DATE: September 15, 2020

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 HydroScience Engineers, Inc., for the Sewer and Water Line Improvement Projects, in an Amount Not-to-Exceed $1,467,865

RECOMMENDATION

That Council adopts a resolution (Attachment II) authorizing the City Manager to execute a professional services agreement (PSA) with HydroScience Engineers, Inc., (HydroScience) in an amount not-to-exceed $1,467,865 for the Sewer and Water Line Improvement Projects.

SUMMARY

As part of the Council Adopted Strategic Roadmap to improve utilities infrastructure, the City aims to upgrade the sewer collection system by replacing three to four miles of pipeline annually and the water distribution system by replacing four to six miles of pipeline 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 service agreement is recommended for both the Sewer and Water Line Improvement Projects for design efficiencies and economies of scale. The Sewer Line Improvement Project involves repairing, rehabilitating, replacing, rechanneling, and installing approximately 3.5 miles of sewer line segments, manholes, and appurtenances throughout the City. The sewer line locations were selected by staff for a variety of reasons including being undersized, condition, having exceeded service life, and frequency of maintenance and high possibility of overflows. The Water Line Improvement Project involves replacing and improving approximately five 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

Sewer Collection System

The City's 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.

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.

DISCUSSION

The sewer improvements project includes replacing approximately 18,500 linear feet of existing 6, 8, 10 and 12-inch sanitary sewer vitrified clay pipe (VCP), asbestos cement pipe (ACP), and high-density polyethylene pipe (HDPE). These segments have been selected based on performance and maintenance data over the past several years. Recommended projects from the 2015 Sewer Master Plan, including upsizing undersized sewer mains, rerouting flows, and installing new sewer lines, will also be incorporated to address capacity deficiencies within the existing sewer collection system.

The water improvements include replacing approximately 26,200 linear feet of existing 4, 6, 8, and 12-inch cast iron pipe (CIP), ductile iron pipe (DIP), and asbestos cement pipe (ACP). These segments have been selected based on performance and maintenance data over the past several years. Recommended projects from the 2014 Water System Master Plan, including upsizing undersized water mains and installing new water lines, will also be incorporated to address capacity deficiencies within the existing water distribution system, satisfy future capacity requirements, and provide sufficient fire flow.

On June 19, 2020, staff issued a request for proposals to consulting firms with specialized experience and knowledge of sewer collection and water distribution systems. On July 21, 2020, staff received five proposals from Carollo Engineers, HDR, HydroScience, Lee and Ro, and Woodard and Curran. These base design costs ranged from $1,133,075 to $2,734,367. After reviewing the submitted proposals, staff recommends HydroScience for the project 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 improvement projects. The firm focuses on water and wastewater related projects and has performed recent similar projects for numerous clients in the Bay Area. In addition, HydroScience has completed several projects for the City including the Recycled Water Customer Onsite Conversions Project.

Given the scope of work, staff has negotiated an amount of $1,310,865 for the basic engineering design services and $157,000 for additional services that the City may authorize, for a total not-to-exceed contract amount of $1,467,865 with HydroScience. 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.

The total engineering design services are approximately 8% of the estimated total construction cost, which is competitive given the scope of work and the nature of complicated underground utility projects.

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 servicing the high frequency, undersized, and structurally defective sewer mains, water mains, and structures. In addition, staff time attending to issues related to high frequency maintenance, sanitary sewer overflows, and system breaks 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 2021 through FY 2030 CIP includes funding for the projects described in the Sewer Replacement Fund (Fund 611), Water Replacement Fund (Fund 603), and Water Improvement Fund (Fund 604). Tables 1 and 2 show the projects as described in the approved CIP.

Table 1. Sewer Improvements Funding

Fund	Project No.	Description	Budget
611	07759	Main Street Sewer Main Replacement	$400,000
611	07617	Annual Line Replacement FY18	$479,916
611	07627	Annual Line Replacement FY19	$889,268
611	07659	Annual Line Replacement FY16	$384,679
611	07737	Annual Line Replacements FY21	$4,000,000
611	07671	Cypress Avenue Sewer Improvement	$520,000
611	07686	Tyrell Avenue Sewer Improvement	$520,000
611	07729	Annual Line Replacement FY20	$3,337,910
		Total	$10,528,773

Table 2. Water Improvements Funding

Fund	Project No.	Description	Budget
603	07132	Water Main Replacement at Highland, Carroll Zephyr, Cascade, Hickory, Stanwood, & Memorial Wy	$4,661,500
603	07134	Cast Iron Water Pipeline Replacement – Local Streets	$1,421,812
603	07143	Annual Line Replacements FY19	$164,970
603	07145	Annual Line Replacements FY20	$123,615
603	07064	Water Main Replacement in Main St.	$500,000
603	07027	Annual Line Replacements FY21	$2,452,800
604	07182	New 12" Pipeline – Dunn Road	$600,000
604	07192	Alternative Feed Pipelines	$600,000
		Total	$10,354,697

The breakdown for project costs is as follows:

Total Project Cost	
Engineering Services (Consultant)	$ 1,467,865
Design and Construction Management – City Staff (Estimated)	$600,000
Construction Contract (Estimated)	$19,029,120
Inspection and Testing (Estimated)	$300,000
Total	$21,396,985

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 CEQA document to cover both sewer and water improvements and use the same data when preparing the water and sewer improvements in overlapping areas. HydroScience understands the efficiencies in working on both improvement projects and is offering a 25% reduction in fees when 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 preliminary 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 Improve Infrastructure as one of the strategic priorities. Specifically, this item relates to the implementation of the following projects:

Project 13b: Replace 4-6 miles of water pipelines annually.

Project 15: Upgrade sewer collection system by replacing 3-4 miles of sewer lines 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

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

Following Council approval, staff will finalize a PSA with HydroScience 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 2021.

The following schedule has been developed for this project:

Council Approval	September 15, 2020
Approval of Plans and Specifications and Call for Bids	June 2021
Award of Construction Contract	September 2021
Construction Completion	September 2022

Prepared by: Mariza Sibal, Assistant Civil Engineer

Reviewed by: Tay Nguyen, Senior Utilities Engineer

Recommended by: Alex Ameri, Director of Public Works

Approved by:

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Kelly McAdoo, City Manager