# Monthly Operating Report

## Veolia Richmond CPM, WPCP and Collection System

*February 2019*

## 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 mid-January, the process had improved greatly and in the weeks since has returned to a compliant operational state. A final report on these events remains pending from the consultant and is expected in March.

- There were no violations of NPDES permit requirements or effluent limits in February

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

- 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 no odor complaints in February.

- There were two extensive blending events in February. The first occurred from the 13$^{th}$ through 16$^{th}$ for just over 84 hours. Total volume blended was 49.72 million gallons (MG) with 5.34 inches of rain falling over the 48 hours on the 13$^{th}$ and 14$^{th}$. From February 26 through 28 31.80 MG was blended over a 54.5 hour stretch. About 2.5 inches of rain fell in that 2 day period however the ground saturation from previous rains contributed to the conditions which lead to blending.

*Richmond CPM, WPCP and Collection System*

| Table 1 Parameter | Monthly Performance Indicators | Limit/Target |
|---|---|---|
| **Treatment Plant Operations:** | | |
| Influent Flow, daily average (MGD) | 13.07** | N/A |
| Effluent Flow, daily average (MGD) | 15.37 | N/A |
| Influent $BOD_5$, avg. mg/L | 157 | N/A |
| Influent TSS, avg. mg/L | 186 | N/A |
| Effluent TSS, monthly average mg/L | 18 | 30 or less |
| Effluent BOD, monthly average mg/L | 16 | 30 or less |
| % BOD Removal | 89 | > 85 |
| % TSS Removal | 91 | > 85 |
| NPDES Effluent Limit Violations | 0 | 0 |
| Blending events | 2 | 0 |
| Total volume blended, MG | 81.52 | 0 |
| Odor complaints | 0 | 0 |
| Digested sludge pumped to drying beds, MG | 1.225*** | N/A |
| Leachate received, GAL | 407,522 | N/A |
| Leachate received/treated YTD, MG | 769,018 | N/A |

**Staff is looking into the difference between the daily average influent versus effluent flow values as those numbers typically track more closely. It is thought that there may be an issue with the electronics in the custom (ADS) influent flow measuring device.

*** Sludge transport meter is out of service. Using value of sludge sent to digester in lieu of.

## Maintenance

### Asset Management Work Orders

| Work Order Type | # Completed |
|---|---|
| Storm Water Pump Stations | 60 |
| Sewer Pump/Lift Stations | 81 |
| Treatment Plant | 37 |
| Corrective | 23 |
| Total | 201 |

## Completed Projects

- Most of the maintenance group's project time (not spent on various routine checks and planned work orders etc.) was devoted to emergency work during the very rainy month. It is common to experience equipment failures at the plant and conditions at the sewer lift which requires close attention during heavy and/or extended rain events.

## Look Ahead; March – April 2019

- Complete the ATI Chemical SBS-Chlorine Analyzer Replacement Project.
- Complete the 23rd Street Storm Water Pump Station Motor Control Panel Project.
- Replace RAS electromagnetic flow meter(s)
- Replace non-functional space heaters with new gas radiant heat units in maintenance building

**Collections System and** Storm O&M

### Sanitary Sewer System Highlights

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

During the month of February-2019, there were (19) 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

Relative to CCTV condition assessment production:

- Scheduling has been completed to address the (291) pipe segments noted in the 2019 RAA which require and updated survey such that the PACP Quick Structural Code rating is based upon no less than 70% of the pipe segment having been CCTV condition assessed. In accordance with the notations in the 2019 RAA, the (291) pipe segments shall receive updated CCTV condition assessments by no later than 4/30/2019; in order to achieve this target date of completion Veolia has establish CCTV condition assessment contracts in support of achieving the target date.
- CCTV production and special project work progress impacted series of significant rain events and high sustained plant flows over several days in the aftermath of rain events

There were a total of (23) sanitary system calls, (5) of which were property lateral issues, (1) of which were sewer line main-related, (1) was a manhole; there was (53) 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.

