

Monthly Operating Report

Richmond WWTP and Collection System

July 2018

Executive Summary

- There were no permit violations in the month of July 2018. This represents the 28th 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.
- NPDES permit reissue is still pending from the Regional Water Quality Control Board. The treatment plant continues to operate under the previous permit which expired on June 30. Regional Board staff has notified Veolia – Richmond – West County Wastewater staff that the draft reissued permit is expected to be transmitted in early November.
- On July 24 Veolia staff provided a tour of the Richmond Water Pollution Control Plant to West County Wastewater District (WCWD) management personnel. The purpose of the tour was to allow them to view and gain an understanding of the chemical feed system designed to remove chlorine (dechlorinate - using sodium bisulfite) from the effluent of both treatment plants prior to discharge. The dechlorination system is old, past its useful life and in need of rehabilitation. It would likely be a shared cost between the two organizations (City of Richmond and WCWD).

Wastewater Treatment Plant

- There were two odor complaints during July on the 2nd and 27th. Both were made by individuals who noted odors while driving by the treatment plant on Canal Blvd. Each call was investigated by way of an odor evaluation and neither evaluation turned up adverse findings or a source of the odors.
- There were no blending events in July.
- Operations Manager hired with a start date of September 10
- Lab manager who has been with Veolia in Richmond for nearly 14 years has submitted her retirement notification. The recruitment for her replacement has begun.

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Table 1 Parameter	Monthly Performance Indicators	Limit/Target
Treatment Plant Operations:		
Influent Flow, daily average (MGD)	4.74	N/A
Effluent Flow, daily average (MGD)	5.21	N/A
Influent BOD ₅ , avg. mg/L	371	N/A
Influent TSS, avg. mg/L	329	N/A
Effluent TSS, monthly average mg/L	12	30 or less
Effluent BOD, monthly average mg/L	17	30 or less
% BOD Removal	95	> 85
% TSS Removal	96	> 85
NPDES Effluent Limit Violations	0	0
Blending events	0	0
Total volume blended, MG	0	0
Odor complaints	2	0
Digested sludge pumped to drying beds, MG	**1.440	N/A
Leachate received, GAL	265,300	N/A
Leachate received/treated YTD, MG	2.537	N/A

** Transport flow meter malfunction. Value used is total of raw and thickened sludge sent to digester

Maintenance

Work Order Type	# Completed
Storm Water Pump Stations	105
Sewer Pump/Lift Stations	98
Treatment Plant	61
Corrective	27
Total	291

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Completed Projects

- Completed the installation of the plant facility automated front access swing gate. All electronic transmitters for gate access have been distributed to the appropriate Veolia & City of Richmond personnel.
- Overhaul DAF Air Pressurization Pump #2 and return to service.
- Install new #3 water piping system and valves located at the Heat Exchange Building.
- Installed six new wireless SCADA radios and antennas at six individual pump lift stations, including Southwest Annex, Canyon Estates #1, Brickyard Booster, Brickyard Cove, 23rd Street & Bradley Moody Storm Station.

Look Ahead; August - September 2018

- Replace headworks odor control bed media
- Drain & service Secondary Clarifier #1 Drive Unit.
- Complete landscaping and security fencing upgrades located around the front access gate area of the facility.
- Complete potable water control system replacement project.
- Remove and perform preventative maintenance on (4) wet weather pump station Flygt NP 3356.746 175 H.P. centrifugal submersible pumps.
- Complete annual preventative maintenance & load testing on both main facility emergency power diesel generators.
- Complete annual preventative maintenance service on both heat exchange Hurst boiler units.

Collection System Monthly Report

Sanitary Sewer System Highlights

Project is currently in first year of cycle for sanitary sewer pipe cleaning (2018-2021).

During the month of July there were no (0) sanitary sewer overflow events. Year-to-Date Wet-weather/Dry-weather YTD SSO totals are as follows:

- Wet-weather (rain event) = 0-YTD
- Dry-weather (non-rain event) SSOs = 6-YTD

Collection Systems group continued focus on video inspection review for rehabilitation priorities and other Baykeeper Settlement Agreement requirements. Relative to this, in order to meet timely delivery of information associated with such tasks as necessary in required reports to Baykeeper, Veolia is developing RFP for augmented segment pre-cleaning and CCTV video

July 2018

inspection/reporting with issuance of the RFP scheduled for the first week in August-2018 and completion of project scheduled for November-2018

There were a total of (14) sanitary sewer service calls, (6) of which were property lateral issues, (6) of which were sewer line main-related, and (2) of which were unrelated to the City's system or property laterals. 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.

