24.9
Actuated g/C Ratio		0.51			0.28						0.28	0.28
Clearance Time (s)											4.0	4.0
Vehicle Extension (s)											3.0	3.0
Lane Grp Cap (vph)		1687			1282						475	421
v/s Ratio Prot		c0.19			c0.08						0.18	
v/s Ratio Perm					c0.12							c0.22
v/c Ratio		0.38			1.82dl						0.66	0.79
Uniform Delay, d1		13.3			28.6						28.8	30.1
Progression Factor		0.05			0.96						1.00	1.00
Incremental Delay, d2		0.1			1.4						3.3	9.8
Delay (s)		0.7			28.9						32.1	39.9
Level of Service		A			C						C	D
Approach Delay (s)		0.7			28.9			0.0			36.1	
Approach LOS		A			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	22.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	970	60	280	700	0	0	0	0	340	10	220
Future Volume (vph)	0	970	60	280	700	0	0	0	0	340	10	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			3.0						4.0	4.0
Lane Util. Factor		0.95			*1.00						1.00	1.00
Frpb, ped/bikes		1.00			1.00						1.00	1.00
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.99			1.00						1.00	0.85
Flt Protected		1.00			0.99						0.95	1.00
Satd. Flow (prot)		3500			5509						1776	1583
Flt Permitted		1.00			0.72						0.95	1.00
Satd. Flow (perm)		3500			4039						1776	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	1010	62	292	729	0	0	0	0	354	10	229
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1068	0	0	1021	0	0	0	0	0	364	229
Confl. Peds. (#/hr)			6			5						
Turn Type		NA		Prot	NA					Split	NA	Perm
Protected Phases		2 4		1	1 6					3	3	
Permitted Phases												3
Actuated Green, G (s)		53.0			30.0						18.0	18.0
Effective Green, g (s)		53.0			30.0						18.0	18.0
Actuated g/C Ratio		0.59			0.33						0.20	0.20
Clearance Time (s)											4.0	4.0
Vehicle Extension (s)											3.0	3.0
Lane Grp Cap (vph)		2061			1509						355	316
v/s Ratio Prot		c0.31			c0.08						c0.20	
v/s Ratio Perm					c0.15							0.14
v/c Ratio		0.52			1.49dl						1.03	0.72
Uniform Delay, d1		10.9			25.8						36.0	33.7
Progression Factor		0.12			0.82						1.00	1.00
Incremental Delay, d2		0.1			1.0						54.4	8.0
Delay (s)		1.4			22.2						90.4	41.7
Level of Service		A			C						F	D
Approach Delay (s)		1.4			22.2			0.0			71.6	
Approach LOS		A			C			A			E	

Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	77.3%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	540	210	200	510	0	0	0	0	150	1330	120
Future Volume (veh/h)	0	540	210	200	510	0	0	0	0	150	1330	120
Number	3	8	18	7	4	14				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00				1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1900	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	581	215	215	548	0				161	1430	118
Adj No. of Lanes	0	2	1	0	2	0				0	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93				0.93	0.93	0.93
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1445	628	276	749	0				157	1454	125
Arrive On Green	0.00	0.41	0.41	0.41	0.41	0.00				0.47	0.47	0.47
Sat Flow, veh/h	0	3632	1538	423	1918	0				331	3061	263
Grp Volume(v), veh/h	0	581	215	301	462	0				899	0	810
Grp Sat Flow(s),veh/h/ln	0	1770	1538	646	1610	0				1846	0	1809
Q Serve(g_s), s	0.0	7.0	5.8	17.5	14.3	0.0				28.5	0.0	25.6
Cycle Q Clear(g_c), s	0.0	7.0	5.8	24.5	14.3	0.0				28.5	0.0	25.6
Prop In Lane	0.00		1.00	0.71		0.00				0.18		0.15
Lane Grp Cap(c), veh/h	0	1445	628	367	658	0				877	0	859
V/C Ratio(X)	0.00	0.40	0.34	0.82	0.70	0.00				1.02	0.00	0.94
Avail Cap(c_a), veh/h	0	1445	628	367	658	0				877	0	859
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.92	0.92	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	12.6	12.2	21.2	14.7	0.0				15.8	0.0	15.0
Incr Delay (d2), s/veh	0.0	0.1	0.1	12.1	2.6	0.0				36.8	0.0	19.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.4	2.5	6.2	6.8	0.0				23.3	0.0	17.3
LnGrp Delay(d),s/veh	0.0	12.6	12.3	33.3	17.4	0.0				52.5	0.0	34.7
LnGrp LOS		B	B	C	B					F		C
Approach Vol, veh/h		796			763						1709	
Approach Delay, s/veh		12.5			23.6						44.1	
Approach LOS		B			C						D	

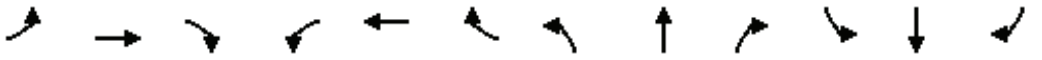
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		32.0		28.0				28.0
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		28.5		24.5				24.5
Max Q Clear Time (g_c+I1), s		30.5		26.5				9.0
Green Ext Time (p_c), s		0.0		0.0				7.0

Intersection Summary	
HCM 2010 Ctrl Delay	31.6
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	620	170	150	610	0	0	0	0	180	820	140
Future Volume (veh/h)	0	620	170	150	610	0	0	0	0	180	820	140
Number	3	8	18	7	4	14				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1900	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	620	120	150	610	0				180	820	122
Adj No. of Lanes	0	2	1	0	2	0				0	2	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1421	620	220	885	0				267	1274	199
Arrive On Green	0.00	0.40	0.40	0.40	0.40	0.00				0.48	0.48	0.48
Sat Flow, veh/h	0	3632	1544	332	2288	0				554	2644	412
Grp Volume(v), veh/h	0	620	120	334	426	0				597	0	525
Grp Sat Flow(s),veh/h/ln	0	1770	1544	925	1610	0				1835	0	1775
Q Serve(g_s), s	0.0	7.6	3.0	13.5	12.9	0.0				15.0	0.0	13.1
Cycle Q Clear(g_c), s	0.0	7.6	3.0	21.1	12.9	0.0				15.0	0.0	13.1
Prop In Lane	0.00		1.00	0.45		0.00				0.30		0.23
Lane Grp Cap(c), veh/h	0	1421	620	458	647	0				884	0	855
V/C Ratio(X)	0.00	0.44	0.19	0.73	0.66	0.00				0.67	0.00	0.61
Avail Cap(c_a), veh/h	0	1445	630	466	658	0				884	0	855
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.95	0.95	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	13.0	11.6	17.8	14.6	0.0				11.9	0.0	11.4
Incr Delay (d2), s/veh	0.0	0.1	0.1	4.6	1.8	0.0				4.1	0.0	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.7	1.3	5.8	6.0	0.0				8.5	0.0	7.1
LnGrp Delay(d),s/veh	0.0	13.1	11.7	22.4	16.4	0.0				16.0	0.0	14.7
LnGrp LOS		B	B	C	B					B		B
Approach Vol, veh/h		740			760						1122	
Approach Delay, s/veh		12.9			19.0						15.4	
Approach LOS		B			B						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		32.4		27.6				27.6
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		28.5		24.5				24.5
Max Q Clear Time (g_c+I1), s		17.0		23.1				9.6
Green Ext Time (p_c), s		4.1		1.0				6.4

Intersection Summary	
HCM 2010 Ctrl Delay	15.8
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	200	490	0	0	540	200	190	910	180	0	0	0
Future Volume (veh/h)	200	490	0	0	540	200	190	910	180	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	0.99		1.00	1.00		0.94	1.00		0.97			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1863	1900	1863	1900			
Adj Flow Rate, veh/h	227	557	0	0	614	200	216	1034	166			
Adj No. of Lanes	0	2	0	0	2	1	0	3	0			
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	346	901	0	0	1776	749	285	1458	241			
Arrive On Green	0.50	0.50	0.00	0.00	0.50	0.50	0.38	0.38	0.38			
Sat Flow, veh/h	472	1880	0	0	3632	1492	753	3858	636			
Grp Volume(v), veh/h	297	487	0	0	614	200	523	442	451			
Grp Sat Flow(s),veh/h/ln	657	1610	0	0	1770	1492	1825	1695	1727			
Q Serve(g_s), s	19.2	12.6	0.0	0.0	6.1	4.5	14.5	12.8	12.8			
Cycle Q Clear(g_c), s	25.3	12.6	0.0	0.0	6.1	4.5	14.5	12.8	12.8			
Prop In Lane	0.76		0.00	0.00		1.00	0.41		0.37			
Lane Grp Cap(c), veh/h	439	808	0	0	1776	749	690	641	653			
V/C Ratio(X)	0.68	0.60	0.00	0.00	0.35	0.27	0.76	0.69	0.69			
Avail Cap(c_a), veh/h	449	830	0	0	1824	769	941	874	890			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	15.3	10.4	0.0	0.0	8.7	8.3	15.8	15.2	15.2			
Incr Delay (d2), s/veh	3.2	0.8	0.0	0.0	0.0	0.1	1.5	0.6	0.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.8	5.7	0.0	0.0	2.9	1.8	7.6	6.0	6.1			
LnGrp Delay(d),s/veh	18.5	11.2	0.0	0.0	8.8	8.4	17.3	15.8	15.8			
LnGrp LOS	B	B			A	A	B	B	B			
Approach Vol, veh/h		784			814			1416				
Approach Delay, s/veh		13.9			8.7			16.3				
Approach LOS		B			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		25.5		32.7				32.7
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		30.0		30.0				30.0
Max Q Clear Time (g_c+I1), s		16.5		8.1				27.3
Green Ext Time (p_c), s		5.5		8.6				1.9

Intersection Summary	
HCM 2010 Ctrl Delay	13.7
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	230	570	0	0	490	250	270	1690	220	0	0	0
Future Volume (veh/h)	230	570	0	0	490	250	270	1690	220	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	0.99		1.00	1.00		0.93	1.00		0.98			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1863	1900	1863	1900			
Adj Flow Rate, veh/h	235	582	0	0	500	250	276	1724	204			
Adj No. of Lanes	0	2	0	0	2	1	0	3	0			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	316	806	0	0	1585	658	280	1863	225			
Arrive On Green	0.45	0.45	0.00	0.00	0.45	0.45	0.45	0.45	0.45			
Sat Flow, veh/h	495	1886	0	0	3632	1471	624	4160	502			
Grp Volume(v), veh/h	315	502	0	0	500	250	810	679	715			
Grp Sat Flow(s),veh/h/ln	686	1610	0	0	1770	1471	1832	1695	1760			
Q Serve(g_s), s	23.9	16.8	0.0	0.0	6.1	7.6	29.3	24.7	25.3			
Cycle Q Clear(g_c), s	30.0	16.8	0.0	0.0	6.1	7.6	29.3	24.7	25.3			
Prop In Lane	0.75		0.00	0.00		1.00	0.34		0.29			
Lane Grp Cap(c), veh/h	401	721	0	0	1585	658	820	759	788			
V/C Ratio(X)	0.78	0.70	0.00	0.00	0.32	0.38	0.99	0.89	0.91			
Avail Cap(c_a), veh/h	401	721	0	0	1585	658	820	759	788			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	21.3	14.8	0.0	0.0	11.9	12.3	18.3	17.0	17.2			
Incr Delay (d2), s/veh	9.0	2.5	0.0	0.0	0.0	0.1	28.2	12.8	13.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	6.8	7.9	0.0	0.0	2.9	3.1	21.0	14.2	15.2			
LnGrp Delay(d),s/veh	30.3	17.3	0.0	0.0	11.9	12.4	46.5	29.8	31.2			
LnGrp LOS	C	B			B	B	D	C	C			
Approach Vol, veh/h		817			750			2204				
Approach Delay, s/veh		22.3			12.1			36.4				
Approach LOS		C			B			D				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		33.5		33.5				33.5
Change Period (Y+Rc), s		3.5		3.5				3.5
Max Green Setting (Gmax), s		30.0		30.0				30.0
Max Q Clear Time (g_c+I1), s		31.3		9.6				32.0
Green Ext Time (p_c), s		0.0		7.9				0.0

Intersection Summary	
HCM 2010 Ctrl Delay	28.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	400	220	50	320	0	70	0	30	290	320	40
Future Volume (veh/h)	0	400	220	50	320	0	70	0	30	290	320	40
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1845	1900	1845	1845	0	1845	0	1845	1845	1845	1900
Adj Flow Rate, veh/h	0	417	171	52	333	0	73	0	2	224	443	36
Adj No. of Lanes	0	2	0	1	2	0	1	0	1	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	3	3	3	3	0	3	0	3	3	3	3
Cap, veh/h	0	865	351	211	1975	0	0	0	0	377	722	58
Arrive On Green	0.00	0.36	0.36	0.12	0.56	0.00	0.00	0.00	0.00	0.21	0.21	0.21
Sat Flow, veh/h	0	2517	983	1757	3597	0		0		1757	3368	273
Grp Volume(v), veh/h	0	300	288	52	333	0		0.0		224	242	237
Grp Sat Flow(s),veh/h/ln	0	1752	1655	1757	1752	0				1757	1845	1797
Q Serve(g_s), s	0.0	5.4	5.5	1.1	1.9	0.0				4.7	4.8	4.8
Cycle Q Clear(g_c), s	0.0	5.4	5.5	1.1	1.9	0.0				4.7	4.8	4.8
Prop In Lane	0.00		0.59	1.00		0.00				1.00		0.15
Lane Grp Cap(c), veh/h	0	626	591	211	1975	0				377	396	385
V/C Ratio(X)	0.00	0.48	0.49	0.25	0.17	0.00				0.59	0.61	0.62
Avail Cap(c_a), veh/h	0	1383	1306	1127	2767	0				1127	1183	1152
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	10.1	10.1	16.2	4.3	0.0				14.3	14.4	14.4
Incr Delay (d2), s/veh	0.0	0.6	0.7	0.2	0.0	0.0				0.6	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.7	2.6	0.5	0.9	0.0				2.3	2.5	2.4
LnGrp Delay(d),s/veh	0.0	10.8	10.9	16.4	4.3	0.0				14.9	15.0	15.0
LnGrp LOS		B	B	B	A					B	B	B
Approach Vol, veh/h		588			385						703	
Approach Delay, s/veh		10.8			5.9						15.0	
Approach LOS		B			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		27.8			8.4	19.5		12.7
Change Period (Y+Rc), s		5.0			3.5	5.0		4.0
Max Green Setting (Gmax), s		32.0			26.0	32.0		26.0
Max Q Clear Time (g_c+I1), s		3.9			3.1	7.5		6.8
Green Ext Time (p_c), s		6.9			0.0	6.6		1.9

Intersection Summary	
HCM 2010 Ctrl Delay	11.4
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	360	160	40	320	0	100	0	50	370	120	50
Future Volume (veh/h)	0	360	160	40	320	0	100	0	50	370	120	50
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1845	1900	1845	1845	0	1845	0	1845	1845	1845	1900
Adj Flow Rate, veh/h	0	404	135	45	360	0	112	0	4	416	135	45
Adj No. of Lanes	0	2	0	1	2	0	1	0	1	2	1	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	3	3	3	3	0	3	0	3	3	3	3
Cap, veh/h	0	923	305	193	1968	0	0	0	0	692	261	87
Arrive On Green	0.00	0.36	0.36	0.11	0.56	0.00	0.00	0.00	0.00	0.20	0.20	0.20
Sat Flow, veh/h	0	2671	851	1757	3597	0		0		3514	1325	442
Grp Volume(v), veh/h	0	273	266	45	360	0		0.0		416	0	180
Grp Sat Flow(s),veh/h/ln	0	1752	1678	1757	1752	0				1757	0	1767
Q Serve(g_s), s	0.0	4.4	4.5	0.9	1.9	0.0				4.0	0.0	3.4
Cycle Q Clear(g_c), s	0.0	4.4	4.5	0.9	1.9	0.0				4.0	0.0	3.4
Prop In Lane	0.00		0.51	1.00		0.00				1.00		0.25
Lane Grp Cap(c), veh/h	0	627	600	193	1968	0				692	0	348
V/C Ratio(X)	0.00	0.44	0.44	0.23	0.18	0.00				0.60	0.00	0.52
Avail Cap(c_a), veh/h	0	1505	1442	1226	3011	0				2452	0	1233
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	9.1	9.1	15.1	4.0	0.0				13.6	0.0	13.4
Incr Delay (d2), s/veh	0.0	0.5	0.6	0.2	0.0	0.0				0.3	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.2	2.2	0.4	0.9	0.0				1.9	0.0	1.7
LnGrp Delay(d),s/veh	0.0	9.6	9.7	15.4	4.0	0.0				13.9	0.0	13.8
LnGrp LOS		A	A	B	A					B		B
Approach Vol, veh/h		539			405						596	
Approach Delay, s/veh		9.7			5.3						13.9	
Approach LOS		A			A						B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		25.9			7.6	18.3		11.3
Change Period (Y+Rc), s		5.0			3.5	5.0		4.0
Max Green Setting (Gmax), s		32.0			26.0	32.0		26.0
Max Q Clear Time (g_c+I1), s		3.9			2.9	6.5		6.0
Green Ext Time (p_c), s		6.6			0.0	6.4		1.3

Intersection Summary	
HCM 2010 Ctrl Delay	10.2
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	500	0	0	220	880	150	0	320	0	0	0
Future Volume (veh/h)	220	500	0	0	220	880	150	0	320	0	0	0
Number	1	6	16	5	2	12	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1845	0	0	1845	1900	1845	0	1845			
Adj Flow Rate, veh/h	242	549	0	0	242	530	165	0	147			
Adj No. of Lanes	0	2	0	0	3	0	1	0	1			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91			
Percent Heavy Veh, %	3	3	0	0	3	3	3	0	3			
Cap, veh/h	421	1109	0	0	2147	981	298	0	266			
Arrive On Green	0.64	0.64	0.00	0.00	0.64	0.64	0.17	0.00	0.17			
Sat Flow, veh/h	443	1818	0	0	3523	1535	1757	0	1568			
Grp Volume(v), veh/h	302	489	0	0	242	530	165	0	147			
Grp Sat Flow(s),veh/h/ln	582	1595	0	0	1679	1535	1757	0	1568			
Q Serve(g_s), s	14.3	7.5	0.0	0.0	1.3	9.0	4.1	0.0	4.0			
Cycle Q Clear(g_c), s	23.3	7.5	0.0	0.0	1.3	9.0	4.1	0.0	4.0			
Prop In Lane	0.80		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	510	1020	0	0	2147	981	298	0	266			
V/C Ratio(X)	0.59	0.48	0.00	0.00	0.11	0.54	0.55	0.00	0.55			
Avail Cap(c_a), veh/h	524	1049	0	0	2350	1074	1043	0	931			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	10.1	4.4	0.0	0.0	3.3	4.7	17.9	0.0	17.9			
Incr Delay (d2), s/veh	2.1	0.5	0.0	0.0	0.0	0.7	0.6	0.0	0.7			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.6	3.4	0.0	0.0	0.6	3.9	2.0	0.0	1.8			
LnGrp Delay(d),s/veh	12.2	4.9	0.0	0.0	3.3	5.3	18.5	0.0	18.6			
LnGrp LOS	B	A			A	A	B		B			
Approach Vol, veh/h		791			772			312				
Approach Delay, s/veh		7.7			4.7			18.6				
Approach LOS		A			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		34.1		13.0		34.1		
Change Period (Y+Rc), s		4.0		5.0		4.0		
Max Green Setting (Gmax), s		33.0		28.0		31.0		
Max Q Clear Time (g_c+I1), s		11.0		6.1		25.3		
Green Ext Time (p_c), s		15.4		0.2		4.9		

Intersection Summary	
HCM 2010 Ctrl Delay	8.3
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	780	0	0	210	510	150	0	220	0	0	0
Future Volume (veh/h)	0	780	0	0	210	510	150	0	220	0	0	0
Number	1	6	16	5	2	12	7	4	14			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	0	1863	0	0	1863	1900	1863	0	1863			
Adj Flow Rate, veh/h	0	918	0	0	247	267	176	0	173			
Adj No. of Lanes	0	2	0	0	3	0	1	0	1			
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85			
Percent Heavy Veh, %	0	2	0	0	2	2	2	0	2			
Cap, veh/h	0	1988	0	0	1904	870	366	0	327			
Arrive On Green	0.00	0.56	0.00	0.00	0.56	0.56	0.21	0.00	0.21			
Sat Flow, veh/h	0	3725	0	0	3558	1550	1774	0	1583			
Grp Volume(v), veh/h	0	918	0	0	247	267	176	0	173			
Grp Sat Flow(s),veh/h/ln	0	1770	0	0	1695	1550	1774	0	1583			
Q Serve(g_s), s	0.0	6.0	0.0	0.0	1.3	3.5	3.4	0.0	3.8			
Cycle Q Clear(g_c), s	0.0	6.0	0.0	0.0	1.3	3.5	3.4	0.0	3.8			
Prop In Lane	0.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	1988	0	0	1904	870	366	0	327			
V/C Ratio(X)	0.00	0.46	0.00	0.00	0.13	0.31	0.48	0.00	0.53			
Avail Cap(c_a), veh/h	0	2829	0	0	2885	1319	1281	0	1143			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	5.0	0.0	0.0	4.0	4.5	13.6	0.0	13.7			
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.0	0.3	0.4	0.0	0.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	2.9	0.0	0.0	0.6	1.6	1.7	0.0	1.7			
LnGrp Delay(d),s/veh	0.0	5.3	0.0	0.0	4.1	4.8	13.9	0.0	14.2			
LnGrp LOS		A			A	A	B		B			
Approach Vol, veh/h		918			514			349				
Approach Delay, s/veh		5.3			4.4			14.1				
Approach LOS		A			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		25.8		13.0		25.8		
Change Period (Y+Rc), s		4.0		5.0		4.0		
Max Green Setting (Gmax), s		33.0		28.0		31.0		
Max Q Clear Time (g_c+I1), s		5.5		5.8		8.0		
Green Ext Time (p_c), s		15.4		0.2		13.8		

Intersection Summary	
HCM 2010 Ctrl Delay	6.8
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	370	330	120	770	190	170	550	130	200	570	160
Future Volume (veh/h)	120	370	330	120	770	190	170	550	130	200	570	160
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	128	394	71	128	819	181	181	585	24	213	606	153
Adj No. of Lanes	1	2	1	1	2	0	0	2	1	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	155	980	430	154	794	175	181	619	349	208	620	164
Arrive On Green	0.09	0.28	0.28	0.17	0.55	0.55	0.22	0.22	0.22	0.28	0.28	0.28
Sat Flow, veh/h	1774	3539	1555	1774	2875	635	811	2781	1568	750	2237	592
Grp Volume(v), veh/h	128	394	71	128	504	496	407	359	24	519	0	453
Grp Sat Flow(s),veh/h/ln	1774	1770	1555	1774	1770	1741	1822	1770	1568	1825	0	1753
Q Serve(g_s), s	7.8	10.0	3.8	7.7	30.4	30.4	24.5	21.8	1.3	30.5	0.0	27.7
Cycle Q Clear(g_c), s	7.8	10.0	3.8	7.7	30.4	30.4	24.5	21.8	1.3	30.5	0.0	27.7
Prop In Lane	1.00		1.00	1.00		0.36	0.44		1.00	0.41		0.34
Lane Grp Cap(c), veh/h	155	980	430	154	489	481	406	394	349	506	0	486
V/C Ratio(X)	0.83	0.40	0.17	0.83	1.03	1.03	1.00	0.91	0.07	1.02	0.00	0.93
Avail Cap(c_a), veh/h	169	980	430	282	489	481	406	394	349	506	0	486
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.64	0.64	0.64	0.68	0.68	0.68	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	49.4	32.4	30.1	44.7	24.6	24.6	42.8	41.7	33.7	39.8	0.0	38.7
Incr Delay (d2), s/veh	16.1	0.8	0.5	3.0	42.0	42.2	45.2	24.4	0.0	46.5	0.0	24.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	5.0	1.7	3.8	20.1	19.8	17.4	13.3	0.6	21.9	0.0	16.7
LnGrp Delay(d),s/veh	65.5	33.2	30.7	47.7	66.6	66.9	88.0	66.1	33.8	86.2	0.0	63.5
LnGrp LOS	E	C	C	D	F	F	F	E	C	F		E
Approach Vol, veh/h		593			1128			790			972	
Approach Delay, s/veh		39.8			64.6			76.4			75.6	
Approach LOS		D			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.1	34.9		34.0	13.1	34.9		28.0
Change Period (Y+Rc), s	3.5	4.5		3.5	3.5	4.5		3.5
Max Green Setting (Gmax), s	17.5	22.5		30.5	10.5	29.5		24.5
Max Q Clear Time (g_c+I1), s	9.7	12.0		32.5	9.8	32.4		26.5
Green Ext Time (p_c), s	0.1	7.5		0.0	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	66.1
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	690	180	170	430	150	200	700	220	210	750	90
Future Volume (veh/h)	130	690	180	170	430	150	200	700	220	210	750	90
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	138	734	35	181	457	127	213	745	56	223	798	89
Adj No. of Lanes	1	2	1	1	2	0	0	2	1	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	165	862	378	213	738	203	170	630	349	193	729	85
Arrive On Green	0.09	0.24	0.24	0.04	0.09	0.09	0.22	0.22	0.22	0.28	0.28	0.28
Sat Flow, veh/h	1774	3539	1550	1774	2729	752	764	2830	1566	697	2630	306
Grp Volume(v), veh/h	138	734	35	181	295	289	509	449	56	584	0	526
Grp Sat Flow(s),veh/h/ln	1774	1770	1550	1774	1770	1712	1825	1770	1566	1828	0	1806
Q Serve(g_s), s	8.4	21.8	1.9	11.2	17.7	17.9	24.5	24.5	3.2	30.5	0.0	30.5
Cycle Q Clear(g_c), s	8.4	21.8	1.9	11.2	17.7	17.9	24.5	24.5	3.2	30.5	0.0	30.5
Prop In Lane	1.00		1.00	1.00		0.44	0.42		1.00	0.38		0.17
Lane Grp Cap(c), veh/h	165	862	378	213	478	463	406	394	349	507	0	501
V/C Ratio(X)	0.83	0.85	0.09	0.85	0.62	0.62	1.25	1.14	0.16	1.15	0.00	1.05
Avail Cap(c_a), veh/h	169	862	378	282	478	463	406	394	349	507	0	501
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.84	0.84	0.84	0.93	0.93	0.93	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	49.0	39.7	32.2	51.8	44.6	44.7	42.8	42.8	34.5	39.8	0.0	39.8
Incr Delay (d2), s/veh	23.1	8.8	0.4	12.8	5.4	5.8	132.4	89.1	0.1	89.5	0.0	53.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	11.7	0.9	6.3	9.4	9.3	27.2	21.7	1.4	28.0	0.0	22.7
LnGrp Delay(d),s/veh	72.1	48.5	32.6	64.6	50.0	50.5	175.1	131.8	34.5	129.3	0.0	93.6
LnGrp LOS	E	D	C	E	D	D	F	F	C	F		F
Approach Vol, veh/h		907			765			1014			1110	
Approach Delay, s/veh		51.5			53.7			148.2			112.4	
Approach LOS		D			D			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	16.7	31.3		34.0	13.8	34.2		28.0
Change Period (Y+Rc), s	3.5	4.5		3.5	3.5	4.5		3.5
Max Green Setting (Gmax), s	17.5	22.5		30.5	10.5	29.5		24.5
Max Q Clear Time (g_c+I1), s	13.2	23.8		32.5	10.4	19.9		26.5
Green Ext Time (p_c), s	0.1	0.0		0.0	0.0	6.6		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		95.6
HCM 2010 LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	190	330	0	0	0	80	250	270	0	580	40
Future Volume (veh/h)	0	190	330	0	0	0	80	250	270	0	580	40
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900				1863	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	0	213	146				90	281	141	0	652	11
Adj No. of Lanes	1	2	0				1	1	1	0	2	1
Peak Hour Factor	0.89	0.89	0.89				0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2				2	2	2	0	2	2
Cap, veh/h	384	444	291				121	1004	854	0	1234	552
Arrive On Green	0.00	0.22	0.22				0.07	0.54	0.54	0.00	0.35	0.35
Sat Flow, veh/h	1774	2051	1344				1774	1863	1583	0	3632	1583
Grp Volume(v), veh/h	0	182	177				90	281	141	0	652	11
Grp Sat Flow(s),veh/h/ln	1774	1770	1626				1774	1863	1583	0	1770	1583
Q Serve(g_s), s	0.0	2.9	3.1				1.6	2.7	1.5	0.0	4.8	0.1
Cycle Q Clear(g_c), s	0.0	2.9	3.1				1.6	2.7	1.5	0.0	4.8	0.1
Prop In Lane	1.00		0.83				1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	384	383	352				121	1004	854	0	1234	552
V/C Ratio(X)	0.00	0.48	0.50				0.74	0.28	0.17	0.00	0.53	0.02
Avail Cap(c_a), veh/h	1681	1677	1540				271	1480	1258	0	1839	823
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00				1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	11.2	11.3				15.0	4.1	3.8	0.0	8.5	7.0
Incr Delay (d2), s/veh	0.0	0.9	1.1				8.6	0.2	0.1	0.0	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.5	1.5				1.1	1.4	0.6	0.0	2.4	0.1
LnGrp Delay(d),s/veh	0.0	12.1	12.4				23.6	4.2	3.9	0.0	8.9	7.0
LnGrp LOS		B	B				C	A	A		A	A
Approach Vol, veh/h		359						512			663	
Approach Delay, s/veh		12.2						7.5			8.8	
Approach LOS		B						A			A	

