



RIVERSIDE PUBLIC UTILITIES

Board Memorandum

BOARD OF PUBLIC UTILITIES

DATE: JANUARY 13, 2025

SUBJECT: CIRCUIT 1205 AND CIRCUIT 1287 RELIABILITY IMPROVEMENT AND FUSE COORDINATION PROJECT – WORK ORDER NO. 2415639 AND WORK ORDER NO. 2507378 FOR A TOTAL CAPITAL EXPENDITURE OF \$310,247

ISSUES:

Consider approval of Work Order No. 2415639 for \$158,847 and Work Order No. 2507378 for \$151,400, for a total capital expenditure of \$310,247 for the Circuits 1205 and 1287 Reliability Improvement and Fuse Coordination Project.

RECOMMENDATIONS:

That the Board of Public Utilities approve Work Order No. 2415639 in the amount of \$158,847 and Work Order No. 2507378 in the amount of \$151,400, for a total capital expenditure of \$310,247 for the Circuits 1205 and 1287 Reliability Improvement and Fuse Coordination Project.

BACKGROUND:

Riverside Public Utilities (RPU) Electric System Planning staff performed a reliability study to improve the performance of electric distribution Circuits 1205 and 1287, specifically for the purpose of reducing the number of customers impacted and outage times. Due to the numerous outages that have occurred on Circuits 1205 and 1287, specific reliability improvements need to be performed. One of the improvements to be implemented is the overcurrent protective device coordination of both of the circuits.

The study recommends the reduction of fuse sizes on both Circuit 1205 and 1287 to coordinate with the substation breaker, thereby reducing the number of customers impacted and shortening the duration of outages. The industry standard indices for determining reliability of both duration and frequency of outages are the System Average Interruption Duration Index (SAIDI) and System Average Interruption Frequency Index (SAIFI). This project will improve both the SAIDI and SAIFI indices. The coordination of the fuses would isolate faults affecting customers to a smaller group from a lateral line before it is sensed by the relay in the substation which in turn will avoid tripping the entire circuit at the substations and reduce the number of customers impacted.

In addition, there are fuses on Circuits 1205 and 1287 that are improperly sized and exceed the limitations of the wire's ampacity. By making the fuse sizes lower than their branch wire's ampacity, the fuse will protect the wires by opening the circuit if a fault causes too much current

to flow on the lines. If the fuses are not properly sized, the excess current, seen from electrical faults, can cause damage to wires and equipment and could require a substantial amount of time to repair or replace equipment.

DISCUSSION:

The scope of work for this project includes the removal and installation of two-hundred-twenty-five (225) cutouts with fuses on existing and new locations as well as the replacement of one pole and guywire. A cutout is a device that holds the fuse. The pole locations on circuit 1205 are within the Arlington Heights neighborhood south of Victoria Avenue, between Gibson Street and Madison Street Circuit 1287 is within the neighborhoods of Arlanza and La Sierra Acres south of Arlington Avenue, north of Wells Avenue between Golden Avenue and Harold Street. RPU electric field crews will perform the construction of this project and no contracted civil underground electric work is planned.



Fused Cutout



Fused Cutouts on Crossarm

The project/fiscal breakdown is as follows:

Project and Fiscal Breakdown – Work Order No. 2415639 (Circuit 1205)					
Work Type	Performed By:	Amount (\$):			% of Total:
Design and Inspection	RPU Engineering and Operations	\$69,538			44%
Electrical Work	RPU Field Forces	Labor	\$67,622	\$89,309	56%
		Equipment	\$11,134		
		Materials	\$10,553		
Work Order Total:	\$158,847				100%
Anticipated Start Date:	February 2025				
Anticipated Duration:	4 weeks				

Project and Fiscal Breakdown – Work Order No. 2507378 (Circuit 1287)					
Work Type	Performed By:	Amount (\$):			% of Total:
Design and Inspection	RPU Engineering and Operations	\$54,601			36%
Electrical Work	RPU Field Forces	Labor	\$46,136	\$96,799	64%
		Equipment	\$11,751		
		Materials	\$38,912		
Work Order Total:	\$151,400				100%
Anticipated Start Date:	March 2025				
Anticipated Duration:	4 weeks				

The Work Order Totals above are, in effect, the Engineer's Estimate for this project since it is an in-house project being designed and constructed by Public Utility staff.

STRATEGIC PLAN ALIGNMENT:

This item contributes to **Strategic Priority No. 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** – The replacement of the fuses on Circuits 1205 and 1287 to a lower amperage and coordination at the substation will lower outage times and the number of customers affected by that outage. This project will help build community trust and result in greater public good.

2. **Equity** – Replacing the fuses to lower amperage fuses and coordination at the substations on Circuits 1205 and 1287 supports an equitable distribution of service to ensure that every customer connected to Circuits 1205 and 1287 has access to share in the benefits of community progress.
3. **Fiscal Responsibility** – This item represents fiscal responsibility by isolating the outage, electric field personnel will be able to locate and repair the fault more efficiently, reducing overall operational costs.
4. **Innovation** – RPU is committed to identifying creative solutions to effectively and efficiently meet the needs of our community members by providing innovative infrastructure improvements by lowering the amperage of fuses and coordinating with the substation to isolate and lower outage times and the number of customers affected by those outages.
5. **Sustainability & Resiliency** – RPU is meeting the community's changing needs and preparing for the goals set by the Envision Riverside 2025 Strategic Plan, by preparing for future load on Circuit 1205 and Circuit 1287.

FISCAL IMPACT:

The total fiscal impact is \$310,247. Sufficient funds are available in Public Utilities Electric Capital Account No. 6130000-470655.

Prepared by:	Daniel Honeyfield, Utilities Assistant General Manager/Energy Delivery
Approved by:	David A. Garcia, Utilities General Manager
Certifies availability of funds:	Kristie Thomas, Finance Director/Assistant Chief Financial Officer
Approved by:	Rafael Guzman, Assistant City Manager
Approved as to form:	Jack Liu, Interim City Attorney

Attachments:

1. Project Site Map Circuit 1205
2. Project Site Map Circuit 1287
3. Presentation