

# Monthly Operating Report

## Veolia Richmond CPM, WPCP and Collection System

### March 2019

## Executive Summary

- In mid-February, at least in part triggered by over wasting (removal of activated sludge from the from the treatment plant's aeration system), the plant processes transitioned to an inhibited and upset condition. The biological process has not been functioning in its usually robust, compliant and effective manner. As a result, certain parameters (biochemical oxygen demand (or BOD) and total suspended solids (or TSS)) exceeded NPDES permit limits in March as noted in Table 1 immediately below. In addition to the BOD and TSS exceedances, there was also a missed pH sample during month by laboratory staff. Three pH samples are required to be collected and analyzed however only two of three were processed. To date, all required reports have been submitted to the State and corrective measures have been implemented for the missed pH sample. Corrective and mitigation measures to investigate and resolve the plant process upset are continuing.

**Table 1**

<b>March-2019 EFF-002 Conditions of Non-Compliance</b>				
<b>Parameter</b>	<b>Type</b>	<b>Limit</b>	<b>Date</b>	<b>Value</b>
Biochemical Oxygen Demand (BOD)	(5-day @ 20 Deg. C)	Effluent Weekly Average mg/L Max 45	3/9/2019	48
Biochemical Oxygen Demand (BOD)	(5-day @ 20 Deg. C)	Effluent Weekly Average mg/L Max 45	3/23/2019	62
pH minimum sampling frequency	Grab	(3) samples/week	3/30/2019	2
Biochemical Oxygen Demand (BOD)	(5-day @ 20 Deg. C)	Effluent Weekly Average mg/L Max 45	3/30/2019	53
Total Suspended Solids (TSS)	(TSS)	Effluent Monthly Average mg/L 30	3/31/2019	37
Biochemical Oxygen Demand (BOD)	(5-day @ 20 Deg. C)	Effluent Monthly Average mg/L 30	3/30/2019	50
TSS Percent Plant Removal	(BOD)	85% minimum	3/31/2019	82
BOD Percent Plant Removal	(BOD)	85% minimum	3/31/2019	68

- The monthly acute aquatic bioassay test passed with 100% survival of the test organisms. A chronic toxicity test also passed with less than 2.5 toxicity units for both organism survival and growth.

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- Planning and preparations (proposals, air permitting and technical design documents) are underway for several major construction projects planned for the treatment plant in 2019. Those include the new grit-headworks system, aeration system upgrades and electrical cogeneration system among others.

**Wastewater Treatment Plant**

- There were no odor complaints in February.
- There was a single blending event in March. It occurred from the 6<sup>th</sup> through 7<sup>th</sup> for 26.75 hours. Total volume blended was 6.44 with .92 inches of rain measured during the period.

<b>Table 2</b> Parameter	Monthly Performance Indicators	Limit/Target
<b>Treatment Plant Operations:</b>		
Influent Flow, daily average (MGD)	7.84**	N/A
Effluent Flow, daily average (MGD)	10.86	N/A
Influent BOD <sub>5</sub> , avg. mg/L	158	N/A
Influent TSS, avg. mg/L	210	N/A
Effluent TSS, monthly average mg/L	37	30 or less
Effluent BOD, monthly average mg/L	50	30 or less
% BOD Removal	68	> 85
% TSS Removal	82	> 85
NPDES Effluent Limit Violations	8	0
Blending events	1	0
Total volume blended, MG	6.44	0
Odor complaints	0	0
Digested sludge pumped to drying beds, MG	1.323	N/A
Leachate received, GAL	533,751	N/A
Leachate received/treated YTD, MG	1.303	N/A

\*\*For parts of 7 days the plant bar screen was out of service and as such staff was forced to use the wet weather pump station pumps to move water into the treatment plant. In this operational mode the influent flow meter is largely bypassed which skews that meter and total flow measured low.

