

FB04
Department of Information Technology – Capital

Capital Budget Summary

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

Project	Prior Auth.	2019 Request	2020 Est.	2021 Est.	2022 Est.	2023 Est.	Beyond CIP
Public Safety Communication System	\$303.907	\$10.500	\$21.740	\$0.000	\$0.000	\$0.000	\$0.000
Total	\$303.907	\$10.500	\$21.740	\$0.000	\$0.000	\$0.000	\$0.000

Fund Source	Prior Auth.	2019 Request	2020 Est.	2021 Est.	2022 Est.	2023 Est.	Beyond CIP
GO Bonds	\$187.610	\$10.500	\$21.740	\$0.000	\$0.000	\$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
Other ¹	88.497	0.000	0.000	0.000	0.000	0.000	0.000
Total	\$303.907	\$10.500	\$21.740	\$0.000	\$0.000	\$0.000	\$0.000

CIP: Capital Improvement Program

FF: federal funds

GF: general funds

GO: general obligation

PAYGO: pay-as-you-go

¹ State Highway Administration funds.

Summary of Recommended Bond Actions

1. Public Safety Communication System

Approve \$10,500,000 in general obligation bonds to continue construction of the 700 megahertz public safety communication system.

2. SECTION 12 – Department of Information Technology – Public Safety Communication System

Approve pre-authorization of \$21,740,000 in general obligation bonds for fiscal 2020 to continue construction of the 700 megahertz public safety communication system.

Budget Overview

The Department of Information Technology (DoIT) fiscal 2019 capital budget includes only one project, the Public Safety Communication System 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. The program is also referred to as Maryland First Responders Interoperable Radio System Team (Maryland FiRST).

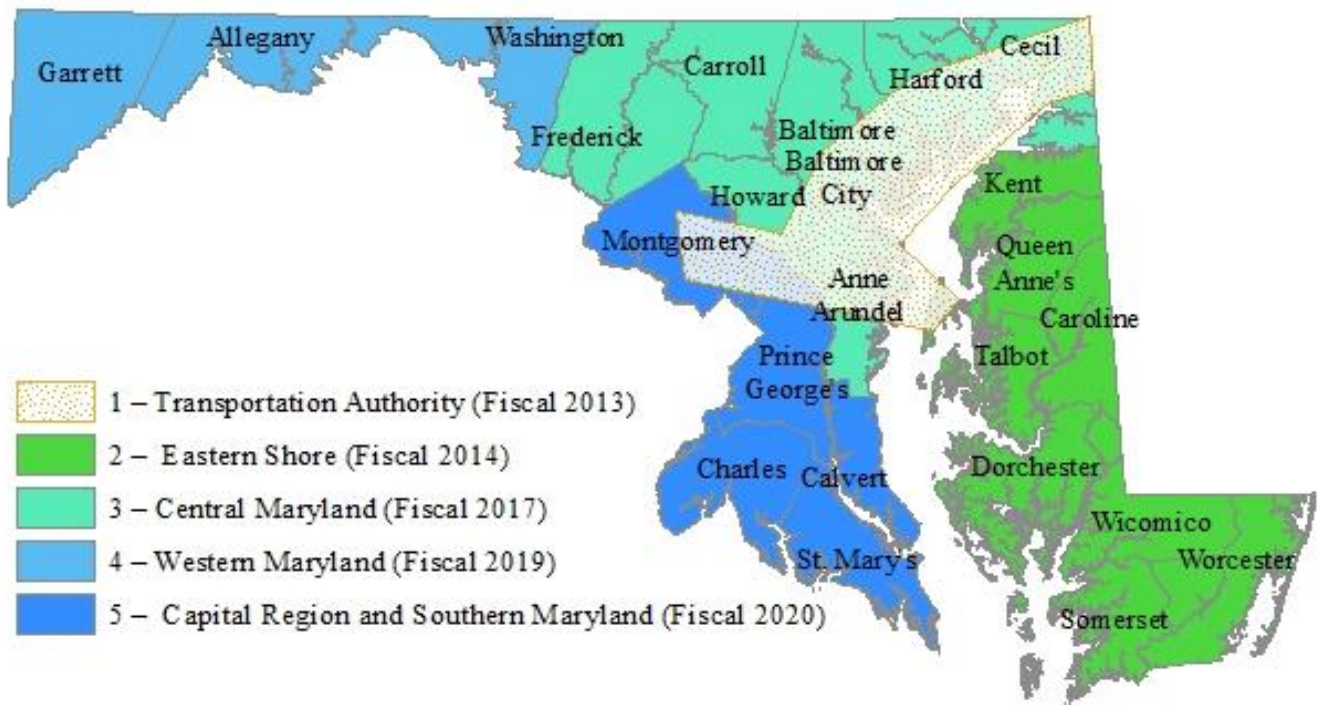
The State has a contract with Motorola to build and renovate infrastructure for this project. Once completed, this radio system will be the primary operating radio system for all State agencies, providing a communications platform for State agencies and allowing for seamless interoperability among State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

Exhibit 1 shows the construction schedule by regions. The regions are:

- Region 1 is the Maryland Transportation Authority and Baltimore City, which became operational in fiscal 2013;
- Region 2 is the Eastern Shore, which became operational in fiscal 2013 and 2014;
- Region 3 is Central Maryland in which Baltimore, Cecil, Carroll, Frederick, and Harford counties became operational in fiscal 2016, while Anne Arundel and Howard counties became operational in fiscal 2017;

- Region 4 is Western Maryland; Washington County became operational in December 2017 while Allegany County is expected to be operational in June 2018 and Garrett County in November 2018; and
- Region 5 is the nation’s capital area and Southern Maryland, which was targeted to be operational in fiscal 2019, but based on programmed funding continuing through fiscal 2020, it is more likely that the region will be fully implemented in late fiscal 2020 or early fiscal 2021.

