

RIVERSIDE PUBLIC UTILITIES

Board Memorandum

BOARD OF PUBLIC UTILITIES

DATE: OCTOBER 22, 2018

ITEM NO:

SUBJECT: FREEMAN SUBSTATION TO ORANGECREST SUBSTATION FIBER OPTIC CABLE UPGRADE – WORK ORDER NO. 1423748 IN THE AMOUNT OF \$1,265,000

ISSUE:

Approve Work Order No. 1423748 in the amount of \$1,265,000 to upgrade the fiber optic cable between Freeman and Orangecrest Substations to improve capacity and reliability.

RECOMMENDATION:

That the Board of Public Utilities approve Work Order No. 1423748 in the amount of \$1,265,000 to upgrade the fiber optic cable between Freeman and Orangecrest Substations to improve capacity and reliability.

BACKGROUND:

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

In January 22, 2016, the Board approved Magellan Advisors (Magellan) dark fiber business plan and roadmap for enhanced broadband communications in Riverside. Magellan provided a plan for enhancement of RPU's business practices and expansion of our dark fiber offerings. RPU has many locations and paths throughout the City where it owns excess fiber. This excess fiber is not connected to electronic switches at either end, rendering it "dark". Currently, RPU leases some of these excess fibers to third parties who install the electronics to "light" the fiber for communication use. These businesses can then use the existing fibers to "light" the fiber for internet and communication use.

DISCUSSION:

RPU has an existing 12-strand fiber optic cable from Freeman Substation to Orangecrest Substation that was installed in 1994. All fibers are currently at capacity and are being utilized by RPU and other City departments. There are no spare fiber strands for additional connectivity between the two substations. In addition, RPU's minimum standard is now 144-strand fiber optic cable which will serve future needs of the community as identified in the Magellan dark fiber business plan. This project will replace the aged 12-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.

The project includes installation of:

- 50,000 feet of 144-strand fiber optic cable
- 5 cross connect cabinets
- 10 fiber optic patch panels
- 5 pull boxes

Work Order No. 1423748 includes engineering, design, equipment procurement, construction, installation, testing, and commissioning of the fiber optic network. Engineering, design, and testing will be performed by RPU staff. Construction and installation of the fiber optic network will be performed by RPU staff and contractors.

The project breakdown is proposed as follows:

| Project Breakdown | |
|--|----------------------------------|
| Engineering Performed By: | RPU Engineering Staff |
| Civil Construction Performed By: | Contractor |
| Fiber Installation Performed By: | RPU Electric Field Forces |
| Fiber Termination, Testing, and Commissioning Performed By | RPU Electric Operations Forces |
| Anticipated Start Date: | October 2018 |
| Anticipated Duration: | 30 Weeks |
| Coordination Required With: | Riverside County and Home Owners |
| Reimbursements: | None |

The breakdown of the total capital expenditure is summarized in the following table:

| Description | Amount (\$) | Percent of Total |
|---|--------------------|-------------------------|
| Equipment and Material Purchases | \$250,000 | 20% |
| RPU Construction and Operations | \$725,000 | 57% |
| Contractor from RPU's Contractors Panel | \$45,000 | 4% |
| Engineering, Management, and Inspection | \$130,000 | 10% |
| Contingencies | \$115,000 | 9% |
| Total | \$1,265,000 | 100% |

FISCAL IMPACT:

Sufficient funds are available in Public Utilities City Wide Communication Account No. 6130000-470664.

Prepared by: George R. Hanson, Utilities Assistant General Manager/Energy Delivery
 Approved by: Todd L. Jorgensen, Interim Utilities General Manager
 Approved by: Al Zelinka, FAICP, City Manager
 Approved as to form: Gary G. Geuss, City Attorney

Certifies availability of funds: Laura M. Nomura, Utilities Assistant General Manager/Finance & Administration

Attachment: Project Site Map

Attachment 1: Project Site Map

