Monthly Operating Report
Veolia Richmond CPM, WPCP and Collection System
December 2018

Executive Summary

- Between the first and second week of September, conditions in the treatment plant developed such that the amount of solids in the activated sludge process began to drop without a clear understanding of why. The condition has been affecting the settling and growth characteristics of the activated sludge system since. Plant staff has evaluated process changes and installed polymer and chemical feed as remedial measures. In addition, several consultants, expert in the field of wastewater process operations have been engaged to assist in the investigation. The City's pretreatment/source control staff has been working with business and industry in the service area to determine that if there are any discharges of materials to the sewer system that may be impacting the plant's biological process. As of this writing, the process appears to be stabilizing and improving however the inbound rains and high flows will likely be stress the process.

- As a result of the conditions noted above, there were five (5) NPDES permit violations during the month of December 2018. The monthly average effluent limits for BOD and TSS were 39 and 43 mg/l respectively. Both of those values are above the limit of 30 mg/l. In addition there were two weekly average exceedances of TSS (limit of 45 mg/l and values of 50 and 57) and one weekly average exceedance of BOD (limit of 45 mg/l and value of 46).

- The monthly acute aquatic bioassay test passed with 90% survival of the test organisms.

- Planning and preparations (proposals and technical documents) are beginning for several major construction projects planned for the treatment plant in 2019. Those include the new grit/headworks system and aeration system upgrades among others.

Wastewater Treatment Plant

- There were five odor complaints during December. Three were called in by individuals driving by the plant (repeat callers) on Canal Blvd. Investigation did not indicate elevated odors or H2S levels from the treatment plant. Two calls were from within the service area however not in the vicinity of the plant. One of those noted a burning (fire log) odor and the other a "sewage leak".

- There were no blending events in December.

Table 1 Parameter	Monthly Performance Indicators	Limit/Target
Treatment Plant Operations:		
Influent Flow, daily average (MGD)	4.83**	N/A
Effluent Flow, daily average (MGD)	6.85	N/A
Influent BOD_5, avg. mg/L	280	N/A
Influent TSS, avg. mg/L	403	N/A
Effluent TSS, monthly average mg/L	43.5	30 or less
Effluent BOD, monthly average mg/L	39	30 or less
% BOD Removal	86	> 85
% TSS Removal	88	> 85
NPDES Effluent Limit Violations	5	0
Blending events	0	0
Total volume blended, MG	0	0
Odor complaints	1	0
Digested sludge pumped to drying beds, MG	1.412	N/A
Leachate received, GAL	291,564	N/A
Leachate received/treated YTD, MG	3.844	N/A

** Influent flow meter out of service for most of the month. Value biased low.

Maintenance

Asset Management Work Orders

Work Order Type	# Completed
Storm Water Pump Stations	65
Sewer Pump/Lift Stations	77
Treatment Plant	153
Corrective	41
Total	336

Completed Projects

- Working with Veolia Corporate Asset Management staff on repair and replacement plan for the next few years and inventory control system

Look Ahead; December- January 2018/2019

- Complete the 23rd Street Storm Water Pump Station Motor Control Panel Upgrade Project
- Complete the ATI SBS-Chlorine Analyzer Replacement Project.

Collections System and Storm O&M

Sanitary Sewer System Highlights

Project is currently in first year of cycle for sanitary sewer pipe cleaning (2018-2021).

During the month of December, there was (3) sanitary sewer overflow events. Year-to-Date Wet-weather/Dry-weather YTD SSO totals are as follows:

- Wet-weather (rain event) = 1-YTD
- Dry-weather (non-rain event) SSOs = 12-YTD

Relative to CCTV condition assessment production:

- InfoNet database has been brought current, consultant's work to complete RAA draft by 1/4/2019 continues using both the initial InfoNet database files submitted November-2018 and updated database information generated since the November-2018 initial dataset from InfoNet files
    - Initial reports are showing (291) pipe segments as being inaccessible to complete a CCTV condition assessment with the breakdown as follows:
        - (159) pipe segments inaccessible due to pipe segment structural conditions
        - (84) pipe segments inaccessible due to (likely) O&M conditions, pipe segments will be re-qualified in the field
        - (29) pipe segments inaccessible due to conditions that must be re-qualified in the field
        - (17) due to camera issues that may be O&M and/or structure conditions and/or technology issues that must be re-qualified in the field

