

FB04B
Department of Information Technology – Capital

One Maryland Broadband Network (Statewide)

General Obligation Bonds	\$5,000,000
PAYGO FF	\$51,678,068

Summary of Recommended PAYGO Actions

1. Concur with the Governor's allowance.

Summary of Recommended Bond Actions

1. Approve.

Bill Text: One Maryland Broadband Network. Provide funds for the construction of a statewide fiber optics network.

Project Description: Construct additional fiber optic lines to connect government and private broadband networks. The network will connect lines to anchor institutions, such as schools, libraries, hospitals, and public safety agencies. The benefits of the system are improved access, increased bandwidth, and reduced operating costs.

Project Summary Information

Total Costs
(\$ in Thousands)

Source	Prior Authorizations	Fiscal 2013	Fiscal 2014	Total
GO Bonds	\$5,800	\$5,000	\$1,200	\$12,000
Federal Funds	51,632	51,678	11,930	115,240
Nonbudgeted Funds	31,177	0	0	31,177
Total	\$88,609	\$56,678	\$13,130	\$158,417

Source: Department of Budget and Management, *Capital Improvement Program*, January 2012

Project Analysis

In September 2010, the State was awarded a \$115.2 million federal grant for the One Maryland Broadband Network project. The grant required that funds be expended by August 31, 2013. In January 2011, the Department of Information Technology (DoIT) submitted a \$26.4 million federal fund budget amendment. The department advised that the project is an expansion of the network Maryland High Speed Data Network project. As such, Section 33 of the fiscal 2011 budget bill (Chapter 482 of 2010) requires budget committee consideration for projects increasing the scope of a capital project by more than 7.5% of the cost estimate. Therefore, DoIT requested budget committee approval of the project, which was granted in January 2011.

Funding and Project Description

The federal funds supporting the One Maryland Broadband Network project were received from the U.S. Department of Commerce's Broadband Technology Opportunities Program. The federal funds were authorized in the American Recovery and Reinvestment Act of 2009 (ARRA). State and local entities are required to provide a 20% match to the federal funds.

DoIT advises that Maryland currently has a fiber optic backbone totaling 2,456 miles. This includes the State-owned network Maryland network and the Maryland Broadband (MdBC) network. While this covers much of the State, there are areas in the western, eastern, and southern portion of the State (including Anne Arundel County) that do not have high-bandwidth fiber optic cable available. Another issue is that these independent networks are not connected to each other.

The project proposes to add approximately 1,300 miles of fiber optic cable lines. This will be added to all 24 of Maryland's jurisdictions. The network will increase bandwidth, improve access to online content, and reduce operating costs by eliminating or reducing leased fiber and converting standard telephone service to voice over Internet protocol. The project will provide capacity to provide broadband service to households and business, but these services will need to be provided by private partners, and creating these connections is not part of the One Maryland Broadband Network project.

Though some cost savings are anticipated, the primary benefit of the proposed network is the improved connectivity that high-bandwidth fiber optic cables offer. The fiber optic cables will connect over 1,000 community anchor institutions. These institutions include K-12 schools, community colleges, higher education institutions, libraries, government facilities, and health care facilities. The proposed network is anticipated to improve public safety by enhancing emergency communications, connecting operations centers, and allowing updates to Next-Generation 9-1-1 systems. Health care benefits include connecting hospitals, health care professionals, and medical parks, as well as helping jurisdictions meet the requirements of the ARRA's Health Information Technology for Economic and Clinical Health Act.

The total cost of the project is currently estimated at \$158.4 million. **Exhibit 1** shows that this includes \$34.4 million in cash contributions and \$8.8 million in in-kind contributions. In-kind contributions include project management, engineering, existing fiber optic cables, and equipment provided for the project. **Appendix 1** lists the cash matches, and **Appendix 2** lists the in-kind matches.