**Maintenance**

Asset Management Work Orders

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**Table 3**

Work Order Type	# Completed
Storm Water Pump Stations	79
Sewer Pump/Lift Stations	88
Treatment Plant	93
Corrective	33
Total	201

**Completed Projects**

- Completed the ATI Chemical SBS-Chlorine Analyzer Replacement Project
- Replaced non-functional space heaters with new gas radiant heat units in maintenance building
- Replace Muffin Monster inline grinder #112 in heat exchange building
- Removed damaged Head Works Bar Screen carrier unit and replaced with back-up, returned to service

**Look Ahead; March – April 2019**

- Complete the 23<sup>rd</sup> Street Storm Water Pump Station Motor Control Panel Project
- Replace RAS electromagnetic flow meter
- Complete 1<sup>st</sup> 2019 bi-annual Dystor cover inspection on both digesters
- Install new semi-portable prominent polymer activation/feed system in secondary process
- Install new burner on Hurst Boiler #1, upgrade PG&E meter & gas pressure system

**Collection System Monthly Report**

**Sanitary Sewer System Highlights**

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

During the month of March-2019, there were (0) sanitary sewer overflow events. Year-to-Date Wet-weather/Dry-weather YTD SSO totals are as follows:

- Wet-weather (rain event) = 21-YTD
- Dry-weather (non-rain event) SSOs = 0-YTD
- Total SSO's = 21-YTD

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Relative to Baykeeper and Contractual CCTV condition assessment production:

1. Status Update of CCTV required by Baykeeper and for Updated 2019 RAA
  - a. (291) pipe segments requiring updated condition assessment (i.e. current condition assessment is less than 10-years old but based upon less than 70% of the pipe segment being CCTVd) are being scheduled within Infonet to be completed by the RAA due date of 4/30/2019
  - b. (57) pipe segments completed by Veolia as of 3/30/2019
  - c. (105) segments completed by contractor as of 3/30/2019
  - d. (129) pipe segments remain to be completed by 4/30/2019
    - i. Veolia to complete (96) additional pipe segments by 4/30/2019
    - ii. Contractor(s) to complete (33) additional pipe segment by 4/30/2019
  - e. Annual update "Hot Spot" submitted to City and subsequently submitted by City to Baykeeper for review and comment
  - f. Annual Root Control program on schedule for submission to City by 6/1/2019 for subsequent submission to
2. Status of 10-year CCTV cycle production
  - a. Veolia is in the 10th year of a 10-year CCTV cycle. Cycle start date was January 1, 2010.
  - b. 2019 Pipe segments with CCTV condition assessments greater than 10-years
    - i. Total Pipe Segments = (249), approximately 13-miles or 7% of the total gravity system
    - ii. Pipe Segments Due through March-2019 = (50)
    - iii. Pipe Segments Completed through March-2019 = (0)
      1. Baykeeper RAA CCTV deliverable due 4/30/2019 determined by Veolia to be priority focus of CCTV resources

There were a total of (12) sanitary system calls, (9) of which were property lateral issues, (2) of which were sewer line main-related, (1) odor complaint; there was (53) storm system service calls. Below, see Table 4 for Collection System Performance Indicators and the Table 5 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**

