



Memorandum

TO: HONORABLE MAYOR
AND CITY COUNCIL

FROM: Kerrie Romanow
Matt Loesch

SUBJECT: SEE BELOW

DATE: May 1, 2024

Approved

Date

5/14/24

**SUBJECT: ACTIONS RELATED TO THE 10165 – AMMONIA PUMPS
REPLACEMENT PROJECT AT THE SAN JOSE - SANTA CLARA
REGIONAL WASTEWATER FACILITY**

RECOMMENDATION

- (a) Adopt a resolution adopting the Addendum to the Environmental Impact Report for the San José-Santa Clara Regional Water Pollution Control Plant Master Plan (SCH #2011052074), Ammonia Pumps Replacement Project, File No. ER21-306, in accordance with the California Environmental Quality Act, as amended.
- (b) Accept the report on bids and award of a contract for the construction of 10165 - Ammonia Pumps Replacement Project, to the lowest responsive, responsible bidder, Mountain Cascade, Inc., in the amount of \$2,220,250.
- (c) Approve a 10% contingency in the amount of \$222,025.

SUMMARY AND OUTCOME

Award of the contract to Mountain Cascade, Inc. will allow for the construction and completion of the 10165 - Ammonia Pumps Replacement Project at the San José-Santa Clara Regional Wastewater Facility (RWF). (**Attachment** - Ammonia Pump Station: Location Map). Construction of this project will improve the reliability of the disinfection system at the RWF. Approval of a 10% contingency will provide funding for unanticipated work that is necessary for the proper and timely completion of the project.

BACKGROUND

The RWF uses chloramine in its effluent disinfection process. Chloramine is a combination of chlorine and ammonia, which is less corrosive and produces lesser disinfection byproduct than chlorine. The disinfection facility consists of two chemical dosing facilities near the chlorine contact basins: an ammonia facility and a sodium hypochlorite facility. The ammonia facility consists of five ammonia pumps that feed aqueous ammonia to the chlorine contact basin where chloramine is formed. The existing ammonia pumps are oversized and cannot be turned down to the typical dosing range while providing accurate chemical flow control. An upcoming update to the RWF National Pollutant Discharge Elimination System permit is anticipated to require tighter control over the effluent ammonia concentration discharge and thus ammonia dosing control is extremely important.

This project will replace the five existing ammonia pumps with new, smaller pumps that will provide accurate chemical flow control across the anticipated dose setpoint range and contact basin flow range. The five existing flowmeters will also be replaced and a backup flowmeter will be installed. All pump-related appurtenances will be replaced, and a new strut-mounted control panel will be installed. This will result in increased efficiency, reliability, and redundancy at the ammonia facility.

A construction Notice To Proceed is anticipated to be issued in July 2024, with substantial completion anticipated by October 2025.

ANALYSIS

Bids were opened on March 7, 2024, with the following results.

<u>Contractor</u>	<u>Bid Amount</u>	<u>Variance Amount</u>	<u>(Over/Under) Percent</u>
Mountain Cascade, Inc (Livermore)	\$2,220,250	\$1,120,250	102%
Shimmick Construction Company, Inc. (Suisun)	\$2,297,500	\$1,197,500	109%
Pacific Infrastructure Corp. (Pleasanton)	\$2,459,000	\$1,359,000	124%
Metro Builders Engineers Group Ltd. (Newport Beach) <i>(non-responsive)</i>	\$2,554,130	\$1,454,130	132%
Engineer's Estimate	\$1,100,000	--	--

The bids received are between 102% and 132% above the Engineer's Estimate. The lowest responsible bid was submitted by Mountain Cascade, Inc. at \$2,220,250. City staff analyzed the bids and determined that multiple factors may have contributed to the higher-than-expected bid prices, as outlined below.