Exhibit 1
One Maryland Broadband Network Fund Sources
(\$ in Millions)

<u>Source</u>	<u>Amount</u>
Federal Funds	\$115.2
Cash Matches	
State Cash Match	\$14.5
Other Entities Cash Match	19.8
Subtotal	\$34.4
In-kind Matches	
State In-kind Match	\$2.7
Other Entities In-kind Match	6.1
Subtotal	\$8.8
Total Project Funds	\$158.4

Source: Department of Information Technology, January 2011

Project Partners

In addition to DoIT, the project includes a number of partners. These partners include local governments, nonprofit organizations, and State agencies.

The largest partner is the Inter-County Broadband Network (ICBN), which is led by Howard County and also includes Anne Arundel, Baltimore, Carroll, Harford, Montgomery, and Prince George's counties, the city of Annapolis, and Baltimore City. ICBN has been identified as a sub-recipient of the grant and will be managing the construction of the network in central Maryland.

Local government partners include Allegany, Calvert, Caroline, Frederick, Garrett, Kent, Queen Anne's, Somerset, and Wicomico counties. These counties will be contributing \$608,700 in cash to the project. DoIT advises that this is a statewide project, and new fiber optic lines will be installed in counties that are not contributing to the construction of the network. The construction of fiber optic lines outside the ICBN will be managed by DoIT.

MdBC is a private nonprofit cooperative telecommunications provider that operates a fiber optic network and provides broadband services to rural parts of Maryland. The State has invested in MdBC through the Rural Broadband Assistance Fund that was established in Chapter 269 of 2006. MdBC received \$2.0 million in general funds, \$9.8 million in State revenues from Maryland Economic Development Assistance Authority and Fund, and \$5.3 million in federal fund grants. Approximately \$1.8 million in in-kind services and \$1.0 million in cash will be contributed by MdBC for this project. In-kind services are primarily the State's use of MdBC's existing fiber optic infrastructure on the Eastern Shore of Maryland. This infrastructure will alleviate the need for the State to build an overlapping fiber optic backbone network on the Eastern Shore. The State entered into a public-private partnership arrangement with MdBC via a resource sharing agreement, through which the State and MdBC grant each other use of portions of their respective existing fiber optic networks. The partnership will provide greater access at a lower cost for the State and MdBC.

Other partners include the Mid-Atlantic Crossroads (MAX) and NCRNet. MAX is a consortium of higher education and research institutions in the Washington, DC region that provides management of advanced network connectivity on the east coast of the United States. They are proposed to provide network operations support services for some of the ICBN jurisdictions. This does not impact the DoIT managed portion of the project. Their in-kind contribution, which totals \$450,000, would provide them with a period of free services that would be part of a longer term contract with those respective ICBN jurisdictions.

NCRNet is the regional public safety/homeland security fiber infrastructure that has been built in the National Capital Region (NCR). It is owned and operated by the local jurisdictions in Maryland; Washington, DC; and Northern Virginia. Its primary purpose is to enable high-bandwidth, interoperable, emergency communications in the event of natural or man-made disaster. The partnership envisioned for the network and NCRnet is to provide a cost-effective mechanism that will create a high-bandwidth connection to all the NCR jurisdictions (including DC and Northern Virginia counties) to enable homeland security and public safety communications for first responders on a regional basis. This interconnection will deliver value to the State and to our local jurisdictions since they will not need to incur the cost of developing such connections. NCRNet will not be making any cash or in-kind contribution.

Finally, participating State agencies include the Maryland State Police, the State Highway Administration (SHA), the University System of Maryland (USM), the University of Maryland Medical System, and Maryland Public Television. USM will be contributing \$200,000 in cash to the project. The other agencies will not be contributing any funds to the project. Upon completion, they will be connected to the network.

Project Construction Plan

The project is scheduled to be completed by August 31, 2013. Because federal funds will no longer be available after August 31, 2013, the State must complete the project by then. DoIT advises that delays would result in a loss of federal funds.

The permitting process for this project is quite extensive. DoIT must receive permits from SHA for rights of ways along roads, from 24 county and Baltimore City Departments of Public

Works (DPW), from several municipal DPWs, from the Maryland Department of the Environment for tidal crossings and wetlands, and from the U.S. Army Corps of Engineers for tidal crossings.

