

Monthly Operating Report

Richmond WWTP and Collection System

August 2018

Executive Summary

- There were no permit violations in the month of August 2018. This represents the 29th consecutive month without a violation of the wastewater treatment plant's NPDES permit.
- The monthly acute aquatic bioassay test passed with 100% survival of the fathead minnows.
- A draft NPDES reissued NPDES Permit was received from the Regional Water Quality Control Board (RWQCB). Comments from Veolia/City of Richmond staff regarding the draft have been submitted to the RWQCB. The treatment plant continues to operate under the previous permit which expired on June 30.
- Veolia and City staff has been working with West County Wastewater District on an upgrade to the automation/communications component of the sludge-leachate transport system. The parties have also begun discussions of a cost share framework for capital upgrades to the combined effluent dechlorination system. The last meeting was held on August 14 at which time West County reps toured the Richmond plant and observed the condition of the dechlorination system assets.

Wastewater Treatment Plant

- There was one odor complaint during August on the 20th of the month. The call was made by an individual who noted odors while driving by the treatment plant on Canal Blvd. It was investigated by way of an odor evaluation though did not turn up adverse findings or a source of the odor observed.
- There were no blending events in August.
- Lab manager who has been with Veolia in Richmond for nearly 14 years has submitted her retirement notification. A replacement has been recruited from another Veolia project and is expected to begin work on October 1.
- Construction continues on the primary sedimentation basins and secondary clarifiers. The complete mechanical replacement of one of two primary clarifiers and two of the three secondary clarifiers has been nearly completed. These unit process upgrades are

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expected to be finished by middle to late November which coincides with the start of the wet season.

Table 1 Parameter	Monthly Performance Indicators	Limit/Target
Treatment Plant Operations:		
Influent Flow, daily average (MGD)	4.71	N/A
Effluent Flow, daily average (MGD)	5.20	N/A
Influent BOD ₅ , avg. mg/L	354	N/A
Influent TSS, avg. mg/L	328	N/A
Effluent TSS, monthly average mg/L	17	30 or less
Effluent BOD, monthly average mg/L	17	30 or less
% BOD Removal	95	> 85
% TSS Removal	95	> 85
NPDES Effluent Limit Violations	0	0
Blending events	0	0
Total volume blended, MG	0	0
Odor complaints	1	0
Digested sludge pumped to drying beds, MG	**1.483	N/A
Leachate received, GAL	240,000	N/A
Leachate received/treated YTD, MG	2.777	N/A

** Transport flow meter malfunction. Value used is total of raw and thickened sludge sent to digester

Maintenance

Work Order Type	# Completed
Storm Water Pump Stations	78
Sewer Pump/Lift Stations	103
Treatment Plant	77
Corrective	37
Total	295

August 2018

Completed Projects

- Annual preventative maintenance on both Hurst digester heating boilers completed.
- Primary clarifier skimmer auger overhauled and returned to service.
- Overhaul primary sludge Pump #2 and return to service.

Look Ahead; August - September 2018

- Complete annual bar screen preventative maintenance (crane required)
- Complete landscaping and security fencing upgrades located around the front access gate area of the facility.
- Complete potable water control system upgrade project. (in process)
- Remove and perform preventative maintenance on (4) wet weather storage pump station Flygt pumps. (crane required)
- Complete annual preventative maintenance & load testing on treatment plant emergency, backup power diesel generators.
- Overhaul multi stage turbine #3 water pump (Pump #2) and return to service.

Collection System Monthly Report

Sanitary Sewer System Highlights

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

During the month of August, there was (1) sanitary sewer overflow event. 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 = 6-YTD

Collection systems staff commenced preliminary pre-wet weather focus cleaning of known “Hot Spot” points in the wastewater collection system that become surcharged during periods of storm water inflow and infiltration as well as O&M work on storm system debris capture devices. Consequently, CCTV production by Veolia staff was restricted to research/response activities only.

