



City Council Agenda Item

City Council Meeting Date: January 19, 2021

TO: Jim Throop, City Manager

FROM: Dong Hyun Chon, Wastewater Superintendent
d_chon@ci.lompoc.ca.us

SUBJECT: Adoption of Resolution No. 6376(21) Awarding Contract for Purchase of Sludge Suction Header Replacement System for the Lompoc Regional Wastewater Reclamation Plant's Secondary Clarifier Units

Recommendation:

Staff recommends the City Council:

- 1) Adopt Resolution No. 6376(21), approving the award of contract in the amount of \$316,789.60 to Ovivo, Inc, authorizing a purchase order, and approving supplemental appropriations for the Lompoc Regional Wastewater Reclamation Plant's (LRWRP) Secondary Clarifier Renovation Project (Project) (attached); or
- 2) Provide alternate direction.

Background:

In 2002, the City implemented a capital replacement program for the LRWRP in order to implement new standards imposed by the Central Coast Regional Water Quality Board. The 2007-2011 renovations addressed only the components of the LRWRP that improved the facility's ability to attain the new standards. Several components of the LRWRP built or rebuilt as part of the 1976-78 plant reconstruction remain operational, continue to age, and require increasing maintenance as they age. The secondary clarifier units, installed as part of the 2007-2011 renovations, have experienced significant wear and maintenance issues since their installation and have become a threat to the ongoing daily operations of the LRWRP.

The three Secondary Clarifiers used in the LRWRP process were newly installed as part of the 2007-2011 LRWRP renovation project and were brought online for operational use during fiscal year (FY) 2007-08. The expected life of the units at the time of installation was estimated at 25 years except the metal components were of "hot dipped galvanized steel," which resulted in an estimated life of less than the projected 25 years. As such,

the Secondary Clarifiers were identified in the FYs 2017-23 Capital Improvement Plan (CIP) as components of the LRWRP requiring capital repairs and renovations with a project title of "Rebuild Secondary Clarifiers".

The Secondary Clarifier units are suction header clarifier units designed mainly for municipal wastewater treatment applications. They provide for the rapid removal of sludge by suction. The units maximize sludge concentration, providing low effluent suspended solids and efficient scum removal. The clarifier model installed at the LRWRP is well adapted for primary and secondary clarification processes, except for the selection of the hot dipped galvanized steel components originally installed.

Secondary clarification is a vital component of most biological wastewater treatment systems, including the LRWRP. The fundamental objective of secondary clarifiers is to separate biological floc from the treated liquid waste stream and to remove floated scum that accumulates on the top of secondary clarifier units. The settled/compacted biological floc is recirculated back to the aeration basin through suction headers in the bottom of the secondary clarifier, continuing the treatment process efficiently and effectively.

The CIP identified the Project as "Essential Maintenance" with a proposed schedule to replace, renovate, and rebuild each of the three units on an annual schedule over two budget cycles (2018-19 to 2021-22). The final unit would be rebuilt approximately 4 years after Wastewater staff identified the units as requiring major renovations. Due to this unexpected and significantly quicker degrading of the components than anticipated, the units are at, or beyond, their revised expected end of operational life.

This recent development has required the Project to be prioritized over several other renovation projects designated for portions of the LRWRP in the CIP. While the CIP provided a comprehensive and conservative estimate of \$250,000 to repair, rebuild, and renovate each Secondary Clarifier unit, Wastewater staff have identified economies of scale by having the original manufacturer complete the repair, rebuild and renovation of all three units as a single Project. A significant difference in the planned replacements is to switch from the hot dipped galvanized steel components to stainless steel components to eliminate the chance of reoccurrence of the corrosion that occurred with the initial steel parts. The change in scope from three projects to one Project has significantly reduced the actual proposed cost from the original conservative estimate of \$750,000 to approximately \$317,000.

Discussion:

The LRWRP has three 90' diameter secondary clarifier units which were built as part of the 2007-2011 plant reconstruction project and have operated since 2007-2008. As mentioned above, the complete units by their nature, would have an approximate 25 year operational life but for the unexpected degradation of the hot dipped galvanized steel components. Currently, all steel secondary clarifier mechanisms proposed for repair and replacement in this Project are beyond their useful operational life, are rusted, leak, and, critically, were originally supplied in hot dipped galvanized steel. The degraded

component issues reduce process efficiencies to an adverse level. In addition, the current state of repair of the secondary clarifier units are a safety concern for the Wastewater staff assigned to maintain and operate the units.