Exhibit 2 shows the bulk of the project’s costs support construction and equipment costs. In-kind contributions provide much of the support for administrative costs. To reduce the time it takes to complete the project, engineering will be done concurrently in sections and will be done continuously throughout the life of the project. The process is that the State will engineer a section, submit it for permits, and then begin to engineer another section.

Exhibit 2
Use of Funds
(\$ in Millions)

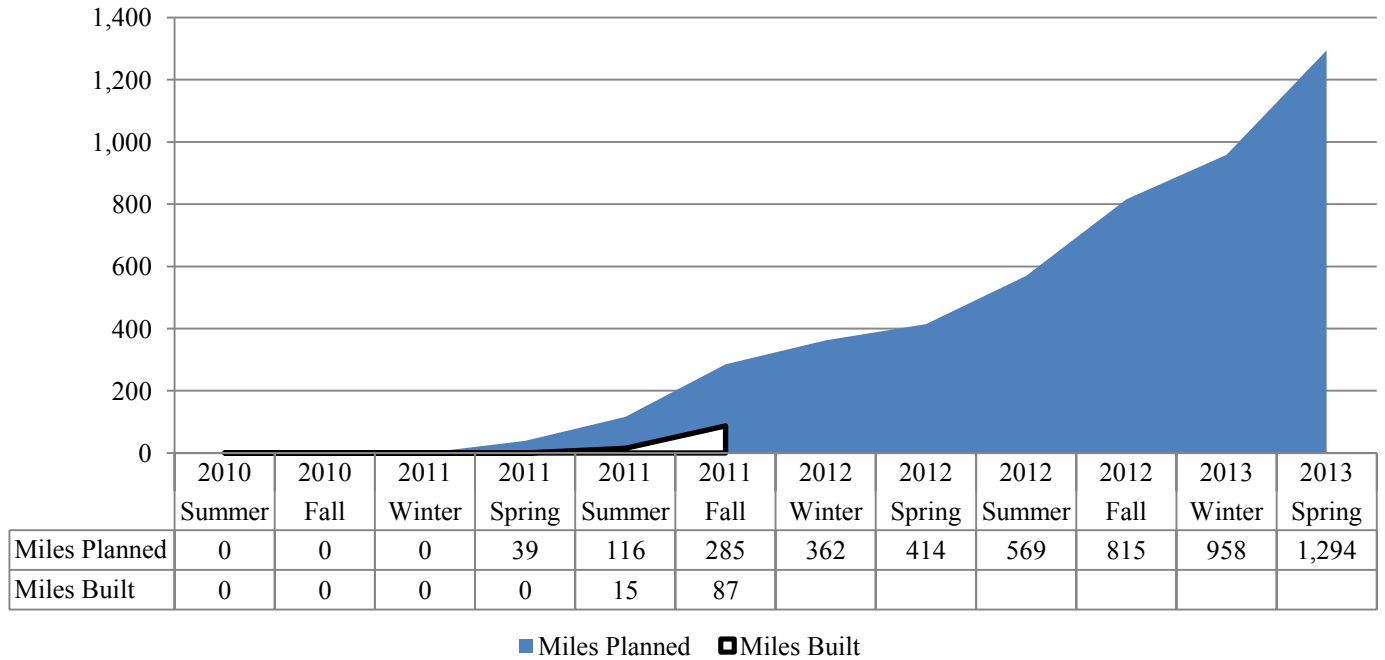
<u>Activity</u>	<u>Cost</u>
Project Management and Administration	\$12.4
Engineering	21.6
Construction and Equipment	124.4
Total	\$158.4

Source: Department of Information Technology, January 2011

When permits for a section are approved, fiber optic strands and materials that light up and manage the network (such as routers, switches, power supplies, and software) will be received. Construction of the main fiber backbone begins after all the materials are received. Along many lines, fiber optic lines from the backbone to community anchor institutions will also be built.

