

Monthly Operating Report

Richmond WWTP and Collection System

September 2018

Executive Summary

- There were no permit violations in the month of September 2018. This represents the 30th 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.
- 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. This condition changes the process in a manner that reduces the plant's ability to treat wastewater. Countermeasures have been implemented and are ongoing. An investigation is underway by Veolia and City staff in addition to the assistance of an outside consultant.
- On September 30 a PG&E Utility power failure occurred and revealed issues with the plant emergency generator automatic transfer switch. Two more utility power disruptions occurred in the following two days; the generator experienced the same issues. Veolia plant operations/maintenance and CPM staff were involved in the investigation as were individuals from the generator maintenance provider and installation contractor. The issues are understood to have been resolved and more discussion and potential corrective/preventative measures are underway to prevent a recurrence.

Wastewater Treatment Plant

- There were no odor complaints during September.
- There were no blending events for the month.
- A new lab manager started work on September 30.
- Construction continues on the primary sedimentation basins and secondary clarifiers. These unit process upgrades are expected to be completed by mid to late November.

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Table 1 Parameter	Monthly Performance Indicators	Limit/Target
Treatment Plant Operations:		
Influent Flow, daily average (MGD)	4.64	N/A
Effluent Flow, daily average (MGD)	5.16	N/A
Influent BOD ₅ , avg. mg/L	360	N/A
Influent TSS, avg. mg/L	384	N/A
Effluent TSS, monthly average mg/L	21	30 or less
Effluent BOD, monthly average mg/L	24	30 or less
% BOD Removal	93	> 85
% TSS Removal	94	> 85
NPDES Effluent Limit Violations	0	0
Blending events	0	0
Total volume blended, MG	0	0
Odor complaints	0	0
Digested sludge pumped to drying beds, MG	**1.711	N/A
Leachate received, GAL	350,000	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

Asset Management Work Orders

Work Order Type	# Completed
Storm Water Pump Stations	117
Sewer Pump/Lift Stations	106
Treatment Plant	76
Corrective	31
Total	330

September 2018

Completed Projects

- Completed landscaping and security fencing upgrades located around the front access gate area of the facility.
- Performed preventative maintenance on (4) wet weather station Flygt submersible pumps.
- Completed the annual preventative maintenance & load testing on both main plant redundant power diesel generators.
- Overhauled Progressive Cavity #3 Water Pump and returned to service.

Look Ahead; September 2018

- Complete annual Headwork Bar Screen Preventative Maintenance (Tentative date 10-16-2018)
- Complete 2nd bi-annual Digester Dystor cover inspection (Set for 11-5-2018)
- Complete Potable Water Control System Replacement Project. (Panel construction delay per Telstar)

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 September, 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 = 7-YTD

Collection Systems staff continues 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.

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 contracted an additional firm to perform pipe segment pre-cleaning and CCTV video inspection.

There were a total of (14) sanitary system calls, (6) of which were property lateral issues, (1) of which were sewer line main-related, and (7) of which non-City of Richmond system related; there was (1) storm system service call. Below, see Table 2-a for Collection System Performance Indicators and the Table 2-b for Collection System Activity Summary for performance indicator data specifics.

September 2018

Sanitary Sewer Point Repair:

(0) Sanitary system repairs performed during the month

Storm Water System Highlights

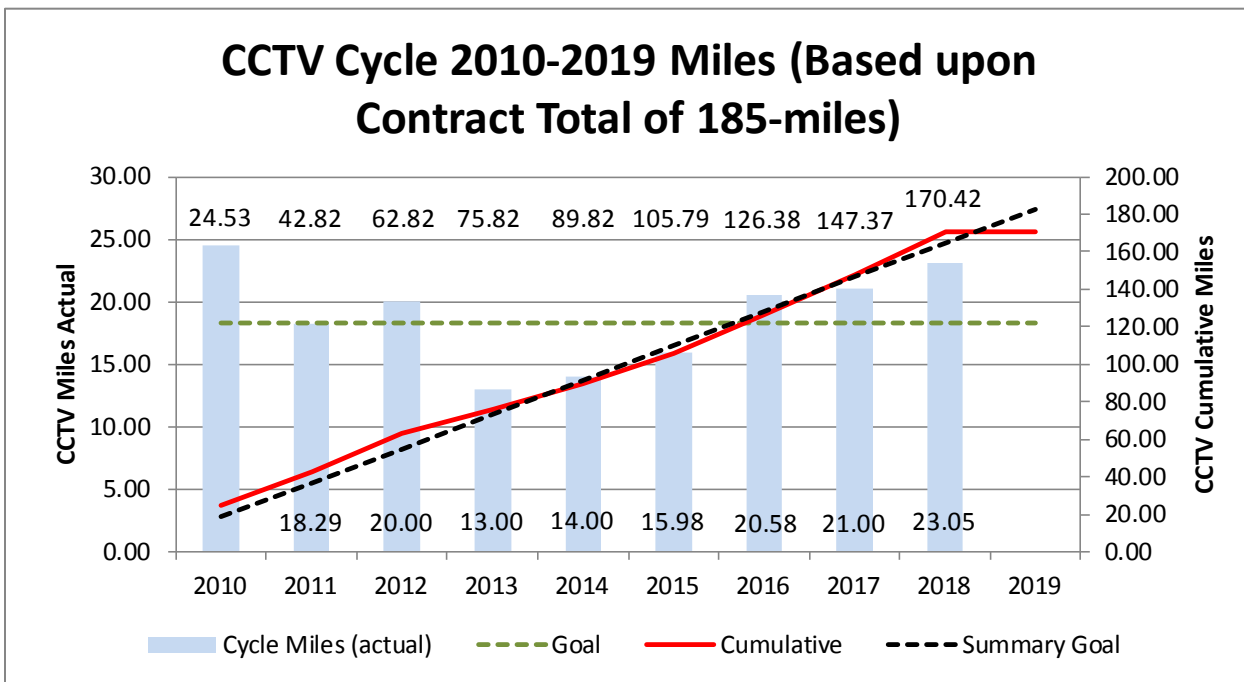
- Cleaned additional culvert boxes at the intersection of 34th ST & Nevins Ave
- Cleaned catch basin at 8th Street & Nevin
- Cleaned storm water pipe segments near 34th & Nevin Street
- Cleaned storm water pipe segments near 23rd Street and Nevin St.
- Cleaned storm water pipe segment near 400 West Richmond
- Replaced storm water grate at 1480 Maricopa Street & 55th Street

Storm Water System Point Repairs

(0) Storm system repairs performed during the month

Collection Systems Monthly Performance Indicators

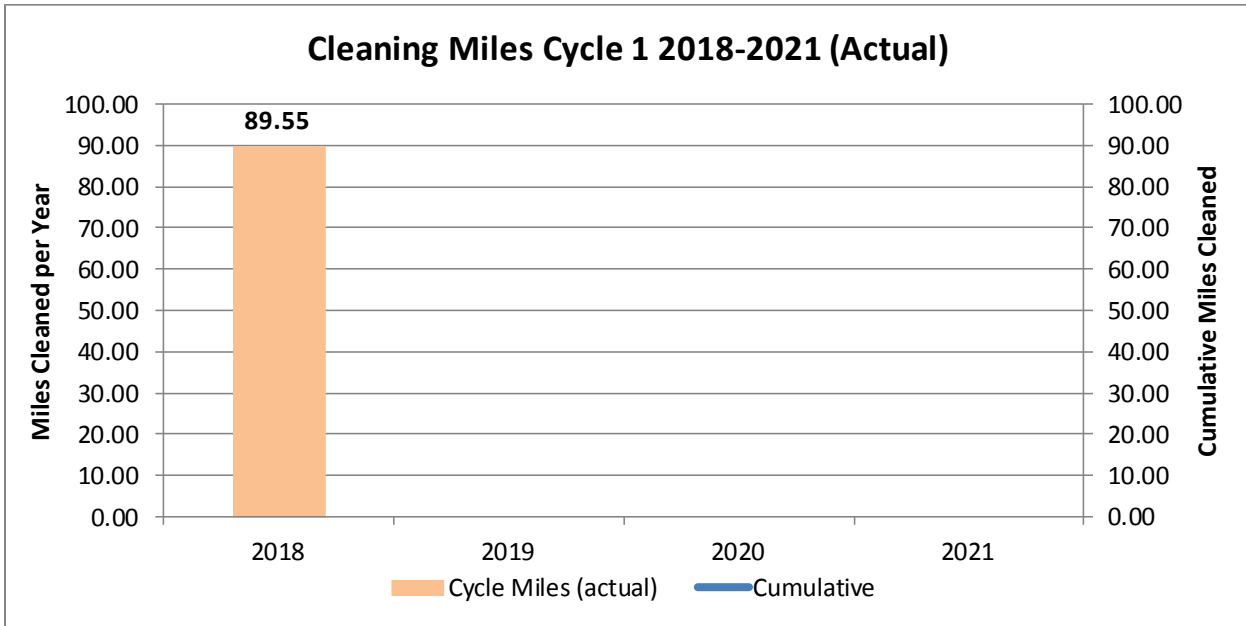
Veolia is in the 9th year of a 10-year CCTV cycle. Cycle start date was January 1, 2010. *



