

FB04
Department of Information Technology

Capital Budget Summary

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

Projects	Prior Auth.	2018 Request	2019 Est.	2020 Est.	2021 Est.	2022 Est.	Beyond CIP
Public Safety Communication System	\$276.907	\$27.000	\$15.000	\$17.240	\$0.000	\$0.000	\$0.000
Total	\$276.907	\$27.000	\$15.000	\$17.240	\$0.000	\$0.000	\$0.000

Fund Source	Prior Auth.	2018 Request	2019 Est.	2020 Est.	2021 Est.	2022 Est.	Beyond CIP
GO Bonds	\$160.610	\$27.000	\$15.000	\$17.240	\$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
Nonbudgeted Funds	88.497	0.000	0.000	0.000	0.000	0.000	0.000
Total	\$276.907	\$27.000	\$15.000	\$17.240	\$0.000	\$0.000	\$0.000

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

Summary of Recommended Bond Actions

1. Public Safety Communication System

Approve.

Budget Overview

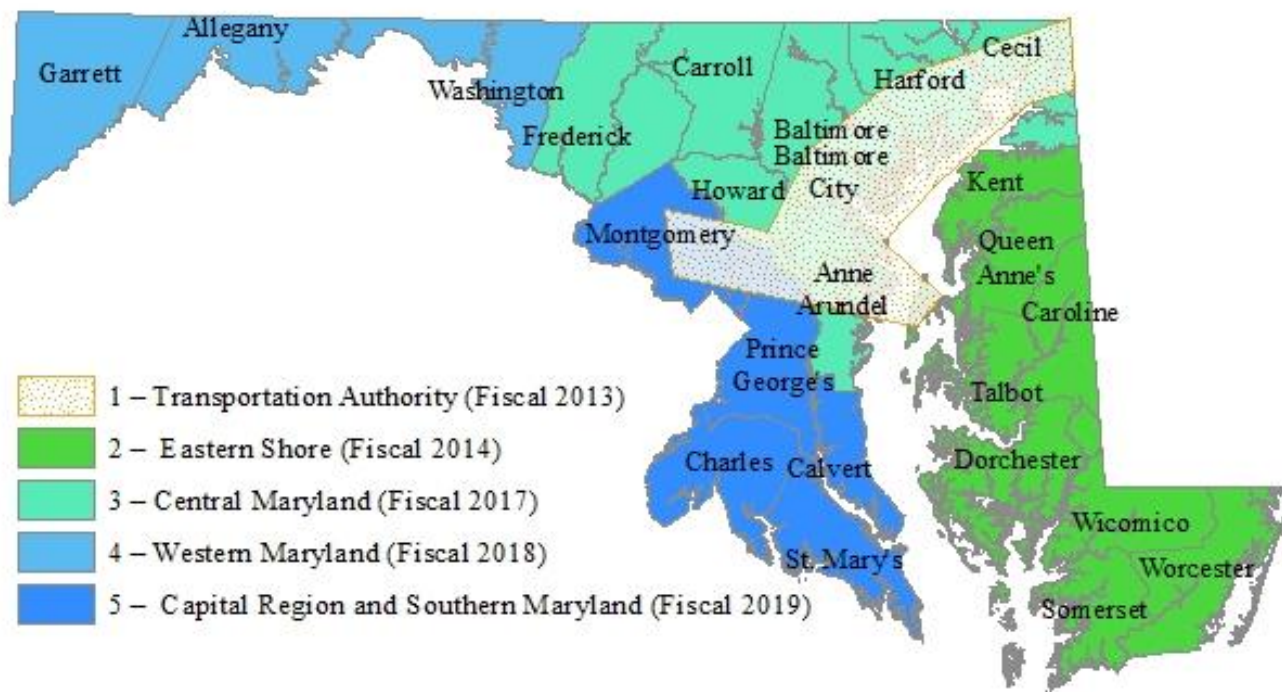
The Department of Information Technology (DoIT) capital fiscal 2018 request includes only one project, the Public Safety Communications System project. This provides an integrated statewide public safety wireless communication system and a primary radio communication system for public safety first responders 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.

