

Monthly Operating Report

Richmond WWTP and Collection System

August, 2017

Executive Summary

- Veolia operations staff attended a course of lectures and practicals by Dr. David Jenkins, Professor Emeritus UC Berkeley, during August, on filamentous organism identification and sludge settling problem resolution.
- Secondary Clarifier No. 1 taken out of service for upgrade as a part of the overall wastewater treatment plant upgrade. The clarifier is expected to be back in service by the end of November 2017. Major upgrade/replacement projects involving process units including the other two secondary clarifiers, grit removal system, DAFT (sludge thickening) system and aeration system (to include an anoxic selector and diffused air to replace the existing agitators) are planned over the next 2 to 5 years.

Wastewater Treatment Plant

- There was a single e-mailed odor complaint and one complaint called into the Air District on August 17. The complaint called into the Air District Inspector was relayed to Veolia staff as an odor detected by a motorist driving by the plant on Canal Blvd. The complaint was unconfirmed.
- There were no permit violations in the month of August 2017
- The monthly acute aquatic bioassay test passed with 100% survival of the fathead minnows.
- There were no blending events in July.
- H₂S in the digester gas was measured at 300 ppm (the limit is 200 ppm) on August 15 and reported to the Air District that day. The issue was due to a mechanical problem with the ferric chloride pump which was repaired immediately. Within 2 days the H₂S level had dropped back below 200 ppm. The Air District Permit to Operate requires the H₂S level to be reduced within 15 days which it was.

Table 1	Parameter	Monthly Performance Indicators	Limit/Target
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*Monthly Operating Report
Richmond WWTP and Collection System*

August, 2017

Treatment Plant Operations:		
Influent Flow, daily average (MGD)	5.11	N/A
Effluent Flow, daily average (MGD)	4.90	N/A
Influent BOD ₅ , avg. mg/L	419	N/A
Influent TSS, avg. mg/L	374	N/A
Effluent TSS, monthly average mg/L	11.9	30 or less
Effluent BOD, monthly average mg/L	14.8	30 or less
% BOD Removal	96.0	> 85
% TSS Removal	96.8	> 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	1.672	N/A
Leachate received, GAL	480,800	N/A
Leachate received YTD, MG	3.25	N/A

Maintenance

Staff completed 421 total maintenance work orders during the month; 145 at sewer lift stations, 106 for storm water pump stations and 155 work orders at the treatment plant. In addition 15 corrective work orders were also completed.

Completed Projects; ongoing

- Continuing work in support of plant electrical upgrade project. Central Sierra completed the installation of the plant's perimeter lighting and is now installing the fiber optic terminations.
- Executed contract with Bay Alarm to redo existing plant security and smoke/fire alarm monitoring. Awaiting installation of equipment
- Completed the changeover from Homa pumps to Flygt non-clogging pumps at Sunset point lift station. This will improve pump station reliability.
- Updated list of 2017 treatment plant and lift station maintenance projects

Look Ahead; September - October

- The Cog Rake Electrical Panel Upgrade is now scheduled for October as a joint project with Central Sierra.
- Maintenance staff will be working closely with Central Sierra on the next five phases of the Electrical Upgrade Project and they are:

August, 2017

- Phase 1, powering up the 15 KVA switch board which includes the emergency generator control panel
- Phase 2, powering up Switchboard # 2
- Phase 3, powering up Switchboard # 3
- Phase 4, powering up Switchboard # 1
- Phase 5, connecting the fiber network
- Cagwin & Dorward has been selected to provide landscape maintenance service around the entrance and parking areas of the facility
- Influent Pump # 3 will be removed and rebuilt
- Synagro is scheduled for influent wet well, grit and storm basin cleaning in September/early October
- Subcontracted for an instrumentation and control technician to supplement project staff in performing related preventative and other maintenance activities. The current, late stage of the plant Electrical Upgrade Project has created more workload for project staff than can be effectively managed.

Collection Systems

Sanitary Sewer System Highlights

RedZone Robotics completed the pipe condition assessment of certain large diameter pipes; submittal of final report and CCTV data to Veolia are pending.

A new collection system technician with commercial driver's license (Class B) is set to start on September 15th.

