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ORIGINATING SECTION: FACILITIES ENGINEERING
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AGENDA DATE: November 14, 2018 **ITEM NO. 13c**

SUBJECT: Capital Projects Status Report

The Facilities Engineering (FE) Section plans, performs and manages design and construction for the majority of the water supply conveyance, production, and delivery projects as well as the flood protection capital projects in the Zone 7 Capital Improvement Program (CIP).

Attached is a table showing the status of key capital projects for which the FE Section is responsible.

Facilities Engineering Project Status Report – November 14, 2018

Note: Bold text highlights schedule and project cost changes made from the previous quarterly report and explanation for changes.

Project	Scope	Project Cost and Budget	Schedule – Target Dates for Completion	Current Status
Fund 120 Projects				
Chain of Lakes 1 Facilities Stabilization	Ground movement towards Cope Lake has been observed at the COL 1 site. In September/October 2016, the Cope Lake slope at COL 1 was flattened out and riprap was installed at the toe of the slope for support. Additional site investigation was conducted and the report from CE&G was received in September 2017. The report concludes a potential for up to 13 inches of additional settlement at COL 1 site. Despite the measures undertaken, recent surveys continue to show ground settlement and movement. This project is to evaluate alternatives and implement recommended options to provide additional support for the well and the building to minimize impact/damage from future ground movement.	Total Estimated Cost - $3.4 million Total Approved Budget - $3. 4 million Project Spent= 5% Project Complete = 10%	Design– **December** 2018 Construction – October 2019 Closeout – December 2019	Cal Engineering and Geology (CE&G) was selected through an RFP process to provide planning, design, and construction support services for the project. An adaptive approach is being undertaken whereby design alternatives preferred to be implemented will help to stabilize the building. The yard itself will continue to be monitored for ground movement and assessed for future stabilization needs. The estimated construction cost to implement the preferred alternatives is around $1.3 million.

Project	Scope	Project Cost and Budget	Schedule – Target Dates for Completion	Current Status
CWS 5 – Turnout Replacement	This facility is identified in the Asset Management Program (AMP) for replacement. The meter is outdated and mechanical equipment is showing wear and tear. The turnout inlet valve has periodically failed and leaks. Electrical and communication components are also outdated and subject to periodic failures. This project will remove and replace turnout components including but not limited to its civil, mechanical, and electrical components.	Total Estimated Cost =$280,000 Total Approved Budget - $280,000 Spent =4% Project Complete =10%	Planning – September2018 Design – November 2018 Construction – March 2019 Closeout - May 2019	Staff Coordinated changes with Operations and Maintenance. Working on finalizing design which is expected to be complete at the end of November 2018.
DVWTP Polymer Mixing System Replacement	The current polymer mixing system was retrofitted into a room near the filter gallery. It includes outdated mechanical/mixing equipment that requires manual polymer loading and mixing. The equipment often fails. Moreover, the room does not have adequate space for maintenance of the pumps and piping. This project replaces polymer mixing and mechanical equipment to provide more reliable and automated operation.	Total Estimated Cost =$550,000 Total Approved Budget - $550,000 Spent =2% Project Complete =2%	Planning – September 2017 Design – **December 2018** Construction – **September 2019** Closeout - **November 2019**	**Continuing with design. Due to current planned activities for the DVWTP Ozonation Project, construction of the polymer mixing system replacement may need to be deferred into the winter of 2019.to avoid conflict.**

Project	Scope	Project Cost and Budget	Schedule – Target Dates for Completion	Current Status
DVWTP HVAC System Renewal/Replacement	DVWTP HVAC equipment was identified in the AMP for replacement. The results of a condition assessment indicate replacement of the main equipment (boilers, chillers, and HVAC units) can be deferred for five years but replacement of the outdated controls system that are no longer supported, installation of a redundant HVAC unit for the computer server room, and some duct work repairs are still needed for a proper working HVAC system.	Total Estimated Cost is anticipated to be determined after refining the scope but it is anticipated to be significantly less than the budget due to reduction in scope. Total Approved Budget - $670,000 Spent =8% Project Complete =10%	Planning – July 2018 Design – August 2018 Construction – November 2018 Closeout - April 2019	After a condition assessment of the DVWTP HVAC system, it was determined that the existing system still had at least another five years' of useful life. However, the Building Control Units for the HVAC system are outdated and are no longer supported for maintenance. Updated BCUs for the existing HVAC system have been procured. Staff is working with contractors to get estimates for installation of a separate redundant HVAC unit for the server room at the DVWTP and possible ductwork replacement. Work will be completed via a contract amendment with our existing HVAC contractor to expedite procurement and reduce the critical path of completion before the computer server room is ready. Total budget needs for this work is expected to be around $200,000. The existing HVAC system will be reprioritized in the Asset Management Program.