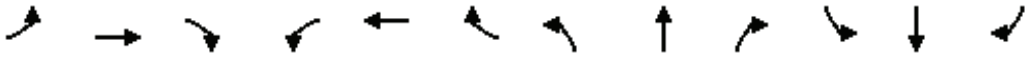
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		21.6		11.1	6.2	15.4		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		26.0		31.0	5.0	17.0		
Max Q Clear Time (g_c+I1), s		4.7		5.1	3.6	6.8		
Green Ext Time (p_c), s		6.7		2.2	0.0	4.6		

Intersection Summary	
HCM 2010 Ctrl Delay	9.2
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	140	140	0	0	0	100	570	530	0	610	30
Future Volume (veh/h)	30	140	140	0	0	0	100	570	530	0	610	30
Number	7	4	14				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900				1863	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	35	165	17				118	671	419	0	718	9
Adj No. of Lanes	1	2	0				1	1	1	0	2	1
Peak Hour Factor	0.85	0.85	0.85				0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2				2	2	2	0	2	2
Cap, veh/h	218	399	41				148	1177	999	0	1506	673
Arrive On Green	0.12	0.12	0.12				0.08	0.63	0.63	0.00	0.43	0.43
Sat Flow, veh/h	1774	3244	330				1774	1863	1580	0	3632	1581
Grp Volume(v), veh/h	35	89	93				118	671	419	0	718	9
Grp Sat Flow(s),veh/h/ln	1774	1770	1804				1774	1863	1580	0	1770	1581
Q Serve(g_s), s	0.6	1.5	1.6				2.1	6.8	4.3	0.0	4.8	0.1
Cycle Q Clear(g_c), s	0.6	1.5	1.6				2.1	6.8	4.3	0.0	4.8	0.1
Prop In Lane	1.00		0.18				1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	218	217	222				148	1177	999	0	1506	673
V/C Ratio(X)	0.16	0.41	0.42				0.80	0.57	0.42	0.00	0.48	0.01
Avail Cap(c_a), veh/h	1686	1682	1715				272	1485	1260	0	1845	824
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00				1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	12.8	13.2	13.2				14.7	3.5	3.0	0.0	6.7	5.4
Incr Delay (d2), s/veh	0.3	1.2	1.3				9.3	0.4	0.3	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.8	0.9				1.4	3.5	1.9	0.0	2.3	0.0
LnGrp Delay(d),s/veh	13.1	14.5	14.5				24.0	3.9	3.3	0.0	7.0	5.4
LnGrp LOS	B	B	B				C	A	A		A	A
Approach Vol, veh/h		217						1208			727	
Approach Delay, s/veh		14.3						5.6			7.0	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		24.6		8.0	6.7	17.9		
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		
Max Green Setting (Gmax), s		26.0		31.0	5.0	17.0		
Max Q Clear Time (g_c+I1), s		8.8		3.6	4.1	6.8		
Green Ext Time (p_c), s		10.2		1.1	0.0	7.0		

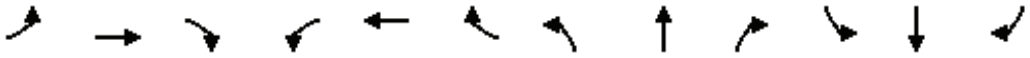
Intersection Summary	
HCM 2010 Ctrl Delay	7.0
HCM 2010 LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	20	10	40	30	450	10	110	20	480	390	40
Future Volume (Veh/h)	40	20	10	40	30	450	10	110	20	480	390	40
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	22	11	43	33	489	11	120	22	522	424	43
Pedestrians					1							
Lane Width (ft)					12.0							
Walking Speed (ft/s)					4.0							
Percent Blockage					0							
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											499	
pX, platoon unblocked	0.73	0.73	0.73	0.73	0.73		0.73					
vC, conflicting volume	2148	1654	446	1666	1665	132	467			143		
vC1, stage 1 conf vol	1490	1490		154	154							
vC2, stage 2 conf vol	658	165		1512	1511							
vCu, unblocked vol	2385	1711	59	1726	1725	132	89			143		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	74	99	0	54	47	99			64		
cM capacity (veh/h)	4	84	737	39	72	917	1103			1438		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	76	565	153	989
Volume Left	43	43	11	522
Volume Right	11	489	22	43
cSH	7	271	1103	1438
Volume to Capacity	11.62	2.08	0.01	0.36
Queue Length 95th (ft)	Err	1045	1	42
Control Delay (s)	Err	530.5	0.7	6.8
Lane LOS	F	F	A	A
Approach Delay (s)	Err	530.5	0.7	6.8
Approach LOS	F	F		

Intersection Summary				
Average Delay	598.1			
Intersection Capacity Utilization	98.7%	ICU Level of Service	F	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	20	10	20	20	590	10	520	30	490	210	30
Future Volume (Veh/h)	70	20	10	20	20	590	10	520	30	490	210	30
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	76	22	11	22	22	641	11	565	33	533	228	33
Pedestrians		1			1			1				
Lane Width (ft)		12.0			12.0			12.0				
Walking Speed (ft/s)		4.0			4.0			4.0				
Percent Blockage		0			0			0				
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)											499	
pX, platoon unblocked	0.72	0.72	0.72	0.72	0.72		0.72					
vC, conflicting volume	2567	1932	246	1938	1932	582	262			599		
vC1, stage 1 conf vol	1312	1312		604	604							
vC2, stage 2 conf vol	1256	621		1334	1328							
vCu, unblocked vol	2975	2098	0	2105	2098	582	0			599		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	0	99	40	67	0	99			45		
cM capacity (veh/h)	0	17	784	37	66	512	1174			977		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	109	685	609	794
Volume Left	76	22	11	533
Volume Right	11	641	33	33
cSH	0	313	1174	977
Volume to Capacity	Err	2.19	0.01	0.55
Queue Length 95th (ft)	Err	1286	1	85
Control Delay (s)	Err	570.3	0.3	11.5
Lane LOS	F	F	A	B
Approach Delay (s)	Err	570.3	0.3	11.5
Approach LOS	F	F		

Intersection Summary				
Average Delay	Err			
Intersection Capacity Utilization	121.4%	ICU Level of Service	H	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	440	190	320	740	200	180	190	110	190	520	150
Future Volume (veh/h)	60	440	190	320	740	200	180	190	110	190	520	150
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	71	518	172	376	871	209	212	224	100	224	612	157
Adj No. of Lanes	1	2	0	1	2	0	0	2	0	0	2	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	185	1219	403	400	1322	317	204	512	229	263	752	221
Arrive On Green	0.94	0.94	0.94	0.47	0.47	0.47	0.46	0.46	0.46	0.46	0.46	0.46
Sat Flow, veh/h	520	2603	860	749	2823	677	300	1104	493	462	1621	476
Grp Volume(v), veh/h	71	351	339	376	546	534	212	0	324	464	0	529
Grp Sat Flow(s),veh/h/ln	520	1770	1694	749	1770	1730	300	0	1597	957	0	1601
Q Serve(g_s), s	11.1	2.3	2.3	49.2	26.1	26.1	21.9	0.0	15.0	36.0	0.0	29.1
Cycle Q Clear(g_c), s	37.2	2.3	2.3	51.5	26.1	26.1	51.0	0.0	15.0	51.0	0.0	29.1
Prop In Lane	1.00		0.51	1.00		0.39	1.00		0.31	0.48		0.30
Lane Grp Cap(c), veh/h	185	828	793	400	828	810	204	0	741	492	0	742
V/C Ratio(X)	0.38	0.42	0.43	0.94	0.66	0.66	1.04	0.00	0.44	0.94	0.00	0.71
Avail Cap(c_a), veh/h	185	828	793	400	828	810	204	0	741	492	0	742
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.92	1.00	1.00	1.00	0.50	0.00	0.50	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.7	1.9	1.9	33.1	22.5	22.5	47.5	0.0	19.8	37.8	0.0	23.6
Incr Delay (d2), s/veh	5.4	1.5	1.5	32.0	4.1	4.2	54.6	0.0	0.1	26.6	0.0	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	1.3	1.3	14.9	13.7	13.4	9.3	0.0	6.6	17.7	0.0	13.3
LnGrp Delay(d),s/veh	18.1	3.4	3.5	65.2	26.6	26.7	102.2	0.0	19.9	64.4	0.0	26.4
LnGrp LOS	B	A	A	E	C	C	F		B	E		C
Approach Vol, veh/h		761			1456			536			993	
Approach Delay, s/veh		4.8			36.6			52.5			44.2	
Approach LOS		A			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		55.0		55.0		55.0		55.0
Change Period (Y+Rc), s		3.5		4.0		3.5		4.0
Max Green Setting (Gmax), s		51.5		51.0		51.5		51.0
Max Q Clear Time (g_c+I1), s		39.2		53.0		53.5		53.0
Green Ext Time (p_c), s		9.9		0.0		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	34.4
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	740	220	140	390	160	260	710	370	140	260	70
Future Volume (veh/h)	150	740	220	140	390	160	260	710	370	140	260	70
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	160	787	207	149	415	127	277	755	356	149	277	60
Adj No. of Lanes	1	2	0	1	2	0	0	2	0	0	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	346	1194	314	258	1153	349	263	694	379	94	673	146
Arrive On Green	0.86	0.86	0.86	0.43	0.43	0.43	0.50	0.50	0.50	0.50	0.50	0.50
Sat Flow, veh/h	860	2765	727	564	2669	808	433	1388	757	57	1345	291
Grp Volume(v), veh/h	160	504	490	149	274	268	663	0	725	149	0	337
Grp Sat Flow(s),veh/h/ln	860	1770	1723	564	1770	1707	1035	0	1542	57	0	1636
Q Serve(g_s), s	11.3	9.9	9.9	26.0	11.4	11.7	40.7	0.0	48.8	6.2	0.0	14.3
Cycle Q Clear(g_c), s	23.0	9.9	9.9	35.9	11.4	11.7	55.0	0.0	48.8	55.0	0.0	14.3
Prop In Lane	1.00		0.42	1.00		0.47	0.42		0.49	1.00		0.18
Lane Grp Cap(c), veh/h	346	764	744	258	764	737	564	0	771	94	0	818
V/C Ratio(X)	0.46	0.66	0.66	0.58	0.36	0.36	1.18	0.00	0.94	1.59	0.00	0.41
Avail Cap(c_a), veh/h	346	764	744	258	764	737	564	0	771	94	0	818
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.51	0.51	0.51	1.00	1.00	1.00	0.09	0.00	0.09	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.1	4.9	4.9	32.4	21.0	21.1	36.3	0.0	25.9	54.1	0.0	17.3
Incr Delay (d2), s/veh	2.3	2.3	2.4	9.1	1.3	1.4	80.8	0.0	2.7	307.7	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	5.0	4.8	4.7	5.8	5.7	29.7	0.0	21.1	10.9	0.0	6.5
LnGrp Delay(d),s/veh	11.3	7.2	7.3	41.5	22.3	22.5	117.1	0.0	28.6	361.7	0.0	17.4
LnGrp LOS	B	A	A	D	C	C	F		C	F		B
Approach Vol, veh/h		1154			691			1388			486	
Approach Delay, s/veh		7.8			26.5			70.9			123.0	
Approach LOS		A			C			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		51.0		59.0		51.0		59.0
Change Period (Y+Rc), s		3.5		4.0		3.5		4.0
Max Green Setting (Gmax), s		47.5		55.0		47.5		55.0
Max Q Clear Time (g_c+I1), s		25.0		57.0		37.9		57.0
Green Ext Time (p_c), s		13.4		0.0		7.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	49.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	280	270	120	280	120	180	340	90	260	740	20
Future Volume (veh/h)	10	280	270	120	280	120	180	340	90	260	740	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	12	329	257	141	329	121	212	400	81	306	871	22
Adj No. of Lanes	0	1	0	0	1	0	0	2	0	0	2	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	62	402	307	163	299	101	173	656	139	278	904	26
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.48	0.48	0.48	0.48	0.48	0.48
Sat Flow, veh/h	13	986	753	231	734	248	145	1376	292	397	1896	54
Grp Volume(v), veh/h	598	0	0	591	0	0	240	0	453	512	0	687
Grp Sat Flow(s),veh/h/ln	1752	0	0	1213	0	0	180	0	1633	663	0	1684
Q Serve(g_s), s	0.0	0.0	0.0	6.2	0.0	0.0	7.5	0.0	13.0	18.0	0.0	23.5
Cycle Q Clear(g_c), s	20.3	0.0	0.0	26.5	0.0	0.0	31.0	0.0	13.0	31.0	0.0	23.5
Prop In Lane	0.02		0.43	0.24		0.20	0.88		0.18	0.60		0.03
Lane Grp Cap(c), veh/h	771	0	0	563	0	0	190	0	779	405	0	803
V/C Ratio(X)	0.78	0.00	0.00	1.05	0.00	0.00	1.26	0.00	0.58	1.26	0.00	0.86
Avail Cap(c_a), veh/h	771	0	0	563	0	0	190	0	779	405	0	803
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.5	0.0	0.0	20.6	0.0	0.0	29.7	0.0	12.3	25.5	0.0	15.0
Incr Delay (d2), s/veh	5.0	0.0	0.0	51.4	0.0	0.0	154.1	0.0	1.1	137.1	0.0	9.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.7	0.0	0.0	18.1	0.0	0.0	11.5	0.0	6.0	22.6	0.0	12.7
LnGrp Delay(d),s/veh	22.5	0.0	0.0	72.1	0.0	0.0	183.8	0.0	13.4	162.6	0.0	24.1
LnGrp LOS	C			F			F		B	F		C
Approach Vol, veh/h		598			591			693			1199	
Approach Delay, s/veh		22.5			72.1			72.5			83.2	
Approach LOS		C			E			E			F	

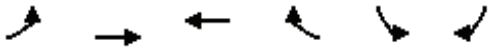
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		35.0		30.0		35.0		30.0
Change Period (Y+Rc), s		4.0		3.5		4.0		3.5
Max Green Setting (Gmax), s		31.0		26.5		31.0		26.5
Max Q Clear Time (g_c+I1), s		33.0		22.3		33.0		28.5
Green Ext Time (p_c), s		0.0		2.9		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	66.9
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	250	120	140	390	490	210	820	150	210	350	50
Future Volume (veh/h)	20	250	120	140	390	490	210	820	150	210	350	50
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	23	287	110	161	448	515	241	943	151	241	402	46
Adj No. of Lanes	0	1	0	0	1	0	0	2	0	0	2	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	76	505	186	144	265	292	226	856	162	141	710	81
Arrive On Green	0.41	0.41	0.41	0.41	0.41	0.41	0.48	0.48	0.48	0.48	0.48	0.48
Sat Flow, veh/h	43	1240	455	197	651	717	313	1796	340	64	1489	170
Grp Volume(v), veh/h	420	0	0	1124	0	0	614	0	721	241	0	448
Grp Sat Flow(s),veh/h/ln	1738	0	0	1565	0	0	826	0	1622	64	0	1659
Q Serve(g_s), s	0.0	0.0	0.0	14.6	0.0	0.0	18.4	0.0	27.2	3.8	0.0	12.6
Cycle Q Clear(g_c), s	11.9	0.0	0.0	26.5	0.0	0.0	31.0	0.0	27.2	31.0	0.0	12.6
Prop In Lane	0.05		0.26	0.14		0.46	0.39		0.21	1.00		0.10
Lane Grp Cap(c), veh/h	767	0	0	701	0	0	471	0	774	141	0	791
V/C Ratio(X)	0.55	0.00	0.00	1.60	0.00	0.00	1.30	0.00	0.93	1.71	0.00	0.57
Avail Cap(c_a), veh/h	767	0	0	701	0	0	471	0	774	141	0	791
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.9	0.0	0.0	20.3	0.0	0.0	24.2	0.0	16.0	32.1	0.0	12.2
Incr Delay (d2), s/veh	0.8	0.0	0.0	277.7	0.0	0.0	151.7	0.0	17.8	347.0	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	0.0	0.0	66.6	0.0	0.0	28.2	0.0	15.8	16.1	0.0	5.9
LnGrp Delay(d),s/veh	15.7	0.0	0.0	298.0	0.0	0.0	175.8	0.0	33.8	379.1	0.0	13.1
LnGrp LOS	B			F			F		C	F		B
Approach Vol, veh/h		420			1124			1335			689	
Approach Delay, s/veh		15.7			298.0			99.2			141.1	
Approach LOS		B			F			F			F	

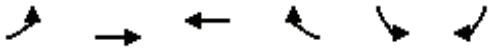
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		35.0		30.0		35.0		30.0
Change Period (Y+Rc), s		4.0		3.5		4.0		3.5
Max Green Setting (Gmax), s		31.0		26.5		31.0		26.5
Max Q Clear Time (g_c+I1), s		33.0		13.9		33.0		28.5
Green Ext Time (p_c), s		0.0		9.5		0.0		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		160.1
HCM 2010 LOS		F



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	260	40	80	180	310	460
Future Volume (vph)	260	40	80	180	310	460
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1583	1770	1583
Flt Permitted	0.70	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1304	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	286	44	88	198	341	505
RTOR Reduction (vph)	0	0	0	133	0	294
Lane Group Flow (vph)	286	44	88	65	341	211
Confl. Peds. (#/hr)					5	
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)	10.4	10.4	10.4	10.4	13.2	13.2
Effective Green, g (s)	10.4	10.4	10.4	10.4	13.2	13.2
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.42	0.42
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	429	613	613	520	739	661
v/s Ratio Prot		0.02	0.05		c0.19	
v/s Ratio Perm	c0.22			0.04		0.13
v/c Ratio	0.67	0.07	0.14	0.13	0.46	0.32
Uniform Delay, d1	9.1	7.3	7.5	7.4	6.6	6.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.9	0.0	0.1	0.1	0.5	0.3
Delay (s)	13.0	7.3	7.6	7.5	7.1	6.5
Level of Service	B	A	A	A	A	A
Approach Delay (s)		12.2	7.5		6.7	
Approach LOS		B	A		A	

Intersection Summary			
HCM 2000 Control Delay	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	31.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	450	90	40	680	300	420
Future Volume (vph)	450	90	40	680	300	420
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1583	1770	1583
Flt Permitted	0.73	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1353	1863	1863	1583	1770	1583
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	529	106	47	800	353	494
RTOR Reduction (vph)	0	0	0	374	0	338
Lane Group Flow (vph)	529	106	47	426	353	156
Confl. Peds. (#/hr)					3	
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)	28.1	28.1	28.1	28.1	16.7	16.7
Effective Green, g (s)	28.1	28.1	28.1	28.1	16.7	16.7
Actuated g/C Ratio	0.53	0.53	0.53	0.53	0.32	0.32
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	720	991	991	842	559	500
v/s Ratio Prot		0.06	0.03		c0.20	
v/s Ratio Perm	c0.39			0.27		0.10
v/c Ratio	0.73	0.11	0.05	0.51	0.63	0.31
Uniform Delay, d1	9.5	6.1	5.9	7.9	15.4	13.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.9	0.0	0.0	0.5	2.3	0.4
Delay (s)	13.4	6.2	5.9	8.4	17.7	14.1
Level of Service	B	A	A	A	B	B
Approach Delay (s)		12.2	8.2		15.6	
Approach LOS		B	A		B	

Intersection Summary			
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	52.8	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	470	150	370	740	140	140	490	190	160	1130	230
Future Volume (veh/h)	150	470	150	370	740	140	140	490	190	160	1130	230
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	165	516	80	407	813	77	154	538	174	176	1242	238
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	194	772	338	371	1061	461	145	891	287	206	1103	209
Arrive On Green	0.11	0.22	0.22	0.21	0.30	0.30	0.08	0.34	0.34	0.12	0.37	0.37
Sat Flow, veh/h	1774	3539	1548	1774	3539	1537	1774	2631	847	1774	2960	562
Grp Volume(v), veh/h	165	516	80	407	813	77	154	361	351	176	738	742
Grp Sat Flow(s),veh/h/ln	1774	1770	1548	1774	1770	1537	1774	1770	1709	1774	1770	1752
Q Serve(g_s), s	10.0	14.7	4.7	23.0	23.0	4.1	9.0	18.7	18.8	10.7	41.0	41.0
Cycle Q Clear(g_c), s	10.0	14.7	4.7	23.0	23.0	4.1	9.0	18.7	18.8	10.7	41.0	41.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.50	1.00		0.32
Lane Grp Cap(c), veh/h	194	772	338	371	1061	461	145	599	578	206	660	653
V/C Ratio(X)	0.85	0.67	0.24	1.10	0.77	0.17	1.06	0.60	0.61	0.86	1.12	1.14
Avail Cap(c_a), veh/h	226	772	338	371	1061	461	145	599	578	290	660	653
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.1	39.4	35.4	43.5	35.0	28.4	50.5	30.2	30.3	47.7	34.5	34.5
Incr Delay (d2), s/veh	20.6	4.6	1.6	75.5	5.3	0.8	91.9	1.2	1.3	12.0	72.2	79.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	7.7	2.2	19.0	12.0	1.8	8.1	9.3	9.1	5.9	33.2	34.2
LnGrp Delay(d),s/veh	68.7	43.9	37.1	119.0	40.3	29.2	142.4	31.5	31.6	59.7	106.7	113.7
LnGrp LOS	E	D	D	F	D	C	F	C	C	E	F	F
Approach Vol, veh/h		761			1297			866			1656	
Approach Delay, s/veh		48.6			64.3			51.2			104.9	
Approach LOS		D			E			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	28.0	12.0	44.0	17.0	37.0	15.8	40.2
Change Period (Y+Rc), s	3.0	4.0	3.0	3.0	5.0	4.0	3.0	3.0
Max Green Setting (Gmax), s	23.0	24.0	9.0	41.0	14.0	31.0	18.0	32.0
Max Q Clear Time (g_c+I1), s	25.0	16.7	11.0	43.0	12.0	25.0	12.7	20.8
Green Ext Time (p_c), s	0.0	5.6	0.0	0.0	0.0	4.7	0.1	7.8

Intersection Summary	
HCM 2010 Ctrl Delay	73.9
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	1040	130	270	570	180	170	1420	340	160	580	90
Future Volume (veh/h)	150	1040	130	270	570	180	170	1420	340	160	580	90
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	167	1156	65	300	633	126	189	1578	359	178	644	88
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	195	997	435	194	929	408	219	1203	262	129	1149	157
Arrive On Green	0.11	0.28	0.28	0.11	0.26	0.26	0.12	0.42	0.42	0.07	0.37	0.37
Sat Flow, veh/h	1774	3539	1545	1774	3539	1552	1774	2876	627	1774	3128	427
Grp Volume(v), veh/h	167	1156	65	300	633	126	189	944	993	178	364	368
Grp Sat Flow(s),veh/h/ln	1774	1770	1545	1774	1770	1552	1774	1770	1734	1774	1770	1785
Q Serve(g_s), s	10.2	31.0	3.5	12.0	17.7	7.2	11.5	46.0	46.0	8.0	18.0	18.1
Cycle Q Clear(g_c), s	10.2	31.0	3.5	12.0	17.7	7.2	11.5	46.0	46.0	8.0	18.0	18.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.36	1.00		0.24
Lane Grp Cap(c), veh/h	195	997	435	194	929	408	219	740	725	129	650	656
V/C Ratio(X)	0.85	1.16	0.15	1.55	0.68	0.31	0.86	1.28	1.37	1.38	0.56	0.56
Avail Cap(c_a), veh/h	210	997	435	194	929	408	306	740	725	129	650	656
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.1	39.5	29.6	49.0	36.4	32.6	47.3	32.0	32.0	51.0	27.7	27.7
Incr Delay (d2), s/veh	24.6	82.9	0.7	271.5	4.0	2.0	12.6	134.6	174.9	211.7	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	26.6	1.6	20.5	9.1	3.3	6.4	50.1	57.2	11.5	8.9	9.0
LnGrp Delay(d),s/veh	72.7	122.4	30.3	320.5	40.4	34.5	59.9	166.6	206.9	262.7	28.4	28.4
LnGrp LOS	E	F	C	F	D	C	E	F	F	F	C	C
Approach Vol, veh/h		1388			1059			2126			910	
Approach Delay, s/veh		112.1			119.1			176.0			74.2	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	35.0	16.6	43.4	17.1	32.9	11.0	49.0
Change Period (Y+Rc), s	3.0	4.0	3.0	3.0	5.0	4.0	3.0	3.0
Max Green Setting (Gmax), s	12.0	31.0	19.0	35.0	13.0	28.0	8.0	46.0
Max Q Clear Time (g_c+I1), s	14.0	33.0	13.5	20.1	12.2	19.7	10.0	48.0
Green Ext Time (p_c), s	0.0	0.0	0.1	11.8	0.0	7.3	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	131.9
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	420	10	320	0	500	270	0	1330	320
Future Volume (veh/h)	0	0	0	420	10	320	0	500	270	0	1330	320
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	0	1863	1863	0	1863	1900
Adj Flow Rate, veh/h				517	0	145	0	532	0	0	1415	288
Adj No. of Lanes				2	0	1	0	3	1	0	3	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				2	2	2	0	2	2	0	2	2
Cap, veh/h				861	0	384	0	2836	883	0	2354	478
Arrive On Green				0.24	0.00	0.24	0.00	0.56	0.00	0.00	0.56	0.56
Sat Flow, veh/h				3548	0	1581	0	5253	1583	0	4389	857
Grp Volume(v), veh/h				517	0	145	0	532	0	0	1136	567
Grp Sat Flow(s),veh/h/ln				1774	0	1581	0	1695	1583	0	1695	1688
Q Serve(g_s), s				5.2	0.0	3.1	0.0	2.1	0.0	0.0	8.9	9.0
Cycle Q Clear(g_c), s				5.2	0.0	3.1	0.0	2.1	0.0	0.0	8.9	9.0
Prop In Lane				1.00		1.00	0.00		1.00	0.00		0.51
Lane Grp Cap(c), veh/h				861	0	384	0	2836	883	0	1891	942
V/C Ratio(X)				0.60	0.00	0.38	0.00	0.19	0.00	0.00	0.60	0.60
Avail Cap(c_a), veh/h				2831	0	1262	0	3170	987	0	2113	1052
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				13.5	0.0	12.7	0.0	4.4	0.0	0.0	5.9	5.9
Incr Delay (d2), s/veh				0.7	0.0	0.6	0.0	0.0	0.0	0.0	0.4	0.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.6	0.0	1.4	0.0	0.9	0.0	0.0	4.2	4.3
LnGrp Delay(d),s/veh				14.1	0.0	13.3	0.0	4.4	0.0	0.0	6.3	6.7
LnGrp LOS				B		B		A			A	A
Approach Vol, veh/h					662			532			1703	
Approach Delay, s/veh					13.9			4.4			6.4	
Approach LOS					B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		26.4				26.4		13.7
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		25.0				25.0		32.0
Max Q Clear Time (g_c+I1), s		4.1				11.0		7.2
Green Ext Time (p_c), s		15.8				11.4		2.4