Sanitary Sewer Point Repair:

Sanitary sewer repair performed during the month of as follows:

- 35th St – collapsed pipe repair completed

Storm Water System Highlights

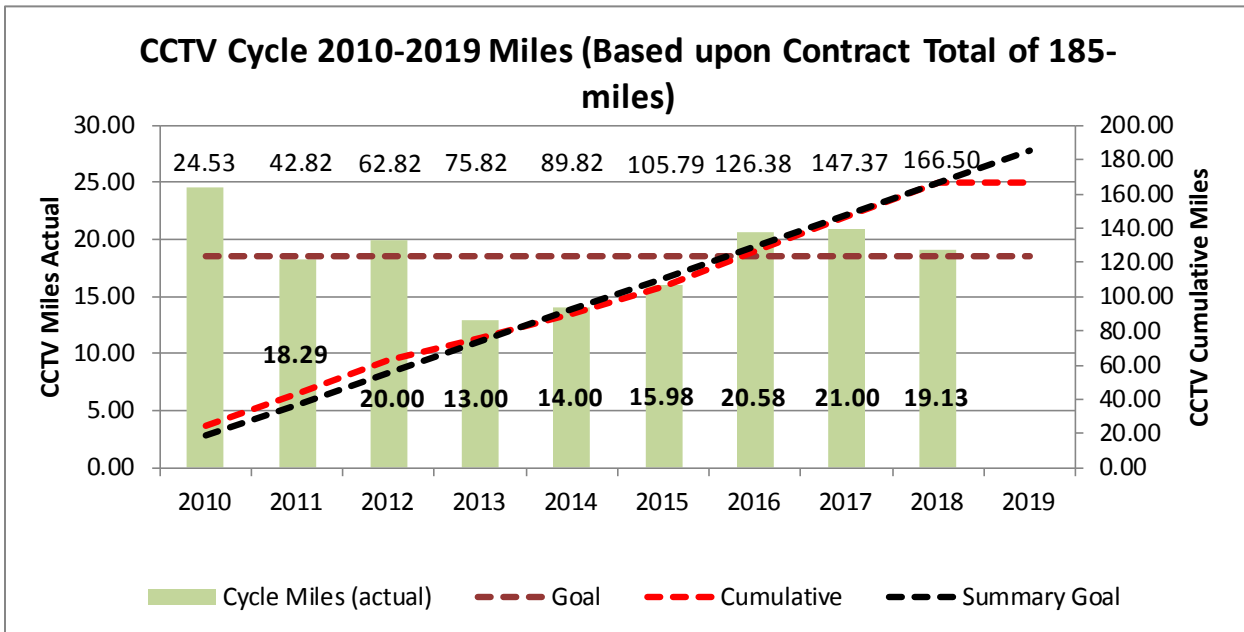
- There was (1) storm-water related service call
- Cleaned storm drain on Kern & Solano Avenue
- Cleaned Enterprise storm water pump station
- Cleaned 251-LF of storm pipe at 6th & Chancellor

Storm Water System Point Repairs

- (1) point repair, new manhole to prevent flooding, at Lincoln School

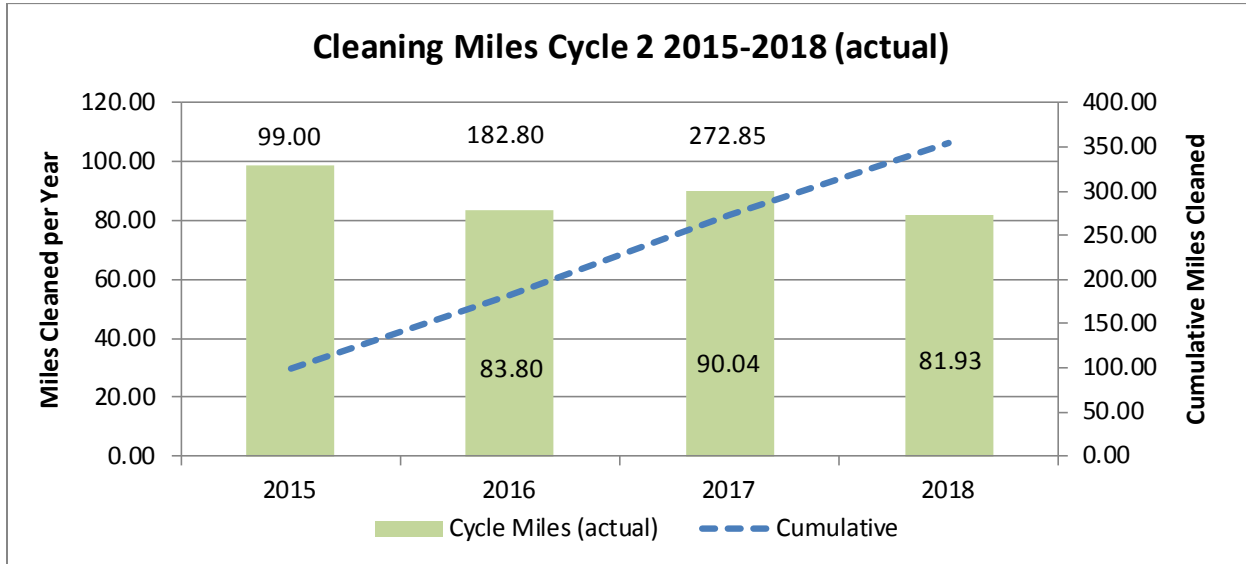
Collection Systems Monthly Performance Indicators