During the month of August there were 3 dry weather sanitary sewer overflow events. Of the 3 SSOs, 1 impacted the storm system with only 8 of 592 gallons (1.4%) not recovered. SSO locations as follow;

1. 535 Marina Bay Parkway
2. 825 8th Street
3. 2016 Macdonald Avenue

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

Sanitary Sewer Point Repair:

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

- W Richmond and Santa Fe Sinkhole Point Repair is completed.
- 1212 Cutting Blvd replaced frame and cover

Storm Water System

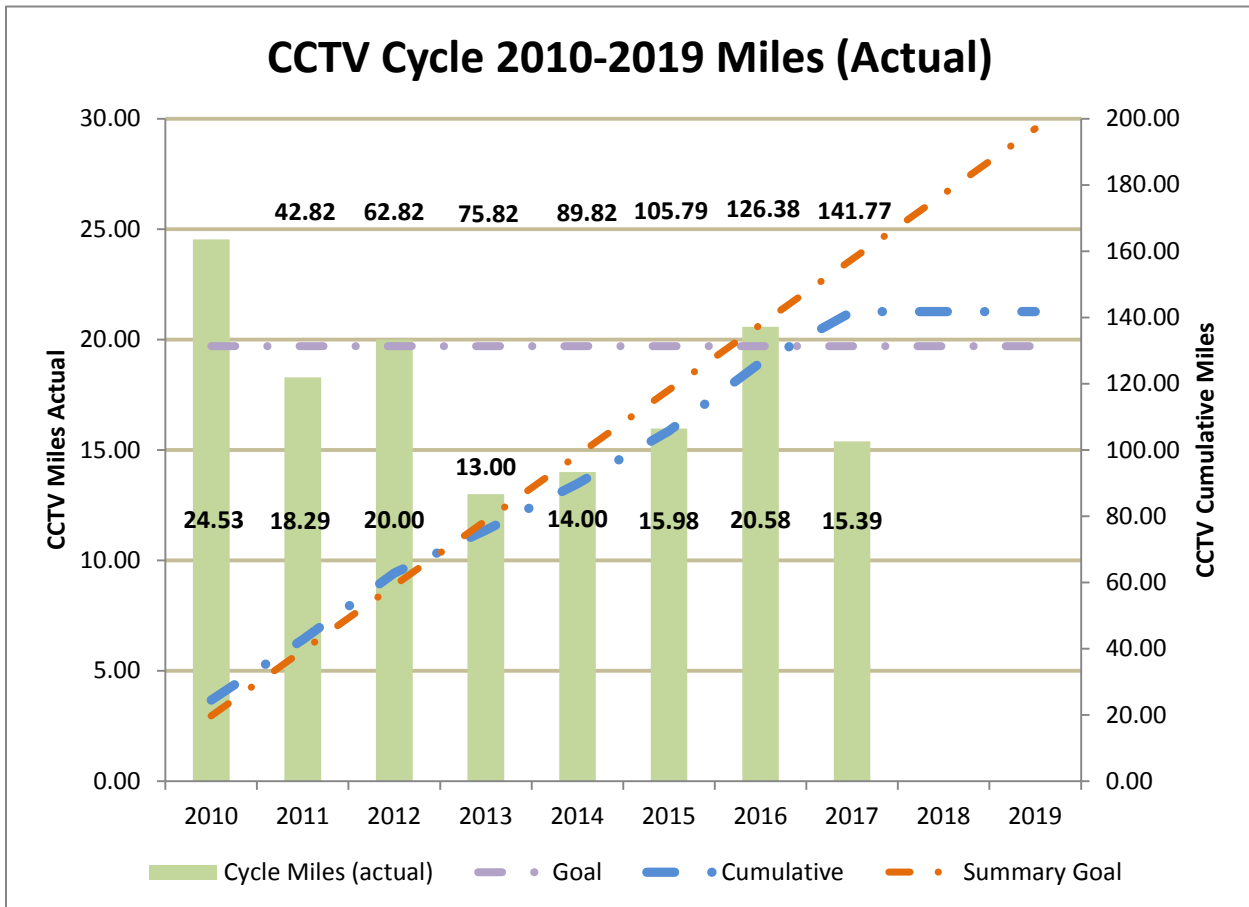
There were five storm-water related service calls in August. (see table 3).

Storm Water Highlights

- Slip lining project for 317 Western Drive repair has started.
- Installation of new ditch inlet with 200' of 8" drainage at Western Alley has started.
- Morningside Drive Catch Basin Installation project was completed in August. Staff videoed the asset to confirm it is functioning properly.

