

Monthly Operating Report

Richmond WWTP and Collection System

April, 2018

Executive Summary

- The Richmond City Council approved a contract amendment with Veolia on April 17 that provides the benefit of reduced capital project delivery costs to the City and extends the contract five years to 2027
- There were no permit violations in the month of April 2018. This represents the 25th consecutive month without a violation of the treatment plant's NPDES permit.
- The monthly acute aquatic bioassay test passed with 100% survival of the fathead minnows.

Wastewater Treatment Plant

- There was 1 odor complaint related to the plant during the month of April, on the 18th from 622 8th Street. A survey of the residence did not reveal odors.
- There was one blending event in April, starting on 4/6/18 at 1635 hours and finished on the 4/8/18 at 1125 hours. The total volume blended was 18.51 million gallons.
- There were a number of activities to take equipment in and out of service, mainly related to the plant upgrade construction.

On April 1, Secondary Clarifier #3 was brought back in service after it was inspected and measured by the construction crew; April 16, Secondary Clarifier #2 was taken out of service for the summer for rehab and to replace the internal mechanical components; April 23, Secondary Clarifier #1 was taken out of service for several days to repair a problem with an internal seal on the center column. The repair was done under warranty by the construction contractor.

- On April 29, the influent bar screen was taken out of service as the due to a failure of the main drive and other components. At the time of writing the repairs are nearly complete.
- Continuing recruitment for treatment plant operations supervisor
- Continuing recruitment for project maintenance supervisor

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Table 1 Parameter	Monthly Performance Indicators	Limit/Target
Treatment Plant Operations:		
Influent Flow, daily average (MGD)	7.26**	N/A
Effluent Flow, daily average (MGD)	8.53**	N/A
Influent BOD ₅ , avg. mg/L	322	N/A
Influent TSS, avg. mg/L	332	N/A
Effluent TSS, monthly average mg/L	19.4	30 or less
Effluent BOD, monthly average mg/L	22.1	30 or less
% BOD Removal	92.6	> 85
% TSS Removal	93.0	> 85
NPDES Effluent Limit Violations	0	0
Blending events	1	0
Total volume blended, MG	18.51	0
Odor complaints	1	0
Digested sludge pumped to drying beds, MG	1.38	N/A
Leachate received, GAL	340,500	N/A
Leachate received YTD, MG	1.287	N/A

** The difference between the influent and effluent monthly averages is probably because of some issues with the influent meter as well as the influent screen being out of service and the incoming wastewater bypassing the influent meter.

Maintenance

Staff completed 266 total maintenance work orders during the month; preventative; 79 at sewer lift stations, 64 for storm water pump stations and 105 work orders at the treatment plant. There were also 18 corrective work orders completed as part of the total.

Projects in Progress;

- Overhaul Influent Bar-Screen Rake Arm assembly.
- Installing two new automated security gates at treatment plant entrances

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Completed Projects

- On April 27, a natural gas pipeline adjacent to the Administration building was found leaking. Working with PG&E, the gas distribution system was immediately isolated. An external plumbing contractor was hired to conduct the repair work with Veolia maintenance staff assisting them. The work was completed on the 29th and the system placed back in operation. Natural gas is used to operate the boilers and heat the anaerobic digesters and to supply hot water to the plant and offices. While the incident became an unplanned maintenance project, there were no safety problems or issues related to the resulting equipment shut downs.

Look Ahead; May-June 2018

- Replace existing sludge transport chart meter with new SCADA monitored/controlled Endress Hauser Pro-mag Flow monitor.
- Receive two additional contractor bids to replace existing W1 water control apparatus MCC. Expect to start on project shortly.

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 April, there was (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 = 4-YTD

Collection Department continued focus on video inspection review for rehabilitation priorities for lines with Grade 5 defects as part of Baykeeper Settlement Agreement requirements.

There were a total of (16) sanitary sewer service calls in April, (5) of which were property lateral issues, (9) 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 Table 2-b for Collection System Activity Summary for performance indicator data specifics.

