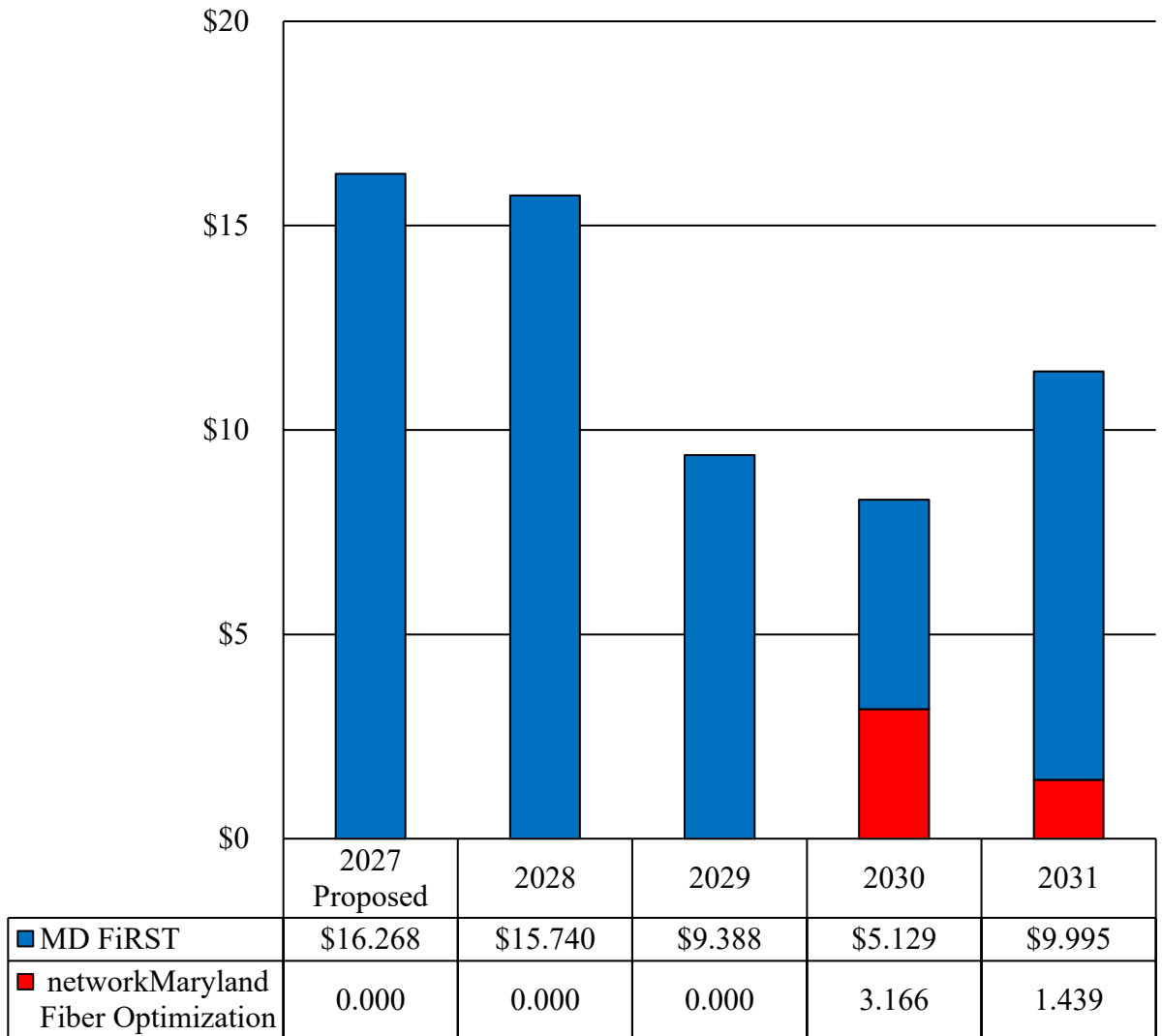


F50*
Department of Information Technology – Capital

Capital Budget Summary

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



MD FiRST: Maryland First Responders Interoperable Radio System Team

Note: Funding for fiscal 2027 to 2031 is provided with general obligation (GO) bonds. Prior funding totaling \$550 million has been authorized for the MD FiRST Project, including \$429.1 million in GO bonds, \$93.5 million in nonbudgeted funds, and \$27.4 million in pay-as-you-go general funds.