Relative to CCTV condition assessment production, in order to meet timely delivery of information associated with Baykeeper Settlement Agreement tasks, principally CCTV condition assessments and the related Risk Assessment Analysis, Veolia initiated a contract to perform pipe segment pre-cleaning and CCTV video inspection/reporting commenced on 8/29/2018 with completion of project scheduled for 11/7/2018; on an approximately weekly basis, updated CCTV records will be inputted to the InfoNet database and subsequently updated database files provided to Vivian Housen & Associates in support of the updated Risk Assessment Analysis. The production target for contracted CCTV work is 3 to 4 miles of pipe.

There were a total of 13 sanitary system calls, 5 of which were property lateral issues, 3 of which were sewer line main-related, and 5 of which non-City of Richmond system related; there was 1

storm system service call. See Table 2-a below for Collection System Performance Indicators and Table 2-b for Collection System Activity Summary for performance indicator data specifics.

Sanitary Sewer Point Repair:

(0) Sanitary system repairs completed through the O&M group during the month

Storm Water System Highlights

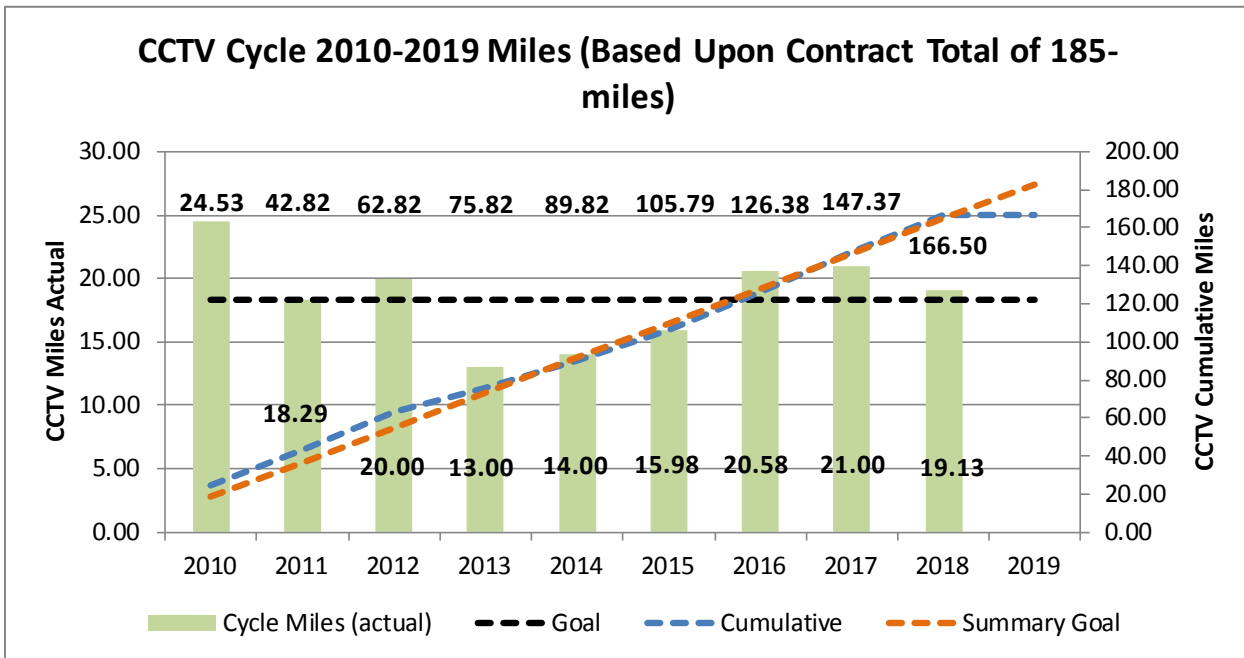
- Cleaned 48-CF of debris to uncover a storm system catch basin; debris was from railroad right-of-way rock, rock was causing flooding during rain events. This asset is not identified in InfoNet GIS layer
- Cleaned all culverts and culvert boxes at the intersection of 34th ST & Nevins Ave
- Cleaned Enterprise storm water pump station
- Cleaned catch basins and storm trenches at 484 Western Ave, Point Richmond
- Cleaned catch basin at 1618 Carlson Blvd and 359-LF' of 24-inch storm system
- Cleaned litter capture device at S 8th ST & Potero St; 8-CY of litter and debris removed
- Cleaned litter capture device at Marina Bay Parkway and Regatta Blvd (gateway to Meeker Slough); 2-CY of debris removed

