Monthly Operating Report
Richmond WWTP and Collection System
September, 2017

Executive Summary

- There were no permit violations in the month of September 2017
- There were no blending events in September
- The monthly acute aquatic bioassay test passed with 100% survival of the fathead minnows.
- Several Veolia staff attended a Joint Monthly Meeting of the CWEA San Francisco Bay and the Redwood Empire Section in Pleasant Hill. The speaker was Matt Kallerud who summarized West County wastewater plant's upgrade plans and implementation in a talk titled "Keeping Things Flowing While Under Construction".
- Veolia and City Staff, along with consultants, began earnest information exchanges with the Regional Board in support of the upcoming NPDES Permit reissuance. The first face to face meeting with regulators in support of the process is scheduled for October 18.
- Veolia and City Staff (including legal representatives), along with consultants, continued working on response to the Baykeeper's most recent letter. The response was finalized and transmitted on October 10.
- Veolia and City Staff attended the West County Agency quarterly Board Meeting

Wastewater Treatment Plant

- There was one odor complaint during the month of September on the 26th at 0745 hours. The complaint was made via e-mail as opposed to being phoned in which is customary. Staff responded by performing an H2S survey at the treatment plant followed by a visit to the residence. No unusual H2S readings were recorded and the resident reported back shortly afterwards that the odors had dissipated.
- There were no H2S alerts from the fence line monitors. A new H2S monitoring system is in development and is planned to be operational by the end of the year.
- On 28th September, the H2S concentration in the digester gas (Digester 1) was measured at 500 ppm whereas the permit limit is 200 ppm. The problem was determined to be the chemical (ferric chloride) feed line and peristaltic pump used for dispensing the chemical. The line was cleaned and the feed pump replaced. A procedure has been implemented to clean the line and

inspect the peristaltic pump every 3 months. In these instances the Air District Permit requires that any measurement greater than 200 PPM to be corrected within 14 calendar days

- The DAFT (dissolved air flotation thickener) unit, used to thicken waste activated sludge (WAS) suffered mechanical issues during the 2nd half of September. The issue seems to be resolved however staff is monitoring and considering possible solutions. It is important to note the DAFT system is nearly 40 years old and at the end of its useful life. A replacement rotary drum thickener (RDT) system is in design and expected to be in construction after the first of the year (2018).

Table 1 **Parameter**	Monthly Performance Indicators	Limit/Target
Treatment Plant Operations:		
Influent Flow, daily average (MGD)	5.15	N/A
Effluent Flow, daily average (MGD)	5.08	N/A
Influent BOD_5, avg. mg/L	350	N/A
Influent TSS, avg. mg/L	328	N/A
Effluent TSS, monthly average mg/L	13.6	30 or less
Effluent BOD, monthly average mg/L	14.9	30 or less
% BOD Removal	96.0	> 85
% TSS Removal	95.8	> 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	1.828	N/A
Leachate received, GAL	384,360	N/A
Leachate received YTD, MG	3.63	N/A

Maintenance

Staff completed 232 total maintenance work orders during the month; preventative; 81 at sewer lift stations, 71 for storm water pump stations and 60 work orders at the treatment plant. 20 corrective work orders were also completed.

Completed Projects; September

- Continued work in support of the plant electrical upgrade project. Began focusing on the Fiber network connection portion.

- Continued working on the contract with Bay Alarm to upgrade the existing plant security and smoke/fire alarm monitoring.

- Working to commission the Zaps (real time influent monitoring) machine. It was determined to be a communication issue with the modem. Zaps is configuring a new modem which should be on site the week of October 24th.

Look Ahead; October

- Install new Bar Screen M&C panel. (Central Sierra Electric)
- Complete preventative maintenance of all lift station emergency back-up generators (subcontracted to Peterson CAT)
- Replace 4" corroded ductile iron pipe for #3 water to old heat exchange building
- Replace damaged TWAS pump #1 located at DAF Tank #2 (and rebuild)
- Remove and replace damaged #4 RAS Pump (and rebuild)
- Remove damaged Influent Pump #3 (and rebuild).
- Assist with replace and relocation of check-valves located at the Brickyard (HOA) lift station (Ghilotti Construction)
- Repair Plant Air Compressor #2.

Collection Systems

Sanitary Sewer System Highlights

Staff focused on O&M and hot spot cleaning during the month and weekly QA/QC procedures (CCTV review) were completed for randomly selected sewer lines that were cleaned the previous day.

All Vactor trucks are in service with minor repairs being accomplished with maintenance and collection staff working together.

During the month of September there were 3 dry weather sanitary sewer overflow events.

1. 327 3rd St. – Category 3; 15 gallons spilled with complete capture and return to sewer. No impact to storm system.
2. 516 Dimm St. – Category 3; 10 gallons discharged, 8 gallons recovered and 2 gallons soaked into soil/ground. No impact to storm system.
3. San Pablo and Macdonald Ave. – Category 3; 5 gallons spilled to street gutter and all evaporated prior to cleaning. No impact to storm system.

