

Monthly Operating Report

Richmond WWTP and Collection System

October, 2017

Executive Summary

- There were no permit violations in the month of October 2017
- The monthly acute aquatic bioassay test passed with 100% survival of the fathead minnows.
- Completed subcontract to install new plant security and fire monitoring system

Wastewater Treatment Plant

- There were 2 odor complaints (received via e-mail as opposed to telephone) from the Point Richmond area in October. The H₂S monitoring instruments did not detect elevated readings at the time. Further, there were 5 fence line H₂S alerts during the month of October indicating H₂S at 30ppb or higher. The alerts were received on the 16th, twice on the 23rd, the 26th and 27th of the month and the H₂S level did not exceed 35ppb. The existing H₂S monitoring system is due to be replaced in the next month.
 - A dead skunk was noted on Canal Blvd in line with, and close to the North fence H₂S monitor. Two days later a dead deer was discovered on Canal Blvd on the median in front of the Watershed Nursery entrance and in line with the plant grit chamber.
 - There were two visits from Mr. Salvador Rueda, the BAAQMD Air Quality inspector. His first visit was on the 23rd when the cause of odor was identified as the dead skunk. On his 2nd visit, it was Mr. Rueda who noticed the dead deer and the odors coming from it. Mr. Rueda said there had been several odor complaints from Richmond residents. He confirmed there were no unusual odors emanating from the plant and concluded that the skunk and possibly a different location in Point Richmond may have been the source of odor.
- In an unrelated incident, on 26th October, the H₂S concentration in the digester biogas (contained in the Digester No 1 gas holder), rose to 300 ppm, i.e., 100 ppm above the permit level. A split in the ferric chloride pump tubing was found to be the cause. The levels returned back to below 200 ppm on October 30th.
- ZAPS influent monitoring system's communication modem has been received and installed. The system is now being calibrated against samples manually collected and analyzed by an external laboratory

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Table 1 Parameter	Monthly Performance Indicators	Limit/Target
Treatment Plant Operations:		
Influent Flow, daily average (MGD)	4.61	N/A
Effluent Flow, daily average (MGD)	4.78	N/A
Influent BOD ₅ , avg. mg/L	376	N/A
Influent TSS, avg. mg/L	384	N/A
Effluent TSS, monthly average mg/L	13.8	30 or less
Effluent BOD, monthly average mg/L	14.7	30 or less
% BOD Removal	96.1	> 85
% TSS Removal	95.9	> 85
NPDES Effluent Limit Violations	0	0
Blending events	0	0
Total volume blended, MG	0	0
Odor complaint calls	0	0
Digested sludge pumped to drying beds, MG	0.803	N/A
Leachate received, GAL	360,620	N/A
Leachate received YTD, MG	3.99	N/A

Maintenance

Staff completed 346 total maintenance work orders during the month; preventative; 101 at sewer lift stations, 108 for storm water pump stations and 137 work orders at the treatment plant. 11 corrective work orders were also completed.

Completed Projects; October

- Installed new cog rake control panel with differential level control
- Completed scheduled preventative maintenance on all lift station emergency back-up generators (subcontracted to Peterson CAT)
- Replaced underperforming TWAS pump #2 with a new Lobestar pump
- Removed and replaced #4 RAS Pump
- Removed Influent Pump #3 and shipped off site for rebuild
- Repaired Plant Air Compressor #2

Look Ahead; November

- Install rebuilt number 3 influent pump

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- Assist with replace and relocation of check-valves located at the Brickyard (HOA) lift station (Ghilotti Construction moved from October)
- Replaced 4" corroded ductile iron pipe for #3 water to old heat exchange building (moved from October)
- Install Network Video Recorder and four security cameras to test alternative systems
- Complete contract and vendor set up to have new automated security gates installed at plant site

Collection Systems

Contractor will be installing a new system of hardware and software components to monitor sewer level in select manholes around the city of Richmond called FlowView from ADS. This will replace and expand the existing system (from 9 to 20 locations). QA/QC for the week was completed and involved televising/evaluating lines that were cleaned the previous day. That effort resulted in quality cleaning and some point repairs required in the sewer system.

All Vactors are performing on a daily basis with minor repairs being accomplished with maintenance and collection staff working together.

During the month of October we had 4 dry weather sanitary sewer overflow events. All are preliminarily reported as Category III with no impact to storm system.

1. Marina Bay Parkway
2. 44th St and Macdonald Ave
3. Humboldt and Solano
4. Wendell and 23rd St

There were a total of twenty one sanitary sewer service calls in October, eleven of which were private lateral issues. (See table 2).