There were a total of (20) sanitary system calls, (7) of which were property lateral issues, (7) of which were sewer line main-related, (1) was a sinkhole, and (5) of which non-City of Richmond system related; there was (6) storm system service calls. Below, see Table 2-a for Collection System Performance Indicators and the Table-3 for Collection System Activity Summary for performance indicator data specifics.

Sanitary Sewer Point Repair:

(0) Sanitary system repairs performed during the month

Storm Water System Highlights

Richmond CPM, WPCP and Collection System

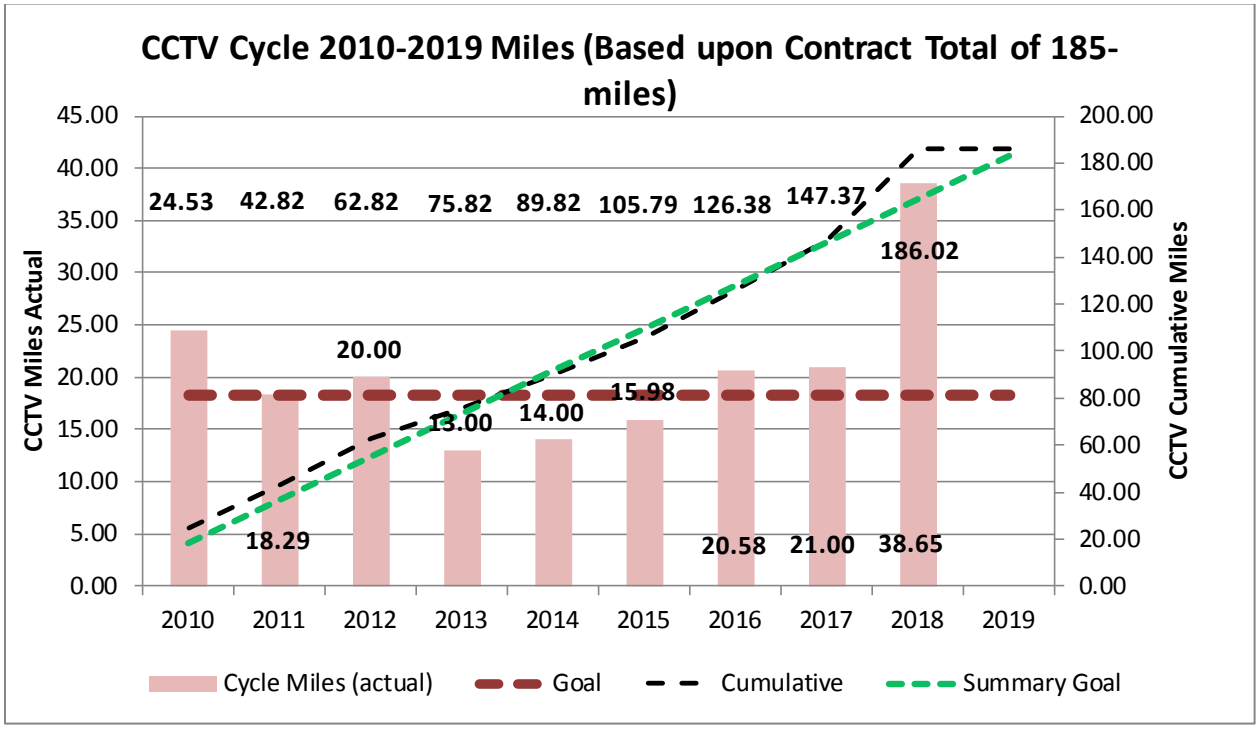
- Cleaned (11) Catch Basins
- Cleaned (0) V-ditches