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Key Observations

- ***New Sole-source Motorola Maintenance Contract:*** The original Maryland First Responders Interoperable Radio System Team (MD FiRST) contract with Motorola ended on November 16, 2025. A new 10-year sole-source maintenance contract with Motorola was approved by the Board of Public Works on November 19, 2025. According to the Department of Information Technology (DoIT), the services to maintain and upgrade the system could not be procured from other vendors due to the proprietary nature of Motorola’s network infrastructure. The new contract covers only the maintenance component of MD FiRST infrastructure with four system upgrades over the 10-year period. DoIT is currently working on renewing the master contract for radio communications, which will cover radio subscriber purchases and additional MD FiRST infrastructure, including new radio sites, radio consoles, antenna replacements, and microwave or backhaul equipment. During the 2025 session, DoIT explained that the department planned to exercise a no-cost extension for one to two years for Motorola to complete the work for the projects that received funding in fiscal 2024 and 2025. **DoIT should comment on the status of the no-cost extension of the original Motorola contract, including the period covered by the extended contract. DoIT should clarify whether the no-cost extension includes work for the projects that received funding in fiscal 2026 as well. DoIT should further clarify if new solicitations will be required for all projects receiving funding in fiscal 2027 and the out-years.**
- ***New MD FiRST Subprogram Included Beginning with Fiscal 2027 Budget:*** The fiscal 2027 budget includes a new subprogram for MD FiRST to replace and upgrade the current Motorola GTR 8000 base station radio/radio transceiver with the D-series base station radio, as Motorola is ending support for the current equipment effective December 31, 2032. This subprogram was not included in the original capital master plan for MD FiRST. **DoIT should update the committees on a revised capital master plan that incorporates the new subprogram beginning in fiscal 2027, including the department’s plan to identify additional deficiencies, planned solutions to address them, timeline for implementing the planned solutions, and estimated total cost.**

GO Bond Recommended Actions

1. Approve all general obligation bond authorizations for the Department of Information Technology.

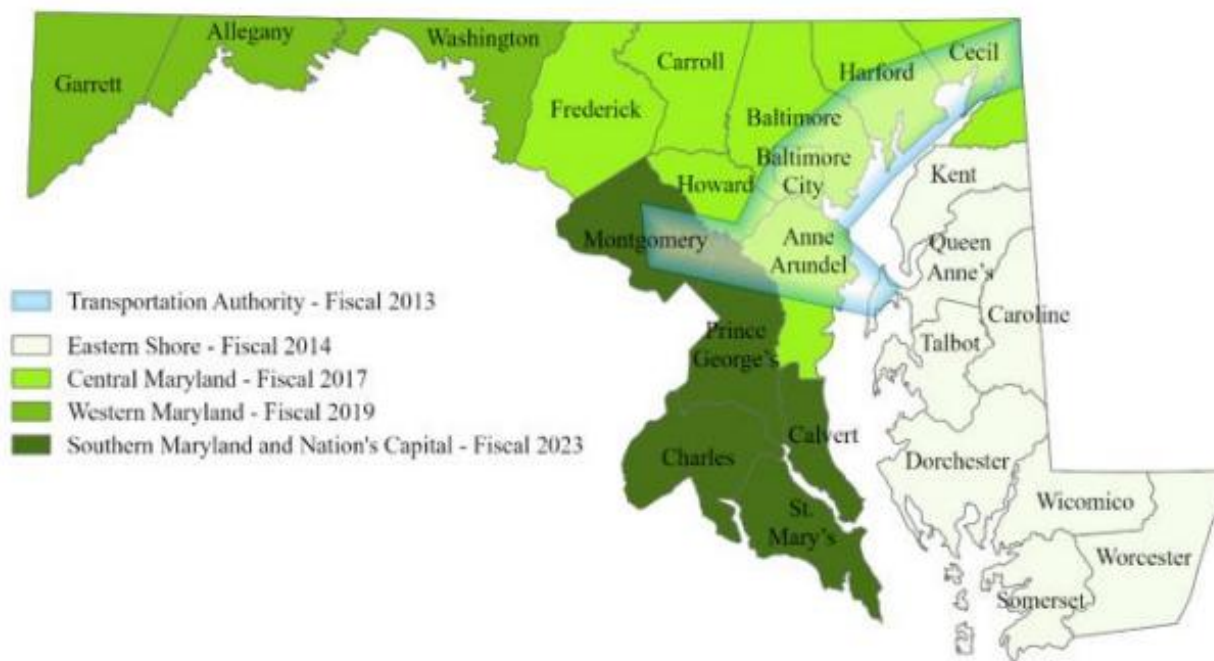
Summary of Fiscal 2027 Funded State-owned Projects

