Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program

Submitted Date:	**Easygrants ID: 7392**
Funding Opportunity: Broadband Technology Opportunities Program	**Applicant Organization:** INFORMATION TECHNOLOGY, MARYLAND DEPARTMENT OF
Task: Submit Application - BTOP	**Applicant Name**: Gregory Urban

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Task: Submit Application - BTOP	**Applicant Name:** Gregory Urban

A. General Application Information

Applicant Information	
Name and Federal ID for Applicant	
DUNS Number	961890741
CCR # (CAGE)	5XR29
Legal Business Name	INFORMATION TECHNOLOGY, MARYLAND DEPARTMENT OF
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Alternate POC	GREGORY URBAN 4102607279 Ext. gregory.urban@doit.state.md.us
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Alternate Electronic Business POC	LYNN DULEH-BUEHLER 4102607593 Ext. lynn.duleh-buehler@doit.state.md.us

Name and Contact Information of Person to be Contacted on Matters Involving this Application:	
Prefix	
First Name	Gregory
Middle Name	
Last Name	Urban
Suffix	

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Telephone Number	410-227-0253
Fax Number	
Email	gregory.urban@doit.state.md.us
Title	

Additional Contact Information of Person to be Contacted on Matters Involving this Application:

Project Role	Name	Phone	Email
Secondary Point of Contact	Mr. Denis , McElligott	4107670875	denis.mcelligott@doit.state.md.us

Environmental Point of Contact

Prefix: Mr.
Name: McElligott, Denis
Suffix:
Telephone Number: 4107670875
Title: Director of Wireless Services

Organization Classification	
Type of Organization	State or State Agency
Is the organization a small business?	No
Does the organization meet the definition of a socially and economically disadvantaged small business concern?	No

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Authorized Organizational Representative	
AOR Name	URBAN, GREGORY
Result	Applicant Authorized

Project Title and Project Description

Project Title: One Maryland Broadband Network

Project Description: The OMBN will directly connect 1144 community anchor institutions and community colleges, foster economic development, improve public safety interoperability and interconnect local and state government networks. Through a consortium and partnerships with public and private providers, the state-wide middle-mile network will bring high speed fiber optics to the unserved and underserved.

CCI Priority Checklist

The following items were selected from the CCI Priority Checklist:

1. This project will deploy Middle Mile broadband infrastructure to community anchor institutions.

2. The project will deploy Middle Mile broadband infrastructure and has incorporated a public-private partnership among government, non-profit and for-profits entities, and other key community stakeholders.

3. This project will deploy Middle Mile broadband infrastructure in economically distressed areas.

4. This project will deploy Middle Mile broadband infrastructure to community colleges.

5. This project will deploy Middle Mile broadband infrastructure to public safety entities.

6. This project will deploy Middle Mile broadband infrastructure and either includes a Last Mile infrastructure component in unserved or underserved areas or has received commitments from one or more Last Mile broadband service providers to utilize the Middle Mile components. Any Last Mile components in rural areas do not exceed 20% of the total eligible costs of the project.

Comprehensive Community Infrastructure Components

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The following items were selected from the Comprehensive Community Infrastructure Components:

Middle Mile

BIP Applicants

Have you also applied to BIP for funding in the sample proposed funded service area?

- No

If Yes, please provide the project title and Easygrants ID number:
Title of Joint BIP Application:
Easygrants ID:

Other Applications

Is this application being submitted in coordination with any other application being submitted during this round of funding?

- No

Easygrants ID	Project Title

If YES, please explain any synergies and/or dependencies between this project and any other applications.

Individual Background Screening

Is the Applicant exempt from the Department of Commerce requirements regarding individual background screening in connection with any award resulting from this Application?

- Yes, Applicant is exempt because it is a unit of a state or local government

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If the answer to the above question is "No," please identify each key individual associated with the Applicant who would be required to complete Form CD-346, "Applicant for Funding Assistance," in connection with any award resulting from this Application:

Name	Title	Employer

B. Executive Summary, Project Purpose and Benefits

Essay Question

Executive Summary of the proposed project:

The One Maryland Broadband Consortium will build the One Maryland Broadband Network ("OMBN") bringing high-count middle-mile fiber optics to every Maryland county. This comprehensive community infrastructure will directly connect and serve 1,166 community anchors and other points of interest including 469 schools (K-12), 311 public safety facilities, 255 government facilities, 68 libraries, 18 community colleges and other anchor and community support organizations.

Through partnerships, OBMN will also offer cost-effective, high-bandwidth middle-mile capacity to enable private carriers to bridge the last mile—through their own investments—to Maryland's many underserved residents and vulnerable communities.

The OMBN is comprised of a consortium of public and private partnerships that include the following key partners: the State of Maryland's Department of Information Technology Network, who operates networkMaryland, the State's data network; the Inter-County Broadband Network (ICBN) which is an established consortium of 10 Maryland local government jurisdictions; the Maryland Broadband Cooperative (a rural nonprofit telecommunications company); the University of Maryland System; and Mid-Atlantic Crossroads (MAX), a GigaPoP consortium. In addition, OMBN has submitted numerous letters of support and interest from last

mile providers, private companies and other local government and state agencies that will participate and utilize the middle mile network.

Leveraging the established and successful state-run networkMaryland network, the OMBN will provide a single statewide intergovernmental network, connecting to community anchor institutions in urban/suburban and rural areas via networkMaryland and Howard County, a subrecipient of the grant.

Howard County represents the ICBN, a consortium of 10 Maryland local governments located in the central portion of state. ICBN will own and operate infrastructure built using BTOP grant funds. ICBN will interconnect 10 existing local government silo networks and will span 4,200 square miles, including urban, suburban, and some rural communities. In total, ICBN will pass about 1.8 million households (for a total of 4.7 million people), and roughly 71,000 businesses. In addition, the project will directly connect 866 community anchor institutions using Gigabit Ethernet technology, and reach unserved and underserved areas including vulnerable populations in Annapolis and Baltimore.

Further, ICBN will offer dark fiber leases to all qualified entities that commit to use the ICBN middle mile fiber as a platform for building out the last mile. Multiple private sector last mile providers have expressed strong interest in leveraging ICBN's middle mile fiber for this purpose in several unserved areas of Maryland.

Together with existing networkMaryland fiber infrastructure, ICBN consortium will provide the fiber link that will completely bridge the gap between rural eastern and western Maryland. Through an MOU with the State, the county consortium will provide networkMaryland with at least 12 strands of fiber on all fiber built with BTOP funds that will enable the entire state to be interconnected.

The second sub-recipient is the Maryland Broadband Cooperative, Inc. (MdBC), whose members provide competitive last-mile services to businesses and residential customers. This portion of the network will span almost 6,000 of Maryland's 9,844 square miles, primarily along State identified unserved and underserved areas on the Eastern Shore and in Southern and Western Maryland. MdBC will provide managed optical services to its members, which will provide the performance and flexibility necessary to open the global market to rural Maryland. The 15-

county MdBC service area includes a population of 913,862, with 403,854 households and 25,090 businesses.

The proposed OMBN will leverage the extensive capabilities and decades of experience of the State government and participating local governments in operating fiber optic networks. It will create a stable and sustainable network that will focus on connecting anchor institutions that serve vulnerable communities and the public interest, while creating the middle-mile infrastructure necessary to enable private operators to develop innovative last-mile networks throughout the State, including in underserved areas of urban poverty and unserved rural areas that lack any infrastructure at all.

Recognizing Maryland's unique geographic position surrounding much of Washington, D.C., the proposed OMBN project also seeks to facilitate an interoperable homeland security network that extends from the National Capital Region to the Delaware, Pennsylvania and West Virginia borders. This aspect of the proposed project represents a significant regional and national imperative:

1. Given the many federal institutions located in the jurisdictions, and the tens of thousands of federal employees who live there, the network could play a key role in ensuring a more robust continuity of operations plan for federal government agencies.

2. Many of the rural and suburban areas within the service area are first- and second-line evacuation routes in the event of a terrorist attack or natural disaster (e.g., a flu pandemic) in Washington, D.C. Given that public school buildings would be called into service as evacuation shelters, connecting those buildings and all hospitals and public health clinics in the service area would substantially improve the success of current evacuation plans. Likewise, connecting all emergency operations centers in the service area would improve the federal and jurisdictional approach to these challenges and needs.

The OMBN includes a variety of proposed services and which together will improve education, public safety, and healthcare, and help the public and private partners meet residents' other key needs. For example:

1. Education: The network will connect 18 community colleges, 469 K-12 schools, and hundreds of thousands of children to untold educational resources over fiber optics, bringing the world into the classroom in an interactive, high-capacity way through partnerships with Maryland Public

Television, and other educational content providers. OMBN will also interconnect with MAX, and the University System of Maryland Academic Telecommunications System (UMATS), bringing those schools a range of innovative content from colleges and universities in Maryland and beyond.

2. Public safety: The proposed network will enhance emergency communications, interconnect operations centers, allow for web-conferencing and enable and enhance regional emergency communications. This includes building fiber to every Public Safety Answering Point (PSAP), enabling the upgrade to the Next-Generation 911 system.

3. Healthcare: One Maryland seeks to connect hospitals and health care professionals and medical parks in the proposed service area. In addition to addressing a critical need, such connections will also help the jurisdictions meet the requirements of the ARRA's Health Information Technology for Economic and Clinical Health (HITECH) Act.

The One Maryland network would also directly support other funded ARRA projects.

As stated, OMBN will also significantly lower the barriers to entry for private and non-profit companies that are interested in offering last-mile service to unserved and underserved residents throughout the service area. Private carriers including Broadstripe, Freedom Wireless, Quantum Internet, and Litecast have submitted letters of interest to build out last-mile infrastructure leveraging the project's middle-mile infrastructure.

Other private companies, including Ciena, Cisco, and Alcatel Lucent, have also submitted letters of support/interest in some cases offering discounts on services for the OMBN.

One Maryland is requesting $139,708,442 million in BTOP funding, including all reasonable and appropriate permitting, construction, equipment expenses equipment expenses, and administrative fees. The consortium will be providing a $25.2% percent match comprised of $38,340,700 million in cash and $8,790,800 million in equipment and in-kind services. The total project cost, including the match, is $186,839,942 million.

