SPECIAL MEETING

OPERATIONS & CUSTOMER RELATIONS COMMITTEE

MONTECITO WATER DISTRICT
583 SAN YSIDRO ROAD

Thursday, August 19, 2021
3:30 P.M.

Join by Teleconference:
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AGENDA

1) CALL TO ORDER, DETERMINATION OF COMMITTEE QUORUM

2) PUBLIC FORUM

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3) ITEMS FOR COMMITTEE CONSIDERATION

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** indicates attachment included for this item.*

4) ITEMS FOR A FUTURE AGENDA

5) ADJOURNMENT

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MONTECITO WATER DISTRICT
MEMORANDUM

SECTION: 3-A

DATE: AUGUST 24, 2021

TO: BOARD OF DIRECTORS

FROM: ASSISTANT GENERAL MANAGER / ENGINEERING MANAGER

SUBJECT: CONTRACT AMENDMENT FOR DESIGN SERVICES RELATED TO THE ASADRA RESERVOIR RETROFIT AND REPLACEMENT PROJECT

RECOMMENDATION:

1. That the Board of Directors authorize staff to execute an amendment with Tetra Tech for additional design services related to the ASADRA Reservoir Retrofit and Replacement Project for a not-to-exceed amount of $332,844 to be included in the grant and low interest loan request from the State Revolving Fund and to be funded from unrestricted reserves until reimbursed in late 2022.

DISCUSSION:

In February 2021, the Board of Directors authorized staff to pursue a funding opportunity facilitated by the State Water Resources Control Board (SWRCB) as part of the Drinking Water State Revolving Fund (DWSRF) program. The DWSRF program is offering grants and below-market loans for drinking water infrastructure projects for agencies impacted by the 2017/18 wildfires and ongoing natural hazard risks. The Board approved project includes the retrofit and replacement of 8 District storage reservoirs to mitigate from potential damage caused by future natural hazards.

In March 2021, the Board of Directors authorized the execution of contracts with three firms for the design, environmental, and project management services for the project. This authorization included a contract with Tetra Tech for a not-to-exceed amount of $862,418 for engineering design services for the project. Tetra Tech has now submitted the 60% design drawings for seven of the eight reservoirs which have been reviewed and commented on by the project manager Wood Rodgers and also by District engineering and operations staff.

The premise of the project is to replace in kind or retrofit each of the 8 reservoirs to withstand seismic design loads. As the District and its consultants have progressed deeper into design, several optional improvements have been identified that could be pursued by the District if desired. A decision to pursue or not pursue these changes is required now to avoid delaying the completion of the design and delaying the funding agreement. All of the upgrades would increase capital costs but as shown in the explanations below, the full life cycle cost analysis for

each item proved that some are more economical in the long term. As also discussed below, some options are simply not cost effective given the limited benefit.

After careful review of each potential upgrade, District staff are recommending pursuit of five upgrades and not recommending three of the upgrades. Table 1 provides a summary of the impact to project costs if these upgrades are pursued per staff recommendation.

The staff recommended changes include:

- **Terminal Reservoir Concrete Roof –** The existing metal roof at the Terminal Reservoir is in poor condition, including many of the structural support members. Therefore, the roof and at least 40% of the structural framing members require immediate replacement.

  Since the entire roof and structural support system requires replacement, a concrete roof, in lieu of a metal roof with metal framing, is being considered. A concrete roof will provide the District with a structure that has significantly less maintenance requirements and will have a longer service life. While the new metal roof and its framing components will be coated to resist corrosion, there is still routine maintenance required to re-coat these metallic items and at certain intervals, replace them completely to ensure they are structurally sound. A concrete roof requires significantly less maintenance and does not exhibit the same issues associated with corrosion, which is typically what leads to metal roof rehabilitation and replacement. The increase in capital cost to construct a new concrete roof is approximately $100K when compared to a new metal roofing system. A life cycle cost analysis was performed and over a 75-year life cycle, the net present value of a steel reservoir roof is $6.3M vs a concrete roof at $1.8M.

- **Romero Reservoir Roof –** The existing roof on this reservoir was installed in the mid-1970s and was found to be in good condition during the 2015 seismic evaluation, likely due to the excellent reservoir ventilation system. It is anticipated that this roof will last another 15 to 20 years based on its past performance. A life cycle cost analysis was performed and over a 75-year life cycle, the net present value of a steel reservoir roof is $2.7M vs a concrete roof at $1.4M. For this reason, a concrete roof upgrade is recommended for the Romero Reservoir, resulting in a $700,000 increase to the project cost for this site.