The Maryland map in **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 is expected to be operational in the third quarter of fiscal 2017 while Allegany and Garrett Counties are expected to be operational in the second quarter of fiscal 2018; and
- Region 5 is the nation's capital area and Southern Maryland, which is expected to be operational in fiscal 2019.

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



Source: Department of Information Technology, January 2017

In 2016, the Department of Budget and Management reduced the fiscal 2017 general obligation (GO) bond authorization by \$13.5 million (from \$28.5 million to \$15.0 million). This was done as a cost containment measure to reduce spending. The result was to extend funding by two years.

The legislature authorized \$5.8 million in GO bonds, and another \$9.2 million of Rainy Day Fund appropriations were redirected to this project. Redirected Rainy Day Funds totaled \$80.0 million. This included a requirement that the Administration could only transfer all redirected funds. If all funds were not transferred, the entire amount would revert to the General Fund. The Administration has indicated that it will let the funds revert to the General Fund. Consequently, the project, which was projected to receive \$28.5 million, receives \$5.8 million in fiscal 2017. Under the previous schedule, Western Maryland was scheduled to be operational in fiscal 2017.

The Department of Budget and Management advises that Western Maryland is now expected to be operational in fiscal 2018. The final two counties in Central Maryland (Anne Arundel and Howard) did not become operational in fiscal 2016 as was planned. Instead, they became operational in fiscal 2017. **The department should be prepared to brief the committees on the effect of**

reducing fiscal 2017 authorizations on the project cost and schedule. This should include to what extent, if any, the reduced funding contributed to delays in Central and Western Maryland. DoIT should be prepared to describe how the project was managed with reduced funding in fiscal 2017.

This project is nearing the end of construction. Exhibit 2 shows the final GO bond authorization is in fiscal 2020. Compared to the 2015 *Capital Improvement Program* (CIP), total costs are \$1.9 million more in the 2017 CIP.

Exhibit 2
Comparison of 2015 and 2017 General Obligation Bond Costs
(\$ in Thousands)

	<u>2016</u> <u>Actual</u>	<u>2017</u> <u>Actual</u>	<u>2018</u> <u>Estimated</u>	<u>2019</u> <u>Estimated</u>	<u>2020</u> <u>Estimated</u>	<u>Total</u>
2017 CIP	\$29,950	\$5,810	\$27,000	\$15,000	\$17,240	\$95,000
2015 CIP	29,950	28,500	34,650	0	0	93,100
Difference	\$0	-\$22,690	-\$7,650	\$15,000	\$17,240	\$1,900

CIP: *Capital Improvement Program*

Note: These costs exclude \$1.3 million in fiscal 2016 and \$3.2 million in fiscal 2017 to construct four new towers for the State Highway Administration in Western Maryland. The source of the funds is the Transportation Trust Fund.

Source: Department of Budget and Management

The State has been incurring annual operations and maintenance (O&M) costs as the 700 MHz radio system is being built out, phases become operational, and components come out of warranty. These annual O&M costs will continue to increase as the radio system is fully built out and all components come out of warranty. A steady O&M budget level is expected to be achieved in fiscal 2021, with inflationary growth thereafter. In addition, the State will have to start budgeting for life cycle replacement and upgrades as the various different hardware components of the system reach end-of-life and software upgrades are required.

The State 700 MHz radio system is categorized as a digital P25 trunked Land Mobile Radio (LMR) system. As a complex system, LMRs contain the following basic components, all requiring annual O&M support and life cycle replacement:

- ***Communication Site Radio Equipment (Radio Subsystem)***: This includes base station radios, site controllers, antenna combining system, and switches and routers at some 140 tower sites (when fully built out).

