FB04A
Department of Information Technology

Public Safety Communication System (Statewide)

General Obligation Bonds **$10,000,000** **Recommendation: Approve**

Bill Text: Provide funds to construct and equip a statewide public safety communications system to provide the State with a new, modern, unified radio communications system.

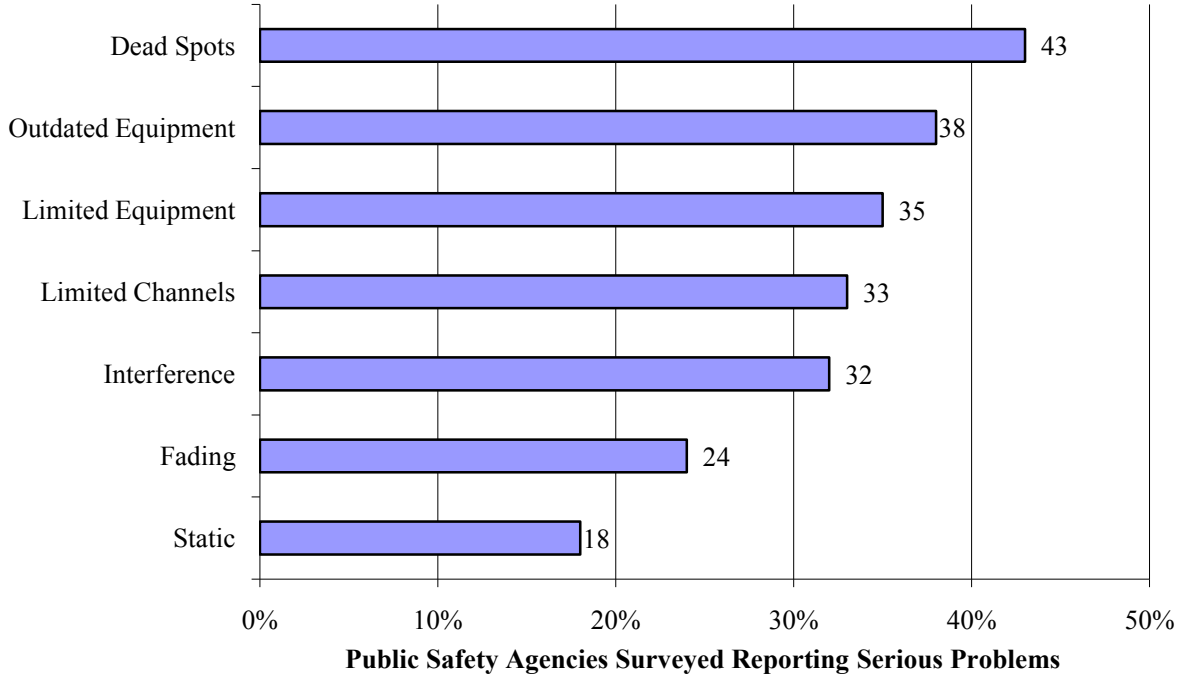
Project Description: This project will provide an integrated statewide public safety wireless communication system and provide a primary radio communication system for public safety first responders throughout the State. The system uses the Public Safety 700 MHz spectrum licensed to the State by the Federal Communications Commission (FCC). Once completed, this radio system will be the primary operating radio system for all State agencies, providing a communications platform for 16 State operating units and allowing for seamless interoperability among State users and first responders at all levels of government. Interoperable communications is the ability for first responders to transmit voice and data communications in real-time regardless of agency or jurisdictional boundary. When communications systems are interoperable, police and firefighters responding to a routine incident or a catastrophic emergency can talk to and share information with each other to coordinate efforts and work effectively together.

Project Analysis

For over a decade, the State has been laboring to construct a statewide public safety communications system to provide the State with a new, modern, wireless 700 MHz communications system. The need to develop such a system took on new urgency after the terrorist attacks of September 11, 2001. Indeed, the 9/11 Commission, in its review of those attacks and the response to them, cited the inability of first responders to communicate with each other in the initial report and reiterated the continued failure of first responders to adequately communicate with each other in the subsequent follow-up report. In the past, local jurisdictions and State agencies have built stand alone systems that met individual agency needs. However, the deployment of independent non-integrated systems throughout the State owned and operated by State, county, and local agencies has created situations that hamper cross-jurisdictional and cross-discipline communications. Currently radio communication interoperability among State agencies and localities is hampered by the use of different operating frequency bands, technologies, and system platforms. Moreover, these systems are generally voice only and do not support mobile data applications.