Intersection Summary	
HCM 2010 Ctrl Delay	7.8
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	330	10	930	0	1050	490	0	780	200
Future Volume (veh/h)	0	0	0	330	10	930	0	1050	490	0	780	200
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	0	1863	1863	0	1863	1900
Adj Flow Rate, veh/h				238	0	1106	0	1117	0	0	830	139
Adj No. of Lanes				1	0	2	0	3	1	0	3	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				2	2	2	0	2	2	0	2	2
Cap, veh/h				778	0	1389	0	2085	649	0	1801	300
Arrive On Green				0.44	0.00	0.44	0.00	0.41	0.00	0.00	0.41	0.41
Sat Flow, veh/h				1774	0	3167	0	5253	1583	0	4560	731
Grp Volume(v), veh/h				238	0	1106	0	1117	0	0	639	330
Grp Sat Flow(s),veh/h/ln				1774	0	1583	0	1695	1583	0	1695	1734
Q Serve(g_s), s				4.6	0.0	15.9	0.0	8.8	0.0	0.0	7.3	7.3
Cycle Q Clear(g_c), s				4.6	0.0	15.9	0.0	8.8	0.0	0.0	7.3	7.3
Prop In Lane				1.00		1.00	0.00		1.00	0.00		0.42
Lane Grp Cap(c), veh/h				778	0	1389	0	2085	649	0	1390	711
V/C Ratio(X)				0.31	0.00	0.80	0.00	0.54	0.00	0.00	0.46	0.46
Avail Cap(c_a), veh/h				1074	0	1917	0	2404	749	0	1603	820
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh				9.6	0.0	12.8	0.0	11.8	0.0	0.0	11.3	11.4
Incr Delay (d2), s/veh				0.2	0.0	1.7	0.0	0.2	0.0	0.0	0.2	0.5
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.3	0.0	7.2	0.0	4.1	0.0	0.0	3.4	3.6
LnGrp Delay(d),s/veh				9.8	0.0	14.5	0.0	12.0	0.0	0.0	11.6	11.8
LnGrp LOS				A		B		B			B	B
Approach Vol, veh/h					1344			1117			969	
Approach Delay, s/veh					13.7			12.0			11.7	
Approach LOS					B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		25.7				25.7		27.2
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		25.0				25.0		32.0
Max Q Clear Time (g_c+I1), s		10.8				9.3		17.9
Green Ext Time (p_c), s		10.9				11.8		5.3

Intersection Summary	
HCM 2010 Ctrl Delay	12.6
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	0	750	0	0	0	0	630	540	0	1020	730
Future Volume (veh/h)	140	0	750	0	0	0	0	630	540	0	1020	730
Number	3	8	18				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863				0	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	0	0	992				0	716	0	0	1159	0
Adj No. of Lanes	0	1	2				0	3	0	0	2	1
Peak Hour Factor	0.88	0.88	0.88				0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2				0	2	2	0	2	2
Cap, veh/h	0	696	1184				0	2521	0	0	1755	785
Arrive On Green	0.00	0.00	0.37				0.00	0.50	0.00	0.00	0.50	0.00
Sat Flow, veh/h	0	1863	3167				0	5421	0	0	3632	1583
Grp Volume(v), veh/h	0	0	992				0	716	0	0	1159	0
Grp Sat Flow(s),veh/h/ln	0	1863	1583				0	1695	0	0	1770	1583
Q Serve(g_s), s	0.0	0.0	17.5				0.0	5.1	0.0	0.0	15.1	0.0
Cycle Q Clear(g_c), s	0.0	0.0	17.5				0.0	5.1	0.0	0.0	15.1	0.0
Prop In Lane	0.00		1.00				0.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	0	696	1184				0	2521	0	0	1755	785
V/C Ratio(X)	0.00	0.00	0.84				0.00	0.28	0.00	0.00	0.66	0.00
Avail Cap(c_a), veh/h	0	911	1548				0	3066	0	0	2134	955
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	17.5				0.0	9.1	0.0	0.0	11.6	0.0
Incr Delay (d2), s/veh	0.0	0.0	3.3				0.0	0.1	0.0	0.0	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	8.1				0.0	2.3	0.0	0.0	7.4	0.0
LnGrp Delay(d),s/veh	0.0	0.0	20.8				0.0	9.1	0.0	0.0	12.2	0.0
LnGrp LOS			C					A			B	
Approach Vol, veh/h		992						716			1159	
Approach Delay, s/veh		20.8						9.1			12.2	
Approach LOS		C						A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		34.4				34.4		26.9
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		37.0				37.0		30.0
Max Q Clear Time (g_c+I1), s		7.1				17.1		19.5
Green Ext Time (p_c), s		17.4				13.4		3.4

Intersection Summary	
HCM 2010 Ctrl Delay	14.4
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	380	0	480	0	0	0	0	1160	590	0	680	430
Future Volume (veh/h)	380	0	480	0	0	0	0	1160	590	0	680	430
Number	3	8	18				5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863				0	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	442	13	451				0	1349	0	0	791	0
Adj No. of Lanes	0	1	1				0	3	0	0	2	1
Peak Hour Factor	0.86	0.86	0.86				0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2				0	2	2	0	2	2
Cap, veh/h	615	18	564				0	2579	0	0	1795	803
Arrive On Green	0.36	0.36	0.36				0.00	0.51	0.00	0.00	0.51	0.00
Sat Flow, veh/h	1726	51	1583				0	5421	0	0	3632	1583
Grp Volume(v), veh/h	455	0	451				0	1349	0	0	791	0
Grp Sat Flow(s),veh/h/ln	1776	0	1583				0	1695	0	0	1770	1583
Q Serve(g_s), s	13.0	0.0	15.0				0.0	10.4	0.0	0.0	8.3	0.0
Cycle Q Clear(g_c), s	13.0	0.0	15.0				0.0	10.4	0.0	0.0	8.3	0.0
Prop In Lane	0.97		1.00				0.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	633	0	564				0	2579	0	0	1795	803
V/C Ratio(X)	0.72	0.00	0.80				0.00	0.52	0.00	0.00	0.44	0.00
Avail Cap(c_a), veh/h	911	0	812				0	3215	0	0	2238	1001
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	16.3	0.0	17.0				0.0	9.7	0.0	0.0	9.2	0.0
Incr Delay (d2), s/veh	1.6	0.0	3.7				0.0	0.2	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.6	0.0	7.1				0.0	4.8	0.0	0.0	4.0	0.0
LnGrp Delay(d),s/veh	17.9	0.0	20.7				0.0	9.8	0.0	0.0	9.3	0.0
LnGrp LOS	B		C					A			A	
Approach Vol, veh/h		906						1349			791	
Approach Delay, s/veh		19.3						9.8			9.3	
Approach LOS		B						A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		33.7				33.7		24.8
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		37.0				37.0		30.0
Max Q Clear Time (g_c+I1), s		12.4				10.3		17.0
Green Ext Time (p_c), s		17.3				18.3		3.8

Intersection Summary	
HCM 2010 Ctrl Delay	12.5
HCM 2010 LOS	B

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	20	100	10	10	30	120	1040	50	300	1170	300
Future Volume (veh/h)	100	20	100	10	10	30	120	1040	50	300	1170	300
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	109	22	63	11	11	0	130	1130	52	326	1272	309
Adj No. of Lanes	1	1	0	1	1	0	0	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	89	47	135	18	133	0	168	1437	68	148	2185	521
Arrive On Green	0.05	0.11	0.11	0.01	0.07	0.00	0.66	0.66	0.66	0.08	0.77	0.77
Sat Flow, veh/h	1774	422	1208	1774	1863	0	197	2185	103	1774	2822	673
Grp Volume(v), veh/h	109	0	85	11	11	0	465	0	847	326	789	792
Grp Sat Flow(s),veh/h/ln	1774	0	1630	1774	1863	0	809	0	1677	1774	1770	1725
Q Serve(g_s), s	6.0	0.0	5.9	0.7	0.7	0.0	45.9	0.0	41.9	10.0	21.8	23.0
Cycle Q Clear(g_c), s	6.0	0.0	5.9	0.7	0.7	0.0	54.8	0.0	41.9	10.0	21.8	23.0
Prop In Lane	1.00		0.74	1.00		0.00	0.28		0.06	1.00		0.39
Lane Grp Cap(c), veh/h	89	0	181	18	133	0	570	0	1103	148	1370	1336
V/C Ratio(X)	1.23	0.00	0.47	0.61	0.08	0.00	0.82	0.00	0.77	2.21	0.58	0.59
Avail Cap(c_a), veh/h	89	0	181	74	574	0	570	0	1103	148	1370	1336
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	0.12	0.00	0.12	0.61	0.61	0.61
Uniform Delay (d), s/veh	57.0	0.0	50.0	59.1	52.0	0.0	15.7	0.0	14.2	55.0	5.5	5.7
Incr Delay (d2), s/veh	169.3	0.0	0.7	11.5	0.1	0.0	1.7	0.0	0.6	555.6	1.1	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.1	0.0	2.7	0.4	0.3	0.0	12.4	0.0	19.5	27.7	10.9	11.2
LnGrp Delay(d),s/veh	226.3	0.0	50.7	70.6	52.1	0.0	17.4	0.0	14.9	610.6	6.6	6.8
LnGrp LOS	F		D	E	D		B		B	F	A	A
Approach Vol, veh/h		194			22			1312			1907	
Approach Delay, s/veh		149.3			61.4			15.8			110.0	
Approach LOS		F			E			B			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	14.0	83.4	10.0	12.6		97.4	5.2	17.4
Change Period (Y+Rc), s	4.0	4.5	4.0	4.0		4.5	4.0	4.0
Max Green Setting (Gmax), s	10.0	32.5	6.0	37.0		46.5	5.0	5.0
Max Q Clear Time (g_c+I1), s	12.0	56.8	8.0	2.7		25.0	2.7	7.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0		20.8	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	75.9
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	300	20	250	40	20	260	140	1190	0	40	940	180
Future Volume (veh/h)	300	20	250	40	20	260	140	1190	0	40	940	180
Number	3	8	18	7	4	14	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	326	22	248	43	22	65	152	1293	0	43	1022	183
Adj No. of Lanes	1	1	0	1	1	0	0	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	148	20	228	55	42	125	184	1524	0	55	2119	379
Arrive On Green	0.08	0.16	0.16	0.03	0.10	0.10	0.64	0.64	0.00	0.03	0.71	0.71
Sat Flow, veh/h	1774	129	1459	1774	406	1200	227	2450	0	1774	2990	534
Grp Volume(v), veh/h	326	0	270	43	0	87	615	830	0	43	604	601
Grp Sat Flow(s),veh/h/ln	1774	0	1589	1774	0	1607	983	1610	0	1774	1770	1755
Q Serve(g_s), s	10.0	0.0	18.8	2.9	0.0	6.2	62.0	45.4	0.0	2.9	18.1	18.2
Cycle Q Clear(g_c), s	10.0	0.0	18.8	2.9	0.0	6.2	72.5	45.4	0.0	2.9	18.1	18.2
Prop In Lane	1.00		0.92	1.00		0.75	0.25		0.00	1.00		0.30
Lane Grp Cap(c), veh/h	148	0	248	55	0	167	670	1037	0	55	1254	1243
V/C Ratio(X)	2.21	0.00	1.09	0.78	0.00	0.52	0.92	0.80	0.00	0.78	0.48	0.48
Avail Cap(c_a), veh/h	148	0	248	59	0	469	670	1037	0	59	1254	1243
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.37	0.37	0.00	0.82	0.82	0.82
Uniform Delay (d), s/veh	55.0	0.0	50.6	57.7	0.0	50.9	22.9	15.7	0.0	57.7	7.7	7.8
Incr Delay (d2), s/veh	563.7	0.0	82.3	41.1	0.0	0.9	8.9	2.5	0.0	35.1	1.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	28.0	0.0	13.9	2.0	0.0	2.8	21.1	20.8	0.0	2.0	9.1	9.1
LnGrp Delay(d),s/veh	618.7	0.0	133.0	98.8	0.0	51.9	31.8	18.2	0.0	92.8	8.8	8.9
LnGrp LOS	F		F	F		D	C	B		F	A	A
Approach Vol, veh/h		596			130			1445			1248	
Approach Delay, s/veh		398.7			67.4			24.0			11.7	
Approach LOS		F			E			C			B	

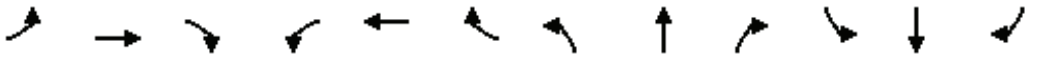
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	7.7	81.8	14.0	16.5		89.5	7.7	22.8
Change Period (Y+Rc), s	4.0	4.5	4.0	4.0		4.5	4.0	4.0
Max Green Setting (Gmax), s	4.0	38.5	10.0	35.0		46.5	4.0	4.0
Max Q Clear Time (g_c+I1), s	4.9	74.5	12.0	8.2		20.2	4.9	20.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.4		24.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	86.5
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	390	220	90	80	80	160	40	510	290	380	370	270
Future Volume (veh/h)	390	220	90	80	80	160	40	510	290	380	370	270
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	411	232	0	84	84	39	42	537	270	400	389	0
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	396	907	406	108	224	98	54	564	283	418	1606	0
Arrive On Green	0.22	0.26	0.00	0.06	0.09	0.09	0.03	0.25	0.25	0.24	0.45	0.00
Sat Flow, veh/h	1774	3539	1583	1774	2388	1040	1774	2273	1140	1774	3632	0
Grp Volume(v), veh/h	411	232	0	84	61	62	42	418	389	400	389	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1659	1774	1770	1643	1774	1770	0
Q Serve(g_s), s	18.0	4.2	0.0	3.8	2.6	2.8	1.9	18.7	18.8	17.9	5.4	0.0
Cycle Q Clear(g_c), s	18.0	4.2	0.0	3.8	2.6	2.8	1.9	18.7	18.8	17.9	5.4	0.0
Prop In Lane	1.00		1.00	1.00		0.63	1.00		0.69	1.00		0.00
Lane Grp Cap(c), veh/h	396	907	406	108	166	156	54	439	408	418	1606	0
V/C Ratio(X)	1.04	0.26	0.00	0.78	0.37	0.40	0.78	0.95	0.95	0.96	0.24	0.00
Avail Cap(c_a), veh/h	396	1318	590	198	461	432	154	439	408	418	1606	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	31.3	23.8	0.0	37.3	34.2	34.4	38.8	29.8	29.8	30.4	13.5	0.0
Incr Delay (d2), s/veh	55.1	0.1	0.0	11.2	1.3	1.6	21.4	30.7	32.9	32.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.8	2.1	0.0	2.2	1.3	1.4	1.2	12.9	12.3	12.6	2.7	0.0
LnGrp Delay(d),s/veh	86.4	24.0	0.0	48.5	35.6	36.0	60.2	60.5	62.8	63.2	13.6	0.0
LnGrp LOS	F	C		D	D	D	E	E	E	E	B	
Approach Vol, veh/h		643			207			849			789	
Approach Delay, s/veh		63.9			40.9			61.5			38.7	
Approach LOS		E			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	24.0	8.9	24.7	6.4	40.6	22.0	11.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	19.0	20.0	9.0	30.0	7.0	32.0	18.0	21.0
Max Q Clear Time (g_c+I1), s	19.9	20.8	5.8	6.2	3.9	7.4	20.0	4.8
Green Ext Time (p_c), s	0.0	0.0	0.0	2.2	0.0	9.3	0.0	1.9

Intersection Summary	
HCM 2010 Ctrl Delay	53.2
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	420	460	100	100	240	510	70	360	220	210	600	340
Future Volume (veh/h)	420	460	100	100	240	510	70	360	220	210	600	340
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	442	484	0	105	253	360	74	379	135	221	632	0
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	463	1539	688	134	441	395	77	475	167	231	965	0
Arrive On Green	0.26	0.43	0.00	0.08	0.25	0.25	0.04	0.19	0.19	0.13	0.27	0.00
Sat Flow, veh/h	1774	3539	1583	1774	1770	1583	1774	2557	898	1774	3632	0
Grp Volume(v), veh/h	442	484	0	105	253	360	74	261	253	221	632	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1583	1774	1770	1685	1774	1770	0
Q Serve(g_s), s	22.6	8.2	0.0	5.4	11.5	20.3	3.8	12.9	13.3	11.4	14.6	0.0
Cycle Q Clear(g_c), s	22.6	8.2	0.0	5.4	11.5	20.3	3.8	12.9	13.3	11.4	14.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.53	1.00		0.00
Lane Grp Cap(c), veh/h	463	1539	688	134	441	395	77	329	313	231	965	0
V/C Ratio(X)	0.96	0.31	0.00	0.79	0.57	0.91	0.96	0.79	0.81	0.96	0.66	0.00
Avail Cap(c_a), veh/h	463	1539	688	231	461	413	77	346	330	231	1000	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	33.5	17.0	0.0	41.8	30.3	33.6	43.9	35.8	35.9	39.8	29.6	0.0
Incr Delay (d2), s/veh	30.7	0.1	0.0	9.7	1.6	23.6	88.6	11.4	13.5	46.7	1.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.0	4.1	0.0	3.0	5.8	11.5	3.8	7.3	7.4	8.6	7.3	0.0
LnGrp Delay(d),s/veh	64.2	17.1	0.0	51.5	31.8	57.2	132.5	47.2	49.4	86.4	31.1	0.0
LnGrp LOS	E	B		D	C	E	F	D	D	F	C	
Approach Vol, veh/h		926			718			588			853	
Approach Delay, s/veh		39.6			47.4			58.9			45.5	
Approach LOS		D			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	21.1	10.9	44.0	8.0	29.1	28.0	27.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	18.0	12.0	36.0	4.0	26.0	24.0	24.0
Max Q Clear Time (g_c+I1), s	13.4	15.3	7.4	10.2	5.8	16.6	24.6	22.3
Green Ext Time (p_c), s	0.0	1.8	0.1	8.2	0.0	5.1	0.0	0.6

Intersection Summary	
HCM 2010 Ctrl Delay	46.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	950	550	90	1270	140	240	370	60	130	600	190
Future Volume (veh/h)	90	950	550	90	1270	140	240	370	60	130	600	190
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.96	1.00		0.98	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	95	1000	418	95	1337	139	253	389	50	137	632	169
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	73	1504	646	143	1371	142	285	1138	145	168	815	218
Arrive On Green	0.42	0.42	0.42	0.42	0.42	0.42	0.16	0.36	0.36	0.09	0.30	0.30
Sat Flow, veh/h	357	3539	1519	377	3225	333	1774	3149	402	1774	2759	737
Grp Volume(v), veh/h	95	1000	418	95	730	746	253	217	222	137	405	396
Grp Sat Flow(s),veh/h/ln	357	1770	1519	377	1770	1789	1774	1770	1782	1774	1770	1727
Q Serve(g_s), s	1.4	23.8	22.9	20.8	42.4	43.2	14.7	9.4	9.5	8.0	22.0	22.0
Cycle Q Clear(g_c), s	44.6	23.8	22.9	44.6	42.4	43.2	14.7	9.4	9.5	8.0	22.0	22.0
Prop In Lane	1.00		1.00	1.00		0.19	1.00		0.23	1.00		0.43
Lane Grp Cap(c), veh/h	73	1504	646	143	752	760	285	639	644	168	523	510
V/C Ratio(X)	1.29	0.66	0.65	0.66	0.97	0.98	0.89	0.34	0.34	0.82	0.77	0.78
Avail Cap(c_a), veh/h	73	1504	646	143	752	760	329	639	644	279	565	551
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.5	24.2	23.9	44.3	29.5	29.8	43.2	24.4	24.5	46.6	33.8	33.8
Incr Delay (d2), s/veh	202.4	2.3	5.0	21.6	26.4	28.4	22.2	1.1	1.2	9.3	9.5	9.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	12.0	10.5	3.6	26.2	27.1	8.9	4.8	4.9	4.3	12.1	11.8
LnGrp Delay(d),s/veh	254.9	26.5	28.9	65.9	56.0	58.2	65.3	25.5	25.6	55.9	43.3	43.6
LnGrp LOS	F	C	C	E	E	E	E	C	C	E	D	D
Approach Vol, veh/h		1513			1571			692			938	
Approach Delay, s/veh		41.5			57.6			40.1			45.3	
Approach LOS		D			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		49.1	20.4	35.5		49.1	13.4	42.4
Change Period (Y+Rc), s		4.5	3.5	4.5		4.5	3.5	4.5
Max Green Setting (Gmax), s		39.5	19.5	33.5		39.5	16.5	36.5
Max Q Clear Time (g_c+I1), s		46.6	16.7	24.0		46.6	10.0	11.5
Green Ext Time (p_c), s		0.0	0.2	7.0		0.0	0.2	17.4

Intersection Summary	
HCM 2010 Ctrl Delay	47.4
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	1630	190	10	800	180	200	590	50	70	410	130
Future Volume (veh/h)	220	1630	190	10	800	180	200	590	50	70	410	130
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	239	1772	177	11	870	179	217	641	47	76	446	106
Adj No. of Lanes	1	2	1	1	2	0	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	199	1665	724	69	1369	282	250	1185	87	98	762	180
Arrive On Green	0.47	0.47	0.47	0.47	0.47	0.47	0.14	0.35	0.35	0.06	0.27	0.27
Sat Flow, veh/h	535	3539	1539	225	2909	598	1774	3339	245	1774	2829	667
Grp Volume(v), veh/h	239	1772	177	11	529	520	217	339	349	76	278	274
Grp Sat Flow(s),veh/h/ln	535	1770	1539	225	1770	1737	1774	1770	1814	1774	1770	1726
Q Serve(g_s), s	25.7	49.4	7.2	0.0	23.7	23.7	12.6	16.1	16.1	4.4	14.3	14.5
Cycle Q Clear(g_c), s	49.4	49.4	7.2	49.4	23.7	23.7	12.6	16.1	16.1	4.4	14.3	14.5
Prop In Lane	1.00		1.00	1.00		0.34	1.00		0.13	1.00		0.39
Lane Grp Cap(c), veh/h	199	1665	724	69	833	817	250	628	644	98	477	465
V/C Ratio(X)	1.20	1.06	0.24	0.16	0.64	0.64	0.87	0.54	0.54	0.77	0.58	0.59
Avail Cap(c_a), veh/h	199	1665	724	69	833	817	329	628	644	279	565	551
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.1	27.8	16.6	52.5	21.0	21.0	44.1	27.0	27.0	48.9	33.2	33.3
Incr Delay (d2), s/veh	127.5	41.4	0.8	5.0	3.7	3.8	17.1	2.7	2.6	12.0	4.0	4.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.8	33.6	3.2	0.4	12.3	12.1	7.3	8.3	8.5	2.5	7.5	7.5
LnGrp Delay(d),s/veh	171.6	69.2	17.4	57.5	24.7	24.8	61.2	29.7	29.7	61.0	37.3	37.6
LnGrp LOS	F	F	B	E	C	C	E	C	C	E	D	D
Approach Vol, veh/h		2188			1060			905			628	
Approach Delay, s/veh		76.2			25.1			37.2			40.3	
Approach LOS		E			C			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6	7	8
Phs Duration (G+Y+Rc), s		53.9	18.3	32.8		53.9	9.3	41.8
Change Period (Y+Rc), s		4.5	3.5	4.5		4.5	3.5	4.5
Max Green Setting (Gmax), s		39.5	19.5	33.5		39.5	16.5	36.5
Max Q Clear Time (g_c+I1), s		51.4	14.6	16.5		51.4	6.4	18.1
Green Ext Time (p_c), s		0.0	0.3	11.8		0.0	0.1	13.6

Intersection Summary	
HCM 2010 Ctrl Delay	52.7
HCM 2010 LOS	D

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1060	230	450	210	150	350
Future Volume (veh/h)	1060	230	450	210	150	350
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	1178	256	500	233	167	0
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	955	795	399	1467	200	178
Arrive On Green	0.51	0.51	0.22	0.79	0.11	0.00
Sat Flow, veh/h	1863	1551	1774	1863	1774	1583
Grp Volume(v), veh/h	1178	256	500	233	167	0
Grp Sat Flow(s),veh/h/ln	1863	1551	1774	1863	1774	1583
Q Serve(g_s), s	41.0	7.7	18.0	2.4	7.4	0.0
Cycle Q Clear(g_c), s	41.0	7.7	18.0	2.4	7.4	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	955	795	399	1467	200	178
V/C Ratio(X)	1.23	0.32	1.25	0.16	0.84	0.00
Avail Cap(c_a), veh/h	955	795	399	1467	200	178
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	19.5	11.4	31.0	2.1	34.8	0.0
Incr Delay (d2), s/veh	114.4	0.2	132.8	0.1	25.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	51.0	3.3	23.5	1.3	5.0	0.0
LnGrp Delay(d),s/veh	133.9	11.6	163.8	2.1	60.3	0.0
LnGrp LOS	F	B	F	A	E	
Approach Vol, veh/h	1434			733	167	
Approach Delay, s/veh	112.1			112.4	60.3	
Approach LOS	F			F	E	

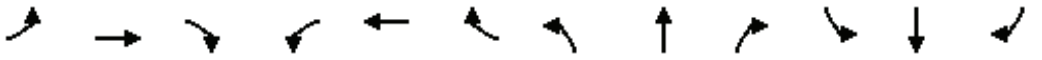
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		13.0	22.0	45.0				67.0
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		9.0	18.0	41.0				63.0
Max Q Clear Time (g_c+I1), s		9.4	20.0	43.0				4.4
Green Ext Time (p_c), s		0.0	0.0	0.0				22.9

