



DATE: December 6, 2022

TO: Mayor and City Council

FROM: Director of Public Works

SUBJECT: Adopt a Resolution Authorizing the City Manager to Amend the Professional Services Agreement with Brown and Caldwell to Increase the Contract Amount by \$4,800,000 to a Total Not-to-Exceed Amount of \$8,649,711 for Final Design Services for the Administration and Laboratory Building, and Primary Effluent Equalization Basin Relocation Projects, and Geotechnical Investigation Services for the Water Pollution Control Facility Improvements Phase II Project No. 07760

RECOMMENDATION

That Council adopts a resolution (Attachment II) authorizing the City Manager to amend the Professional Services Agreement (PSA) with Brown and Caldwell to increase the contract amount by \$4,800,000 to a total not-to-exceed amount of \$8,649,711 for final design services for the Administration and Laboratory Building, and Primary Effluent Equalization Basin (EQ Basin) Relocation Projects, and geotechnical investigation services for the Water Pollution Control Facility (WPCF) Improvements Phase II Project, Project No. 07760.

SUMMARY

The WPCF core infrastructure was originally constructed in 1952 and included tanks, pumps, large pipes, industrial buildings, and complex mechanical and electrical systems. The WPCF has undergone several upgrades as Hayward population and industry has grown and now treats an average flow of approximately eleven million gallons per day (MGD) and meets current regulatory requirements for discharge of treated effluent to the deep waters of the San Francisco Bay (Bay).

In May 2019, the Regional Water Quality Control Board (Water Board) announced upcoming regulatory requirements limiting discharge of nutrients (nitrogen) to the Bay. In June 2020 the City completed a comprehensive master plan update, the WPCF Phase II Facilities Plan (Facilities Plan), to identify improvements required for the WPCF to upgrade its treatment process to incorporate nutrient reduction in the treated effluent to meet the upcoming requirements.

On July 5, 2022, Council authorized an agreement with Brown and Caldwell (B&C) in an

amount not-to-exceed \$3,849,711 for preliminary design services for the Phase II Project. The preliminary design phase builds upon the Facilities Plan to further refine the project elements including secondary treatment process selection, hydraulic analysis, EQ Basin sizing, and layout of facilities including a new Administration and Laboratory Building and relocated EQ Basin. The preliminary design effort is underway and is approximately 22% complete as of the end of October. Preliminary design for the entire project will be complete in June 2023.

The project will be split into three separate bid packages that include the Administration and Laboratory Building Project as the first bid package, the EQ Basin Relocation Project as the second bid package, and the WPCF Improvement Phase II Project as the third bid package. Preliminary design efforts for the early bid packages are targeting a completion date of February 2023 ahead of completing the preliminary design effort for the Phase II project. In order for the final design effort to begin ahead of the completion of final design for the Phase II project, the geotechnical investigation needs to be complete ideally very early in the final design process so as to confirm suitability of the underlying soils for the proposed new facilities. Therefore, early authorization of final design services is needed for the early bid packages so as to not delay the overall final design schedule.

Staff previously negotiated the scope and not-to-exceed fee for the entire project in the amount of \$24,737,324, which includes preliminary and final design services, bid period services, engineering services during construction, optional services, and design contingency for all three bid packages. On July 5, 2022, preliminary design services were authorized and are currently about 22% complete. Staff is requesting partial authorization of final design services in the amount of \$4,800,000 for the early bid packages (the Administration and Laboratory Building, and Primary Effluent EQ Basin Relocation Projects), as well as the geotechnical investigation that supports all three design packages.

BACKGROUND

In 2014, the City prepared an update to the WPCF Master Plan (2014 Master Plan Update), that included a comprehensive list of near-term and long-term improvement projects for the Capital Improvement Program (CIP) to address WPCF infrastructure needs. Since the 2014 Master Plan Update was prepared, additional more stringent wastewater discharge regulations have been promulgated by the Water Board related to discharge of nutrients to the Bay. After reviewing the list of CIP projects related to nutrient reduction developed in the 2014 Master Plan Update, staff recommended initiating the Facilities Plan to review the recommendations and refine/modify the CIP plan. The primary goals of the Facilities Plan included:

- Perform a schematic design and site planning for the new Administration and Laboratory Building;
- Determine the most appropriate and cost-effective technology that meets the nitrogen removal requirements;
- Develop a strategic plan which coordinates nutrient removal and water recycling; and
- Identify project elements and costs for treatment facility upgrades to meet upcoming regulatory requirements for nutrient discharges to the Bay.