Storm Water System Point Repairs

(0) Storm system repairs performed during the month

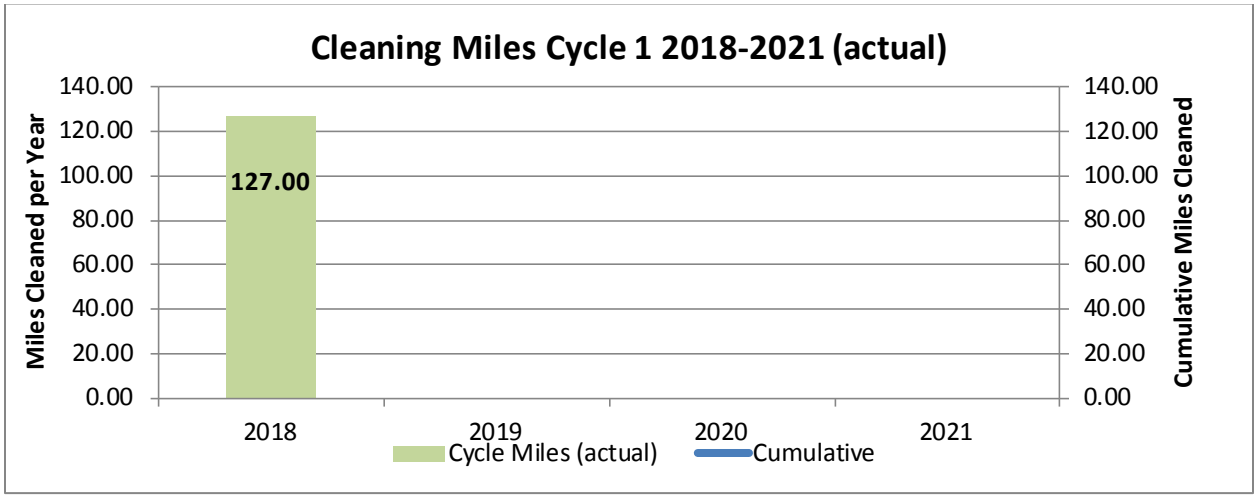
Collection Systems Monthly Performance Indicators

Veolia is in the 9th year of a 10-year CCTV cycle. Cycle start date was January 1, 2010. *



