FB04
Department of Information Technology

Capital Budget Summary

State-owned *Capital Improvement Program*
($ in Millions)

Projects	Prior Auth.	2017 Request	2018 Est.	2019 Est.	2020 Est.	2021 Est.	Beyond CIP
Public Safety Communication System	$271.097	$15.000	$24.000	$17.500	$10.650	$0.000	$0.000
Total	**$271.097**	**$15.000**	**$24.000**	**$17.500**	**$10.650**	**$0.000**	**$0.000**

Fund Source	Prior Auth.	2017 Request	2018 Est.	2019 Est.	2020 Est.	2021 Est.	Beyond CIP
GO Bonds	$154.800	$15.000	$24.000	$17.500	$10.650	$0.000	$0.000
PAYGO GF	27.400	0.000	0.000	0.000	0.000	0.000	0.000
PAYGO FF	0.400	0.000	0.000	0.000	0.000	0.000	0.000
Nonbudgeted Funds	88.497	0.000	0.000	0.000	0.000	0.000	0.000
Total	**$271.097**	**$15.000**	**$24.000**	**$17.500**	**$10.650**	**$0.000**	**$0.000**

CIP: *Capital Improvement Program*
FF: federal funds
GF: general funds
GO: general obligation
PAYGO: pay-as-you-go

For further information contact: Patrick S. Frank Phone (410) 946-5530

Summary of Issues

Public Safety Communication System Project Is Delayed, Which Increases Costs: The Department of Budget and Management (DBM) authorizes $15.0 million. Last year, $28.5 million was planned. The funds are reduced as a cost containment measure. This adds $4.0 million to total project costs and delays realizing the public safety benefits associated with this project. **The Department of Legislative Services (DLS) recommends that funding for this project is restored to the levels programmed for fiscal 2017 in the 2015 session *Capital Improvement Program* (CIP).**

Summary of Updates

Joint Chairmen's Report Addressing High-speed Data Network Improvements: In the 2015 *Joint Chairmen's Report*, DBM, in consultation with the Department of Information Technology (DoIT), was required to report to the committees on high-speed data networks in State facilities. DBM was required to explain procedures for including the cost to connect new State-owned facilities to the State's data networks and ensure that such costs are included in its cost estimates for fiscal 2017 projects. The committees also requested that DoIT review State facilities, including long-term leases, to determine the need for improving connectivity. To the extent that any need was found, DoIT was charged with performing a cost-benefit analysis of the needed improvements. DBM advises that procedures are in place to fund capital project connectivity in the fiscal 2017 new construction. For facilities that are currently in use, DoIT monitors usage and upgrades, if necessary. DoIT is also moving facilities from older copper cables to fiber optic cables, if it is cost neutral.

Summary of Recommended Bond Actions

		Funds
1.	Public Safety Communications System Increase authorization to level proposed in fiscal 2015 capital budget plan.	$13,500,000 GO
	Total Additions	**$13,500,000 GO**

Program Description

Program Description: DoIT supports Maryland's Executive Branch agencies as the principal procurement unit for information technology (IT) services and in establishing a long-range technology infrastructure, encouraging cross-agency collaboration, and advocating best practices for operations and major IT project development management. DoIT identifies and provides opportunities for State agencies to become more technologically efficient, reduce costs, and maximize the State's investment in IT and telecommunications assets.

Budget Overview

DoIT capital's fiscal 2017 request includes only one project, the Public Safety Communications System (PSCS) project. This provides an integrated statewide public safety wireless communication system and a primary radio communication system for public safety first responders throughout the State. The system uses the Public Safety 700 megahertz (MHz) spectrum licensed to the State by the Federal Communications Commission (FCC). The program is also referred to as Maryland First Responders Interoperable Radio System Team (Maryland FiRST).