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



*Note: goal mileage has been adjusted from 19.7-miles/year to 18.5-miles/year to correspond with Amendment #1 system mileage of 185-miles and recently reported City GIS mileage of 183-miles

Veolia is in the 1st year of a 4-year sewer cleaning cycle. Cycle start date was January 1, 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	7/7	N/A
Regular/OT Hours Spent on Private Lateral Calls	7/21	N/A
Point Repairs Completed	1	N/A
Manhole Inspections	6	N/A
Manhole Repairs	0	N/A
CCTV (Closed Circuit TV) (ft.)	13,226	7,000
GPS Surveys	0	As needed
Cleaning (ft.)	44,728	25,000
Cleaning QA/QC Events	8	4
SSOs for current month – Mainline	0	10/yr.
Total Mainline SSO Volume (gallons)	0	0
Total Mainline SSO Volume Recovered (gallons)	0	100%
% Mainline SSO Volume Recovered	0	100%

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# 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	0	0
Total Wet Weather SSOs Year to Date	0	0
Total Dry Weather SSOs Year to Date	6	10 - Baykeeper
Number and Percentage of SSOs During 2018 with Discharge Reaching Storm Water Conveyance	3 of 6 = 50%	N/A

Table 2-b Data detail to the Sanitary System Performance Indicators noted in Table 2-a above are as follows:

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Richmond CA Collection System Activity Summary



Collection and Conveyance

Report Period: July-18

Line Cleaning Summary

Total Lines Cleaned: 183
Total Footage Cleaned: 44,727.74 ft
Total Footage with Cleaning Method: 44,727.74 ft
Unknown Cleaning Method Footage: 0.00 ft

Footage by Cleaning Method

Regular Monthly

REAR 6,703.60 ft
SPINNER 26,349.52 ft
PENETRATOR 0.00 ft

Service Call

REAR 256.00 ft
SPINNER 3,842.08 ft
PENETRATOR 402.40 ft

SSO

REAR 0.00 ft
SPINNER 299.99 ft
PENETRATOR 0.00 ft

Corrective Maintenance

REAR 0.00 ft
SPINNER 0.00 ft
PENETRATOR 0.00 ft

FOG

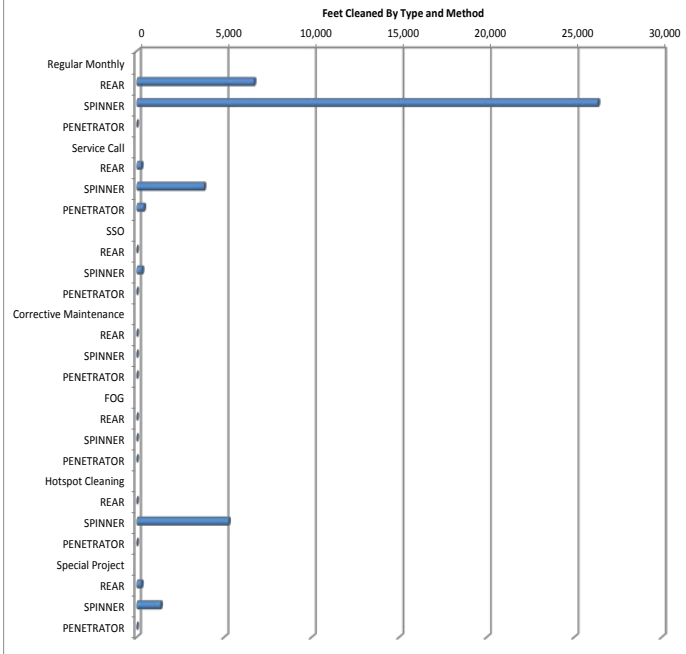
REAR 0.00 ft
SPINNER 0.00 ft
PENETRATOR 0.00 ft

