Executive Summary

The Arkansas Department of Information Systems (DIS) is responsible for providing the State data, voice, video and public safety wireless networks. DIS provides the State Network Operations Center and Data Center hereafter referred to as NOC/DC. These functions are provided for all state agencies, boards and commissions as provided in Arkansas code. DIS also provides the above mentioned services to K-12, universities, colleges, technical and community colleges, cities, counties and non-profit organizations throughout the state. All 2,855,390 residents of the State benefit from this network especially the 450,000 K-12 public school students in the State. Schools rely on the network for educational opportunities that would otherwise be unattainable. The State NOC/DC is currently housed in an aging public building located on the Arkansas Capitol Campus. The building infrastructure (power, cooling, etc.) cannot support updating the current NOC/DC above a Tier I level. These constraints, along with the security concerns of being located in a public building are unacceptable for a NOC/DC hosting such important resources for the citizens of Arkansas. The NOC/DC houses over 200 servers including email, voter registration and election systems, Internet content filtering, inmate management systems, licensure and accreditation systems, VoIP and voicemail systems, cross-agency collaboration servers (ex., SharePoint), mainframe systems, switching equipment for the public safety radio network and many other IT resources utilized by the State and its citizens. DIS staff is present at the NOC on a 24 hour basis to maintain and operate the State network and resources residing in the Data Center. The State network is used to provide VoIP, data, public Internet access, video and access to resources hosted in the NOC/DC. Internet access with content filtering is provided to all agencies and institutions. Our e-Rate eligible customers, including all public K-12 schools and public libraries, are required to filter Internet content. To enable content filtering all Internet traffic from these agencies, schools and libraries must be transported over the State network back to one of three State network Internet Points-of-Presence (POPs), the largest being the State NOC/DC. The video conferencing service is used by State agencies, higher education institutions, K-12 and telemedicine. The State's primary network backbone consists of ATM OC-3 links connecting to five hubs where core routing is accomplished. There are approximately 2,963 local access connections provided by multiple local exchange carriers consisting of a variety of access transport types including Frame-Relay with speeds ranging up to 1.5 Mbps; DSL; Cable Modem; Ethernet over Fiber (in primarily urban areas) with speeds ranging from 10 Mbps to 50 Mbps; ATM T1; ATM OC3 with speeds of 50 Mbps up to 150 Mbps; and ATM-based IMA (3.0 Mbps to 6.0 Mbps). The ATM T1 and higher connections are used to provide bandwidth and Quality of Service (QoS) control for video conferencing and data. The Ethernet and local access ATM connections also employ...
multiple logical connections for separating video and data. The Arkansas Wireless Information Network (AWIN) is our statewide multiple-site trunked digital 700/800 MHZ communications system based on the Association of Public-Safety Communications Officials-International's Project 25 (APCO P-25) standard. The AWIN network provides service in every county of the State and covers 98% of the State's land mass. AWIN is host to over 15,000 portable, mobile and data subscribers including county and city law enforcement agencies, Arkansas State Police and the Arkansas Department of Emergency Management. One of the two core switches for the AWIN network is located in the State NOC/DC. The proposed project is to construct a new Tier III NOC/DC and migrate the wired network to a Multiprotocol Label Switching (MPLS) backbone. A new NOC/DC would replace the aging existing facility and enable the State to offer services with higher reliability and a higher level of data security. A Tier III data center has a 'concurrently maintainable site infrastructure' which is appropriate for the support of a State NOC/DC and the 24x7 services provided to internal and external clients. A Tier III data center anticipates only 96 minutes annual downtime and has redundant capacity components in the power and cooling systems which allows for data center maintenance without affecting operations. Tier III sites are the most common level for mission-critical data centers with high availability requirements. A co-located NOC would enable the State to employ staff 24x7 to maintain and monitor the data center and network, thus further enhancing the reliability and security of the services offered. All services and hosted resources from the current State Data Center will be moved to the new NOC/DC. A new state-of-the-art facility enables more State agencies the ability to host their resources in the State NOC/DC thereby increasing efficiencies and reducing overall IT-related costs to the State. The NOC/DC will be located in central Arkansas but will be used by citizens across the state. DIS has already completed much of the work in scoping the NOC/DC project. DIS has estimates for construction costs based on a 2009 commissioned study conducted in conjunction with the Benham Companies, LLC (an SAIC company). Many of the design parameters for the new facility have been identified in collaboration with Benham. Using these agreed-upon design parameters will accelerate the process of getting the project started. Over 30 sites have been evaluated as a potential location in order to identify the most optimal choice. The proposed network will be comprised of vendor-provided MPLS and Ethernet services connected to a single vendor-provided MPLS backbone serving all locations in our three LATAs. The primary service providers in the State are AT&T, CenturyLink, and Windstream. There are numerous independent and rural telco providers that will be involved in the project. The current ATM and Frame Relay technologies that comprise the foundation of the State network will be phased out by commercial carriers over the next 10 years. Even in many non-rural areas of the State, the combination of Frame Relay or ATM with T1s is the only option for broadband access. These technologies are becoming a limiting factor for the ability of State institutions, particularly schools and community colleges, to increase their bandwidth to meet growing requirements. Improved technologies at more attractive rates are now available in the broader vendor market and in some areas of the State. These technologies are better aligned to support current and future network technology trends. They are designed to be used over high speed networks and reduce the overhead and inefficiencies associated with current older technology. DIS was worked with potential bidders to show how the State can be the anchor tenant in a town and bring enough potential broadband revenue to allow the vendors to equip their offices in all areas of the State for these higher speed services. These services then become available to the community at large providing opportunities for vendor network build out to provide Ethernet or other high-speed broadband services.
at all 2,900+ of our sites. This will effectively push broadband further into rural and underserved areas of the State. An Invitation for Bid (IFB) is in the final preparation stages and will provide a competitive bidding process for procuring these broadband services in every area of the State. The expansion and enhancement of the State network and NOC/DC will provide jobs in the vendor community as well as in State Government. We feel building the network through the vendor community will enhance broadband opportunities throughout the State for all its citizens. Having a Tier III NOC/Data Center will enable DIS to offer hosting services to more agencies thus removing the need for multiple agencies running their own isolated and under-staffed data centers. A combination of the next-generation network and NOC/DC would enable DIS to provide more services and bandwidth at or below the current cost to our agencies, boards, institutions, organizations and citizens. Key partners such as the Arkansas Governor's Office, Information Network of Arkansas (INA), Arkansas Wireless Information Network, the Arkansas E-Rate Program and the Arkansas Department of Education are supportive of the State and DIS's efforts to improve the State Network and State Data Center. The total budget for this project is $62,859,029. DIS plans to provide 30% cash matching funds of $18,857,709; therefore is requesting federal grant funds in the amount of $44,001,320. The savings generated by this project for State General Revenue and Federal funds will be $94,968,360 over a 30 year period.