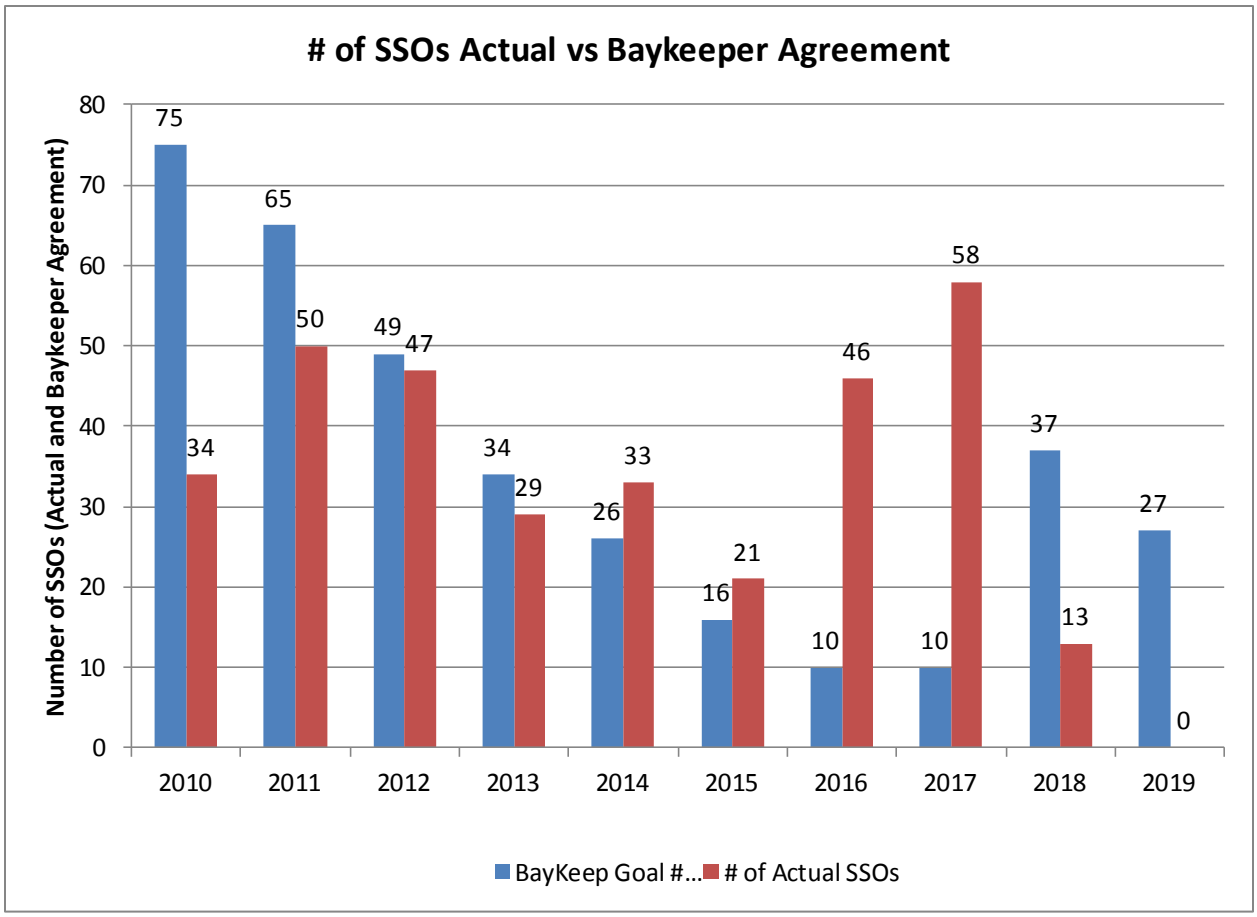
*Note: goal mileage is based upon 18.5-miles/year to correspond with Contract Amendment #1 system mileage of 185-miles and recently reported City GIS mileage of 183-miles

Veolia is in the 1st year of a 4-year sewer cleaning cycle. Cycle start date was January 1, 2018.



Richmond CPM, WPCP and Collection System

SSO performance compliance with past and 2018 Baykeeper Settlement Agreement



Sanitary System Performance Indicators

Table 2-a

Performance Indicator	Monthly Actual	Target/Limit
Service Calls (Public Facilities/Assets)	9	N/A
Service Call Response Time (minutes)	<30	<30
Private Lateral Service Calls; Regular/After Hours	4/3	N/A
Regular/OT Hours Spent on Private Lateral Calls	4/9	N/A
Point Repairs Completed	0	N/A
Manhole Inspections	0	N/A
Manhole Repairs	0	N/A
CCTV (Closed Circuit TV) (ft.)	5,522	7,000
GPS Surveys	0	As needed
Cleaning (ft.)	25,667	20,130
Cleaning QA/QC Events	0	8

Richmond CPM, WPCP and Collection System

SSOs for current month – Mainline	3	3.1/Mth
Total Mainline SSO Volume (gallons)	190	0
Total Mainline SSO Volume Recovered (gallons)	40	100%
% Mainline SSO Volume Recovered	100%	100%
# SSOs – Wet Weather (localized capacity issue)	0	0
# SSOs – Engineered Overflow Structure	0	0
Total SSO Volume from Engineered Overflow Structure	0	N/A
SSOs – Private Laterals	0	N/A
General Maintenance	0	N/A
Potential SSOs Eliminated due to Smart Cover Monitors	0	N/A
SSOs – Mainline – Resulting in Property Damage	1	0
Total Wet Weather SSOs Year to Date	1	20 Combined Wet Weather/Dry Weather Annual - Baykeeper
Total Dry Weather SSOs Year to Date	12	
Number and Percentage of SSOs During 2018 with Discharge Reaching Storm Water Conveyance	4 of 13 = 31%	N/A