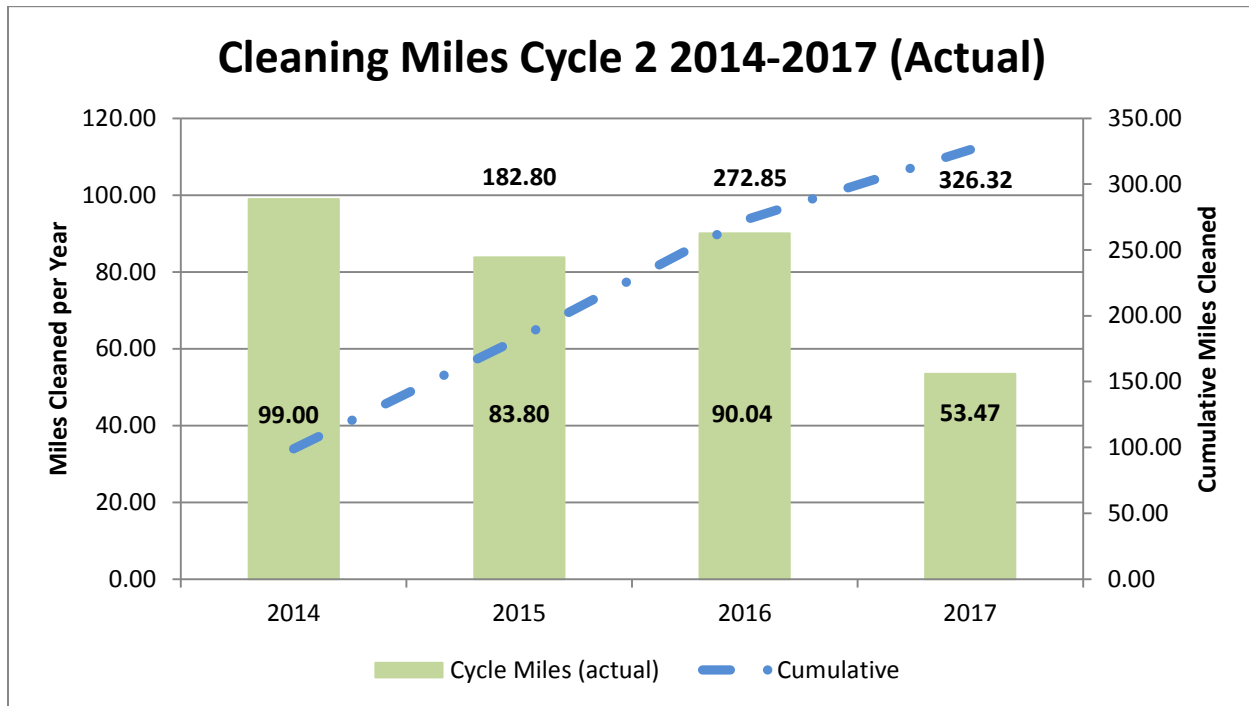
Collection Systems Monthly Performance Indicators

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.

August, 2017



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	5/1	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.)	8,831	7,000
GPS Surveys	0	As needed
Cleaning (ft.)	32,584	25,000
Cleaning QA/QC Events	2	4
SSOs for current month – Mainline	3	10/yr
Total Mainline SSO Volume (gallons)	593	0
Total Mainline SSO Volume Recovered (gallons)	585	100%
% Mainline SSO Volume Recovered	98.7%	100%
# SSOs – Wet Weather (Localized Capacity Issue)	0	0
# SSOs – Engineered Overflow Structure	0	0

Monthly Operating Report
 Richmond WWTP and Collection System

August, 2017

Total SSO Volume from Engineered Overflow Structure	0	N/A
SSOs – Private Laterals	0	N/A
General Maintenance	6	N/A
Sewer Lift Station PMs	145	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	9	10 - Baykeeper
Number and Percentage of SSOs During 2017 with Discharge Reaching Storm Water Conveyance	39 of 44 - 92%	N/A

Storm Water System Performance Indicators

Table 3

Performance Indicator	Monthly Actual	Target/Limit
Storm Point Repairs	3	N/A
Storm Manhole Repairs	0	N/A
Storm Manhole Inspections	0	N/A
Storm Service Calls	5	N/A
Storm CCTV (ft)	0	N/A
Storm GPS Surveys	0	N/A
Storm Pipe Cleaning (ft)	1,655	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	26	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	106	N/A

Capital Improvement Program

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

Monthly Operating Report
Richmond WWTP and Collection System

August, 2017

Wastewater Treatment Plant. Construction is 95% complete; Design Services during Construction – 93% complete.

