

Fiscal Year 2013-14 Capital Construction Request

Office of Information Technology

Digital Trunked Radio System, Software Upgrade

PROGRAM PLAN STATUS

2014-081

Approved Program Plan?

N/A

Date Approved:

PRIORITY NUMBERS

Prioritized By

Priority

DeptInst

2 of 2

OSP

NP of 29

PRIOR APPROPRIATION AND REQUEST INFORMATION

<u>Fund Source</u>	<u>Prior Approp.</u>	<u>FY 2013-14</u>	<u>FY 2014-15</u>	<u>Future Requests</u>	<u>Total Cost</u>
CCF	\$0	\$3,726,190	\$3,726,190	\$7,452,380	\$14,904,760
Total	\$0	\$3,726,190	\$3,726,190	\$7,452,380	\$14,904,760

ITEMIZED COST INFORMATION

<u>Cost Item</u>	<u>Prior Approp.</u>	<u>FY 2013-14</u>	<u>FY 2014-15</u>	<u>Future Requests</u>	<u>Total Cost</u>
Land Acquisition	\$0	\$0	\$0	\$0	\$0
Professional Services	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0
Equipment	\$0	\$3,726,190	\$3,726,190	\$7,452,380	\$14,904,760
Miscellaneous	\$0	\$0	\$0	\$0	\$0
Contingency	\$0	\$0	\$0	\$0	\$0
Total	\$0	\$3,726,190	\$3,726,190	\$7,452,380	\$14,904,760

PROJECT DESCRIPTION / SCOPE OF WORK

The Governor's Office of Information Technology (OIT) is requesting state funds for the first phase of a four-phase project to purchase new software to support the Digital Trunked Radio System (DTRS). The DTRS is a statewide public safety, two-way radio communication system. The system is used by state and local government agencies like the Department of Corrections and local sheriffs for day-to-day communications and to improve interagency cooperation and coordination in first responder situations. The project will upgrade the existing software platform in order to mitigate risks associated with the system's security, interoperability, and capacity.

This year's request for Phase I upgrades the DTRS software from version 7.5 to version 7.7. OIT explains that an incremental software upgrade is necessary to ensure that the system remains stable and available to all users. The request will provision, program, and install new software and equipment at the master sites, communication centers, and backhaul links. Phase I also reinstates cyber security and anti-virus protection and allows agencies to replace outdated console equipment. Phases II through IV will incrementally upgrade the system from version 7.7 to 7.14, increase the number of users that can be supported to 128,000, adopt more advanced encryption, maintain security, and replace associated hardware, including outdated network servers.

DTRS infrastructure. The equipment, software, and radio towers that make up the DTRS are owned by a combination of state and local entities. The infrastructure of the DTRS includes 216 radio towers located throughout the state; 1 primary zone controller located in Denver that processes data sent to 4 master sites, which house computer equipment used to control the operations of the radio sites; 115 communication dispatch centers, which allow operators to communicate with first responders and facilitate communication between first responders; and

Fiscal Year 2013-14 Capital Construction Request

Office of Information Technology

Digital Trunked Radio System, Software Upgrade

backhaul links, which connect the sites to each other. The DTRS infrastructure also includes communications software and individual radios.

Future operating and capital need associated with the DTRS. In addition to the work requested under this project, the DTRS also requires upgrades to additional operating equipment and physical facilities. Furthermore, although the upgrade of the current software to version 7.14 can be supported on existing dispatch center equipment, all subsequent upgrades to versions 7.15 and higher will require the replacement of the dispatch equipment used by the majority of the dispatch centers. The cost to replace this equipment is about \$150,000 per dispatch center for an estimated 240 dispatch centers, or \$36 million. Additionally, many of the existing radio towers are in poor condition and require repairs. In recent years, some of the required repairs have been addressed through the state's controlled maintenance process. Since FY 2010-11, the state has spent about \$2.7 million to replace six microwave site towers. OIT's five-year plan for controlled maintenance indicates several additional requests associated with repairs to state-owned radio towers, and a recent report to the Joint Budget Committee about the DTRS estimates it will cost about \$35 million to repair the existing tower infrastructure, including state- and locally owned radio tower sites.