Intersection Summary	
HCM 2010 Ctrl Delay	108.5
HCM 2010 LOS	F

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	520	150	700	700	340	330
Future Volume (veh/h)	520	150	700	700	340	330
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	571	165	769	769	374	0
Adj No. of Lanes	1	1	1	1	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	489	407	665	1281	377	336
Arrive On Green	0.26	0.26	0.38	0.69	0.21	0.00
Sat Flow, veh/h	1863	1549	1774	1863	1774	1583
Grp Volume(v), veh/h	571	165	769	769	374	0
Grp Sat Flow(s),veh/h/ln	1863	1549	1774	1863	1774	1583
Q Serve(g_s), s	21.0	7.0	30.0	17.6	16.8	0.0
Cycle Q Clear(g_c), s	21.0	7.0	30.0	17.6	16.8	0.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	489	407	665	1281	377	336
V/C Ratio(X)	1.17	0.41	1.16	0.60	0.99	0.00
Avail Cap(c_a), veh/h	489	407	665	1281	377	336
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	29.5	24.3	25.0	6.7	31.4	0.0
Incr Delay (d2), s/veh	95.7	0.7	86.4	0.8	44.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.7	3.1	30.6	9.0	12.8	0.0
LnGrp Delay(d),s/veh	125.2	25.0	111.4	7.4	75.6	0.0
LnGrp LOS	F	C	F	A	E	
Approach Vol, veh/h	736			1538	374	
Approach Delay, s/veh	102.7			59.4	75.6	
Approach LOS	F			E	E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		21.0	34.0	25.0				59.0
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		17.0	30.0	21.0				55.0
Max Q Clear Time (g_c+I1), s		18.8	32.0	23.0				19.6
Green Ext Time (p_c), s		0.0	0.0	0.0				13.4

Intersection Summary	
HCM 2010 Ctrl Delay	73.8
HCM 2010 LOS	E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	530	360	130	210	390	100	120	250	700	380	330
Future Volume (veh/h)	150	530	360	130	210	390	100	120	250	700	380	330
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1863	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	163	576	346	141	228	303	109	130	8	761	413	339
Adj No. of Lanes	1	1	0	0	1	1	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	485	298	179	107	173	243	510	855	53	364	178	146
Arrive On Green	0.27	0.27	0.27	0.05	0.05	0.05	0.49	0.49	0.49	0.49	0.49	0.49
Sat Flow, veh/h	1774	1091	656	698	1129	1583	708	1734	107	665	361	296
Grp Volume(v), veh/h	163	0	922	369	0	303	109	0	138	1513	0	0
Grp Sat Flow(s),veh/h/ln	1774	0	1747	1828	0	1583	708	0	1841	1323	0	0
Q Serve(g_s), s	11.0	0.0	41.0	23.0	0.0	23.0	0.0	0.0	6.2	67.8	0.0	0.0
Cycle Q Clear(g_c), s	11.0	0.0	41.0	23.0	0.0	23.0	10.0	0.0	6.2	74.0	0.0	0.0
Prop In Lane	1.00		0.38	0.38		1.00	1.00		0.06	0.50		0.22
Lane Grp Cap(c), veh/h	485	0	478	280	0	243	510	0	908	689	0	0
V/C Ratio(X)	0.34	0.00	1.93	1.32	0.00	1.25	0.21	0.00	0.15	2.20	0.00	0.00
Avail Cap(c_a), veh/h	485	0	478	280	0	243	510	0	908	689	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.72	0.00	0.72	1.00	0.00	1.00	0.09	0.00	0.00
Uniform Delay (d), s/veh	43.6	0.0	54.5	71.2	0.0	71.2	21.8	0.0	20.8	42.9	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	426.5	159.7	0.0	134.1	0.2	0.0	0.1	539.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	0.0	76.3	24.1	0.0	19.1	2.6	0.0	3.2	131.6	0.0	0.0
LnGrp Delay(d),s/veh	44.0	0.0	481.0	230.9	0.0	205.3	22.0	0.0	20.9	582.1	0.0	0.0
LnGrp LOS	D		F	F		F	C		C	F		
Approach Vol, veh/h		1085			672			247			1513	
Approach Delay, s/veh		415.4			219.4			21.4			582.1	
Approach LOS		F			F			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		78.0		45.0		78.0		27.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		74.0		41.0		74.0		23.0
Max Q Clear Time (g_c+I1), s		12.0		43.0		76.0		25.0
Green Ext Time (p_c), s		44.0		0.0		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	422.0
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	120	140	420	720	780	300	480	300	440	320	90
Future Volume (veh/h)	140	120	140	420	720	780	300	480	300	440	320	90
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1900	1863	1863	1863	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	152	130	76	457	783	782	326	522	264	478	348	90
Adj No. of Lanes	1	1	0	0	1	1	1	1	0	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	189	118	69	184	316	433	573	625	316	119	60	16
Arrive On Green	0.11	0.11	0.11	0.36	0.36	0.36	0.54	0.54	0.54	0.54	0.54	0.54
Sat Flow, veh/h	1774	1104	645	674	1155	1583	947	1158	586	153	111	29
Grp Volume(v), veh/h	152	0	206	1240	0	782	326	0	786	916	0	0
Grp Sat Flow(s),veh/h/ln	1774	0	1749	1829	0	1583	947	0	1744	293	0	0
Q Serve(g_s), s	12.6	0.0	16.0	41.0	0.0	41.0	0.0	0.0	56.6	24.4	0.0	0.0
Cycle Q Clear(g_c), s	12.6	0.0	16.0	41.0	0.0	41.0	34.8	0.0	56.6	81.0	0.0	0.0
Prop In Lane	1.00		0.37	0.37		1.00	1.00		0.34	0.52		0.10
Lane Grp Cap(c), veh/h	189	0	187	500	0	433	573	0	942	195	0	0
V/C Ratio(X)	0.80	0.00	1.10	2.48	0.00	1.81	0.57	0.00	0.83	4.70	0.00	0.00
Avail Cap(c_a), veh/h	189	0	187	500	0	433	573	0	942	195	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.09	0.00	0.09	1.00	0.00	1.00	0.23	0.00	0.00
Uniform Delay (d), s/veh	65.5	0.0	67.0	47.7	0.0	47.7	23.9	0.0	28.9	65.1	0.0	0.0
Incr Delay (d2), s/veh	21.6	0.0	96.6	666.7	0.0	364.0	1.3	0.0	6.6	1668.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	0.0	12.7	113.2	0.0	61.6	9.5	0.0	28.8	98.4	0.0	0.0
LnGrp Delay(d),s/veh	87.1	0.0	163.6	714.4	0.0	411.7	25.2	0.0	35.5	1733.8	0.0	0.0
LnGrp LOS	F		F	F		F	C		D	F		
Approach Vol, veh/h		358			2022			1112			916	
Approach Delay, s/veh		131.1			597.3			32.5			1733.8	
Approach LOS		F			F			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		85.0		20.0		85.0		45.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		81.0		16.0		81.0		41.0
Max Q Clear Time (g_c+I1), s		58.6		18.0		83.0		43.0
Green Ext Time (p_c), s		18.0		0.0		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	653.1
HCM 2010 LOS	F

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	930	550	90	480	250	280
Future Volume (veh/h)	930	550	90	480	250	280
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	1011	0	98	522	272	304
Adj No. of Lanes	1	0	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1403	0	71	1527	225	201
Arrive On Green	0.75	0.00	0.04	0.82	0.13	0.13
Sat Flow, veh/h	1863	0	1774	1863	1774	1583
Grp Volume(v), veh/h	1011	0	98	522	272	304
Grp Sat Flow(s),veh/h/ln	1863	0	1774	1863	1774	1583
Q Serve(g_s), s	43.9	0.0	6.0	10.5	19.0	19.0
Cycle Q Clear(g_c), s	43.9	0.0	6.0	10.5	19.0	19.0
Prop In Lane		0.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1403	0	71	1527	225	201
V/C Ratio(X)	0.72	0.00	1.38	0.34	1.21	1.52
Avail Cap(c_a), veh/h	1403	0	71	1527	225	201
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.00	0.88	0.88	1.00	1.00
Uniform Delay (d), s/veh	10.0	0.0	72.0	3.4	65.5	65.5
Incr Delay (d2), s/veh	0.3	0.0	231.1	0.5	128.6	256.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	22.3	0.0	7.5	5.6	17.3	22.6
LnGrp Delay(d),s/veh	10.3	0.0	303.1	3.9	194.1	321.5
LnGrp LOS	B		F	A	F	F
Approach Vol, veh/h	1011			620	576	
Approach Delay, s/veh	10.3			51.2	261.4	
Approach LOS	B			D	F	

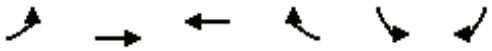
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		23.0	10.0	117.0				127.0
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		19.0	6.0	113.0				123.0
Max Q Clear Time (g_c+I1), s		21.0	8.0	45.9				12.5
Green Ext Time (p_c), s		0.0	0.0	20.0				21.2

Intersection Summary	
HCM 2010 Ctrl Delay	87.3
HCM 2010 LOS	F

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	450	410	220	1280	640	320
Future Volume (veh/h)	450	410	220	1280	640	320
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	489	0	239	1391	696	348
Adj No. of Lanes	1	0	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	894	0	201	1155	580	517
Arrive On Green	0.48	0.00	0.11	0.62	0.33	0.33
Sat Flow, veh/h	1863	0	1774	1863	1774	1583
Grp Volume(v), veh/h	489	0	239	1391	696	348
Grp Sat Flow(s),veh/h/ln	1863	0	1774	1863	1774	1583
Q Serve(g_s), s	27.8	0.0	17.0	93.0	49.0	28.5
Cycle Q Clear(g_c), s	27.8	0.0	17.0	93.0	49.0	28.5
Prop In Lane		0.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	894	0	201	1155	580	517
V/C Ratio(X)	0.55	0.00	1.19	1.20	1.20	0.67
Avail Cap(c_a), veh/h	894	0	201	1155	580	517
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.00	0.62	0.62	1.00	1.00
Uniform Delay (d), s/veh	27.5	0.0	66.5	28.5	50.5	43.6
Incr Delay (d2), s/veh	0.2	0.0	111.6	97.4	106.2	6.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.3	0.0	14.6	78.7	41.1	13.5
LnGrp Delay(d),s/veh	27.7	0.0	178.1	125.9	156.7	50.4
LnGrp LOS	C		F	F	F	D
Approach Vol, veh/h	489			1630	1044	
Approach Delay, s/veh	27.7			133.5	121.3	
Approach LOS	C			F	F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		53.0	21.0	76.0				97.0
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		49.0	17.0	72.0				93.0
Max Q Clear Time (g_c+I1), s		51.0	19.0	29.8				95.0
Green Ext Time (p_c), s		0.0	0.0	28.9				0.0

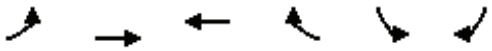
Intersection Summary	
HCM 2010 Ctrl Delay	113.1
HCM 2010 LOS	F



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1050	670	0	1020	830
Future Volume (veh/h)	0	1050	670	0	1020	830
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	0	1105	705	0	1074	797
Adj No. of Lanes	0	2	2	0	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1652	1652	0	1319	607
Arrive On Green	0.00	0.47	0.15	0.00	0.38	0.38
Sat Flow, veh/h	0	3725	3725	0	3442	1583
Grp Volume(v), veh/h	0	1105	705	0	1074	797
Grp Sat Flow(s),veh/h/ln	0	1770	1770	0	1721	1583
Q Serve(g_s), s	0.0	14.5	10.8	0.0	16.8	23.0
Cycle Q Clear(g_c), s	0.0	14.5	10.8	0.0	16.8	23.0
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1652	1652	0	1319	607
V/C Ratio(X)	0.00	0.67	0.43	0.00	0.81	1.31
Avail Cap(c_a), veh/h	0	1652	1652	0	1319	607
HCM Platoon Ratio	1.00	1.00	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.96	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	12.4	18.1	0.0	16.6	18.5
Incr Delay (d2), s/veh	0.0	2.2	0.8	0.0	4.0	152.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.6	5.5	0.0	8.6	35.6
LnGrp Delay(d),s/veh	0.0	14.6	18.9	0.0	20.6	170.9
LnGrp LOS		B	B		C	F
Approach Vol, veh/h		1105	705		1871	
Approach Delay, s/veh		14.6	18.9		84.6	
Approach LOS		B	B		F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		33.0		27.0		33.0		
Change Period (Y+Rc), s		5.0		4.0		5.0		
Max Green Setting (Gmax), s		28.0		23.0		28.0		
Max Q Clear Time (g_c+I1), s		16.5		25.0		12.8		
Green Ext Time (p_c), s		8.5		0.0		10.6		

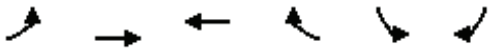
Intersection Summary	
HCM 2010 Ctrl Delay	51.0
HCM 2010 LOS	D



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1690	500	0	560	670
Future Volume (veh/h)	0	1690	500	0	560	670
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	0	1863	1863
Adj Flow Rate, veh/h	0	1817	538	0	602	593
Adj No. of Lanes	0	2	2	0	2	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	1652	1652	0	1319	607
Arrive On Green	0.00	0.47	0.15	0.00	0.38	0.38
Sat Flow, veh/h	0	3725	3725	0	3442	1583
Grp Volume(v), veh/h	0	1817	538	0	602	593
Grp Sat Flow(s),veh/h/ln	0	1770	1770	0	1721	1583
Q Serve(g_s), s	0.0	28.0	8.1	0.0	7.8	22.2
Cycle Q Clear(g_c), s	0.0	28.0	8.1	0.0	7.8	22.2
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	1652	1652	0	1319	607
V/C Ratio(X)	0.00	1.10	0.33	0.00	0.46	0.98
Avail Cap(c_a), veh/h	0	1652	1652	0	1319	607
HCM Platoon Ratio	1.00	1.00	0.33	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	0.98	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	16.0	17.0	0.0	13.8	18.2
Incr Delay (d2), s/veh	0.0	54.9	0.5	0.0	0.2	30.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	26.1	4.1	0.0	3.7	14.7
LnGrp Delay(d),s/veh	0.0	70.9	17.5	0.0	14.1	48.9
LnGrp LOS		F	B		B	D
Approach Vol, veh/h		1817	538		1195	
Approach Delay, s/veh		70.9	17.5		31.4	
Approach LOS		E	B		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		33.0		27.0		33.0		
Change Period (Y+Rc), s		5.0		4.0		5.0		
Max Green Setting (Gmax), s		28.0		23.0		28.0		
Max Q Clear Time (g_c+I1), s		30.0		24.2		10.1		
Green Ext Time (p_c), s		0.0		0.0		15.0		

Intersection Summary	
HCM 2010 Ctrl Delay	49.5
HCM 2010 LOS	D

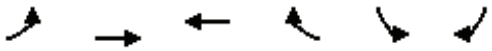


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	2050	590	50	310	80
Future Volume (veh/h)	20	2050	590	50	310	80
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99			0.94	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	21	2158	621	42	326	67
Adj No. of Lanes	0	2	2	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	69	2105	2049	138	367	75
Arrive On Green	0.61	0.61	0.61	0.61	0.25	0.25
Sat Flow, veh/h	13	3526	3444	226	1439	296
Grp Volume(v), veh/h	1169	1010	328	335	394	0
Grp Sat Flow(s),veh/h/ln	1844	1610	1770	1807	1739	0
Q Serve(g_s), s	14.5	36.7	5.3	5.3	13.1	0.0
Cycle Q Clear(g_c), s	36.7	36.7	5.3	5.3	13.1	0.0
Prop In Lane	0.02			0.13	0.83	0.17
Lane Grp Cap(c), veh/h	1189	985	1082	1105	443	0
V/C Ratio(X)	0.98	1.03	0.30	0.30	0.89	0.00
Avail Cap(c_a), veh/h	1189	985	1082	1105	522	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.59	0.59	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	12.2	11.6	5.6	5.6	21.5	0.0
Incr Delay (d2), s/veh	16.5	28.7	0.7	0.7	13.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.6	23.7	2.8	2.8	8.0	0.0
LnGrp Delay(d),s/veh	28.7	40.3	6.3	6.3	35.5	0.0
LnGrp LOS	C	F	A	A	D	
Approach Vol, veh/h		2179	663		394	
Approach Delay, s/veh		34.1	6.3		35.5	
Approach LOS		C	A		D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		40.7		19.3		40.7		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		34.0		18.0		34.0		
Max Q Clear Time (g_c+I1), s		38.7		15.1		7.3		
Green Ext Time (p_c), s		0.0		0.2		23.8		

Intersection Summary	
HCM 2010 Ctrl Delay	28.6
HCM 2010 LOS	C

Notes



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	70	2180	470	130	70	30
Future Volume (veh/h)	70	2180	470	130	70	30
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99			0.95	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	74	2295	495	113	74	1
Adj No. of Lanes	0	2	2	0	0	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	0	0
Cap, veh/h	119	2690	2302	522	95	1
Arrive On Green	1.00	1.00	0.54	0.54	0.06	0.06
Sat Flow, veh/h	69	3399	2930	643	1726	23
Grp Volume(v), veh/h	1272	1097	307	301	76	0
Grp Sat Flow(s),veh/h/ln	1772	1610	1770	1710	1772	0
Q Serve(g_s), s	0.0	0.0	5.4	5.5	2.5	0.0
Cycle Q Clear(g_c), s	0.0	0.0	5.4	5.5	2.5	0.0
Prop In Lane	0.06			0.38	0.97	0.01
Lane Grp Cap(c), veh/h	1502	1307	1436	1388	98	0
V/C Ratio(X)	0.85	0.84	0.21	0.22	0.78	0.00
Avail Cap(c_a), veh/h	1502	1307	1436	1388	532	0
HCM Platoon Ratio	2.00	2.00	0.67	0.67	1.00	1.00
Upstream Filter(I)	0.23	0.23	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	3.8	3.8	28.0	0.0
Incr Delay (d2), s/veh	1.5	1.6	0.3	0.4	5.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.6	2.8	2.7	1.4	0.0
LnGrp Delay(d),s/veh	1.5	1.6	4.1	4.2	33.0	0.0
LnGrp LOS	A	A	A	A	C	
Approach Vol, veh/h		2369	608		76	
Approach Delay, s/veh		1.5	4.2		33.0	
Approach LOS		A	A		C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		52.7		7.3		52.7		
Change Period (Y+Rc), s		4.0		4.0		4.0		
Max Green Setting (Gmax), s		34.0		18.0		34.0		
Max Q Clear Time (g_c+I1), s		2.0		4.5		7.5		
Green Ext Time (p_c), s		29.4		0.1		24.7		

Intersection Summary	
HCM 2010 Ctrl Delay	2.8
HCM 2010 LOS	A

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	240	30	1070	120	490	90	570	580	0	0	800	290
Future Volume (veh/h)	240	30	1070	120	490	90	570	580	0	0	800	290
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.76	1.00		0.92	1.00		1.00	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	253	0	921	126	516	16	600	611	0	0	842	201
Adj No. of Lanes	1	0	2	1	2	1	2	3	0	0	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	0	2	2
Cap, veh/h	244	0	887	452	902	370	602	2624	0	0	1118	484
Arrive On Green	0.14	0.00	0.14	0.25	0.25	0.25	0.17	0.52	0.00	0.00	0.32	0.32
Sat Flow, veh/h	1774	0	2420	1774	3539	1452	3442	5253	0	0	3632	1532
Grp Volume(v), veh/h	253	0	921	126	516	16	600	611	0	0	842	201
Grp Sat Flow(s),veh/h/ln	1774	0	1210	1774	1770	1452	1721	1695	0	0	1770	1532
Q Serve(g_s), s	16.5	0.0	16.5	6.8	15.3	1.0	20.9	7.9	0.0	0.0	25.6	12.4
Cycle Q Clear(g_c), s	16.5	0.0	16.5	6.8	15.3	1.0	20.9	7.9	0.0	0.0	25.6	12.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	244	0	887	452	902	370	602	2624	0	0	1118	484
V/C Ratio(X)	1.04	0.00	1.04	0.28	0.57	0.04	1.00	0.23	0.00	0.00	0.75	0.42
Avail Cap(c_a), veh/h	244	0	887	532	1062	436	602	2624	0	0	1118	484
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	0.0	42.5	35.9	39.0	33.7	49.5	16.0	0.0	0.0	36.8	32.3
Incr Delay (d2), s/veh	67.6	0.0	40.7	0.3	0.6	0.0	35.6	0.2	0.0	0.0	4.7	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.6	0.0	19.7	3.4	7.5	0.4	12.9	3.7	0.0	0.0	13.2	5.6
LnGrp Delay(d),s/veh	119.4	0.0	83.1	36.2	39.6	33.7	85.1	16.2	0.0	0.0	41.6	34.9
LnGrp LOS	F		F	D	D	C	F	B			D	C
Approach Vol, veh/h		1174			658			1211			1043	
Approach Delay, s/veh		90.9			38.8			50.3			40.3	
Approach LOS		F			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		65.9		20.0	24.0	41.9		34.1
Change Period (Y+Rc), s		4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s		56.5		16.5	21.0	32.5		36.0
Max Q Clear Time (g_c+I1), s		9.9		18.5	22.9	27.6		17.3
Green Ext Time (p_c), s		16.3		0.0	0.0	3.7		3.7

Intersection Summary	
HCM 2010 Ctrl Delay	57.6
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	40	740	120	470	170	590	920	0	0	790	220
Future Volume (veh/h)	270	40	740	120	470	170	590	920	0	0	790	220
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.67	1.00		0.90	1.00		1.00	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	0	1863	1863
Adj Flow Rate, veh/h	278	0	572	124	485	120	608	948	0	0	814	148
Adj No. of Lanes	1	0	2	1	2	1	2	3	0	0	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	0	2	2
Cap, veh/h	244	0	846	475	948	380	602	2557	0	0	1072	450
Arrive On Green	0.14	0.00	0.14	0.27	0.27	0.27	0.17	0.50	0.00	0.00	0.30	0.30
Sat Flow, veh/h	1774	0	2126	1774	3539	1417	3442	5253	0	0	3632	1485
Grp Volume(v), veh/h	278	0	572	124	485	120	608	948	0	0	814	148
Grp Sat Flow(s),veh/h/ln	1774	0	1063	1774	1770	1417	1721	1695	0	0	1770	1485
Q Serve(g_s), s	16.5	0.0	16.5	6.6	13.9	8.1	21.0	13.7	0.0	0.0	25.0	9.3
Cycle Q Clear(g_c), s	16.5	0.0	16.5	6.6	13.9	8.1	21.0	13.7	0.0	0.0	25.0	9.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h	244	0	846	475	948	380	602	2557	0	0	1072	450
V/C Ratio(X)	1.14	0.00	0.68	0.26	0.51	0.32	1.01	0.37	0.00	0.00	0.76	0.33
Avail Cap(c_a), veh/h	244	0	846	532	1062	425	602	2557	0	0	1072	450
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	0.0	37.9	34.6	37.3	35.1	49.5	18.2	0.0	0.0	37.9	32.4
Incr Delay (d2), s/veh	100.5	0.0	2.1	0.3	0.4	0.5	39.0	0.4	0.0	0.0	5.1	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.9	0.0	8.7	3.3	6.9	3.2	13.2	6.5	0.0	0.0	13.0	4.0
LnGrp Delay(d),s/veh	152.3	0.0	40.1	34.9	37.7	35.6	88.6	18.6	0.0	0.0	42.9	34.3
LnGrp LOS	F		D	C	D	D	F	B			D	C
Approach Vol, veh/h		850			729			1556			962	
Approach Delay, s/veh		76.8			36.9			46.0			41.6	
Approach LOS		E			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		64.3		20.0	24.0	40.3		35.7
Change Period (Y+Rc), s		4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s		56.5		16.5	21.0	32.5		36.0
Max Q Clear Time (g_c+I1), s		15.7		18.5	23.0	27.0		15.9
Green Ext Time (p_c), s		19.6		0.0	0.0	4.5		4.0

Intersection Summary	
HCM 2010 Ctrl Delay	49.7
HCM 2010 LOS	D

Notes

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	490	380	570	710	70	100
Future Volume (veh/h)	490	380	570	710	70	100
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	516	400	600	747	74	105
Adj No. of Lanes	1	0	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	506	392	578	1573	151	134
Arrive On Green	0.52	0.52	0.29	0.84	0.08	0.08
Sat Flow, veh/h	974	755	1774	1863	1774	1583
Grp Volume(v), veh/h	0	916	600	747	74	105
Grp Sat Flow(s),veh/h/ln	0	1729	1774	1863	1774	1583
Q Serve(g_s), s	0.0	59.0	33.0	11.8	4.5	7.4
Cycle Q Clear(g_c), s	0.0	59.0	33.0	11.8	4.5	7.4
Prop In Lane		0.44	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	898	578	1573	151	134
V/C Ratio(X)	0.00	1.02	1.04	0.47	0.49	0.78
Avail Cap(c_a), veh/h	0	898	578	1573	250	223
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	27.3	36.4	2.3	49.7	51.0
Incr Delay (d2), s/veh	0.0	35.2	47.4	0.2	2.5	9.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	36.7	25.6	5.9	2.3	3.6
LnGrp Delay(d),s/veh	0.0	62.6	83.8	2.5	52.1	60.4
LnGrp LOS		F	F	A	D	E
Approach Vol, veh/h	916			1347	179	
Approach Delay, s/veh	62.6			38.7	57.0	
Approach LOS	E			D	E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		13.6	37.0	63.0				100.0
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		16.0	33.0	59.0				96.0
Max Q Clear Time (g_c+I1), s		9.4	35.0	61.0				13.8
Green Ext Time (p_c), s		0.3	0.0	0.0				24.2

Intersection Summary	
HCM 2010 Ctrl Delay	49.0
HCM 2010 LOS	D

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	840	60	90	800	360	560
Future Volume (veh/h)	840	60	90	800	360	560
Number	4	14	3	8	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863
Adj Flow Rate, veh/h	884	63	95	842	379	589
Adj No. of Lanes	1	0	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	914	65	141	1116	593	529
Arrive On Green	0.53	0.53	0.03	0.60	0.33	0.33
Sat Flow, veh/h	1719	122	1774	1863	1774	1583
Grp Volume(v), veh/h	0	947	95	842	379	589
Grp Sat Flow(s),veh/h/ln	0	1841	1774	1863	1774	1583
Q Serve(g_s), s	0.0	59.3	2.8	39.6	21.6	40.0
Cycle Q Clear(g_c), s	0.0	59.3	2.8	39.6	21.6	40.0
Prop In Lane		0.07	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	980	141	1116	593	529
V/C Ratio(X)	0.00	0.97	0.67	0.75	0.64	1.11
Avail Cap(c_a), veh/h	0	985	141	1121	593	529
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	27.0	28.6	17.6	33.7	39.8
Incr Delay (d2), s/veh	0.0	20.9	11.9	3.0	2.3	73.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	35.7	2.2	21.0	11.0	28.3
LnGrp Delay(d),s/veh	0.0	47.9	40.5	20.5	36.0	113.7
LnGrp LOS		D	D	C	D	F
Approach Vol, veh/h	947			937	968	
Approach Delay, s/veh	47.9			22.5	83.3	
Approach LOS	D			C	F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		44.0	8.0	67.7				75.7
Change Period (Y+Rc), s		4.0	4.0	4.0				4.0
Max Green Setting (Gmax), s		40.0	4.0	64.0				72.0
Max Q Clear Time (g_c+I1), s		42.0	4.8	61.3				41.6
Green Ext Time (p_c), s		0.0	0.0	2.4				18.1