Maryland First Responders Interoperable Radio System Team

The fiscal 2027 capital budget for DoIT includes one project, the MD FiRST project. This provides an interoperable statewide public safety radio communications 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. MD FiRST was previously referred to as the Public Safety Communications System.

MD FiRST provides the primary operating radio system for all State agencies, providing a communications platform for State agencies and seamless interoperability among users and first responders at all levels of government. Interoperable communication is the ability for first responders to transmit voice and data communications in real time, regardless of agency or jurisdictional boundary. The system supports local jurisdictions as primary and interoperability users, as well as supporting Maryland jurisdictions, jurisdictions from neighboring states, and federal partners as interoperability users. The project initiated in calendar 2010. Upon completion in April 2023, the infrastructure consists of a communication backbone of approximately 170 transmitter sites, which include communication towers, equipment shelters, radio equipment, and data communication equipment. According to DoIT, the system currently supports approximately 34,000 primary users and 98,000 interoperability users as of January 2026. **Exhibit 1** shows the five phases of the project's initial buildout that are now complete and operational, with counties grouped geographically within a given phase.

Exhibit 1
Schedule for Implementing MD FiRST
Fiscal Years That Regions Became Fully Operational



MD FiRST: First Responders Interoperable Radio System Team

Source: Department of Information Technology

Ethernet Conversion Update

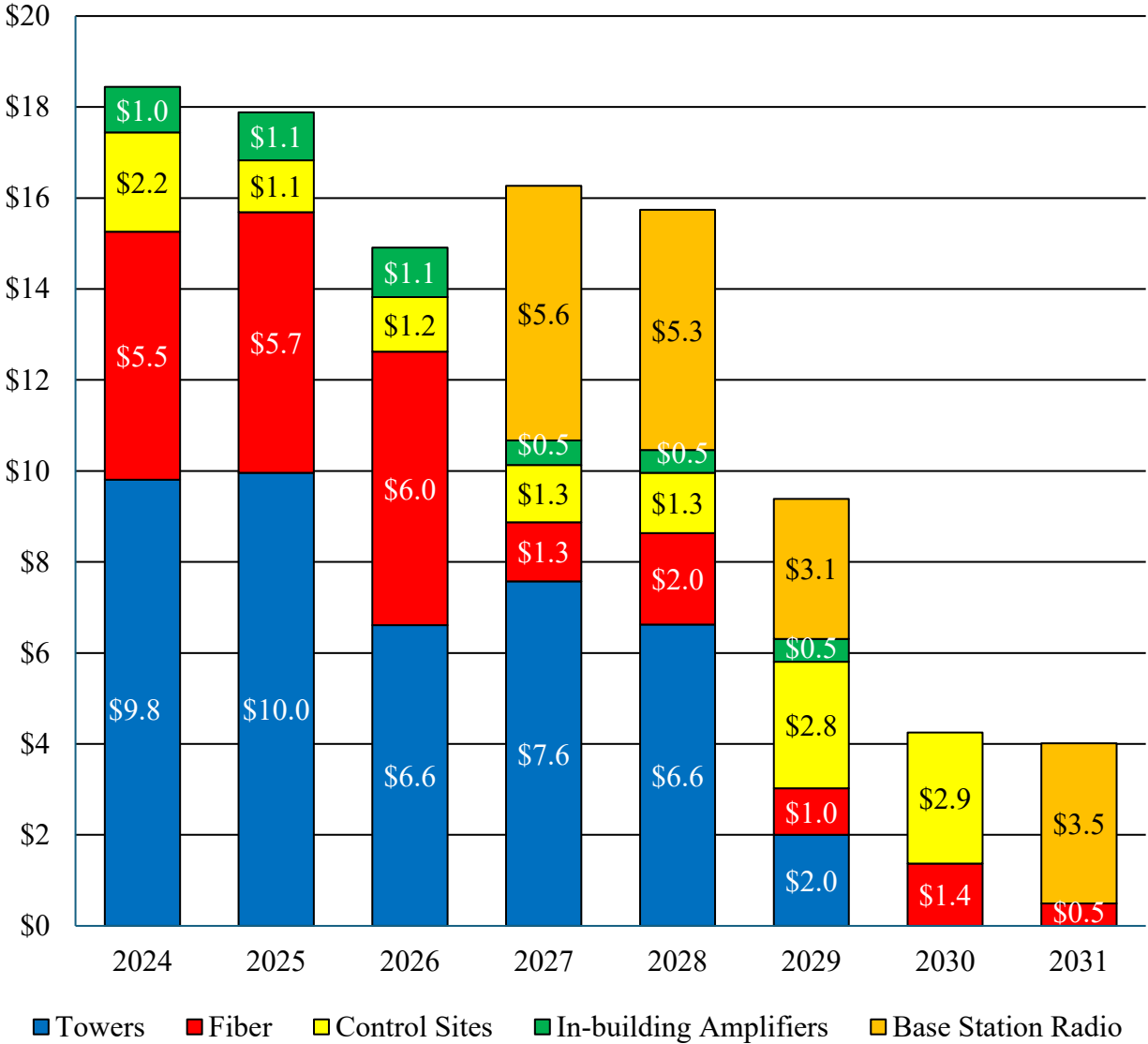
The 700 MHz system vendor no longer supports the T-1 technology. While Phase 5 of the system for the nation's capital area and Southern Maryland was designed using ethernet technology, Phases 1 through 4 were implemented using T-1 technology to leverage existing State assets and contain project costs. In September 2025, an ongoing upgrade to ethernet for Phases 1 through 4 was completed and is fully operational. Transition of all project data and documentation from Motorola to the State is expected to be completed by March 2026. Ethernet is the current radio industry standard for backhaul and provides capabilities that T-1 technology did not offer. Ethernet has the capability of carrying more data throughout the system, as it has greater bandwidth than T-1. In addition, it provides greater resilience due to the nature of its routing capabilities.