- Cleaned (19) Catch Basins
- Cleaned (0) V-ditches

**Storm Water System Point Repairs**

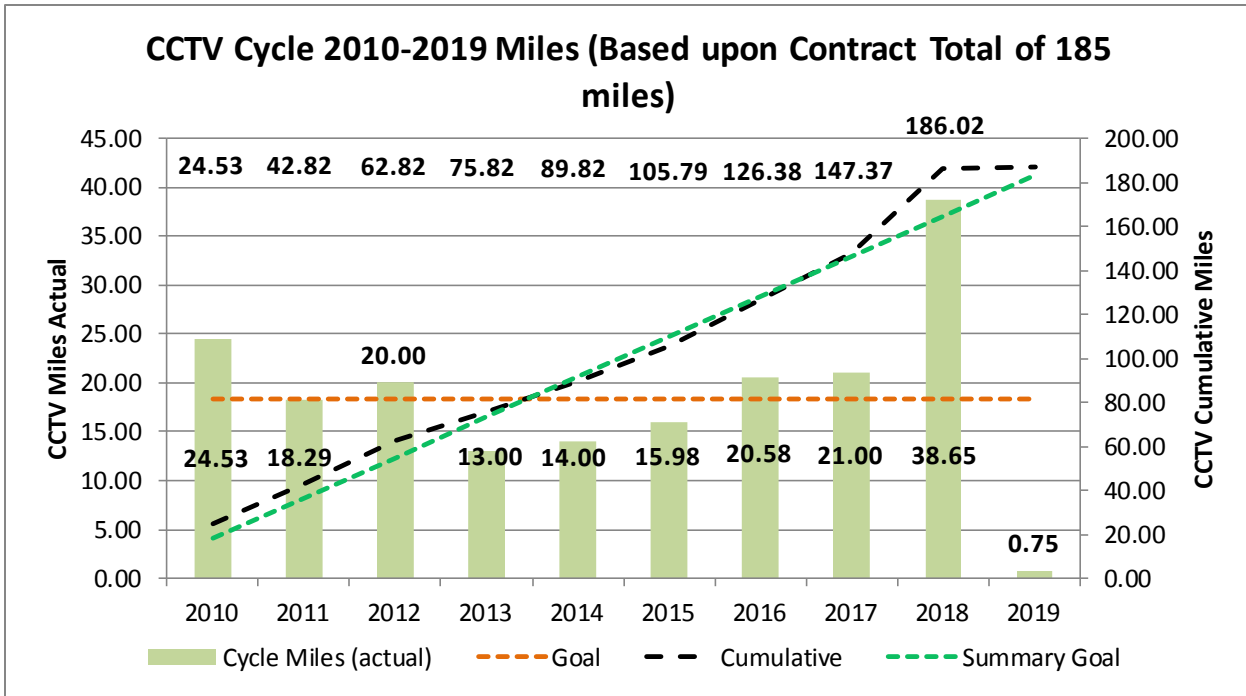
(0) Storm system repairs performed during the month

**Collection Systems Monthly Performance Indicators**

Veolia is in the 10<sup>th</sup> year of a 10-year CCTV cycle. Cycle start date was January 1, 2010.

Richmond CPM, WPCP and Collection System

Chart A



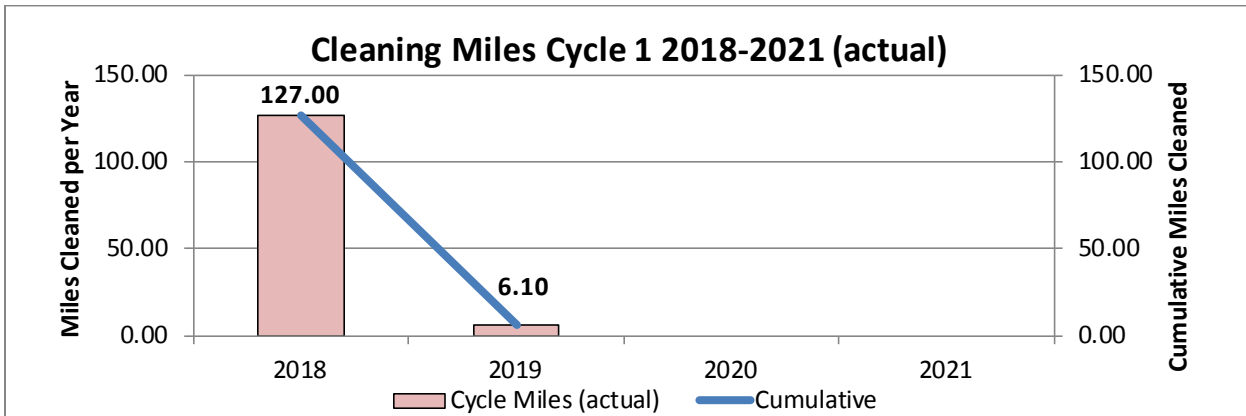
\*Notes:

- 1) 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
- 2) CCTV work completed YTD represent only work completed by Veolia and not by Veolia sub-contractors as subcontractors work not yet downloaded from subcontractor’s database and uploaded to Veolia’s database
- 3) March CCTV production work significantly impacted focus on completing Baykeeper CCTV deliverable date of 4/30/2019 for re-inspection of (291) pipe segments

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

- 6.1-miles of target 45-miles/year completed
- Percentage of annual target miles completed = 14%
  - Percentage of year elapsed = 25%

Chart B

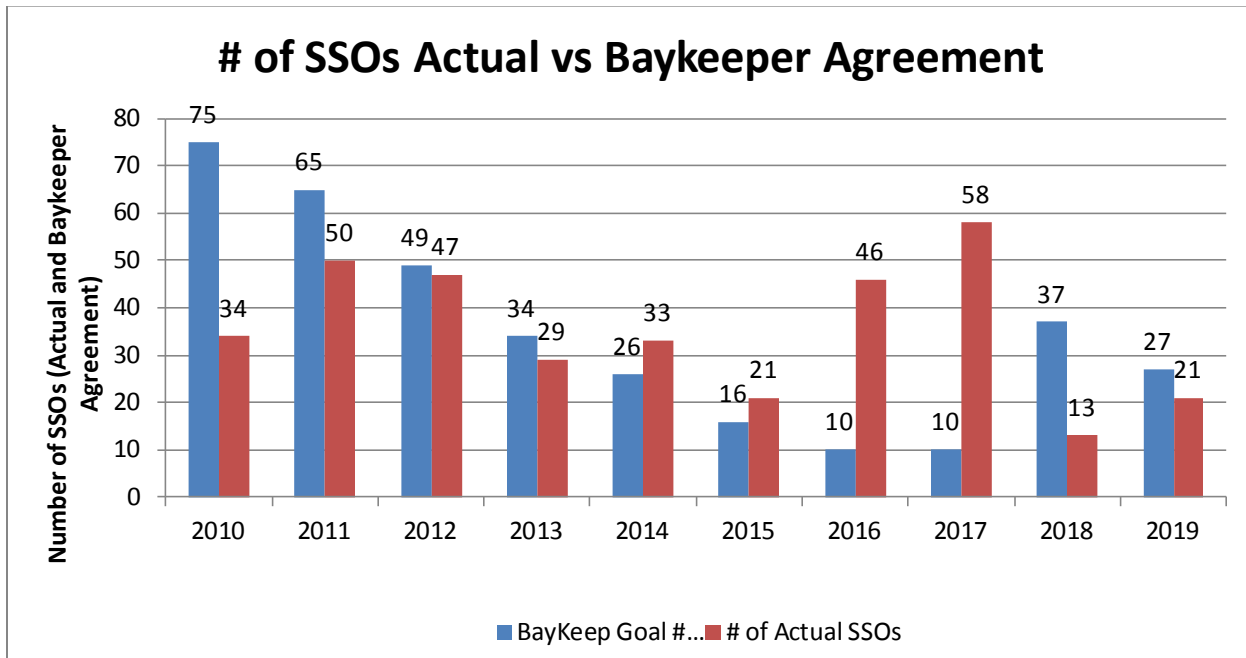


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1) Cleaning work completed YTD represent only work completed by Veolia and not by Veolia sub-contractors as subcontractors work not yet downloaded from subcontractor’s database and uploaded to Veolia’s database

SSO performance compliance with past and current 2018 Baykeeper Settlement Agreement

**Chart C**



**Sanitary System Performance Indicators**

**Table 4**

Performance Indicator	Monthly Actual	Target/Limit
Service Calls (Public Facilities/Assets)	12	N/A
Service Call Response Time (minutes)	<30	<30
Private Lateral Service Calls; Regular/After Hours	4/5	N/A
Regular/OT Hours Spent on Private Lateral Calls	8/15	N/A
Point Repairs Completed	0	N/A
Manhole Inspections	0	N/A
Manhole Repairs	0	N/A
CCTV (Closed Circuit TV) (ft.)	297	7,000
GPS Surveys	0	As needed
Cleaning (ft.)	22,531	20,130
Cleaning QA/QC Events	0	8

