EXECUTIVE SUMMARY

AR-Kansas: A Pair Prepared

Business continuity and disaster recovery are recognized as critical components of a full information technology implementation. The utilization of maps to respond to events has proven beneficial in numerous disasters including 9/11, the Space Shuttle Columbia disaster, and Hurricanes Katrina and Rita. Providing decision makers with a visual common operating picture enables better decision making. The Arkansas Geographic Information Office and the Kansas Data Access and Support Center (DASC) are responsible for providing mapping assistance in the form of geographic information systems (GIS) within their respective states. Each state supports mature implementations of mapping systems used to support daily mapping activities. GIS is quickly becoming integrated into a number of business processes within each state.

Cross boundary collaboration and partnerships have oftentimes been limited to technology transfer. GIS Infrastructure (i.e. facilities, bandwidth, and information technology staff) lends itself to endless collaboration and partnership opportunities. Costs for warm site hosting can pose as a deterrent. This was the case for the states of Arkansas and Kansas. The traditional cost of warm sites led to an interagency agreement by which each organization hosts each other's servers and provides bandwidth for synchronization. Synchronizations are performed during off peak hours via virtual portal network protocols. This solution ensures Arkansas and Kansas will have ready access to information technology needed to support their business processes.

Staff within the states of Arkansas and Kansas have worked together to ensure access to key data and project files is available in order to respond to an event. Events may be catastrophic or simply power / network outages. A number of cyber back-up and recovery strategies were examined. Key components of each strategy required a timely recovery of hundreds of gigabytes of data, access to the data on and independent of each states' network, and the storage of the data in a physical location outside each home state.

JUSTIFICATION

A. CONCISE DESCRIPTION OF THE BUSINESS PROBLEM AND SOLUTION, INCLUDING LENGTH OF TIME IN OPERATION.

Business Problem

The State of Arkansas and the State of Kansas identified the need to have timely access to mapping information in order to respond to events and support daily business processes. This need was deemed critical enough to trigger the creation of a warm site for each state to make certain business continuity and disaster recovery could be fully realized. Both states maintain existing local back-ups. Though local back up solutions are beneficial; network and / or power issues and the housing of a back up server under the same 'roof' does not equate to business continuity or disaster recovery best practices. Establishing a traditional warm site was deemed cost prohibitive by each state.

Solution

Arkansas and Kansas information technology staff worked together to identify a low cost solution that was capable of providing each state access to the mapping applications and data they deemed critical. Each state purchased hardware and software adequate to support their needs.

Software and an initial load of data were performed within the home state. Hardware was delivered to the hosting state and joined to the hosting states' network. Replication mechanisms were then put in place to provide for nightly synchronization. Kansas and Arkansas have had their systems in place since the fall of 2005.

B. SIGNIFICANCE TO THE IMPROVEMENT OF THE OPERATION OF GOVERNMENT.

GIS technologies have seen dramatic growth in the last five years. Answering the question "where?" is becoming critical to disaster response and daily business processes. The implementation and use of web-based services are being utilized to support state government business processes. The states of Arkansas and Kansas have transitioned from traditional GIS clearinghouses to web-based service providers. Each state provides access to data, metadata, interactive mapping applications, and web services through its web portal. Customers have come to rely on the services provided through the portals to conduct day-to-day business.

The installation of the backup servers addresses the growing need to establish redundancy for the databases and services provided through the portals. The implementation of the systems has been separated into two phases. Phase one, completed in October of 2005, was the installation of the hardware/software components and the implementation of the database replication process. Phase

two, scheduled for completion during summer 2006 or Kansas, involves the complete replication of the state's portal and all of its associated applications and web services. The installation of the backup system represents a significant improvement in the operation of the state's ability to access information.

The presence of a backup architecture in a remote location with current information and skilled staff ensures that information will be available should the people, software, and equipment be unavailable to recover information. The fact that first responders depend on the availability of location information to respond during an event makes this constant availability an improvement to the operation of government.

C. BENEFITS REALIZED BY SERVICE RECIPIENTS, TAXPAYERS, AGENCY OR STATE.

The primary benefit is the redundancy gained through implementing the system. Warm site data backup capability established in phase one of the project is beneficial not only to users, but to the database stewards who use state systems as a mechanism for database archival and distribution. The primary benefit in phase two will be an increase in uptime and availability of the various services provided through the portal. In general, these improvements will be somewhat transparent to end-users.

Typically, warm sites are expensive to establish and maintain. This cross boundary collaboration provides for the ability for each state to have warm site access for the cost of the hardware and software, thus benefiting the taxpayers and state.

D. REALIZED RETURN ON INVESTMENT, SHORT-TERM/LONG-TERM PAYBACK (INCLUDE SUMMARY CALCULATIONS).

		COST	
Description	**Year 1**	**Year 2**	**Year 3**
Hardware	$40,250	$0	$10,000
Database Servers			
Web Server			
Uninterruptible Power Supply			
Software	$18,000	$8,000	$8,000
MS Server 2003			
Apache HTTP Server			
Apache Tomcat Servlet Engine			
Cold Fusion MX Server			
ArcIMS			
ArcSDE			
Sun Solaris 2.9			
Oracle Standard Edition			
Estimated Hosting Cost for Each State	$57,326	$57,326	$57,326
*** Hardware & Software Total**	**$115,576**	**$65,326**	**$75,326**
** Estimated hosting cost for a hot site for each state	-$58,250	-$8,000	-$18,000
*** Monetary Return on Investment	$57,326	$57,326	$57,326

This cross boundary collaborative partnership demonstrates a coordinated, cost savings approach for joining up IT related goals for the State of Arkansas and Kansas. Sharing infrastructure resources to provide a warm site has proven to be efficient in the delivery of systems, applications, and services. Arkansas and Kansas are continually looking for ways to collaborate on common IT goals that meet the needs of other states.