On February 27, 2018¹, Council approved execution of a PSA with Black & Veatch (B&V) to develop a Facilities Plan to identify improvements needed to meet upcoming regulatory requirements for nutrient reduction in discharges to the Bay. The Facilities Plan was completed in July 2019 and included development of a nutrient management strategy and related capital improvements.

Summary of Capital Improvement Projects

The following table presents a summary of the Administration and Laboratory building and primary effluent equalization basin CIP projects from the 2019 Facilities Plan. The complete Phase II Project includes the nutrient upgrades along with other projects recommended in the Facilities Plan and/or prior master plans prepared for the WPCF summarized in the June 5th, 2022 Preliminary Design staff report.²

| Table 1 –Capital Improvement Project Approved Funds | | | |
|--|---|------------------|------------------|
| CIP Project Number | Project Element | FY 23 CIP | FY 24 CIP |
| 612-07749 | New Primary Equalization Basin (EQ Basin) | \$300,000 | \$10,900,000 |
| 612-07786 | WPCF New Administration Building and Laboratory | | \$20,000,000 |

DISCUSSION

The main goal of the amended PSA is to authorize additional services previously negotiated with Brown and Caldwell so that they may begin final design services for the Administration and Laboratory Building and the EQ Basin Relocation Projects, and perform geotechnical investigations.

The project will be split into three separate bid packages that include the Administration and Laboratory Building in the first bid package, the EQ Basin Relocation Project in the second bid package, and the WPCF Improvements Phase II Project in the third bid package. The primary advantage of constructing the Administration and Laboratory Building as a separate project includes being able to attract building contractors who specialize in building and laboratory construction specifically bidding as the prime (general) contractor thereby avoiding subcontractor markups. In addition, by starting the building early, Operations and Maintenance staff can move into the new building early minimizing impacts to staff during construction of the Phase II Project. Preliminary design is anticipated to be completed in February 2023. Before

¹ <https://hayward.legistar.com/LegislationDetail.aspx?ID=3354003&GUID=015931F3-41B1-45E5-8345-F8440FF11A26&Options=&Search=>

² <https://hayward.legistar.com/View.ashx?M=F&ID=11029209&GUID=7059C7EC-4593-483D-91F3-DC0F24CF252B>

final design can begin, the geotechnical investigation for the new building needs to be completed. Therefore, Staff are seeking authorization for both final design services and geotechnical investigation so work can begin on preparing the final design package for bids following completion of the preliminary design work.

Because most of the project improvements are in the footprint of the WPCF's current EQ Basin, a separate project to relocate the EQ Basin is included to shorten the overall duration of the Phase II project by clearing the way for construction of the new improvements ahead of the start of that project. Shortening the overall construction duration will save overall project costs. The goal is to have the new EQ Basin complete and operational prior to beginning work on the new BNR facility. Preliminary design services are currently underway to determine the size and location of the basins along with any required ancillary facilities such as pumping stations, inlet and outlet piping, and construction details required to meet Bay Area Air Quality Management District (BAAQMD) requirements. Preliminary design is anticipated to be completed in February 2023. Like the Administration and Laboratory Building, the geotechnical investigation must be complete before beginning final design services.

On March 15, 2022, staff issued a request for proposals for final design services for the Phase II Project and selected Brown and Caldwell as the best qualified firm. Staff negotiated a final scope of work and fee of \$24,737,324. On July 5, 2022, Council authorized an initial agreement with Brown and Caldwell (B&C) in an amount not-to-exceed \$3,849,711 for preliminary design services for the Phase II Project, leaving \$20,887,613 of the initial negotiated design contract to be awarded in later increments. Staff is seeking authorization to amend the PSA by \$4,800,000 for a not-to-exceed amount of \$8,649,711 that includes the previously authorized preliminary design services, and partial authorization of final design services for the two early bid packages, along with the geotechnical investigation that is needed to support the design effort for all three bid packages. In 2023, Staff will return to council to authorize additional services in the PSA with Brown and Caldwell for the Phase II Project.

The following paragraphs briefly describe the proposed scope of the tasks to be authorized.