We anticipate that this project will provide broadband services directly and indirectly over 650,500 residences, businesses, and anchors by year 8 of the project. The number of jobs estimated to be created or saved as a result of the project is roughly 2031.

The OMBN plan has deep private and public sector support, is strongly endorsed by Governor O'Malley, Senators Mikulski and Cardin and the entire Congressional Delegation. OMBN is critical for the future of Maryland and its citizens.

Project purpose:

The proposed State of Maryland OMBN seeks to unite rural, urban, and suburban communities in one contiguous middle-mile state and county government network. The benefits of this interconnection are numerous and substantial, especially as they relate to sharing resources and knowledge among community colleges, public schools, libraries, and public safety entities.

The project will directly connect 1,144 community anchors that lack adequate access to high-bandwidth broadband capacity. The network will service 469 schools (K-12), 311 public safety facilities, 255 government facilities, 68 libraries, 24 community colleges and institutions of higher education.

Recognizing the State of Maryland's unique geographic position surrounding parts of Washington, D.C., the proposed project also seeks to facilitate an interoperable homeland security network that extends from the National Capital Region (NCR) to the Pennsylvania, Delaware and West Virginia borders. This is critical for homeland security on the federal, state and local level.

The OMBN includes a variety of proposed services and applications for the proposed funded service areas, which together will improve education, public safety, and healthcare, and help the public and private partners meet residents' other key needs.

Further, in the rural areas of the proposed funded service area, the high-speed middle-mile connectivity will extend economic opportunities and social benefits into unserved and underserved communities, and lower the barriers of entry for private telecommunications carriers to deliver last-mile connectivity to residents and businesses.

The OMBN also seeks to bolster economic development and civic engagement throughout Maryland's rural communities. These areas have traditionally been served by incumbent telecommunications carriers through low-speed dial up, or, in areas immediately surrounding

Central Offices, limited-range DSL. In addition to limiting residents' educational opportunities, inadequate infrastructure is a significant barrier to diversification of the rural economy and inhibits development and recruitment of new industries.

Through the MdBC—a key project partner—and its members, the OMBN will enable the deployment of needed broadband infrastructure and services to significant unserved and underserved regions of the State. Many members are Internet service providers that stand ready to expand their subscribership and provide new services to locations and regions that, but for this investment, have not and will not be able to participate in the global economy. Within 5 years of network build, MdBC projects they will connect 230,500 households and more than 14,000 businesses that do not have broadband services today.

Overall, this project not only addresses a compelling problem that exists throughout the proposed service area and impacts all consortium members but the Plan is consistent with BTOP goals, meets 6 of the priority categories and meets the objectives set forth in the Recovery Act.

Currently, OMBN member budgets are undergoing tight fiscal constraints. While the Consortium is capable of providing a 25% match for the cost of the plan, "but for" the stimulus money these critical projects would not be able to move forward. This grant opportunity enables OMBN members to move forward with this plan, generate millions of dollars in savings and continue to build critical infrastructure and sustainable network for years to come.
The OMBN Plan is an effective solution to this problem because it will serve and benefit millions of Maryland residents through its community anchor institutions and last mile partners while meeting the critical needs of local and state government. Currently our schools are at capacity for bandwidth and many are not connected to their local government network; our libraries do not have enough bandwidth to meet the public need for Internet; our public safety entities including fire houses and police stations cannot adequately meet their communications needs without this Plan. Connecting these anchors to our network will resolve these issues.

In addition, currently our community anchors are often forced to spend millions of local government dollars every year for Internet access that does not meet their needs. These cost savings will ease budget stress and enable our local governments to continue to upgrade, maintain and build out this fiber network to the benefit of government and the residents of Maryland.

More importantly, this plan is effective because it is managed and run by experts in local governments that have years of demonstrated success in fiber network deployment and management. This plan was created by experienced local government IT Directors and technology staff in consultation with engineers and telecommunications advisors. This plan is dynamic, addresses critical needs in our communities and provides a solid effective solution to the challenges facing local government.

The significance of this plan is far-reaching. Not only does this plan enable local and state governments and the private sector to work together to meet the needs of its citizens in a way that has never been done in Maryland, but this plan sets the groundwork for meeting future needs inclyuding future planning for shared network applications in education, health care, telecommuting, energy efficiency, public safety and economic development.

In summary, as a middle mile project, the OMBN plan directing connects 1161 community anchors and POIS and reaches many unserved/underserved areas and vulnerable populations throughout our proposed service area, and strongly addresses 6 of the CCI priorities and all 5 statutory purposes of the Act.

Recovery Act and Other Governmental Collaboration:

The OMBN will extensively leverage Recovery Act and other federal and state programs.

Many of the State's Recovery Act-funded projects in education, job training, housing, and transportation will directly benefit from fiber connections to community anchors. (The Governor's system of tracking Recovery Act-funded project makes it possible to identify the projects at each anchor location: http://mdimap.towson.edu/statestat/)

In addition, the Governor links all decisions on seeking federal resources to one of 15 core strategic policy goals (http://www.statestat.maryland.gov/gdu.asp). Because the first three goals (job creation, improving student achievement, and improving adult workforce skills) all directly relate to this broadband effort, the chance to leverage existing resources is significant.

Specific examples of Recovery Act and other governmental collaboration include:

Maryland will receive $4.1 million under the Port Security Grant Program (PSGP) to protect critical infrastructure in the Port of Baltimore area and $1.9 million under the Fire Station Construction Grant Program (SCG) to replace an Anne Arundel County Fire Department fire station in Glen Burnie, Md. In addition, Maryland has received $1.4 million in ARRA-funded Emergency Food and Shelter Grants.

The Maryland Broadband Cooperative (MdBC) was awarded roughly $2 million in NTIA grants for broadband planning, data collection, and mapping. MdBC will work with the University of Maryland on data collection and analysis.

Baltimore Gas & Electric (BG&E), which was awarded a $200 million DoE Smart Grid grant, has expressed in a letter its strong interest in leveraging One Maryland middle-mile fiber for its Smart Grid program.

The One Maryland project will capitalize on efficiencies with the State's buildout of a 700 MHz public safety network, which is partially funded with an NTIA Public Safety Interoperable Communications grant and a DHS Urban Area Security Initiative grant.

Howard County, received a $2.6 million Energy Efficiency Block Conservation Grant to help place electrical sub-meters at every county facility. These sub-meters will transmit data via county network. For the program to be fully effective, all county buildings must be connected. One Maryland will provide the middle-mile infrastructure the County needs to do this.

The City of Baltimore intends to leverage applied-for public safety grants with its One Maryland fiber projects to public safety entities to improve access and interoperability.

Coppin State University: $932,000 public computer center grant with an additional $275,000 applicant-provided match to provide broadband access and computer education to the Coppin Heights-Rosemont community, a low-income neighborhood in Baltimore, Maryland.

Fit with BTOP CCI Priorities:

The State of Maryland's OMBN will deploy middle-mile broadband infrastructure and definitively meets 6 of the BTOP CCI priorities.

1.Community anchor institutions
The project will deploy middle-mile broadband infrastructure with a commitment to offer new or substantially upgraded service to 1,144 community anchor institutions statewide, including 469 schools (K-12), 311 public safety facilities, 255 government facilities, 68 libraries, 24 community colleges and other institutions of higher education, and other community support organizations. These community anchor institutions have expressed a demand or indicated a need for access or improved access.

2.Public-private partnership
The project incorporates a substantial public-private partnership among government, non-profit and for-profit entities, and other key community stakeholders, many of which have expressed a demand or indicated a need for access or improved access.

The partners include all the counties in the state, the State government's networkMaryland operation, state agencies such as the State Highway Administration, the University of Maryland, the non-profit Maryland Broadband Cooperative MAX, - a GigaPoP consortium of higher education and research institutions in the Washington, D.C. region.

Private carriers including Broadstripe, Freedom Wireless, Quantum Internet, Litecast have submitted letters of interest to build out last-mile infrastructure. Other private companies, including Ciena, Cisco, and Alcatel Lucent, have also submitted letters of support/interest and in some cases offering significant discounts to OMBN members.

3.Economically Distressed
The project will deploy middle-mile broadband infrastructure with the intent to bolster growth in economically distressed areas. The project's proposed funded service area for middle-mile broadband infrastructure deployment includes many areas of the state that meet the definition of an economically distressed area. Dorchester County, for example, has a 12.7% unemployment rate (2.4% higher than the national average in December 2009). Baltimore City, Prince George's County, and the Eastern Shore region all have similarly distressed communities.

OMBN estimates that this project will create or save 2031 jobs in Maryland. At a time when the job market is stagnant, if not still declining, job creation in the technology and construction sectors to name two, are critical for Maryland.

4.Community colleges
The project's middle-mile broadband infrastructure will connect to community colleges throughout the state of Maryland—a total of 18 community colleges—including the University System of Maryland. Each of these community colleges has expressed a demand or indicated a need for access or improved access. Further, the middle-mile infrastructure serving these community colleges will enable the schools to better deliver on their core educational missions and benefit from resource sharing for distance learning

5.Public safety entities
The project's middle-mile broadband infrastructure will serve 311 public safety entities across the State—every significant public safety entity that does not already have adequate broadband access. Further, each of these public safety entities has expressed a demand or indicated a need for access or improved access. The public safety entities that will be served by OMBN include Maryland Emergency Management Administration (MEMA), police stations, fire stations, emergency operations centers, 911 centers, and critical facilities for homeland security.

OMBN will also work with the local Urban Area Strategic Initiative (UASI) working groups in leveraging the Department of Commerce's Public Safety Interoperability grants and the Department of Homeland Security Urban Area Security Initiative grants. These relationships are already established.

OMBN will interconnect with NCRnet, the multijurisdictional public safety interoperability network encompassing the 22 jurisdictions in the National Capital Region in and around the District of Columbia. NCRnet enables local government agencies and organizations to seamlessly share critical data and information during emergencies and day-to-day operations. The network also supports high-definition videoconferencing among emergency operations centers and other critical facilities.

