

**City Manager's Report****February 26, 2019 City Council Meeting****Prepared By: Mark Liebenow, Water Reclamation Facility Supervisor****Item#: 12.1****Subject:** Adopt a Resolution:

1. Approving a contract with Carnahan Electric, Ltd. in the amount of \$110,647.24 for the Automatic Transfer Switch (ATS) Bypass Project (CIP#41803);and
2. Authorize the City Engineer to execute the same; and
3. Approving a \$32,798 budget appropriation from the Sewer Enterprise Fund unassigned fund balance for the said project.

Purpose: The Automatic Transfer Switch (ATS) at the Hangtown Creek Water Reclamation Facility (WRF) is used to engage the Detroit Standby Generator, which provides backup power to the older portion of the WRF in the event of a power failure. The ATS has failed in the past, and a secure source of continuous power is needed to operate the WRF in an emergency.

Background: The WRF carries an Industrial General Permit with the State that requires the facility to have a reliable and constant source of power in the event of a power failure. The Detroit Generator and the ATS were installed at the WRF as part of the 1996 upgrade. It was designed to provide emergency backup power in the event of a power outage. Over time, the ATS has been repaired on multiple occasions, has become obsolete, making it difficult to find parts, and is now unreliable.

Additionally, over the past year, the Detroit Generator has developed maintenance concerns. Coolant was found in the oil during the last regular inspection from Holt of California, the City's contracted service provider. This issue could come from a variety of causes and would be costly to resolve concurrently with replacement of the ATS.

Discussion: When the most recent WRF upgrade occurred in 2009, a Caterpillar (CAT) generator was installed, which is adequately sized to provide backup power to the entire plant (both the upgraded and older portions). At the time, the City received the larger generator at a reasonable cost due to limited supply of the originally specified smaller generator in response to the nationwide demand of the smaller generators created by Hurricane Katrina. However, the upgrade did not include connection of the older portion of the plant with the larger CAT generator as a source of backup power, and as a result, the older portion remains tied to the ATS and the Detroit generator. Both the ATS and Detroit generator have been in service for more than twenty years at the WRF. Over the past six years, the reliability of the ATS has steadily declined and the unit has been repaired multiple times. One such instance of unreliability took place at approximately 11:00 pm during the wind and rain storm on February 12, 2019. In that event, on-call WRF staff was forced to don an arc flash suit to manually turn on the ATS to

restore power to the older portion of the plant through the Detroit generator. In addition to being a potential danger to staff, parts for the ATS are difficult to come by and some have to be special ordered or manufactured at a considerable expense to the City. Initial quotes were obtained to replace the ATS only and were assumed as CIP #41803 and approved by Council as part of the adopted Fiscal Year 2017/2018 Capital Improvement Program Budget.

Since that time, the Detroit generator was assessed as part of routine maintenance and found to have radiator coolant in the oil. An estimate to repair the generator and address the coolant issue was obtained and came in with the lowest estimate at \$83,171.84. This brought the combined cost of replacing the ATS and repairing the Detroit generator to approximately \$163,250. This prompted WRF staff to seek alternative solutions to this situation.

As alternative to the replacement cost of the ATS and repair of the Detroit generator, staff evaluated bypassing both units entirely and connecting the older portion of the treatment plant directly to the CAT generator. Being a large enough unit to power the entire facility and have extra power in reserve, the CAT generator is currently being underutilized. The CAT generator set also contains a load bank that assists in 1) Determining the generator will function properly in the event of a power failure and 2) Prevention of “wet-stacking” (a buildup of oils and grease when the generator is underutilized, as it is currently) by imitating the full plant WRF electrical load that would occur in the event of a power failure. These regular testing efforts assist in making the CAT a far more reliable back up power supply to support the WRF. Quotes for the ATS bypass and direct panel connection to the CAT generator were requested, and two proposals were received. The highest cost proposal was received from A.T.E.E.M. Electrical Engineering in the amount of \$375,746.00. The lowest cost proposal in the amount of \$110,647.24 was received from Carnahan Electric Ltd. Staff recommends awarding a contract to Carnahan Electric, Ltd. for the ATS Bypass Project.

Options:

1. Approve the contract with Carnahan Electric, Ltd. in the amount of \$110,647.24 as recommended by staff.
2. Direct staff to provide a revised solution or negotiate different terms for the contract.

Cost: The cost of the proposed contract with Carnahan Electric, Ltd. is \$110,647.24.

Budget Impact: The City Council adopted the Fiscal Year 2017/2018 Capital Improvement Program Budget which appropriated \$80,062 for the Automatic Transfer Switch Replacement Project (CIP#41803). As mentioned above, the project scope of work has been revised to deliver a more complete and reliable project at the WRF, necessitating a need for additional funds. In order to complete the project, staff recommends an additional \$32,798 budget appropriation from the Sewer Enterprise Fund unassigned fund balance for a total project budget of \$112,860.

Below are the proposed project revenue and expenditure budgets:

Description	Adopted Project Budget	Proposed Project Budget	Increase/ (Decrease)
Measure H Fund	\$ 80,062	\$ 80,062	\$ -
Sewer Enterprise Fund	-	32,798	32,798
Total revenues	\$ 80,062	\$ 112,860	\$ 32,798

Description	Adopted Project Budget	Proposed Project Budget	Increase/ (Decrease)
Construction	\$ 78,504	\$ 110,647	\$ 32,143
Contingency	1,558	2,213	655
Total expenditures	\$ 80,062	\$ 112,860	\$ 32,798


As you can see, the proposed \$110,647.24 contract with Carnahan Electric, Ltd. is within the \$112,860 proposed project budget.

Recommendation:

Adopt a Resolution:

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M. Cleve Morris, City Manager


Rebecca Neves, City Engineer

Attachment:

1. Resolution
2. Carnahan Electric ATS Bypass Proposal