

# Monthly Operating Report

## Richmond WWTP and Collection System

### *December, 2017*

## Executive Summary

- There were no known NPDES permit violations in the month of December 2017
- The monthly acute aquatic bioassay test passed with 100% survival of the fathead minnows.
- Veolia staff supported the City and consultants in gathering, developing and submitting information for various Baykeeper related activities
- December was a relatively dry month with only .05 and .13 inches of rainfall measured by the treatment plant and Richmond City Hall rain gauges respectively. For reference, about 5.9 inches fell in December of 2016 and the average over the past 5 years is about 6.0 for the month.
- The Plant Electrical Upgrade Project is 99% complete with some final programming of the emergency generator and connecting to the fiber optic network remaining to complete

## Wastewater Treatment Plant

- There were 3 odor complaints during the month of December, all of them from the Brickyard cove area. The first was on Dec 2<sup>nd</sup> called in from 109 Flagship Court at 1120PM. The second call was on December 7<sup>th</sup> at 5:30PM from 229 Drakes Bay Court (the resident visited the treatment plant the next day). Finally, the third complaint was from 230 Drakes Bay Court on December 17<sup>th</sup> at 1100PM. There were no unusual operational conditions or problems at the plant. It is noteworthy however that December was unusually dry and the weather conditions for nearly the entire month were relatively warm with little or no wind.
- ZAPS influent monitoring system: the results of the manually collected samples have been entered in the system for comparison with the results shown by the ZAP system. The operators are waiting for the system developer to validate the data so the commissioning may be completed.
- Entech Design, Inc. provided a demonstration electronic sludge depth probe and meter which was installed on the newly upgraded secondary (Clarifier #1) just after its return to service the first week of December. The probe and the clarifier worked well. At the end of one further week of testing, the probe was relocated to the Primary Clarifier #1 and appeared to work well for that application as well.

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- Staff attended three air quality webinars presented by Yorke Engineering. The topics concerned Rule 18, and new State wide air quality regulations as well as the webinar 'Quantification and Control of Odors'.
- Two meetings were held with community leaders (who are also Brickyard Cove residents) to try and identify odor issues/sources (thought related to the treatment plant) and address their concerns regarding same.

Table 1 Parameter	Monthly Performance Indicators	Limit/Target
<b>Treatment Plant Operations:</b>		
Influent Flow, daily average (MGD)	5.12	N/A
Effluent Flow, daily average (MGD)	5.05	N/A
Influent BOD <sub>5</sub> , avg. mg/L	402	N/A
Influent TSS, avg. mg/L	438	N/A
Effluent TSS, monthly average mg/L	11.8	30 or less
Effluent BOD, monthly average mg/L	16.8	30 or less
% BOD Removal	95.3	> 85
% TSS Removal	97.0	> 85
NPDES Effluent Limit Violations	0	0
Blending events	0	0
Total volume blended, MG	0	0
Odor complaints	3	0
Digested sludge pumped to drying beds, MG	1.194	N/A
Leachate received, GAL	352,500	N/A
Leachate received YTD, MG	4.70	N/A

## Maintenance

Staff completed 236 total maintenance work orders during the month; preventative; 87 at sewer lift stations, 69 for storm water pump stations and 67 work orders at the treatment plant. 13 corrective work orders were completed as part of the total.

Completed Projects; December

- Replaced laboratory floor with compliant, non-skid material.
- Removed and replaced 22 collector flights in Primary Clarifier #2.

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- Overhaul Primary sludge pump #1 and return to service.

Look Ahead; January 2018

- Install repaired influent pump #3 and return to service (pump is repaired and set to be installed the 2<sup>nd</sup> week of January)
- Install new automated security gate at plant facility (contract to be finalized)
- Install new flow-monitor and display in pump transport building (waiting on parts from vendor)
- Replace damaged purge valve actuator drive on Dystor #1 (parts ordered)
- Install new H2S monitor/sensors in plant facility (Sonoma Technologies).
- Replace partitions in men's bathroom located in administration building.
- Complete construction at new wash-down area of plant to accommodate City Street-sweeper traffic.

## **Collection Systems**

### **Sanitary Sewer System Highlights**

A contractor performing direct boring for a communications utility punched through a 10 inch sewer force main which triggered 22,148-gallons of sanitary sewer overflow that required emergency repair costing \$10k for excavation and temporary exterior point patch followed by application of a high-compression coupler fitting.

During the month of December the system experienced (4) dry weather sanitary sewer overflow events.

1. Marina Bay Parkway (Category 1; SSO impacted storm collections system)
2. 332 s 41<sup>st</sup> St (Category 3; no impact to storm system)
3. 201 Alvarado St (Category 3; no impact to storm system)
4. 5333 Gately Ave (Category 1; SSO impacted storm collections system)

There were a total of (24) sanitary sewer service calls in December, sixteen of which were private lateral issues (see table 2).

### **Sanitary Sewer Point Repair:**

There was (3) sanitary sewer repairs performed during the month of December 2017.