PROJECT JUSTIFICATION

OIT explains that interoperable radio communications are a critical technology for search and rescue, emergency response, disaster management, and other public safety functions because they allow personnel from multiple agencies to rapidly share information and coordinate efforts. The DTRS has been used in several high profile emergency situations in the last year including the recent wildfires and the Aurora theatre shooting. In the instance of the Aurora theatre shooting, the DTRS allowed Aurora first responders using a different radio communications system to interface with the DTRS to communicate directly with first responders in neighboring communities. According to OIT, the DTRS prevents the reoccurrence of situations like the Columbine school shooting, where first responders from different agencies and jurisdictions were not able to communicate directly via two-way radio.

According to OIT, the state and its local government partners have identified a software upgrade as the highest priority need for the DTRS. The anti-virus protection for the existing software expired January 1, 2013, leaving the network vulnerable to intrusion, viruses, and other cyber security incidents. According to OIT, the vendor has extended support as far as is technically possible under the current software platform. The new software will also support Federal Communications Commission mandates on narrowbanding, which go into effect in 2017. Narrowbanding requires radio users to use less bandwidth in broadcasts and is made possible through better technology and equipment. The new software will also increase interoperability between DTRS and other systems used by local agencies, such as the voice communication system used by the city and county of Denver.

The project will also upgrade the software used by the DTRS to improve its capacity, or the ability of the system to carry calls without overloading available equipment or channels. The DTRS currently supports about 67,000 users; after the system's software is fully upgraded, it will support about 128,000 users. Additionally, upgrading the system will make state and local entities more eligible for grant funding from the U.S. Department of Homeland Security (DHS). The DHS requires states to report on their capabilities regarding the interoperability of voice communication. The data that is collected through this reporting is used in determining yearly grant allocations. Attachment A details the DHS's interoperability continuum.

Consequences if not funded. According to OIT, if the software upgrade is not funded, the system may cease to operate in some parts of the state which will threaten the interoperability between agencies and thus the ability of first responders to coordinate in emergency situations.

PROGRAM INFORMATION

According to OIT, about 1,000 local, state, and federal government agencies currently use the DTRS. The system processes about 7.5 million transmissions per month and 86 million transmissions a year. Attachment B is a map of the DTRS service coverage area. The primary stakeholders of the DTRS include the Departments of Corrections, Natural Resources, Public Safety, and Transportation, local government public safety entities, and several federal agencies. An agency may opt to use the DTRS as its primary radio system or for interoperability only, especially during first responder situations.

Fiscal Year 2013-14 Capital Construction Request

Office of Information Technology

Digital Trunked Radio System, Software Upgrade

The Consolidated Communications System Authority (CCSA) is a 20-member board created by House Bill 12-1224 to represent the interests of the various agencies that use the DTRS. The CCSA solicits funding for the DTRS; represents its membership in strategic, technical, and regulatory matters; and advises the Governor and General Assembly regarding the present status and future needs of the DTRS. The CCSA presents a written report to the Joint Budget Committee annually concerning the operational and capital needs for the DTRS and funding options to meet those needs.

LEED CERTIFICATION INFORMATION

The project is not required to comply with the provisions of Senate Bill 07-051 regarding LEED certification because it is an information technology project and does not involve the renovation, design, or construction of a physical facility.

PROJECT STATUS

This is a new project.

Funding history. The implementation of the DTRS was funded as a seven-phase project through the capital process between FY 1999-00 and FY 2008-09. Each phase of the project implemented the DTRS by geographic boundary based on Colorado State Patrol and Department of Transportation boundaries. The state-funded cost of the project was offset by local grants and federal funds. The DTRS replaced disparate and technically obsolete radio systems in order to create a statewide public safety communications system. The FY 2008-09 appropriation funded a hardware and software upgrade for 28 state and local public safety dispatch centers.

SOURCE OF CASH FUNDS

This project is not funded from cash sources.

STAFF QUESTIONS AND ISSUES

None.

