



City Council Report

Date: April 15, 2019
To: City Council
Through: Kari Kent, Assistant City Manager
From: Beth Huning, City Engineer
Rob Kidder, Assistant City Engineer
Subject: Robson Electrical Substation East Bay Transformer - Switchgear Replacement – GMP No. 1
City Project CP0461-0016
Council District 4

Purpose and Recommendation

The purpose of this report is to present the Guaranteed Maximum Price (GMP) No. 1 for the Robson Electrical Substation East Bay Transformer-Switchgear Replacement, a Construction Manager at Risk (CMAR) project for approval by the City Council. (See Exhibit "A" for project location.)

GMP No. 1 includes the scope of work to furnish, install, and construct the conduits, foundations, structural steel, and switches necessary to support the replacement of the transformer and associated switchgear at the Robson Electrical Substation.

Staff recommends that Council award a contract for this portion of the project to ESS Corporation (ESS) in the amount of \$1,007,901 (GMP No. 1), and authorize a change order allowance in the amount of \$100,790 (10%).

Background

Eight (8) 69 kV to 12 kV transformers and associated switchgear at four (4) substations connect the city's electric utility distribution system to the 69 kV internal transmission system. Due to the aging of the existing 44-year-old transformer and associated switchgear in the "East Bay" of the Robson Electrical Substation and the growing electrical demand in Mesa's downtown, a new transformer (28 MVA) and associated switchgear are needed to provide redundancy to ensure that the City of Mesa's electric utility delivers safe, reliable, and efficient electric utility service to our 17,000 and growing customers.

As part of this effort, a new site layout has been proposed for the substation to provide more flexibility which will help minimize the impact on Mesa's electric customers during electrical system failures or disturbances. As part of this site change, a new bay will be added for placement of a future additional transformer and associated switchgear to meet future demand. The new site layout also includes new conduits, concrete pads, and structural members to accommodate the larger substation transformer and high voltage electrical switches.

To facilitate project scheduling, construction will be completed in two construction phases. GMP No. 1 will install conduits, foundations, structural steel and high voltage switches. The GMP No. 1 scope will be performed concurrent to the design of the protective relaying and electrical controls which are to be installed as part of GMP No. 2. This phased approach of constructing GMP No. 1 concurrent to the design of GMP No. 2 will reduce the overall project schedule by six months.

In the fall of this year, a second request will be made for approval of GMP No. 2 to install the relaying and controls, complete electrical connections, and test and commission the substation. Minor alterations to the site for accessibility to the rebuilt substation bay will also be performed.

The table below indicates the overall components for the Robson Electrical Substation rebuild and associated project costs:

COMPONENT	COUNCIL APPROVAL DATE	TOTAL PROJECT COST
Design	Oct. 2018	\$ 260,970
GMP # 1	Apr. 2019	\$ 1,238,206
GMP # 2	Fall. 2019	\$ 571,574
Transformer	July 2018	\$ 742,390
Switchgear	November 2018	\$ 510,221
Pole, Switches, Cable	N/A *	\$ 258,804
Total		\$ 3,582,164

*Purchased from existing materials contract previously approved by Council

Discussion

In October 2018, ESS Corporation was selected as the CMAR based on an evaluation of their Statement of Qualifications. ESS has worked closely with the project team to help develop the project design, prepare cost estimates, and develop the project schedule and phasing plan.

Once underway, construction of this phase (GMP No. 1) is anticipated to last approximately nine months. City electrical customers should not experience any electrical outage due to this replacement project. While minor traffic control may be required in the immediate vicinity of the Robson Electrical Substation to facilitate the delivery of large equipment, impacts to the surrounding neighborhood are expected to be minimal. Engineering Public Relations will be engaged to keep all residents abreast of any impacts they might experience during construction efforts.

Alternatives

An alternative to the approval of a Construction Services contract for this CMAR is to not perform the work. This is not recommended due to the aging of the existing equipment. In addition, Council approved purchase of the 28 MVA transformer on July 9, 2018 and it has been ordered. The failure to replace equipment of this age could result in loss of the entire substation bay, thus burdening the remaining electrical substations and increasing the likelihood of extensive electrical outages for repairs.

Fiscal Impact

The total authorized amount recommended for this project is \$1,108,691, based upon a GMP No. 1 of \$1,007,901, plus an additional \$100,790 (10%) as a change order allowance. This change order allowance will only be utilized for approved change orders.

This project is funded by 2014 Electric bonds.

Coordinated With

The Energy Resources Department concurs with this recommendation.