DoIT advises that construction has begun. Work is scheduled to be completed by the end of July 2013. The amount of work completed increases over the years. The busiest year is 2012 when almost half the construction work is done. **Exhibit 3** shows that by fall 2011, 87 miles had been constructed. The project’s schedule appears to have slipped; the plan proposed that 287 miles would be completed.

**Exhibit 3
Quarterly Project Progress
Cumulative Miles Planned and Built**



Source: Department of Information Technology, Quarterly Performance Progress Report for Broadband Infrastructure Projects, 2011 and 2012

Ownership, Maintenance, and Operations

DoIT will operate the network as part of networkMaryland. For the ICBN portion of the project, the 9 jurisdictions will own the lines and equipment within their boundaries, and the assets will be maintained and operated by each respective jurisdiction. The State will have use of varying fiber counts in each of these jurisdictions. In the 16 counties where the project is managed by DoIT, DoIT will maintain and operate the lines and equipment. The cost of fiber maintenance will be determined based upon the final decision of which sections of the fiber are installed aerially and which portions are buried.

The State does not expect to generate any revenues from this project. Federal regulations limit what the State can do with the lines that are constructed. For example, the State is restricted from selling the lines.

However, the State does expect to derive some financial benefits from this project. DoIT estimates that savings generated total approximately \$610,000 annually. The project reduce services from telecommunications providers (such as Verizon) by installing fiber in 50 locations ranging from smaller sites with bandwidth of 3 millions of bits per second (Mbps) to large sites with bandwidths of 100 Mbps.

Another source of savings could be resource sharing agreements. At a minimum, these agreements could allow the State to use other assets, possibly reducing operating costs.

Finally, portions of the fiber in the ICBN region will be set aside by the individual counties for the purpose of leasing the fiber to telecommunications companies as part of the grant's requirement for "non-discriminatory open access." The "non-discriminatory open access" requirement will be met in the rural portions of the State by MdBC, which will manage fiber resources for use by private, commercial entities.

Status Report

DoIT is regularly providing status reports for this project. These include quarterly reports filed with the federal government, as well as regular Statestat and Broadband Stat meetings. The Department of Legislative receives these reports. According to these reports:

- Approximately \$27.4 million of the \$158.4 million has been spent through February 1, 2012, of which \$20.4 million is in federal funds and \$7.0 million is in matching funds.
- Legal agreements to construct the network with all county governments, except Frederick County, have been completed, and new fiber resource sharing agreements are still being developed.
- Legal agreements with all nine utilities for aerial attachments (Baltimore Gas and Electric, PEPCO, Verizon, Alleghany Power, Delmarva, Choptank, Berlin Electric, and Hagerstown Light) have been completed.
- Legal agreements for each railroad crossing with CSX, the Maryland Department of Transportation, Maryland Midland Railway, and Bay Coastal Rail Road have been completed, and agreements with the Maryland Transit Administration, Amtrak, Norfolk Southern, Maryland and Delaware Railroad, and George's Creek Railway are not yet complete;
- Contracts for fiber, materials, logistics, engineering services, and construction have been awarded.
- Engineering is in process in every county, and to date, 1,144 (out of 1,300) miles of engineering has been awarded, 855 miles has been submitted to permitting agencies, and 315 miles of the route has been permitted by the various permitting agencies.

FB04B – Department of Information Technology – Capital

- Construction has begun, currently building in Anne Arundel, Baltimore, Carroll, Charles, Harford, Howard, Montgomery, and Prince George’s counties and Baltimore City, with a total of 113 (out of 1,300) miles completed and 10 sites connected (out of 1,006).

Issues

1. The Project Construction Schedule Has Slipped

The federal government requires that two-thirds of the funds for this project are spent by August 31, 2012. This requires the State to spend at least \$76.8 million of the \$115.2 million federal fund appropriations by the end of August. Through February 1, 2012, the State has spent \$20.4 million in federal funds.