Storm Water System Point Repairs

(0) Storm system repairs performed during the month

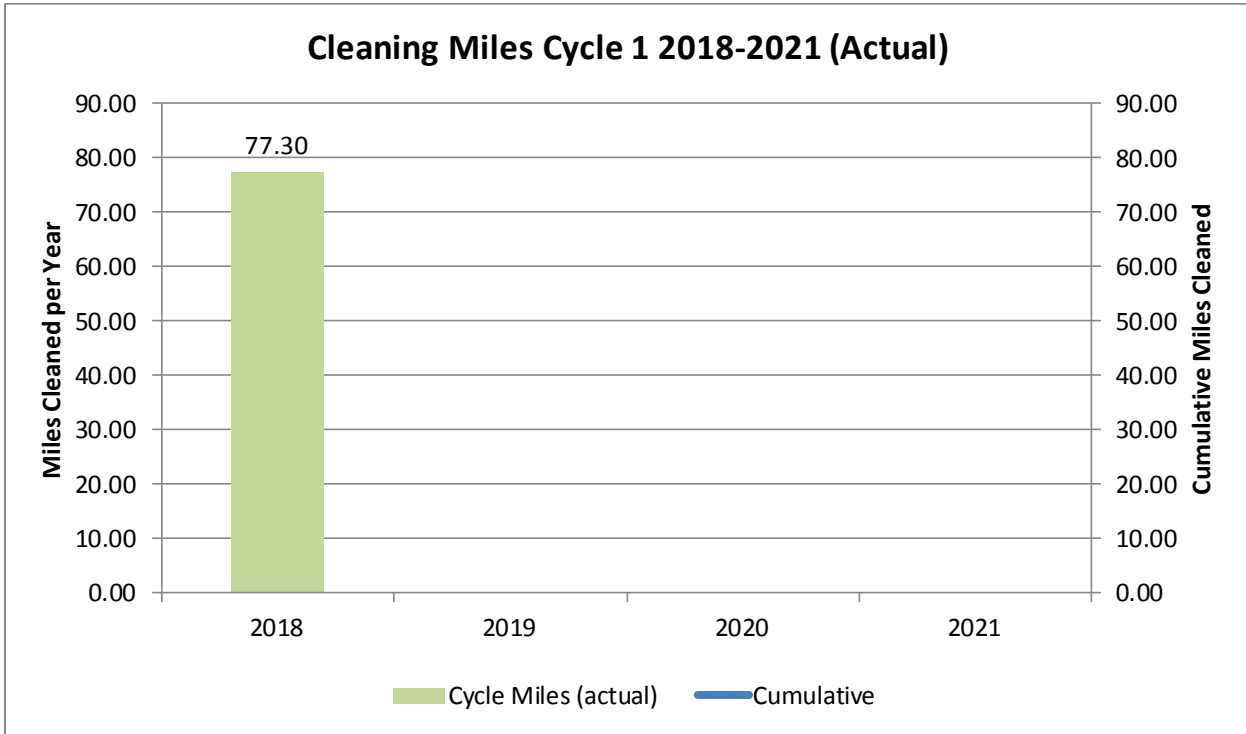
Collection Systems Monthly Performance Indicators