Rest Of Page Intentionally Left Blank

Richmond CPM, WPCP and Collection System

Table 2-b Data detail to the Sanitary System Performance Indicators noted in Table 2-a above are as follows:

Richmond CA Collection System Activity Summary

VEOLIA

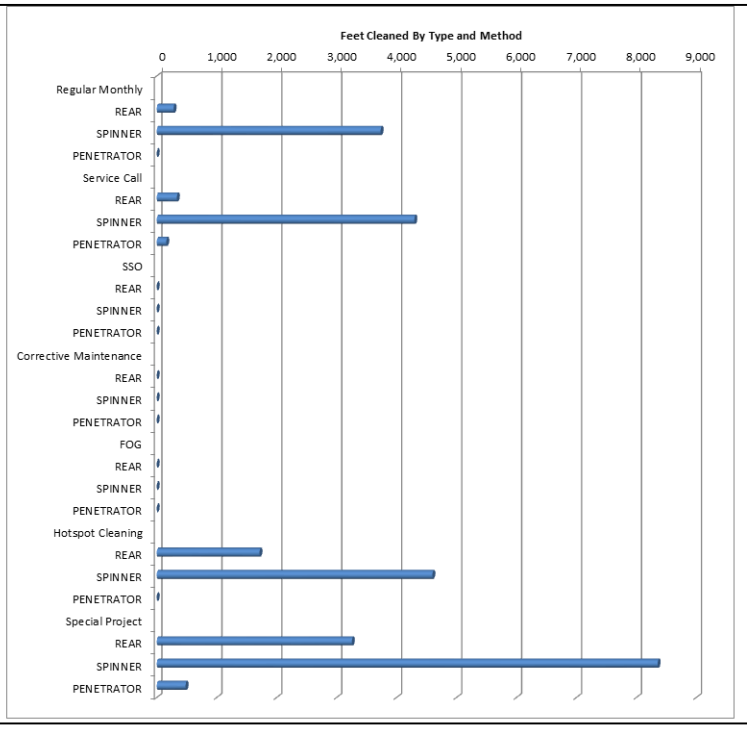
Collection and Conveyance
Report Period **January-19**

Line Cleaning Summary

Total Lines Cleaned:	84
Total Footage Cleaned:	28,081.74 ft
Total Footage with Cleaning Method:	27,212.74 ft
Unknown Cleaning Method Footage:	869.00 ft

Footage by Cleaning Method

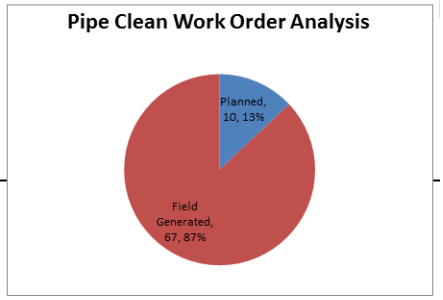
Regular Monthly	
REAR	282.00 ft
SPINNER	3,734.00 ft
PENETRATOR	0.00 ft
Service Call	
REAR	336.00 ft
SPINNER	4,297.00 ft
PENETRATOR	160.00 ft
SSO	
REAR	0.00 ft
SPINNER	0.00 ft
PENETRATOR	0.00 ft
Corrective Maintenance	
REAR	0.00 ft
SPINNER	0.00 ft
PENETRATOR	0.00 ft
FOG	
REAR	0.00 ft
SPINNER	0.00 ft
PENETRATOR	0.00 ft
Hotspot Cleaning	
REAR	1,713.97 ft
SPINNER	4,598.77 ft
PENETRATOR	0.00 ft
Special Project	
REAR	3,255.00 ft
SPINNER	8,355.00 ft
PENETRATOR	481.00 ft



Pipe Clean Production

Work Order Scheduling

By Crew Leader	Footage	# of days	Footage per day	Planned	Field Generated
ARMSTRONG	0.00	0	0	0	0
HENDRICKS	769.81	1	769.81	2	0
LEWIS	13,275.69	11	1,206.88	4	32
HILL	0.00	0	0	0	0
WALLIS	0.00	0	0	0	0
MENDOZA	11,521.23	18	640.07	4	35
SIMONETTI	0.00	0	0	0	0
Totals	**25,566.74**	**30**	**852.22**	**10**	**67**