6.Last-mile broadband service providers
The project has a commitment from multiple last-mile broadband service providers to use utilize the OMBN middle-mile infrastructure. Private companies including Broadstripe, Freedom Wireless, Quantum Internet, bloosurf, and Bay Country Communications and Litecast have submitted letters of interest to leverage the middle-mile infrastructure to build out last-mile infrastructure at their own expense to serve residential and business customers. Multiple interconnection points for these carriers are located in unserved locations. These last-mile

providers will purchase lit or dark fiber to support their delivery of last-mile services. Any company that purchases dark fiber can also then offer lit services to other carriers.

7. 30 percent cost match
The OMBN has proposed to contribute 25.2 percent in non-federal cost match for the project—or $47,131,500 (20.5%) in cash and in-kind matching on the $8,790,800 project total. Although this match does not meet the stipulated 30 percent for priority status, it represents a quite significant investment by the project partners, especially given the difficult financial times facing state and local governments.

For these reasons, the OMBN plan strongly meets and exceeds the objectives of these CCI priorities.

Is the applicant seeking a waiver of the Buy American provision pursuant to section x.Q of the NOFA?

- No

Is the applicant deliquent on any federal debt?

- No

If Yes, justification for deliquency:

Are you seeking a waiver of any requirement set forth in the NOFA that is not mandated by statute or applicable law?

- No

Is the applicant a current recipient of a grant or loan from RUS?

- No

C. Partners

Are you partnering with any other key institutions, organizations, or other entities for this project?

- Yes

If YES, key partners are listed below:

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Project Role: Sub-recipient
Name: Levy, Ira
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Email: ilevy@howardcountymd.gov
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Address 2:
Address 3:
City: Ellicott City
State: Maryland
Zip Code: 21043
Organization: Howard County Government
Organization Type: County Government
Small business: No
Socially and economically disadvantaged small business concern: No

Project Role: Third party in-kind contributor
Name: O'Neil, Peter
Phone: 3014056666
Email: poneil@maxgigapop.net
Address 1: 8400 Baltimore Avenue
Address 2: Suite 102
Address 3:
City: College Park
State: Maryland
Zip Code: 20740
Organization: Mid-Atlantic Crossroads
Organization Type: Other
Small business: No
Socially and economically disadvantaged small business concern: No

Project Role: Third party in-kind contributor
Name: Malmberg, Norwin
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Email: malmberg@usmd.edu
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State: Maryland
Zip Code: 20783
Organization: University System of Maryland

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Organization Type: Other
Small business: No
Socially and economically disadvantaged small business concern: No

Project Role: Sub-recipient
Name: Mitchell, Patrick
Phone: 4103416322
Email: pmitchell@mdbc.us
Address 1: 212 West Main Street, #307
Address 2:
Address 3:
City: Salisbury
State: Maryland
Zip Code: 21801
Organization: Maryland Broadband Cooperative
Organization Type: Cooperative or Mutual
Small business: No
Socially and economically disadvantaged small business concern: No

Description of the involvement of the partners listed above in the project.

The OMBN is a consortium of public and private partnerships that includes significant local community participation. As the lead applicant, the State of Maryland, acting through its Department of Information Technology (DoIT), will work with all State agencies to carry out the mission. DoIT, the operating entity for OMBN through its Networks Division, is the responsible for the operations and management of the network, as well as the construction of the network in partnership with Howard County. Partners include:

Howard County – Key Partner and Sub-recipient

Role and Contribution – Howard County plays a key role in representing a consortium of 10 local governments that comprise the Inter-County Broadband Network (ICBN). Howard County chairs and serves as the Administrative Agent for the ICBN and will be the liaison to the OMBN Governance Committee. ICBN will give networkMaryland at least 12 strands of grant-funded fiber that will in part be used to interconnect the Eastern Shore to Western Maryland.

Projected Impact: The ICBN will interconnect 10 individual local government silo networks and directly connect 866 anchors and POIs. ICBN will lease dark fiber to private providers who will reach the unserved/underserved and bridge the last mile.

Financial Commitment. ICBN members have committed over $26M in matching. Of that, $21 million is in cash with almost $5M in in-kind.

Benefit to the Partner: ICBN members will individually own and operate infrastructure in their territory. ICBN members will utilize revenue generated from dark fiber leasing to continue to expand the network and directly connect anchors not part of this project. ICBN counties will generate annual savings of at least 40M through reductions in expensive carrier leases and other cost reductions.

Maryland Broadband Cooperative- Key Partner and Sub-recipient
Role and Contribution: The OMBN will engage the Maryland Broadband Cooperative (MdBC) in a public/private partnership to provide the open access network requirement in rural Maryland. The MdBC is a non-profit supported by its members who provide last mile services with a mission to spur economic growth through open access to broadband services serving the rural communities of Eastern, Southern and Western Maryland.

Projected Impact: Through this partnership MdBC's members will be able to offer the public new broadband services; especially in large unserved /underserved regions of rural Maryland, potentially impacting 292,000 residences and 18,000 businesses as projected over the next 8 years.

Financial Commitment: MdBC is committing $2.8M in cash and in-kind match. $1,000,000 will be cash match from the MdBC operating budget and $1,814,400 will be in-kind, representing dark fiber allocated to the open network requirement of the grant.

Benefits to MdBC: From this partnership, MdBC increases its capacity to fulfill its mission to rural Maryland. The MdBC will be granted, via an IRU, 144 strands of fiber along the backbone routes built as part the 3 backbone rings as described in this project. MdBC will receive ownership of 18 communications huts, fiber laterals connecting to the backbone, sand electronics required to deliver broadband services.

UMATS – Key Party and Third-Party In-Kind Contributor
Role and Contribution: The University of Maryland Academic Telecommunications System (UMATS) provides Internet and video network services to campuses of the University System, community colleges and private colleges in Maryland. UMATS will coordinate connectivity and provide technical assistance for many schools and libraries.

Projected Impact: This project will interconnect many individual schools and libraries with high speed broadband access. Community colleges and university sites will be connected to the UMATS network to fulfill their growing broadband needs. Anchors will also be able to take advantage of distance learning and other benefits from being part of an interconnected network.

Financial commitment: UMATS has committed $200,000 in matching funds to pay for the necessary network equipment to connect to the new fiber.

Benefit to UMATS: The community college and higher education sites will be connected to the UMATS network as part of OMBN. This fiber will allow UMATS to deliver high speed redundant Internet service in a cost effective manner.

Mid-Atlantic Crossroads (MAX) – Key Partner and Third Party in-kind recipient
Role and Contribution: MAX is a regional optical network consortium that provides services to 45 universities, colleges, federal agencies, defense research labs, and government organizations. MAX provides 10Gb/s interconnections to national research &education networks like National LambdaRail and Internet2 and other Regional Optical Networks across the US and internationally. MAX will interconnect with OMBN and enable OMBN to benefit from MAX's partners. MAX will also provide some network management services.

Projected Impact: MAX will seek to align with the OMBN backbone infrastructure to allow for multiple points of redundant interconnections. By interconnecting the OMBN to MAX, OMBN will benefit from the same reach nationally and internationally as the region's research universities and federal agencies.

Financial Commitment: MAX has committed to contributing to NOC services for ICBN partners. The provider of the NOC services will be the Indiana University Global Research NOC that currently provides NOC services for MAX, Internet2, NLR, and other state networking organizations. MAX will contribute to providing NOC services, estimated to be $150,000 to

$200,000 per year depending on the number of backbone nodes established for an initial period of five (5) years.

Benefit to the Partner: MAX seeks to further expand its network by using a pair of fiber deployed by the ICBN. Such use will help MAX reduce costs and benefit through the interconnections to local government.

D. Congressional Districts

Applicant Headquarters

- Maryland

Project Service States

Maryland

Project Service Areas

Maryland - 1

Maryland - 2

Maryland - 3

Maryland - 4

Maryland - 5

Maryland - 6

Maryland - 7

Maryland - 8

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Will any portion of your proposed project serve federally recognized tribal entities?

- No

Indicate each federally recognized tribal entity your proposed project will serve.

Have you consulted with each of the federally recognized tribal entities identified above?

- No

E. Service Area Details

Is the applicant seeking a waiver for providing less than 100% coverage of a service area?

- No

Project Details

Service Area Type: Middle Mile
Service Area Name: One Maryland Broadband Network
Rural Classification of the Last Mile Service Area: Non-Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.
The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 9,773
Total Population in Proposed Service Area: 5,699,478
Total Number of Households in Service Area: 1,980,859
Total Number of Businesses in Service Area: 443,540
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 3,584
Unemployment Rate in the Service Area: 8

Submitted Date:	Easygrants ID: 7392
Funding Opportunity: Broadband Technology Opportunities Program	**Applicant Organization:** INFORMATION TECHNOLOGY, MARYLAND DEPARTMENT OF
Task: Submit Application - BTOP	**Applicant Name**: Gregory Urban

Median Income in the Service Area: **70,482**
Estimated Percentage of Households with Access to Broadband: **60**
Estimated Percentage of Households Subscribing to Broadband: **70**

F. Community Anchor Summary

Community Anchor Summary	
Schools (k-12)	469
Libraries	68
Medical and Healthcare Providers	1
Public Safety Entities	311
Community Colleges	18
Public Housing	0
Other Institutions of Higher Education	6
Other Community Support Organization	16
Other Government Facilities	255
TOTAL COMMUNITY ANCHOR INSTITUTIONS	**1144**
Historically Black colleges and Universities	0
Tribal Colleges and Universities	0
Alaska Native Serving	0

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Institutions	
Hispanic Serving Institutions	0
Native Hawaiian Serving Institutions	0
TOTAL MINORITY SERVING INSTITUTIONS	**0**

G. Project Benefits

Demographics

Jobs	
How many direct jobs-years will be created from this project?	988
How many indirect jobs will be created from this project?	312
How many jobs will be induced from this project?	731

Methodology used to estimate jobs:
The Council of Economic Advisers "Estimates of Job Creation from the American Recovery and Reinvestment Act of 2009", dated May 2009 states that job years can be computed by dividing total project budget ($187M) by $92,000. This yields 2031 job years. Of that, per the guidelines, 64% or 1300 job years are implied to be direct and indirect job years, and 36% or 731 job years would be induced job years.