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

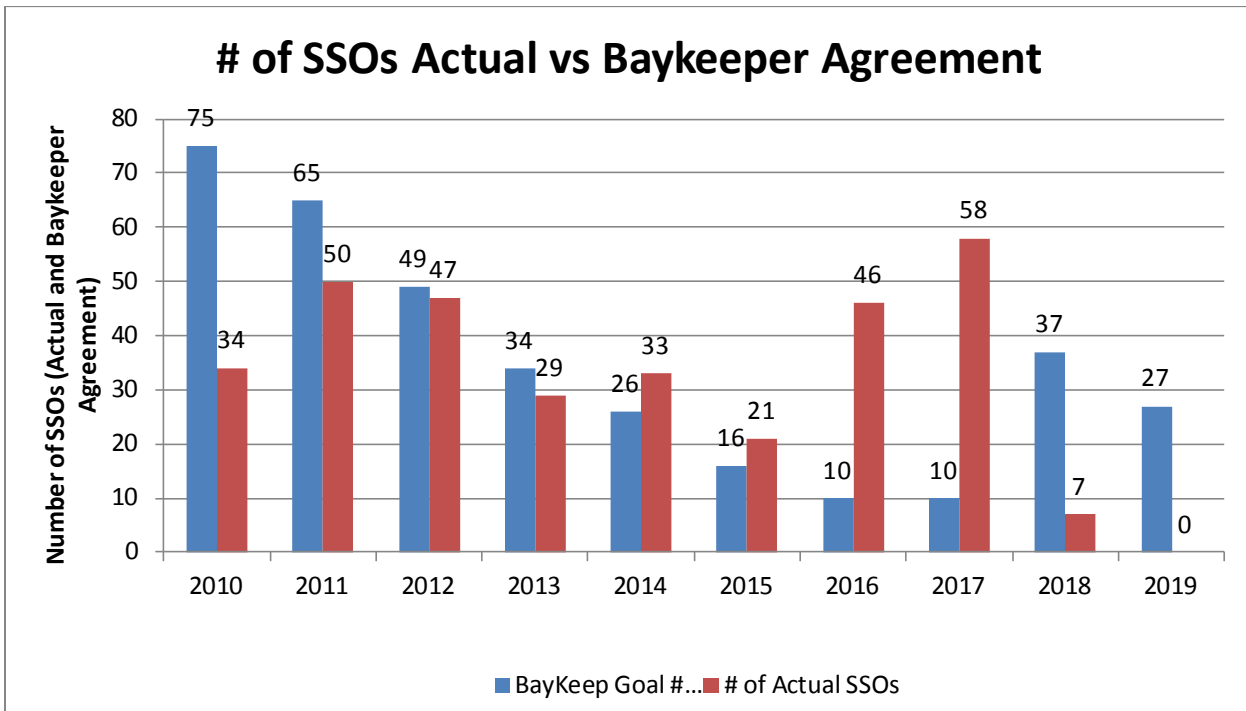


*Note: goal mileage is based upon 18.5-miles/year to correspond with Contract Amendment #1 system mileage of 185-miles and recently reported City GIS mileage of 183-miles

Veolia is in the 1st year of a 4-year sewer cleaning cycle. Cycle start date was January 1, 2018. A total of 82 miles was cleaned in 2017 and 90 miles in 2016.



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)	13	N/A
Service Call Response Time (minutes)	<30	<30
Private Lateral Service Calls; Regular/After Hours	0/5	N/A
Regular/OT Hours Spent on Private Lateral Calls	0/24	N/A
Point Repairs Completed	0	N/A
Manhole Inspections	0	N/A
Manhole Repairs	0	N/A
CCTV (Closed Circuit TV) (ft.)	0	7,000
GPS Surveys	0	As needed
Cleaning (ft.)	41,154	20,130
Cleaning QA/QC Events	9	8
SSOs for current month – Mainline	1	20/Yr.
Total Mainline SSO Volume (gallons)	20	0
Total Mainline SSO Volume Recovered (gallons)	0	100%
% Mainline SSO Volume Recovered	0%	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	37 Combined Wet Weather/Dry Weather Annual - Baykeeper
Total Dry Weather SSOs Year to Date	6	
Number and Percentage of SSOs During 2018 with Discharge Reaching Storm Water Conveyance	3 of 7 = 50%	N/A

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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