Sanitary Sewer Point Repair:

There were three sanitary sewer repairs performed during the month of October 2017.

- Sinkhole repaired and completed at 826 s. 49th St.
- There were 2 major voids repaired on the same sewer line at 619 and 629 Roosevelt Ave
- In addition to the above mentioned point repairs, there was one manhole frame and cover replaced during the month

Storm Water System

There were five storm-water related service calls in September. (See table 3).

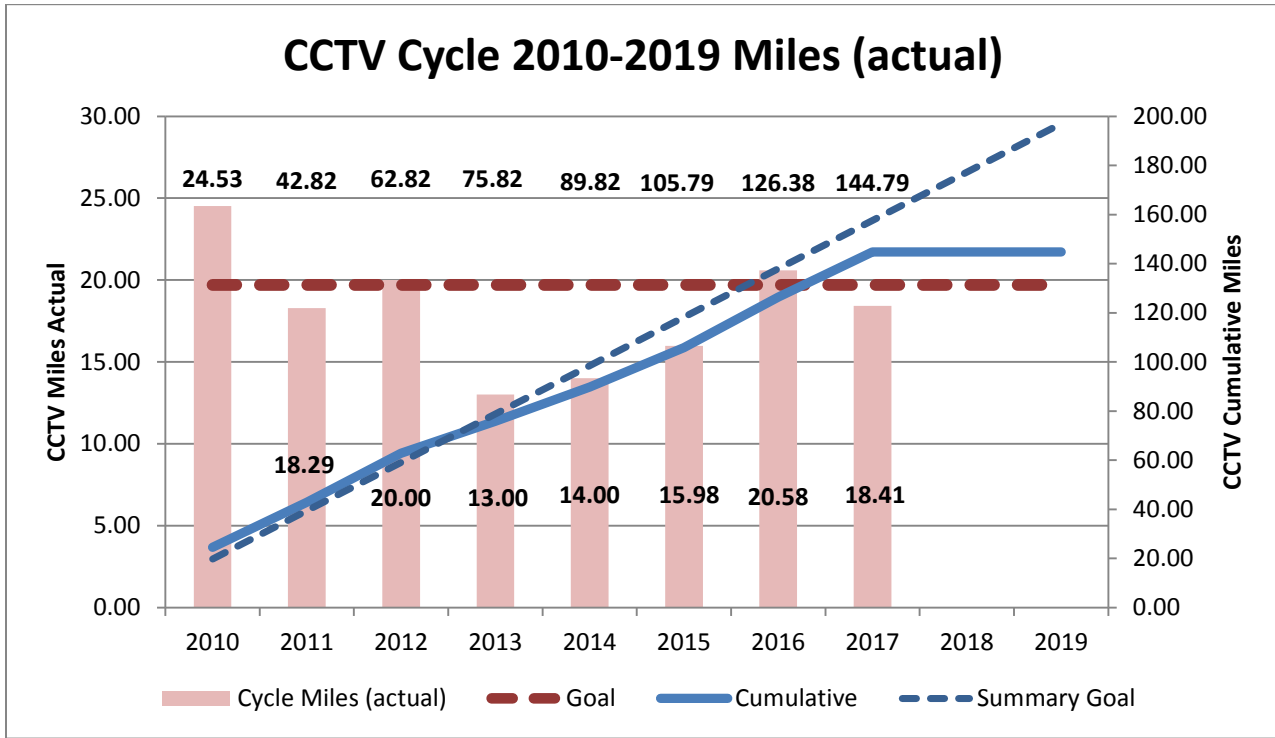
Storm Water Highlights

- Point Molate 2 sinkholes repairs and completed.