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SSOs for current month – Mainline	0	2.25/Month
Total Mainline SSO Volume (gallons)	1,776,219	0
Total Mainline SSO Volume Recovered (gallons)	0	100%
% Mainline SSO Volume Recovered	0%	100%
# SSOs – Wet Weather (localized capacity issue)	21	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	TBD	0
Total Wet Weather SSOs Year to Date	21	27 Combined Wet Weather/Dry Weather Annual - Baykeeper
Total Dry Weather SSOs Year to Date	0	
Number and Percentage of SSOs During 2019 with Discharge Reaching Storm Water Conveyance	21 of 21 = 100%	N/A

**Table 5** Data detail to the Sanitary System Performance Indicators noted in Table 4 above are as follows:

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Richmond CPM, WPCP and Collection System

Richmond CA Collection System Activity Summary



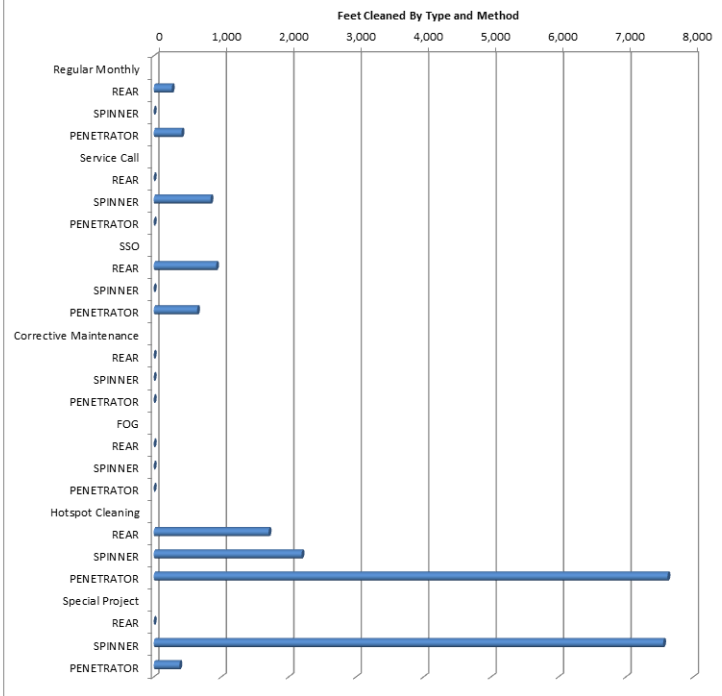
Collection and Conveyance  
Report Period March-19

Line Cleaning Summary

Total Lines Cleaned:	80
Total Footage Cleaned:	22,530.72 ft
Total Footage with Cleaning Method:	22,530.72 ft
Unknown Cleaning Method Footage:	0.00 ft

Footage by Cleaning Method

Regular Monthly	
REAR	267.42 ft
SPINNER	0.00 ft
PENETRATOR	411.52 ft
Service Call	
REAR	0.00 ft
SPINNER	841.30 ft
PENETRATOR	0.00 ft
SSO	
REAR	924.71 ft
SPINNER	0.00 ft
PENETRATOR	642.81 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	1,702.44 ft
SPINNER	2,191.26 ft
PENETRATOR	7,617.14 ft
Special Project	
REAR	0.00 ft
SPINNER	7,552.79 ft
PENETRATOR	379.34 ft