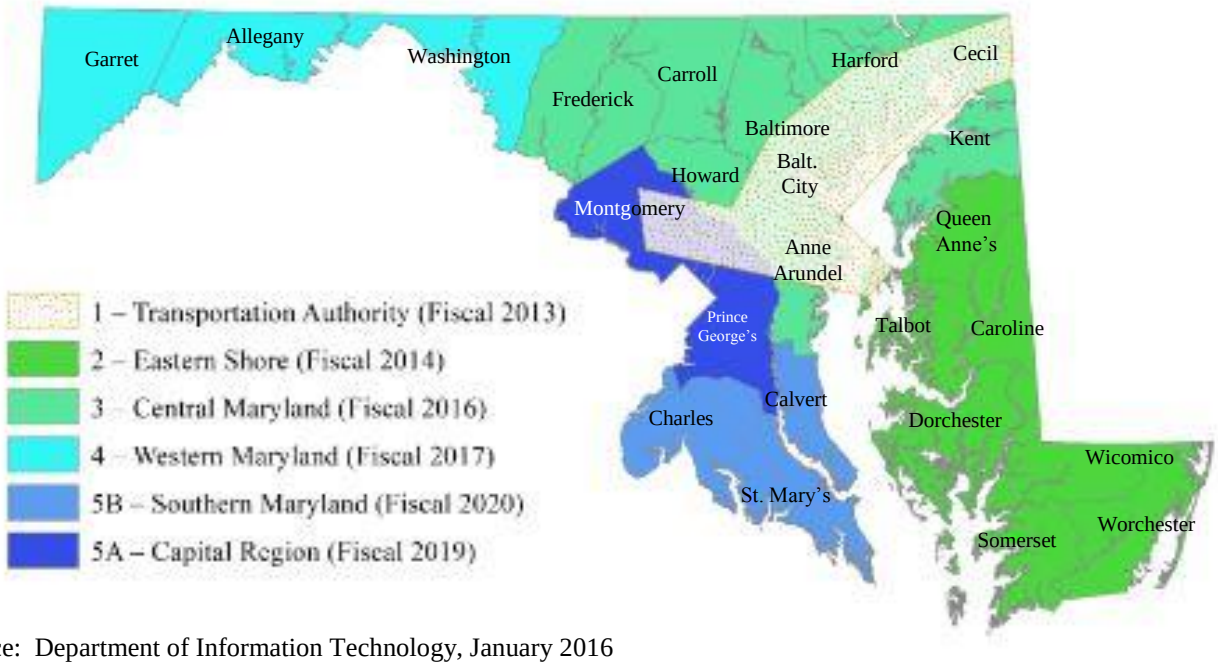
The State has a contract with Motorola to build and renovate infrastructure for this project. Once completed, this radio system will be the primary operating radio system for all State agencies, providing a communications platform for State agencies and allowing for seamless interoperability among State 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.

The project has been divided into the following regions:

- Region 1A is the Maryland Transportation Authority;
- Region 1 is Central Maryland;
- Region 2 is the Eastern Shore;
- Region 3 is the nation's capital area and Southern Maryland; and
- Region 4 is Western Maryland.

Construction did not progress by regions. Instead, the project was divided into six construction phases. The Maryland map in **Exhibit 1** shows the construction schedule by phases, as well as the actual and estimated fiscal year of completion.

Exhibit 1
Schedule for Implementing Maryland FiRST
Fiscal Years Regions Become Operational



Source: Department of Information Technology, January 2016

Phase 3 is currently under construction. DoIT advises that Baltimore County has been operational since August 2015 while Harford and Cecil counties have been operational since October 2015. Testing for Frederick and Carroll counties was completed in December 2015. By June 2016, Anne Arundel and Howard counties should be operational. When Phase 3 is completed, 83% of the State's population will be covered by Maryland FiRST.

The 2016 session CIP modifies the general obligation (GO) bond authorizations required to complete this project. Last year's program assumed $28.5 million in fiscal 2017 and a total remaining cost of $63.2 million. This year's program reduces fiscal 2017 authorizations to $15.0 million but increases total remaining costs to $67.2 million. This delays completion of Southern Maryland's region from fiscal 2017 to 2020. The completion of the national capital area region is now scheduled for fiscal 2019, instead of fiscal 2018.