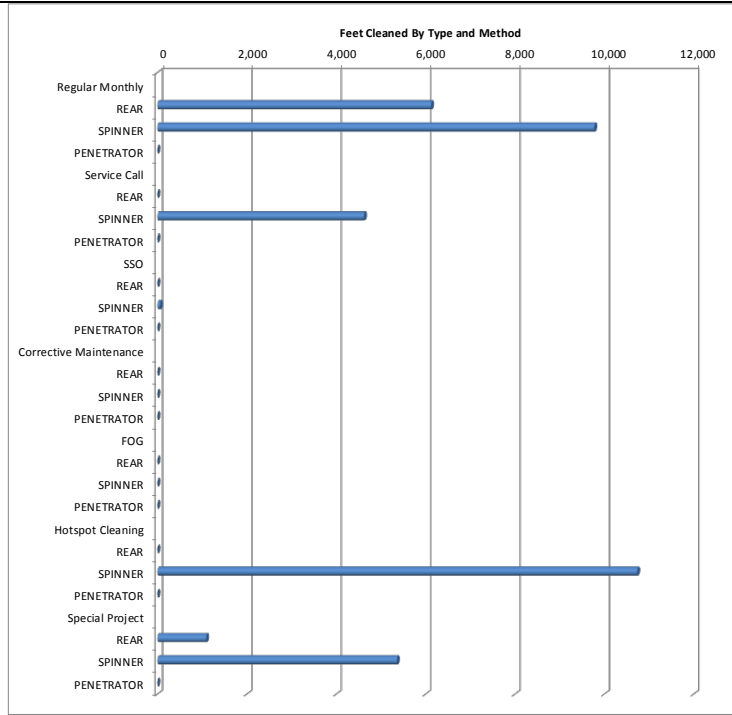
Collection and Conveyance
Report Period August-18

Line Cleaning Summary

Total Lines Cleaned:	130
Total Footage Cleaned:	41,150.44 ft
Total Footage with Cleaning Method:	37,770.94 ft
Unknown Cleaning Method Footage:	3,379.50 ft

Footage by Cleaning Method

Regular Monthly		
REAR	6,123.85 ft	
SPINNER	9,776.12 ft	
PENETRATOR	0.00 ft	
Service Call		
REAR	0.00 ft	
SPINNER	4,622.00 ft	
PENETRATOR	0.00 ft	
SSO		
REAR	0.00 ft	
SPINNER	60.00 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	0.00 ft	
SPINNER	10,737.97 ft	
PENETRATOR	0.00 ft	
Special Project		
REAR	1,091.00 ft	
SPINNER	5,360.00 ft	
PENETRATOR	0.00 ft	

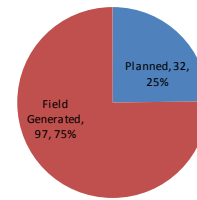


Pipe Clean Production

By Crew Leader	Footage	# of days	Footage per day	Planned	Field Generated
ARMSTRONG	0.00	0	0	0	0
HENDRICKS	225.41	2	112.71	2	0
LEWIS	4,335.00	4	1,083.75	0	10
HILL	0.00	0	0	0	0
WALLIS	0.00	0	0	0	0
MENDOZA	31,561.53	19	1,661.13	30	72
SIMONETTI	4,530.50	4	1,132.63	0	15
Totals	40,652.44	29	1,401.81	32	97

Work Order Scheduling

Pipe Clean Work Order Analysis



Pipe Clean by Pipe Material

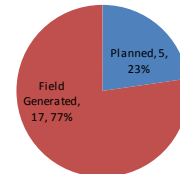
	Footage	# of Segments
VCP	31,614.90	93
PVC	4,615.24	14
Unknown or Other	4,920.31	23
Totals	41,150.44	130

CCTV Activity Summary

CCTV Total Footage	0.00 ft	5	17
Successfully Imported			
Number of Lines Tved:	0		
Total Footage Tved:	0.00 ft		
Unsuccessfully Imported			
Number of Lines Tved:	24		
Total Footage Tved:	6,258.20 ft		

Work Order Scheduling

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	1
Exercise FM Pressure Valve	0
Markout Locations	0