Sanitary Sewer Point Repair:

(3) Sanitary sewer repair performed during the month of April as follows:

- 1020 McLaughlin Ave – repaired sinkhole
- 159 2nd St – Repaired broken pipe
- 4417 Potrero Ave - Emergency repair of broken pipe

Storm Water System Highlights

There were (4) storm-water related service calls in April.

April, 2018

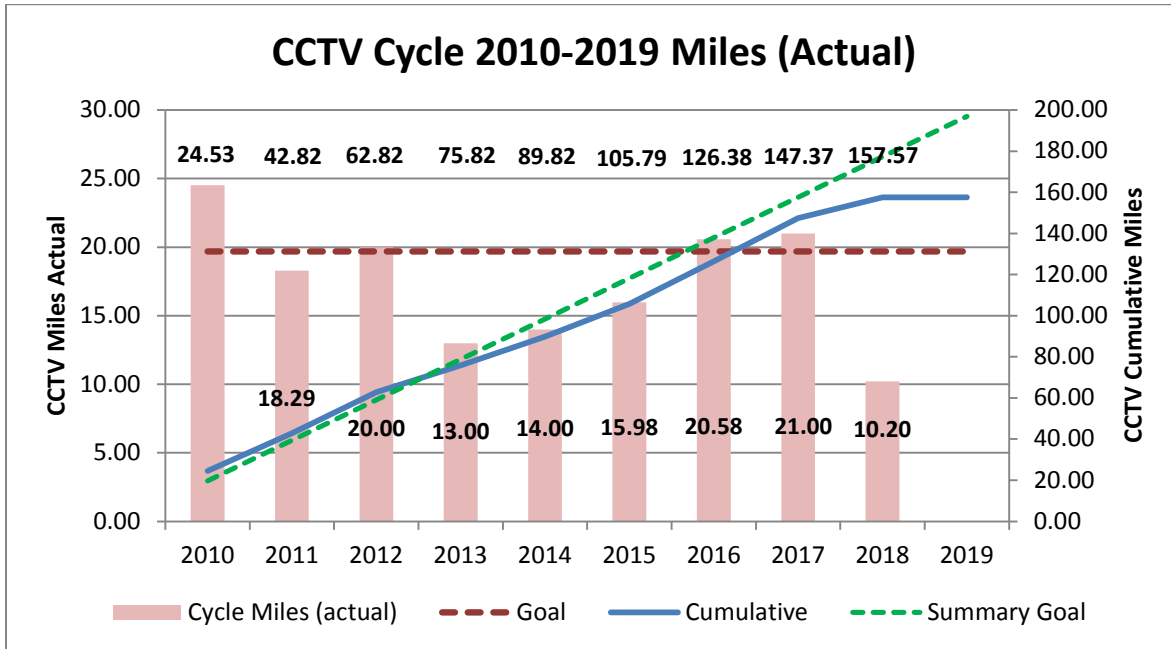
Cleaned (41) catch basins, inlets, drains and storage devices within the City of Richmond.