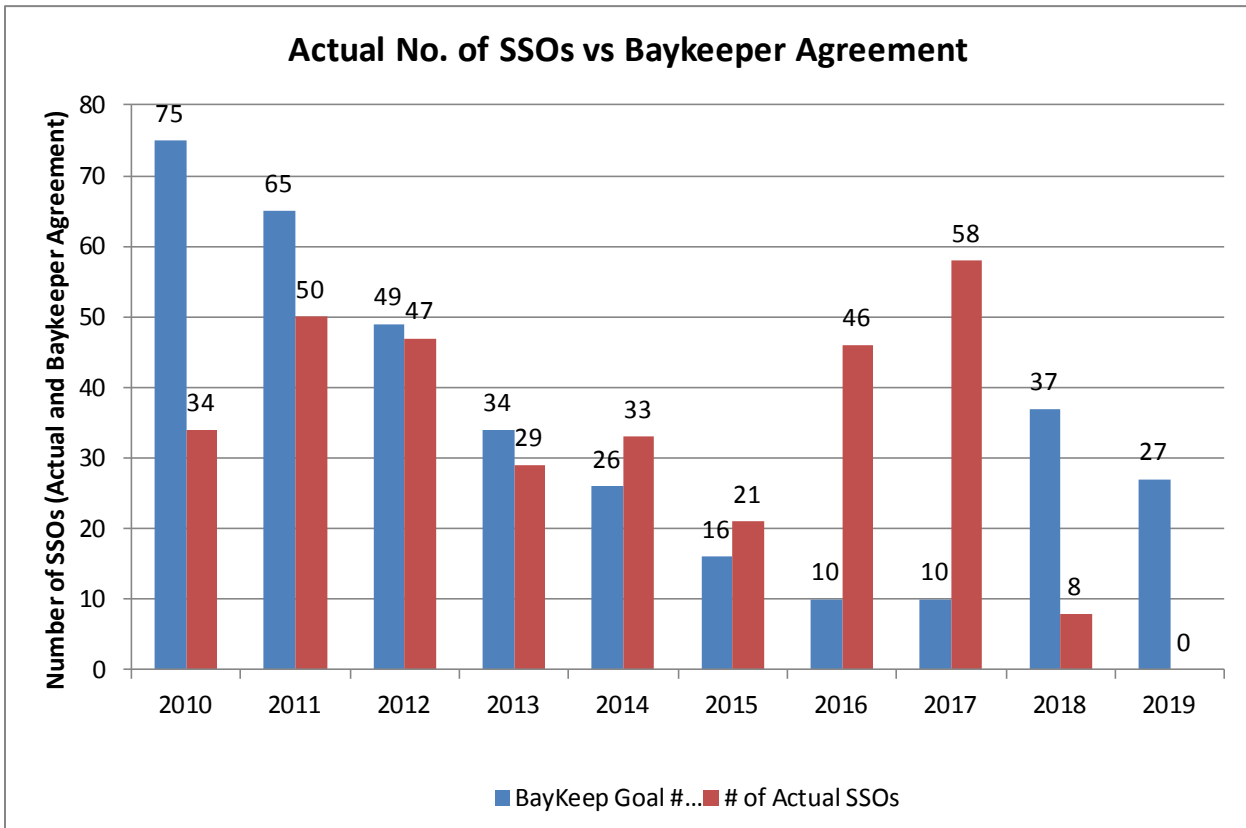
*Note: goal mileage is based upon 18.5-miles/year to correspond with Contract Amendment #1 system mileage of 185-miles and recently reported City GIS mileage of 183-miles