- **Hot Springs Reservoir Concrete Roof –** Similar to the reasons stated above, a concrete roof will require less maintenance and will have a longer service life than a metal roof. In addition, seismic sloshing which can severely damage a roof during an earthquake, would require a metal roof to be constructed approximately 5-ft to 6-ft higher than the concrete roof to meet design codes and avoid damage imposed by seismic sloshing. Raising the roof could have aesthetic impacts, and would also require District staff to scale and maintain an even taller roof system in the future. The increase in capital cost to construct a new concrete roof is approximately $100K when compared to a new metal roofing system A life cycle cost analysis was performed and over a 75-year life cycle, the net present value of a steel reservoir roof is $1.0M vs a concrete roof at $550K.

- **Buena Vista Reservoir Concrete Roof –** The Buena Vista Reservoir is identical to that of the Hot Springs Reservoir, therefore the same logic applies for recommendation of a concrete roof for this structure. The increase in capital cost to construct a new concrete roof is approximately $100K when compared to a new metal roofing system. A life cycle cost analysis was performed and over a 75-year life cycle, the net present value of a steel reservoir roof is $1.0M vs a concrete roof at $550K.

- **All Reservoirs, SCADA and Electrical Improvements –** The electrical and Supervisory Control and Data Acquisition (SCADA) improvements generally consist of upgrading antiquated Programmable Logic Controllers (PLC), providing intrusion alarms for reservoir access points, and equipping reservoirs with mixing systems where they do not currently exist. These electrical and SCADA improvements will "harden" these facilities by providing alarms to District staff if reservoir access points (hatches) are opened, will allow for greater operational flexibility for reservoirs using remote controls, and will enhance water quality.

- **Romero Reservoir Secant Wall –** The geotechnical study and report indicated that the reservoir is partially supported by fill, which requires a soil retaining system to resist seismic movement. A soil retaining system is required regardless of the other reservoir improvements. There are two options for the soil retaining system, a steel sheet pile system or a concrete secant wall. The cost difference between the two wall types is about $300K to 400K, with the concrete secant wall being the more expensive option. However, the steel sheet piles are only expected to last 50-years, where the concrete secant wall will last 75-years. In addition, the installation procedure for steel sheet piles may be difficult if cobbles or other formations are encountered, which could increase the price of this wall type during construction, where in comparison the concrete secant wall will not be impacted as significantly if challenging geotechnical conditions are present.

Reservoir upgrades that were considered but are not recommend for inclusion to the project include:

- **Romero Reservoir Divider Wall –** A concrete center divider wall was considered for this reservoir, which would bisect the reservoir and allow half of the reservoir to remain in service while the other half is drained to perform maintenance activities. Due to the cost associated with this wall (ranging from $180K to 300K) and the infrequency at which it would be used, it is not recommended that this feature be included.

- **Bella Vista Reservoir Divider Wall –** A concrete center divider wall was also considered for this reservoir, which would bisect the reservoir and allow half of the reservoir to remain in service while the other half is drained to perform maintenance activities. Due to the cost associated with this wall, $950K, the difficulty in constructing this feature within the existing enclosed reservoir, and the infrequency at which it would be used, it is not recommended that this feature be included.

Table 1 – Updated Project Cost Estimate

	Project	Original Project Cost (March 2021)	New Proposed Cost (w/ upgrades)	Difference	Reason for Increase
	Project Management (PM, CM)	**$ 500,000**	**$ 500,000**	**$ -**	
1	Doulton Reservoir Seismic Vulnerability Replacement	**$ 1,604,474**	**$2,193,000**	**$ 588,526**	**Geotechnical Requires Deep Piles**
2	Romero Reservoir Seismic Vulnerability Retrofit	**$ 681,641**	**$3,332,650**	**$ 2,651,009**	**Upgrade to Concrete Roof ($0.7M), Secant Wall ($1.3M)**
3	Terminal Reservoir Seismic Vulnerability Retrofit	**$ 2,537,223**	**$3,573,000**	**$ 1,035,777**	**Upgrade to Concrete Roof**
4	Bella Vista Reservoir Seismic Vulnerability Retrofit	**$ 2,002,796**	**$1,480,000**	**$ (522,796)**	
5	Park Lane Reservoir Seismic Vulnerability Replacement	**$ 3,934,341**	**$3,408,416**	**$ (525,925)**	
6	Cold Spring Seismic Vulnerability Retrofit	**$ 2,401,038**	**$2,545,000**	**$ 143,962**	
7	Hot Springs Reservoir Seismic Vulnerability Retrofit	**$ 948,362**	**$1,629,500**	**$681,138**	**Upgrade to Concrete Roof**
8	Buena Vista Reservoir Seismic Vulnerability Retrofit	**$ 984,685**	**$1,632,423**	**$ 647,738**	**Upgrade to Concrete Roof**
	TOTAL REQUEST	**$15,594,558**	**$20,293,989**	**$ 4,699,431**	

As shown in the table, the total project cost would increase to over $20M including the additional design services amendment. Staff has confirmed with the granting entity that the grant program has adequate funds to cover this proposed increase in project costs.