To further break down the direct job years and indirect job years numbers, indirect job years will be estimated for our application based on the level of expenditure for input materials, specifically the network equipment, fiber, and conduit, as a percentage of the total budget (24%), multiplied against the number of jobs years using the 64% rule. The balance of job years will be applied to the direct job years value.

Thus, indirect job years are calculated as: 1300 job years x 24% = 312 job years. Direct job years would then be 1300-312 = 988 job years.

Project Impact:

The proposed OMBN plan seeks to unite rural, urban, and suburban communities in one contiguous middle-mile state and county government network. The benefits of this interconnection are numerous and substantial, especially as they relate to economic development and job creation, and resource sharing. The project will connect 1144 community anchors—all of which lack adequate access to high-bandwidth broadband capacity, and all of which have expressed an interest in connecting to the network.

The OMBN plan will meet all of the broadband needs of the communities within the proposed funded service area either directly or indirectly through established private and public sector partners and will create or save an estimated 2,031 jobs at a critical time of need.
The project will create a stable and sustainable middle-mile network that will focus on connecting anchor institutions that serve vulnerable communities and the public interest, while creating the middle-mile infrastructure necessary to enable private operators to deploy last-mile networks throughout the State, including in unserved and underserved rural areas.

The OMBN will also significantly lower the barriers to entry for private and non-profit companies that are interested in offering last-mile service to unserved and underserved residents throughout the service area. Internet service providers that have expressed interest in leveraging the project's middle-mile infrastructure include Freedom Wireless Broadband, Quantum Internet, Litecast, Broadstripe, Bay Country Communications, bloosurf.

Throughout the proposed service area, there are thousdands of communities, neighborhoods and businesses that do not have broadband service. OMBN will enable the above listed ISPs to fill-in-the gaps to provide services to these otherwise forgotten areas.

This strong expression of interest by service providers portends a significant impact in terms of the availability of robust last-mile services for the roughly hundreds of thousands of underserved residents in the proposed funded service area.

For the service providers, the availability of open middle-mile infrastructure at industry-standard pricing will expand their capacity and significantly reduce their costs. As the backbone infrastructure becomes operational, the availability of high-speed services at a fraction of the current cost will likely spawn new ISPs in each underserved region and allow existing ISPs serving rural areas to expand their footprints in an efficient and cost-effective manner.

The intergovernmental interconnection network created through this initiative would enable much greater survivability and capacity of Internet connectivity than possible for each participating jurisdiction individually. The wide range of interconnection points with other backbone networks facilitated by the OMBN design will enable direct, high-level peering arrangements or procuring Internet transit services from Tier 1 Internet Service Providers, such as Level 3, and other major networks operators with multi-gigabit per second backbones passing through Maryland. The redundant architecture of the network ensures this capacity can be offered to each of the participants with the high availability necessary to support the more critical role of Internet in all facets of the business of the anchor intuitions and government users.

A key objective of OMBN is to enable vast increases in Internet capacity of the participating government entities at the same or lower recurring cost as existing leased connections. High capacity, "bulk" connections of multiple gigabits to multiple tens of gigabits per second is feasible through Level 3, Verizon Business, and others at a fraction of the cost per megabit per second of typical leased services. In essence, the potential of OMBN is to expand the local Maryland presence on the Internet backbone with direct conduits to local government and other anchor institutions.

In addition to the impact of enabling last-mile broadband access for currently unserved and underserved communities, the OMBN community anchor connections will benefit communities in a variety of ways—commensurate with the wide range of anchors, and of the services and applications envisioned for the proposed funded service areas. Specifically, the anchor connections will improve education, public safety, and healthcare, while promoting economic development and reducing costs for the public and private partners:

Capacity in our Schools
With hundreds of facilities, the school districts within Maryland require technology infrastructure, particularly bandwidth, to be agile and robust to facilitate rapid and continuous changes, both to engage students and to ensure the proper administration and management of all operations and support services.

In June 2008, SETDA (Maryland, State Education Technology Director's Association) released a key report on this subject. In a technology-rich learning environment for the next 2-3 years, SETDA recommends an external Internet connection to the Internet Service Provider of at least

10 Mbps per 1,000 students/staff and internal wide area network connections from the district to each school and between schools of at least 100 Mbps per 1,000 students/staff.

Currently, we are seeing well below that level at 1 Mbps per 1,000 students across Maryland and between schools of less than 50% of what SEDTA recommends as a minimum.

The OMBN will allow our schools to meet the required demand.

More striking, is that for the next 5-7 years, SETDA also recommends an external Internet connection to the Internet Service Provider of at least 100 Mbps per 1,000 students/staff and internal wide area network connections from the district to each school and between schools of at least 1 Gbps per 1,000 students/staff

Maryland will not be able to achieve this recommendation.

Cost Savings for Anchor Institutions:
Another significant benefit is the reduction in operating costs by eliminating or reducing leased fiber and network connection costs, sharing Internet access costs, and converting standard phone services to voice over Internet protocol (VoIP). For example, one library stands to save approximately $500.00 per month in data connection costs while increasing their bandwidth and the amount of information they can access by 1,000 percent. For a school system of 70 schools with 40 megabits of bandwidth, increasing the bandwidth to 1 gigabit will allow for unprecedented access to educational information and high definition video content. At the same time, that same school system will save approximately $2 million annually in data connection costs.

Likewise, connecting all emergency operations centers in the service area would improve the federal and jurisdictional approach to these challenges and needs; the many federal institutions located in the jurisdictions, and the tens of thousands of federal employees who live there, mean that the OMBN could play a key role in ensuring a more robust continuity of operations plan for federal government agencies.

Public safety also requires government resources and fiber infrastructure to meet their critical needs. For example, public safety video conferencing, police dispatch, emergency management

offices, centralized CAD/RMS and video surveillance currently require integrated high-speed bandwidth not currently in place. OMBN makes this public safety requirement a reality.

OMBN seeks to connect hospitals and health care professionals and medical parks in the proposed service area. This includes interconnecting OMBN with the University of Maryland Medical System to facilitate telemedicine and telehealth services to health care facilities. These initiatives will provide patients in rural and distant communities with access to services and clinical specialists previously only available in urban centers. In addition to addressing a critical need, such connections will also help the jurisdictions meet the requirements of the ARRA's Health Information Technology for Economic and Clinical Health (HITECH) Act.

The OMBN will meet all of the broadband needs of the communities within the proposed funded service area either directly or indirectly through established private and public sector partners and will create or save an estimated 2,031 jobs at a critical time of need.

Vulnerable Populations:
The Proposed Funded Service Area includes 24 jurisdictions in the State of Maryland. According to the 2000 Census, African Americans constitute more than one-quarter (28 percent) of the area population – more than twice the national average (12 percent). Moreover, in nearly 1,000 block groups (929 of 3,666 populated block groups), African Americans constitute a minority majority, comprising more than one-half of the population in the block group. At the County level, Prince George's County (64 percent), Baltimore City (63 percent), Charles County (39 percent), Baltimore County (25 percent), and Wicomico County (24 percent) each include minority populations more than twice the national average. Strikingly, these Counties are among the most populated in the Proposed Funded Service Area.

It is well-established that broadband use among African Americans significantly lags behind the national average. In fact, only 46 percent of African Americans have home broadband, as compared to 63 percent of all adults and 65 percent of Caucasians. The Pew Internet and American Life Project reports a non-statistically significant increase in broadband use among African Americans in 2009 (from 43 to 46 percent), representing a second consecutive year of below-average broadband growth among this demographic. (Horrigan 2009) During this same period, other minority groups reported dramatic growth. While other analyses report somewhat differing levels of broadband use by African Americans, the research consistently finds rates trailing the national average. (see, e.g., Internet Innovation Alliance, Dec. 10, 2009, Press

Release: "Less than Half of African Americans and Hispanics Regularly Use the Internet"; FCC 2010, reporting 59 percent of African-Americans compared to 65 percent of Americans overall have broadband connections at home).

These national trends, combined with the large number of African Americans in the proposed funded service area support a need for a strong middle-mile network to improve access at community anchors and reduce prices throughout the project area.

Level of Need:
The OMBN anchor institutions' substantial level of need cannot be met by carriers alone through their patchwork infrastructure and service-limiting business practices.

In some parts of the OMBN footprint, carrier services to anchors are not available at all. In many parts, sufficient services are not available. From a functional standpoint, particularly in terms of homeland security/public safety, the project would deliver essential capabilities that anchors cannot currently buy at any price from private carriers.

Further, in Maryland's 15 rural counties, which a State assessment found to be drastically underserved compared to other parts of the State, inadequate infrastructure is not just a barrier to meeting anchors' needs, it is a barrier to economic diversification, inhibits recruitment of new industries, and creates huge areas of unserved/underserved residences and businesses.

The proposed OMBN middle-mile infrastructure will connect 1144 community anchors—all of which lack adequate access to broadband capacity, and all of which have expressed an interest in connecting to the network. The project complements carrier-provided services and addresses geographic areas and needs that carriers do not. In some parts of the One Maryland footprint, carriers do not have adequate facilities to deliver high bandwidth (1 Gbps and up) to core anchors such as schools, libraries, and remote fire-stations (indeed, in some areas, no more than a T1 circuit can be leased from a carrier, if that).

The lack of adequate services to anchors is mirrored by lack of services to residences. Maryland's rural areas are traditionally served—when they are served at all—by the incumbent telecommunications carriers through low-speed dial-up and limited-range DSL access with reliable speeds under 10 Mbps. Residents in many neighborhoods cannot purchase DSL or cable modem services at all, and have been begging for buildout for years. Under the federal

framework for cable franchising, our cable providers are generally obligated to build only where average population density is 30 homes per mile; in less densely populated areas, there is no cable infrastructure or cable broadband.

By supporting last-mile service providers with open-access middle-mile capacity, One Maryland will facilitate the deployment of new and expanded broadband access for the roughly 300,000 to 600,000 underserved residents in the more rural areas of the proposed funded service area.