Hotspot Cleaning

REAR 0.00 ft
SPINNER 5,244.75 ft
PENETRATOR 0.00 ft

Special Project

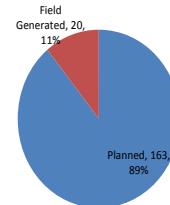
REAR 263.60 ft
SPINNER 1,365.80 ft
PENETRATOR 0.00 ft



Pipe Clean Production

By Crew Leader	Work Order Scheduling				
	Footage	# of days	Footage per day	Planned	Field Generated
ARMSTRONG	0.00	0	0	0	0
HENDRICKS	27,521.59	16	1,720.10	114	0
LEWIS	5,988.24	4	1,497.06	27	0
HILL	0.00	0	0	0	0
WALLIS	0.00	0	0	0	0
MENDOZA	7,878.59	12	656.55	17	13
SIMONETTI	3,339.32	6	556.55	5	7
Totals	44,727.74	38	1,177.05	163	20

Pipe Clean Work Order Analysis



Pipe Clean by Pipe Material

	Footage	# of Segments
VCP	31,811.45	119
PVC	1,910.70	9
Unknown or Other	11,005.59	55
Totals	44,727.74	183

CCTV Activity Summary

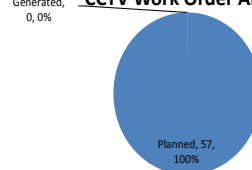
CCTV Total Footage: 2671.80 ft
57 Work Order Scheduling, 0 Field Generated

Successfully Imported
Number of Lines Tved: 11
Total Footage Tved: 2,671.80 ft

Unsuccessfully Imported
Number of Lines Tved: 46
Total Footage Tved: 13,226.27 ft

Work Order Scheduling

CCTV Work Order Analysis



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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	2
Jet Cleaning	0
Pump Out	0
Manual Cleaning	0
Visual Inspection	7
Exercise FM Pressure Valve	0
Markout Locations	0

Number of Call Outs

Total Number of Call Outs: 14

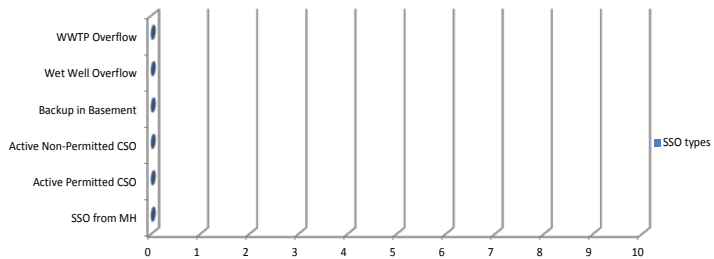
Call outs from Customer Complaints: 14

Call outs from SSO: 0

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

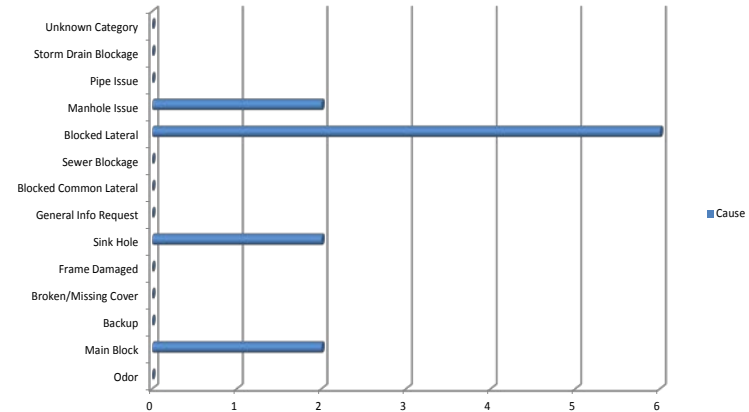
Call outs by SSO Type



Call outs from Customer Complaints:

Call outs by Cause	
Odor	0
Main Block	2
Backup	0
Broken/Missing Cover	0
Frame Damaged	0
Sink Hole	2
General Info Request	0
Blocked Common Lateral	0
Sewer Blockage	0
Blocked Lateral	6
Manhole Issue	2
Pipe Issue	0
Storm Drain Blockage	0
Unknown Category	0
Totals	12

Cause



Storm Water System Performance Indicators

Table 3

Performance Indicator	Monthly Actual	Target/Limit
Storm Point Repairs	0	N/A
Storm Manhole Repairs	1	N/A
Storm Manhole Inspections	0	N/A
Storm Service Calls	1	N/A
Storm CCTV (ft)	0	N/A
Storm GPS Surveys	0	N/A
Storm Pipe Cleaning (ft)	251	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	1	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

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 98% complete.*

- All underground work is complete; approximately 34,080 lf (6.4 miles) of pipe was installed by the end of July
- Finish paving and striping work on 23rd was finalized in July
- Punchlist items ongoing and will be completed in August

BK Sewer Pipe Rehabilitation – Phase I & II.

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- Unit Cost Bids for Phase 1 Line Segment Repairs – bids were received in June; Bay Hawk Inc. is the apparent low bidder; they have provided proposals for each line segment
- Task Authorization (TA) to follow
- Construction anticipated on Phase 1 beginning in September 2018 on 16-20 point repairs as part of FY 17/18 funding
- Anticipate design proposals for Phase 2 from V.W. Housen & Associates in August

Cutting/Carlson & Hoffman Boulevard Projects. *V. W. Housen & Associates. These projects replace pipelines with NASSCO PACP Structural Grade 4 and correct 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.*

- W.R. Forde is the apparent low bidder; construction is slated to begin in September 2018
- Internal Veolia project review was ongoing in July
- TA was prepared for signature in July and will be signed once the project is approved internally

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.*

- The TA was prepared and executed in July
- Subcontract with V&A Engineering was executed, and work began in July
- Must be completed by September 1, 2018

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 95% complete.*

- Consultant delivered a draft summary report in May, which remains under review
- A meeting is scheduled on August 20, 2018, to review the report and its findings

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

- Two additional manholes were completed in July; approximately 57 manholes have been rehabilitated thus far by the end of July 2018
- The contractor is working on putting together pictures of all completed manholes

Richmond WWTP Biosolids and 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 100% complete.*

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- The Biosolids and Energy Management Plan was delivered mid-July; this project is complete
- Staff continues reviewing the analysis; final project billing to follow

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.*

- V. W. Housen & Associates has built the network and waiting for significant rain to perform the flow monitoring. (4th Qtr. 2018)

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 of existing conditions is 85% complete; development of design alternatives is pending the final assessment of existing conditions.*

- The City continues to review and correspond with Point Richmond R&D Associates II, LLC ("PR2"), owner of the Tech Center on Canal, to review options for modifications to the wetlands north of the WWTP as a part of the proposed hillside drainage improvements. A copy of the Wetlands Agreement between PR2 and the City was provided to the Consultant. A portion of the wetland is on land leased by the City to PR2.
- The City confirmed the plant nursery will be relocated to north of the WPCP.
- The City provided the Consultant with additional data on the existing storm drain facilities that may be used for the proposed design.
- The Consultant still identifies some data gaps in the information they had received from the project team; they are working to resolve those gaps with assistance from Veolia and the City and continue with their assessment.
- Once the City confirms if and how the wetlands area north of the WWTP may be used, the Consultant will provide a timeline to complete the design alternatives report and conceptual design.

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 85% complete.*

- Carollo is still on hold regarding their design efforts until further notice with the exception of the SBS Facilities Condition Assessment effort
- Carollo attended construction meetings
- Secondary Clarifier No. 3 Mechanism was delivered and is on site
- Overaa has substantially completed their rehab work on Secondary Clarifier No. 2

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- Once Secondary Clarifier No 2 is operating to the Plant's satisfaction, the Plant will take Secondary Clarifier No 1 down, drain, and clean the Clarifier so the painters can mobilize and begin blasting and painting the launders and launder supports
- Primary Sedimentation Basin No.2 concrete repair has been completed, and Overaa is installing the new rails, flights, and chains. Work Sedimentation Basin will be completed on or before August 21, 2018. Sedimentation Basin No 1 will be taken down shortly after Sedimentation Basin No 2 is operating to the Plants satisfaction
- Primary Sedimentation Basin No. 1 work may begin in early September and will be ongoing until late November 2018