Storm Water System Point Repairs

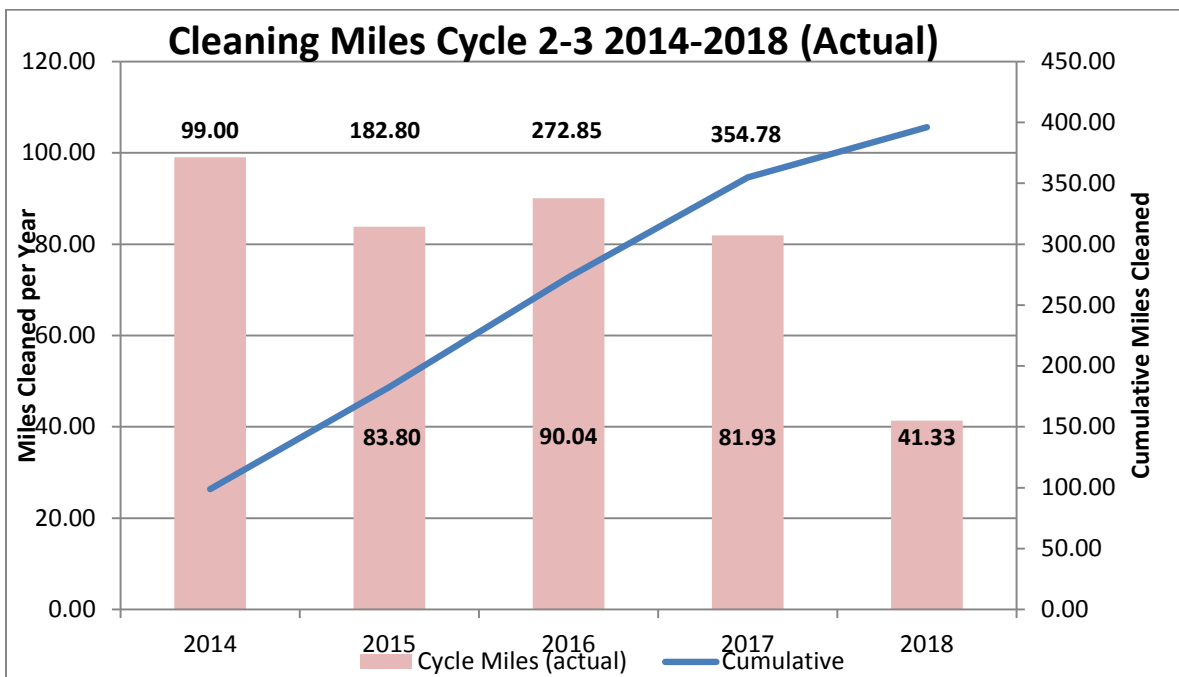
- 29 6th St/Lincoln School – We are in the process of installing new manhole in this area to alleviate flooding

Collection Systems Monthly Performance Indicators

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



Veolia is in the 1st year of a 4-year sewer cleaning cycle. Cycle start date was January 1, 2018.



April, 2018

Sanitary System Performance Indicators

Table 2-a

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	4/2	N/A
Regular/OT Hours Spent on Private Lateral Calls	16/8	N/A
Point Repairs Completed	3	N/A
Manhole Inspections	11	N/A
Manhole Repairs	0	N/A
CCTV (Closed Circuit TV) (ft.)	21,510	7,000
GPS Surveys	0	As needed
Cleaning (ft.)	75,575	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%
# 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		
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	4	10 - Baykeeper
Number and Percentage of SSOs During 2017 with Discharge Reaching Storm Water Conveyance	2 of 4 = 50%	N/A