While interoperability is usually cited as the driving force behind the need for the 700 MHz system, it should also be noted that, based on survey data, public safety agencies report numerous other serious radio system issues (see **Exhibit 1**), many of which can also be addressed through the 700 MHz system.

Exhibit 1
Reported Serious Radio System Issues



Source: Public Safety Wireless Network Program

Governance

For many years, the 700 MHz project was governed by an interagency governance group headed by the Department of Budget and Management Office of Information Technology, now the Department of Information Technology (DoIT). The group included membership of federal, State, and local agencies. Under the current Administration, leadership of the intergovernance group was transferred to the Department of State Police. In a July 2008 executive order, responsibility for public safety communications systems, including the 700 MHz system, was placed under a Maryland Statewide Communications Interoperability Program, complete with a State Interoperability Director and program management office, with advice to this program to be provided by a Statewide Interoperability Executive Committee with State and local representation, including legislative members. It should be noted that there is no federal representation on the executive committee. Although the executive committee's mandate relates to State projects, given the federal presence in and around Maryland, in the past hearings on the 700 MHz system, members of the legislature have commented that some sort of federal representation with regard to the 700 MHz system would be appropriate.

Interoperability Levels and the 700 MHz System

This 700 MHz communications system will link several large State agency users (*e.g.,* the Maryland State Police, the Maryland Department of Transportation, the Maryland Transportation Authority (MDTA), and the Department of Natural Resources) and multiple smaller agency users (*e.g.,* the Maryland Department of the Environment, the Department of Juvenile Services, and the Department of Public Safety and Correctional Services). The infrastructure will also be available to local jurisdictions. Currently, these agencies use a multiplicity of communications systems.

According to a July 2008 Statewide Communications Interoperability Plan, the 700 MHz is conceived as the ultimate level of interoperability. That plan identifies six levels of interoperability, which are shown in **Exhibit 2**. While the goal of the 700 MHz system is to attain interoperability at Level 6, the highest level, it is expected that lower levels of interoperability will continue for some considerable time going forward.

Exhibit 2
Levels of Interoperability

Interoperability Levels	Interoperability Initiatives	Description
Level 1	Radio Caches	Physical exchange of radios with other agencies at the scene of an event. Obvious limitation is having sufficient radios on hand for large-scale events.
Level 2	Interoperability Talkaround	Intended to provide local area communications in situations where network coverage is not available.
Level 3	Mutual Aid	Established radio frequency coverage areas to be used exclusively by first responders for communication during special events. Limitation is that radios have to be tuned to the same frequency.
Level 4	Operability Across Frequency Bands	Interoperability achieved by linking all first responder radio systems in a variety of ways. For example, this may be done through portable network-to-network gateways that are deployed to the scene of an incident.
Level 5	System Specific Roaming	Sharing existing systems. Full interoperability possible when jurisdictions use common equipment. However, when equipment is from different manufacturers, there is often limited functionality. At that point, Level 4 gateways may supplement interoperability.
Level 6	Statewide 700 MHz System	Interoperability that relies on open standard functionality for wireless communication. National standards have been adopted, and these standards are referenced in Maryland's planned 700 MHz system.

Source: Maryland Statewide Communications Interoperability Plan

Project Status

Despite a pending protest of the initial award of the contract to Motorola, Inc, the Board of Public Works approved a contract for Phase I (Region 1A) of the project in November 2010. Phase I entails the build-out of a turnkey radio system to replace MDTA's existing system. DoIT reports that on March 9, 2011, the State received notification from the Maryland State Board of Contract Appeals that the complainant withdrew its appeal of the award and that the case has been dismissed with prejudice. **DoIT should comment on the projected timeframe for completing Phase I of the project. DoIT should also comment on what impact project delays will have on the State's ability to satisfy the first FCC build-out benchmark, which requires that the State be prepared to provide "substantial service"[1] to one-third of the population by January 2012.**

Project Funding

The fiscal 2012 budget includes $10.0 million in general obligation (GO) bond funds to complete the build-out of Region 1A (*i.e.*, Anne Arundel, Baltimore, Cecil, and Harford counties). Of this amount, $9.8 million will be used to construct and equip (*e.g.,* base stations, transmitters, receivers) Region 1A to meet the initial FCC build-out benchmark, which requires the State to demonstrate that it has provided, or is prepared to provide, "substantial service" to one-third of the population by January 1, 2012. As shown in **Exhibit 3**, the fiscal 2012 request, coupled with a prior year unencumbered balance of $37.2 million, will make $47.2 million available in fiscal 2012 to complete the build-out of Region 1A. It should be noted that the current estimate for the total project ($755.0 million) reflects a $288.0 million, or 62%, increase above the preceding year's estimate of $467.0 million. According to DoIT, the original estimate was based on an analysis conducted during the functional requirement gathering process. The current estimate, which is based on the actual contract award, reflects the anticipated funding level required to build out all regions to a public safety interoperability coverage level (*i.e.*, in-building coverage). **DoIT should comment on the increase in project funding.**