*Richmond CPM, WPCP and Collection System*

**Sanitary Sewer Point Repair:**

(0) Sanitary system repairs performed during the month

**Storm Water System Highlights**

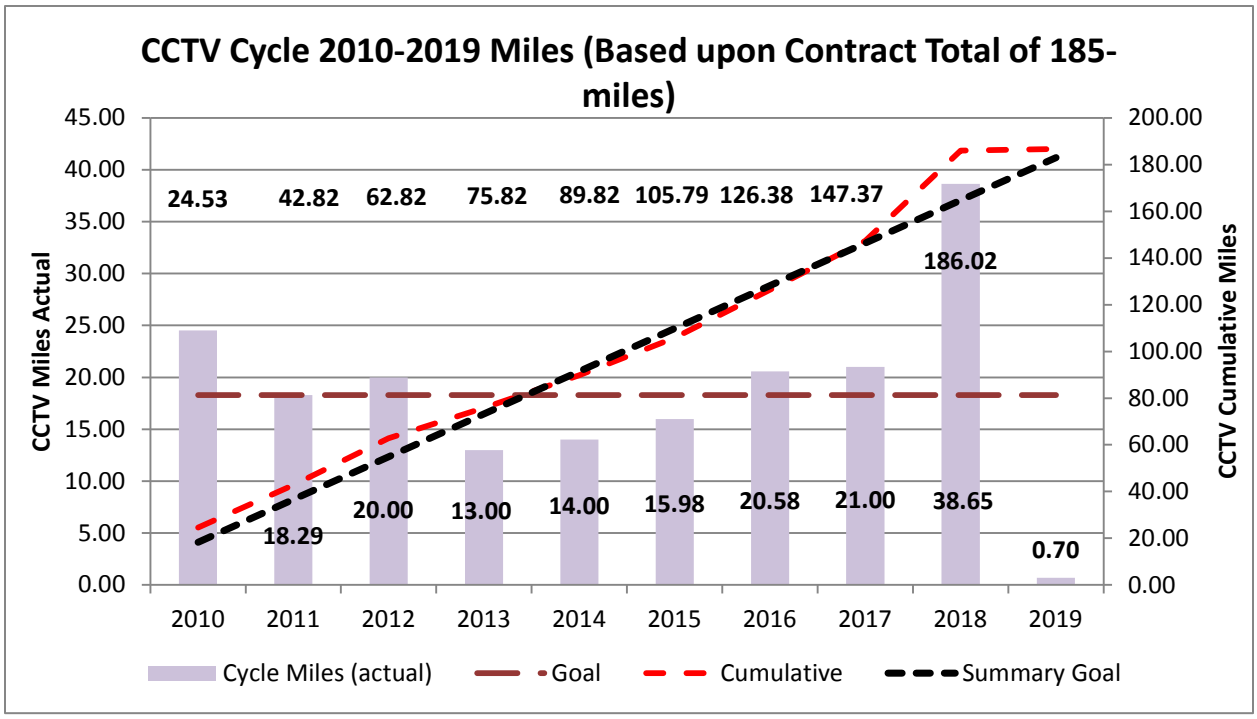
- Cleaned (36) Catch Basins
- Cleaned (0) V-ditches

**Storm Water System Point Repairs**

(0) Storm system repairs performed during the month

**Collection Systems Monthly Performance Indicators**

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




*Notes:

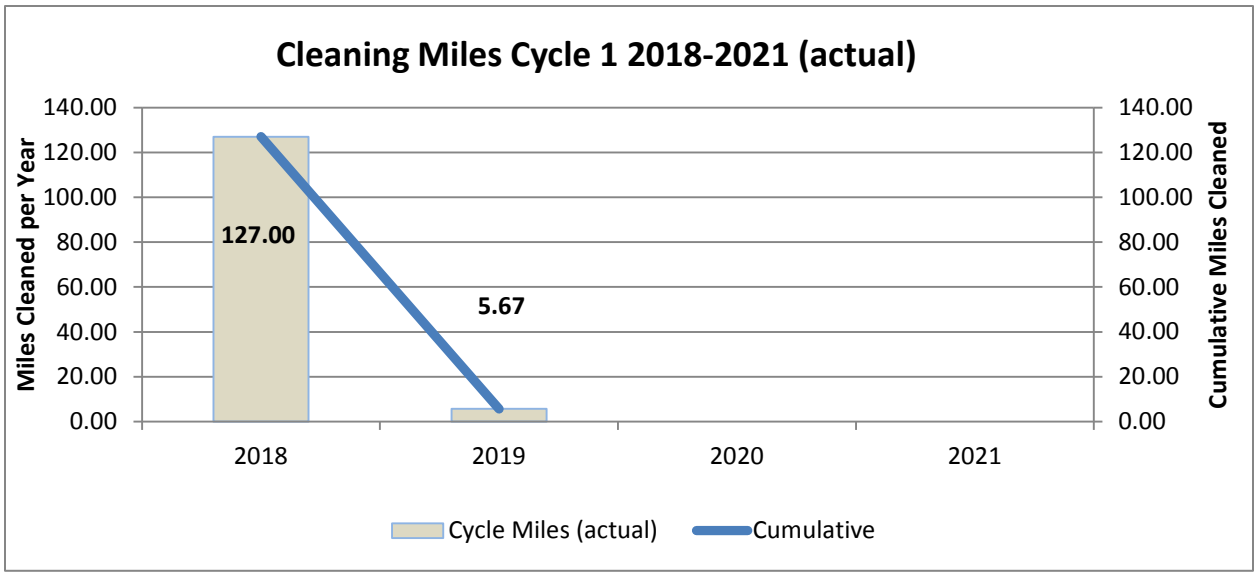
1) Goal mileage is based upon 18.5-miles/year to correspond with Contract Amendment #1 system mileage of 185-miles and recently reported City GIS mileage of 183-miles

2) CCTV work completed YTD represents 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) February-CCTV production work significantly impacted by series of wet weather events and subsequent period needed to "drain" the wastewater collection system

## *Richmond CPM, WPCP and Collection System*

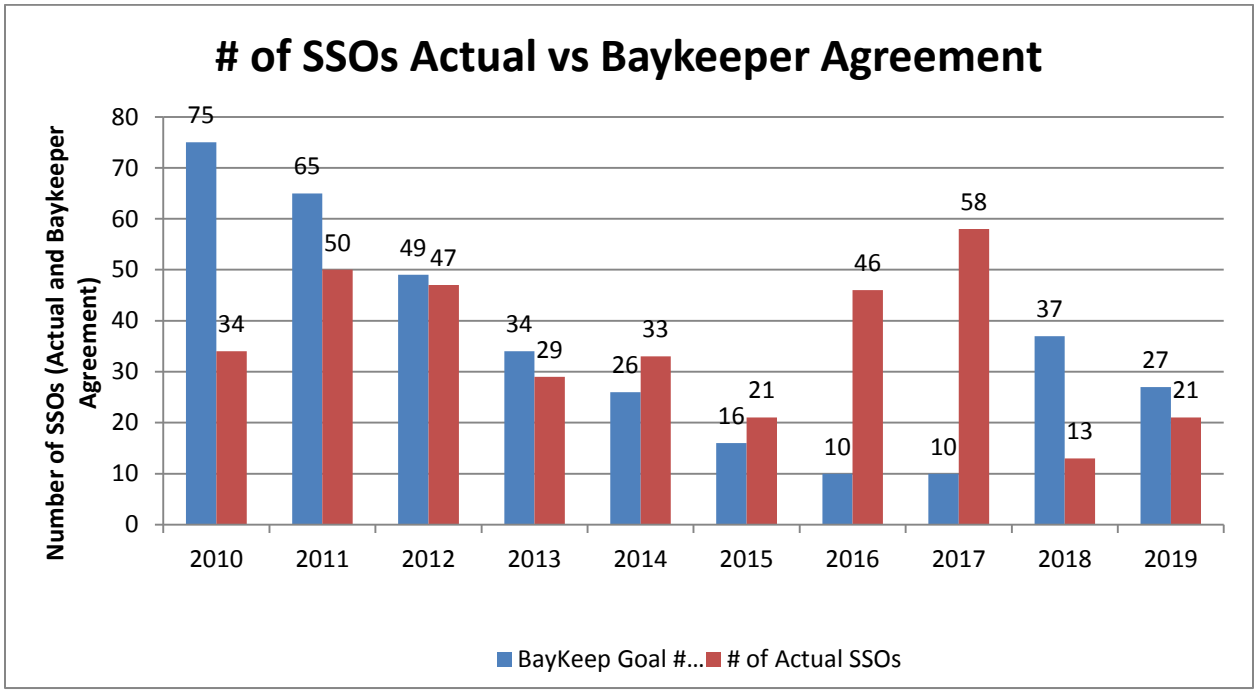
Veolia is in the 2nd year of a 4-year sewer cleaning cycle. Cycle start date was January 1, 2018.




