**Fiber Optic Sharing Project**

**City of Peoria and Peoria Unified School District**

**City of Peoria, Arizona**

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***Fiber Optic Sharing Project Synopsis***

The fiber optic sharing project between the City of Peoria (“City”) and the Peoria Unified School District (“PUSD”) began to take shape in 2006 when the City and PUSD began exploring options for collaborating on technology. In 2005, PUSD allocated $8 million to construct a fiber network to connect all PUSD schools together. However, it was realized that the funding available would likely not be sufficient to support the entire initiative. In 2006 it was identified that the opportunity existed to leverage each entities’ infrastructure and funding to benefit both. The shared fiber optic cabling project would make available the City’s existing fiber optic conduit in exchange for PUSD installing new fiber optic cable. This cable would connect PUSD schools as well make fiber cable available for the City to connect City facilities via the fiber network.

An IGA was drafted outlining the fiber sharing project and outlining how both entities could work together to complete the project and decide how to maintain the network in the future. Per the IGA and subsequent addenda, the City of Peoria assumed ownership and maintenance responsibilities on the major portions of the fiber backbone effective December 1, 2008, with PUSD retaining responsibilities for those sections that are only serving schools, off the main arterial streets.

Since the original IGA was signed in December 2006, all “backbone” fiber has been installed and all PUSD schools are connected via fiber. In the City’s FY2008 CIP budget, the City’s IT Department received funding of $265,000 to complete connections into applicable City facilities from the fiber backbone. The majority of this work has been completed with the final City facility, where fiber is possible, to be connected in fall 2009. Approximately 78% of the City’s facilities will be connected by the fiber network with the remaining sites unable to be connected in the near future due to infrastructure not being available.

As the City facilities were cut over to the new fiber network, the existing microwave network has become a hot standby (redundant) connection for all City facilities in the event of a fiber break. This gives the City the ability to automatically compensate for any anomaly or break in the fiber network through the already in-place microwave network. This system is online and tested frequently to ensure that, in the event it is needed, it will work as designed.

In addition to this project allowing for redundant network connectivity, the City has also been able to reduce ongoing costs for leased telecom services and avoid additional costs as new facilities have come online. The estimated annual savings are $100,000 on leased circuits for network connectivity and microwave backup circuits. The fiber network has also provided increased network performance (up to 1Gb from 150Mb microwave or T-1/DS-1 speed leased circuits) and is a key component of the IT Department’s business continuity planning process.

While this project still incurred significant costs, the collaboration between the City and PUSD provided significant cost avoidance for both entities. It has been estimated that, at the current rate of funding for fiber optic connectivity, it would have taken over 56 years for the City of Peoria to install the 28 miles of fiber optic cabling necessary to connect all facilities, at an estimated cost of over $5.5 million. In addition, PUSD was able to complete the fiber network with their original funding by utilizing the existing City conduit.

This fiber optic sharing project would not have been successful without the strong inter and intra-governmental collaboration between the City of Peoria Information Technology Department, Traffic Engineering Division, Public Works – Streets Division, Materials Management Division, and the Peoria Unified School District’s Information Management and Technology Department. The project outcomes were exactly what had been expected.

This partnership between separate government entities serving the same constituents allowed for the installation of a single fiber network to meet the needs of both parties. While there were some obstacles, primarily different sets of politics and ruling bodies, they were overcome by engaging both the Peoria City Council and the Peoria Unified District School Board of Directors that their constituents will be better served by this partnership. It was also important to make the project equitable and a “win-win” for both the City and PUSD to ensure public funds were spent in the best interest of both entities.

***Presentation Components***

* ***Innovation/Creativity***

The City of Peoria has seen improvement because this project has provided improved network and telecom performance that allows faster, more efficient, and more reliable communications. The project also allowed the City’s IT Department to centralize voice and data operations through high speed links between facilities rather than the previous more distributed environment relying upon leased services. The centralization has reduced staff trips to remote locations as well as a reduction in hardware assets and software licensing required by the system consolidation. New technologies were not utilized for this project. The City did not use a private consultant for this project, but PUSD contracted with Elert & Associates for the network design and project management of the fiber installation. Their contact information is listed below.

 Elert & Associates

140 Third Street South
Stillwater, MN 55082

Felix Fayngersh, Project Manager

 (651) 430-2772

* ***Citizen Outcomes***

This project provided enhanced services to citizens by allowing more efficient use of public computers. PUSD is now able to provide better reliability, performance, and faster speeds at their schools connected by the network which benefits their student and staff populations. Access to the City and PUSD wasn’t improved, but the quality was enhanced. This project has not had a direct impact on the health of the community.

* ***Applicable Results and Real World Practicality***

The practical applications that can be shared are stressing the importance of collaborating with other agencies who serve the same constituents. In most cases, this collaboration can provide favorable outcomes for all organizations involved. Working together can also allow for more responsible management and expenditure of public funds which benefits everyone involved.

An important lesson learned from this joint fiber project is the importance of having accurate as-built drawings and plans available before starting this type of project. Due to inaccurate plans, we didn’t have a complete picture of the physical locations of the existing conduit which caused some bumps in the road but we were able to overcome them relatively painlessly.

This project is applicable to other local governments in demonstrating the importance of thinking outside the box and realizing funding isn’t the most important item needed to participate in joint projects. Governments may have existing infrastructure or resources that could greatly benefit other organizations and projects.

The main outcome that will be shared regarding this project is how two completely separate organizations were able to enhance their networks by leveraging the assets and resources of each other. Unless both organizations had been willing to explore opportunities for collaborating on technology projects, PUSD would have had to secure additional funding to connect all their schools via fiber or make the decision to connect a limited number of schools based on available funding. The City of Peoria would not have been able to connect their facilities via fiber and would have continued to incur significant ongoing costs for the leased circuits that provided connectivity between facilities.

* ***Case Study Presentation***

The case study presentation will include contributions from multiple project participants, PowerPoint presentation and high-level diagrams illustrating the fiber network.