Number of Call Outs

Total Number of Call Outs: 13

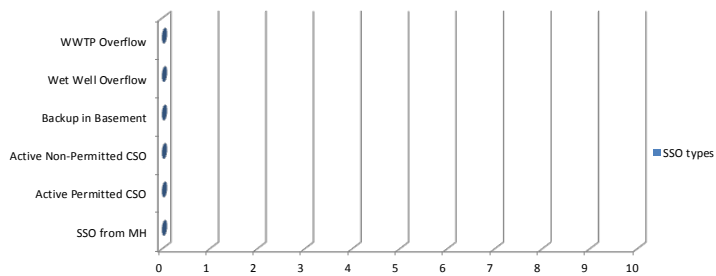
Call outs from Customer Complaints: 12

Call outs from SSO: 1

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

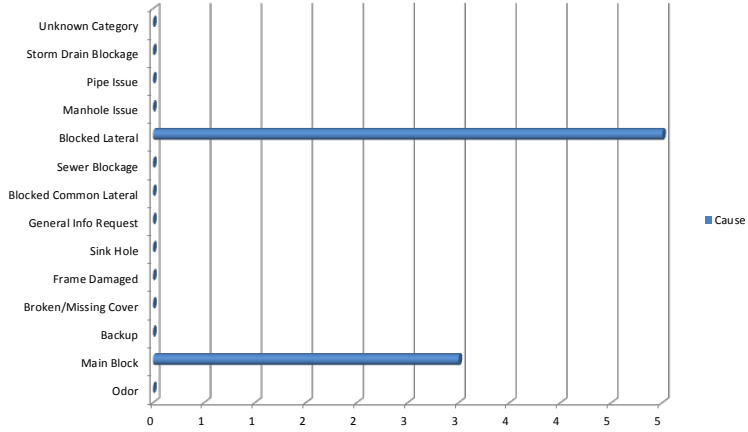
Call outs by SSO Type



Call outs from Customer Complaints:

Call outs by Cause	
Odor	0
Main Block	3
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	0
Pipe Issue	0
Storm Drain Blockage	0
Unknown Category	0
Totals	8

Cause



Storm Water System Performance Indicators

Table 3

Performance Indicator	Monthly Actual	Target/Limit
Storm Point Repairs	0	N/A
Storm Manhole Repairs	1	N/A
Storm Manhole Inspections	0	N/A
Storm Service Calls	1	N/A
Storm CCTV (ft)	0	N/A
Storm GPS Surveys	0	N/A
Storm Pipe Cleaning (ft)	251	N/A
Storm General Maintenance Cleaning (Linear feet of V-Ditches, Culverts or Creeks)	0	N/A
Pump Stations/Inlet/Outlet Channels Cleaned	1	N/A
Catch Basins/Inlets/Storm Drains Cleaned	1	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

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 approximately 99% complete.*

- Punchlist items were substantially complete in August, with the exception of two manholes; they will be completed in September.
- As-built drawings and development of figures showing work completed outside of the original project scope are in process.
- Once the Contractor completes the necessary close out paperwork, retention will be released and final invoicing remains on this project.

BK Sewer Pipe Rehabilitation – Phase I & II.

August 2018

- Unit Cost Bids for Phase 1 Line Segment Repairs – the project was awarded to Bay Hawk; the Task Authorization (TA) was prepared in August and executed in early September.
- Construction anticipated on Phase 1 beginning in mid to late September 2018 on 24 point repairs as part of FY17/18 funding.
- Urgent work under this umbrella project will be completed at Harbor Way South and S. 8th Street by W.R. Forde (second lowest bidder) prior to the City's paving schedule (Note: the depth of this work was out of scope for Bay Hawk; Forde submitted a successful bid for this portion of the project work only).
- Regarding Phase 2, Staff met with V.W. Housen & Associates to review designs; project list and revised design proposals are anticipated in September.