There were a total of sixteen sanitary sewer service calls in September, ten of which were private lateral issues. (See table 2).

Staff is spending a large amount of time involved and assisting with sewer construction projects in the service area

Veolia's collection system manager retired at the end of September and the recruitment is open for his replacement.

Sanitary Sewer Point Repair:

There were two sanitary sewer repairs performed during the month of September 2017.

- New manhole frame and cover was installed at 1074 s 57th St.
- The sinkhole at Santa Fe was repaired and completed.

Storm Water System

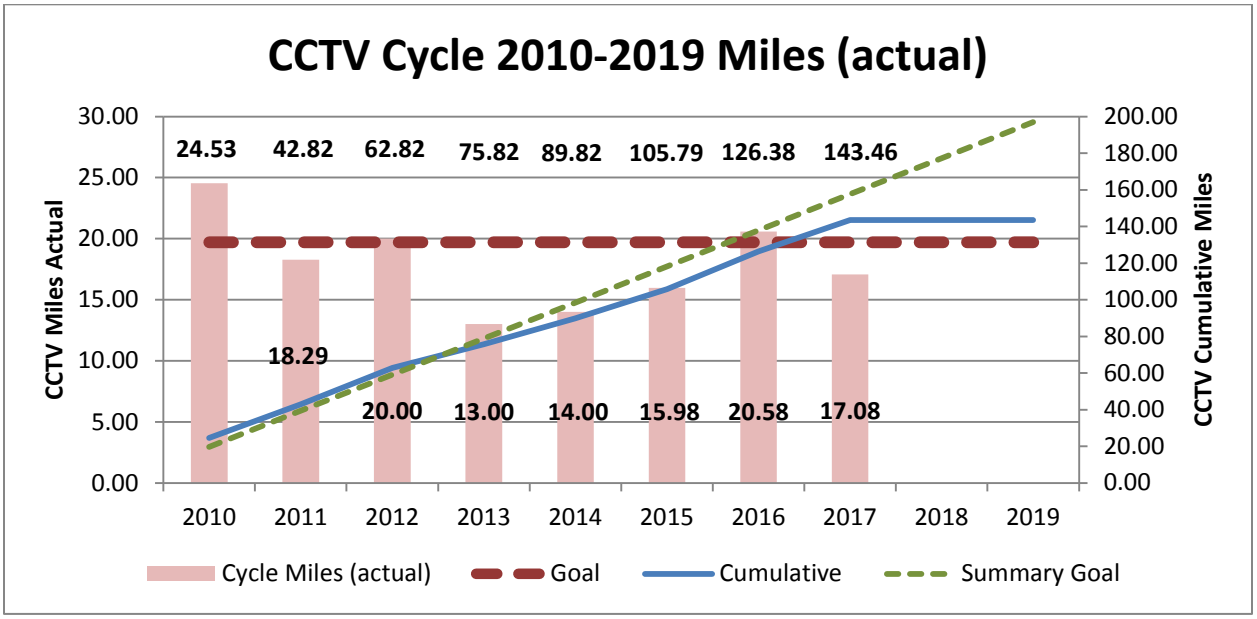
There were five storm-water related service calls in September. (see table 3).

Storm Water Highlights

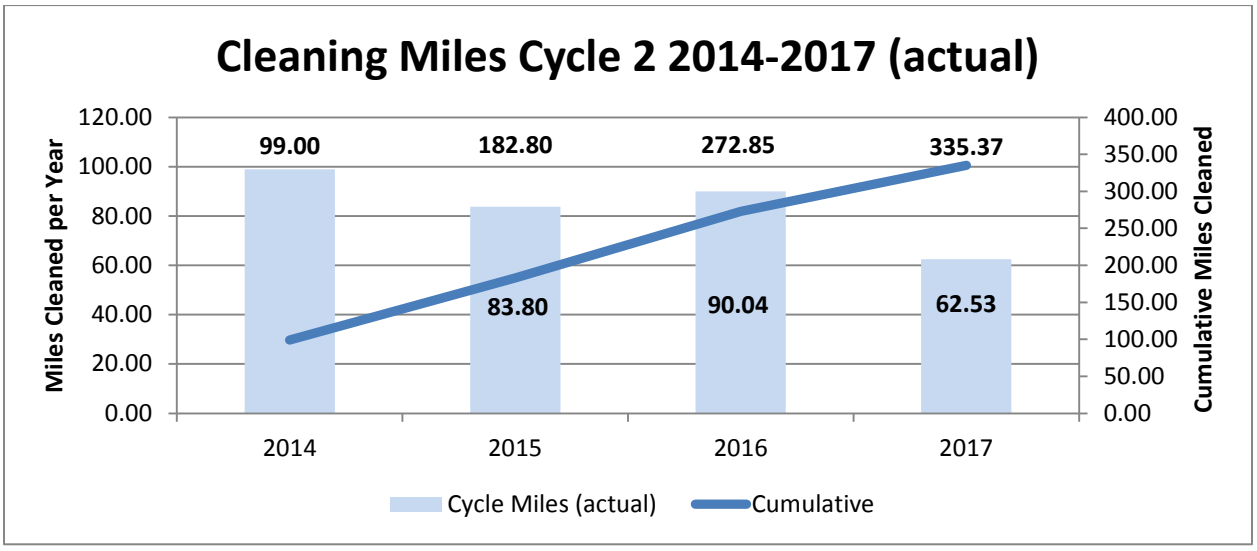
- Slip lining project for 317 Western Drive repair was completed in September.
- Installation of new ditch inlet with 200' of 8" drainage at Western Alley was completed.