- Materials and equipment costs typical to wastewater projects are escalating rapidly and somewhat unpredictably due to inflation and industry shortages. This is a particularly significant issue for electrical equipment and instrumentation, which represents a significant portion of the project. The latest expansion of construction activity in California has also resulted in shortage of skilled labor across the industry, contributing to the higher-than-expected bid prices across the various construction projects.
- The final Engineer's Estimate was developed based on vendor cost quotes from 2022 and 2023 and then a nine percent escalation factor was applied to account for recent and anticipated further cost increases, partly based on recent discussions with these vendors. The Engineer's Estimate and the design were finalized in September 2023. Because the bids were not opened until March 2024, additional escalation may have occurred that was not accounted for in the estimate.
- Recent discussion with the pump systems vendor indicates significant pricing increases and added cost items for submittals, project management, Operations and Maintenance manuals, seismic calculations, etc. that the vendor left out of its original quotation but should have been included.
- The project scope is dominated by mechanical and electrical equipment and appurtenances. No new significant structures or civil work is included in the scope. Therefore, the total project cost is much more sensitive to changes in equipment and component pricing than a typical wastewater project.
- The project requires complex sequencing of work and testing necessary to construct the improvements around existing RWF operations and meet RWF process shutdown requirements. Contractors are permitted some flexibility to develop means and methods to complete the project in accordance with specified work sequence restrictions. The estimate attempted to account for sequencing complexities via allowances, but it is possible those allowances were not fully reflective of the costs that were ultimately incorporated in the bids.
- City automation staff requested the addition of a higher level of process instrumentation and incorporation of RWF automation requirements during design. The Engineer's Estimate included allowances for the level of automation required, but it is possible those allowances were not fully reflective of the costs that were ultimately incorporated in the bids.

Despite the bids being higher than the Engineer's Estimate, staff recommends proceeding with the award of the contract for the following reasons outlined below.

- The project improvements are needed to resolve a process control challenge at the disinfection process arising from improperly sized pumps. The improvements are also needed to meet permit requirements when the ammonia limitations become more stringent.
- Critical equipment has a 26-week lead time and process shutdowns for improvements can only occur during dry weather. A several month delay in awarding the project would cause a one-year delay in improvements being completed because the 2025 summer shutdown window would be missed.
- Material and equipment cost escalation continues to be a problem for the construction industry. It is likely that any significant delay in awarding the project would cause project cost to further increase.

Mountain Cascade, Inc. has completed installation of similar chemical metering pumps, with piping, appurtenances, electrical, and instrumentation control equipment for the Central Marin Sanitation Agency in 2016. Mountain Cascade, Inc. has also installed an arsenic treatment system with chemical storage, pump station for Dillon and Murphy in 2016 and a chemical storage and feed pump station for the River Island Development in 2021.

Policy Alternatives

Alternative #1: Direct City staff to reject all bids and not implement the project.

Pros: Capital cost savings in the short term.

Cons: Continued operation of the existing ammonia pumps would result in continued process limitations preventing accurate ammonia dosing to the disinfection process during lower flow conditions, resulting in excessive effluent ammonia and excessive use of the chemical. When new permit limits take effect, effluent ammonia may not comply with limitations under some operating conditions.

Reasons for not recommending: Improvements are necessary to provide the required level of ammonia dosing control and to reduce chemical usage.

Alternative #2: Direct staff to modify the scope and re-bid the project.

Pros: Modifying the scope and re-bidding the project may reduce costs in the near-term.

Cons: A delay in awarding the project in order to re-bid would push project completion forward at least one full year due to the limited summer shutdown window for taking ammonia pumps and controls offline for replacement coupled with the long lead time for ordering equipment.

Reasons for not recommending: Modifying the scope to remove some construction elements would require rejecting all the bids and incurring additional consultant and staff costs to redesign and rebid the project, adding at least 10 to 12 months to the construction schedule. The criticality of the project does not allow for a long delay in rebidding the project. There are no significant elements that could be removed that would substantially reduce project cost without compromising the project's compliance with RWF standards and requirements. Rebids also do not necessarily force a more competitive market condition and there is also no guarantee that

future bids will be in line with the Engineer's Estimate. All prequalified contractors may not participate in the rebidding process. In addition, considering the tight labor market and abundance of construction work in the Bay Area, costs may increase substantially, and qualified specialty subcontractors may not be available, reducing any potential savings to the City.

Procurement Issues

The bid submitted by Metro Builders & Engineers Group, Ltd. was deemed non-responsive for failing to provide the specific bidder's experience information required by the City.