Intersection Summary	
HCM 2010 Ctrl Delay	51.6
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	130	170	450	330	110	180	1180	190	350	290	70
Future Volume (veh/h)	120	130	170	450	330	110	180	1180	190	350	290	70
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	130	141	185	489	359	120	196	1283	207	380	315	76
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	2	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	133	98	128	414	390	130	223	1248	200	315	543	131
Arrive On Green	0.08	0.13	0.13	0.23	0.29	0.29	0.13	0.41	0.41	0.09	0.37	0.37
Sat Flow, veh/h	1774	732	961	1774	1337	447	1774	3057	489	3442	1451	350
Grp Volume(v), veh/h	130	0	326	489	0	479	196	739	751	380	0	391
Grp Sat Flow(s),veh/h/ln	1774	0	1693	1774	0	1784	1774	1770	1776	1721	0	1801
Q Serve(g_s), s	8.8	0.0	16.0	28.0	0.0	31.2	13.0	49.0	49.0	11.0	0.0	20.8
Cycle Q Clear(g_c), s	8.8	0.0	16.0	28.0	0.0	31.2	13.0	49.0	49.0	11.0	0.0	20.8
Prop In Lane	1.00		0.57	1.00		0.25	1.00		0.28	1.00		0.19
Lane Grp Cap(c), veh/h	133	0	226	414	0	520	223	723	725	315	0	674
V/C Ratio(X)	0.98	0.00	1.44	1.18	0.00	0.92	0.88	1.02	1.04	1.20	0.00	0.58
Avail Cap(c_a), veh/h	133	0	226	414	0	520	251	723	725	315	0	674
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	55.4	0.0	52.0	46.0	0.0	41.2	51.5	35.5	35.5	54.5	0.0	30.0
Incr Delay (d2), s/veh	70.7	0.0	223.0	103.9	0.0	21.8	25.7	39.2	43.0	118.2	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	0.0	21.4	25.6	0.0	18.5	8.0	31.8	32.6	10.4	0.0	10.6
LnGrp Delay(d),s/veh	126.1	0.0	275.0	149.9	0.0	63.0	77.3	74.7	78.5	172.7	0.0	31.3
LnGrp LOS	F		F	F		E	E	F	F	F		C
Approach Vol, veh/h		456			968			1686			771	
Approach Delay, s/veh		232.6			106.9			76.7			101.0	
Approach LOS		F			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	53.0	32.0	20.0	19.1	48.9	13.0	39.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	11.0	49.0	28.0	16.0	17.0	43.0	9.0	35.0
Max Q Clear Time (g_c+I1), s	13.0	51.0	30.0	18.0	15.0	22.8	10.8	33.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.1	13.5	0.0	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	107.4
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	150	210	160	550	160	120	150	410	120	610	820	50
Future Volume (veh/h)	150	210	160	550	160	120	150	410	120	610	820	50
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	163	228	174	598	174	130	163	446	130	663	891	54
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	2	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	190	170	130	399	290	217	133	693	200	726	681	41
Arrive On Green	0.11	0.17	0.17	0.22	0.29	0.29	0.08	0.26	0.26	0.21	0.39	0.39
Sat Flow, veh/h	1774	972	742	1774	990	740	1774	2710	784	3442	1739	105
Grp Volume(v), veh/h	163	0	402	598	0	304	163	290	286	663	0	945
Grp Sat Flow(s),veh/h/ln	1774	0	1714	1774	0	1730	1774	1770	1724	1721	0	1844
Q Serve(g_s), s	10.8	0.0	21.0	27.0	0.0	18.1	9.0	17.5	17.8	22.6	0.0	47.0
Cycle Q Clear(g_c), s	10.8	0.0	21.0	27.0	0.0	18.1	9.0	17.5	17.8	22.6	0.0	47.0
Prop In Lane	1.00		0.43	1.00		0.43	1.00		0.45	1.00		0.06
Lane Grp Cap(c), veh/h	190	0	300	399	0	507	133	453	441	726	0	722
V/C Ratio(X)	0.86	0.00	1.34	1.50	0.00	0.60	1.23	0.64	0.65	0.91	0.00	1.31
Avail Cap(c_a), veh/h	207	0	300	399	0	507	133	453	441	774	0	722
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.7	0.0	49.5	46.5	0.0	36.4	55.5	39.7	39.8	46.3	0.0	36.5
Incr Delay (d2), s/veh	27.0	0.0	173.8	237.0	0.0	2.0	150.8	3.0	3.3	14.7	0.0	148.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.7	0.0	24.4	39.5	0.0	8.9	10.0	8.9	8.8	12.3	0.0	53.7
LnGrp Delay(d),s/veh	79.7	0.0	223.3	283.5	0.0	38.3	206.3	42.8	43.2	61.0	0.0	185.1
LnGrp LOS	E		F	F		D	F	D	D	E		F
Approach Vol, veh/h		565			902			739			1608	
Approach Delay, s/veh		181.9			200.9			79.0			133.9	
Approach LOS		F			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.3	34.7	31.0	25.0	13.0	51.0	16.8	39.2
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	27.0	29.0	27.0	21.0	9.0	47.0	14.0	34.0
Max Q Clear Time (g_c+I1), s	24.6	19.8	29.0	23.0	11.0	49.0	12.8	20.1
Green Ext Time (p_c), s	0.7	6.5	0.0	0.0	0.0	0.0	0.0	3.9

Intersection Summary	
HCM 2010 Ctrl Delay	146.2
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	500	290	960	200	60	110	110	710	60	160	40
Future Volume (veh/h)	30	500	290	960	200	60	110	110	710	60	160	40
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	33	556	226	1067	222	60	122	122	297	67	178	36
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	56	524	213	796	1741	459	206	217	893	49	129	26
Arrive On Green	0.03	0.21	0.21	0.45	0.63	0.63	0.12	0.12	0.12	0.11	0.11	0.11
Sat Flow, veh/h	1774	2448	992	1774	2759	727	1774	1863	1575	428	1137	230
Grp Volume(v), veh/h	33	401	381	1067	140	142	122	122	297	281	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1671	1774	1770	1716	1774	1863	1575	1795	0	0
Q Serve(g_s), s	2.7	32.0	32.0	67.0	4.7	5.0	9.7	9.3	15.1	17.0	0.0	0.0
Cycle Q Clear(g_c), s	2.7	32.0	32.0	67.0	4.7	5.0	9.7	9.3	15.1	17.0	0.0	0.0
Prop In Lane	1.00		0.59	1.00		0.42	1.00		1.00	0.24		0.13
Lane Grp Cap(c), veh/h	56	379	358	796	1117	1083	206	217	893	204	0	0
V/C Ratio(X)	0.59	1.06	1.06	1.34	0.13	0.13	0.59	0.56	0.33	1.38	0.00	0.00
Avail Cap(c_a), veh/h	83	379	358	796	1117	1083	214	224	900	204	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	71.3	58.7	58.7	41.2	11.0	11.1	62.6	62.4	17.4	66.2	0.0	0.0
Incr Delay (d2), s/veh	9.3	62.7	65.3	161.8	0.1	0.1	4.0	3.0	0.2	196.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	22.2	21.2	68.5	2.3	2.4	5.0	5.0	6.6	19.6	0.0	0.0
LnGrp Delay(d),s/veh	80.6	121.3	124.0	203.0	11.1	11.1	66.7	65.4	17.6	262.7	0.0	0.0
LnGrp LOS	F	F	F	F	B	B	E	E	B	F		
Approach Vol, veh/h		815			1349			541			281	
Approach Delay, s/veh		120.9			162.9			39.5			262.7	
Approach LOS		F			F			D			F	

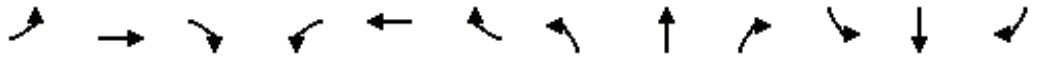
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	71.0	36.0		21.0	8.7	98.3		21.4
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	67.0	32.0		17.0	7.0	92.0		18.0
Max Q Clear Time (g_c+I1), s	69.0	34.0		19.0	4.7	7.0		17.1
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	8.8		0.2

Intersection Summary		
HCM 2010 Ctrl Delay		138.5
HCM 2010 LOS		F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	590	150	470	420	60	340	200	1040	40	90	80
Future Volume (veh/h)	70	590	150	470	420	60	340	200	1040	40	90	80
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	72	608	130	485	433	54	351	206	615	41	93	57
Adj No. of Lanes	1	2	0	1	2	0	1	1	1	0	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	99	678	145	521	1493	185	400	420	820	46	105	64
Arrive On Green	0.06	0.23	0.23	0.29	0.47	0.47	0.23	0.23	0.23	0.12	0.12	0.12
Sat Flow, veh/h	1774	2904	620	1774	3170	393	1774	1863	1579	374	848	520
Grp Volume(v), veh/h	72	370	368	485	241	246	351	206	615	191	0	0
Grp Sat Flow(s),veh/h/ln	1774	1770	1753	1774	1770	1793	1774	1863	1579	1741	0	0
Q Serve(g_s), s	5.1	26.1	26.2	34.2	10.7	10.8	24.6	12.4	29.0	13.9	0.0	0.0
Cycle Q Clear(g_c), s	5.1	26.1	26.2	34.2	10.7	10.8	24.6	12.4	29.0	13.9	0.0	0.0
Prop In Lane	1.00		0.35	1.00		0.22	1.00		1.00	0.21		0.30
Lane Grp Cap(c), veh/h	99	413	409	521	834	845	400	420	820	215	0	0
V/C Ratio(X)	0.73	0.90	0.90	0.93	0.29	0.29	0.88	0.49	0.75	0.89	0.00	0.00
Avail Cap(c_a), veh/h	165	426	422	799	1058	1073	400	420	820	216	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	59.8	47.8	47.9	44.2	20.8	20.9	48.2	43.4	24.4	55.5	0.0	0.0
Incr Delay (d2), s/veh	9.7	20.6	21.2	12.8	0.2	0.2	19.4	0.9	3.9	32.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	15.1	15.1	18.6	5.3	5.4	14.2	6.5	18.0	8.6	0.0	0.0
LnGrp Delay(d),s/veh	69.5	68.4	69.1	57.0	21.0	21.1	67.6	44.3	28.3	88.4	0.0	0.0
LnGrp LOS	E	E	E	E	C	C	E	D	C	F		
Approach Vol, veh/h		810			972			1172			191	
Approach Delay, s/veh		68.8			39.0			42.9			88.4	
Approach LOS		E			D			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	41.8	34.1		19.9	11.2	64.7		33.0
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	58.0	31.0		16.0	12.0	77.0		29.0
Max Q Clear Time (g_c+I1), s	36.2	28.2		15.9	7.1	12.8		31.0
Green Ext Time (p_c), s	1.6	1.9		0.0	0.0	10.3		0.0

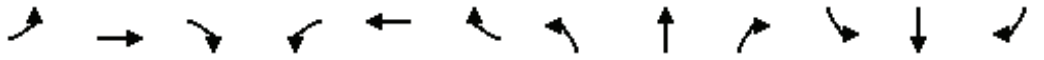
Intersection Summary	
HCM 2010 Ctrl Delay	51.1
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	710	10	150	130	780	0	0	840	570
Future Volume (veh/h)	0	0	0	710	10	150	130	780	0	0	840	570
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1900	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				807	11	22	148	886	0	0	955	0
Adj No. of Lanes				1	1	0	1	2	0	0	2	0
Peak Hour Factor				0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				705	221	441	104	1717	0	0	1300	0
Arrive On Green				0.40	0.40	0.40	0.06	0.49	0.00	0.00	0.37	0.00
Sat Flow, veh/h				1774	556	1111	1774	3632	0	0	3725	0
Grp Volume(v), veh/h				807	0	33	148	886	0	0	955	0
Grp Sat Flow(s),veh/h/ln				1774	0	1667	1774	1770	0	0	1770	0
Q Serve(g_s), s				27.0	0.0	0.8	4.0	11.7	0.0	0.0	15.9	0.0
Cycle Q Clear(g_c), s				27.0	0.0	0.8	4.0	11.7	0.0	0.0	15.9	0.0
Prop In Lane				1.00		0.67	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				705	0	662	104	1717	0	0	1300	0
V/C Ratio(X)				1.15	0.00	0.05	1.42	0.52	0.00	0.00	0.73	0.00
Avail Cap(c_a), veh/h				705	0	662	104	1823	0	0	1406	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				20.5	0.0	12.6	32.0	12.0	0.0	0.0	18.6	0.0
Incr Delay (d2), s/veh				81.4	0.0	0.0	234.7	0.2	0.0	0.0	1.9	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				29.1	0.0	0.4	8.8	5.7	0.0	0.0	8.0	0.0
LnGrp Delay(d),s/veh				101.9	0.0	12.6	266.7	12.3	0.0	0.0	20.5	0.0
LnGrp LOS				F		B	F	B			C	
Approach Vol, veh/h					840			1034			955	
Approach Delay, s/veh					98.4			48.7			20.5	
Approach LOS					F			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		37.0			8.0	29.0		31.0
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		35.0			4.0	27.0		27.0
Max Q Clear Time (g_c+I1), s		13.7			6.0	17.9		29.0
Green Ext Time (p_c), s		13.7			0.0	7.1		0.0

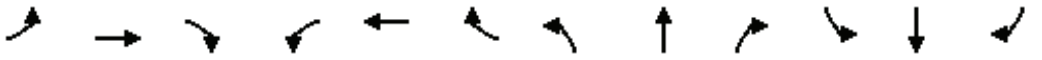
Intersection Summary	
HCM 2010 Ctrl Delay	53.9
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	290	10	540	490	1040	0	0	390	320
Future Volume (veh/h)	0	0	0	290	10	540	490	1040	0	0	390	320
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1900	1863	1863	0	0	1863	1900
Adj Flow Rate, veh/h				305	11	502	516	1095	0	0	411	0
Adj No. of Lanes				1	1	0	1	2	0	0	2	0
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				2	2	2	2	2	0	0	2	2
Cap, veh/h				551	11	483	525	2021	0	0	765	0
Arrive On Green				0.31	0.31	0.31	0.30	0.57	0.00	0.00	0.22	0.00
Sat Flow, veh/h				1774	34	1554	1774	3632	0	0	3725	0
Grp Volume(v), veh/h				305	0	513	516	1095	0	0	411	0
Grp Sat Flow(s),veh/h/ln				1774	0	1588	1774	1770	0	0	1770	0
Q Serve(g_s), s				9.7	0.0	21.0	19.5	13.0	0.0	0.0	7.0	0.0
Cycle Q Clear(g_c), s				9.7	0.0	21.0	19.5	13.0	0.0	0.0	7.0	0.0
Prop In Lane				1.00		0.98	1.00		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				551	0	493	525	2021	0	0	765	0
V/C Ratio(X)				0.55	0.00	1.04	0.98	0.54	0.00	0.00	0.54	0.00
Avail Cap(c_a), veh/h				551	0	493	525	2146	0	0	890	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				19.4	0.0	23.3	23.6	9.0	0.0	0.0	23.5	0.0
Incr Delay (d2), s/veh				1.2	0.0	51.2	34.9	0.2	0.0	0.0	0.6	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.9	0.0	16.1	14.5	6.3	0.0	0.0	3.4	0.0
LnGrp Delay(d),s/veh				20.6	0.0	74.5	58.5	9.3	0.0	0.0	24.1	0.0
LnGrp LOS				C		F	E	A			C	
Approach Vol, veh/h					818			1611			411	
Approach Delay, s/veh					54.4			25.0			24.1	
Approach LOS					D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		42.6			24.0	18.6		25.0
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s		41.0			20.0	17.0		21.0
Max Q Clear Time (g_c+I1), s		15.0			21.5	9.0		23.0
Green Ext Time (p_c), s		12.6			0.0	5.6		0.0

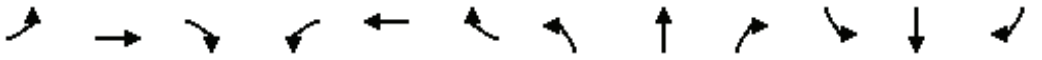
Intersection Summary	
HCM 2010 Ctrl Delay	33.4
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1010	320	170	440	0	0	0	0	520	40	780
Future Volume (veh/h)	0	1010	320	170	440	0	0	0	0	520	40	780
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1900	1863	0				1863	1863	1900
Adj Flow Rate, veh/h	0	1098	293	185	478	0				565	43	784
Adj No. of Lanes	0	2	0	0	2	0				1	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1881	498	276	1095	0				378	18	323
Arrive On Green	0.00	0.68	0.68	1.00	1.00	0.00				0.21	0.21	0.21
Sat Flow, veh/h	0	2860	732	265	1695	0				1774	83	1513
Grp Volume(v), veh/h	0	699	692	185	478	0				565	0	827
Grp Sat Flow(s),veh/h/ln	0	1770	1729	265	1610	0				1774	0	1596
Q Serve(g_s), s	0.0	15.7	16.0	35.0	0.0	0.0				16.0	0.0	16.0
Cycle Q Clear(g_c), s	0.0	15.7	16.0	51.0	0.0	0.0				16.0	0.0	16.0
Prop In Lane	0.00		0.42	1.00		0.00				1.00		0.95
Lane Grp Cap(c), veh/h	0	1203	1176	276	1095	0				378	0	340
V/C Ratio(X)	0.00	0.58	0.59	0.67	0.44	0.00				1.49	0.00	2.43
Avail Cap(c_a), veh/h	0	1203	1176	276	1095	0				378	0	340
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.89	0.89	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.3	6.4	8.4	0.0	0.0				29.5	0.0	29.5
Incr Delay (d2), s/veh	0.0	0.7	0.8	5.4	0.2	0.0				235.4	0.0	652.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	7.8	7.8	4.2	0.1	0.0				32.5	0.0	68.7
LnGrp Delay(d),s/veh	0.0	7.1	7.2	13.9	0.2	0.0				264.9	0.0	681.5
LnGrp LOS		A	A	B	A					F		F
Approach Vol, veh/h		1391			663						1392	
Approach Delay, s/veh		7.1			4.0						512.4	
Approach LOS		A			A						F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				55.0		20.0		55.0
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				51.0		16.0		51.0
Max Q Clear Time (g_c+I1), s				18.0		18.0		53.0
Green Ext Time (p_c), s				22.8		0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	210.6
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1150	480	190	590	0	0	0	0	630	20	510
Future Volume (veh/h)	0	1150	480	190	590	0	0	0	0	630	20	510
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1900	1863	0				1863	1863	1900
Adj Flow Rate, veh/h	0	1198	431	198	615	0				656	21	492
Adj No. of Lanes	0	2	0	0	2	0				1	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96				0.96	0.96	0.96
Percent Heavy Veh, %	0	2	2	2	2	0				2	2	2
Cap, veh/h	0	1747	611	215	1095	0				378	14	326
Arrive On Green	0.00	0.68	0.68	1.00	1.00	0.00				0.21	0.21	0.21
Sat Flow, veh/h	0	2663	899	174	1695	0				1774	65	1528
Grp Volume(v), veh/h	0	814	815	198	615	0				656	0	513
Grp Sat Flow(s),veh/h/ln	0	1770	1699	174	1610	0				1774	0	1593
Q Serve(g_s), s	0.0	20.5	22.1	28.9	0.0	0.0				16.0	0.0	16.0
Cycle Q Clear(g_c), s	0.0	20.5	22.1	51.0	0.0	0.0				16.0	0.0	16.0
Prop In Lane	0.00		0.53	1.00		0.00				1.00		0.96
Lane Grp Cap(c), veh/h	0	1203	1156	215	1095	0				378	0	340
V/C Ratio(X)	0.00	0.68	0.70	0.92	0.56	0.00				1.73	0.00	1.51
Avail Cap(c_a), veh/h	0	1203	1156	215	1095	0				378	0	340
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.84	0.84	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	7.1	7.4	16.8	0.0	0.0				29.5	0.0	29.5
Incr Delay (d2), s/veh	0.0	1.5	2.0	36.2	0.6	0.0				340.9	0.0	244.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	10.2	10.8	6.2	0.2	0.0				43.6	0.0	30.0
LnGrp Delay(d),s/veh	0.0	8.6	9.3	53.0	0.6	0.0				370.4	0.0	273.5
LnGrp LOS		A	A	D	A					F		F
Approach Vol, veh/h		1629			813						1169	
Approach Delay, s/veh		9.0			13.3						327.9	
Approach LOS		A			B						F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				55.0		20.0		55.0
Change Period (Y+Rc), s				4.0		4.0		4.0
Max Green Setting (Gmax), s				51.0		16.0		51.0
Max Q Clear Time (g_c+I1), s				24.1		18.0		53.0
Green Ext Time (p_c), s				23.0		0.0		0.0

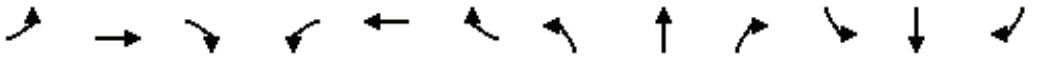
Intersection Summary	
HCM 2010 Ctrl Delay	113.2
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	380	1150	0	0	530	490	80	20	120	0	0	0
Future Volume (veh/h)	380	1150	0	0	530	490	80	20	120	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	427	1292	0	0	596	361	56	70	55			
Adj No. of Lanes	0	2	0	0	2	0	1	1	1			
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	352	1304	0	0	1461	885	355	373	316			
Arrive On Green	1.00	1.00	0.00	0.00	0.69	0.69	0.20	0.20	0.20			
Sat Flow, veh/h	397	1965	0	0	2200	1276	1774	1863	1581			
Grp Volume(v), veh/h	717	1002	0	0	501	456	56	70	55			
Grp Sat Flow(s),veh/h/ln	667	1610	0	0	1770	1613	1774	1863	1581			
Q Serve(g_s), s	42.9	0.0	0.0	0.0	9.1	9.1	2.0	2.3	2.2			
Cycle Q Clear(g_c), s	52.0	0.0	0.0	0.0	9.1	9.1	2.0	2.3	2.2			
Prop In Lane	0.60		0.00	0.00		0.79	1.00		1.00			
Lane Grp Cap(c), veh/h	539	1117	0	0	1227	1119	355	373	316			
V/C Ratio(X)	1.33	0.90	0.00	0.00	0.41	0.41	0.16	0.19	0.17			
Avail Cap(c_a), veh/h	539	1117	0	0	1227	1119	355	373	316			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.50	0.50	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	7.6	0.0	0.0	0.0	4.9	4.9	24.8	24.9	24.9			
Incr Delay (d2), s/veh	154.9	5.3	0.0	0.0	0.2	0.2	0.9	1.1	1.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	34.2	1.6	0.0	0.0	4.4	4.0	1.0	1.3	1.1			
LnGrp Delay(d),s/veh	162.5	5.3	0.0	0.0	5.1	5.2	25.7	26.1	26.1			
LnGrp LOS	F	A			A	A	C	C	C			
Approach Vol, veh/h		1719			957			181				
Approach Delay, s/veh		70.9			5.1			26.0				
Approach LOS		E			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		19.0		56.0				56.0
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		15.0		52.0				52.0
Max Q Clear Time (g_c+I1), s		4.3		54.0				11.1
Green Ext Time (p_c), s		0.5		0.0				35.3

Intersection Summary	
HCM 2010 Ctrl Delay	46.0
HCM 2010 LOS	D

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	690	1090	0	0	680	560	100	160	230	0	0	0
Future Volume (veh/h)	690	1090	0	0	680	560	100	160	230	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1900	1863	0	0	1863	1900	1863	1863	1863			
Adj Flow Rate, veh/h	719	1135	0	0	708	475	104	167	155			
Adj No. of Lanes	0	2	0	0	2	0	1	1	1			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	338	1131	0	0	1402	935	355	373	317			
Arrive On Green	1.00	1.00	0.00	0.00	0.69	0.69	0.20	0.20	0.20			
Sat Flow, veh/h	353	1716	0	0	2116	1349	1774	1863	1583			
Grp Volume(v), veh/h	762	1092	0	0	619	564	104	167	155			
Grp Sat Flow(s),veh/h/ln	374	1610	0	0	1770	1602	1774	1863	1583			
Q Serve(g_s), s	39.5	0.0	0.0	0.0	12.4	12.5	3.7	5.9	6.5			
Cycle Q Clear(g_c), s	52.0	0.0	0.0	0.0	12.4	12.5	3.7	5.9	6.5			
Prop In Lane	0.94		0.00	0.00		0.84	1.00		1.00			
Lane Grp Cap(c), veh/h	353	1117	0	0	1227	1111	355	373	317			
V/C Ratio(X)	2.16	0.98	0.00	0.00	0.50	0.51	0.29	0.45	0.49			
Avail Cap(c_a), veh/h	353	1117	0	0	1227	1111	355	373	317			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.17	0.17	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	11.5	0.0	0.0	0.0	5.4	5.4	25.5	26.4	26.6			
Incr Delay (d2), s/veh	523.8	7.1	0.0	0.0	0.3	0.4	2.1	3.9	5.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	58.5	2.2	0.0	0.0	6.0	5.4	2.0	3.4	3.3			
LnGrp Delay(d),s/veh	535.3	7.1	0.0	0.0	5.8	5.8	27.6	30.2	31.9			
LnGrp LOS	F	A			A	A	C	C	C			
Approach Vol, veh/h		1854			1183			426				
Approach Delay, s/veh		224.1			5.8			30.2				
Approach LOS		F			A			C				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		19.0		56.0				56.0
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		15.0		52.0				52.0
Max Q Clear Time (g_c+I1), s		8.5		54.0				14.5
Green Ext Time (p_c), s		1.0		0.0				36.1

Intersection Summary	
HCM 2010 Ctrl Delay	125.7
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	600	270	30	620	100	230	230	30	200	1000	190
Future Volume (veh/h)	30	600	270	30	620	100	230	230	30	200	1000	190
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	32	632	208	32	653	93	242	242	24	211	1053	185
Adj No. of Lanes	0	2	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	66	1128	572	62	1019	149	272	1227	120	243	1081	189
Arrive On Green	0.37	0.37	0.37	0.37	0.37	0.37	0.15	0.38	0.38	0.14	0.36	0.36
Sat Flow, veh/h	79	3015	1528	70	2724	398	1774	3247	319	1774	2994	525
Grp Volume(v), veh/h	320	344	208	402	0	376	242	131	135	211	621	617
Grp Sat Flow(s),veh/h/ln	1483	1610	1528	1582	0	1609	1774	1770	1796	1774	1770	1749
Q Serve(g_s), s	1.4	18.4	10.6	5.1	0.0	20.6	14.4	5.4	5.5	12.6	37.3	37.6
Cycle Q Clear(g_c), s	22.0	18.4	10.6	23.5	0.0	20.6	14.4	5.4	5.5	12.6	37.3	37.6
Prop In Lane	0.10		1.00	0.08		0.25	1.00		0.18	1.00		0.30
Lane Grp Cap(c), veh/h	592	603	572	628	0	602	272	669	679	243	639	632
V/C Ratio(X)	0.54	0.57	0.36	0.64	0.00	0.63	0.89	0.20	0.20	0.87	0.97	0.98
Avail Cap(c_a), veh/h	592	603	572	628	0	602	345	669	679	427	639	632
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.00	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.7	26.9	24.5	27.6	0.0	27.6	44.8	22.6	22.6	45.7	34.0	34.0
Incr Delay (d2), s/veh	3.5	3.9	1.8	0.5	0.0	0.4	17.6	0.2	0.2	3.7	28.7	29.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	8.8	4.8	10.1	0.0	9.2	8.4	2.7	2.7	6.4	23.2	23.4
LnGrp Delay(d),s/veh	29.2	30.8	26.3	28.0	0.0	28.1	62.4	22.8	22.8	49.4	62.7	64.0
LnGrp LOS	C	C	C	C		C	E	C	C	D	E	E
Approach Vol, veh/h		872			778			508			1449	
Approach Delay, s/veh		29.1			28.0			41.6			61.3	
Approach LOS		C			C			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	20.6	43.0		44.4	18.8	44.8		44.4
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	21.0	39.0		36.0	26.0	34.0		36.0
Max Q Clear Time (g_c+I1), s	16.4	39.6		24.0	14.6	7.5		25.5
Green Ext Time (p_c), s	0.2	0.0		9.1	0.2	16.2		8.1