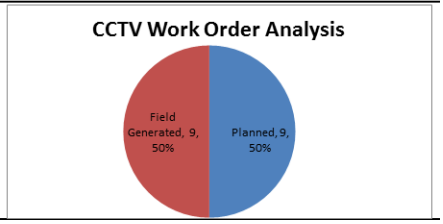


Pipe Clean by Pipe Material	Footage	# of Segments
VCP	23,120.60	68
PVC	4,462.26	15
Unknown or Other	498.88	1
	28,081.74	**84**

CCTV Activity Summary

Work Order Scheduling

CCTV Total Footage	**2011.10 ft**	9	9
Successfully Imported			
Number of Lines Tved:	11		
Total Footage Tved:	2,011.10 ft		
Unsuccessfully Imported			
Number of Lines Tved:	7		
Total Footage Tved:	1,655.96 ft		



Richmond CPM, WPCP and Collection System

Manhole Inspections

Number of Manholes Inspected:	0

Fats,Oils & Grease Inspections

Number of FOG Inspections:	0

Pipe Repair

Number of Pipe Repair:	0

Manhole GPS Inspections

Number of Manholes GPS:	0

Manhole Maintenance

Number of Manholes Repaired:	0

Manhole Cleaning

Total Number of Manholes Cleaned:	0
Total number buckets of debree removed:	0
Average number buckets of debree removed:	0

General Maintenance Activities

Vactor Cleaning	0
Jet Cleaning	0
Pump Out	4
Manual Cleaning	0
Visual Inspection	0
Exercise FM Pressure Valve	0
Markout Locations	0

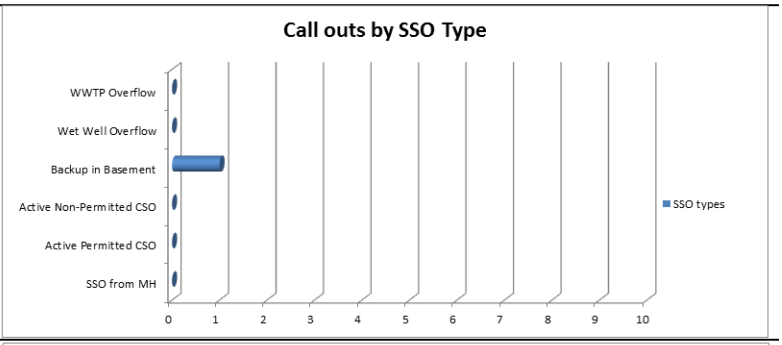
Number of Call Outs

Total Number of Call Outs:	20
Call outs from Customer Complaints:	17
Call outs from SSO:	3

Call outs from SSO:

Call outs by SSO Type

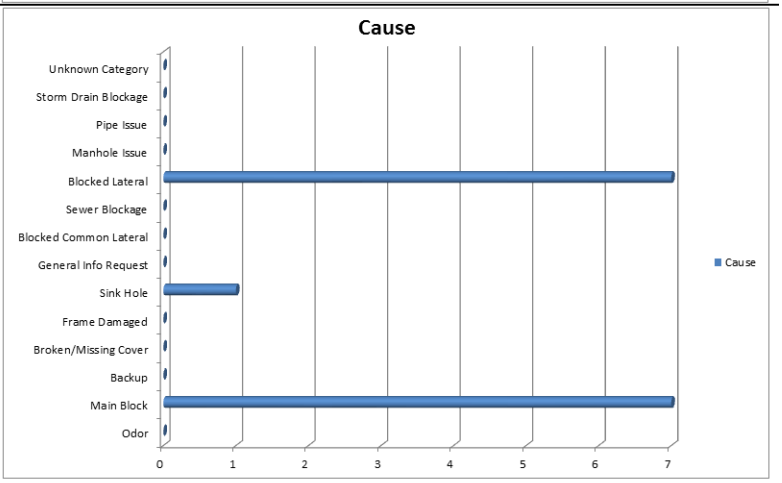
SSO from MH	0
Active Permitted CSO	0
Active Non-Permitted CSO	0
Backup in Basement	1
Wet Well Overflow	0
WWTP Overflow	0