Project	Scope	Project Cost and Budget	Schedule – Target Dates for Completion	Current Status
Dougherty Reservoir Recoating and Rehabilitation Project	The steel tank was constructed in 1984 and the original coating systems are nearing the end of their useful life. This project involves recoating of the exterior and interior of the 4MG steel tank, including all submerged metals and piping appurtenances. A new, more efficient cathodic protection system will be installed as well as power system upgrade. Scope includes a coating consultant to provide a coating system design. Additionally from experience obtained during the 4.5 MG Clearwell recoating, the scope for this project includes replacement of tank center column, the 36-inch combined inlet and outlet valve and drain valves.	Total Estimated Cost =$2,200,000 Total Approved Budget - $2,200,000 Spent = 1% Project Complete = 1% As this facility is jointly owned with the Dublin San Ramon Services District, each agency is responsible for 50% of the total project cost shown. DSRSD would reimburse Zone 7 for their share.	Planning – Fall/Winter 2018 Design – Spring 2019 Construction – April 2020 Closeout – June 2020	Staff is working to set up tank diving inspection to assess extent of maintenance for the interior of the tank.

Project	Scope	Project Cost and Budget	Schedule – Target Dates for Completion	Current Status
DVWTP Ozonation Project	This project combines the following current and future CIP projects: • DVWTP Ozonation which is to design & construct ozone treatment facilities including contactor, ozone generation and feed systems, liquid oxygen (LOX) storage and feed systems, yard piping upgrades, electrical and instrumentation and controls and other ancillary work. • Carbon Dioxide Project which includes carbon dioxide storage and feed systems for pH suppression and stabilization • Filter Rehabilitation Phase 1 & 2, which includes removal and replacement of filter media, coating of filter walls/floors, installation of new filter under drains and addition of air scour for backwashing. • Main Plant Generator Project which includes removal and replacement of the existing (Continued in next column)	main plant generator with a larger unit to cover the additional electrical loads from the new ozone process. • PWRPA service connection. • A portion of the construction phase cost for the project, $38 million, is debt financed. Total Estimated Project Cost =$49 million (design & construction) Planning & design budget\cost – $3.5 million, spent 100%. Construction Budget - $45.5 million (includes contingency, construction management, engineering support services and Z7 staff time) **Construction Budget Spent = 25%** **Construction Complete = 25%**	Planning – Completed - Summer 2016 Design – Completed -January 2018 Construction – Ozonation System substantial completion – December 2019 and Filter Rehab March 2020 Closeout – May 2020	Overaa continues to construct the ozone contactor structure. Overaa also began to install the chlorine contact pipeline and electrical duct banks routing to the new facilities. There is also ongoing work to modify the flow splitter box and flash mix system for coagulant chemical mixing. Submittal reviews are ongoing with packages for the ozone system and major electrical components under review.