DBM advises that there have been delays to Region 3 that contribute to delaying Regions 5A and 5B. According to DBM, the project is delayed "due to limited debt capacity."

FCC, which licensed the public safety 700 MHz spectrum for the system, requires that the State meet two build-out benchmarks. The first was that the system provide "substantial service" to one-third of citizens by June 2014. This was achieved in calendar 2012 with the completion of Region 1A. The

second is that two-thirds of the population are provided service by June 2019. DoIT projects that this will be reached at the completion of Phase 3 in fiscal 2016.

Prior year costs increased by $4.5 million in fiscal 2016. The State Highway Administration provided funds to renovate and upgrade its radio communications towers in Western Maryland to ensure that such towers would be compatible with Maryland FiRST.

The system funded with this initiative has an objective of providing full on-street coverage but does not guarantee complete in-building coverage. Prior to implementing the system, an early estimate projected that as many as 230 additional towers may need to be built to provide in-building coverage. Since implementing the system, the coverage has proved to exceed expectations in a number of areas. As a result, the effort it would take to provide in-building coverage appears less than previously anticipated. In some cases, adding an antenna that goes through the building and can transmit from the top of the building is sufficient. **The department should brief the committees on what is required to provide in-building coverage. This should include a discussion of work and costs.**

Issues

1. Public Safety Communication System Project Is Delayed, Which Increases Costs

To slow the growth rate for GO bond debt service costs, the Administration intends to limit total new GO bond authorizations to $995 million in each year of the five-year CIP. For fiscal 2017, this is $34 million less than what was proposed in the 2015 CIP. To realize these savings, fiscal 2017 authorizations for some projects need to be reduced. DBM advises that authorizations for this project were reduced as a cost containment measure.

Exhibit 2 shows that the delay reduces authorizations by $13.5 million in fiscal 2017. However, overall authorizations increase by $4.0 million and project completion is delayed by two years.

Exhibit 2
2015 and 2016 *Capital Improvement Program* Planned Authorizations
Fiscal 2017-2020
($ in Thousands)

	2017	2018	2019	2020	Total
2015 *Capital Improvement Program*	$28,500	$34,650	$0	$0	$63,150
2016 *Capital Improvement Program*	15,000	24,000	17,500	10,650	67,150
Difference	**-$13,500**	**-$10,650**	**$17,500**	**$10,650**	**$4,000**

Source: Department of Budget and Management, January 2016

Department of Legislative Services Recommends Restoring Funding

DLS recommends that funding for this project is restored. The basis for this recommendation is that:

- **The Spending Affordability Committee (SAC) Recommended a Debt Limit Totaling $1,055 Million So Capacity Is Available:** SAC recognizes the need to slow capital spending but did not recommend shrinking the capital budget. Instead, 1% growth of last year's appropriation is recommended so that important initiatives can be funded. This provides sufficient authorization to restore full funding without displacing other projects;

- **It Costs More to Delay the Project:** As shown in Exhibit 2, slowing the pace of the total project build out through fiscal 2020 increases the total project cost by $4 million; and

- **The Benefits of the System, Which DBM Advises Are Substantial, Will Be Realized Sooner If the Funds Are Restored:** The system provides improved interoperability between local, State, and federal agencies. DBM advises that the system will "correct existing emergency communications deficiencies" and "thereby minimizing the loss of life and property." Maryland FiRST was used in April 2015 to support State and local agencies responding to disturbance following the death of Freddie Gray. "The completed portions of the PSCS have thus far been operating beyond expectations," according to DBM.

Updates

1. *Joint Chairmen's Report* Addressing High-speed Data Network Improvements

In the 2015 *Joint Chairmen's Report*, DBM, in consultation with DoIT, was required to report to the committees on high-speed data networks in State facilities. DBM is also required to explain procedures for including the cost to connect new State-owned facilities to the State's data networks and ensure that such costs are included in its cost estimates for fiscal 2017 projects. The committees also requested that DoIT review State facilities, including long-term leases, to determine the need for improving connectivity. To the extent that any need was found, DoIT is charged with performing a cost-benefit analysis of the needed improvements.