- Central Sierra continued work on Site Security Lighting (approximate 95% complete).
- Generator Radiator Changed out and Control Panel installed.
- Pipe Gallery Exhaust Fans Installed.

13th Street & Dunn and 23rd Street Rehabilitation Projects W.R. Forde, VW 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.

- The Notice to Proceed was issued July 31, 2017. Contractor and staff currently reviewing submittals.
- WR Forde is proceeding with installation of the sewer main & manholes in a northerly direction on 13th Street
- Anticipate completion of the 13th Street sewer portion of this job by the end of September

Cutting, Carlson, and Hoffman Boulevard Project Designs VW Housen & Associates; 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 are in progress and require completion of the remainder of CCTV inspections. All documents will be provided to Veolia for final review by 9/16/2017. Construction of this project currently on hold for State funding; bidding for both projects will occur after the City receives approval for SRF funding.

Manhole Lining Rehabilitation Project In-house design

- Phase 1 of this project replaces 80 manholes within the City's collection system.
- Carollo consultant working with Veolia staff for an RFP package to go out to bid shortly.

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 95% complete; construction to begin in early September.

- Contech Engineered Solutions and designer engineers BKF met a second time with Veolia and City staff to review two specific locations targeted for these devices.
- The project went out to bid August 8; bids were due August 22; two bids received; construction awarded to W.R. Forde; must be operational (substantial completion) by September 30.
- WR Forde has participated with the city & EBMUD to relocate an unanticipated 12" Steel Waterline & Domestic Water Service in conflict with required excavation.
 - Work was completed and water service to affected customers was restored as of a.m. 09-12-17.
- Layout, excavation, and shoring at Marina Bay Parkway Site is ongoing and should be complete & ready for setting of CDS Unit by EOD 09-13-17. CDS Unit scheduled for delivery and placement 09-14-17.

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.

*Monthly Operating Report
Richmond WWTP and Collection System*

August, 2017

- Consultant CH2M continued work on review of available background documents and data request; developed and submitted request.
- Continued work on evaluation of co-digestion and feedstock opportunities; conducted investigation into potential local feedstock sources,
- Continued preparation of City Council meeting, scheduled for September 26, 2017; prepared a draft presentation.
- Workshop No. 2 is set for September 6, 2017.

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 68% complete.

- Veolia directly contracted Bayhawk Inc. for excavation work.
- V&A showed Bayhawk the locations and coordinated with Bayhawk
- V&A submitted final work plan and prepared equipment
- Bayhawk potholed and located the sludge-leachate lines and other utilities in the vicinity.

Tewksbury/Marine Bayhawk Construction; this project installed new manholes, cleaned out existing pipe and installed laterals in the sanitary sewer area near the intersections of Tewksbury Avenue, Marine Street and Morgan Avenue in the City of Richmond, as these sewers are old and have tree roots in the pipes, causing Sanitary Sewer Overflows (SSOs). Construction is 100% complete.

- Phases 1 & 2 were combined to add three new manholes and 275' of 8" pipe near the intersection of Tewksbury, Marine and Morgan in the City of Richmond (I) and to install laterals on Marine Street (II).
- Work completed by Bayhawk in July; final CCTV work being done by Collections.
- As-built schematic to go to City upon completion.

WWTP Critical Improvements Project Design Carollo Engineers; design is 99% 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 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 10% complete.

- Completed site walk with geotechnical subcontractor and NCE staff to discuss hillside slope protection and evaluate potential biological impacts.
- Discussed draft scope and fee for geological and geotechnical hazard assessment report.
- Completed initial hydrologic evaluation.

WWTP High Priority Projects 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 3% complete; construction is 5% complete.

Monthly Operating Report
Richmond WWTP and Collection System

August, 2017

- Carollo began preparation of the preliminary design for the CEPT facilities.
- Mobilization of Overaa Crews & Equipment
- Completed Existing Mechanical Equipment Demo – Clarifier 1
- Completed Existing Grout Demo – Clarifier 1
- Form Concrete at Corners & Installed Epoxy Dowels – Clarifier 1