A History of Need for Middle-Mile Infrastructure
In other parts of the state, the level of need for middle-mile infrastructure among community anchor institutions is borne out by a long history of the institutions trying—and failing—to meet their broadband needs with available carrier services:
1. Anne Arundel County has been approached by multiple anchor institutions, including Public Housing, for service that the institutions say they cannot get from Verizon. For example, Verizon has declined to provide TLS service over fiber to those anchors and offers, as an alternative, VPN service that would traverse the public Internet. For security and reliability reasons, such service cannot be compared to TLS and cannot meet these anchors' needs.

2.Other OMBN members have tried for years to work with incumbents to get infrastructure to unserved and underserved areas. Carroll County, for example, approached both incumbents before embarking on its fiber initiative. In Anne Arundel County, where the County and Comcast have partnered in building fiber for years, the County worked with Comcast staff for six months in 2009 on a joint effort to build the fiber proposed here before the company decided not to participate. The County had similar conversations over a period of weeks with Verizon but Verizon also eventually declined.

3. As part of a UASI grant-funded public safety initiative, the National Capital Region (NCR) jurisdictions released a formal Request for Information (RFI) in 2006 to identify the availability and cost of "dark" fiber optic connections from commercial carriers to implement a regional fiber optic public safety network (NCRnet) interconnecting the networks of the individual jurisdictions. Specifically, this RFI defined specific fiber optic routes needed between key government communications facilities in several counties and explicitly indicated a willingness to consider a range of dark fiber purchase and lease arrangements. The RFI was publicly and formally advertised, and sent directly to more than a dozen carriers and network operators, including AT&T, Comcast, Cox, and Verizon.

4. Among these carriers, only three (Level 3, AboveNet, and Fibergate) provided responses for even some of the necessary links; many of the other carriers were either not interested or did not have the necessary infrastructure. None of the providers were willing to sell their existing dark fiber, but rather proposed long-term (typically 20-year) Indefeasible Right of Use (IRU) agreements. More importantly, the average 20-year cost for a single pair of fibers was nearly $10,000 per mile for links, and in all cases necessitated additional construction to reach the actual interconnection points needed; at these rates, a 20-year IRU for a 216-strand segment would cost over $1 million per mile.

5. Howard County approached Verizon requesting full quality-of-service (QOS) provisioning over a 100 Mbps pipe to meet homeland security needs—but the carrier, as a business matter, allows QOS only on 10% of the 100 Mbps connection and not at all on 10 Mbps connections.

6. When Howard County approached its current carrier to upgrade its bandwidth and voice capacity for emergency reasons, it was forced to sign a multi-year agreement that required legislative approval and took 6 months to complete. By leveraging its own solution in the OMBN, the same upgrade would have taken one day.

7. There is not one cable or broadband provider that has infrastructure built out in all jurisdictions. And even where facilities are available, carriers frequently decline to sell services that government requires. This issue is prevalent in most if not all Maryland jurisdictions. Cable and broadband providers also often refuse to interconnect, as is the case in Howard County. That said, the OMBN vision is for a full partnership with carriers, in which we and they facilitate each others' build-outs. Over the past 15 years, many Maryland jurisdictions have partnered with carriers to realize the efficiencies of shared construction, thereby making deployment both more economical and more extensive; full funding of the project will expand that capability.

Interconnection and Deployment Speed Are Unmet Needs
Government network interconnection is another unmet need that would be addressed by the project. Within each jurisdiction, there are schools and libraries that cannot be connected to each other, and cannot leverage content and share information. In some cases, the private carriers refuse to interconnect with each other. For example, in Howard County, Verizon and Comcast refuse to interconnect—despite franchise agreements that require interconnection and letters from the County Executive requesting the interconnection.

Innovation and speed of deployment are also examples of services that private carriers do not offer, but that OMBN-owned fiber would. Currently, it takes significant time and money to negotiate almost everything that our community anchors seek to do with the carriers. There have been projects that our anchors, including community colleges, have had to abandon due to these logistical hurdles. On our network, in contrast, the same services could be deployed quickly and at no additional cost.

Maryland Community Anchors Need Broadband for Homeland Security/Pubic Safety
From a functional and operational standpoint, particularly from the homeland security/public safety standpoint, government-owned fiber delivers essential capabilities that OMBN partners and anchors cannot buy at any price from the private carriers. Government anchor networks enable local governments to avoid the operational, security and design limitations of leased services with respect to performance, availability and capacity.

Given our location in the national capital region (NCR), the benefits of a government-owned fiber network are essential to the Maryland jurisdictions for meeting their homeland security/public safety needs. Our communities, which include suburbs abutting the District of Columbia, are the first, second, and third lines of evacuation from the nation's capital.

In the event of a terrorist attack targeted on the District of Columbia or a natural disaster centered there, the close-in suburbs in the OMBN consortium are without question the first line of evacuation for City residents. The outer suburbs and rural areas, further away from the District, are the second and third lines of evacuation—and the schools, libraries, and other government buildings in those communities are likely to become evacuation centers, just as they will in the close-in communities.

Planning for this sort of disaster requires the type of robust, redundant, and fail-safe homeland security/public safety communications capabilities that only a fiber network, under end-to-end government control, can guarantee. But even in the absence of catastrophe, private carriers' network outages routinely impact local governments that depend on leased lines for their communications, including public safety communications.

Cost and Capacity Is an Issue, Now and in the Future

Finally, in terms of the need for Maryland anchor institutions' to manage their budgets, cost is an important issue. In the absence of the proposed network, many of the anchor institutions in areas that do have available service cannot afford to purchase comparable middle-mile high-capacity circuits from the private sector; rather, they must simply cap their bandwidth use.

In the rural counties, many last-mile service providers have been crippled by excessive middle-mile bandwidth charges from current backhaul providers that range up to $100 per Mb per month. The OMBN would be able to provide backhaul at close to industry-standard pricing (customarily $2 to $4 per Mb).

In contrast to leased circuits, the proposed fiber network could be upgraded to higher capacity at no increase in recurring costs. And, significantly, the proposed network would not entail recurring costs for capacity ad infinitum as do leased services.

networkMaryland already saves $10M dollars a year in operating costs from owning and operating its own fiber-optic network.

By way of illustration: The community colleges and K-12 school systems in Maryland communities are almost uniformly under budget crisis. The proposed project would not just provide more robust service to those schools now, but it would future-proof the schools' communications budgets, ensuring the services and capacity indefinitely.

Montgomery County provides a useful illustration. Elementary schools served over the County's fiber optic network, FiberNet, receive a symmetrical 100 Mbps for an annual cost of $71 per megabit per site. In contrast, elementary schools served over leased T1 circuits pay an annual per megabit cost per site of $1,826 after the e-Rate discount is taken into account. Without the e-Rate subsidy to the carrier, the cost per megabit per site would be $3,652 per year. This is a savings of $1826 per megabit per site per year to the federal government in e-rate subsidies.

By supporting last-mile service providers with open-access middle-mile capacity, OMBN will facilitate the deployment of new and expanded broadband access for the roughly 300,000 to 600,000 underserved residents in the more rural areas of the proposed funded service area.

H. Technology

Submitted Date:	**Easygrants ID: 7392**
Funding Opportunity: Broadband Technology Opportunities Program	**Applicant Organization:** INFORMATION TECHNOLOGY, MARYLAND DEPARTMENT OF
Task: Submit Application - BTOP	**Applicant Name:** Gregory Urban

Technology Type

Indicate the technology that will be used to deliver last mile services. The following items were selected:

Wireline - Fiber-optic Cable

Other:

Technology Questions

Methodology for Area Status:

The Proposed Funded Service Area consists of 15 relatively sparsely populated rural counties and a 10-community urban area. Though both areas include large numbers of underserved households, the reasons for lack of service vary across the state. Many of the rural areas lack access to broadband, while in the populated areas, lack of affordability limits adoption. For this reason, we assessed level of service in the 15-county rural area based on availability and used economic indicators as a proxy for determining access in the urban area.

National research has repeatedly found broadband adoption correlates with income. A March 2010 FCC analysis found only 35 percent of households with incomes below $25,000 subscribe to broadband. The Pew Internet and American Life Project (April 2009) reports 35 percent adoption at incomes below $20,000, compared to 65 percent adoption nationwide. These findings are well below the 40 percent NTIA threshold for determining level of service.

Applying the more conservative, $20,000 income threshold to GIS census block-level data for the 10-community urban area, we determined that the 147 census blocks which have more than 51 percent of households earning less than $20,000 are underserved. These block groups include 32,052 households with a total population of 124,000.

In the 15-county rural area, we analyzed service based on both availability and subscription rates. For these less populated areas of the state, we started by mapping every phone company central office and blocked off areas representing 18,000 feet around the CO, where DSL is theoretically available, assuming that those areas are "served."

We then blocked off areas where cable franchise agreements are in place and homes presumably have access to cable modem service. This is a very conservative methodology because the cable companies did not build out entire jurisdictions (they were required only to build in the population centers); as a result, we are erring on the side of over-counting homes as "served." In addition, franchise areas do not line up with block group or tract boundaries. To err on the side of assuming more rather than less "served" areas, our methodology assumes that, if 30 percent or more of a geographic area falls within a cable franchise service area, the entire block group is served.

In addition, based on data provided by the independent consulting firm of ECONorthwest, led by Dr. Barry Goodstadt, we determined that, in the rural areas, subscription rates meet the definition for underserved in 60 percent of the census block groups.

Based on this comprehensive methodology, we conservatively conclude that 30 percent of the households in the entire state of Maryland lack access to broadband and 35 percent do not subscribe. Geographically, only 50 percent of the state has access to broadband service (please see GIS map of served and underserved areas, combining both analysis of availability and subscription).

Description of Network Openness:

OMBN members commit that the proposed project will comply with the NOFA's non-discrimination and interconnection obligations.

1. Open Access: networkMaryland will grant to the Maryland Broadband Cooperative, through an IRU, 144 strands of fiber on backbone routes built by networkMaryland with BTOP grant funds. The MDBC will then manage the dark fiber leasing of those strands for the State of Maryland. Through an MOU, ICBN members will provide networkMaryland with at least 12 strands of fiber on all fiber built with BTOP funds.

