



# RIVERSIDE PUBLIC UTILITIES

## Board Memorandum

**BOARD OF PUBLIC UTILITIES**

**DATE: SEPTEMBER 25, 2023**

**SUBJECT: MULTI-SUBSTATION 69KV CIRCUIT BREAKER REPLACEMENT PROJECT - INCREASE CAPITAL EXPENDITURE OF WORK ORDER NO. 1906356 FROM \$6,500,000 TO \$7,200,000**

**ISSUE:**

Consider approval of an increase to Work Order No. 1906356 from \$6,500,000 to \$7,200,000, for a total increase amount of \$700,000, for the Multi-Substation 69KV Circuit Breaker Replacement Project.

**RECOMMENDATION:**

That the Board of Public Utilities approve an increase to Work Order No. 1906356 from \$6,500,000 to \$7,200,000, for a total increase amount of \$700,000, to complete the remaining design, construction, procurement, testing, commissioning, and construction support for the Multi-Substation 69KV Circuit Breaker Replacement Project.

**BACKGROUND:**

On September 23, 2019, the Board of Public Utilities (Board) approved Work Order No. 1906356 for the Multi-Substation 69kV Circuit Breaker Replacement Project for an initial capital expenditure of \$3,500,000, with an estimated total project cost of \$7,636,200 (Attachment 2). The project included replacing 24 aging oil and gas power circuit breakers with environmentally friendly vacuum-type breakers. The Work Order included Board approval to increase the project cost over three fiscal years.

On February 22, 2021, the Board approved an increase to Work Order No. 1906356 from \$3,500,000 to \$6,500,000 (Attachment 3). Staff explained that although the COVID-19 pandemic had slowed the construction effort, the consultant design and procurement activities had continued per the original schedule. The approved monies were utilized to compensate for those expenses. The report also mentioned that staff would return to the Board to request approval of final funds at a later scheduled date.

The project stands at 85% of the design completed, 75% of the construction completed, and 95% of the procurement completed. Staff projects that the Board-approved capital expenditure will be depleted by the end of December 2023.



*Typical Oil Circuit Breaker  
(Aged Unit)*



*Typical Vacuum Circuit Breaker  
(Replacement Unit)*

**DISCUSSION:**

In 2019, the Board approved the project for initial funding of \$3,500,000. The staff report at that time indicated that staff would approach the Board for two additional funding requests, projecting a total project cost of \$7,636,200. To date, the Board has approved \$6,500,000. Staff is now presenting the third and final request for funding to finalize the project. Upon reviewing the expenses and estimating the remaining costs, the new projected total is \$7,200,000. Therefore, staff is requesting only an additional \$700,000 to complete the project.

The total project breakdown is as follows:

<b>Project Breakdown</b>			
<b>Work Type</b>	<b>Performed By:</b>	<b>2/22/2021 Approved Estimated Amount (\$)</b>	<b>9/25/2023 Revised Estimated Amount (\$)</b>
Fabrication and Delivery of (24) 69kV Power Circuit Breaker per RFB No. SUB-836	V&S Schuler – Awarded and <b>Fully Paid</b>	\$2,199,682	\$2,199,682
Consultant Design Services per RFP No.1864	Leidos Engineering, LLC. – <b>Awarded and Fully Paid</b>	\$976,318	\$976,318

Parts, Material, and Equipment Rentals	Miscellaneous Vendors	\$500,000	\$650,000
Project Management and Engineering	Riverside Public Utilities	\$550,000	\$750,000
Construction, Field Testing and Commissioning	Riverside Public Utilities	\$1,930,000	\$2,280,000
Contingency (5%)		\$344,000	\$344,000
<b>Work Order Total:</b>		<b>\$6,500,000</b>	<b>\$7,200,000</b>
<b>Start Date:</b>	<b>February 2020</b>		
<b>Anticipated Duration:</b>	<b>July 2024</b>		

All major equipment and consultant design have been paid and received. The remaining work involves project management, minor design, construction support, material, construction, testing, and as-builts for the last four power circuit breakers to be replaced. Staff is requesting to increase the amount of Work Order 1906356 by \$700,000 to complete the project.

The table below shows the breakdown amount for the remaining work.

Description of Work	Amount (\$)
Parts, Material, and Equipment Rentals	\$150,000
Project Management and Engineering	\$200,000
Construction, Field Testing and Commissioning	\$350,000
<b>Work Order Amount Requested</b>	<b>\$700,000</b>

**STRATEGIC PLAN ALIGNMENT:**

This item contributes to **Strategic Priority 6 - Infrastructure, Mobility and Connectivity** and **Goal 6.2** – Maintain, protect, and improve assets and infrastructure within the City’s built environment to ensure and enhance reliability, resiliency, sustainability, and facilitate connectivity.

This item aligns with each of the five Cross-Cutting Threads as follows:

1. **Community Trust** – Riverside is transparent and makes decisions based on sound policy, inclusive community engagement, involvement of City Boards & Commissions, and timely and reliable information. RPU staff acted prudently and openly to the public regarding this project by expressing their intent during the initial Board meeting to return to the Board at future times to gradually increase funding.
2. **Equity** – RPU endeavors to provide safe and reliable electric service to all its customers. Since RPU’s electric system is an interconnected network, investments made to individual parts of the system improve the reliability of the overall system, thereby providing an equitable benefit to all customers.
3. **Fiscal Responsibility** – From the moment the work order was approved, RPU Engineering staff monitored the expenses charged to the project. By collecting actual figures from consultant design and field activities, staff was able to identify the final funds required to complete the project in a lower dollar amount as originally budgeted.

4. **Innovation** – RPU Engineering and Electric Operations staff worked collaboratively to standardize design and construction practices. At the early stages of design for this project, staff developed template drawings, created bill of material spreadsheets, and identified rental equipment for overhaul and new installs. Those outcomes became typical for power circuit breaker replacement projects and have been adopted since then. In this way, the design, procurement, and construction efforts have been streamlined to simplify new installations.
  
5. **Sustainability & Resiliency** – This project originated from an infrastructure replacement plan to remove aging equipment from the electrical system and thus, eliminating potential points of failure. RPU selected the replacement units in view of California legislature to prohibit acquisition of SF6 equipment by utilities starting the year 2025. SF6 technology had been the industry’s standard beforehand to manufacture 69kV power circuit breakers. The new breakers were purchased with vacuum interrupter technology, which supports the City’s goal to achieve carbon neutrality by 2040.

**FISCAL IMPACT:**

The total fiscal impact is \$700,000. Sufficient funds are available in Public Utilities Substation Bus Upgrade Capital Account No. 6130100-470616, pending Fiscal Year 2022/23 carry forwards recorded per Riverside Municipal Code Article XI, Sec. 1111 which states: “A City Council approved capital project fund shall remain for the established purpose and the appropriations therein shall carry over to the completion of each project...”. Carry forwards are expected to be recorded before December 2023.

Prepared by:	Daniel Honeyfield, Utilities Assistant General Manager/Energy Delivery
Approved by:	Todd M. Corbin, Utilities General Manager
Certified as to availability of funds:	Kristie Thomas, Finance Director/Assistant Chief Financial Officer
Approved by:	Rafael Guzman, Assistant City Manager
Approved as to form:	Phaedra A. Norton, City Attorney

**Attachments:**

1. Project Site Map
2. September 23, 2019, Board Minutes
3. February 8, 2021, Board Minutes
4. Presentation