Intersection Summary	
HCM 2010 Ctrl Delay	43.6
HCM 2010 LOS	D

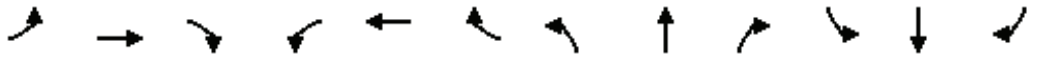
Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	710	440	40	570	140	280	680	40	100	390	60
Future Volume (veh/h)	90	710	440	40	570	140	280	680	40	100	390	60
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	94	740	376	42	594	129	292	708	38	104	406	48
Adj No. of Lanes	0	2	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	158	1158	739	76	1089	256	321	1133	61	131	716	84
Arrive On Green	0.48	0.48	0.48	0.48	0.48	0.48	0.18	0.33	0.33	0.07	0.23	0.23
Sat Flow, veh/h	239	2398	1531	82	2256	530	1774	3409	183	1774	3177	373
Grp Volume(v), veh/h	332	502	376	380	0	385	292	367	379	104	225	229
Grp Sat Flow(s),veh/h/ln	1027	1610	1531	1287	0	1580	1774	1770	1823	1774	1770	1780
Q Serve(g_s), s	15.8	25.3	18.2	3.6	0.0	18.0	17.4	18.9	18.9	6.2	12.2	12.4
Cycle Q Clear(g_c), s	33.7	25.3	18.2	28.8	0.0	18.0	17.4	18.9	18.9	6.2	12.2	12.4
Prop In Lane	0.28		1.00	0.11		0.34	1.00		0.10	1.00		0.21
Lane Grp Cap(c), veh/h	538	778	739	659	0	763	321	588	606	131	399	401
V/C Ratio(X)	0.62	0.65	0.51	0.58	0.00	0.50	0.91	0.62	0.63	0.79	0.56	0.57
Avail Cap(c_a), veh/h	538	778	739	659	0	763	345	588	606	427	639	643
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.00	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.5	21.0	19.1	18.8	0.0	19.1	43.4	30.4	30.4	49.2	37.1	37.2
Incr Delay (d2), s/veh	5.2	4.1	2.5	0.3	0.0	0.2	25.3	2.4	2.4	4.1	1.8	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	12.0	8.1	7.3	0.0	7.8	10.8	9.6	9.9	3.2	6.1	6.2
LnGrp Delay(d),s/veh	29.7	25.1	21.6	19.1	0.0	19.3	68.6	32.8	32.7	53.3	38.9	39.0
LnGrp LOS	C	C	C	B		B	E	C	C	D	D	D
Approach Vol, veh/h		1210			765			1038			558	
Approach Delay, s/veh		25.3			19.2			42.9			41.6	
Approach LOS		C			B			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	23.5	28.3		56.1	12.0	39.9		56.1
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0
Max Green Setting (Gmax), s	21.0	39.0		36.0	26.0	34.0		36.0
Max Q Clear Time (g_c+I1), s	19.4	14.4		35.7	8.2	20.9		30.8
Green Ext Time (p_c), s	0.1	8.3		0.2	0.1	7.8		4.6

Intersection Summary	
HCM 2010 Ctrl Delay	31.6
HCM 2010 LOS	C

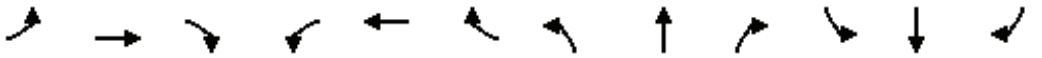
Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	320	160	130	250	90	60	670	70	110	1130	20
Future Volume (veh/h)	30	320	160	130	250	90	60	670	70	110	1130	20
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.94	1.00		0.97	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	30	323	146	131	253	80	61	677	64	111	1141	19
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	107	286	129	177	374	118	138	1436	136	158	1609	27
Arrive On Green	0.06	0.24	0.24	0.10	0.28	0.28	0.08	0.44	0.44	0.03	0.15	0.15
Sat Flow, veh/h	1774	1187	536	1774	1336	423	1774	3261	308	1774	3559	59
Grp Volume(v), veh/h	30	0	469	131	0	333	61	367	374	111	567	593
Grp Sat Flow(s),veh/h/ln	1774	0	1723	1774	0	1759	1774	1770	1799	1774	1770	1849
Q Serve(g_s), s	1.7	0.0	26.0	7.8	0.0	18.2	3.5	15.8	15.9	6.7	32.9	32.9
Cycle Q Clear(g_c), s	1.7	0.0	26.0	7.8	0.0	18.2	3.5	15.8	15.9	6.7	32.9	32.9
Prop In Lane	1.00		0.31	1.00		0.24	1.00		0.17	1.00		0.03
Lane Grp Cap(c), veh/h	107	0	415	177	0	493	138	780	792	158	800	836
V/C Ratio(X)	0.28	0.00	1.13	0.74	0.00	0.68	0.44	0.47	0.47	0.70	0.71	0.71
Avail Cap(c_a), veh/h	197	0	415	197	0	493	197	780	792	197	800	836
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.55	0.55	0.55
Uniform Delay (d), s/veh	48.5	0.0	41.0	47.2	0.0	34.5	47.6	21.3	21.3	51.0	39.2	39.2
Incr Delay (d2), s/veh	0.5	0.0	84.8	10.2	0.0	7.3	0.8	2.0	2.0	2.8	3.0	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	22.1	4.3	0.0	9.8	1.8	8.2	8.3	3.4	16.8	17.6
LnGrp Delay(d),s/veh	49.0	0.0	125.8	57.4	0.0	41.8	48.4	23.4	23.4	53.8	42.1	42.0
LnGrp LOS	D		F	E		D	D	C	C	D	D	D
Approach Vol, veh/h		499			464			802			1271	
Approach Delay, s/veh		121.2			46.2			25.3			43.1	
Approach LOS		F			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.4	52.8	13.8	30.0	12.6	51.6	9.5	34.3
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	12.0	44.0	12.0	26.0	12.0	44.0	12.0	26.0
Max Q Clear Time (g_c+I1), s	5.5	34.9	9.8	28.0	8.7	17.9	3.7	20.2
Green Ext Time (p_c), s	0.0	7.8	0.0	0.0	0.0	19.2	0.0	1.9

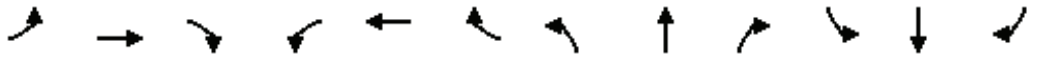
Intersection Summary	
HCM 2010 Ctrl Delay	51.7
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	210	80	100	330	100	120	1020	90	130	990	60
Future Volume (veh/h)	20	210	80	100	330	100	120	1020	90	130	990	60
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.94	1.00		0.95	1.00		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	20	214	69	102	337	93	122	1041	86	133	1010	57
Adj No. of Lanes	1	1	0	1	1	0	1	2	0	1	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	82	318	102	172	404	111	160	1453	120	163	1499	85
Arrive On Green	0.05	0.24	0.24	0.10	0.29	0.29	0.09	0.44	0.44	0.03	0.15	0.15
Sat Flow, veh/h	1774	1320	426	1774	1383	382	1774	3296	272	1774	3388	191
Grp Volume(v), veh/h	20	0	283	102	0	430	122	559	568	133	527	540
Grp Sat Flow(s),veh/h/ln	1774	0	1746	1774	0	1765	1774	1770	1798	1774	1770	1810
Q Serve(g_s), s	1.2	0.0	15.9	5.9	0.0	24.6	7.3	27.9	27.9	8.1	30.5	30.5
Cycle Q Clear(g_c), s	1.2	0.0	15.9	5.9	0.0	24.6	7.3	27.9	27.9	8.1	30.5	30.5
Prop In Lane	1.00		0.24	1.00		0.22	1.00		0.15	1.00		0.11
Lane Grp Cap(c), veh/h	82	0	420	172	0	515	160	780	793	163	783	801
V/C Ratio(X)	0.25	0.00	0.67	0.59	0.00	0.83	0.76	0.72	0.72	0.82	0.67	0.67
Avail Cap(c_a), veh/h	197	0	420	197	0	515	197	780	793	197	783	801
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.65	0.65	0.65
Uniform Delay (d), s/veh	49.7	0.0	37.2	46.7	0.0	35.8	48.0	24.7	24.7	51.5	38.7	38.7
Incr Delay (d2), s/veh	0.6	0.0	8.3	1.7	0.0	14.7	9.9	5.6	5.5	11.3	3.0	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	8.6	3.0	0.0	14.1	4.0	14.7	14.9	4.5	15.6	16.0
LnGrp Delay(d),s/veh	50.3	0.0	45.5	48.4	0.0	50.5	57.9	30.2	30.2	62.8	41.7	41.7
LnGrp LOS	D		D	D		D	E	C	C	E	D	D
Approach Vol, veh/h		303			532			1249			1200	
Approach Delay, s/veh		45.8			50.1			32.9			44.0	
Approach LOS		D			D			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	51.8	13.5	30.0	12.9	51.6	8.0	35.5
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	12.0	44.0	12.0	26.0	12.0	44.0	12.0	26.0
Max Q Clear Time (g_c+I1), s	9.3	32.5	7.9	17.9	10.1	29.9	3.2	26.6
Green Ext Time (p_c), s	0.0	10.3	0.0	2.1	0.0	12.4	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	41.0
HCM 2010 LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	650	190	160	740	0	0	0	0	200	1140	160
Future Volume (veh/h)	0	650	190	160	740	0	0	0	0	200	1140	160
Number	7	4	14	3	8	18				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		1.00				1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	663	191	163	755	0				204	1163	150
Adj No. of Lanes	0	2	0	1	2	0				0	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1247	359	299	1650	0				187	1112	150
Arrive On Green	0.00	0.47	0.47	0.47	0.47	0.00				0.40	0.40	0.40
Sat Flow, veh/h	0	2767	769	642	3632	0				467	2777	374
Grp Volume(v), veh/h	0	439	415	163	755	0				803	0	714
Grp Sat Flow(s),veh/h/ln	0	1770	1674	642	1770	0				1839	0	1779
Q Serve(g_s), s	0.0	11.2	11.2	15.4	9.2	0.0				25.5	0.0	25.5
Cycle Q Clear(g_c), s	0.0	11.2	11.2	26.6	9.2	0.0				25.5	0.0	25.5
Prop In Lane	0.00		0.46	1.00		0.00				0.25		0.21
Lane Grp Cap(c), veh/h	0	825	780	299	1650	0				736	0	712
V/C Ratio(X)	0.00	0.53	0.53	0.54	0.46	0.00				1.09	0.00	1.00
Avail Cap(c_a), veh/h	0	833	788	302	1667	0				736	0	712
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	12.1	12.1	21.5	11.5	0.0				19.1	0.0	19.1
Incr Delay (d2), s/veh	0.0	0.3	0.3	1.1	0.1	0.0				60.6	0.0	34.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.4	5.2	2.8	4.4	0.0				25.1	0.0	19.1
LnGrp Delay(d),s/veh	0.0	12.4	12.4	22.6	11.6	0.0				79.7	0.0	53.5
LnGrp LOS		B	B	C	B					F		F
Approach Vol, veh/h		854			918						1517	
Approach Delay, s/veh		12.4			13.6						67.3	
Approach LOS		B			B						E	

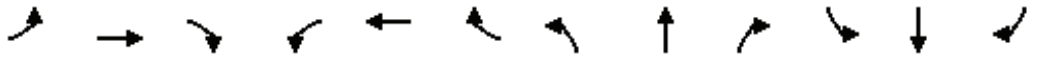
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		30.0		33.7				33.7
Change Period (Y+Rc), s		4.5		4.0				4.0
Max Green Setting (Gmax), s		25.5		30.0				30.0
Max Q Clear Time (g_c+I1), s		27.5		13.2				28.6
Green Ext Time (p_c), s		0.0		8.3				1.1

Intersection Summary	
HCM 2010 Ctrl Delay	38.1
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	860	160	130	610	0	0	0	0	170	800	130
Future Volume (veh/h)	0	860	160	130	610	0	0	0	0	170	800	130
Number	7	4	14	3	8	18				5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		1.00				1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1900	1863	1863	0				1900	1863	1900
Adj Flow Rate, veh/h	0	887	146	134	629	0				175	825	119
Adj No. of Lanes	0	2	0	1	2	0				0	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	0	2	2	2	2	0				0	2	0
Cap, veh/h	0	1579	260	293	1852	0				183	907	137
Arrive On Green	0.00	0.52	0.52	0.52	0.52	0.00				0.34	0.34	0.34
Sat Flow, veh/h	0	3111	497	543	3632	0				541	2672	404
Grp Volume(v), veh/h	0	520	513	134	629	0				594	0	525
Grp Sat Flow(s),veh/h/ln	0	1770	1745	543	1770	0				1836	0	1780
Q Serve(g_s), s	0.0	12.3	12.3	13.7	6.4	0.0				19.6	0.0	17.1
Cycle Q Clear(g_c), s	0.0	12.3	12.3	26.0	6.4	0.0				19.6	0.0	17.1
Prop In Lane	0.00		0.28	1.00		0.00				0.29		0.23
Lane Grp Cap(c), veh/h	0	926	913	293	1852	0				623	0	604
V/C Ratio(X)	0.00	0.56	0.56	0.46	0.34	0.00				0.95	0.00	0.87
Avail Cap(c_a), veh/h	0	987	973	311	1973	0				623	0	604
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	10.0	10.0	18.7	8.6	0.0				20.0	0.0	19.2
Incr Delay (d2), s/veh	0.0	0.3	0.3	0.4	0.0	0.0				24.9	0.0	12.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.0	5.9	2.1	3.1	0.0				14.0	0.0	10.4
LnGrp Delay(d),s/veh	0.0	10.3	10.3	19.1	8.6	0.0				44.9	0.0	31.5
LnGrp LOS		B	B	B	A					D		C
Approach Vol, veh/h		1033			763						1119	
Approach Delay, s/veh		10.3			10.4						38.6	
Approach LOS		B			B						D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		25.5		36.4				36.4
Change Period (Y+Rc), s		4.5		4.0				4.0
Max Green Setting (Gmax), s		21.0		34.5				34.5
Max Q Clear Time (g_c+I1), s		21.6		14.3				28.0
Green Ext Time (p_c), s		0.0		9.4				4.4

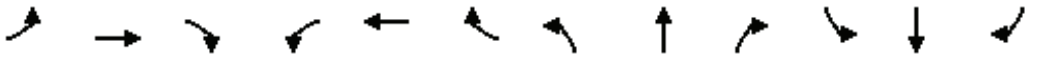
Intersection Summary	
HCM 2010 Ctrl Delay	21.2
HCM 2010 LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	210	630	0	0	680	130	210	960	100	0	0	0
Future Volume (veh/h)	210	630	0	0	680	130	210	960	100	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.95	1.00		0.95			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1900	1863	1900			
Adj Flow Rate, veh/h	221	663	0	0	716	116	221	1011	92			
Adj No. of Lanes	1	2	0	0	2	0	0	3	0			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	285	1845	0	0	900	146	293	1440	134			
Arrive On Green	0.16	0.52	0.00	0.00	0.30	0.30	0.35	0.35	0.35			
Sat Flow, veh/h	1774	3632	0	0	3120	490	831	4079	380			
Grp Volume(v), veh/h	221	663	0	0	418	414	484	410	429			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1747	1821	1695	1774			
Q Serve(g_s), s	6.6	6.1	0.0	0.0	12.1	12.1	13.0	11.5	11.5			
Cycle Q Clear(g_c), s	6.6	6.1	0.0	0.0	12.1	12.1	13.0	11.5	11.5			
Prop In Lane	1.00		0.00	0.00		0.28	0.46		0.21			
Lane Grp Cap(c), veh/h	285	1845	0	0	526	520	643	598	626			
V/C Ratio(X)	0.77	0.36	0.00	0.00	0.80	0.80	0.75	0.69	0.69			
Avail Cap(c_a), veh/h	637	1845	0	0	652	643	818	761	797			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	22.4	7.9	0.0	0.0	18.0	18.0	15.9	15.4	15.4			
Incr Delay (d2), s/veh	1.7	0.0	0.0	0.0	4.3	4.4	2.1	1.0	0.9			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	3.4	3.0	0.0	0.0	6.6	6.5	6.8	5.5	5.8			
LnGrp Delay(d),s/veh	24.1	7.9	0.0	0.0	22.3	22.4	18.0	16.4	16.3			
LnGrp LOS	C	A			C	C	B	B	B			
Approach Vol, veh/h		884			832			1324				
Approach Delay, s/veh		11.9			22.4			16.9				
Approach LOS		B			C			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		23.2	12.5	20.1				32.5
Change Period (Y+Rc), s		3.5	3.5	3.5				3.5
Max Green Setting (Gmax), s		25.0	20.0	20.5				20.5
Max Q Clear Time (g_c+I1), s		15.0	8.6	14.1				8.1
Green Ext Time (p_c), s		4.5	0.7	2.1				2.9

Intersection Summary	
HCM 2010 Ctrl Delay	17.0
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	760	0	0	440	160	300	1750	150	0	0	0
Future Volume (veh/h)	270	760	0	0	440	160	300	1750	150	0	0	0
Number	3	8	18	7	4	14	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.95	1.00		0.96			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1900	1863	1900			
Adj Flow Rate, veh/h	276	776	0	0	449	112	306	1786	143			
Adj No. of Lanes	1	2	0	0	2	0	0	3	0			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	341	1678	0	0	624	154	281	1756	143			
Arrive On Green	0.19	0.47	0.00	0.00	0.22	0.22	0.41	0.41	0.41			
Sat Flow, veh/h	1774	3632	0	0	2873	686	684	4276	349			
Grp Volume(v), veh/h	276	776	0	0	284	277	818	686	731			
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1697	1829	1695	1785			
Q Serve(g_s), s	9.1	9.0	0.0	0.0	9.0	9.2	25.0	24.4	24.9			
Cycle Q Clear(g_c), s	9.1	9.0	0.0	0.0	9.0	9.2	25.0	24.4	24.9			
Prop In Lane	1.00		0.00	0.00		0.40	0.37		0.20			
Lane Grp Cap(c), veh/h	341	1678	0	0	397	381	751	696	733			
V/C Ratio(X)	0.81	0.46	0.00	0.00	0.71	0.73	1.09	0.99	1.00			
Avail Cap(c_a), veh/h	583	1678	0	0	596	572	751	696	733			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00			
Uniform Delay (d), s/veh	23.5	10.8	0.0	0.0	21.8	21.9	17.9	17.7	17.9			
Incr Delay (d2), s/veh	1.8	0.1	0.0	0.0	0.9	1.0	59.5	30.3	32.4			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.6	4.3	0.0	0.0	4.5	4.4	24.7	17.1	18.6			
LnGrp Delay(d),s/veh	25.3	10.8	0.0	0.0	22.7	22.9	77.5	48.0	50.3			
LnGrp LOS	C	B			C	C	F	D	D			
Approach Vol, veh/h		1052			561			2235				
Approach Delay, s/veh		14.6			22.8			59.5				
Approach LOS		B			C			E				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		28.5	15.2	17.2				32.4
Change Period (Y+Rc), s		3.5	3.5	3.5				3.5
Max Green Setting (Gmax), s		25.0	20.0	20.5				20.5
Max Q Clear Time (g_c+I1), s		27.0	11.1	11.2				11.0
Green Ext Time (p_c), s		0.0	0.8	1.7				3.0

Intersection Summary	
HCM 2010 Ctrl Delay	41.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	310	110	130	310	90	230	440	190	120	720	30
Future Volume (veh/h)	80	310	110	130	310	90	230	440	190	120	720	30
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		0.95	1.00		0.94	1.00		0.95
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	86	333	61	140	333	84	247	473	141	129	774	30
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	0	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	110	422	333	170	369	93	480	504	405	132	836	34
Arrive On Green	0.06	0.23	0.23	0.10	0.26	0.26	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1774	1863	1471	1774	1420	358	1774	1863	1495	485	3063	124
Grp Volume(v), veh/h	86	333	61	140	0	417	247	473	141	489	0	444
Grp Sat Flow(s),veh/h/ln	1774	1863	1471	1774	0	1779	1774	1863	1495	1839	0	1833
Q Serve(g_s), s	5.2	18.5	3.7	8.5	0.0	24.9	13.0	27.3	8.3	29.0	0.0	25.5
Cycle Q Clear(g_c), s	5.2	18.5	3.7	8.5	0.0	24.9	13.0	27.3	8.3	29.0	0.0	25.5
Prop In Lane	1.00		1.00	1.00		0.20	1.00		1.00	0.26		0.07
Lane Grp Cap(c), veh/h	110	422	333	170	0	462	480	504	405	502	0	501
V/C Ratio(X)	0.78	0.79	0.18	0.82	0.00	0.90	0.51	0.94	0.35	0.97	0.00	0.89
Avail Cap(c_a), veh/h	242	509	402	242	0	486	484	509	408	502	0	501
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.8	40.0	34.3	48.7	0.0	39.3	33.9	39.1	32.2	39.5	0.0	38.3
Incr Delay (d2), s/veh	13.2	7.3	0.3	15.5	0.0	19.6	1.1	25.3	0.6	33.5	0.0	17.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	10.4	1.5	4.9	0.0	14.7	6.5	17.6	3.5	19.4	0.0	15.4
LnGrp Delay(d),s/veh	64.0	47.3	34.6	64.3	0.0	58.9	35.0	64.4	32.9	73.1	0.0	55.7
LnGrp LOS	E	D	C	E		E	D	E	C	E		E
Approach Vol, veh/h		480			557			861			933	
Approach Delay, s/veh		48.7			60.2			50.8			64.8	
Approach LOS		D			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.1	29.0		33.2	10.4	32.7		33.5
Change Period (Y+Rc), s	3.6	4.1		3.5	3.6	4.1		3.5
Max Green Setting (Gmax), s	15.0	30.0		30.0	15.0	30.0		30.0
Max Q Clear Time (g_c+I1), s	10.5	20.5		29.3	7.2	26.9		31.0
Green Ext Time (p_c), s	0.2	4.1		0.4	0.1	1.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	56.9
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	280	100	110	340	130	160	660	160	160	650	30
Future Volume (veh/h)	50	280	100	110	340	130	160	660	160	160	650	30
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.92	1.00		0.96	1.00		0.94	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	52	289	46	113	351	123	165	680	108	165	670	29
Adj No. of Lanes	1	1	1	1	1	0	1	1	1	0	2	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	68	440	345	142	362	127	493	518	415	180	774	35
Arrive On Green	0.04	0.24	0.24	0.08	0.28	0.28	0.28	0.28	0.28	0.27	0.27	0.27
Sat Flow, veh/h	1774	1863	1461	1774	1304	457	1774	1863	1493	668	2868	129
Grp Volume(v), veh/h	52	289	46	113	0	474	165	680	108	452	0	412
Grp Sat Flow(s),veh/h/ln	1774	1863	1461	1774	0	1761	1774	1863	1493	1829	0	1836
Q Serve(g_s), s	3.1	15.1	2.7	6.8	0.0	28.7	8.0	30.0	6.1	25.8	0.0	22.8
Cycle Q Clear(g_c), s	3.1	15.1	2.7	6.8	0.0	28.7	8.0	30.0	6.1	25.8	0.0	22.8
Prop In Lane	1.00		1.00	1.00		0.26	1.00		1.00	0.37		0.07
Lane Grp Cap(c), veh/h	68	440	345	142	0	489	493	518	415	494	0	496
V/C Ratio(X)	0.77	0.66	0.13	0.80	0.00	0.97	0.33	1.31	0.26	0.91	0.00	0.83
Avail Cap(c_a), veh/h	246	518	406	246	0	489	493	518	415	508	0	510
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.5	37.3	32.5	48.8	0.0	38.5	31.0	39.0	30.3	38.2	0.0	37.1
Incr Delay (d2), s/veh	19.5	2.7	0.2	11.6	0.0	32.6	0.5	154.5	0.4	21.0	0.0	11.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	8.1	1.1	3.8	0.0	18.4	4.0	37.6	2.6	15.9	0.0	13.1
LnGrp Delay(d),s/veh	71.0	40.0	32.7	60.4	0.0	71.1	31.5	193.5	30.7	59.2	0.0	48.3
LnGrp LOS	E	D	C	E		E	C	F	C	E		D
Approach Vol, veh/h		387			587			953			864	
Approach Delay, s/veh		43.3			69.1			147.0			54.0	
Approach LOS		D			E			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.2	29.6		33.5	7.7	34.1		32.7
Change Period (Y+Rc), s	3.6	4.1		3.5	3.6	4.1		3.5
Max Green Setting (Gmax), s	15.0	30.0		30.0	15.0	30.0		30.0
Max Q Clear Time (g_c+I1), s	8.8	17.1		32.0	5.1	30.7		27.8
Green Ext Time (p_c), s	0.2	5.0		0.0	0.1	0.0		1.3

