

INSTALL FIBER OPTIC INFRASTRUCTURE TO REDUCE OPERATING COSTS

QUESTION 3: PUBLIC SAFETY AND TECHNOLOGY

Project Summary

Install city-owned fiber throughout the City to meet increasing need for network bandwidth to conduct business operations and reduce the dependency on leased-lines from telecommunications providers that require ongoing operating costs. The majority of the remote city sites require network bandwidth increases to meet either citizen or city employee needs including Community Centers, Parks, Libraries, Fire Stations, and other community-use or city employee-based locations.

PROJECT DETAILS

Unfunded Amount: \$11,385,600

Design	\$973,072
Right of Way	\$0
Construction	\$8,461,500
Administration	\$389,835
Public Art	\$0
Contingency	\$1,561,146
TOTAL (bond request total)	\$11,358,555

Project Location

Citywide

CIP Project Number: 9

Other Sources: \$6,332,400

Total Project Cost: \$17,718,000

ANALYSIS & ASSESSMENT

Background

This project will install conduit and fiber optic cable, document new and existing fiber optic cable paths, and improve cabling to city locations. City owned fiber optic cable will reduce the city's need for leased lines, as well as positively position the city to use the next generation of cloud enabled applications and services.

The majority of remote city sites are connected via leased lines from Cox Communications or Century Link. Allowing additional bandwidth and connectivity options to community centers, parks, and libraries allows citizens to leverage city resources in newer and innovative ways:

- **Smart City** – With the introduction of the new Old Town Parking Management System, the city launched its first of many Smart City initiatives. Investing in the city’s communications infrastructure allows for future Smart City technologies.
- **Public Safety** – Improve the existing infrastructure to allow for enhanced training, faster online communications, and greater visibility at large events such as the Waste Management Phoenix Open.
- **Scottsdale Water** – Increased bandwidth to the Supervisory Control and Data Acquisition network will facilitate better and lower-cost tracking of network conditions and provide access to better data analysis tools for operational data management. Furthermore, fiber optic cable would provide increased security and visibility to highly sensitive Water Sites.
- **Intelligent Traffic Systems (ITS)** – Improve fiber optic infrastructure giving ITS real-time visibility to traffic signals and cameras, and access to enhanced technology designed to make the roads safer.
- **West World** – Install fiber and copper cable to support secure point of service transactions and improved communications options for events and increase the exposure to different types of events.
- **Community Services** – Install fiber optic cable to directly connect the Libraries, Parks, and Community Centers to the city’s network.
- **Development** - Opportunity to lease conduit space.

Safety

This project will improve data communications to the traffic network including signals, intersection cameras, and traffic detection equipment. Additionally, the project will provide high speed communication between public safety facilities, and first responder applications and services. Finally, the real-time exchange of Supervisory Control and Data Acquisition (SCADA) network data gives the water department great tools to manage the city’s water supply and respond to outages and emergencies in real time.

What is the customer experience?

External customers will benefit through greater exposure to city provided “Smart City” applications and services. Internal customers will experience greater engagement with remote city sites, faster network connectivity to city-owned equipment (e.g. SCADA equipment, stop light cameras), and less reliance on leased line services.

Recent Staff Action

City staff evaluated the need for additional fiber optics between city sites and the benefits that it would provide from a security perspective. Over 50 individual projects were identified as project requirements were gathered.

Strategic Goal

The implementation of this project supports the Strategic Goal: Support Economic Vitality.

RESOURCE IMPACTS

Operating Cost & Staffing, Workload Impact

Operating costs are almost non-existent because fiber optic cabling will be connected to existing City-owned network devices. City staff levels will remain constant; however, contractors will be solicited to install the majority of new fiber optic cabling.

Maintenance Requirements

Little to no maintenance is required on fiber optic cabling once installed.

Impact if this project is not implemented

If this project is not implemented, the city will continue to depend on leased lines to connect city sites. Monthly recurring costs continue to increase annually, currently at approx. \$650K/yr. Additionally, leased lines are prone to outages and maintenance, impacting city operations.

The impacts of not investing vary by area, some impacts include:

- **West World** - Inability to compete for events and continued dependence on wireless communications.
- **Scottsdale Water** - Homeland Security concerns regarding cybersecurity threats and inadequate security controls.
- **ITS** – Inadequate infrastructure to provide real-time cameras and monitoring of signals.