Project	Scope	Project Cost and Budget	Schedule – Target Dates for Completion	Current Status
Fund 120 & 130 Split Projects				
PPWTP Upgrades and Ozonation Project	This project combines the following current and future CIP projects: • Additional 5 MG Treated Water Storage (Construct a new clearwell) to provide operational flexibility and improve reliability of PPWTP production (PPWTP New Clearwell (40% Fund 120, 60% Fund 130) • New Media Filters (Construct new 24 MGD dual media filters in lieu of modifying existing media filters (100% Fund 120) and to replace UF demonstration plant capacity and expand PPWTP production capacity (100% Fund 130)) • UF Clarifier Floor Rehabilitation to replace the damaged mortar layer and reduce the risk of delaying commissioning of the new filters (100% Fund 120) • Carbon Dioxide Installation to provide pH control prior to ozonation (50% Fund 120, 50% Fund 130) • Ozonation (50% Fund 120, 50% Fund 130); approximately $19 million of the construction cost share of Fund 120 is to be debt financed	Total Estimated Cost = **approx. $95M** (planning, design, and construction) Total Planning & Design Budget = $6.84M Total Planning and Design Budget Spent= **75%** Design Complete = **95**%	Planning – May 2017 Design – **November** 2018 Construction – **Winter 2021/2022** Closeout – **Summer 2022**	The final Initial Study / Mitigated Negative Declaration (IS/MND) for the project was adopted at the September Board meeting. **Based on the current design submittal, the updated construction cost estimate is $69M (with a range of -10%/+15% or $62M to $80M, per industry estimating standards). The actual construction cost will not be known until bids are received.** **The bid advertisement date has been delayed in order to address some design clarifications, which will provide a more complete bid package. Bid opening and award of construction phase contracts is anticipated in January.** **The construction schedule has been extended in order to allow more time for completion of the construction activities and to avoid conducting start-up and testing during the high demand period. The extended schedule also provides an additional winter shutdown (3 in total) for final tie-ins.**

Project	Scope	Project Cost and Budget	Schedule – Target Dates for Completion	Current Status
Fund 130 Projects				
Mocho Diversion Facility	This project scope is to construct a diversion structure to divert water from the Arroyo Mocho to Lake H in the Chain of Lakes. As part of the reclamation requirements, Hansen Aggregates is to lead and fund the design and construction of the diversion structure.	Prior to June 30, 2013, $373,000 was spent. July 2013 to July 2017 = $91,500 was spent. Design is 100% complete and submitted for permitting review. Budget for tracking of Hansen's Permitting activities = $25,000 Spent =12%	Permitting – Completion depends on US Army Corps and RWQCB review (Hansen) Final Design – Completion depends on US Army Corps and RWQCB review (Hansen) Construction – Completion depends on US Army Corps and RWQCB review Closeout – TBD	This project was initiated in around 2000 with Zone 7 taking over the lead on permitting, CEQA and design with some funding support from Hansen (then Kaiser). That design and permitting effort was unsuccessful in obtaining any permits. Approximately $373,000 was spent. Under the current approach, Hansen Aggregates is the lead for design and construction, and Zone 7 staff provides review and monitors progress. Hansen has successfully secured the ACOE 404 permit and has submitted the 401 application to the RWQCB for review comments. RWQCB's initial review comments indicate that they would not issue the 401 permit without some type of fish passage\bypass flow capability. Staff is in discussions with Hansen for potential modifications to design to include these elements in the current project instead of the previous plan to modifying the diversion structure in the future after removal of downstream fish passage obstructions such as the BART weir in Fremont.

Project	Scope	Project Cost and Budget	Schedule – Target Dates for Completion	Current Status
Fund 200 & 210 Split Projects				
Arroyo Mocho Medeiros-Project – (Arroyo Mocho Floodplain and Riparian Forest Restoration Project at Medeiros Parkway)	The Arroyo Mocho Medeiros Project is to create flood detention areas in an environmentally sensitive way along the Arroyo Mocho at Medeiros Pkwy between Holmes Street and Arroyo Road. The project will also be constructed in compliance with LARPD's Robertson Park Master Plan and the City of Livermore's Plan for the Oak Grove Nature Reserve so as not to preclude plans for recreation trails in the area.	Total AM Medeiros Budget = $**8.7 million** (M) Total Planning & Design Budget- $**1.5M** Spent = 60% of Total planning & design budget Design Complete = 60%	Planning – November 2016 Design – December2018 Construction – **November 2020** Closeout – **December 2020**	Based on the public input received during the Initial Study /Mitigated Negative Declaration comment period this past summer, the current project scope has been reduced to lowering the bike trail to allow flood flows into Oak Grove Nature Reserve. Staff is working with California Natural Resources Agency to revise the River Parkways Grant scope. Grant funding will allow for trail improvements in Oak Grove Nature Reserve and invasive vegetation removal and control. A revised Initial Study/Mitigated Negative Declaration will be prepared to reflect the revised project scope. Staff will be scheduling another public workshop to discuss current project design. The project budget is expected to be reduced around $3 million.