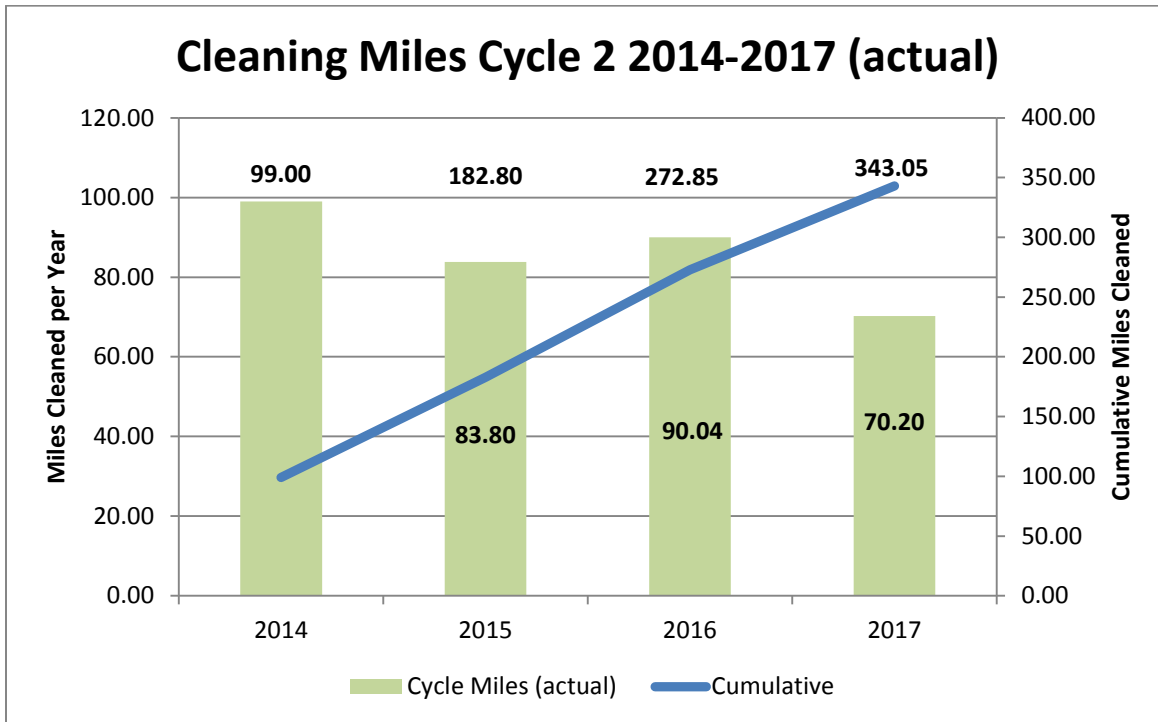
Collection Systems Monthly Performance Indicators

Veolia is in the 8th year of a 10-year CCTV cycle. Cycle start date was January 1, 2010.

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Veolia is in the final year of a 4-year sewer cleaning cycle. Cycle start date was January 1, 2014. Cumulative footage exceeds the goal to-date.



Sanitary System Performance Indicators

Table 2

Performance Indicator	Monthly Actual	Target/Limit
Service Calls (Public Facilities/Assets)	21	N/A
Service Call Response Time (minutes)	<30	<30
Private Lateral Service Calls; Regular/After Hours	11/2	N/A
Regular/OT Hours Spent on Private Lateral Calls	22/4	N/A
Point Repairs Completed	3	N/A
Manhole Inspections	0	N/A
Manhole Repairs	1	N/A
CCTV (Closed Circuit TV) (ft.)	7,036	7,000
GPS Surveys	0	As needed
Cleaning (ft.)	40,531	25,000
Cleaning QA/QC Events	6	4
SSOs for current month – Mainline	4	10/yr
Total Mainline SSO Volume (gallons)	1,472	0
Total Mainline SSO Volume Recovered (gallons)	1,372	100%
% Mainline SSO Volume Recovered	93%	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	3	N/A
Sewer Lift Station PMs	101	N/A
Potential SSOs Eliminated due to SmartCover Monitors	0	N/A
SSOs – Mainline – Resulting in Property Damage	0	0
Total Wet Weather SSOs Year to Date	35	0
Total Dry Weather SSOs Year to Date	16	10 - Baykeeper
Number and Percentage of SSOs During 2017 with Discharge Reaching Storm Water Conveyance	37 of 51 - 72%	N/A

Storm Water System Performance Indicators

Table 3

Performance Indicator	Monthly Actual	Target/Limit
Storm Point Repairs	1	N/A
Storm Manhole Repairs	0	N/A
Storm Manhole Inspections	0	N/A
Storm Service Calls	7	N/A
Storm CCTV (ft)	0	N/A
Storm GPS Surveys	0	N/A
Storm Pipe Cleaning (ft)	882	N/A
Storm General Maintenance Cleaning (Linear feet of V-Ditches, Culverts or Creeks)	0	N/A
Pump Stations/Inlet/Outlet Channels Cleaned	0	N/A
Cash Basins/inlets/storm drains Cleaned	33	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
Storm Water Pump Station PMS	108	N/A

Capital Improvement Program

13th Street & Dunn and 23rd Street Rehabilitation Projects. *W.R. Forde; Vivian 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 \$10.1M. Construction is 30% complete.*