Intersection Summary	
HCM 2010 Ctrl Delay	87.4
HCM 2010 LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	940	20	70	1250	120	10	80	50	220	240	120
Future Volume (vph)	130	940	20	70	1250	120	10	80	50	220	240	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00	0.98		1.00	0.99
Flpb, ped/bikes	1.00	1.00		0.99	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.99			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99	1.00		0.98	1.00
Satd. Flow (prot)	1770	3522		1750	3460			1852	1549		1813	1562
Flt Permitted	0.08	1.00		0.20	1.00			0.94	1.00		0.80	1.00
Satd. Flow (perm)	143	3522		362	3460			1758	1549		1485	1562
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	138	1000	21	74	1330	128	11	85	53	234	255	128
RTOR Reduction (vph)	0	1	0	0	6	0	0	0	29	0	0	10
Lane Group Flow (vph)	138	1020	0	74	1452	0	0	96	24	0	489	118
Confl. Peds. (#/hr)	43		34	34		43	1		10	10		1
Confl. Bikes (#/hr)			4						4			1
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	56.1	56.1		56.1	56.1			40.9	40.9		40.9	40.9
Effective Green, g (s)	56.1	56.1		56.1	56.1			40.9	40.9		40.9	40.9
Actuated g/C Ratio	0.53	0.53		0.53	0.53			0.39	0.39		0.39	0.39
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	2.0		2.0	2.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	76	1881		193	1848			684	603		578	608
v/s Ratio Prot		0.29			0.42							
v/s Ratio Perm	c0.97			0.20				0.05	0.02		c0.33	0.08
v/c Ratio	1.82	0.54		0.38	0.79			0.14	0.04		0.85	0.19
Uniform Delay, d1	24.4	16.0		14.3	19.6			20.7	19.9		29.2	21.2
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	413.9	1.1		5.7	3.4			0.1	0.0		11.0	0.2
Delay (s)	438.3	17.2		20.0	23.1			20.8	19.9		40.2	21.3
Level of Service	F	B		C	C			C	B		D	C
Approach Delay (s)		67.3			22.9			20.5			36.3	
Approach LOS		E			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	40.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.40		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	270	1490	20	50	780	120	20	350	70	110	110	120
Future Volume (vph)	270	1490	20	50	780	120	20	350	70	110	110	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99			1.00	0.98		1.00	0.98
Flpb, ped/bikes	0.99	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	0.98			1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00	1.00		0.98	1.00
Satd. Flow (prot)	1752	3530		1770	3436			1858	1548		1813	1559
Flt Permitted	0.26	1.00		0.09	1.00			0.98	1.00		0.33	1.00
Satd. Flow (perm)	474	3530		172	3436			1819	1548		604	1559
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	281	1552	21	52	812	125	21	365	73	115	115	125
RTOR Reduction (vph)	0	1	0	0	8	0	0	0	7	0	0	64
Lane Group Flow (vph)	281	1572	0	52	930	0	0	386	66	0	230	61
Confl. Peds. (#/hr)	23		12	12		23	2		10	10		2
Confl. Bikes (#/hr)			6			10						2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	66.8	66.8		66.8	66.8			30.2	30.2		30.2	30.2
Effective Green, g (s)	66.8	66.8		66.8	66.8			30.2	30.2		30.2	30.2
Actuated g/C Ratio	0.64	0.64		0.64	0.64			0.29	0.29		0.29	0.29
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	2.0		2.0	2.0			3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	301	2245		109	2185			523	445		173	448
v/s Ratio Prot		0.45			0.27							
v/s Ratio Perm	c0.59			0.30				0.21	0.04		c0.38	0.04
v/c Ratio	0.93	0.70		0.48	0.43			0.74	0.15		1.33	0.14
Uniform Delay, d1	17.1	12.5		10.0	9.5			33.8	27.8		37.4	27.7
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2	37.4	1.8		14.2	0.6			5.4	0.2		182.4	0.1
Delay (s)	54.5	14.4		24.2	10.1			39.2	28.0		219.8	27.9
Level of Service	D	B		C	B			D	C		F	C
Approach Delay (s)		20.5			10.9			37.4			152.2	
Approach LOS		C			B			D			F	

Intersection Summary			
HCM 2000 Control Delay	32.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	96.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	200	70	280	240	90	70	10	250	80	70	20
Future Volume (veh/h)	10	200	70	280	240	90	70	10	250	80	70	20
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1827	1827	1900	1900	1827	1827	1827	1827	1900
Adj Flow Rate, veh/h	11	230	80	322	276	103	80	11	287	92	80	23
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	1	1	0
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	587	1189	403	590	1154	419	513	61	541	449	483	139
Arrive On Green	0.47	0.47	0.47	0.78	0.78	0.78	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	980	2547	863	1044	2474	898	1021	172	1521	1056	1358	390
Grp Volume(v), veh/h	11	155	155	322	191	188	91	0	287	92	0	103
Grp Sat Flow(s),veh/h/ln	980	1736	1674	1044	1736	1636	1193	0	1521	1056	0	1749
Q Serve(g_s), s	0.3	2.3	2.5	8.9	1.3	1.4	1.9	0.0	6.7	3.1	0.0	1.8
Cycle Q Clear(g_c), s	1.7	2.3	2.5	11.4	1.3	1.4	3.7	0.0	6.7	6.8	0.0	1.8
Prop In Lane	1.00		0.52	1.00		0.55	0.88		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	587	810	781	590	810	763	575	0	541	449	0	622
V/C Ratio(X)	0.02	0.19	0.20	0.55	0.24	0.25	0.16	0.00	0.53	0.21	0.00	0.17
Avail Cap(c_a), veh/h	587	810	781	590	810	763	575	0	541	449	0	622
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.85	0.85	0.85	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.3	7.0	7.1	4.7	2.8	2.8	10.9	0.0	11.5	13.0	0.0	9.9
Incr Delay (d2), s/veh	0.1	0.5	0.6	3.0	0.6	0.6	0.6	0.0	3.7	1.0	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.2	1.2	2.9	0.7	0.7	0.9	0.0	3.3	1.0	0.0	1.0
LnGrp Delay(d),s/veh	7.3	7.6	7.6	7.7	3.4	3.5	11.5	0.0	15.2	14.0	0.0	10.5
LnGrp LOS	A	A	A	A	A	A	B		B	B		B
Approach Vol, veh/h		321			701			378			195	
Approach Delay, s/veh		7.6			5.4			14.3			12.2	
Approach LOS		A			A			B			B	

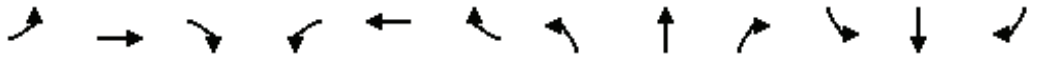
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		20.0		25.0		20.0		25.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		16.0		21.0		16.0		21.0
Max Q Clear Time (g_c+I1), s		8.7		4.5		8.8		13.4
Green Ext Time (p_c), s		1.6		5.5		1.6		3.5

Intersection Summary	
HCM 2010 Ctrl Delay	8.8
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	650	220	60	560	120	170	20	260	150	70	50
Future Volume (veh/h)	30	650	220	60	560	120	170	20	260	150	70	50
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.98	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1900	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	30	657	222	61	566	121	172	20	263	152	71	51
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	1	1	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	389	1092	369	302	1218	259	566	58	621	435	399	286
Arrive On Green	0.42	0.42	0.42	0.56	0.56	0.56	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	751	2587	873	628	2886	615	1037	145	1553	1092	997	716
Grp Volume(v), veh/h	30	449	430	61	346	341	192	0	263	152	0	122
Grp Sat Flow(s),veh/h/ln	751	1770	1690	628	1770	1731	1182	0	1553	1092	0	1713
Q Serve(g_s), s	1.3	8.8	8.9	3.5	5.2	5.3	4.6	0.0	5.5	5.4	0.0	2.1
Cycle Q Clear(g_c), s	6.6	8.8	8.9	12.4	5.2	5.3	6.7	0.0	5.5	12.1	0.0	2.1
Prop In Lane	1.00		0.52	1.00		0.36	0.90		1.00	1.00		0.42
Lane Grp Cap(c), veh/h	389	747	714	302	747	731	624	0	621	435	0	685
V/C Ratio(X)	0.08	0.60	0.60	0.20	0.46	0.47	0.31	0.00	0.42	0.35	0.00	0.18
Avail Cap(c_a), veh/h	389	747	714	302	747	731	624	0	621	435	0	685
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.84	0.84	0.84	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.3	10.1	10.1	12.0	6.8	6.9	10.7	0.0	9.8	14.6	0.0	8.7
Incr Delay (d2), s/veh	0.4	3.6	3.7	1.3	1.7	1.8	1.3	0.0	2.1	2.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	5.0	4.8	0.7	2.8	2.7	2.0	0.0	2.7	1.9	0.0	1.1
LnGrp Delay(d),s/veh	11.7	13.6	13.8	13.2	8.6	8.6	11.9	0.0	11.9	16.9	0.0	9.3
LnGrp LOS	B	B	B	B	A	A	B		B	B		A
Approach Vol, veh/h		909			748			455			274	
Approach Delay, s/veh		13.7			9.0			11.9			13.5	
Approach LOS		B			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		22.0		23.0		22.0		23.0
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s		18.0		19.0		18.0		19.0
Max Q Clear Time (g_c+I1), s		8.7		10.9		14.1		14.4
Green Ext Time (p_c), s		2.6		5.8		1.4		3.6

Intersection Summary	
HCM 2010 Ctrl Delay	11.8
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	440	0	0	480	350	130	0	110	0	0	0
Future Volume (veh/h)	90	440	0	0	480	350	130	0	110	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1845	1845	0	0	1845	1900	1845	1845	1900			
Adj Flow Rate, veh/h	105	512	0	0	558	407	151	0	128			
Adj No. of Lanes	1	2	0	0	2	0	1	1	0			
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86			
Percent Heavy Veh, %	3	3	0	0	3	3	3	3	3			
Cap, veh/h	400	1636	0	0	889	648	625	0	557			
Arrive On Green	0.93	0.93	0.00	0.00	0.93	0.93	0.36	0.00	0.36			
Sat Flow, veh/h	573	3597	0	0	1996	1389	1757	0	1568			
Grp Volume(v), veh/h	105	512	0	0	514	451	151	0	128			
Grp Sat Flow(s),veh/h/ln	573	1752	0	0	1752	1540	1757	0	1568			
Q Serve(g_s), s	2.1	0.6	0.0	0.0	2.1	2.1	2.7	0.0	2.6			
Cycle Q Clear(g_c), s	4.2	0.6	0.0	0.0	2.1	2.1	2.7	0.0	2.6			
Prop In Lane	1.00		0.00	0.00		0.90	1.00		1.00			
Lane Grp Cap(c), veh/h	400	1636	0	0	818	719	625	0	557			
V/C Ratio(X)	0.26	0.31	0.00	0.00	0.63	0.63	0.24	0.00	0.23			
Avail Cap(c_a), veh/h	400	1636	0	0	818	719	625	0	557			
HCM Platoon Ratio	2.00	2.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.97	0.97	0.00	0.00	0.97	0.97	1.00	0.00	1.00			
Uniform Delay (d), s/veh	1.2	0.8	0.0	0.0	0.9	0.9	10.2	0.0	10.2			
Incr Delay (d2), s/veh	1.5	0.5	0.0	0.0	3.5	4.0	0.9	0.0	1.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.4	0.3	0.0	0.0	1.2	1.2	1.5	0.0	1.3			
LnGrp Delay(d),s/veh	2.8	1.3	0.0	0.0	4.4	4.9	11.1	0.0	11.1			
LnGrp LOS	A	A			A	A	B		B			
Approach Vol, veh/h		617			965			279				
Approach Delay, s/veh		1.6			4.6			11.1				
Approach LOS		A			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		20.0		25.0				25.0
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		16.0		21.0				21.0
Max Q Clear Time (g_c+I1), s		4.7		6.2				4.1
Green Ext Time (p_c), s		0.9		9.3				10.2

Intersection Summary	
HCM 2010 Ctrl Delay	4.6
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	260	800	0	0	450	440	290	10	200	0	0	0
Future Volume (veh/h)	260	800	0	0	450	440	290	10	200	0	0	0
Number	7	4	14	3	8	18	5	2	12			
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900	1863	1863	1900			
Adj Flow Rate, veh/h	274	842	0	0	474	463	305	11	211			
Adj No. of Lanes	1	2	0	0	2	0	1	1	0			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	2	2	0	0	2	2	2	2	2			
Cap, veh/h	407	1652	0	0	826	713	631	28	539			
Arrive On Green	0.31	0.31	0.00	0.00	0.93	0.93	0.36	0.36	0.36			
Sat Flow, veh/h	594	3632	0	0	1863	1528	1774	79	1516			
Grp Volume(v), veh/h	274	842	0	0	474	463	305	0	222			
Grp Sat Flow(s),veh/h/ln	594	1770	0	0	1770	1528	1774	0	1595			
Q Serve(g_s), s	18.7	8.8	0.0	0.0	1.7	2.3	6.0	0.0	4.7			
Cycle Q Clear(g_c), s	21.0	8.8	0.0	0.0	1.7	2.3	6.0	0.0	4.7			
Prop In Lane	1.00		0.00	0.00		1.00	1.00		0.95			
Lane Grp Cap(c), veh/h	407	1652	0	0	826	713	631	0	567			
V/C Ratio(X)	0.67	0.51	0.00	0.00	0.57	0.65	0.48	0.00	0.39			
Avail Cap(c_a), veh/h	407	1652	0	0	826	713	631	0	567			
HCM Platoon Ratio	0.67	0.67	1.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.85	0.85	0.00	0.00	0.91	0.91	1.00	0.00	1.00			
Uniform Delay (d), s/veh	17.5	11.3	0.0	0.0	0.9	0.9	11.3	0.0	10.9			
Incr Delay (d2), s/veh	7.4	1.0	0.0	0.0	2.6	4.1	2.6	0.0	2.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	4.2	4.5	0.0	0.0	1.0	1.2	3.3	0.0	2.4			
LnGrp Delay(d),s/veh	24.9	12.2	0.0	0.0	3.5	5.0	13.9	0.0	12.9			
LnGrp LOS	C	B			A	A	B		B			
Approach Vol, veh/h		1116			937			527				
Approach Delay, s/veh		15.3			4.2			13.5				
Approach LOS		B			A			B				

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4				8
Phs Duration (G+Y+Rc), s		20.0		25.0				25.0
Change Period (Y+Rc), s		4.0		4.0				4.0
Max Green Setting (Gmax), s		16.0		21.0				21.0
Max Q Clear Time (g_c+I1), s		8.0		23.0				4.3
Green Ext Time (p_c), s		1.6		0.0				12.8

Intersection Summary	
HCM 2010 Ctrl Delay	10.9
HCM 2010 LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	510	110	280	500	60	30	40	50	80	200	150
Future Volume (vph)	50	510	110	280	500	60	30	40	50	80	200	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0		3.0	4.0			2.0			2.0	2.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00			1.00			1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.97		1.00	0.98			0.94			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.99	1.00
Satd. Flow (prot)	1719	3327		1719	3373			1687			1784	1516
Flt Permitted	0.95	1.00		0.95	1.00			0.81			0.89	1.00
Satd. Flow (perm)	1719	3327		1719	3373			1387			1609	1516
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	52	531	115	292	521	62	31	42	52	83	208	156
RTOR Reduction (vph)	0	20	0	0	9	0	0	0	0	0	0	110
Lane Group Flow (vph)	52	626	0	292	575	0	0	125	0	0	291	46
Confl. Peds. (#/hr)			4			6						2
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1 3	3 6			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	4.0	19.6		38.9	54.5			22.5			22.5	22.5
Effective Green, g (s)	4.0	19.6		34.9	54.5			22.5			22.5	22.5
Actuated g/C Ratio	0.04	0.22		0.39	0.61			0.25			0.25	0.25
Clearance Time (s)	3.0	4.0						2.0			2.0	2.0
Vehicle Extension (s)	3.0	3.0						3.0			3.0	3.0
Lane Grp Cap (vph)	76	724		666	2042			346			402	379
v/s Ratio Prot	0.03	c0.19		c0.17	0.17							
v/s Ratio Perm								0.09			c0.18	0.03
v/c Ratio	0.68	0.87		0.44	0.28			0.36			0.72	0.12
Uniform Delay, d1	42.4	33.9		20.3	8.4			27.8			30.9	26.1
Progression Factor	1.07	1.06		0.88	0.20			1.00			1.00	1.00
Incremental Delay, d2	22.1	12.9		0.2	0.0			0.6			6.3	0.1
Delay (s)	67.6	48.8		18.1	1.7			28.5			37.2	26.2
Level of Service	E	D		B	A			C			D	C
Approach Delay (s)		50.2			7.2			28.5			33.4	
Approach LOS		D			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	880	60	80	770	100	70	80	90	70	50	40
Future Volume (vph)	60	880	60	80	770	100	70	80	90	70	50	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0		3.0	4.0			2.0			2.0	2.0
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Frt	1.00	0.99		1.00	0.98			0.95			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.97	1.00
Satd. Flow (prot)	1770	3497		1770	3469			1743			1810	1557
Flt Permitted	0.95	1.00		0.95	1.00			0.89			0.71	1.00
Satd. Flow (perm)	1770	3497		1770	3469			1567			1318	1557
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	62	917	62	83	802	104	73	83	94	73	52	42
RTOR Reduction (vph)	0	5	0	0	10	0	0	0	0	0	0	31
Lane Group Flow (vph)	63	975	0	83	896	0	0	250	0	0	125	11
Confl. Peds. (#/hr)			5			5						4
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2		1 3	3 6			4			4	
Permitted Phases							4			4		4
Actuated Green, G (s)	4.4	24.4		32.0	52.0			24.6			24.6	24.6
Effective Green, g (s)	4.4	24.4		28.0	52.0			24.6			24.6	24.6
Actuated g/C Ratio	0.05	0.27		0.31	0.58			0.27			0.27	0.27
Clearance Time (s)	3.0	4.0						2.0			2.0	2.0
Vehicle Extension (s)	3.0	3.0						3.0			3.0	3.0
Lane Grp Cap (vph)	86	948		550	2004			428			360	425
v/s Ratio Prot	0.04	c0.28		0.05	c0.26							
v/s Ratio Perm								c0.16			0.09	0.01
v/c Ratio	0.73	1.03		0.15	0.45			0.58			0.35	0.03
Uniform Delay, d1	42.2	32.8		22.4	10.8			28.3			26.3	23.9
Progression Factor	1.06	1.07		1.17	0.26			1.00			1.00	1.00
Incremental Delay, d2	24.7	35.1		0.1	0.1			2.0			0.6	0.0
Delay (s)	69.4	70.2		26.2	2.8			30.3			26.8	24.0
Level of Service	E	E		C	A			C			C	C
Approach Delay (s)		70.1			4.8			30.3			26.1	
Approach LOS		E			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	36.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	650	0	0	780	270	70	10	300	0	0	0
Future Volume (vph)	140	650	0	0	780	270	70	10	300	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Lane Util. Factor	1.00	0.95			*1.00		1.00	0.95	0.95			
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Frt	1.00	1.00			0.96		1.00	0.86	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	1752	3505			3522		1752	1506	1490			
Flt Permitted	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	1752	3505			3522		1752	1506	1490			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	146	677	0	0	812	281	73	10	312	0	0	0
RTOR Reduction (vph)	0	0	0	0	35	0	0	138	145	0	0	0
Lane Group Flow (vph)	146	677	0	0	1059	0	73	25	15	0	0	0
Confl. Peds. (#/hr)			5	5		10						
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	12.7	73.9			58.2		8.6	8.6	8.6			
Effective Green, g (s)	12.7	73.9			58.2		8.6	8.6	8.6			
Actuated g/C Ratio	0.14	0.82			0.65		0.10	0.10	0.10			
Clearance Time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	247	2877			2277		167	143	142			
v/s Ratio Prot	c0.08	0.19			c0.30			0.02				
v/s Ratio Perm							c0.04		0.01			
v/c Ratio	0.59	0.24			0.46		0.44	0.17	0.11			
Uniform Delay, d1	36.2	1.8			8.0		38.4	37.4	37.2			
Progression Factor	0.49	0.46			1.00		1.00	1.00	1.00			
Incremental Delay, d2	3.5	0.2			0.7		1.8	0.6	0.3			
Delay (s)	21.4	1.0			8.7		40.2	38.0	37.5			
Level of Service	C	A			A		D	D	D			
Approach Delay (s)		4.6			8.7			38.2			0.0	
Approach LOS		A			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	310	1010	0	0	840	300	170	60	570	0	0	0
Future Volume (vph)	310	1010	0	0	840	300	170	60	570	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Lane Util. Factor	1.00	0.95			*1.00		1.00	0.95	0.95			
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00	1.00			
Frt	1.00	1.00			0.96		1.00	0.88	0.85			
Flt Protected	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (prot)	1770	3539			3549		1770	1555	1504			
Flt Permitted	0.95	1.00			1.00		0.95	1.00	1.00			
Satd. Flow (perm)	1770	3539			3549		1770	1555	1504			
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	323	1052	0	0	875	312	177	62	594	0	0	0
RTOR Reduction (vph)	0	0	0	0	45	0	0	170	172	0	0	0
Lane Group Flow (vph)	323	1052	0	0	1143	0	177	160	155	0	0	0
Confl. Peds. (#/hr)	12		6	6		12						
Turn Type	Prot	NA			NA		Perm	NA	Perm			
Protected Phases	5	2			6			8				
Permitted Phases							8		8			
Actuated Green, G (s)	17.5	72.5			52.0		10.0	10.0	10.0			
Effective Green, g (s)	17.5	72.5			52.0		10.0	10.0	10.0			
Actuated g/C Ratio	0.19	0.81			0.58		0.11	0.11	0.11			
Clearance Time (s)	3.0	4.0			4.0		3.5	3.5	3.5			
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0	3.0			
Lane Grp Cap (vph)	344	2850			2050		196	172	167			
v/s Ratio Prot	c0.18	0.30			c0.32			c0.10				
v/s Ratio Perm							0.10		0.10			
v/c Ratio	0.94	0.37			0.56		0.90	0.93	0.93			
Uniform Delay, d1	35.7	2.4			11.8		39.5	39.7	39.6			
Progression Factor	0.50	1.24			1.00		1.00	1.00	1.00			
Incremental Delay, d2	29.7	0.3			1.1		38.3	48.9	48.0			
Delay (s)	47.7	3.3			12.9		77.8	88.5	87.6			
Level of Service	D	A			B		E	F	F			
Approach Delay (s)		13.7			12.9			85.9			0.0	
Approach LOS		B			B			F			A	

Intersection Summary			
HCM 2000 Control Delay	31.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.5
Intersection Capacity Utilization	75.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	220	410	160	100	400	40	100	650	70	60	930	210
Future Volume (veh/h)	220	410	160	100	400	40	100	650	70	60	930	210
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.91	1.00		0.96	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	234	436	58	106	426	37	106	691	67	64	989	204
Adj No. of Lanes	1	1	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	197	651	518	0	689	59	157	1525	148	140	1339	276
Arrive On Green	0.04	0.12	0.12	0.00	0.21	0.21	0.06	0.31	0.31	0.08	0.46	0.46
Sat Flow, veh/h	1774	1863	1482	0	3268	282	1774	3249	315	1774	2913	600
Grp Volume(v), veh/h	234	436	58	0	229	234	106	376	382	64	600	593
Grp Sat Flow(s),veh/h/ln	1774	1863	1482	0	1770	1780	1774	1770	1794	1774	1770	1743
Q Serve(g_s), s	12.0	24.2	3.8	0.0	12.7	12.9	6.3	18.3	18.4	3.7	29.9	30.1
Cycle Q Clear(g_c), s	12.0	24.2	3.8	0.0	12.7	12.9	6.3	18.3	18.4	3.7	29.9	30.1
Prop In Lane	1.00		1.00	0.00		0.16	1.00		0.18	1.00		0.34
Lane Grp Cap(c), veh/h	197	651	518	0	373	375	157	831	842	140	813	801
V/C Ratio(X)	1.19	0.67	0.11	0.00	0.61	0.62	0.67	0.45	0.45	0.46	0.74	0.74
Avail Cap(c_a), veh/h	197	651	518	0	426	429	197	831	842	197	813	801
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00
Upstream Filter(I)	0.62	0.62	0.62	0.00	1.00	1.00	0.86	0.86	0.86	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.0	41.8	32.7	0.0	38.6	38.7	49.3	25.9	25.9	47.5	23.9	23.9
Incr Delay (d2), s/veh	111.4	1.3	0.0	0.0	1.2	1.3	3.0	1.5	1.5	0.9	5.9	6.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.0	12.8	1.6	0.0	6.3	6.5	3.2	9.3	9.5	1.9	15.8	15.7
LnGrp Delay(d),s/veh	163.4	43.1	32.8	0.0	39.8	40.0	52.2	27.5	27.5	48.4	29.8	30.0
LnGrp LOS	F	D	C		D	D	D	C	C	D	C	C
Approach Vol, veh/h		728			463			864			1257	
Approach Delay, s/veh		81.0			39.9			30.5			30.8	
Approach LOS		F			D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.5	54.7	0.0	41.8	12.6	53.6	15.0	26.8
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	12.0	44.0	12.0	26.0	12.0	44.0	12.0	26.0
Max Q Clear Time (g_c+I1), s	5.7	20.4	0.0	26.2	8.3	32.1	14.0	14.9
Green Ext Time (p_c), s	0.0	18.2	0.0	0.0	0.0	10.2	0.0	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	43.0
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	340	360	190	90	350	80	210	950	50	70	850	190
Future Volume (veh/h)	340	360	190	90	350	80	210	950	50	70	850	190
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.94	1.00		0.90	1.00		0.93	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	358	379	145	95	368	26	221	1000	9	74	895	174
Adj No. of Lanes	1	1	1	0	2	0	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	197	643	513	0	686	48	197	1690	15	146	1299	252
Arrive On Green	0.04	0.11	0.11	0.00	0.21	0.21	0.11	0.47	0.47	0.08	0.44	0.44
Sat Flow, veh/h	1774	1863	1489	0	3328	233	1774	3592	32	1774	2939	571
Grp Volume(v), veh/h	358	379	145	0	194	200	221	493	516	74	539	530
Grp Sat Flow(s),veh/h/ln	1774	1863	1489	0	1770	1792	1774	1770	1854	1774	1770	1740
Q Serve(g_s), s	12.0	20.9	9.6	0.0	10.6	10.7	12.0	22.1	22.1	4.3	26.4	26.4
Cycle Q Clear(g_c), s	12.0	20.9	9.6	0.0	10.6	10.7	12.0	22.1	22.1	4.3	26.4	26.4
Prop In Lane	1.00		1.00	0.00		0.13	1.00		0.02	1.00		0.33
Lane Grp Cap(c), veh/h	197	643	513	0	365	369	197	833	873	146	782	769
V/C Ratio(X)	1.82	0.59	0.28	0.00	0.53	0.54	1.12	0.59	0.59	0.51	0.69	0.69
Avail Cap(c_a), veh/h	197	643	513	0	426	431	197	833	873	197	782	769
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.49	0.49	0.49	0.00	1.00	1.00	0.54	0.54	0.54	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.0	40.6	35.6	0.0	38.2	38.3	48.0	21.0	21.0	47.4	24.2	24.2
Incr Delay (d2), s/veh	376.9	0.5	0.1	0.0	0.5	0.5	83.9	1.7	1.6	1.0	4.9	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.5	10.9	4.0	0.0	5.2	5.4	10.5	11.1	11.6	2.2	13.9	13.7
LnGrp Delay(d),s/veh	428.9	41.1	35.7	0.0	38.7	38.8	131.9	22.6	22.6	48.4	29.1	29.2
LnGrp LOS	F	D	D		D	D	F	C	C	D	C	C
Approach Vol, veh/h		882			394			1230			1143	
Approach Delay, s/veh		197.6			38.7			42.2			30.4	
Approach LOS		F			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	54.8	0.0	41.3	15.0	51.7	15.0	26.3
Change Period (Y+Rc), s	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Max Green Setting (Gmax), s	12.0	44.0	12.0	26.0	12.0	44.0	12.0	26.0
Max Q Clear Time (g_c+I1), s	6.3	24.1	0.0	22.9	14.0	28.4	14.0	12.7
Green Ext Time (p_c), s	0.0	16.4	0.0	1.2	0.0	13.3	0.0	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	75.7
HCM 2010 LOS	E