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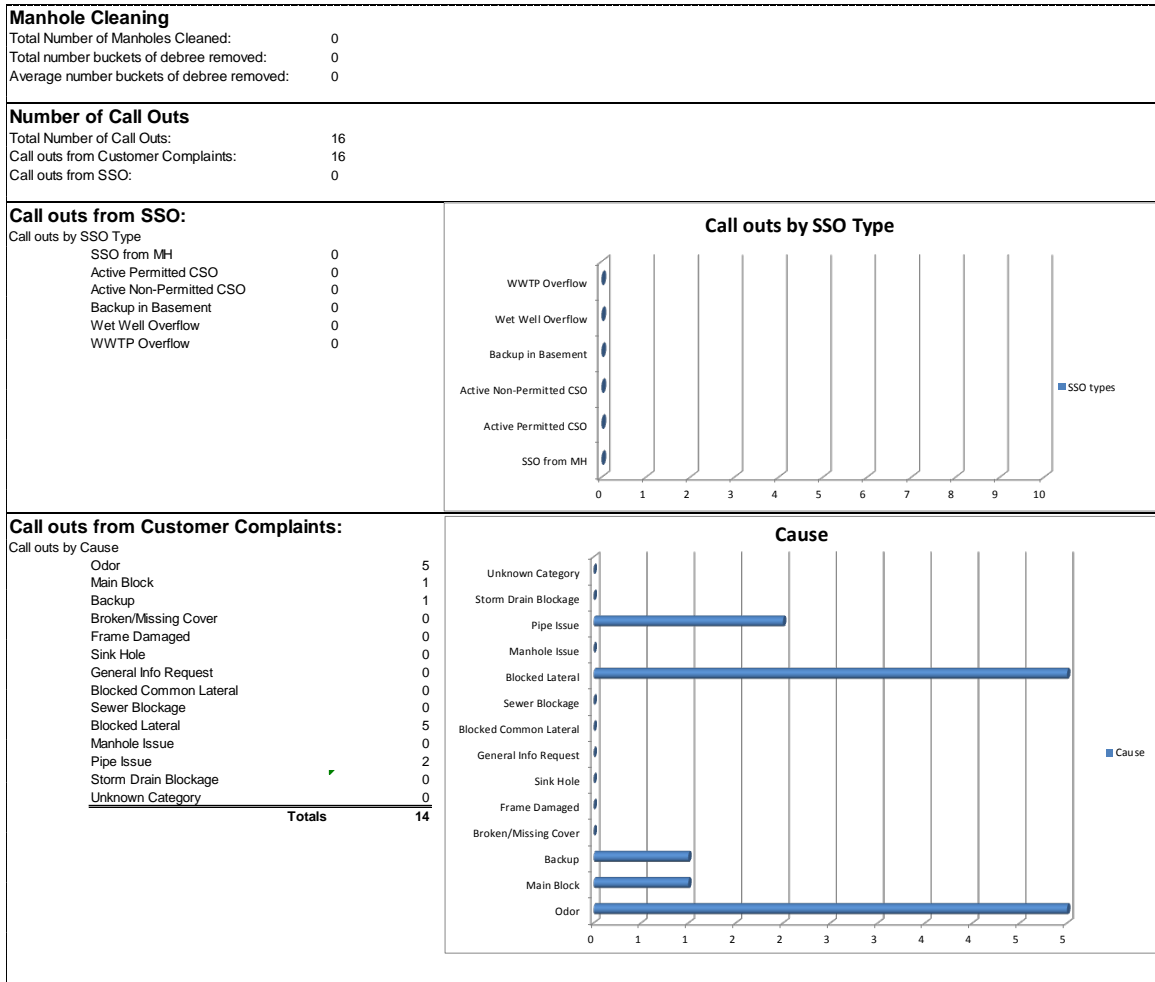
Table 2-b

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

Richmond CA Collection System Activity Summary			VEOLIA		
Collection and Conveyance					
Report Period April-18					
Line Cleaning Summary					
Total Lines Cleaned: 250					
Total Footage Cleaned: 75,666.75 ft					
Total Footage with Cleaning Method: 75,597.16 ft					
Unknown Cleaning Method Footage: 69.59 ft					
Footage by Cleaning Method					
Regular Monthly					
REAR	12,264.19 ft				
SPINNER	26,528.16 ft				
PENETRATOR	0.00 ft				
Service Call					
REAR	1,604.74 ft				
SPINNER	3,881.90 ft				
PENETRATOR	0.00 ft				
SSO					
REAR	0.00 ft				
SPINNER	0.00 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				
FOG					
REAR	201.61 ft				
SPINNER	266.56 ft				
PENETRATOR	0.00 ft				
Hotspot Cleaning					
REAR	325.56 ft				
SPINNER	4,348.42 ft				
PENETRATOR	0.00 ft				
Special Project					
REAR	0.00 ft				
SPINNER	26,176.05 ft				
PENETRATOR	0.00 ft				
Pipe Clean Production			Work Order Scheduling		
By Crew Leader	Footage	# of days	Footage per day	Planned	Field Generated
ARMSTRONG	2,897.21	3	965.74	9	0
HENDRICKS	6,725.09	7	960.73	21	0
LEWIS	19,951.97	15	1,330.13	71	0
HILL	1,383.22	3	461.07	5	0
WALLIS	38,074.89	17	2,239.70	113	0
MENDOZA	0.00	0	0	0	0
SIMONETTI	6,634.36	11	603.12	31	0
Totals	75,666.75	56	1,351.19	250	0
Pipe Clean by Pipe Material			Pipe Clean Work Order Analysis		
	Footage	# of Segments			
VCP	51,971.95	175			
PVC	12,347.18	35			
Unknown or Other	11,347.63	40			
	75,666.75	250			
CCTV Activity Summary			Work Order Scheduling		CCTV Work Order Analysis
CCTV Total Footage	21030.60 ft		66	53	
Successfully Imported					
Number of Lines Tved:	115				
Total Footage Tved:	21,030.60 ft				
Unsuccessfully Imported					
Number of Lines Tved:	8				
Total Footage Tved:	1,313.50 ft				
Manhole Inspections					
Number of Manholes Inspected:	1				
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				