[1] The Federal Communications Commission will deem a state "prepared to provide substantial service" if the licensee certifies that a radio system has been approved and funded for implementation by the deadline date. "Substantial service" refers to the construction and operation of 700 MHz facilities by public safety entities providing service which is sound, favorable, and substantially above a level of mediocre service which just might minimally warrant renewal of the State's license.

Exhibit 3
Phase I Project Funding
Fiscal 2009-2010

Prior Year Unencumbered Funds	
Prior Year Unencumbered Balance from MDTA	$15.0
Fiscal 2011 GO Bond Authorization	14.2
Unencumbered Funds from Fiscal 2007, 2008, and 2010	5.5
Anticipated PSIC Grant Reimbursements	2.5
Total Unencumbered Funds Available	**$37.2**
Fiscal 2012 Funding Request	
Fiscal 2012 Construction and Equipment Funds	$9.8
Project Management	0.2
Total Fiscal 2012 Request	**$10.0**
Total Funding Required to Build out Region 1A	**$47.2**

GO: general obligation
MDTA: Maryland Transportation Authority
PSIC: Public Safety Interoperable Communications Grant

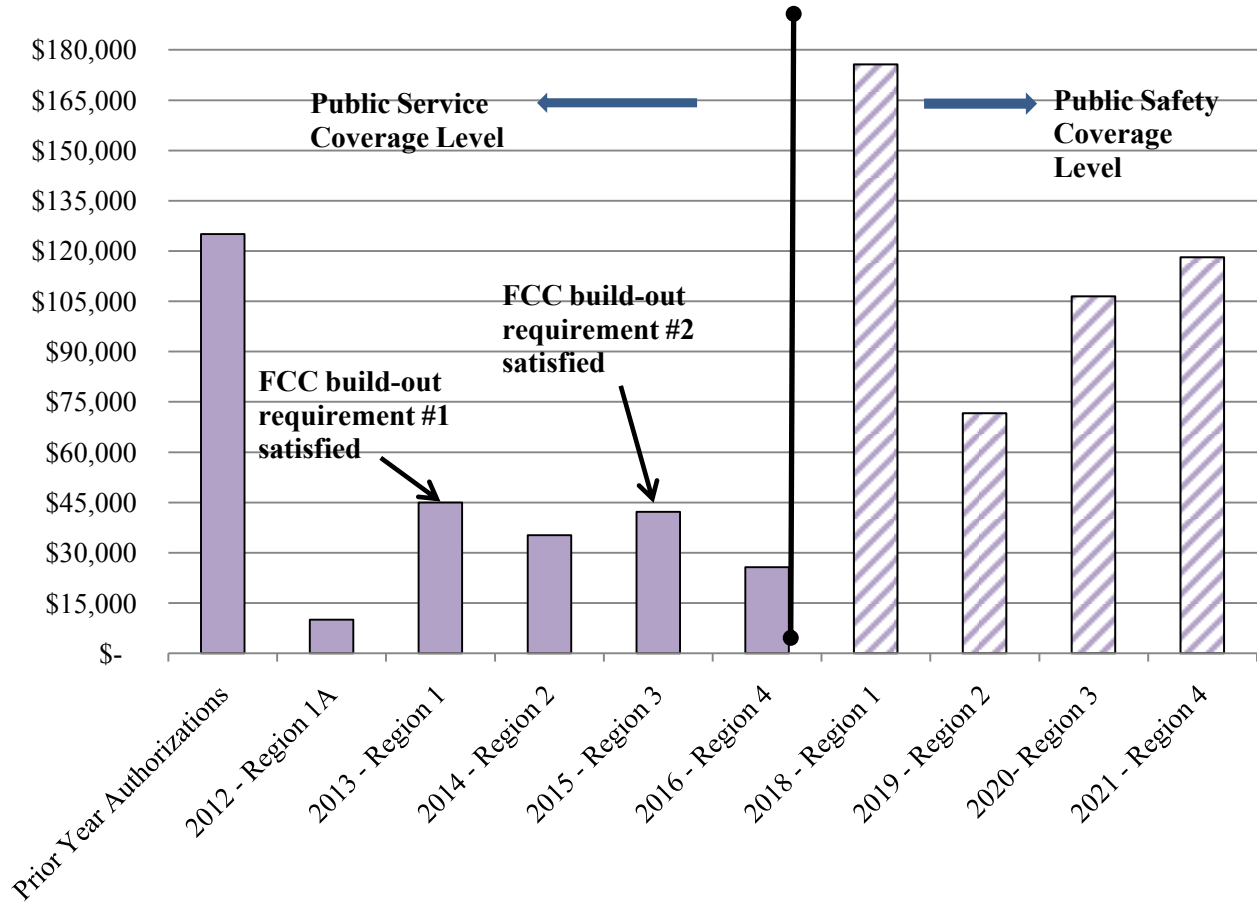
Source: Department of Information Technology