- 13th St. from Costa to Gaynor – All underground piping and manholes are installed and fully functioning. Remaining portions of 13th Street project will begin after 23rd Street portion is substantially complete
- Finish paving still to be completed; completion date TBD, based on priorities
- New 21” and 8” Mains being installed Northward at intersection of 23rd and Virginia
- Change order work at high school basin is ongoing. Potholing of entire basin should be completed by 11/17
- Mainline installation on Bush started from manhole in 23rd Street

Cutting, Carlson, and Hoffman Boulevard Project Designs. *Vivian W. Housen & Associates (SRF). This project replaces pipelines with NASSCO PACP Structural Grade 4 and corrects 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.*

- 100 percent design documents (VWHA) for Cutting/Carlson Boulevard have been submitted

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- Construction of this project currently on hold for State funding; bidding for both projects will occur after the City receives approval for SRF funding

Electrical Upgrade Project Construction. *Central Sierra; Carollo Engineers. The purpose of this project is to upgrade the outdated and failing Electrical Distribution System of the Richmond Wastewater Treatment Plant. Construction is 99% complete; Design Services During Construction – 95% complete.*

- Finished up on pre-electrical change-over readiness for New Plant Main Electrical Switchgear

Hazel Avenue Emergency Sinkhole Repair and PL Installation. *W.R. Forde Associates. This project will install HDPE and new manholes to connect existing storm drain lines and circumvent corroded pipes which caused a hazardous sinkhole on a homeowner's property. Construction is 85% complete.*

- Hard rock and saturated soil conditions encountered, new storm drain line tied into upper terminus
- Trench backfilled and temporarily paved
- Additional surface restorations to be determined

Lift Station MP & Assessment. *Vivian 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 50% complete.*

- Planning work is underway; consultant is reviewing existing data
- Consultant has inspected the City's 13 wastewater pumping stations and is developing recommendations

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

- Bay Hawk was awarded the contract in October
- Ten manholes have been rehabilitated thus far; contractor is awaiting additional locations

Richmond Trash Capture Devices Project (Construction). *W.R. Forde Associates. This project involves installing two below-ground, flow-through treatment devices that use multiple treatment processes to screen, separate and trap trash, debris, sediment, hydrocarbons and other pollutants from stormwater runoff. Design is 100% complete; construction is 100% complete.*

- Entire project is complete; both sites are filtering and functioning

Richmond WWTP Biosolids to Energy Plan. *CH2M. This project provides engineering services to prepare a Biosolids and Energy Plan for the Richmond Waste Water Treatment Plant. Project is 45% complete.*

- Consultant CH2M continued to develop and evaluate energy and biosolids alternatives
- The third workshop with consultant, City and Plant staff is scheduled for November 30

Richmond WWTP Yard Expansion Project. *Bay Hawk. The purpose of this project is to (a) abandon the obsolete diesel and gasoline fuel system at the Richmond Plant and (b) remove and relocate the street sweeper yard to a different location outside of the WWTP. Project is 10% complete.*

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- Contract with Bay Hawk was executed in early October
- Contractor completed all grading & installed a grease inceptor
- City is scheduled to pave the week of 11/20-11/24, weather permitting
- Contractor will install the Fence & K-Rail after the paving
- Staff is working on getting permits approved to remove and dispose of the fuel tank system

Sludge Leachate Line Condition Assessment. *V&A Engineering. The purpose of this project is to assess the current condition of the City of Richmond's Sludge Leachate Line, which is old and in need of repair. A final condition assessment report will be supplied. Project is 85% complete.*

- V&A completed data analysis.
- V&A finished draft report; the report is in V&A's internal QAQC process

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. Design services during construction are 30% complete; construction is 25% complete.*

- Carollo continued preparation of the preliminary design for the CEPT facilities
- Carollo incorporated the electrical, instrumentation, and control design modifications for the secondary clarifier improvements into the WWTP Critical Improvements 100% Design deliverable (to support construction efforts)
- Carollo provided responses to construction submittals and requests for information, and attended weekly construction meetings
- Replacement of PRV's at Clarifier 1 – Complete
- Concrete Modifications at Clarifier 1 – Complete
- Repairs to Launderers & Supports at Clarifier 1- 25% Complete
- Installation of Mechanism at Clarifier 1 – 50% Complete

WWTP 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 and development of design alternatives is 35% complete.*

- Completed draft scope and fee for geological and geotechnical hazard assessment report
- Prepared hydrologic evaluation presentation materials