To solve the issues stated above and to implement the Project as proposed in the CIP, Wastewater staff worked with the original manufacturer of the units and the Project intends to rebuild and/or replace aging suction arms with stainless steel components, eliminating the primary root cause of the units' premature need for replacement. The Project is scheduled to replace the units' center column seals and recoat/repaint the units where new components are welded to existing structure, in addition to replacing all steel components in the unit that have contact with effluent. When the Project's repairs, replacements, renovations, and refurbishments are complete, it is expected that the units will have a revised remaining useful life of 10 years, resulting in the units overall life being equal or superior to the original 25 year useful life expected when originally installed in 2007-2008.

The components of the current suction header unit's configuration being proposed for renovations were supplied and installed by a business division of Ovivo, Inc. approximately 10 years ago, utilizing specifications supplied by the then Wastewater management team and Brown & Caldwell, the design group hired to design the overall plant reconstruction. The configuration of the underlying structure necessitates the replacement components be compatible with the existing components; requiring the use of Ovivo Inc. for the Project, the only vendor manufacturing the components for the plant's secondary clarifiers. The proposal from Ovivo Inc. provides for components that are newer in design, stronger and more durable than the current components and are vastly more efficient than the current components. The use of stainless steel components for the Project rather than hot dipped galvanized steel is a critical difference in this Project compared with the original construction that occurred in 2007-2008.

Fiscal Impact:

The proposal from Ovivo, Inc. includes two options (Attachment 2). The only difference in the delivery of the Project between the two options is they provide for two different grades of stainless steel components. Ovivo, Inc. expects no additional durability from the higher priced grade of steel and the recommendation is for the proposal using 316 grade stainless steel. This quote is for \$298,864 broken down between materials (\$204,864) and installation and freight charges (\$94,000) plus 8.75% sales tax on materials for a total of \$316,789.60.

Wastewater has utilized the Purchasing Division to requisition the Ovivo Inc. quote. However, no incremental General Fund resources will be utilized for this procurement as the Wastewater Utility has adequate resources and pays for purchasing services provided by the General Fund on an ongoing basis.

The Biennial Budget FYs 2019-21 includes appropriations of \$250,000 in account 753WWM-798730 – Wastewater Maintenance - Clarifiers for FY 2020-21. In addition,

during FY 2018-19, \$50,000 was appropriated for initial work on the Project but the appropriations lapsed without any encumbrance of funds.

A budget amendment of \$100,000 is proposed to re-appropriate the FY 2018-19 budget of \$50,000, to appropriate an additional \$50,000 for the remainder of the proposed purchase order (\$316,789.60) and to allow for potential contingencies related to the Project but not to the proposed purchase order of approximately an additional 10% of the procurement process. The budget amendment would appropriate unrestricted Wastewater fund equity (reserves) as follows:

Increase account 753WWM-798730 – Wastewater Maintenance – Clarifiers
by \$100,000 as shown in the budget amendment form.

The proposed budget amendment and the award of the purchase order will allow for the completion of the Project during FY 2020-21 and will eliminate any additional proposed appropriations in future budget periods to complete the Project as proposed in the CIP.

Conclusion:

The approval of the purchase order and contract with Ovivo Inc. will provide several benefits to the City. The renovation of the LRWRP's Secondary Clarifiers, initially identified as a necessary capital project earmarked for completion during FY 2017-18 will reduce operational and maintenance support and costs for the existing Secondary Clarifiers, increase the LRWRP's efficiency and decrease risks to the Plant and staff at the plant. By completing the Project for all three units at one time, the cost to renovate the units has been reduced by more than half compared with the original CIP estimate.

Respectfully submitted,

Dong Hyun Chon, Ph.D., P.E. Wastewater Superintendent

APPROVED FOR SUBMITTAL TO THE CITY MANAGER:

Charles J. Berry, Utility Director

APPROVED FOR SUBMITTAL TO THE CITY COUNCIL:

Jim Throop, City Manager

Attachments: 1) Resolution No. 6376(21)
2) Ovivo Inc. Proposal for Services