MD FiRST Shifts Focus to Filling Gaps

The infrastructure build of the 700 MHz radio communication system is complete and operational as of April 2023. MD FiRST has identified three deficiencies in the existing emergency communications systems: (1) the lack of interoperability between State, local, and federal agencies; (2) poor coverage in certain geographic areas; and (3) the expense of maintaining multiple incompatible radio systems. The identification of gaps has now shifted the program's focus to construct improvements to meet current and future requirements of the State under the Coverage Improvement Program. DoIT prepared a master plan that identified improvement areas to address these deficiencies. As a result, four subprograms were identified and started in fiscal 2024 to provide additional functionality to system users and improve system operability, resilience, and performance. The planned features include additional radio sites, installation of in-building antenna systems, redundant control sites, and an expansion of fiber optic to replace microwave transmission. Beginning in fiscal 2027, a new subprogram, which is not included in the master plan, has been added to MD FiRST's *Capital Improvement Program (CIP)*, which will replace and upgrade the current base station radios due to the end of full support by the vendor beginning in calendar 2033.

Exhibit 2 shows planned features to fill the gaps in the existing emergency communication system and their costs for coverage and site improvements from fiscal 2024 to 2031. The total estimated cost from fiscal 2027 through the end of fiscal 2031 is \$56.5 million. The new subprogram to replace and upgrade base station radios is added beginning in fiscal 2027. Funding for two planned projects, fiber optics expansion and in-building amplifier installations, is reduced to offset the cost for the base station radio modernization project to be consistent with the estimates presented last year. The fiscal 2027 allowance for fiber optics expansion is reduced by 79.4%, or \$5 million, and the in-building amplifier installation amount is reduced by 52.4%, or \$590,000, to provide \$5.6 million in funding for the base station radio modernization project in fiscal 2027. Fiscal 2027 funding totals \$16.3 million, consistent with the amount planned in last year's CIP.