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

2) February-Cleaning production work significantly impacted by series of wet weather events and subsequent period needed to "drain" the wastewater collection system

SSO performance compliance with past and 2018 Baykeeper Settlement Agreement



*Richmond CPM, WPCP and Collection System*

**Sanitary System Performance Indicators**

**Table 2-a**

| Performance Indicator | Monthly Actual | Target/Limit |
|---|---|---|
| Service Calls (Public Facilities/Assets) | 23 | N/A |
| Service Call Response Time (minutes) | <30 | <30 |
| Private Lateral Service Calls; Regular/After Hours | 2/3 | 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.) | 1,760 | 7,000 |
| GPS Surveys | 0 | As needed |
| Cleaning (ft.) | 7,753 | 20,130 |
| Cleaning QA/QC Events | 0 | 8 |
| SSOs for current month – Mainline | 19 | 3.1/Mth |
| Total Mainline SSO Volume (gallons) | 1,748,769 | 0 |
| Total Mainline SSO Volume Recovered (gallons) | 0 | 100% |
| % Mainline SSO Volume Recovered | 0% | 100% |
| # SSOs – Wet Weather (localized capacity issue) | 19 | 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 | 19 of 21 = 90% | N/A |

## *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

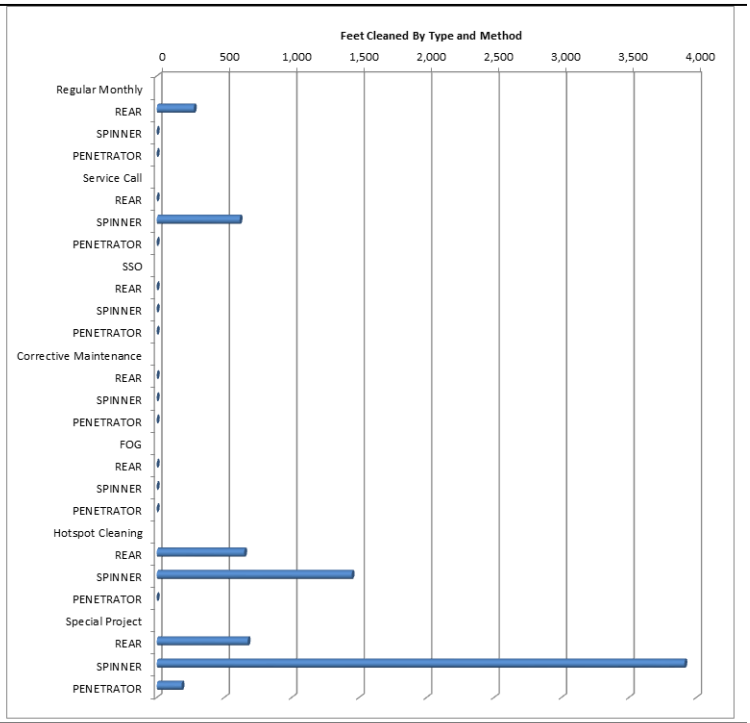
Report Period **February-19**

**Line Cleaning Summary**

| | |
|---|---|
| Total Lines Cleaned: | 29 |
| Total Footage Cleaned: | 7,752.76 ft |
| Total Footage with Cleaning Method: | 7,752.76 ft |
| Unknown Cleaning Method Footage: | 0.00 ft |

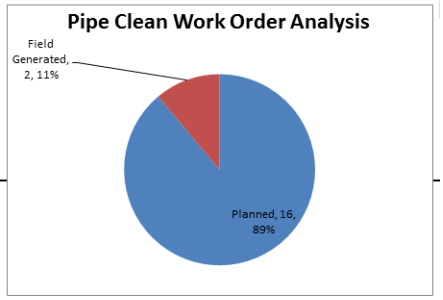
**Footage by Cleaning Method**

| | |
|---|---|
| **Regular Monthly** | |
| REAR | 274.64 ft |
| SPINNER | 0.00 ft |
| PENETRATOR | 0.00 ft |
| **Service Call** | |
| REAR | 0.00 ft |
| SPINNER | 614.56 ft |
| PENETRATOR | 0.00 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 | 648.34 ft |
| SPINNER | 1,445.37 ft |
| PENETRATOR | 0.00 ft |
| **Special Project** | |
| REAR | 674.00 ft |
| SPINNER | 3,911.90 ft |
| PENETRATOR | 183.95 ft |