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



Maryland FiRST: Maryland First Responders Interoperable Radio System Team

Source: Department of Information Technology, February 2018

Based on project cash flow data from DoIT, the Administration is delaying a portion of the funding that was programmed for fiscal 2019 in the 2018 *Capital Improvement Program*. The fiscal 2019 authorization has been reduced from \$15 million to \$10.5 million. **Exhibit 2** shows that the \$4.5 million fiscal 2019 reduction has been added to the fiscal 2020 authorization. The Administration is proposing to pre-authorize the final \$21.8 million in fiscal 2020.

Exhibit 2
Comparison of 2017 and 2018 Funding Plans
 (\$ in Thousands)

	<u>2019</u>	<u>2020</u>	<u>Total</u>
2017 Capital Improvement Program	\$15,000	\$17,240	\$32,240
2018 Capital Improvement Program ¹	10,500	21,740	32,240
Difference	-4,500	4,500	0

¹ The 2018 capital budget bill includes a pre-authorization in the amount of \$21.8 million in fiscal 2020.

Source: Department of Budget and Management

Potential Capital Costs after Completing Region 5

Maryland FiRST should be fully operational by fiscal 2020, after final acceptance testing. Region 4 is operational in Washington County and should be operational in Allegany and Garrett counties by November of this year. Region 5 planning has been completed with additional authorizations supporting construction. Nonetheless, the system may need additional work that is beyond the scope of the original contract. Potential costs include:

- ***Stabilizing System Backhaul:*** The 700 MHz system uses towers to transmit data over large distances. Users are given radios to transmit voice and data information. Backhaul connects the end user to the tower. The Maryland FiRST system uses microwave and fiber as backhaul. Microwave technology is line-of-sight, which can be interrupted. After a system begins operations, inefficiencies are often discovered, such as vulnerabilities and bottlenecks. Additional work may be required to address these inefficiencies. **DoIT should be prepared to brief the committee on the extent to which there are concerns about backhaul that need to be addressed, including potential costs.**

- ***Upgrading to Ethernet Technology:*** The first four regions were designed to use T1 technology, which has a long range and can transit both voice and data information. Ethernet technology has a shorter range and can only transmit data. Since voice can be transformed into data and backhaul distances are short, Ethernet can easily support all that T1 supports. The speed of Ethernet, which is over 100 megabits per second, is a significant advantage over T1, which transmits 1.5 megabits per second. The system’s contractor, Motorola, is only expected to support T1 until 2022 so the State will eventually need to upgrade regions 1 to 4 to Ethernet. **The department should be prepared to brief the committees on why Ethernet technology was not used in regions 1 to 4 and the expected cost of Ethernet upgrades.**

Operating Budget Impact Statement

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

	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Public Safety Communication System					
Estimated Operating Cost	\$0	\$1.990	\$6.649	\$10.080	\$13.068
Estimated Staffing	0	0	0	0	0

The fiscal 2019 allowance includes \$8.9 million in operating costs for the Maryland FiRST radio program. The budget also includes 5 regular positions to operate the program. Costs shown in the table are incremental increases in addition to fiscal 2019 budgeted expenses. Cost increases are primarily attributable to inflation, expiring warranties¹, and anticipated equipment replacement.² No additional staffing is anticipated.

Pre-authorizations and De-authorizations

Exhibit 3 shows that \$4.5 million is deferred into fiscal 2020. Pre-authorizations allow the project to move forward and the Board of Public Works to approve construction if the entire authorization is not provided in the budget year.

Exhibit 3 Pre-authorizations (\$ in Millions)

<u>Project</u>	<u>FY 20</u>	<u>FY 21</u>	<u>FY 22</u>	<u>FY 23</u>	<u>Reason</u>
Public Safety Communication System	\$21.74	\$0	\$0	\$0	Defer \$4.5 million in construction costs from fiscal 2019 to 2020.

Source: Department of Budget and Management, 2018 *Capital Improvement Program*

¹ There is a two-year warranty on the equipment. After two years, the State purchases service contracts, resulting in cost increases two years after the beginning of operations in an area.

² The notional lifecycle replacement schedule for digital subscriber unit radios is 5 to 7 years. However, due to the high cost of each unit, it is recommended that a 7- to 10-year replacement cycle be followed. The estimate begins to replace equipment in fiscal 2021.

GO Bond Recommended Actions

1. Approve \$10,500,000 in general obligation bonds to continue construction of the 700 megahertz public safety communication system.
2. Approve pre-authorization of \$21,740,000 in general obligation bonds for fiscal 2020 to continue construction of the 700 megahertz public safety communication system.