Call outs from Customer Complaints:

Call outs by Cause

Odor	0
Main Block	7
Backup	0
Broken/Missing Cover	0
Frame Damaged	0
Sink Hole	1
General Info Request	0
Blocked Common Lateral	0
Sewer Blockage	0
Blocked Lateral	7
Manhole Issue	0
Pipe Issue	0
Storm Drain Blockage	0
Unknown Category	0
Totals	**15**



Storm Water System Performance Indicators

Table 3

Performance Indicator	Monthly Actual	Target/Limit
Storm Point Repairs	0	N/A
Storm Manhole Repairs	0	N/A
Storm Manhole Inspections	0	N/A
Storm Service Calls	6	N/A
Storm CCTV (ft)	1-segments (88 ft.)	N/A
Storm GPS Surveys	0	N/A
Storm Pipe Cleaning (ft)	0	N/A
Storm General Maintenance Cleaning (Linear feet of V-Ditches, Culverts or Creeks)	0-segments (0-LF)	N/A
Pump Stations/Inlet/Outlet Channels Cleaned	0	N/A
Catch Basins/Inlets/Storm Drains Cleaned	11	N/A
Storm Vaults Cleaned/Inspected	0	N/A
GSRD (trash capture device) Cleaning/Inspections	0	4/year
Flap Gate/Duck Bill Inspections	0	4/year

CAPITAL IMPROVEMENT PROGRAM

DECEMBER 2018

13th Street & Dunn and 23rd Street Rehabilitation Projects. *W.R. Forde; V.W. Housen & Associates. The 13th Street & Dunn project has been combined with the 23rd Street Sewer Replacement. The project was awarded to W.R. Forde at $8.1M. Revised by CO $10.7M. Construction is 100% complete.*

- Final invoicing was completed and will be sent to the City in early January.
- Close out project files on thumb drive will be delivered to Patrick Phelan of the City of Richmond.

2019 Risk Model Update and Risk Assessment Analysis (RAA). *V.W. Housen & Associates (VWHA)*

- SF Baykeeper (BK) 2019 RAA Document to be submitted by January 15, 2019.

Richmond CPM, WPCP and Collection System

Baykeeper (BK) Sewer Pipe Rehabilitation – Phase I & II. *Bay Hawk and W.R. Forde (Phase I)*

- Construction on Phase 1 began in October 2018 for 41 point repairs on 22 line replacements as part of FY17/18 funding.
- Facing inclement weather and holidays, Bay Hawk completed two point repairs in December.
- A proposed pipe segment point repair on 32nd & McBryde was removed from Phase 1 project due to a recently updated CCTV review showing further deterioration of the pipe. This segment will be added to future Phase of project for a full line replacement.
- CPM will formulate the Phase 2 project once the FY18/19 RAA is finalized in January 2019. Phase 2 will consist of approximately 0.48 miles to achieve the rolling 2 mile/year rolling average per the BK Agreement.

Cutting/Carlson & Hoffman Boulevard Projects. *V. W. Housen & Associates (VWHA). These projects replace pipelines which have NASSCO Pipeline Assessment Certification Program (PACP) Structural Grade 4 and 5 level defects in the sewer sheds that flow to Cutting Boulevard. The intention is the reduction of inflow and infiltration which will reduce the need to upsize the Cutting Boulevard interceptor, thereby reducing overall cost and construction impact to the City. Construction W.R. Forde, $7,674,491 for both projects.*

- Approximately 7,000LF have been installed through December.
- The Contractor had two crews working in December.