1. 201 Alvarado St. – repaired broken pipe
2. 5333 Gately Ave – repaired void soil visible
3. Marina Bay Parkway – force main emergency repair

### **Storm Water System**

#### **Storm Water Highlights**

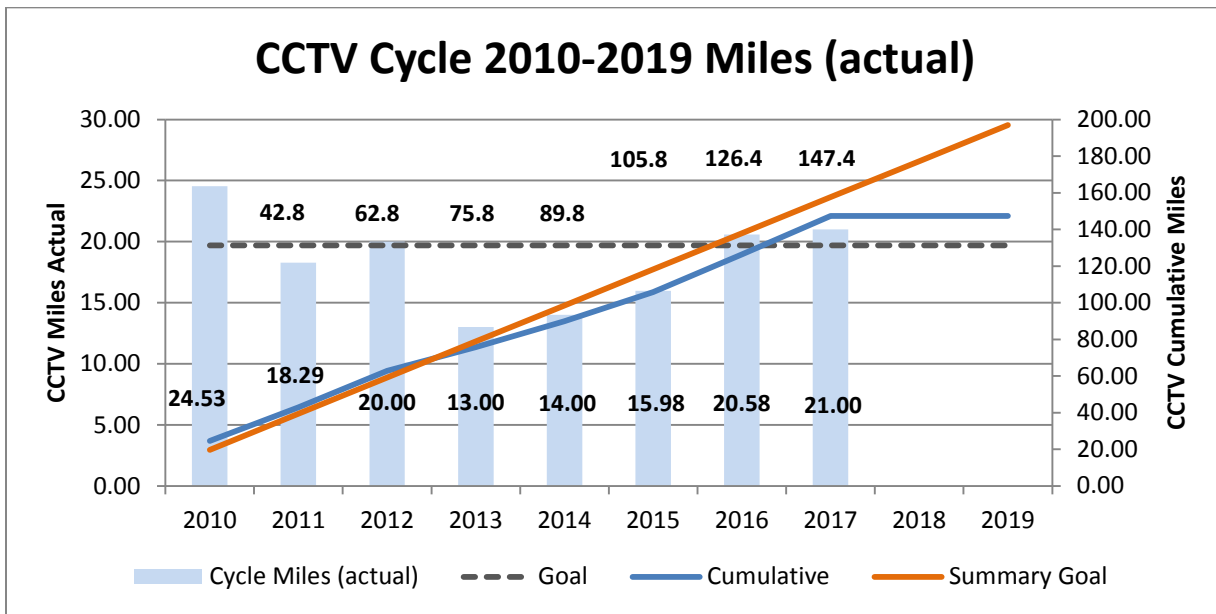
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- Staff cleaned (41) catch basins within the City of Richmond. In preparation for the wet season. Staff also cleaned and inspected the GSRD. The collections crew successfully removed over 3 tons of litter, debris, tires, couches and trash all bagged out of a storm conveyance ditch that runs around 600ft on the south side of Hoffman Blvd. adjacent to the railroad tracks. This was accomplished by utilizing the entire collection staff.

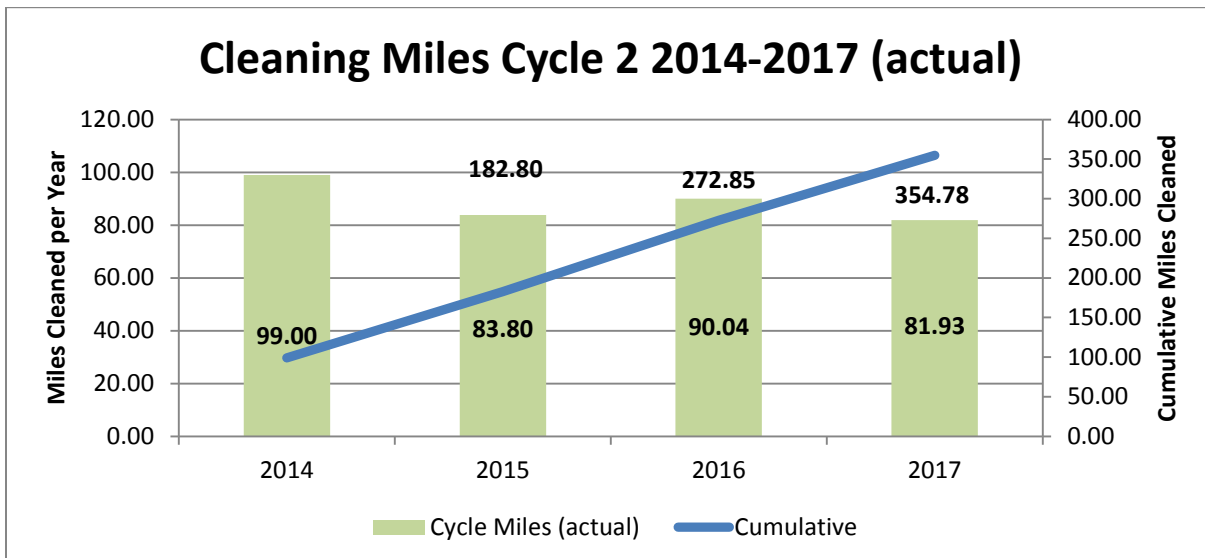
There were (4) storm-water related service calls in December (see table 3).