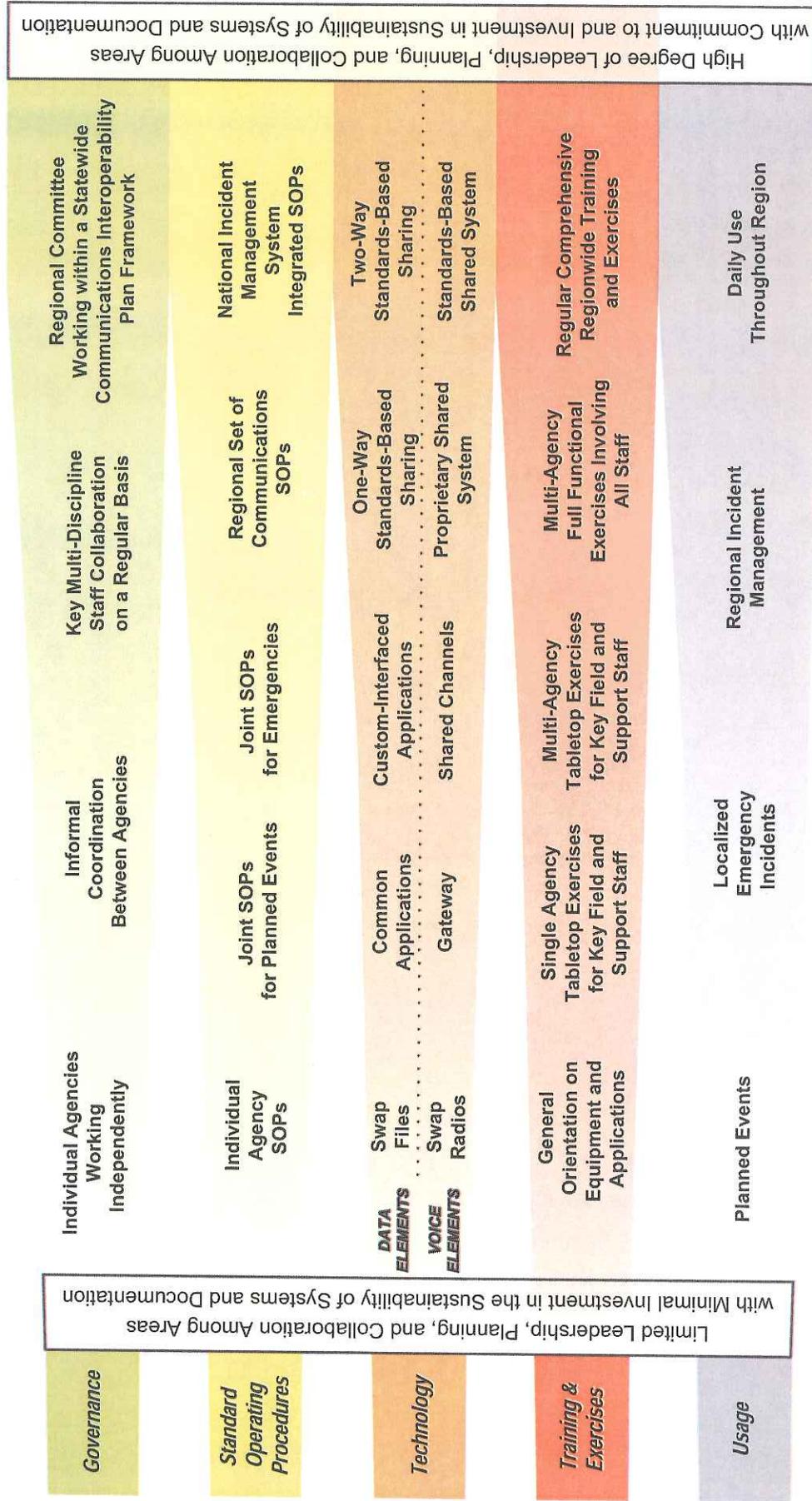
OPERATING BUDGET

This project has no impact on state operating costs. Future requests associated with the DTRS may impact the operating budget.

PROJECT SCHEDULE

	Start Date	Completion Date
Phase I (version 7.5 to 7.7)	July 2013	January 2014
Phase II (version 7.7 to 7.9)	February 2014	June 2014
Phase III (version 7.9 to 7.13)	July 2014	November 2014
Phase IV (version 7.13 to 7.14)	December 2014	December 2014

Interoperability Continuum



Limited Leadership, Planning, and Collaboration Among Areas with Minimal Investment in the Sustainability of Systems and Documentation

High Degree of Leadership, Planning, and Collaboration Among Areas with Commitment to and Investment in Sustainability of Systems and Documentation

Digital Trunked Radio System Coverage Area