WPCF Administration Building and Laboratory Project – Project 612-07786:

The existing Administration and Laboratory Building was originally constructed in 1970 and was subsequently expanded in 1994 to accommodate increased laboratory space requirements. Since it was last modified, the WPCF has seen increased staffing levels due to increasing regulatory requirements, and consequently the existing facilities can no longer efficiently accommodate the space needs and functional requirements of daily operations. Currently, engineering staff are housed in a temporary office trailer on the site due to lack of office space in the current building. The Facilities Plan included space planning for both the administration building and laboratory to adequately house WPCF staff and accommodate laboratory functions required in the future. The project includes construction of a two-story building to house administration, operations, engineering, and laboratory functions in a 21,000 square foot building. Preliminary design is underway to review and confirm the initial space planning needs and layout on the WPCF site, as well as building cost. Final design will begin in early 2023.

EQ Basin Relocation Project – Project No. 612-07749:

The purpose of the Primary Clarifier EQ Basin is to store primary effluent when wet weather flows exceed the secondary treatment capacity at the plant. The EQ Basin also provides flexibility to store flows when process shutdowns are needed to for maintenance purposes. Currently, flows are automatically diverted to the EQ Basin when flows exceed approximately 35 million gallons per day (mgd). Most of the secondary treatment improvements identified in the Facilities Plan are sited in the location currently occupied by the EQ Basin. Therefore, the EQ Basin must be relocated to make room for the new treatment facilities.

Geotechnical Investigation (Part of Project Number 612-07660):

A geotechnical investigation is required to determine the suitability of the subsurface soils to support the proposed facility improvements. The geotechnical investigation includes drilling exploratory borings, logging soil profiles and groundwater elevations, and sampling and testing to determine soil properties underlying proposed new facilities. The geotechnical investigation must be completed before start of final design as the investigation determines the suitability of the site for construction, the type of foundations that are required, seismic and soil bearing capacities, and other parameters that are used in the structural design of the facilities. A geotechnical report in support of the proposed design improvements, including structural foundation design, shoring, yard piping/trench design, structural backfill, dewatering, and asphalt concrete (AC) paving design will be prepared under this scope item.

ECONOMIC IMPACT

Many of the Phase II improvements were identified in the 2014 Master Plan update and funded in the adopted Capital Improvement Program. The Phase II Project includes a new biological nutrient removal facility to address the nutrient load limits in the 2nd watershed permit, as well as related projects from the City's CIP. This proactive approach will result in the City being identified as an "early actor" by the Water Board and provide protection against having to implement additional, potentially more costly improvements if the regulations change.

The total construction cost for the project is estimated to be between \$125 to \$169 million, which is a planning level estimate. The costs will be further refined during the preliminary design effort that is currently underway. It is anticipated that these improvements will affect sewer service rates and sewer connection fees. While the extent to which rates will need to be adjusted cannot be determined with certainty at this point, it is anticipated that customers could see a significant impact of 20% or more over the current rates, over the next several years.

Funding assistance for the project is included in the consultants' scope of work. Funding efforts will pursue financing under both the California Clean Water State Revolving Fund (CWSRF) loan program and the U.S. Environmental Protection Agency (USEPA) Water Infrastructure Finance and Innovation Act (WIFIA) program. WIFIA funding is typically at a slightly higher interest rate than SRF, however payback period is deferred by up to 5 years

after substantial completion of the project. SRF loans payback period begins one year after substantial completion. Up to 49% of the project cost is eligible under WIFIA funding, therefore staff will pursue both avenues of funding as part of this project.

In addition, because WIFIA utilizes federal funds, engineering services are included for the Consultant to provide environmental review and documentation (most likely "CEQA+") in support of the funding applications.

Note that both SRF and WIFIA financing is available for a combination of projects under a master agreement, therefore financing would be available for all three bid packages. Application for funding cannot be completed until the project is well defined, typically after the preliminary design stage has been completed to allow a more accurate estimate of the project cost to be completed, and after the completion of the necessary environmental reviews of the project. Preliminary design for the Phase II Project is anticipated to be completed by June 2023 to the extent that work can begin on SRF and WIFIA loan applications. Staff will return to Council in early 2023 for additional authorization to amend the PSA to complete funding applications and the remainder of the final design services for the Phase II Project. Staff will continue seeking grant funding opportunities to lessen the impact on the City's rate payers.