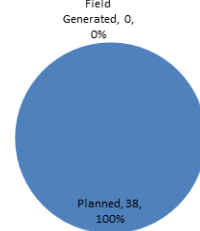


Pipe Clean Production

By Crew Leader	Footage	# of days	Footage per day	Planned	Field Generated
ARMSTRONG	0.00	0	0	0	0
HENDRICKS	313.71	1	313.71	1	0
LEWIS	4,093.77	5	818.75	11	0
HILL	0.00	0	0	0	0
WALLIS	0.00	0	0	0	0
MENDOZA	10,011.01	10	1,001.10	26	0
SIMONETTI	0.00	0	0	0	0
<b>Totals</b>	<b>14,418.49</b>	<b>16</b>	<b>901.16</b>	<b>38</b>	<b>0</b>

Work Order Scheduling

Pipe Clean Work Order Analysis



Pipe Clean by Pipe Material

Pipe Material	Footage	# of Segments
VCP	18,670.47	64
PVC	2,060.80	6
Unknown or Other	1,799.45	10
<b>Totals</b>	<b>22,530.72</b>	<b>80</b>

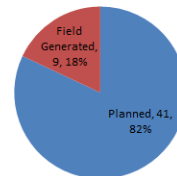
CCTV Activity Summary

CCTV Total Footage	297.10 ft
Successfully Imported	
Number of Lines Tved:	3
Total Footage Tved:	297.10 ft
Unsuccessfully Imported	
Number of Lines Tved:	47
Total Footage Tved:	12,913.92 ft

Work Order Scheduling

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CCTV Work Order Analysis





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**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**

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

**Number of Call Outs**

Total Number of Call Outs: 14

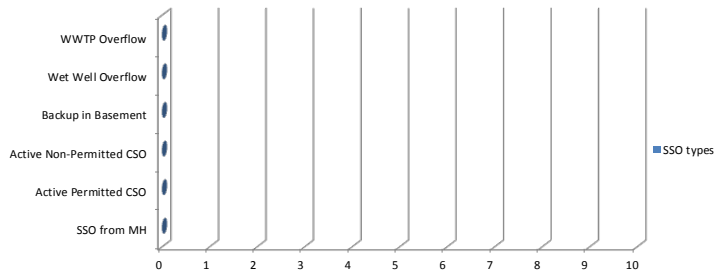
Call outs from Customer Complaints: 14

Call outs from SSO: 0

**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	0
Wet Well Overflow	0
WWTP Overflow	0

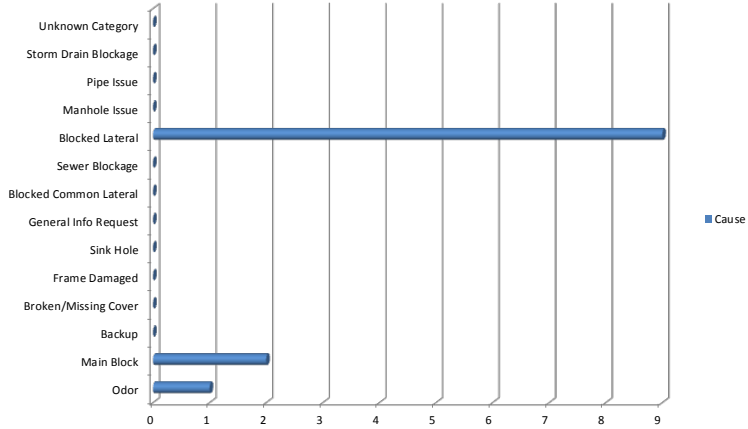
**Call outs by SSO Type**



**Call outs from Customer Complaints:**

Call outs by Cause	
Odor	1
Main Block	2
Backup	0
Broken/Missing Cover	0
Frame Damaged	0
Sink Hole	0
General Info Request	0
Blocked Common Lateral	0
Sewer Blockage	0
Blocked Lateral	9
Manhole Issue	0
Pipe Issue	0
Storm Drain Blockage	0
Unknown Category	0
<b>Totals</b>	<b>12</b>

**Cause**



**Storm Water System Performance Indicators**

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**Table 6**

<b>Performance Indicator</b>	<b>Monthly Actual</b>	<b>Target/Limit</b>
Storm Point Repairs	0	N/A
Storm Manhole Repairs	0	N/A
Storm Manhole Inspections	0	N/A
Storm Service Calls	24	N/A
Storm CCTV (ft)	0-segments (0-ft.)	N/A
Storm GPS Surveys	0	N/A
Storm Pipe Cleaning (ft)	1754	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	19	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 (March 2019)**

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

- Provided an updated RAA Report that addressed comments and questions received from SF Baykeeper.
- Veolia Capital Program Management (CPM) has started vetting Year One priority line segments listed in the 2019 RAA and will be establishing a Year 2 Sewer Repair list.

