Agenda Item #7.1
For Board Meeting of: August 15, 2019

CITY OF SANTA ROSA
BOARD OF PUBLIC UTILITIES

TO: BOARD OF PUBLIC UTILITIES

FROM: MARK KASRAIE, PE, SUPERVISING ENGINEER
CAPITAL PROJECTS ENGINEERING

SUBJECT: PROJECT WORK ORDER AMMENDMENT NO. 1 APPROVAL – PROFESSIONAL ENGINEERING SERVICES FOR THE LAGUNA TREATMENT PLANT DISINFECTION IMPROVEMENTS

AGENDA ACTION: MOTION

RECOMMENDATION

It is recommended by the Contract Review Subcommittee and the Transportation and Public Works Department that the Board of Public Utilities, by motion, approve Amendment No. 1 to Project Work Order No. A010014-2011-09 under the Master Professional Services Agreement with Carollo Engineers, Inc. of Walnut Creek to provide Professional Engineering Services for the Laguna Treatment Plant Disinfection Improvements Project in the amount of $1,384,655, and approve a $200,000 contingency, for a total contract amount not to exceed $4,388,254.

EXECUTIVE SUMMARY

This proposed action will approve Project Work Order (PWO) Amendment No. 1 in the amount of $1,384,655 to PWO No. A010014-2011-09 under the Master Professional Services Agreement with Carollo Engineers, Inc. of Walnut Creek to provide Professional Engineering Services for the Laguna Treatment Plant Disinfection Improvements Project and will approve a $200,000 project contingency.

Due to project delays from the Tubbs Fire as well as changes made at early design stages, the City needs to amend the existing PWO to incorporate project modifications and complete the design.

BACKGROUND

Ultraviolet light (UV) is the primary disinfection process for the Laguna Treatment Plant (LTP). In 2012, the State Water Resources Control Board Division of Drinking Water (DDW) re-evaluated and subsequently de-rated the disinfection system capacity from

67 million gallons per day (MGD) to 48.5 MGD, creating a disinfection deficiency under some wet weather conditions.

For the last several years, LTP staff have faced operational challenges with the existing UV system, which is currently operating below its performance criteria. The UV system has been operating over 20 years and is beyond its useful service life. Plant staff must provide greater resources to address disinfection system limitations such as periodic UV under-dose, coliform exceedance, and cleaning frequency issues.

These events triggered the need to assess disinfection system options to ensure that the LTP has adequate disinfection capacity under all flow rates.

In 2013, a preliminary analysis reviewed the feasibility of four alternative concepts for upgrading the disinfection system capacity. These alternatives included adding additional UV channel(s), replacing the existing UV system with new UV equipment, augmenting the existing UV system with pasteurization, and augmenting the existing UV system with ozone.

In 2016, the City awarded a $2,803,599 PWO with Carollo Engineers, Inc of Walnut Creek to provide professional engineering services for the design of new UV and effluent diversion systems.

In 2017, City staff and the engineering consultant were directed to pause the design process and perform a value engineering (VE) study. The VE study further evaluated the economic feasibility of disinfection system alternatives and reviewed the system design parameters. Through the VE effort and subsequent analyses, staff and the design consultants collectively determined that the most feasible alternative was to construct a full-capacity UV disinfection system to ensure reliability, operational simplicity, treatment consistency, and compliance with Title 22 Recycled Water requirements.

The Tubbs Fire in October 2017 required substantial City resources, which impacted the delivery schedule of this project by over one year. Because of project delays and changes to the design resulting from the additional analyses, the City needs to amend the existing PWO to incorporate project modifications and complete the design.

PRIOR BOARD OF PUBLIC UTILITIES REVIEW

On January 7, 2016, the Board approved a $2,803,599 PWO under the Master Professional Services Agreement with Carollo Engineers, Inc., to provide Professional Engineering Services for the LTP Disinfection Improvements project.

On November 17, 2016, the Board approved the Memorandum of Understanding (MOU) with Calgon Carbon of Coraopolis, PA (Supplier), to establish the selection of the ultraviolet disinfection equipment and to set the purchase price.

ANALYSIS

After thoroughly reviewing Carollo's amendment proposal and checking the total revised design fee against the California State average for design projects and the City of Santa Rosa design fee records, City staff have determined the proposed PWO amendment and revised total design fee remain within the City's expectations for a project of this size. Per the 2018 California Multi-Agency CIP Benchmark Study, the average design fee for similar-sized wastewater treatment plant projects range between 14% and 18% of total construction cost. The City of Santa Rosa's goal for engineering design services for a project of this size is 10%. The revised design budget is $4,388,254, or approximately 9.3% of the estimated construction cost.

Carollo has expertise in UV disinfection and has been responsible for much of the analysis to date, including the 2012 Laguna Water Reclamation Facility (WRF) Capacity and Alternative Technology Analysis, the 2013 Laguna WRF Disinfection Alternatives Analysis, the 2014 Disinfection System Charrette, and most recently the LTP Ultraviolet Transmittance Analysis, the Geysers Sodium Hypochlorite Disinfection Facility Feasibility, the LTP Diversion Improvements Analysis, the LTP UV Replacement Analysis, and the 2017 Value Engineering Study.

If this PWO amendment is not approved, the ongoing issues occurring at LTP will become exacerbated.

Consistent with City of Santa Rosa Council Policy 600-01, Selection of Professional Services and City Code Section 3-08.110, Award Authority, PWO Amendment No. 1 may be approved by Board of Public Utilities.

FISCAL IMPACT

The existing engineering PWO contract is $2,803,599. This proposed PWO amendment will increase the budget by $1,384,655, and staff recommends a contingency of $200,000 for a total contract amount not to exceed $4,388,254.

The total project cost is estimated at approximately $65,000,000, which includes engineering design services, equipment cost, construction, construction management and inspection, and regulatory and administrative fees. Future funding will be accomplished through a combination of budget transfers from currently appropriated funds, new budget appropriations from the 1631 Subregional Wastewater Facilities Fund, as well as a planned 2020 bond issuance.

ENVIRONMENTAL IMPACT

To satisfy the requirements of the California Environmental Quality Act (CEQA), an addendum to the Incremental Recycled Water Program (IRWP) Program Environmental Impact Report (EIR) will be prepared for this project. The addendum will expand the IRWP Program EIR project description to include the On-site Diversion Project. The

IRWP Program EIR already includes the Ultraviolet Disinfection Expansion project within the project description. Additionally, the mitigation measures in the Program EIR that are applicable to the disinfection projects will be updated to reflect current best practices, and a checklist will be completed to verify that the proposed projects will not result in any additional impacts. Once these activities are complete and prior to project approval, the Board will need to adopt the addendum, approve the checklist, adopt the revised program EIR Mitigation Monitoring and Reporting Program (MMRP), and adopt the project specific MMRP.

This action is exempt from the California Environmental Quality Act (CEQA) because it is not a project which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, pursuant to CEQA Guideline section 15378.

BOARD/COMMISSION/COMMITTEE REVIEW AND RECOMMENDATIONS

On July 29, 2019, the Contract Review Subcommittee met with TPW and Santa Rosa Water staff and reviewed the project background and amendment proposal and recommended that the Board approve the proposed PWO Amendment.

ATTACHMENTS

- Attachment 1 – PWO Amendment Scope
- Attachment 2 – PWO Amendment Fee

CONTACT

Mark Kasraie, PE, Supervising Engineer
Email: mkasraie@srcity.org
Phone: (707) 543-3857