Further, in the parts of the state where ICBN members own and operate their own infrastructure, ICBN members will make available, to the private sector and other competitive providers and users, a minimum of 24 strands of fiber wherever the BTOP grant funds fiber construction, in the form of dark fiber leases. The ICBN governance committee will be in charge of leasing these fibers on behalf of the consortium and will issue an RFP for a management entity. The remaining

fiber count will be used to meet government, educational, library, public safety, and other internal institutional needs.

2. Network Management: The OMBN will manage its network through partnerships with networkMaryland, Skyline, and Mid-Atlantic Crossroads "MAX". Currently networkMaryland is and will continue to be the operating and management entity for Maryland's state network. Mid-Atlantic Crossroads will also assist with network management allowing OBMN to benefit from MAX's current relationships with Global NOC which now supports the following organizations in varying capacity: Internet2: CPS, DCN, R&E, ManLan, NLR, FrameNet, PacketNet, NLRview, Connecticut Education Network, CIC, OmniPoP, IPGrid, Indiana GigaPoP,TransPAC2, Ampath, Indiana University (Core). The Global NOC consists of 2 tightly coordinated organizations: the Global NOC Service Desk, and Global NOC Engineering. The Global NOC Service Desk - operating on a 24x7x365 basis out of the NOC control room in Indianapolis - provides Tier 1 support for our networks, serving as the primary hub for proactive monitoring and communications among Global NOC engineers, network users, network owners, vendors, and related support organizations. In addition, the Service Desk provides problem verification and helps to synthesize operational data to give engineers and network owners the most useful information possible to operate and manage networks.

3. Interconnection: OMBN commits to the NOFA's network interconnection requirements. Not only will the project interconnect with the public Internet but also with other private, public, and public interest networks and entities for purposes of resource sharing and data exchange including partnerships with Maryland Public Television for purposes of enabling high-bandwidth communications between MPT and hundreds of Maryland schools that can benefit from public television content and curricula.

System Design:

The system design consists of two key network platforms for serving the inter-governmental community anchor institutions and the rural MdBC members who provide last mile broadband services in many underserved areas of Maryland.

The intergovernmental network design consists of 10 Gigabit Ethernet backbone connectivity over a redundantly routed fiber optics between core network facilities located across Maryland. Typical connections to anchor sites from this backbone are 1 Gigabit. The MdBC network is

fiber network using dense wave division multiplexing (DWDM) to provide scalable network services to its members.

These networks represent a best-in-class solution that will provide advanced network electronics with a long useful lifespan, high-availability, redundant hardware configurations; and substantial spare physical infrastructure to be made available on an open access basis to commercial providers to enhance available services and to reach underserved areas.

The proposed physical layer of the network is comprised of 1581 miles of new fiber construction, with up to 216-strands of cables available. The network adds connectivity to 1166 community anchor and interconnection sites, while providing widespread physical infrastructure enabling the MdBC coop member providers to access underserved markets more cost-effectively.

The intergovernmental interconnection network is designed to expand the State of Maryland's networkMaryland, and incorporates 30 major hub locations, each representing an existing core network location for the State or local government municipality in which it resides. MdBC will utilize many of the intergovernmental network hub locations and fiber in addition to 18 new equipment shelters and their existing sites to provide connectivity services.

The connectivity between hub locations will leverage a combination of existing government fiber and new fiber construction. The backbone design targets 99.999% availability with diverse physical paths provided between most hub sites.

The intergovernmental interconnection network design includes deployment of Juniper MX240 series routers at the hubs, configured for high-availability with fully redundant power supplies and common processing hardware in each chassis. Each backbone switch will support advanced IP and routing services, such as IP multicasting for efficient broadcast video delivery; BGP and OSFP for internetwork peering and automatic failover and load balancing of redundant connections; and IP version 6 support.

In addition to significant new fiber in rural areas, the MdBC will deploy a DWDM system (Nortel OME6500) to provide scalable network services statewide. Using multiple wavelengths on shared fiber strands provided by the State throughout central Maryland, MdBC will offer a comprehensive range of optical networking technologies (Ethernet, SONET, 10 Gbps, dark fiber,

etc) on a statewide basis. DWDM will allow the MdBC to greatly expand network capacity to meet growing customer demand.

All new fiber construction funded through BTOP will contain reserve fiber resources (minimum of 24 strands) to be shared on an open access basis with commercial operators. Access to these fibers will occur at regular intervals where feasible, including approximately 7900 underground vaults along 1581 miles of candidate fiber routes.

Specific examples of planned interconnection points include:

Baltimore Technology Park is a large commercial collocation and data center facility located in Baltimore at 1401 Russell St, which contains a carrier neutral interconnection space for accessing a large number of major carriers. The following carriers currently have a point of presence in the BTP:
Fiberlight
Iron Path Networks
Level 3
Litecast
Time Warner
Verizon
Verizon Business
XO

Level 3 Communications is a major backbone carrier and provider of data services for middle mile and long-haul applications. OneMaryland will connect to a major Level 3 hub located at 111 Market St in Baltimore, Md.

The University of Maryland Academic Telecommunications System (UMATS) serves the University System of Maryland as well as other higher education entities in Maryland. Their upstream Internet providers are Cogent Communications, Level3, and TransitRail. OneMaryland will interconnect with UMATS at 6 Saint Paul St, Baltimore, MD.

Mid Atlantic Crossroads (MAX) is the Internet2 Gigapop for MD and VA and is connected to the National Lambda Rail. Their primary customers are research universities and Federal labs.

OneMaryland will interconnect with MAX at the University of Maryland (224 Stadium Dr, College Park, MD) and in Baltimore (6 Saint Paul St).

Broadstripe is a commercial voice, video, and Internet provider operating in Maryland, Washington, and Oregon. Broadstripe is a last mile partner for underserved areas in Anne Arundel County, and will interconnect at three interconnection points.

Freedom Wireless is a commercial wireless broadband provider operating in Carroll and Frederick Counties in Maryland. Freedom Wireless is a OneMaryland last mile partner for underserved areas in Carroll County, and will interconnect with OneMaryland at 7 interconnection points.

Quantum Internet Services is a commercial broadband and telephone service provider. Quantum's current infrastructure will allow them to interconnect at 3 interconnection points in Carroll County, Md.

Maryland Public Television operates the public broadcasting stations in the State and provides educations resources. MPT will have the ability to connect to the One Maryland backbone at the intersection of Owings Mills Blvd. and Reisterstown Rd.

NCRnet is regional fiber optic network constructed to provide interoperable public safety communications between 19 local government jurisdictions within the National Capital Region. NCRnet will interconnect with One Maryland in Montgomery, Prince George's and Frederick Counties.

Is the applicant seeking a waiver pursuant to section IX.C of the NOFA so as to sell or lease portions of the award-funded broadband facilities during their life?

No

I. Project Budget

Project Budget		
	Federal Grant Request	**Match**

Submitted Date:	**Easygrants ID: 7392**
Funding Opportunity: Broadband Technology Opportunities Program	**Applicant Organization:** INFORMATION TECHNOLOGY, MARYLAND DEPARTMENT OF
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Last Mile	0	0
Middle Mile	139,708,442	47,131,500
Total	139,708,442	47,131,500

Project Budget Total: $186,839,942

Match Percent: 25.2%

Projects Outside Recommended Funding Range:

OMBN Project is not outside the recommended funding range. According to NTIA's FAQs which were further corrected this week, the 5-150 million range is for the federal request amount, not on the total budget. However, easy grants ties the total budget amount to this request. Therefore, Easy Grants deemed the project budget tab "incomplete" and required us to fill out this essay.

We also generated a BTOP help-desk ticket number of #1405862 on this matter.

Below we have pasted the information published in version 3 of the Round 2 Grant Guidance for CCI.

"Based on NTIA‘s experience from the initial round of funding, it has determined that the federal request for a CCI project generally should not be below $5 million or above $150 million. An Applicant proposing projects outside of this range must provide a thorough rationale for the requested variance in the project size. NTIA will evaluate this rationale based on the reasonableness of a project‘s costs and the level of funding available for this program."

CORRECTION: Notwithstanding the text of the question, which states that an explanation is required if the total project budget outside the recommended range, an explanation should be provided if the federal request is outside the recommended range.

Outside Leverage	
Applicant is providing matching funds of at least 20% towards the total eligible project costs?	Yes

Submitted Date:	**Easygrants ID: 7392**
Funding Opportunity: Broadband Technology Opportunities Program	**Applicant Organization:** INFORMATION TECHNOLOGY, MARYLAND DEPARTMENT OF
Task: Submit Application - BTOP	**Applicant Name**: Gregory Urban

Matching cost detail	[redacted]