The data provided by DoIT shows that the project's schedule has slipped. For example, the number of miles constructed is below what was planned a year ago. DoIT advises that this may, in part, be due to the permitting process. The National Telecommunications and Information Administration (NTIA), which is in the U.S. Department of Commerce and administers federal broadband grants, mandated an environmental assessment approval process that required eight months and precluded DoIT from beginning construction. This reduced the time allotted for construction from 36 to 28 months.

Based on the current schedule, the agency will not have spent the required two-thirds federal funds by the end of August 2012. **Exhibit 4** shows that planned spending through September 2012 totals \$65 million, which is \$12 million less than required.

Exhibit 4
Required Spending through August 31, 2012
(\$ in Thousands)

Two-thirds of Federal Fund Grant	\$76.8
Planned Spending in Current Plan through September	64.9
Amount Below Two-thirds Federal Fund Spending	\$11.9

Source: Department of Information Technology, February 2012

DoIT advises that the plan is being revised. When the new plan has been approved by NTIA, DoIT will provide the Department of Legislative Services with a copy of the revised plan.

DoIT should update the committees on the status of the One Maryland Broadband project. This should include an update of the likelihood that two-thirds of funds will be spent by August 31, 2012, as well as efforts taken to meet this requirement.

Prior Authorization and Capital Improvement Program

**Authorization Uses
(\$ in Millions)**

<i>Description</i>	<i>Prior Authorization</i>	<i>2013 Request</i>	<i>2014 Estimate</i>	<i>2015 Estimate</i>	<i>2016 Estimate</i>	<i>2017 Estimate</i>
Acquisition	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000	\$0.000
Planning	1.640	0.000	0.000	0.000	0.000	0.000
Construction	43.763	56.678	13.130	0.000	0.000	0.000
Equipment	43.206	0.000	0.000	0.000	0.000	0.000
Total	\$88.609	\$56.678	\$13.130	\$0.000	\$0.000	\$0.000

**Authorization Sources
(\$ in Millions)**

<i>Description</i>	<i>Prior Authorization</i>	<i>2013 Request</i>	<i>2014 Estimate</i>	<i>2015 Estimate</i>	<i>2016 Estimate</i>	<i>2017 Estimate</i>
GO Bond	\$5.800	\$5.000	\$1.200	\$0.000	\$0.000	\$0.000
Federal	51.632	51.678	11.930	0.000	0.000	0.000
Nonbudgeted	31.177	0.000	0.000	0.000	0.000	0.000
Total	\$88.609	\$56.678	\$13.130	\$0.000	\$0.000	\$0.000

PAYGO Recommended Actions

1. Concur with the Governor’s Allowance.

GO Bond Recommended Actions

1. Approve.

**Cash Match for Other Entities
(\$ in Thousands)**

	<u>Amount</u>
Inter-County Broadband Network	
Annapolis	\$75
Anne Arundel County	2,188
Baltimore City	100
Baltimore County	3,470
Carroll County	2,488
Harford County	450
Howard County	4,888
Montgomery County	1,589
Prince George’s County	2,788
<i>Subtotal</i>	<i>\$18,036</i>
Other Local Jurisdictions	
Allegany County	\$112
Calvert County	120
Caroline County	18
Frederick County	225
Garrett County	64
Kent County	6
Queen Anne’s County	40
Somerset County	14
Wicomico County	10
<i>Subtotal</i>	<i>\$609</i>
University System of Maryland	\$200
Maryland Broadband Cooperative	\$1,000
Total Cash Match	\$19,845

Source: Department of Information Technology

**In-kind Match for Other Entities
(\$ in Thousands)**

<u>Entity</u>	<u>Amount</u>
Anne Arundel County	\$100
Baltimore City	160
Baltimore County	740
Carroll County	400
Harford County	300
Howard County	1,000
Montgomery County	1,058
Prince George’s County	100
Maryland Broadband Cooperative	1,814
Mid-Atlantic Crossroads	450
Total	\$6,122

Source: Department of Information Technology