Notes



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	280	290	50	80	230	40	30	190	90	180	220	270
Future Volume (vph)	280	290	50	80	230	40	30	190	90	180	220	270
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1787	3496		1770	3539	1583	1128	2138		1340	1405	1246
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1787	3496		1770	3539	1583	1128	2138		1340	1405	1246
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	326	337	58	93	267	47	35	221	105	209	256	314
RTOR Reduction (vph)	0	13	0	0	0	39	0	54	0	0	0	230
Lane Group Flow (vph)	326	382	0	93	267	8	35	272	0	188	277	84
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	60%	60%	60%	28%	28%	28%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases						2						8
Actuated Green, G (s)	14.8	22.4		6.6	14.2	14.2	17.2	17.2		23.3	23.3	23.3
Effective Green, g (s)	14.8	22.4		6.6	14.2	14.2	17.2	17.2		23.3	23.3	23.3
Actuated g/C Ratio	0.17	0.26		0.08	0.16	0.16	0.20	0.20		0.27	0.27	0.27
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Vehicle Extension (s)	2.0	4.0		2.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Grp Cap (vph)	303	900		134	577	258	223	422		358	376	333
v/s Ratio Prot	c0.18	c0.11		0.05	0.08		0.03	c0.13		0.14	c0.20	
v/s Ratio Perm						0.00						0.07
v/c Ratio	1.08	0.42		0.69	0.46	0.03	0.16	0.65		0.53	0.74	0.25
Uniform Delay, d1	36.1	26.9		39.2	32.9	30.6	28.9	32.1		27.1	29.1	25.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	73.4	0.4		11.8	0.8	0.1	0.5	3.8		1.8	7.8	0.5
Delay (s)	109.5	27.4		51.1	33.8	30.7	29.3	35.9		28.9	36.9	25.6
Level of Service	F	C		D	C	C	C	D		C	D	C
Approach Delay (s)		64.5			37.3			35.2			30.4	
Approach LOS		E			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	43.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	87.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	260	230	30	90	300	120	20	260	80	130	160	240
Future Volume (vph)	260	230	30	90	300	120	20	260	80	130	160	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	3478		1770	3539	1583	1530	2942		1618	1697	1504
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1770	3478		1770	3539	1583	1530	2942		1618	1697	1504
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	286	253	33	99	330	132	22	286	88	143	176	264
RTOR Reduction (vph)	0	9	0	0	0	106	0	28	0	0	0	209
Lane Group Flow (vph)	286	277	0	99	330	26	22	346	0	129	190	55
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	18%	18%	18%	6%	6%	6%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	Perm
Protected Phases	1	6		5	2		4	4		8	8	
Permitted Phases						2						8
Actuated Green, G (s)	15.0	24.3		6.6	15.9	15.9	16.2	16.2		17.0	17.0	17.0
Effective Green, g (s)	15.0	24.3		6.6	15.9	15.9	16.2	16.2		17.0	17.0	17.0
Actuated g/C Ratio	0.18	0.30		0.08	0.19	0.19	0.20	0.20		0.21	0.21	0.21
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.0	4.0		4.5	4.5	4.5
Vehicle Extension (s)	2.0	4.0		2.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0
Lane Grp Cap (vph)	325	1035		143	689	308	303	584		337	353	313
v/s Ratio Prot	c0.16	0.08		0.06	c0.09		0.01	c0.12		0.08	c0.11	
v/s Ratio Perm						0.02						0.04
v/c Ratio	0.88	0.27		0.69	0.48	0.08	0.07	0.59		0.38	0.54	0.18
Uniform Delay, d1	32.4	21.9		36.5	29.2	26.9	26.6	29.7		27.8	28.8	26.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	22.5	0.2		11.1	0.7	0.2	0.1	1.9		1.0	2.0	0.4
Delay (s)	54.9	22.1		47.6	29.9	27.0	26.7	31.6		28.8	30.8	26.9
Level of Service	D	C		D	C	C	C	C		C	C	C
Approach Delay (s)		38.5			32.3			31.3			28.6	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	32.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	81.6	Sum of lost time (s)	17.5
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	530	110	330	520	0	0	0	0	260	40	320
Future Volume (vph)	0	530	110	330	520	0	0	0	0	260	40	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			3.0						4.0	4.0
Lane Util. Factor		0.95			*1.00						1.00	1.00
Frpb, ped/bikes		0.99			1.00						1.00	1.00
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.97			1.00						1.00	0.85
Flt Protected		1.00			0.98						0.96	1.00
Satd. Flow (prot)		3296			5275						1718	1524
Flt Permitted		1.00			0.75						0.96	1.00
Satd. Flow (perm)		3296			4018						1718	1524
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	552	115	344	542	0	0	0	0	271	42	333
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	649	0	0	886	0	0	0	0	0	313	333
Confl. Peds. (#/hr)			6			5						
Heavy Vehicles (%)	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Turn Type		NA		Prot	NA					Split	NA	Perm
Protected Phases		2 4		1	1 6					3	3	
Permitted Phases												3
Actuated Green, G (s)		46.1			25.6						24.9	24.9
Effective Green, g (s)		46.1			25.6						24.9	24.9
Actuated g/C Ratio		0.51			0.28						0.28	0.28
Clearance Time (s)											4.0	4.0
Vehicle Extension (s)											3.0	3.0
Lane Grp Cap (vph)		1688			1282						475	421
v/s Ratio Prot		c0.20			c0.08						0.18	
v/s Ratio Perm					c0.12							c0.22
v/c Ratio		0.38			1.82dl						0.66	0.79
Uniform Delay, d1		13.3			28.7						28.8	30.1
Progression Factor		0.05			0.92						1.00	1.00
Incremental Delay, d2		0.1			1.5						3.3	9.8
Delay (s)		0.7			28.0						32.1	39.9
Level of Service		A			C						C	D
Approach Delay (s)		0.7			28.0			0.0			36.1	
Approach LOS		A			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	22.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	980	60	280	730	0	0	0	0	340	10	220
Future Volume (vph)	0	980	60	280	730	0	0	0	0	340	10	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			3.0						4.0	4.0
Lane Util. Factor		0.95			*1.00						1.00	1.00
Frpb, ped/bikes		1.00			1.00						1.00	1.00
Flpb, ped/bikes		1.00			1.00						1.00	1.00
Frt		0.99			1.00						1.00	0.85
Flt Protected		1.00			0.99						0.95	1.00
Satd. Flow (prot)		3501			5512						1776	1583
Flt Permitted		1.00			0.72						0.95	1.00
Satd. Flow (perm)		3501			4031						1776	1583
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	1021	62	292	760	0	0	0	0	354	10	229
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1079	0	0	1052	0	0	0	0	0	364	229
Confl. Peds. (#/hr)			6			5						
Turn Type		NA		Prot	NA					Split	NA	Perm
Protected Phases		2 4		1	1 6					3	3	
Permitted Phases												3
Actuated Green, G (s)		53.0			30.0						18.0	18.0
Effective Green, g (s)		53.0			30.0						18.0	18.0
Actuated g/C Ratio		0.59			0.33						0.20	0.20
Clearance Time (s)											4.0	4.0
Vehicle Extension (s)											3.0	3.0
Lane Grp Cap (vph)		2061			1508						355	316
v/s Ratio Prot		c0.31			c0.08						c0.20	
v/s Ratio Perm					c0.16							0.14
v/c Ratio		0.52			1.49dl						1.03	0.72
Uniform Delay, d1		11.0			26.1						36.0	33.7
Progression Factor		0.13			0.83						1.00	1.00
Incremental Delay, d2		0.1			1.1						54.4	8.0
Delay (s)		1.5			22.8						90.4	41.7
Level of Service		A			C						F	D
Approach Delay (s)		1.5			22.8			0.0			71.6	
Approach LOS		A			C			A			E	

Intersection Summary			
HCM 2000 Control Delay	24.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

Appendix F

2014 Water Supply Assessment for the Richmond South Shoreline Specific Plan (Richmond Bay Specific Plan) and Related Supporting Information

ESA

EAST BAY
MUNICIPAL UTILITY DISTRICT

May 27, 2014

Hector Rojas, Senior Planner
City of Richmond
Planning and Building Services Department
450 Civic Center Plaza
Richmond, CA 94804

Re: Water Supply Assessment – Richmond South Shoreline Specific Plan

Dear Mr. Rojas:

This letter responds to the City of Richmond's (City) request on March 17, 2014 for water agency consultation concerning the Richmond South Shoreline Specific Plan (Enclosure 1) located in Richmond, which is within the East Bay Municipal Utility District's (EBMUD) Ultimate Service Boundary. EBMUD appreciates the opportunity to provide this response.

Pursuant to Sections 10910-10915 (SB-610) of the California Water Code, the project meets the threshold requirement for an assessment of water supply availability based on the amount of water this project would require, a mixed-use project that would demand an amount of water equivalent to or greater than the amount of water required by a 500 dwelling unit project.

Please note that this assessment addresses the issue of water supply only and is not a guarantee of service, and future water service is subject to rates and regulations in effect at the time.

Project Demand

The water demand for the Richmond South Shoreline Specific Plan is accounted for in EBMUD's water demand projections as published in EBMUD's 2010 Urban Water Management Plan (UWMP/Enclosure 2). EBMUD's water demand projections account for anticipated future water demands within EBMUD's service boundaries and for variations in demand-attributed changes in development patterns. The historical water use is approximately 220,000 gallons per day (gpd). The projected water demand is estimated to increase up to 1,580,000 gpd at build out.

EBMUD's demand projections indicate both densification and land use changes in a few existing land use classifications, including commercial and residential land use areas, thus increasing EBMUD's overall demand. EBMUD's 2010 UWMP projects water demands over time, accounting for estimated variations in demand usage less conservation and recycled supply sources as noted in Table 4-1, Water Demand Projections for Each Water Use Sector, of the 2010 UWMP. EBMUD's water demand projections are based on the 2040 Demand Study (Demand Study), which was completed in 2009. For planning purposes, the demands are estimated in five year increments, but it is recognized that actual incremental amounts may occur

Recycled Paper

stepwise in shorter time increments. An increase in usage by one customer in a particular customer class does not require a strict gallon-for-gallon increase in conservation by other customers in that class as, in actuality, the amount of potable demand, conservation and recycled water use EBMUD-wide will vary somewhat. Future versions of the UWMP, which is updated every five years, will include an updated assessment of customer demand and water supply.

Project Area

The Richmond South Shoreline Specific Plan is bounded by I-580 to the north and east, Regatta Boulevard, Richmond Inner Harbor to the south, and Marina Way South to the west. The project area consists of approximately 525 acres. The Richmond South Shoreline Specific Plan consists of 4,070 multi-family residential units, 720,000 square feet of retail space, and 5,690,000 square feet of light industrial/commercial space.

EBMUD Water Demand Projections

Since the 1970s, water demand within EBMUD's service area has ranged from 200 to 220 million gallons per day (mgd) in non-drought years. The 2040 water demand forecast of 312 mgd for EBMUD's service area can be reduced to 230 mgd with the successful implementation of water recycling and conservation programs, as outlined in the 2010 UWMP. Although current demand is lower than estimated in the Demand Study, as a result of the recent multi-year drought and the downturn in the economy, the Demand Study still reflects a reasonable expectation for growth over the long term for demand in year 2040. The Richmond South Specific Plan will not change EBMUD's 2040 demand projection.

EBMUD Water Supply and Water Rights

EBMUD has water rights permits and licenses that allow for delivery of up to a maximum of 325 mgd from the Mokelumne River, subject to the availability of Mokelumne River runoff and the senior water rights of other users. EBMUD's position in the hierarchy of Mokelumne River water users is determined by a variety of agreements between Mokelumne River water right holders, and the terms of the appropriative water rights permits and licenses, which have been issued by the State, pre-1914 rights, and riparian rights.

Conditions that could, depending on hydrology, restrict EBMUD's ability to receive its full entitlement include:

- Upstream water use by prior right holders.
- Downstream water use by riparian and senior appropriators and other downstream obligations, including protection of public trust resources.
- Variability in rainfall and runoff.

During prolonged droughts, the Mokelumne River supply cannot meet EBMUD's projected customer demands. To address this, EBMUD has completed construction of the Freeport Regional Water Facility and the Bayside Groundwater Facility, which are discussed below in the Supplemental Water Supply and Demand Management section of this assessment. EBMUD has obtained and continues to seek supplemental supplies.

EBMUD UWMP

The 2010 UWMP, adopted on June 28, 2011, by EBMUD's Board of Directors by Resolution No. 33832-11, is a long-range planning document used to assess current and projected water usage, water supply planning and conservation and recycling efforts. A summary of EBMUD's demand and supply projections, in 5-year increments for a 25-year planning horizon is provided in Table 4-3, EBMUD Demand and Supply Projections of the 2010 UWMP (Enclosure 3).

EBMUD's evaluation of water supply availability accounts for the diversions of both upstream and downstream water right holders and fishery releases on the Mokelumne River. Fishery releases are based on the requirements of a 1998 Joint Settlement Agreement (JSA) between EBMUD, United States (U.S.) Fish and Wildlife Service, and the California Department of Fish and Game. The JSA requires EBMUD to make minimum flow releases from its reservoirs to the lower Mokelumne River to protect and enhance the fishery resources and ecosystem of the river. As this water is released downriver, it is, therefore, not available for use by EBMUD's customers.

The available supply shown in the attached table (Enclosure 3) was derived from EBMUD's hydrologic model with the following assumptions:

- EBMUD Drought Planning Sequence is used for 1976, 1977 and 1978;
- Total system storage is depleted by the end of the third year of the drought;
- EBMUD will implement its Drought Management Program when necessary;
- The diversions by Amador and Calaveras Counties upstream of Pardee Reservoir will increase over time, eventually reaching the full extent of their senior rights;
- Releases are made to meet the requirements of senior downstream water right holders and fishery releases are made according to the JSA;
- Dry-year supply of Central Valley Project (CVP) water, through the Freeport Regional Water Facility, is available; and
- Bayside Groundwater Project, Phase 1, is available.

As discussed under the Drought Management Program section in Chapter 3 of the 2010 UWMP, EBMUD's system storage generally allows it to continue serving its customers during dry-year events. EBMUD imposes rationing based on the projected storage available at the end of September. By imposing rationing in the first dry year of potential drought periods, EBMUD attempts to minimize rationing in subsequent years if a drought persists while continuing to meet its current and subsequent-year fishery flow release requirements and obligations to downstream

agencies. Table 3-2, Long-Term Drought Management Program Guidelines, in the 2010 UWMP summarizes the Drought Management Program guidelines for consumer water reduction goals based on projected system storage.

In Table 4-3, EBMUD Demand and Supply Projections (Enclosure 3), "Single Dry Water Year" (or Year 1 of "Multiple Dry Water Years") is determined to be a year that EBMUD would implement Drought Management Program elements at the "moderate" stage with the goal of achieving a reduction between 0 to 10 percent in customer demand. Year 2 of "Multiple Dry Years" is determined to be a year that EBMUD would implement Drought Management Program elements at the "severe" stage with the goal of achieving between 10 to 15 percent reduction in customer demand. Year 3 of "Multiple Dry Years" is a year in which EBMUD would implement Drought Management Program elements at the "critical" stage. Despite water savings from EBMUD's aggressive conservation and recycling programs and rationing of up to 15 percent, additional supplemental supplies beyond those provided through the Freeport Regional Water Facility and the Bayside Groundwater Facility will be needed during Years 2 and 3 of a three-year drought. Therefore, supplemental supplies are needed in multiple-year drought periods while continuing to meet the requirements of senior downstream water right holders and the provisions of the 1998 JSA.

Supplemental Water Supply and Demand Management

The goals of meeting projected water needs and increased water reliability rely on supplemental supplies, improving reliability of existing water supply facilities, water conservation and recycled water programs.

By 2011, EBMUD completed construction of the Freeport Regional Water Facility and the Bayside Groundwater Facility to augment its water supply during drought periods. However, additional supplemental supplies beyond those provided through these facilities will still be needed, as noted above. Chapter 2 of the 2010 UWMP describes potential supplemental water supply projects that could be implemented to meet projected long-term water demands during multi-year drought periods.

The Freeport Regional Water Facility became operational in February 2011. EBMUD's ability to take delivery of water through the Freeport facility is based on its Long Term Renewal Contract (LTRC) with the U.S. Bureau of Reclamation. The LTRC provides for up to 133,000 acre feet in a single dry-year, not to exceed a total of 165,000 acre feet in three consecutive dry years. Under the LTRC, the CVP supply is available to EBMUD only in dry years when EBMUD's total stored water supply is forecast to be below 500 total acre feet on September 30 of each year.

Construction of the Bayside Groundwater Project, Phase 1, was completed in 2010. A permit from the Department of Public Health, which is pending, is required before the groundwater can be extracted and treated for municipal use. The project is designed to yield 2 mgd over a 6-month period, resulting in an average annual production capacity of 1 mgd per year.

Chapter 2 of the 2010 UWMP also lists other potential supplemental water projects, including northern California water transfers, Bayside Groundwater Project Expansion, Los Vaqueros Expansion and others that could be implemented as necessary to meet the projected long-term water supplemental need during multi-year drought periods. The 2010 UWMP identifies a broad mix of projects, with inherent scalability and the ability to adjust implementation schedules for a particular component, so that EBMUD will be able to continue to pursue the additional supplemental supplies that are projected to be necessary, while also minimizing the risks associated with future uncertainties such as project implementation challenges and global climate change. The Environmental Impact Report that EBMUD certified for the Water Supply Management Program 2040 examined the impacts of pursuing these supplemental supply projects at a program level. Separate project-level environmental documentation will be prepared, as appropriate, for specific components as they are developed in further detail and implemented in accordance with EBMUD's water supply needs.

In addition to pursuing supplemental water supply sources, EBMUD also maximizes resources through continuous improvements in the delivery and transmission of available water supplies, and investments in ensuring the safety of its existing water supply facilities. These programs, along with emergency interties and planned water recycling and conservation efforts, would ensure a reliable water supply to meet projected demands for current and future EBMUD customers within the current service area.

Individual developments within the project area present opportunities to incorporate water conservation measures. EBMUD requests that the City include in its conditions of approval a requirement that the project sponsors comply with the California Model Water Efficient Landscape Ordinance (Division 2, Title 23, California Code of Regulations, Chapter 2.7, Sections 490 through 495). EBMUD staff would appreciate the opportunity to meet with the project sponsor to discuss water conservation programs and best management practices applicable to the integrated projects. A key objective of this discussion will be to explore timely opportunities to expand water conservation via early consideration of EBMUD's conservation programs and best management practices applicable to the project.

The Richmond South Shoreline Specific Plan is located approximately 1.5 miles from an existing recycled water transmission pipeline with some parcels being 3 to 5 miles away. The size and nature of the proposed development along with the thousands of people that will be employed within the project area and the proposed University of California campus will present several opportunities for the use of recycled water for landscape irrigation, commercial and industrial processes, toilet and urinal flushing in non-residential buildings, and cooling towers. As part of the long term water supply planning, the District may investigate expanding the existing recycled water infrastructure or construct a localized satellite facility that utilizes onsite waste and rain water treatment to provide recycled water to the project. The District recommends that the City, the University of California, and their developers maintain continued coordination and

consultation with the District as they plan and implement the various projects regarding the feasibility of providing recycled water for appropriate non-potable uses.

The project sponsor should contact David J. Rehnstrom, Senior Civil Engineer, at (510) 287-1365 for further information.

Sincerely,

Bill Maggi for WRK

William R. Kirkpatrick
Manager of Water Distribution Planning Division

WRK:TRM:sb
sb14_080.docx

Enclosures: 1. Letter of Request for Water Supply Assessment dated March 17, 2014
2. EBMUD 2010 Urban Water Management Plan
3. EBMUD Demand and Supply Projections Table

cc: Board of Directors w/o Enclosure 2

PLANNING AND BUILDING SERVICES DEPARTMENT
Planning Division

March 17, 2014

Mr. David Rehnstrom
East Bay Municipal Utilities District
Water Distribution Planning Division
375 11th Street
Oakland, California 94607

Subject: Request for Water Supply Assessment for Richmond South Shoreline Specific Plan

Dear Mr. Rehnstrom:

Per amendments to Section 10912 of the Water Code implemented by Senate Bill 610, the City of Richmond ("City") is submitting this request to the East Bay Municipal Utilities District ("EBMUD") to prepare a Water Supply Assessment (WSA). The assessment is required in order to determine whether adequate water supply is available to meet the projected water demand of the proposed project. The City, as lead agency, is currently preparing a Specific Plan and Program Environmental Impact Report (SP/PEIR) for the proposed project. The City respectfully requests that EBMUD immediately prepare a water supply assessment for the proposed project as described.

The Richmond South Shoreline Specific Plan (RSSSP) will include general plan and zoning amendments, along with detailed strategies and programs to encourage projects, site design and development standards, as well as funding implementation strategies to carry out the policies of the plan. The proposed project encompasses an area totaling approximately 525 acres (Project Area). The site is bounded by I-580 to the north and east, Regatta Boulevard, Meeker Creek and San Francisco Bay to the south and west, and Marina Way to the west. The Project Area closely represents Richmond General Plan 2030 Change Areas 15 (Regatta/Marina Bay) and 16 (Southern Gateway). Per the General Plan, the central and eastern portions of the Project Area are comprised of commercial and light industrial businesses with the western portion of the Project Area between Marina Way South and Marina Bay Parkway comprised of medium intensity mixed-use with a commercial emphasis. A single residential development, 'The Anchorage at Marina Bay', consisting of approximately 100 townhomes lies just west of Marina Bay Parkway on Jetty Drive. The Project Area has been identified as a Priority Development Area (PDA) due to its existing transportation infrastructure (Rail, Port & Freeway) and the potential for sustainable mixed-use infill development.

The University of California (UC) owns properties at 1301 South 46th Street and 3300 Regatta Boulevard (known as the Richmond Field Station and the Regatta Property) at the center of the Project Area totaling approximately 195 acres. The Richmond Field Station (RFS) is managed by UC Berkeley and has been identified as the preferred site for the second Lawrence Berkeley National Laboratory (LBNL) campus, also known as the Richmond Bay Campus, which when completed may include up to 5.4 million square feet (sf) of research and development facilities with the potential to spin off additional supporting developments. The RSSSP will capitalize on and complement the Long Range Development Plan (LRDP) being developed for the Richmond Bay Campus by UC Berkeley and LBNL.

The RSSSP proposes several preferred development alternatives, including the "Long Term: Employment + Housing" growth scenario which is shown on the attached exhibit. This alterative assumes development of: 4,070 new housing units; 720,000 square feet (SF) of retail space; and 5,690,000 SF of light

industrial/commercial space. This would result in an estimated average daily water use of approximately 1,580,150 gallons/day (GPD). A table providing a breakdown of this estimated use is shown below.

Land Use Classification	Total Size/No. of Units	Water Demand Factor (1)	Total GPD
Residential	4,070 Units	215 GPD/Unit	875,050
Retail	720,000 SF	0.11 GPD/SF	79,200
Light Industrial/Commercial	5,690,000 SF	0.11 GPD/SF	625.900
Total			1,580,150

1. Based on Contra Costa County Sanitation District Average Base Wastewater Flow Unit Factors plus 10%.

The City has identified East Bay Municipal Utilities District (EBMUD) as the water purveyor for the proposed project. As such, pursuant to the requirements of SB 610, the City respectfully requests a WSA be prepared and adopted by East Bay Municipal Utilities District (EBMUD) in 90 days or less.

The City is in the process of preparing the SP/PEIR for the proposed project. The results and conclusion of the WSA will be included in the Utilities section of the SP/EIR.

Please contact me if you have any questions or need additional information. I can be reached at (510) 620-6662 or by email at hector_rojas@ci.richmond.ca.us.

Sincerely,

Hector Rojas
Senior Planner

Enclosure 3

EAST BAY MUNICIPAL UTILITY DISTRICT DEMAND AND SUPPLY PROJECTION
(Reference: Table 4-3, UWMP 2010 – EBMUD)

	2010	2015	2020	2025	2030	2035[1]	2040
PROJECTED DEMAND (MGD)							
CUSTOMER DEMAND [2]	251	266	280	291	304	308	312
ADJUSTED FOR CUMULATIVE CONSERVATION [3]	(26)	(32)	(43)	(49)	(56)	(59)	(62)
ADJUSTED FOR RECYCLED WATER [4]	(9)	(11)	(16)	(18)	(19)	(20)	(20)
PLANNING LEVEL OF DEMAND	216	223	221	224	229	229	230
PROJECTED AVAILABLE SUPPLY AND NEED FOR SUPPLEMENTAL SUPPLY (MGD)[5]							
NORMAL YEAR	>216	>223	>221	>224	>229	>229	>230
SUPPLEMENTAL SUPPLY NEED	0	0	0	0	0	0	0
SINGLE DRY YEAR (MULTIPLE DRY YEARS – YEAR 1)							
AVAILABLE SUPPLY	211	217	215	218	223	222	222
CUSTOMER RATIONING [6]	2%	3%	3%	3%	3%	3%	4%
SUPPLEMENTAL SUPPLY NEED [7]	5	6	6	7	7	8	8
MULTIPLE DRY YEARS – YEAR 2							
AVAILABLE SUPPLY	183	189	188	190	194	194	195
CUSTOMER RATIONING [6]	15%	15%	15%	15%	15%	15%	15%
SUPPLEMENTAL SUPPLY NEED [7]	21	21	21	21	22	22	22
MULTIPLE DRY YEARS – YEAR 3							
AVAILABLE SUPPLY	183	189	188	190	183	164	144
CUSTOMER RATIONING [6]	15%	15%	15%	15%	15%	15%	15%
SUPPLEMENTAL SUPPLY NEED [7]	21	21	21	21	33	53	73
THREE-YEAR DROUGHT							
TOTAL SUPPLEMENTAL SUPPLY NEED (TAF)[7]	53	54	54	55	69	93	115

[1] Projected demand for 2035 is interpolated.

[2] Customer demand values are based on the demand projections from the "2040 Demand Study," Feb 2009. These projected water demands are based on land use in EBMUD's ultimate service area and is unadjusted for conservation and non-potable water. The values are also unadjusted for the current suppressed demand due to the 2007-2010 rationing period and the economic downturn.

[3] Existing conservation saving from the "1994 Water Conservation Master Plan" and planned conservation program savings based on the "2011 Water Conservation Master Plan".

[4] Existing recycled water achieved per the "1993 Water Supply Management Program" and planned recycled water program savings as outlined in Chapter 5 of the UWMP 2010.

[5] Projected available supply data includes dry year supply deliveries from the Freeport Regional Water Project (FRWP) and Bayside Groundwater Project, Phase 1. Delivery rules for the FRWP follow the rules as developed in the Freeport EIR, 2003.

[6] Rationing reduction goals are determined according to projected system storage levels in the Long-Term Drought Management Program guidelines per Table 3-2 in Chapter 3 of the UWMP 2010.

[7] The supplemental supply need is based on EBMUDSIM modeling studies. It is the amount of water needed based on EBMUD's updated demand projections, the provisions of the 1998 Joint Settlement Agreement and the rationing policy stated in Table 3-2, Chapter 3 of the UWMP 2010. The actual need will be dependent on antecedent conditions and the severity of actual drought conditions. Supplemental supply stored during the initial year of the drought could be later released, diminishing supplemental supply needs. During the drought that continued into 2010, the combined effects of water rationing and an economic downturn suppressed demand below the planning level of demand to maintain a sufficient water supply and deferred the need for supplemental water. However, if the drought had continued into its second year, most likely supplemental supplies would have been obtained from the Freeport Regional Water Facility as anticipated in the Interim Drought Management Program Guidelines discussed in Appendix G-2.

APPENDIX C

PG&E WILL SERVE LETTER

1100 South 27th st.,
Richmond, CA 94804

Pacific Gas and Electric Company®

May 30, 2014

Ian Cole
NCE
8795 Folsom Blvd., Suite 250
Sacramento, CA 95826

RE: WILL SERVE LETTER, South Shoreline Project, Richmond

To whom it may concern:

Electric & Gas facilities will be extended to your referenced project.

Extensions of these facilities will be made in accordance with our gas and electric rules and regulations on file with the State of California Public Utilities Commission at the time the applicant applies for gas and electric service.

Please refer any inquiries to me at (510) 231-2937.

Sincerely,

Cedricke Dennis
Industrial Power Engineer