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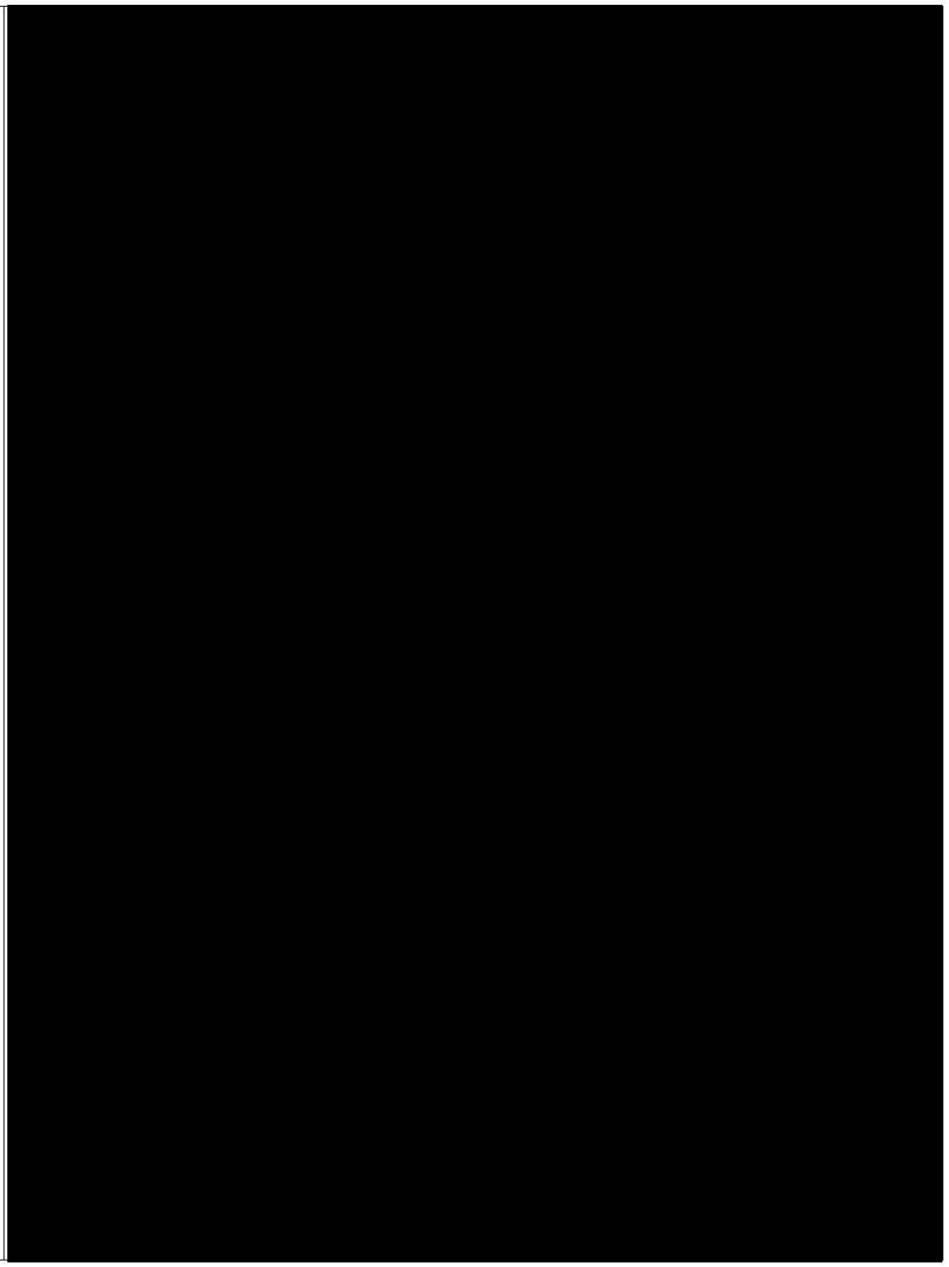

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	[redacted]
Unjust enrichment	
Disclosure of federal and/or state funding sources	

	Infrastructure Committee. This provided an open forum to explore resource sharing opportunities between counties and state entities. Identifying these opportunities assisted in satisfying requirements such as Disaster Recovery, Regional 911, Public Safety, Redundancy, Back haul services to networkMaryland™ and improve overall bandwidth for data services. National Capital Region Network (NCR): Since 2005, the National Capital Region Network that includes Maryland, the District of Columbia and Virginia has received a combination of federal PSIC grants and UASI funds ranging in excess of $20 million dollars to extend a fiber-optic ring linking the National Capital Region into one unified public safety network. The State of Maryland received a PSIC grant in in 2007 totaling $22,934,593 for: a tower and fiber infrastructure, Central Maryland Area Radio Communications (CMARC), Maryland Eastern Shore Interoperability Network (MESIN), Western Maryland Interoperability System Project (IPIX), Public Safety Intranet (PSINET), 700 Megahertz (MHz): Systems Upgrade, Improvement, and Acquisition; State Interoperability Executive Committee (SIEC) Consultant Support; Data Exchange Hub (DEH) and National Capital Region (NCR) Fiber Optic Network Infrastructure (NCRnet); and Management and Administration (M&A).
Budget reasonableness	Each of the OMBN members has successfully operated its own municipal/state fiber optic network for at least 10 years. Each member has a well-qualified network technology staff with proven experience in planning, implementing, operating, and maintaining broadband infrastructure. OMBN will ultimately construct 1580 miles of new fiber optic backbone connecting 1166 sites at an average inclusive (consulting, engineering, construction, testing, equipment, materials, etc.) cost of 118k per mile. Existing competitively bid and awarded equipment, construction and services contracts enabled the consortium to accurately project costs associated with the network.

	Each member worked with local consulting firms to assist with the reasonableness of the budget. Feasibility studies were conducted in 2007 by some members, which reviewed the market and services offered as well as budgets to construct, build, and maintain a fiber optic broadband infrastructure. The results validate the budget was sufficient for the types of technology, material, and construction proposed. Each study incorporated the same theme as the BTOP middle mile project to include the anchor institutions. During the engineering and design phase, each member worked with experienced engineering teams to optimize fiber routes, factoring in existing access points and proximity to community anchor institutions (such as community centers, high schools, libraries, Higher Education including University and Community Colleges, public safety organizations, Communication Towers, Business Parks, hot-spots, etc.). Field survey engineering and GIS software was used to determine proportions of fiber mileage which must be placed underground or mounted aerially. Members reviewed and sequenced their implementation plans, segmenting the applications and lateral implementations into up to four phases, based on the priorities for each entity. Once each member's technical plans and budgets were complete, they were aggregated into a composite budget, schedule, and engineering plan. Each member's tasks were aggregated into a single project schedule; milestones were created to denote the completion of each member phase; the work effort was sequenced with expected available resources.
Demonstration of need	Maryland's state and local governments are facing extreme economic challenges. The Baltimore Sun recently reported that "When the current fiscal year ends in June, Maryland's tax collections will likely

	have dropped 5.2 percent from the previous year, the worst showing on record. Personal income in 2009 is expected to show the lowest growth rate since 1954; unemployment is at its highest level since 1983 and is expected to get worse" (March 14, 2010). The Governor and State legislators, who are currently at work on the FY2011 budget, are attempting "to close an estimated $2 billion budget gap," according to the Washington Post (March 16,2010). The local jurisdictions partnering on the OMBN face similarly dire financial straits. Prince George's County, for example, plans to continue a hiring freeze (keeping up to 1,000 vacant positions unfilled) and will require mandatory employee furloughs for the third year in a row. The City of Annapolis, facing a record $8 million budget deficit, eliminated three dozen city jobs. In these strained times, exacerbated by declining tax revenues and federal support, the State of Maryland and the local jurisdictions partnering on the OMBN project remain committed to providing taxpayer and constituent services, and to deploying the OMBN—especially given that demands for some social programs will increase in this harsh economic climate. However, without the requested federal grant funding, the OMBN project would not be possible. The discount rate used in the Net Present Value (NPV) analysis is 6-percent, which is representative of the jurisdictions weighted average cost of capital. Without BTOP funding, the eight-year NPV is ($17 million), an IRR of over -10 percent. With BTOP funding, the eight year NPV is $25 million, with an ending cash balance of $32 million at the end of year eight. This positive cash balance is required for equipment replacements that start in year eight to maintain the long term stability of the network. Reducing the project BTOP funding below 70 percent would jeopardize the long-term sustainability, and would require the jurisdictions to eliminate project costs that the last mile service

	providers could otherwise leverage to address the needs of vulnerable populations. The current extreme economic conditions have resulted in a curtailment of existing capital projects and requests for funding for projects like building fiber to community anchors in western Maryland. As a result, the funds required for an investment of this magnitude are not available today, nor are they expected in the next three to five years. In short, without this federal stimulus funding, installation of this critical infrastructure and planned fiber broadband network would be stalled indefinitely, if not cancelled. But for the funding, the project would not be built in the foreseeable future.

Funds to States/Territories

States	Amount of Federal Grant Request
Maryland	139,708,442

Funds to States/Territories Total: $139,708,442

J. Historical Financials

Matching Funds			
	2007	**2008**	**2009**
Revenue	23,865,413	24,946,967	25,380,931
Expenditures	25,463,480	27,145,272	28,511,008
Net Assets	18,557,588	17,438,536	14,543,704
Change in Net Assets from Prior Year	-14,000	-1,119,052	-2,859,403
Bond Rating (if applicable)	AAA	AAA	AAA

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K. Project Readiness

BTOP Organizational Readiness

The OMBN will be developed, constructed, and operated by a range of public and private entities—collaborating under the auspices of a Governance Committee led by the State—that have deep collective experience in building and operating interconnected fiber networks, delivering and maintaining broadband service to community anchor institutions, and supporting private last-mile service providers.

The well-established entities represented on the Governance Committee include the Maryland Department of Information Technology, NetworkMaryland, the Inter-County Broadband Network (ICBN), and the Maryland Broadband Cooperative.

The State of Maryland, and the Department of Information Technology (DoIT) in particular, have the proven capabilities, capacity, and processes needed to administer large grants and large communications programs. DoIT has provided connectivity to anchors statewide, through its NetworkMaryland governmental fiber network, for eight years; the OMBN fiber will enable DoIT to leverage its existing organizational capabilities to reach significantly more anchors.

The Inter-County Broadband Network (ICBN), a consortium of 10 Maryland counties and cities, collectively have more than 200 years of experience in information technology services, network management, project management, technology infrastructure development, GIS, data and application development, and telecommunications. Of particular note is the $400 million collective annual operational budgets currently managed by these jurisdictions, and their combined technical staff of more than 500 employees.

In addition to operating their own fiber networks, many of the ICBN jurisdictions have previously developed county-wide consortiums—including schools, libraries, government entities, private industry, and higher education—to connect strategic facilitates with broadband. Projects have ranged from single-year, million-dollar initiatives to 5-plus-year, $30 million programs—all of which have stayed on budget and been completed on time.

MdBC operates under its own established organizational structure, and brings together a team with more than 100 years of experience in telecommunications, finance, business development, and broadband installation/construction. It has managed approximately 345 route miles of fiber installation. Significantly, MdBC brings its 46 members to the project. Many of these telecommunications and utility companies and statewide Internet service providers have submitted letters of support that signal their readiness and intent to leverage the middle-mile capacity for private last-mile deployments throughout the State.