Background

DoIT operates networkMaryland, which is a high-speed data network that connects State agencies, libraries, schools, higher education institutions, and local governments. Since the network project began in 1999, network connectivity has become a required feature for State agencies.

DoIT noted that the prior years' capital projects cost estimate worksheets did not consider the cost of including high-speed data networks that connect to networkMaryland in State facilities. Often, the State contracts with private vendors, such as Verizon, to connect facilities with networkMaryland. There were concerns that facilities do not have sufficient capacity or require maintenance to upgrade aging fiber optic cables. Retrofitting these facilities could improve operations.

Fiscal 2017 Project Estimates

DBM advises that steps have been taken to ensure that high-speed data connectivity is now included in fiscal 2017 capital project cost estimates and will be included in future years. Steps are also taken to evaluate connectivity in facilities in use, including:

- DBM now provides DoIT with a list of new construction projects lacking high-speed connectivity data;
- DoIT reviews the list and makes recommendations about which options provide optimal value; and
- DoIT analyzes private contractor costs using a five-year timeframe[1] and compares this to one-time construction expenses.

[1] The five-year timeframe was selected because DoIT does not have confidence that bandwidth needs can be forecast beyond five years with any accuracy.

Connectivity for Existing Buildings

A key aspect of agency connectivity is the bandwidth that an agency needs. As such, DoIT advises that the department regularly evaluates usage. Procedures allow for automatic notification when agencies are close to exceeding their bandwidth. When an agency's utilization reaches 95% of its total bandwidth provided, DoIT is automatically notified and initiates an evaluation of need to increase bandwidth. To understand agency needs, DoIT also holds multi-agency forums to discuss evolving needs based on new applications and systems.

Another aspect is the type of technology. The State-owned network uses two types of technologies, copper cable and fiber optic cable. Copper cable is the older technology. Compared to fiber optic cable, copper cable is not easily expandable and more costly at high bandwidth levels. Fiber optic cable is also considered to be the most robust technology available. Newer technology has increased fiber optic's cost advantages so that it becomes less costly at 3 megabits per second (Mbps) than copper cable. Previously, the cost benefits of fiber optic technology were not realized until the required bandwidth exceeded 6 Mbps. DoIT has identified approximately 150 locations where the current copper connections can be replaced with fiber optic connections at no increase in State costs. These services are being migrated. Another benefit is that the additional cost of increasing bandwidth is quite small once the fiber optic connection exists. DoIT advises that it continues to monitor agency activity and evaluate alternative technologies that may be suitable for replacing current technology.

Operating Budget Impact Statement

Executive's Operating Budget Impact Statement – State-owned Projects
($ in Millions)

	FY 2017	*FY 2018*	*FY 2019*	*FY 2020*	*FY 2021*
Public Safety Communication System					
Estimated Operating Cost	$14.8	$8.0	$6.9	$11.3	$13.4
Estimated Staffing	0	0	0	0	0
Total Operating Impact					
Estimated Operating Cost	**$14.8**	**$8.0**	**$6.9**	**$11.3**	**$13.4**
Estimated Staffing	**0**	**0**	**0**	**0**	**0**

GO Bond Recommended Actions

1. Increase authorization to level proposed in fiscal 2015 capital budget plan.

FB04A Public Safety Communications System ..... $ 28,500,000

Allowance	Change	Authorization
15,000,000	13,500,000	28,500,000

Explanation: To accommodate lower general obligation bond authorization levels, the Department of Budget and Management (DBM) has revised the staged build-out schedule and reduced funding for this project from what was previously scheduled. Since the Spending Affordability Committee recommended a level of debt in excess of the Administration's level, capacity is available. Increasing the authorization and keeping the project on schedule is projected to reduce total project costs by $4 million. DBM advises that the system will "correct existing emergency communications deficiencies" and "thereby minimizing the loss of life and property." The Department of Legislative Services recommends that the project not be delayed so that total costs can be reduced and the benefits of this project are realized sooner.

Total Reductions **$13,500,000 GO**