Federal Communications Commission Compliance

The FCC has allocated 24 MHz of radio spectrum nationwide for public safety services within the 764-776 MHz and 794-806 MHz bands (also known as "Public Safety 700 MHz band"). The FCC has designated 2.4 MHz of the Public Safety 700 MHz band as "state" channels. All 50 states, including the District of Columbia and several territories, were granted licenses by the FCC to operate on the same amount of spectrum regardless of size. In order to ensure the timely and efficient use of the spectrum, the FCC established two build-out benchmarks that states must satisfy in order to retain their licenses on the Public Safety 700 MHz band. As previously discussed, the first build-out benchmark requires each state to certify that it has either provided, or is prepared to provide, "substantial service" to one-third of its population by January 1, 2012. The second benchmark requires each state to certify substantial service to two-thirds of its population by January 1, 2017.

Exhibit 4 illustrates the anticipated build-out of geographic coverage by region, including when the State anticipates that it will satisfy the FCC build-out benchmarks. Discussions with DoIT have indicated that in order to provide substantial service to one-third of the Maryland population by the required build-out date, the State will need to build out and equip Region 1 (Anne Arundel, Baltimore, Carroll, Cecil, Frederick, Harford, and Howard counties and Baltimore City). However, it should be noted that the DoIT project team is currently considering other options that would enable the State to satisfy the first threshold prior to the completion of Region 1. Under the current plan, the State will initially provide a public service level of interoperability coverage, which is designed to ensure that public safety responders have adequate outdoor coverage. Once Maryland has achieved the public service level of coverage, the State will then pursue the public safety level of interoperability coverage, which is designed to ensure adequate coverage both indoors and outdoors. Currently, it is anticipated that the public service level and public safety level of coverage will be achieved by fiscal 2016 and 2021, respectively.

Exhibit 4
Public Safety Communications (700 MHz) System
Fiscal 2012-2021
($ in Thousands)



Note: The project entails four different coverage area regions for the 700 MHz system: (1) Region 1 (Anne Arundel, Baltimore, Carroll, Cecil, Frederick, Harford, and Howard counties and Baltimore City); (2) Region 2 (Caroline, Dorchester, Kent, Queen Anne's, Somerset, Talbot, Wicomico, and Worcester counties); (3) Region 3 (Calvert, Charles, Montgomery, Prince George's, and St. Mary's counties); and (4) Region 4 (Allegany, Garrett, and Washington counties). In addition, a subregion 1A was established, consisting essentially of areas under the policing jurisdiction of the Maryland Transportation Authority. Region 1A will be the first area of deployment.

Prior Authorization and Capital Improvement Program

Authorization Uses
($ in Millions)

Description	*Prior Authorization*	*2012 Allowance*	*2013 Estimate*	*2014 Estimate*	*2015 Estimate*	*2016 Estimate*
Acquisition	$0.125	$0.000	$0.000	$0.000	$0.000	$0.000
Planning	2.751	0.000	0.000	0.000	0.000	0.000
Construction	58.696	6.850	13.000	9.250	11.300	7.800
Equipment	63.475	3.150	32.000	26.000	30.900	17.900
Total	**$125.047**	**$10.000**	**$45.000**	**$35.250**	**$42.200**	**$25.700**

Authorization Sources
($ in Millions)

Description	*Prior Authorization*	*2012 Allowance*	*2013 Estimate*	*2014 Estimate*	*2015 Estimate*	*2016 Estimate*
GO Bond	$41.200	$10.000	$35.000	$25.250	$32.200	$15.700
General	27.400	0.000	0.000	0.000	0.000	0.000
Federal	0.400	0.000	0.000	0.000	0.000	0.000
Nonbudgeted	56.047	0.000	10.000	10.000	10.000	10.000
Total	**$125.047**	**$10.000**	**$45.000**	**$35.250**	**$42.200**	**$25.700**

Recommended Actions

1. Approve.