Exhibit 2
MD FiRST Coverage Improvement Program Capital Costs
Fiscal 2024-2031
(\$ in Millions)



MD FiRST: First Responders Interoperable Radio System Team

Source: 2026 Capital Improvement Program

Planned Radio Tower Sites to Improve Coverage

The system’s infrastructure consists of a communication backbone of approximately 170 radio transmitter sites (including towers and shelters), radio equipment, fiber and microwave transport, and data communications equipment. The system is designed for on-street radio coverage but also provides a level of in-building coverage in many areas. DoIT has gathered system radio coverage data across most of the State. The department has found some deficiencies in the coverage and the backend infrastructure that is addressed in the CIP.

To mitigate these deficiencies, DoIT is adding additional transmitter radio sites to the system in areas with demonstrable coverage gaps. This project was allocated \$9.8 million in fiscal 2024, \$10 million in fiscal 2025, and \$6.6 million in fiscal 2026. In fiscal 2027, this project would receive an additional \$7.6 million and a total of \$8.6 million from fiscal 2028 through 2029. No radio frequency (RF) site is planned after fiscal 2029. **Exhibit 3** shows planned radio sites. **DoIT should comment if the department is considering or investigating any new sites that may require funding beyond fiscal 2029.**

Exhibit 3 Planned Radio Sites Fiscal 2024-2029

<u>Fiscal Year</u>	<u>County</u>	<u>Site Name or Identifier</u>	<u>Site Status</u>	<u>Project Status</u>
2024	Garrett	Oakland	Existing	Complete
2024	Allegany	Cumberland	Greenfield	Completion of final construction drawings in progress; TORFP drafted
2024	Howard/Baltimore	Patapsco SP	Greenfield	Completion of environmental planning with MDE in progress; TORFP drafted
2024	Queen Anne’s	Queenstown	Greenfield	MOU with SHA in process
2025	Allegany	Barton Valley	Existing	Site lease executed; TORFP for shelter drafted
2025	Garrett	New Germany SP-1	Greenfield	Active procurement
2025	Talbot	St. Michaels	Greenfield	In process
2025	Montgomery	Bretton Woods	Existing	Target go-live: 05/15/2026
2026	Dorchester	Cambridge	Greenfield	Soil test and MoU for site use with county in process
2026	Montgomery	Burtonsville	Existing	MoU with county in process
2026	Garrett	Accident	Existing	Site lease with tower owner underway
2027	Prince George’s	Bowie	Existing	
2027	Garrett	New Germany SP-2	Greenfield	

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<u>Fiscal Year</u>	<u>County</u>	<u>Site Name or Identifier</u>	<u>Site Status</u>	<u>Project Status</u>
2027	Frederick/Carroll	New Market	Existing	
2028*	Charles	Budd’s Creek	Existing	
2028*	Washington	Boonsboro	Existing	
2028*	Dorchester	Bishops Head	Existing	
2029*	Montgomery	Dickerson	Greenfield^	

MDE: Maryland Department of the Environment

MOU: Memorandum of Understanding

SHA: State Highway Administration

TORFP: Task Order Request for Proposals

*Sites are subject to change pending further site investigation activities.

^This site will be constructed by Montgomery County.

Note: Funding for fiscal 2024, 2025, and 2026 sites is already approved. A greenfield site is a site where a new tower must be built.

Source: Department of Information Technology

DoIT attempts to use or build towers on State-owned properties to minimize the cost of purchasing or leasing real estate. The costs to develop transmitter sites can vary substantially by site, depending on the available assets and site geography. These variable costs include the costs to build the tower and shelter, remediate an existing tower, purchase and install equipment, and implement fiber and/or microwave backhaul. The department prioritizes location based on the factors to maximize available funding. These key factors, in order of highest to lowest, are:

- locations where a State tower, equipment shelter, and backhaul communication equipment already exist;
- locations where a county or commercial tower exists; however, backhaul and/or equipment shelters may not be present;
- greenfield sites where there is no tower, equipment shelter, and existing backhaul; however, a partner may provide funding for a new tower; and
- greenfield sites where there is no tower, equipment shelter, and existing backhaul communication equipment and no outside funding is available.