September 2018

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



SSO Performance Compliance with Past and 2018 Baykeeper Settlement Agreement



September 2018

Sanitary System Performance Indicators

Table 2-a

Performance Indicator	Monthly Actual	Target/Limit
Service Calls (Public Facilities/Assets)	14	N/A
Service Call Response Time (minutes)	<30	<30
Private Lateral Service Calls; Regular/After Hours	0/6	N/A
Regular/OT Hours Spent on Private Lateral Calls	0/36	N/A
Point Repairs Completed	0	N/A
Manhole Inspections	0	N/A
Manhole Repairs	0	N/A
CCTV (Closed Circuit TV) (ft.)	16,588	7,000
GPS Surveys	0	As needed
Cleaning (ft.)	57,861	20,130
Cleaning QA/QC Events	8	8
SSOs for current month – Mainline	1	≤ 3.0/Month
Total Mainline SSO Volume (gallons)	5720	0
Total Mainline SSO Volume Recovered (gallons)	20	100%
% Mainline SSO Volume Recovered	0.3%	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	7	
Number and Percentage of SSOs During 2018 with Discharge Reaching Storm Water Conveyance	4 of 8 = 50%	N/A

Monthly Operating Report
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September 2018

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



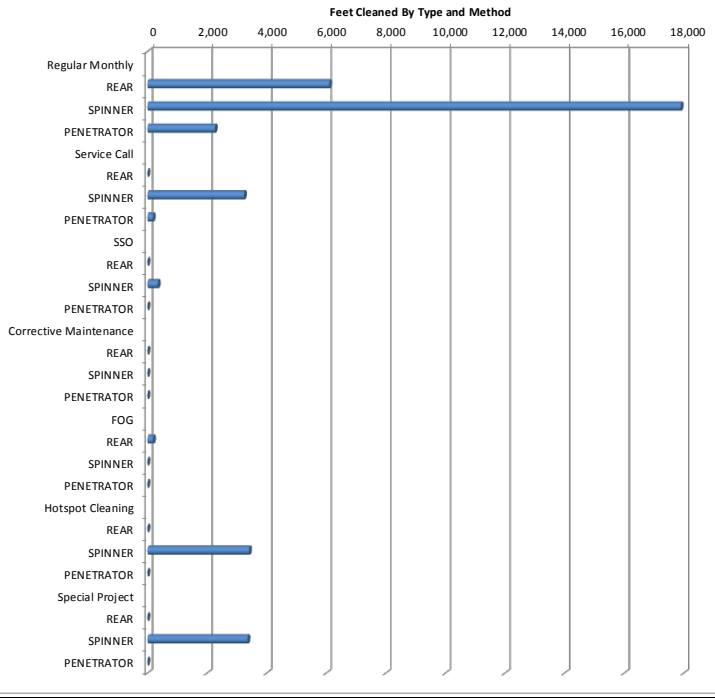
Collection and Conveyance
Report Period **September-18**

Line Cleaning Summary

Total Lines Cleaned:	205
Total Footage Cleaned:	57,861.41 ft
Total Footage with Cleaning Method:	36,993.40 ft
Unknown Cleaning Method Footage:	20,868.00 ft