Amendment to Design Services Contract

Tetra Tech is under contract to provide structural design services as well as engineering support during construction. The additional upgrades described above will incur additional costs from Tetra Tech to pivot to the new design work (concrete roofs, SCADA, electrical, etc.). The additional design work is listed below:

- **Electrical & Instrumentation Design** – Many of the sites have antiquated communication equipment including PLCs and radios that require replacement to allow the District to adequately monitor the performance of the reservoirs. In addition, the monitoring and control elements, such as level transducers and modulated valves, require upgrading. The District is "hardening" its facilities by including intrusion alarms which alert District staff when a hatch or other opening in the reservoir is accessed. Finally, several of the reservoirs will be retrofitted with mixing systems to enhance water quality. Tetra Tech's scope of work includes providing electrical and instrumentation design to support the above improvements, which will be integrated into the overall Contract Documents.

- **Piping Modifications** – Tetra Tech conducted a seismic evaluation of the inlet and outlet pipes for the reservoirs to determine where flexible connections or pipe replacement should occur. Tetra Tech's scope of work will include the design of these on-site piping modifications.

- **Terminal Reservoir Concrete Roof Design** – Tetra Tech advanced this design to the 60% level with a metal roof based on its original scope of work. Based on the above recommendation to outfit this reservoir with a concrete roof, Tetra Tech's scope of work will include the design of a concrete roof and related elements.

- **Romero Reservoir Concrete Roof Design** – Tetra Tech advanced this design to 50% level with only seismic roof bracing based on its original scope of work. Based on the above recommendation to outfit this reservoir with a concrete roof, Tetra Tech's scope of work will include the design of a concrete roof and related elements.

- **Storm Water Pollution Prevention Plan (SWPPP)** – Due to the size of this project (greater than 1 acre of disturbance), a Storm Water Pollution Prevention Plan SWPPP is required. SWPPP is a document that outlines how a construction project will minimize stormwater pollution. Construction sites are a well-known source of sediment and other pollutants which can cause significant harm to rivers, lakes, coastal waters, and flood control facilities. The SWPPP describes the contractor's activity to prevent pollution for the specific project. Tetra Tech will prepare a SWPPP for the project as required to meet storm water regulations which will include an assessment to determine permit applicability based on timing and soil disturbance. In addition to the SWPPP development, Tetra Tech will file the Notice of Intent, Notice of Termination, and Changes of Information.

A summary of the design fee increase is shown in Table 2.

Table 2 – Summary of Design Fee Increase

Task	Fee
Electrical & Instrumentation Design	$240,800
Reservoir Piping Modifications	$20,640
Terminal Reservoir Concrete Roof Structural Design	$32,610
Romero Reservoir Concrete Roof Structural Design	$26,205
Storm Water Prevention Pollution Program (SWPPP)	$12,589
Total	**$332,844**

FISCAL IMPACT

The proposed amendment would increase the design contract with Tetra Tech from $862,418 to $1,195,262. This would increase all planning level costs for design, project management, and environmental services from $1,046,353 to $1,379,197. It should be noted that at the February 23, 2021 Board meeting, staff was authorized to file the grant application agreement which at the time estimated planning and design costs to be $1,868,563. Even with these additional design fees, the current costs are below the original estimate. The additional work is not included in the current fiscal year (FY) 2022 budget and is not included in the District's 2020 5-year rate study since it was unanticipated. These costs would be incurred over the current fiscal year (FY2022). These unbudgeted expenses would be funded using unrestricted reserves.

The costs associated with this work will be reimbursed in total once the final grant agreement is executed by the SWRCB and the District, likely in Fall of 2022. The expenses, less the 30% loan forgiveness then become part of the 30-year SRF loan for the project. The first payment on the loan would not be due until the project is complete, which is projected to be around 2025.

Staff consulted with Robert Porr, the District's Municipal Advisor from Fieldman Rolapp & Associates, to confirm adequate debt coverage. Robert Porr staff confirmed the District could acquire approximately $28M in new debt and still satisfy debt coverage requirements.

ATTACHMENTS

None