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

- Bay Hawk completed two point repairs in March – one at 31<sup>st</sup> and Garvin, and one at Harbour Way and Barrett.
- Phase I of this project is approximately 90% complete as of March 2019.

**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 19,285 LF has been installed through March 2019.

### *Richmond CPM, WPCP and Collection System*

- The Contractor had three crews working in March.
- March rains kept the Contractor from some work, but the overall schedule remains intact.
- Post CCTV, manhole testing and final paving to commence in April.

**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 review meeting was held early February.
- CCTV records are pending, as the consultant needed to answer questions from the 90 percent design review meeting regarding coordination with PG&E.
- Bid ready documents will be completed after the CCTV data is received in April; bidding through the City's BidsOnline process scheduled for May 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 manholes within the City's collection system.*

- Bay Hawk installed two new manholes and rehabbed three manholes in March.
- City budget for this effort was reduced to \$250K for this fiscal year, which will also be the annual amount moving forward.
- Project is approximately 60% complete as of March.

**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 50% complete.*

- Flow monitors were installed on November 30, 2018; flow monitoring continued through March 31, 2019. Data will be received approximately 4 weeks after meters are removed.
- Parcel flows have been assigned to modeled manholes, and dry weather calibration is in process. The basis for dry weather flow calibration is data collected through early February 2019. Wet weather calibration will begin after final meter data is received.
- An updated capacity plan will be developed by July 15, 2019 as required by SF Baykeeper.

**Trash Capture Device Meeker Ditch Installation Project.** *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.*

- W.R. Forde is the low bidder and has begun mobilization on the project.
- Contractor submitted encroachment permit application and traffic control plan to City for approval.
- Potholing, excavation and shoring to commence in April. Delivery of Trash Capture Devices scheduled for late April-early May.

### *Richmond CPM, WPCP and Collection System*

**WWTP High Priority Projects.** *Engineers: Carollo Engineers; 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. Secondary Clarifiers Construction is 100% complete. Grit/Aeration/Blower Building design is going through Carollo's internal QA/QC check before getting released for bidding purposes.*

- As-Needed SRF Application Assistance
  - Submitted project memorandum summarizing status updates for the project.
  - Attended regular SRF conference calls and provided updates on the status of the application review.
  - Conducted SRF calls with Veolia and the State to determine feasibility, schedule impacts, and additional information/review required to include the solids facilities demolition in the SRF loan.
- WWTP Critical Improvements – Bid Documents
  - Continued preparation of bid documents.
  - Prepared for and conducted Work Restrictions Workshop on 3/13.
  - Prepared for and conducted Construction Schedule Workshop on 3/26, which included presentation of: engineer's construction cost estimate, feasibility of constructing the facilities using space in the nursery, and construction schedule.
  - Continued preparation of and submitted Draft Engineer's Construction Cost Estimate for the solids facilities demolition.
  - Continued preparation of and submitted Draft Engineer's Construction Cost Estimate for the original project. Note this cost estimate includes the original scope items, but does not include potential additional scope items (e.g., solids demolition, rehabilitation/replacement of the influent raw sewage pipe beyond what was indicated in the 100% design drawings, etc.)
  - Continued preparation of and submitted Draft Construction Schedule.
  - Continued preparation of and submitted Draft Specifications for Veolia review and comment including: 01140 – Work Restrictions, 01324 – Progress Schedules and Reports, 01500 – Temporary Facilities and Controls.
- ESDC - Secondary Clarifier
  - Continued preparation of record drawings due the end of May 2019.