Fiber Optic Expansion

MD FiRST uses fiber and microwave backhaul to transmit voice and data between transmitter sites and often over large geographical distances. The backhaul network was

constructed using existing State microwave and fiber assets wherever possible. While microwave is a reliable means of data transportation, there are opportunities to expand the use of fiber optics to supplement or replace the reliance upon microwave. This mitigates performance issues during weather conditions like storms and extreme heat. DoIT is using revenues from resource-sharing agreements to improve the existing backhaul network. Dark fiber included in these runs could also benefit and support rural broadband initiatives.

The expansion of fiber optics infrastructure was allocated \$5.5 million in fiscal 2024, \$5.7 million in fiscal 2025, and \$6.0 million in fiscal 2026. **Exhibit 4** shows the status of the fiber optics projects that have already received funding. The infrastructure expansion would receive \$1.3 million in fiscal 2027 and a total of \$4.9 million from fiscal 2028 through 2031. As mentioned above, this is \$5.0 million less than what was planned in last year’s CIP for fiscal 2027 and \$6.1 million lower than previously planned from fiscal 2028 through 2031 in order to provide funds for the new base station radios project. DoIT still plans to complete the previously planned level of fiber optic expansion, with work deferred beyond the current CIP planning period. The fiscal 2027 budget includes two fiber optics projects: (1) Hanover (estimated at \$300,000); and (2) Valley Lee (Route 235) to the Maryland State Police Barrack in Leonardtown (estimated at \$1 million). There is a total of five fiber optics projects planned from fiscal 2028 to 2031.

Exhibit 4
Fiber Optics Project Status
Fiscal 2024-2026

<u>Fiscal Year</u>	<u>Project</u>	<u>Status</u>
2024	Assateague to Berlin	Implementation
2024	Denton to Federalsburg	Implementation
2025	Sudlerville to Massey to Galena	Engineering complete
2025	Carole Highlands	Engineering complete
2025	Still Pond to Chestertown	Implementation
2025	Mount Savage	Engineering in progress
2026	Smallwood to Douglas Point	Funding approved
2026	Indianhead to Smallwood	Funding approved
2026	Lusby to Leonardtown Maryland State Police	Funding approved

Source: Department of Information Technology

In-building Antennas

The system was designed for on-street coverage. As the system has been implemented, MD FiRST has identified areas with in-building coverage gaps. The use of adjunct technology, such as bi-directional amplifiers (BDA), may be used to supplement radio coverage in buildings

and within smaller and discrete geographic areas to improve on-street and in-building coverage. Adding BDAs can be a cost-effective solution that reduces coverage gaps and enhances radio coverage in schools, State parks, tunnels, and critical infrastructure like hospitals and government buildings. This project element was allocated \$1.0 million in fiscal 2024, \$1.1 million in fiscal 2025, and \$1.1 million in fiscal 2026. The project receives \$535,000 for two planned BDA installations statewide in fiscal 2027, which is \$590,000 lower than planned in last year's CIP to provide funds for the new base station radio replacement project. From fiscal 2027 through 2028, this project is estimated to receive a total of \$1.0 million, which is \$2.6 million lower than last year's CIP. **DoIT should provide a status update on the projects that have received funding since fiscal 2024.**

Georedundant Prime/Control Sites

MD FiRST radio towers are grouped into 22 geographical areas, usually within a county, to form a connected cell. Each cell has a prime site that controls and manages information while connecting that cell to the rest of the network. Adding a second and geographically redundant prime/control site within each cell provides redundancy in the event the primary controlling site is disabled due to planned or unplanned events. This reduces the risk of a large-scale radio coverage outage.