FISCAL IMPACT

On July 5, 2022, Council authorized \$3,849,711 for preliminary design services for the Phase II Project. This amendment seeks partial authorization of the final design services in the amount of \$4,800,000 for an amended not-to-exceed professional services contract amount of \$8,649,711. This authorization includes engineering contingency in the amount of 5.6% of the final design fee to account for unanticipated engineering services that may be required as the design progresses. This is part of a multi-year contract that covers design through the completion of construction including startup assistance and training with a total PSA fee of \$24,737,324. This project is anticipated to take six years to complete. The funding for this contract will be allocated from the Sewer Improvement Fund, 612-07660 (WPCF Nutrient Upgrades Design), 612-07749 (New Primary EQ Basin), and 612-07750 (New Final Clarifier).

As noted above, staff is planning to apply for a State Revolving Fund loan, and funding from WIFIA to finance the project. Both funding sources can be applied to fund multiple projects, as well as retroactively reimburse for engineering design services. As the design progresses, the estimated project cost is expected to be adjusted, especially as the project elements become better defined. Budget adjustments will be brought forward to Council through the annual budget approval process. In addition, staff will continue seeking grant opportunities.

STRATEGIC ROADMAP

This agenda item supports the various goals of Council's Strategic Roadmap. The WPCF Improvements Phase II Project will address infrastructure needs and improvements to increase the reliability of the City's treatment plant, and construct process improvements to meet more stringent nutrient limits in accordance with upcoming regulatory requirements,

while supporting the goals of the City Council. Specifically, this item relates to the implantation of the following projects:

Confront Climate Crises & Champion Environmental Justice.

Mitigate Climate Crisis Impacts through Resilient Design and Community Engagement

Project C14b: Implement Shoreline Master Plan, including mitigating sea level rise in the industrial corridor through building requirements and outreach

Invest in Infrastructure.

Invest in Water Supplies, Sanitation Infrastructure & Storm Sewers

Project N19: Update Water Pollution Control Facility Phase II Plan

SUSTAINABILITY FEATURES

The WPCF Improvement Project Phase II will help maintain and improve the biology and health of the Bay which is vital for the region and the State. The Phase II Project will also satisfy the early actor requirements specified in the Water Board’s 2nd Watershed Permit to reduce nitrogen loads to the Bay.

The effects and risks of rising sea water levels will be reviewed and incorporated into the design of the new facilities.

The Administration and Laboratory Building will be reviewed by the Building Division for conformance with State and local requirements related to sustainability (i.e., California Building Code, California Energy Code, etc.) which require a minimal level of energy efficiency, resource conservation, material recycling, etc. In addition, the building will be designed and constructed to meet Leadership in Energy and Environmental Design (LEED) standards for a Silver Certification, or better.

PUBLIC CONTACT

As part of the funding process, an environmental study (CEQA and/or Initial Study and Mitigated Negative Declaration) will be posted for public review and comment. In addition, a public hearing will be held to review the environmental study.

The project will include a web page to be hosted on the City’s website with periodic updates throughout the multi-year duration of the project.

NEXT STEPS

The following schedule has been developed for this project:

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| City Council Authorization to Award Final Design and Engineering Services During Construction for the Phase II Project | February 2023 |
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|---|---------------|
| Award of PSA for Third Party Construction Management including Value Engineering and Constructability Review for the Phase II Project | June 2023 |
| Approval of Environmental Study – IS/MND or CEQA | December 2023 |
| Approval of Plans and Specifications and Call for Bids for the Administration and Laboratory Building | December 2023 |
| Approval of Application for WIFIA and SRF Loans | January 2024 |
| Award of Construction Contract for the Administration and Laboratory Building Project | February 2024 |
| Approval of Plans and Specifications and Call for Bids for the EQ Basin Relocation Project | May 2024 |
| Award of Construction Contract for the EQ Basin Relocation Project | July 2024 |
| Approval of Plans and Specifications and Call for Bids for the Phase II Improvements Project | July 2024 |
| Award of Construction Contract for the Phase II Improvements Project | February 2025 |
| Administration and Laboratory Building Project Construction Completion | December 2025 |
| EQ Basin Relocation Project Construction Completion | June 2026 |
| Phase II Improvements Project Construction Completion | July 2028 |

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Recommended by: Alex Ameri, Director of Public Works

Approved by:



Kelly McAdoo, City Manager