Collection Systems Monthly Performance Indicators

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



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)	16	N/A
Service Call Response Time (minutes)	<30	<30
Private Lateral Service Calls; Regular/After Hours	10/2	N/A
Regular/OT Hours Spent on Private Lateral Calls	20/4	N/A
Point Repairs Completed	1	N/A
Manhole Inspections	0	N/A
Manhole Repairs	1	N/A
CCTV (Closed Circuit TV) (ft.)	9,813	7,000
GPS Surveys	0	As needed
Cleaning (ft.)	47,814	25,000
Cleaning QA/QC Events	6	4
SSOs for current month – Mainline	3	N/A
Total Mainline SSO Volume (gallons)	30	0
Total Mainline SSO Volume Recovered (gallons)	23	100%
% Mainline SSO Volume Recovered	77%	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	81	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	15	10 - Baykeeper
Number and Percentage of SSOs During 2017 with Discharge Reaching Storm Water Conveyance	37 of 50 - 74%	N/A

Storm Water System Performance Indicators

Table 3

Performance Indicator	Monthly Actual	Target/Limit
Storm Point Repairs	2	N/A
Storm Manhole Repairs	0	N/A
Storm Manhole Inspections	0	N/A
Storm Service Calls	4	N/A
Storm CCTV (ft)	0	N/A
Storm GPS Surveys	0	N/A
Storm Pipe Cleaning (ft)	488	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
Catch Basins/inlets/storm drains Cleaned	17	N/A
Storm Vaults Cleaned/Inspected	0	N/A
GSRD (trash capture device) Cleaning/Inspections	1	4/year
Flap Gate/Duck Bill Inspections	0	4/year
Storm Water Pump Station PMs	71	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. Construction is 12% complete.*

- 13th St. – All underground piping and manholes are installed and fully functioning
- Finish paving still to be completed; completion date TBD, based on priorities

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 95% complete.*

- 100 percent design documents (VWHA) for Cutting/Carlson Boulevard have been submitted
- 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 Electric; 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 98% complete; Design Services During Construction – 93% complete.*

- Central Sierra continued work on Site Security Lighting (approximate 99% complete)
- Generator Local Control Panel Installed and functioning

- Generator Switchgear/Control Panel Installed and in process of doing system checkout

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 75% complete.*

- Sinkhole and failed storm drain pipe filled with cellular concrete
- New storm drain system tied in at Yuba and Zara
- New storm drain pipe installed through second new manhole
- Completion of new storm drain pipework by 10/20/17

Lift Station Master Plan & 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. Design is 26% complete.*

- Design work is underway; consultant is reviewing existing data

Manhole Lining Rehabilitation Project. *In-house design.*

- Phase 1 of this project replacing 75 manholes with the City's collection system was awarded to Bay Hawk
- Staff and Contractor are reviewing project scope and cost; a TA is currently under review

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, which began in September, is 95% complete.*

- Marina Bay System is installed, functioning and complete
- South 8th and Potrero is installed, and final connections being performed the week of 10/16/17
- Lid set and system functioning the week of 10/16/17
- Service Restoration work TBD

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 30% complete.*

- Workshop No. 2 was held September 6, 2017
- A presentation for the City Council meeting was done September 26, 2017
- Consultant CH2M continued work on review of available background documents and data request
- Continued work on evaluation of co-digestion and feedstock opportunities; conducted investigation into potential local feedstock sources

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 75% complete.*

- V&A completed all field work (Friday 9/8 – Thursday 9/14)
- Bay Hawk restored all excavation sites
- Started data processing and writing the draft report

WWTP Critical Improvements Project Design. *Carollo Engineers. Design is 99.5% complete.*

- Carollo continued preparation of the 100% design deliverable
- Prepared project memorandum summarizing results of process sampling effort conducted by plant staff in March 2017
- This project will become a Design/Build project entitled WWTP High Priority Projects – Carollo to continue design; Overaa to do construction

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 10% 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
- Mechanical Demo – Clarifier 1 Complete
- Concrete Modifications – Clarifier 1 - Complete
- Replacement of PRV'S – Clarifier 1 - Complete
- Modifications of Launder & Supports – Clarifier 1 - 15% Complete
- Clarifier 1 Equipment to start arriving week of October 23, 2017

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 20% complete.*

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