



DATE: February 20, 2024

TO: Mayor and City Council

FROM: Director of Public Works

SUBJECT Adopt a Resolution Authorizing the City Manager to Execute a Professional Services Agreement with BKF Engineers, Inc., for the FY 2024 Sewer and Water Line Replacement Projects, Project Nos. 07789 and 07072, in an Amount Not-to-Exceed \$2,155,000

RECOMMENDATION

That Council adopts a resolution (Attachment II) authorizing the City Manager to execute a professional services agreement (PSA) with BKF Engineers, Inc., (BKF) in an amount not-to-exceed \$2,155,000 for the FY 2024 Sewer and Water Line Replacement Projects.

SUMMARY

As part of the Council Adopted Strategic Roadmap to improve utilities infrastructure, the City aims to upgrade the sanitary sewer collection system by replacing an average of 2.5 miles of sewer and water pipelines annually. The goal is to improve the capacity and maintain the operability of the sewer collection and water distribution system, prevent sanitary sewer overflows, and provide adequate fire flows.

One professional service agreement is recommended for both the Sewer and Water Line Replacement Projects for design efficiencies and economies of scale. The Sewer Line Replacement Project involves replacing approximately 5.6 miles of sewer line and related appurtenances, and repairing, rehabilitating, replacing, and rechanneling sewer manholes throughout the City. The sewer line locations were selected by staff for a variety of reasons including being undersized, based on being in poor condition, having exceeded service life, and based on frequency of maintenance and high possibility of overflows. The Water Line Replacement Project involves replacing and improving approximately 4.7 miles of water mains and appurtenances throughout the City. The water line locations were selected by staff for a variety of reasons including being undersized, having exceeded service life, frequency of breaks, and/or upgrades needed for supply reliability and fire flow improvements.

BACKGROUND

Sanitary Sewer Collection System

The City's sanitary sewer collection system is comprised of approximately 325 miles of sewer mains and nine sewage lift stations. The collection system conveys the wastewater flow to the City's Water Pollution Control Facility (WPCF), which treats an average of 11.3 million gallons per day of wastewater generated by the City's residents and businesses.

The City's current Capital Improvement Program (CIP) includes funding to replace the City's undersized and structurally damaged sewer mains through annual sewer line replacement projects. The Utilities Division staff performs regular sewer main cleaning and has an ongoing program to monitor and inspect the condition of the City's sanitary sewer collection system using closed circuit television (CCTV) technology. The inspection is performed by placing a camera, mounted on tracks, inside a sewer pipe and remotely guiding it through the length of the pipe. These inspections are used to identify structurally damaged sewer mains for repair or replacement.

In June 2015, the City hired RMC Water and Environment (now Woodard & Curran) to prepare the City of Hayward Sewer Collection System Master Plan. The master plan recommended improvements to address capacity deficiencies in the existing collection system and future capacity requirements. Recommended improvements from the master plan are included in the Sewer Line Replacement Project.

Water Distribution System

The City's water distribution system is comprised of approximately 375 miles of water distribution pipelines, sixteen water storage tanks, and seven pump stations delivering water to upper pressure zones. The City has approximately 37,500 service connections in various sectors such as residential, commercial, industrial, and institutional/governmental.

The City's current CIP includes funding to replace the City's water mains to improve supply reliability and fire flow through annual water line replacement projects. Approximately 67% of the pipelines within the City's water distribution system consists of asbestos cement pipe and a majority of the existing pipelines are 6-inches in diameter.

In June 2014, the City hired West Yost Associates to prepare the City of Hayward Water System Master Plan. The master plan includes recommended projects to address capacity deficiencies in the existing water distribution system and satisfy future capacity requirements. The last remaining pipeline improvement recommendation will be installed by Summer 2024 upon completion of the current water line construction work.

DISCUSSION

The Sewer Line Replacement Project includes replacing approximately 29,700 linear feet of existing sanitary sewer vitrified clay pipe (VCP), asbestos cement pipe (ACP), and high-density polyethylene pipe (HDPE) ranging from 6-inches up to 27-inches in diameter. These segments were selected based on performance and maintenance data over the past several years.

Recommended improvements to address capacity deficiencies from the 2015 Sewer Master Plan are also included.

The Water Line Replacement Project includes replacing approximately 24,700 linear feet of existing cast iron pipe (CIP), ductile iron pipe (DIP), and asbestos cement pipe (ACP) ranging from 6-inches to 12-inches in diameter. These segments were selected based on performance and maintenance data over the past several years.

On October 6, 2023, staff issued requests for proposals for the FY 2024 Sewer and Water Line Replacement Projects and notified select consulting firms with specialized experience and knowledge of sewer collection and water distribution systems of the project posting. On November 28, 2023, staff received proposals for both projects from BKF Engineers, HydroScience Engineers, Bellecci, and Wilsey Ham. Additionally, Harris and Associates submitted a single proposal for the sewer project only. The proposed fee for the sewer project performed as a separate project ranged from \$1,153,346 to \$1,454,339. The proposed fee for the water project ranged from \$698,587 to \$1,262,150. Combined, the base design costs for both projects ranged from \$1,877,184 to \$2,716,489. After reviewing the submitted proposals, staff recommends BKF for the projects based on their responsiveness to the proposal and schedule, extensive knowledge of pipeline replacement techniques, and experience of the proposed team in designing similar sewer and water line replacement projects. The firm has performed recent similar projects for numerous government agencies and special districts in the Bay Area.