Contingency

San José Municipal Code Section 27.04.050 provides a standard contingency of 10% of the total contract amount for all public works contracts except those involving the renovation of a building or buildings. The standard 10% contingency is deemed appropriate for this project.

Project Labor Agreement Applicability

The City's Project Labor Agreement is not applicable to this project because the Engineer's Estimate is below the \$1.22 million threshold.

Wage Theft Prevention Policy Check

The Office of Equality Assurance reviewed bidders for compliance with the City's Wage Theft Prevention Policy on March 7, 2024 and again on April 5, 2024. No wage theft issues were identified.

Local and Small Business Outreach

Mountain Cascade, Inc. is not a local or a small business enterprise. In addition, no local subcontractors were listed.

EVALUATION AND FOLLOW-UP

No follow-up action with City Council is expected currently. Quarterly progress reports of the RWF Capital Improvement Program will also be submitted to the Treatment Plant Advisory Committee and posted on the City's website.

COST SUMMARY/IMPLICATIONS

In accordance with the recommendations set forth in the Capital Project Cost Allocation Technical Memorandum (Carollo Engineers, March 2016), this project is allocated between the

four billable parameters relative to the rolling weighted average distribution of all RWF assets. The source of funding for this project is through the 512 San José-Santa Clara Treatment Plant Capital Fund and 513 San José-Santa Clara Treatment Plant Operating Fund. The project will have no additional impact on the General Fund.

1. TOTAL COST OF PROJECT:

Project Delivery*	\$736,006
Construction	\$2,220,250
<u>Contingency (10%)</u>	<u>\$222,025</u>
TOTAL PROJECT COSTS	\$3,178,281

* Project delivery includes \$237,875 for design consultant, \$39,786 for construction management review during the design phase, \$370 for construction management during the bid and award, \$407,089 for construction management during the construction phase, and \$50,886 for post-construction and project closeout. The project delivery cost is approximately 33% of the construction cost, which is on the lower end of the typical 30% to 60% range and is likely due to the higher-than-expected construction bid.

2. COST ELEMENTS OF CONTRACT:

Mobilization/Demobilization	\$88,000
Removal/Disposal of pumps and appurtenances	40,000
Ammonia metering pumps	1,100,000
Flowmeters, pump controllers, valves, piping, fitting, etc.	682,250
Distributed Control System remote Input/Output Panel/System Integration	205,000
Miscellaneous	105,000
TOTAL BASE BID AMOUNT	\$2,220,250

BUDGET REFERENCE

The table below identifies the fund and appropriations to fund the contract recommended as part of this memorandum and remaining project costs, including project delivery, construction, and contingency costs.

Fund #	Appn #	Appn. Name	Total Appn	Amt. for Contract	2023-2024 Adopted Capital Budget Page	Last Budget Action (Date, Ord. No.)
512	5690	Plant Infrastructure Improvements	\$6,510,000	\$2,220,250	290	10/17/2023 Ord. No. 30966

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COORDINATION

This memorandum has been coordinated with the City Attorney's Office, the City Manager's Budget Office, the Finance Department, and Planning, Building, and Code Enforcement Department.

PUBLIC OUTREACH

This memorandum will be posted on the City's Council Agenda website for the June 4, 2024 City Council meeting.

COMMISSION RECOMMENDATION AND INPUT

This item is scheduled to be heard at the May 23, 2024, Treatment Plant Advisory Committee meeting. A supplemental memorandum with the committee's recommendation will be included in the June 4, 2024 City Council meeting agenda.

CEQA

Addendum to the Environmental Impact Report for the San José/Santa Clara Water Pollution Control Plant Master Plan (Resolution No. 76568), File No. ER21-306, for the Ammonia Pumps Replacement Project.

PUBLIC SUBSIDY REPORTING

This item does not include a public subsidy as defined in section 53083 or 53083.1 of the California Government Code or the City's Open Government Resolution.

/s/
KERRIE ROMANOW
Director, Environmental Services Department

/s/
MATT LOESCH
Director, Public Works

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For questions, please contact Mariana Chavez-Vazquez, RWF General Manager, at Mariana.Chavez-Vazquez@sanjoseca.gov or (408) 535-8550.

ATTACHMENT: Ammonia Pump Station: Location Map

Ammonia Pump Station: Location Map



