DATE: January 24, 2023

TO: Mayor and City Council

FROM: Director of Public Works

SUBJECT: Adopt a Resolution Authorizing the City Manager to Award a Contract to Carbon Supply Inc. for Bio-Gas Conditioning System Media Replacement Project No. 07618 in an Amount Not-to-Exceed $319,800

RECOMMENDATION

That Council adopts a resolution (Attachment II) authorizing the City Manager to award a contract to Carbon Supply, Inc., (Carbon Supply) for Bio-Gas Conditioning Skid System Media Replacement Project No. 07618 in an amount not-to-exceed (NTE) $319,800.

SUMMARY

On September 29, 2022, the City received three bids for Bio-Gas Conditioning System Skid Media Replacement Project No. 07618 ranging from $319,800 to $393,648. Staff recommends that the contract be awarded to Carbon Supply**,** which submitted the lowest responsive and responsible bid of $319,800.

BACKGROUND

The City's Capital Improvement Program (CIP) includes funding for the periodic replacement of media which treats gases to prevent them from damaging the cogeneration engine at the Water Pollution Control Facility (WPCF). The life of the gas treatment media is nine to eighteen months, and staff estimate that the current media will need to be replaced by March 2023 to ensure continued safe operation of the cogeneration engine.

DISCUSSION

The anaerobic sludge digesters at the Hayward WPCF produce methane gas, which is fuel for the City's Jenbacher cogeneration engine. The methane gas produced onsite by the digesters contains hydrogen sulfide and siloxane which if introduced to the cogeneration engine will severely damage the engine. These compounds are a result of the material present in the wastewater.

The Cogeneration Project included the construction of a new gas treatment system. The bio-gas treatment system includes two (2) siloxane removal vessels and two (2) hydrogen sulfide removal vessels. See Attachment III for photos of these vessels. The siloxane removal vessels contain approximately 3,300 pounds of an activated carbon media. The hydrogen sulfide removal vessels contain approximately 21,000 pounds each of an iron impregnated wood or sand media.

The design life of this media is nine (9) to eighteen (18) months. The media was last changed in December of 2021. Staff regularly monitors the performance of the media to determine the appropriate time to replace the media. Staff currently estimates that the vessels will need to be replaced in February or March 2023.

Staff issued an invitation for bids to perform the work to replace the media on August 31, 2022. The contract duration is four (4) years and is expected to include the replacement of five (5) vessel volumes of each type of media during the contract period.

The Project's major elements include

- Opening the gas treatment vessels
- Removing the used media from the vessels
- Allowing time for Staff inspection of the vessels
- Installing new media in the vessels
- Resealing the vessels
- Performing hazardous material testing on the used media to determine the appropriate disposal location
- Hauling of the removed materials to an approved off-site disposal location

Staff received 3 bids from the contactors on September 29, 2022, including a bid from Carbon Supply of $319,800, a bid of $352,203 from Green Gas Services, and a bid of $393,648 from Carbon Activated Corporation.

Staff used the Total Cost to determine the lowest responsive and responsible bidder for the work. Carbon Supply was the apparent low bidder with a total cost of $319,800. The costs as described in the bid tabulation abstract is based upon staff estimates of the number of media replacements required for each type of vessel and likely hazardous materials present in the used media. The final purchase order amount will vary depending on the number of vessel replacements that are required and the results of the hazardous materials testing of the media after removal.

ECONOMIC IMPACT

This project will have no direct impact on the local economy.

FISCAL IMPACT

Staff estimates it will cost approximately $80,000 per year over the next four years to replace the media in the vessels and perform other related services under this contract. The adopted CIP includes a $165,000 annual budget for Digester Gas Treatment Vessel Media Replacement Project No. 07618 in Sewer Replacement Fund 611, which is sufficient to cover this anticipated annual amount. This action will not have an impact on the General Fund.

STRATEGIC ROADMAP

This agenda item is a routine operational item and does not relate to one of the Council's six strategic priorities as outlined in the Council's Strategic Roadmap.

SUSTAINABILITY FEATURES

As stated above, this contract is to replace the media in the bio-gas treatment vessels. The media cleans the gas that is sent to the Jenbacher Cogeneration engine. The engine produces the energy for the plant and excess is exported to the grid for use by other City facilities.

PUBLIC CONTACT

The call for bids was publicly posted on the City's website on August 21, 2022 and the bidding period closed on September 29, 2022.

NEXT STEPS

If approved, staff will award the contract to Carbon Supply, Inc., in an amount not to exceed $319,800.

Prepared by: David Donovan, Plant Manager

Recommended by: Alex Ameri, Director of Public Works

Approved by:

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Kelly McAdoo, City Manager