**Pipe Clean Production**

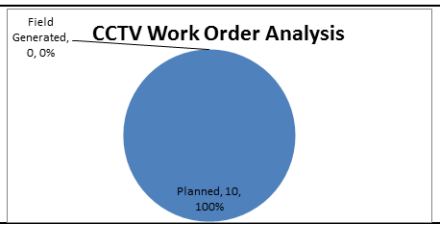
| By Crew Leader | Footage | # of days | Footage per day | Work Order Scheduling: Planned | Field Generated |
|---|---|---|---|---|---|
| ARMSTRONG | 0.00 | 0 | 0 | 0 | 0 |
| HENDRICKS | 0.00 | 0 | 0 | 0 | 0 |
| LEWIS | 4,931.33 | 4 | 1,232.83 | 10 | 2 |
| HILL | 0.00 | 0 | 0 | 0 | 0 |
| WALLIS | 0.00 | 0 | 0 | 0 | 0 |
| MENDOZA | 1,667.98 | 1 | 1,667.98 | 6 | 0 |
| SIMONETTI | 0.00 | 0 | 0 | 0 | 0 |
| **Totals** | **6,599.30** | **5** | **1,319.86** | **16** | **2** |




| Pipe Clean by Pipe Material | Footage | # of Segments |
|---|---|---|
| VCP | 6,128.23 | 23 |
| PVC | 1,004.31 | 3 |
| Unknown or Other | 620.21 | 3 |
| | **7,752.76** | **29** |

**CCTV Activity Summary**

| | | Work Order Scheduling | |
|---|---|---|---|
| **CCTV Total Footage** | **0.00 ft** | 10 | 0 |
| **Successfully Imported** | | | |
| Number of Lines Tved: | 0 | | |
| Total Footage Tved: | 0.00 ft | | |
| **Unsuccessfully Imported** | | | |
| Number of Lines Tved: | 10 | | |
| Total Footage Tved: | 1,760.55 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 | 0 |
| Manual Cleaning | 0 |
| Visual Inspection | 0 |
| Exercise FM Pressure Valve | 0 |
| Markout Locations | 0 |

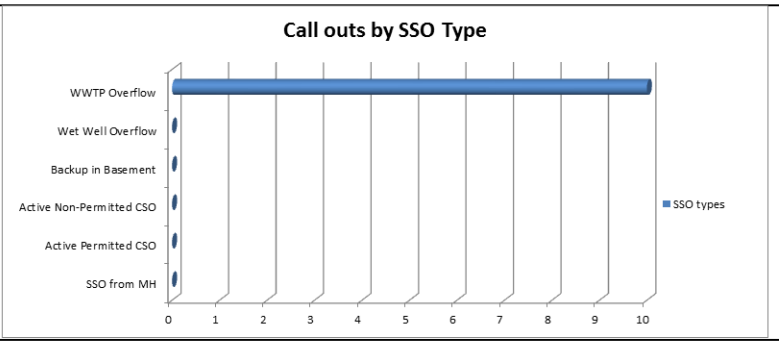
### Number of Call Outs

| | |
|---|---|
| Total Number of Call Outs: | 23 |
| Call outs from Customer Complaints: | 9 |
| Call outs from SSO: | 14 |