MacDonald and Virginia Project. *V. W. Housen & Associates. These projects replace pipelines which have NASSCO Pipeline Assessment Certification Program (PACP) Structural Grade 4 and 5 level defects in the vicinity of MacDonald and Virginia. The intention is the reduction of inflow and infiltration which will reduce the need to upsize the Cutting Boulevard interceptor, thereby reducing overall cost and construction impact to the City.*

- 90 percent design submittal is on schedule to be completed by January 25, 2019. A design review meeting will be scheduled for the end of January/early February.
- Bid ready documents will be finalized in March 2019; bidding through the City's BidsOnline process scheduled for April-June 2019 timeframe with construction to begin in the fall of 2019. Baykeeper Construction deadline is June 30, 2021.

Manhole Rehabilitation Project FY18/19. *Bay Hawk. In-house design continued to replace additional manholes within the City's collection system.*

- The Task Authorization (TA) for FY18/19 Manhole Rehabilitation was executed in November. Four manholes have been rehabbed through December.
- City budget for this effort was reduced to $250K for this fiscal year and moving forward.
- Force Main manholes identified by V&A Consulting Engineers to be rehabbed under the Force Main Assessment project will be added to this project.

Sewer Master Plan Update. *V.W. Housen & Associates. The purpose of this project is to update the City's wastewater collection system hydraulic model to a full-pipe model. This effort includes system-wide flow monitoring during the 2017-18 wet weather season; update the City's Risk Management Model to reflect current CCTV inspection and O&M data; develop recommendations to address pipeline capacity issues and rehabilitation and replacement (R&R) needs; develop an updated Capital Improvement Program (CIP) that builds upon the existing CIP; develop an updated Master Plan report that incorporates the work described above. Project is 13% complete.*

Richmond CPM, WPCP and Collection System

- Flow monitors were installed on November 30, 2018; flow monitoring will continue through March 31, 2019.
- The Hydraulic Model network development has begun. Review of the latest GIS pipe and node layers is underway; anticipated to be completed at the end of December.

Trash Capture Device Installation Project (Regatta Boulevard). *Harris & Associates/Contech Engineering. In March 2017, CalTrans and the City of Richmond entered into a Cooperative Implementation Agreement (CIA) for improvement to the State Highway System as a watershed stakeholder with the City's jurisdiction. Pursuant to Attachment IV of the CalTrans NPDES Permit, CalTrans and the City of Richmond are to collaboratively implement the Water Capture Facility, hereinafter referred to as a Trash Capture Project.*

- Task Authorization for design was executed in late November 2018; design for installation of the trash capture devices was underway in December.
- Purchase Order created for the trash capture device procurement/design (Contech) and design subcontract (Harris & Associates) executed by Veolia in December.
- Bid Ready construction documents expected in February; bidding construction through City BidsOnline expected in March with construction in April/May.

WWTP Stormwater Perimeter Site Evaluation and Topo Survey. *Nichols Consulting Engineers (NCE). The purpose of this project is to complete a review of existing information, topographic surveys and field data collection, preliminary hydrologic and hydraulic analyses, review regulatory and permitting requirements, and develop improvement alternatives for stormwater flows and flooding that come from the hillside watershed area to the west of the Richmond Water Pollution Control Plant during wet weather. Assessment of existing conditions is 100% complete. Development of design alternatives 80% complete. Review of construction related permit requirements 100% complete.*

- NCE provided updated design alternatives #1 and #2 and summary of anticipated regulatory permit requirements related to construction in mid-November for client review.
- Design review meeting was scheduled for December 5, 2018, and cancelled due to scheduling conflicts.

WWTP High Priority Projects. *Engineers: Carollo Engineers; Contractor: C. Overaa Construction & Co. This project is a result of the WWTP Critical Improvements Project Design. The purpose of this project is to replace aging infrastructure and to improve treatment reliability and operating efficiency, beginning with the secondary Clarifiers. Initial design services are 95% complete; design services during construction are 12.5% complete; construction is 100% complete.*

- Carollo is still on hold regarding their design efforts until further notice.
- The Secondary Clarifier project is complete and was turned over to Operations on December 7, 2018; it is operating as designed.