Cutting/Carlson & Hoffman Boulevard Projects. *V. W. Housen & Associates. These projects replace pipelines with NASSCO PACP Structural Grade 4 and correct 5 defects in the sewer sheds that flow to Cutting Boulevard. Reduction of inflow and infiltration will reduce the need to upsize the Cutting Boulevard interceptor, thereby reducing overall cost and construction impact to the City. Design is 100% complete. Construction W.R. Forde, \$7,281,000 for both projects.*

- Veolia's internal Task Authorization review was completed on August 21, 2018.
- The TA was executed on August 22, 2018; Staff submitted Forde's subcontract to Procurement, and it is currently in Veolia's management approval process prior to execution.
- W.R. Forde was issued a Notice of Award on August 23, 2018; Notice to Proceed is slated for mid-September 2018.

Force Main Assessment, Phase 2. *V&A Consulting Engineers. The purpose of this project is to assess the condition of the remaining (8) of (13) force mains within the Richmond Collection System and provide a Condition Assessment Report which will include a condition assessment matrix with a grading scale of 1 to 5 of all (13) force mains. Since the initial Condition Assessment in 2015 (Phase 1), the Port Force Main has undergone modifications, so the new Condition Assessment for 2018 will include re-evaluation of the Port FM repair documentation and as built plans, so that it can be re-assessed and graded to meet Baykeeper requirements. Project is 95% complete.*

- The field investigations were completed during the week of August 6, 2018.
- The draft force main condition assessment report was provided on August 31, 2018.
- Remaining work includes a review meeting with Veolia staff to discuss questions and comments on the draft report and finalization of the report before the September 30, 2018 Baykeeper deadline.

Lift Station MP & Assessment. *V. W. Housen & Associates. The purpose of this project is to prepare a Master Plan for the City of Richmond's sewer collection system lift stations, which are managed and operated by Veolia Water. The Master Plan will include a hydraulic and condition assessment of the existing facilities and a 10-year capital improvement plan (CIP) that includes recommended capacity and rehabilitation improvements. Planning is 95% complete.*

- Consultant delivered a draft summary report in May, which remains under review
- A meeting is scheduled on September 20, 2018, to review the report and its findings

August 2018

MacDonald and Virginia Project. *V. W. Housen & Associates. These projects replace pipelines with NASSCO PACP Structural Grade 4 and correct 5 defects in the vicinity of MacDonald and Virginia. Reduction of inflow and infiltration will reduce the need to upsize the Cutting Boulevard interceptor, thereby reducing overall cost and construction impact to the City.*

- Project definition has been complete following review of CCTV data; additional data will be provided by the end of September by Veolia.
- Topographic survey is in process; utility information has been received and lateral location is in process.
- 90 percent design submittal is planned for the end of November 2018.

Manhole Lining Rehabilitation Project. *Bay Hawk. In-house design to replace 75 manholes within the City's collection system.*

- Eighteen manholes were completed in August.
- Approximately 75 manholes have been rehabilitated thus far by the end of August 2018.

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 12% complete.*

- V. W. Housen & Associates has built the network and is waiting for significant rain to perform the flow monitoring. If precipitation occurs in November 2018, then flow monitoring will begin on December 1, 2018 and continue through March 31, 2019.

WWTP Stormwater Perimeter Site Evaluation and Topo Survey. *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 is 25% complete.*

- Veolia introduced NCE to the new project manager, Gary Beach, and discussed moving ahead with the available data to produce an alternatives analysis.
- A second meeting, involving the City and staff from Veolia and NCE, discussed the City's preference to include a design alternative that does not use detention basins based on maintenance and permitting concerns from the City.
- NCE to provide options on controlling stormwater off of the hill by the end of October.

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% complete; construction is 88% complete.*

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August 2018

- Carollo is still on hold regarding their design efforts until further notice.
- Carollo attended construction meetings and responded to RFIs.
- Carollo prepared supplemental information for the SRF application for the WWTP Critical Improvements Project. That information included a supplemental TM and a Climate Change Worksheet.
- Secondary Clarifier No. 1 is off line and in the process of being painted.
- Secondary Clarifier No. 3 will be taken off line and the Clarifier mechanism will be removed and replaced with new equipment.
- Water blasting in Primary Sedimentation Basin has started; the concrete has been evaluated to be in much worse condition than in Sed Basin No. 2; Staff and the Contractor are reviewing options