Footage by Cleaning Method

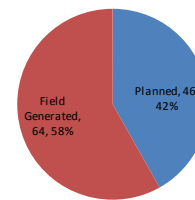
Cleaning Method	Method	Footage
Regular Monthly	REAR	6,104.62 ft
	SPINNER	17,902.06 ft
	PENETRATOR	2,262.69 ft
Service Call	REAR	0.00 ft
	SPINNER	3,241.00 ft
	PENETRATOR	181.00 ft
SSO	REAR	0.00 ft
	SPINNER	347.00 ft
	PENETRATOR	0.00 ft
Corrective Maintenance	REAR	0.00 ft
	SPINNER	0.00 ft
	PENETRATOR	0.00 ft
FOG	REAR	187.00 ft
	SPINNER	0.00 ft
	PENETRATOR	0.00 ft
Hotspot Cleaning	REAR	0.00 ft
	SPINNER	3,410.03 ft
	PENETRATOR	0.00 ft
Special Project	REAR	0.00 ft
	SPINNER	3,358.00 ft
	PENETRATOR	0.00 ft



Pipe Clean Production

By Crew Leader	Footage	# of days	Work Order Scheduling	
			Footage per day	Planned Field Generated
ARMSTRONG	0.00	0	0	0
HENDRICKS	3,707.51	8	463.44	18
LEWIS	13,464.71	14	961.76	4
HILL	0.00	0	0	0
WALLIS	0.00	0	0	0
MENDOZA	13,832.55	13	1,064.04	24
SIMONETTI	0.00	0	0	0
Totals	31,004.76	35	885.85	46

Pipe Clean Work Order Analysis



Pipe Clean by Pipe Material

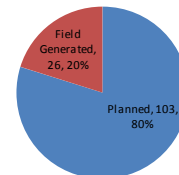
Pipe Material	Footage	# of Segments
VCP	31,253.63	108
PVC	1,919.12	8
Unknown or Other	24,688.66	89
Total	57,861.41	205

CCTV Activity Summary

Activity	Footage	Planned	Field Generated
CCTV Total Footage	16587.70 ft	103	26
Successfully Imported			
Number of Lines Tved:	104		
Total Footage Tved:	16,587.70 ft		
Unsuccessfully Imported			
Number of Lines Tved:	25		
Total Footage Tved:	4,842.21 ft		

Work Order Scheduling

CCTV Work Order Analysis



Monthly Operating Report Richmond WWTP and Collection System

September 2018

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	1
Manual Cleaning	0
Visual Inspection	0
Exercise FM Pressure Valve	0
Markout Locations	0

Number of Call Outs

Total Number of Call Outs: 14

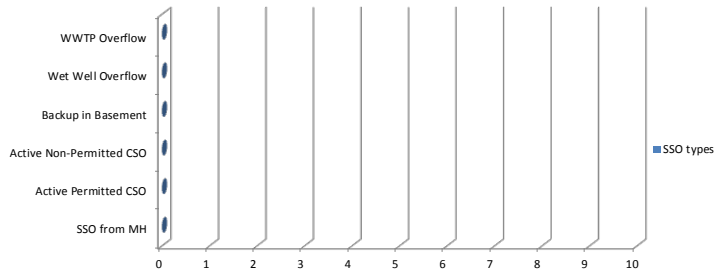
Call outs from Customer Complaints: 12

Call outs from SSO: 2

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

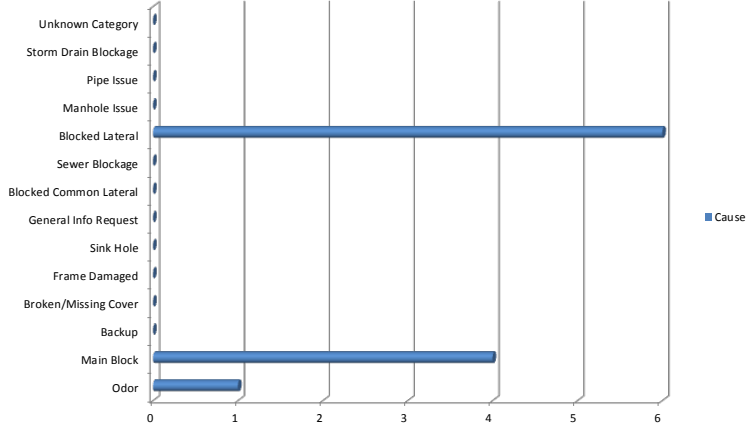
Call outs by SSO Type



Call outs from Customer Complaints:

Call outs by Cause	
Odor	1
Main Block	4
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	6
Manhole Issue	0
Pipe Issue	0
Storm Drain Blockage	0
Unknown Category	0
Totals	11

Cause



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	10	N/A
Storm Service Calls	7	N/A
Storm CCTV (ft)	1-(90-Ft)	N/A
Storm GPS Surveys	0	N/A
Storm Pipe Cleaning (ft)	8-segments (3000-Ft)	N/A
Storm General Maintenance Cleaning (Linear feet of V-Ditches, Culverts or Creeks)	5	N/A
Pump Stations/Inlet/Outlet Channels Cleaned	0	N/A
Catch Basins/Inlets/Storm Drains Cleaned	12	N/A
Storm Vaults Cleaned/Inspected	0	N/A
GSRD (trash capture device) Cleaning/Inspections	4	4/year
Flap Gate/Duck Bill Inspections	2	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 100% complete.*

- Construction is complete; as-built drawings are due October 18, 2018.
- Once the Contractor completes the necessary close out paperwork, retention will be released and final invoicing to the City will occur.

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

September 2018

- Construction on Phase 1 is beginning October 1, 2018 on 22 point repairs and two line replacements 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 were submitted.
- CPM staff is vetting and identifying Phase 2 project list.

Cutting/Carlson & Hoffman Boulevard Projects. 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 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. Design is 100% complete. Construction W.R. Forde, \$7,281,000 for both projects.*

- Notice to Proceed was issued effective October 1, 2018.
- W.R. Forde will be providing a detailed project schedule; Hoffman portion to be completed first.
- Veolia is working with the City and with local businesses and residences on upcoming work.
- Veolia is also working with the City to post notifications online and on social media.

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, so that it can be re-assessed and graded to meet Baykeeper requirements. Project is 100% complete.*

- The draft Force Main Condition Assessment report was provided on August 31, 2018.
- Final Force Main Report was provided to the City and notification was made to Baykeeper prior to the October 1st 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 98% complete.*

- A review meeting was held on September 20, 2018, to review the report and its findings.
- Final report to be distributed in October 2018.

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.*

September 2018

- VWA has completed project definition based on CCTV data review.
- Aerial survey and field work for topographic survey have been completed; 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 approximately 75 manholes within the City's collection system.*

- Approximately 79 manholes have been rehabilitated thus far by the end of August 2018.
- The project is complete; final closeout and billing underway.

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.

- Flow monitoring will begin on December 1, 2018 and continue through March 31, 2019.
- The Hydraulic Model is on hold until spring 2019, following the 2018-19 Flow Monitoring Program.

2019 Risk Model Update and RAA V.W. Housen & Associates

- V.W. Housen will utilize the full dataset provided by Veolia in early November to update the Risk Model and provide an updated RAA for Grade 5 repairs by January 3, 2019.
- Related SF Baykeeper 2019 RAA Document to be submitted by January 15, 2019.

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 is 30% complete.*

- A second meeting involving the City and staff from Veolia and NCE was held to discuss 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.*

- Carollo is still on hold regarding their design efforts until further notice.

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- Carollo prepared supplemental information for the SRF application for the WWTP Critical Improvements Project. That information included a supplemental TM, a Climate Change Worksheet and an A/E certification form to the State.
- 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 been completed; the concrete has been evaluated to be in significantly worse condition than in Sed Basin No. 2.
- Overaa has made repairs to the area that was damaged and plans to install flights and chains in October.