Given the scope of work, staff has negotiated an amount of \$1,921,335 for the basic engineering design services and \$233,665 for additional services that the City may authorize, for a total not-to-exceed contract amount of \$2,155,000 with BKF. The additional services budget is needed to address potential changes in the project design that may be needed based on actual field conditions, such as determining the appropriate construction method and further geotechnical investigation.

ECONOMIC IMPACT

Replacing the sewer mains, water mains, manholes, and appurtenances are part of an effort to, pursuant to Council direction, modernize and upgrade existing infrastructure. The project will reduce operations and maintenance costs associated with the need to frequently service undersized and structurally defective sewer mains, water mains, and structures. In addition, staff time attending to issues related to water main leaks and breaks, and sanitary sewer overflows will be reduced. The community will enjoy the benefits of the Project, including the continued operability and serviceability of the sewer collection and water distribution system. Furthermore, robust and reliable water and sewer infrastructure can help foster economic development and viability in the City.

FISCAL IMPACT

The FY 2024 through FY 2033 CIP includes funding for the projects described in the Sewer Replacement Fund (Fund 611) and Water Replacement Fund (Fund 603). Tables 1 and 2 show the projects as described in the approved CIP.

Table 1. Sewer Replacement Funding

Fund	Project No.	Description	Budget
611	07780	Annual Line Replacements FY 2022	\$4,400,000
611	07738	Annual Line Replacements FY 2023	\$6,000,000
611	07789	Annual Line Replacements FY 2024	\$6,000,000
		Total	\$16,400,000

Table 2. Water Replacement Funding

Fund	Project No.	Description	Budget
603	07200	Annual Line Replacements FY 2022	\$3,500,000
603	07067	Annual Line Replacements FY 2023	\$5,500,000
603	07072	Annual Line Replacements FY 2024	\$5,500,000
603	07134	Cast Iron Water Pipeline Replacement – Local Streets	\$1,500,000
603	07146	12" CI Replacement from Sleepy Hollow to Industrial on Hesperian	\$2,046,000
		Total	\$18,046,000

The breakdown for project costs is as follows:

Combined Project Cost

Engineering Services – Consultant	\$2,155,000
Design and Construction Management – City Staff (Estimated)	\$1,000,000
Sewer Project Construction Contract (Estimated)	\$17,000,000
Water Project Construction Contract (Estimated)	\$12,000,000
Inspection and Testing (Estimated)	\$1,200,000
Total	<u>\$33,355,000</u>

Staff recommends awarding both water and sewer improvement projects to a single consultant to leverage design and cost efficiencies. Design efficiencies can be achieved by producing a single California Environmental Quality Act (CEQA) document to cover both sewer and water improvements by using the same data when preparing the water and sewer improvements in overlapping areas. In addition, design efficiencies are realized in using specifications and design details that are common to both bid packages. BKF understands the efficiencies in working on both replacement projects and is offering a 12.8% reduction in fee if awarded both projects.

The construction cost is only an estimate and assumes all project elements will be constructed. Note this will be confirmed during the design phase. Should the construction cost exceed the funds currently allocated in the CIP, staff will return to Council to request that additional funds be appropriated to cover the additional cost.

STRATEGIC ROADMAP

This agenda item supports the Strategic Roadmap, which includes Invest in Infrastructure as one of the strategic priorities. Specifically, this item relates to the implementation of the following projects:

N19: Replace an average of 2.5 miles of water pipelines annually.

N20: Replace an average of 2.5 miles of sewer pipelines annually.

SUSTAINABILITY FEATURES

The repair and replacement of deteriorating sewer lines reduces the risk of sewer overflows, which can cause untreated wastewater to flow into public waterways. Furthermore, the repair and replacement of deteriorating water lines reduces potable water and energy losses.

PUBLIC CONTACT

The project design includes the preparation of a draft Initial Study and/or Mitigated Negative Declaration (IS/MND) to assess environmental impacts caused by the construction work. The Draft IS/MND will circulate for a thirty-day public review period. In addition, a newspaper publication will be printed to inform the public about the availability of the IS/MND. Copies of the IS/MND will be made available for review online, posted at the Alameda County Clerk's Office, as well as the State Clearing House for distribution. The City will review public comments upon conclusion of the thirty-day review period.

During construction, notices will be provided to affected residents, property, and business owners to inform them of the nature and purpose of the work, potential impacts, work schedule and City contact for additional information.

NEXT STEPS

If approved by Council, staff will finalize the Professional Services Agreement with BKF and issue a Notice to Proceed. Staff will return to Council for approval of the final design plans and specifications, and call for bids in June 2025.

The following schedule has been developed for this project:

Council Approval	February 20, 2024
Approval of Plans and Specifications and Call for Bids	June 2025
Award of Construction Contract	September 2025
Construction Completion	October 2026

Prepared by: Sammy Lo, Senior Civil Engineer

Reviewed by: Suzan England, Utilities Engineering Manager

Recommended by: Alex Ameri, Director of Public Works

Approved by:



Kelly McAdoo, City Manager