**Collection Systems Monthly Performance Indicators**

Veolia is in the 8<sup>th</sup> 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.



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**Sanitary System Performance Indicators**

**Table 2**

Performance Indicator	Monthly Actual	Target/Limit
Service Calls (Public Facilities/Assets)	24	N/A
Service Call Response Time (minutes)	<30	<30
Private Lateral Service Calls; Regular/After Hours	16/4	N/A
Regular/OT Hours Spent on Private Lateral Calls	32/8	N/A
Point Repairs Completed	3	N/A
Manhole Inspections	0	N/A
Manhole Repairs	0	N/A
CCTV (Closed Circuit TV) (ft.)	3,643	7,000
GPS Surveys	0	As needed
Cleaning (ft.)	33,243	25,000
Cleaning QA/QC Events	1	4
SSOs for current month – Mainline	4	10/yr.
Total Mainline SSO Volume (gallons)	25,662	0
Total Mainline SSO Volume Recovered (gallons)	1,774	100%
% Mainline SSO Volume Recovered	69%	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	10	N/A
Sewer Lift Station PMs	87	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	23	10 - Baykeeper
Number and Percentage of SSOs During 2017 with Discharge Reaching Storm Water Conveyance	40 of 58 – 68%	N/A

**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	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)	0	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	41	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	69	N/A

**Capital Improvement Program**

**13<sup>th</sup> Street & Dunn and 23<sup>rd</sup> Street Rehabilitation Projects.** *W.R. Forde; Vivian W. Housen & Associates. The 13<sup>th</sup> Street & Dunn project has been combined with the 23<sup>rd</sup> Street Sewer Replacement. The project was awarded to W.R. Forde at \$8.1M. Revised by CO \$10.1M. Construction is approximately 40% complete.*

- All underground piping and manholes for 13<sup>th</sup> Street are installed and fully functioning
- Work installing mainline and connecting laterals has begun on Rheem and continuing Eastward.
- Work will begin on additional streets in the 13<sup>th</sup> Street basin upon completion of work at high school area.
- Contractor has received the parts for Meeker Avenue SSO. Remobilization of two job sites on 1/11/18; completion estimated by 1/17/18
- All underground work in area of high school basin anticipated to be complete by 1/31/18

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

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**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 the changeover to new Electrical System
- Worked on demolition of old electrical equipment
- Worked on the Network System
- Final task item is planned to be the removal of the existing MCC at the Influent PS Building

**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 100% complete.*

- 100% Complete

**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 51% complete.*

- Consultant has reviewed the existing data and consulted with Veolia staff re: questions
- Consultant has inspected the City's 13 wastewater pumping stations and developed preliminary recommendations, which were discussed with Veolia staff on December 6<sup>th</sup>
- A follow-up field visit was conducted in late December to review sites; costs are under development for the agreed recommendations

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

- Seventeen manholes have been rehabilitated thus far
- Contractor is awaiting additional locations from Veolia

**Richmond WWTP Biosolids to Energy Plan.** *CH2M (now Jacobs). This project provides engineering services to prepare a Biosolids and Energy Plan for the Richmond Waste Water Treatment Plant. Project is 65 % complete.*

- Consultant went on a site visit to Silicon Valley Clean Water with City staff to look at implementation/operation of solids treatment and energy recovery technologies
- Began work on refinements to the preferred alternative and development of implementation strategy

**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 90% complete.*

- City paving of the new yard was delayed; the work was done on December 7<sup>th</sup>
- Contractor will install the Fence & K-Rail after the paving (in early January)
- Staff met with the County re: permits to remove and dispose of the fuel system

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**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 95% complete.

- Draft report went through V&A's internal QAQC process
- Internal QAQC comments and additional questions to Veolia are being addressed

**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 and development of design alternatives is 45% complete.

- Presented initial stormwater treatment findings to Veolia and the City of Richmond
- Working on deliverables and considering modifications identified in the scope

**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 10% complete; construction is 30% complete.

- Carollo provided preparation of the preliminary design for the SBS, CEPT, and Thickening Facilities; prepared for the condition assessment of the SBS Facilities; and attended design progress meetings
- Carollo was notified in mid-December to hold on the design effort until further notice, with the exception of the SBS Facilities Condition Assessment effort.
- Carollo provided responses to construction submittals and requests for information, and attended construction progress meetings
- Clarifier 1 was returned to service December 8th
- Primary Clarifier Basin Inspection by Evoqua - Complete
- Evoqua working on final Equipment Pricing
- Overaa demobilized for wet weather season
- Overaa will return to site in early March for Clarifiers #2 and #3