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- ***Control Subsystem (Master Sites):*** This is the computer “brain” of the LMR, which includes the hardware and software required to operate the radio subsystem. There will be 3 master core sites and 3 backup sites.
- ***Dispatch Subsystem:*** These are the consoles used by dispatchers located in communication centers and 911 centers throughout the State.
- ***Communication Site Infrastructure:*** This includes land, towers, antennas, and building/shelters; power, electrical, generators, uninterruptable power supplies systems and grounding; alarm systems; and heating, ventilation, and air conditioning systems. There are currently 78 sites in operation. When fully built out, there will be about 140 sites.
- ***Transport Subsystems:*** These are the backbone networks that include the fiber optic and microwave systems that connect all the components of the LMR.
- ***Subscriber Radio Subsystem:*** Subscriber units are mobile (vehicle mounted) and portable (handheld) radios. Also, part of this category is the associated accessories and attachments for these radios. Between fiscal 2014 and 2018, 12,510 subscriber units will have been procured for about \$70 million.

The various components have different O&M service arrangements:

- ***Radio System/Master Sites/Dispatch Subsystem Level Components:*** Currently, the daily O&M, monitoring, and break/fix activities are being performed by Motorola via maintenance extension plans approved under the project contract. The maintenance plans that are in effect run until November 2018, with an option year to November 2019. DoIT is in negotiations with Motorola to extend this maintenance plan with additional option years. This extension will also include a System Upgrade Assurance (SUA) agreement that will provide for software upgrades and life cycle replacement for much of the radio system level components. In fiscal 2018, \$5.1 million (out of the \$7.7 million in the program) is for the maintenance extension plans. Maintenance costs are phased in until fiscal 2021, at which point operating costs total \$15.1 million, of which at least \$12.1 million will be maintenance of radio system level components.
- ***Transport Subsystems:*** These are owned by State agencies, which are responsible for the maintenance costs. Much of these costs are already budgeted in agency budgets. The statewide maintenance budget is unclear.
- ***Communication Site Infrastructure:*** This equipment is owned or leased by various agencies and will be maintained by these agencies. Much of these costs are already budgeted in agency budgets. The statewide maintenance budget is unclear.

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- ***Subscriber Radio Subsystem:*** Non-State agencies are responsible for purchasing and maintaining their subscriber units. State agencies need to budget for the replacement of lost, stolen, or broken radios and for accessories such as holsters, microphones, ear pieces, surveillance kits, antennas, *etc.* The statewide maintenance budget for subscriber units is unclear.

Most life cycle replacement costs are in addition to the annual O&M costs. Again, different components have different life cycle replacement schedules and costs.

- ***Radio System/Master Sites/Dispatch Subsystem Level Components:*** As noted above, DoIT is in negotiations with Motorola to include an SUA agreement, as part of the maintenance extension plan that will provide for software upgrades and life cycle replacement for much of the radio system level components on a schedule commensurate with the life cycle of the particular radio component. There are some relatively small SUA costs in fiscal 2018 and 2019. In fiscal 2020, the cost is expected to be about \$2.5 million with annual inflationary growth thereafter. These costs have been built into the radio system level O&M costs estimates stated above.
- ***Transport Subsystems:*** Life cycle replacements for backbone network components are generally longer term items and should be budgeted for by the various State agencies. The statewide life cycle replacement budget is unclear.
- ***Communication Site Infrastructure:*** Life cycle replacements for facility equipment components are generally longer term items and should be budgeted for by the various State agencies. The statewide life cycle replacement budget is unclear.
- ***Subscriber Radio Subsystem:*** The notional life cycle 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. Early indications are that replacement will need to begin in fiscal 2020 to 2021 at a cost of \$8.0 million to \$9.0 million per year (this is in addition to the requested O&M cost).

DoIT should be prepared to discuss maintenance and replacement costs associated with the new Maryland FiRST system.

Operating Budget Impact Statement

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

	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
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Maryland FiRST						
	Estimated Radio Program Operating and Maintenance Cost	\$7.700	\$10.100	\$12.800	\$15.100	\$15.400
	Estimated Staffing	7	7	7	7	7
Total Operating Impact						
	Estimated Operating Cost	\$7.700	\$10.100	\$12.800	\$15.100	\$15.400
	Estimated Staffing	7	7	7	7	7

Note: The exhibit includes total costs and positions of the radio program (F50B04.07), which administers Maryland FiRST.

Source: Department of Information Technology, January 2017

GO Bond Recommended Actions

1. Approve.