### Call outs from SSO:

Call outs by SSO Type

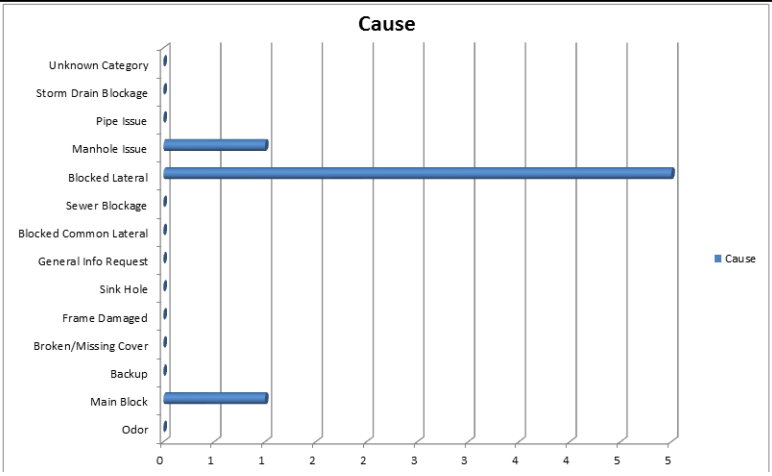
| | |
|---|---|
| SSO from MH | 0 |
| Active Permitted CSO | 0 |
| Active Non-Permitted CSO | 0 |
| Backup in Basement | 0 |
| Wet Well Overflow | 0 |
| WWTP Overflow | 11 |




### Call outs from Customer Complaints:

Call outs by Cause

| | |
|---|---|
| Odor | 0 |
| Main Block | 1 |
| 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 | 5 |
| Manhole Issue | 1 |
| Pipe Issue | 0 |
| Storm Drain Blockage | 0 |
| Unknown Category | 0 |
| **Totals** | **7** |




## Storm Water System Performance Indicators

*Richmond CPM, WPCP and Collection System*

**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 | 53 | N/A |
| Storm CCTV (ft) | 0-segments (0-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) | 7-segments (690-LF) | N/A |
| Pump Stations/Inlet/Outlet Channels Cleaned | 0 | N/A |
| Catch Basins/Inlets/Storm Drains Cleaned | 36 | N/A |
| Storm Vaults Cleaned/Inspected | 0 | N/A |
| GSRD (trash capture device) Cleaning/Inspections | 2 | 4/year |
| Flap Gate/Duck Bill Inspections | 0 | 4/year |

## CAPITAL IMPROVEMENT PROGRAM

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

- Veolia Capital Program Management (CPM) has started vetting Year One line segments listed in the 2019 RAA and will be establishing a Phase 2 Sewer Repair list.

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

- Bay Hawk pipe burst 276' of 6" Mainline, tied in 3 laterals, and installed a new manhole; they also backfilled and paved to complete the project at Key Blvd. and Barrett.
- The Contractor pipe burst 40' of mainline, rehabbed a Manhole and backfilled and paved at Clinton & San Pablo.
- This project is over 50% complete as of February 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 15,500 LF has been installed through February 2019.

## *Richmond CPM, WPCP and Collection System*

- The Contractor had three crews working in February.
- February rains kept the Contractor from some work, but the overall schedule remains intact.

**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.
- Bid ready documents will be finalized in mid-March 2019; bidding through the City's BidsOnline process scheduled for April-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 did not rehab any manholes in February.
- City budget for this effort was reduced to $250K for this fiscal year, which will also be the annual amount moving forward.

**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 30% complete.*

- Flow monitors were installed on November 30, 2018; flow monitoring will continue through March 31, 2019. Meters will remain in place through that time.
- 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.

**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.*

- Bid Ready construction documents were received in February.
- The project went out to bid through City BidsOnline on February 12, 2019, with bids due March 5.

**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 100% complete. Review of construction related permit requirements 100% complete.*

- In January 2019, the City decided to put the design project on hold; Veolia asked that NCE submit all design files and submittals completed to date.
- NCE developed a design summary memorandum to provide a completed background, explanation of design, and considerations moving forward for the project. This memo and supporting documentation was provided to Veolia on February 3, 2019.
- Final invoicing to follow.

**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 15% complete; construction is 100% complete.*

- As-Needed SRF Application Assistance
  - Attended SRF conference calls and provided updates on the status of the application review.
  - Began preparation of project memorandum summarizing status updates for the project.

- WWTP Critical Improvements – Bid Documents
  - Prepared for and conducted work restrictions/ constructability workshop that was held on 2/15.
  - Continued preparation of bid documents.
  - Began preparation of engineer's construction cost estimate for original project.
  - Began preparation of engineer's construction cost estimate for demolition of unused solids facilities.
  - Began high-level constructability review to determine feasibility of constructing the screenings and grit facility from the nursery-side.
  - Prepared for work restrictions workshop.

- ESDC - Secondary Clarifier
  - Continued preparation of record drawings.