

RIVERSIDE PUBLIC UTILITIES

Board Memorandum

BOARD OF PUBLIC UTILITIES

DATE: MARCH 8, 2021

SUBJECT: MOUNTAIN VIEW SUBSTATION TO RIVERSIDE ENERGY RESOURCE CENTER FIBER OPTIC CABLE UPGRADE – WORK ORDER NO. 2108422 FOR A TOTAL CAPITAL EXPENDITURE IN THE AMOUNT OF \$183,000

ISSUE:

Consider approval of Work Order No. 2108422 for a total capital expenditure of \$183,000 to upgrade the fiber optic cable between Mountain View Substation and the Riverside Energy Resource Center to improve capacity and reliability.

RECOMMENDATION:

That the Board of Public Utilities approve Work Order No. 2108422 in the amount of \$183,000 to upgrade the fiber optic cable between Mountain View Substation and Riverside Energy Resource Center to improve capacity and reliability.

BACKGROUND:

Riverside Public Utilities (RPU) operates an advanced broadband fiber optic cable-based network to communicate between its electrical substations and utility control centers for the operation of the electric utility grid. The fiber network infrastructure is instrumental to the operations, reliability and security of the electrical system. In addition, the Innovation and Technology Department utilizes the fiber network infrastructure to serve City departments with computer-based information systems, e-mail, internet, intranet, and telephone services.

RPU has an existing 96-strand fiber optic aerial cable from Mountain View Substation to Riverside Energy Resource Center (RERC) that was installed in 2004. The fiber optic aerial cable is supported and attached along an existing overhead pole-line composed of wooden and steel poles, with a small portion of cable in existing underground conduit to enter the control facilities.



Existing fiber cable to be upgraded with new 144-strand fiber cable

DISCUSSION:

In 2020, through field inspection of this section of the fiber cable network, staff verified the condition of the existing fiber optic cable and determined that approximately 50% of the 96 fiber strands were damaged. The cause of the damage is unknown, but may have resulted from wind-events and attachment point failures, causing the aerial cables to stress and bend at some of the attachment points. The remaining fiber strands are under severe stress and deterioration continues to occur, which will eventually damage all the remaining fiber strands and lead to individual fiber strand failures.

The remaining fiber strands that are good operating condition are currently being utilized by RPU and other City departments. There are no spare fiber strands for additional connectivity between the Mountain View and RERC facilities. In addition, RPU has standardized on 144-strand fiber optic cable to serve future needs. This project will replace the damaged 96-strand fiber optic cable with the 144-strand standard fiber optic cable to improve the capacity, reliability and redundancy of the fiber optic network system. A reliable fiber network system is critical to continue providing safe and reliable electric service to customers in the area. There are no anticipated electric service or disruptions as part of this project. Fiber optic customers will be contacted in advanced and coordination of any down time will be based on the customer's operating requirements during cut-over to the new cable.

The scope of work includes replacement of 9,200 feet aerial fiber optic cable with new 144 fiber strand cable, installation and attachment to existing pole-line, testing and commissioning of the new fiber optic network cable. Scope also includes the removal of the old damaged cable and associated pole attachments. Construction and installation of the fiber optic cable upgrade will be performed by RPU crews. There is no civil infrastructure contract work associated with this project.

The project/fiscal breakdown is as follows:

| Project and Fiscal Breakdown | | |
|--|----------------------|------------------|
| Work Type | Performed By: | Amount: |
| Project Management and Engineering | RPU Engineering | \$15,500 |
| Materials Procurement | RPU Engineering | \$30,000 |
| Fiber Installation | RPU Electric Field | \$100,500 |
| Fiber Termination, Testing and Commissioning | RPU Grid Operations | \$20,500 |
| Contingency (10%): | | \$16,500 |
| Work Order Total: | | \$183,000 |
| Anticipated Start Date: | | March 2021 |
| Anticipated Completion Date: | | October 2021 |

FISCAL IMPACT:

The total fiscal impact is \$183,000. Sufficient funds are available in Public Utilities City-wide Communications Network Capital Account No. 6130000-470664.

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Approved by: Todd M. Corbin, Utilities General Manager
Approved by: Al Zelinka, FAICP, City Manager
Approved as to form: Kristi J. Smith, Interim City Attorney

Certifies availability of funds: Edward Enriquez, Chief Financial Officer/City Treasurer

Attachment: Project Site Map