This objective was allocated \$2.2 million in fiscal 2024, \$1.1 million in fiscal 2025, and \$1.2 million in fiscal 2026. Installation planning is currently underway for the two projects that received funding in fiscal 2024 and 2025. The CIP programs an additional \$2.6 million for fiscal 2027 to 2028 to add one georedundant prime each year and \$5.7 million to add two georedundant primes each in fiscal 2029 and 2030. The order for adding them is prioritized by (1) the number of users affected should the simulcast cell go down and other considerations such as the location of the seat of government; (2) the amount of coverage (or lack thereof) a simulcast cell area has from the surrounding cells and independent radio towers not tied to a cell (for example, counties that are located in the corners of the State have little to no beneficial coverage from surrounding sites); and (3) counties that are primary users since they do not have another radio system. Based on these priorities, DoIT proposes the following schedule:

- ***Fiscal 2027:*** \$1.3 million for the Cecil County simulcast cell;
- ***Fiscal 2028:*** \$1.3 million for the Allegar (partial Allegany County and partial Garrett County) simulcast cell;
- ***Fiscal 2029:*** \$1.4 million each for simulcast cells in Worcester/Somerset County and Montgomery County; and
- ***Fiscal 2030:*** \$1.4 million each for simulcast cells in Howard and Prince George's counties.

Base Station Radio Modernization

A base station radio/radio transceiver serves as a fixed communication hub that facilitates wireless connectivity between local devices and a wider network. MD FiRST currently has 1,064 Motorola GTR 8000 base station radio/radio transceivers at approximately 145 RF sites statewide. Each RF site carries 6 to 16 base station radios, and each base station radio allows up to 10 simultaneous conversations over a single communication channel. The current vendor has announced end of support for the current GTR 8000 equipment effective December 31, 2032. DoIT notes that Motorola has agreed to extend equipment support through December 31, 2039; however, there is no performance guarantee for support during this seven-year extended support period. This new project replaces the current GTR 8000 equipment with the D-Series base station radio with a six-channel RF site setup. The D-Series uses one channel as the control channel and the remaining five channels support 10 simultaneous conversations.

This project is allocated \$5.6 million in fiscal 2027 and a total of \$11.9 million from fiscal 2028 through 2031. Funding for this project comes from reduced funding for fiber optics expansion and in-building amplifier installation projects from fiscal 2027 to 2030. The estimated total cost of this project is \$76.4 million. DoIT plans to replace 20% of the total inventory of the current GTR 8000 equipment from fiscal 2027 to 2030, and the remaining 80% is expected to be completed by fiscal 2040 when the seven-year extended support by Motorola ends. DoIT plans to replace the older GTR 8000 equipment first and has identified 13 RF sites for fiscal 2027:

- **Caroline County:** Denton State Highway Administration (SHA), Federalsburg, and Goldsboro;
- **Dorchester County:** Bucktown State Shelter, Vienna SHA, and Smithsville;
- **Kent County:** Chestertown, Massey, Rock Hall, and Still Pond; and
- **Queen Anne's County:** Metapeake, Safety Drive, and Sudlersville.

Summary of Out-year State-owned Projects

- **networkMaryland Fiber Optimization Program:** The networkMaryland fiber optimization program transitions the current last mile leased circuits from third-party service providers to network Maryland-owned fiber, which is State-owned infrastructure. This program aims to increase broadband access and bandwidth, improve public safety, and promote digital equity in unserved and underserved areas by connecting government buildings, schools, libraries, health care centers, and police and fire facilities to State-owned fiber infrastructure. This project is expected to start in fiscal 2030. The estimated cost for this project is approximately \$3.2 million in fiscal 2030 and \$1.4 million in fiscal 2031. The estimated total project cost is \$10.8 million.

Appendix 1
Executive’s Operating Budget Impact Statement – State-owned Projects
Fiscal 2027-2031
(\$ in Millions)

	2027	2028	2029	2030	2031
Maryland First Responders Interoperable Radio System Team					
Estimated Operating Costs	\$19.900	\$21.098	\$22.638	\$23.671	\$24.660
Estimated Staffing	8.0	8.0	8.0	8.0	8.0

The fiscal 2027 allowance includes \$19.9 million in operating costs for the MD FiRST radio program. The budget also includes 8 regular positions to operate the program. Costs for contracts total \$18.2 million, which is about 91% of the operating budget.

State agencies using the system are charged to cover the radio program’s operating expenses, but non-State organizations are not charged. The State is encouraging non-State agencies to use the system and is concerned that charging them would discourage use. Hence, operations are funded through reimbursable funds from State agencies. These charges are based on the number of subscriber radios that each agency has registered on the system, with agencies that have more radios registered being charged more. Additional costs related to replacing subscriber radio equipment and dispatch consoles will be borne by the agencies and will be appropriated in the agencies’ budgets.