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(Please note that Table 2-b, Richmond CA Collection System Activity Summary, is under “beta test” development within the reporting module of the InfoNet CMMS database and, as such, certain activity data (e.g. manhole cleaning and manhole inspections) results are inadequately or incorrectly reporting at this time. However, Veolia’s Asset Supervisor –Collections System, in concert with Veolia-Corporate underground asset management staff, is continuing the work to refine the InfoNet CMMS reporting features so to achieve readily accessible service agreement and settlement agreement report request.)

Storm Water System Performance Indicators

Table 3

Performance Indicator	Monthly Actual	Target/Limit
Storm Point Repairs	1 in progress	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)	80	N/A

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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	42	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

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 \$10.6M. Construction is approximately 83% complete.*

- Approximately 30,620 lf (5.8 miles) of pipe was installed by the end of April
- Replacement of main & laterals on Hellings is 100% complete
- Replacement of main & laterals on Gaynor is 100% complete
- Replacement of main & laterals on Garvin is 75% complete
- Replacement of main & laterals on Coalinga is 50% complete
- Replacement of main & laterals on Visalia and 20th will follow accordingly
- Finish paving and striping on all streets other than 23rd Garvin, Gaynor, Visalia, Coalinga, and 20th is complete; remaining streets will be scheduled accordingly

Cutting/Carlson/Hoffman Boulevard Project Designs. *V. 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. The project is planned to be bid this spring through Planet Bids.

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 90% complete.*

- Consultant has inspected the City's 13 wastewater pumping stations and developed preliminary recommendations, which were discussed with Veolia staff on December 6, 2017
- A follow-up field visit occurred in mid-December; costs are under development for the agreed recommendations and a draft summary report will be provided next month

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

- Six manholes were completed in April; approximately 42 manholes have been rehabilitated thus far by the end of April
- The contractor is working on putting together pictures of all completed manholes

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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 98% complete.

- Submitted draft Technical Memo (TM) 3: Existing conditions
- Submitted meeting notes from Workshop 4, the final workshop
- Worked on development of final TM5: Alternatives Analysis and Implementation Plan, as well as the Executive Summary, which is expected in the near future

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 95% complete.

- The Fence & K-Rail and street sweeper portion of this project is complete and operating
- The test results on the tanks came back in April showing the material inside was inert
- Staff is working with the contractor, Ponder, on the logistics of off hauling the tanks

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.

- VWHA accelerated the Risk Model update and provided a draft report in December 2017
- As a result of an unseasonably dry January and February, flow monitoring for the hydraulic model update is on hold pending the completion of a flow monitoring program that will begin in November or December of this year.

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 64% complete.

- Staff is working with the City and consultant to concur on discrepancies with offsite drainage options
- Currently awaiting desired modifications to stormwater deliverables
- Received information concerning the nursery relocation and currently exploring modifications to the drainage alternatives
- The geological and geotechnical hazard assessment report is expected by mid-May

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 33% complete.

- Carollo is still on hold regarding their design efforts until further notice with the exception of the SBS Facilities Condition Assessment effort

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- Evoqua is continuing to work on shop drawings and purchasing materials
- Overaa completed demolition on April 25th and is in the process of getting ready to pour fillets.
- Ovivo's Clarifier Mechanism last shipment arrived on April 30th.
- All of the Secondary Clarifiers will be completed and back on line by early November.
- Primary Sedimentation Basin No.2 work will begin in May for removing equipment and beginning water blasting and repairing structure due to damage from H₂S exposure; it will be brought back on line by the late of August 2018
- Primary Sedimentation Basin No. 1 work may begin in early September and will be ongoing until late November 2018
- Depending on the amount of work needed within Sedimentation Basin No. 2, Primary Sedimentation Basin No. 1 may be postponed until spring 2019.