Construction and Vendor Contracts

The Members of the OMBN currently hold or have access to several competitively awarded Engineering, IT, and Construction contracts. Many of the existing contracts have rider language extending the services and negotiated rates to other Maryland governmental entities. The consortium further intends to issue Requests for Expression of Interest in performing various tasks required in constructing the network. Existing competitively bid contracts available for use are as follows:
State of Maryland DOIT - Network Maryland Contract – TORFP #F50B9200037
State of Maryland DOIT – COTS Contract – BPO#060B9800011
State of Maryland DOIT – Hardware Contract – BPO#060B9800013
State of Maryland DOIT – Cable and Wire Contract – BPO#060B9800012
Howard County – Consulting and Engineering – PO#M3826
Howard County – Engineering and Construction – RFP#49-F-1-06/07
Anne Arundel County – Fiber Agreement - #7095
Baltimore County – Engineering and Construction – MA-1106
Baltimore County – MA-1010
Baltimore County – MA-1319
Baltimore County – MA-1320
Montogmery County – Columbia Telecommunications Engineering and Communications Consulting #4346000017AA
Harford County – Engineering and Construction - #08136
Howard County Agreement with CTC, P.O. No. M3826

Customer Base

OMBN is a consortium that comprises three primary operating entities: the State's Department of Information Technology and its networkMaryland fiber network; the local jurisdictions of the ICBN; and the MdBC. The following is a representative sampling of the existing customer base within the proposed funded service area for each of these entities.

networkMaryland provides Internet, intranet, and transport services to governmental customers statewide. The current customer base includes at least 23 state executive-branch agencies, 29 non-executive state offices, and more than a dozen non-state entities (including county governments and institutions of higher education). Approximately 1225 customer sites are currently connected.

The local jurisdictions of the ICBN all have current customers. The customers include the schools, libraries, government buildings, and similar community anchors that the jurisdictions connect to their respective fiber networks. There are approximately 783 anchor sites connected by fiber to networks of the OMBN consortium networks, with many more anchor sites not served by fiber.

MdBC has 46 members. These private Internet service providers (ISPs) are MdBC's customers, purchasing services on the MdBC fiber (e.g., managed optical network services, dark fiber, etc.) to support their last-mile service offerings to residents and businesses. An estimated 99,000 customers are served by the MdBC members within the PFSA.

Licenses, Regulatory Approvals and Agreements

One Maryland consortium members that are state, county and municipal governments, do not require additional leases, state or federal authorizations, or franchise agreements to implement and operate the One Maryland project. The State and local government partner jurisdictions control and own their own public rights-ofways and towers on public property so no additional franchise agreements are needed. However, the many consortium members have already obtained numerous fiber permits, pole attachment agreements and other construction approvals that indicate the shovel-readiness of this project. networkMaryland, and the ICBN consortium members have been building their own networks for years and are shovel ready for a project of this magnitude.

SPIN Number

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L. Environmental Questionnaire

Project Description

The project will build a fiber backbone network connecting 1,166 facilities throughout the State of Maryland. The project will use existing fiber optic connections, conduits for underground cable, and poles for aerial construction wherever possible. Where existing conduit or poles is not available, new underground conduit will be constructed.

No other buildings or new structures will be built. Minor internal modifications may be performed to within facilities to provide the proper environment for network electronics. It is not anticipated that any existing external structures will need modification. All underground fiber is anticipated to be installed in already disturbed ground. For buried cable, different methodologies will be employed depending on requirements and costs, with least-invasive methods first:

If existing underground or in-building conduit is available, new fiber can be pulled through.
Directional bore with auger, water, or pneumatic devices. Requiring a pit dug on each side of the run. If an area is open without paving, cable will be plowed into the ground.
Trench and backfill.

Where new conduit will be required, standard communications vaults will be installed approximately every 700'. Additional attachments may be necessary to bring fiber to sites; these will follow paths of existing telecommunications installations and will not modify any structures.

Property Changes

The project methodology is designed to minimize cost and environmental impact. Where possible, aerial fiber installations and existing conduits will be used with little to no ground disturbance. Where underground installations will be needed, the order of priority outlined above will be used. The project estimates a total of 1581 miles of fiber to be installed. Approximately 474 miles will be overlashed or installed aerially requiring no disturbed ground.

Approximately 1107 miles of fiber will be installed underground with the majority of construction occurring in public right-of-ways. The project plans to use directional boring wherever new underground construction is present. In directional boring, pits will be dug for the boring equipment. The pits do not usually exceed 12'x3', and will be located at intervals of at least 700'. Approximately 7900 vaults will be required for access to the new conduit.
Nearly all construction will be in public rights-of-way, usually in sidewalks, greenways, and paved city streets or in some cases over private commercial or residential areas requiring easements. No construction will be needed on public lands managed by the federal government.

Buildings

The project requires constructing 18 communications equipment huts to operate the network. The huts will be pre-fabricated equipment shelters that will be placed on concrete slabs. The huts will be located in either public right of way, State or County property, or private property; all of which will be previously disturbed ground. Each hut will disturb approximately 200 square feet.

Underground communications vaults will also be needed. These will typically be located in streets and public rights-of-way. All vaults will be installed in previously disturbed areas, either in public rights–of-way, or in private or government-owned areas. A typical vault measures 36? by 24? and is accessible from street level.

Wetlands

Using the National Wetland Inventory, it was determined that a number of wetlands exist in the State of Maryland. However, it is not anticipated that any wetlands will be disturbed. Current construction plans call for construction near some of these locations. Should plans need to be modified, and crossing wetlands be required, the project will apply for bridge attachments or utilize existing conduit on any bridge that crosses a wetland area in order to avoid any construction in a wetlands area. As an alternative option, utilization of an existing utility pole line will be pursued.

Critical Habitats

There will be no construction in critical habitats or existing wildlife refuges, except through existing State or County right of ways that have previously been disturbed. Because of the

nature of the project (installation of fiber on existing utility poles or underground in disturbed ground) it is not anticipated that any habitats or endangered species will be affected. Please see the critical species list attachment for further details.

Floodplain

Much of the State of Maryland is within a 100-year or 500-year flood plain. No building or facility construction, however, is anticipated within a floodplain. The only construction that would occur is conduit and fiber optic construction within these areas. These fiber installations are not eligible for flood insurance, and being outside utility plant, conduit and fiber optics are not easily damaged by water. Please see the accompanying maps for more details on the fiber construction plans with respect to the existing flood plains in the area.

Protected Land

There are 1532 sites on the National Register of Historic Places and hundreds of additional Maryland Historical Properties throughout the State, http://www.mdihp.net/dsp_county.cfm.

Several of these landmarks—all of which have existing utility services—may serve as anchor intuitions for the project. However, the route-selection methodology for this project mitigates the risk of impacting protected sites by utilizing existing poles or constructing conduit in the existing public rights-of-way. When landmark buildings or facilities need to be connected to the network, such facilities will not be significantly impacted by the construction of fiber optics. Existing conduit will be used into facilities where available. The fiber optic connections will follow the existing utility services (e.g., telephone, electricity, gas) into the buildings where possible. No connection into buildings is anticipated for which the building does not have prior telecommunications services installed.

No tribal lands will be impacted by the project.

Coastal Area

The coastal zone management area consists of the 16 eastern Maryland counties and Baltimore City, http://coastalmanagement.noaa.gov/mystate/docs/StateCZBoundaries.pdf. As such the majority of the project, will be constructed within the coastal zone management area. The project will comply with any regulations concerning fiber optic construction in the CZMA.

Brownfield

There are 212 sites in the State of Maryland designated as EPA cleanup sites. No construction is anticipated within any brownfields, although some construction paths may pass over designated areas.

Existing poles or conduits will be used where available to minimize impact. Should new underground installations become necessary, vendors will comply with applicable regulations as part of the regular design and permitting process.

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Uploads

The following pages contain the following uploads provided by the applicant:

Upload Name	File Name	Uploaded By	Uploaded Date
Service Offerings and Competitor Data	One Maryland #7392 Competitive Assessment.xls	Urban, Gregory	03/25/2010
Network Diagram	One Maryland #7392 Network Diagram.pdf	Urban, Gregory	03/25/2010
Build Out Timeline	One Maryland #7392 Build-Out timeline.pdf	Urban, Gregory	03/23/2010
List of Community Anchors and Points of Interest	One Maryland #7392 Anchor Detail and POI.xls	Urban, Gregory	03/23/2010
Management Team Resumes and Organization Chart	One Maryland #7392 Management Org and Resumes.pdf	Urban, Gregory	03/25/2010
Government and Key Partnerships	One Maryland #7932 Key Partner Letters.pdf	Urban, Gregory	03/24/2010
Historical Financial Statements	One Maryland #7392 Historical Financials.pdf	Urban, Gregory	03/24/2010
Budget Narrative	One Maryland #7392	Urban, Gregory	03/25/2010

	Budget Narrative.pdf		
Detailed Budget	One Maryland #7392 Detailed Budget.xls	Urban, Gregory	03/23/2010
Pro-forma Forecast	One Maryland #7392 Proformas.xlsx	Urban, Gregory	03/25/2010
Subscriber Estimates	One Maryland #7392 Subscriber Estimate.xlsx	Urban, Gregory	03/25/2010
Dashboard Metrics	One Maryland #7392 Key Metrics Dashboard.pdf	Urban, Gregory	03/25/2010
Service Area Data	One Maryland #7392 CCI Service Area.xls.xlsx	Urban, Gregory	03/25/2010
Network Maps	One Maryland #7392 Network Maps.pdf	Urban, Gregory	03/25/2010
BTOP Certifications	One Maryland #7392 BTOP certification.pdf	Urban, Gregory	03/25/2010
SF-424 C and D	One Maryland #7392 424 C and D.pdf	Urban, Gregory	03/25/2010
Supplemental Information	One Maryland #7392 Community College and University support letters.pdf	Urban, Gregory	03/25/2010

Supplemental Information	One Maryland #7392 Third-party in kind contributor commitment letters.pdf	Urban, Gregory	03/25/2010
Supplemental Information	One Maryland #7392 Public School support letters.pdf	Urban, Gregory	03/25/2010
Supplemental Information	One Maryland # 7392 Species Report.pdf	Urban, Gregory	03/23/2010
Supplemental Information	One Maryland #7392 Enviro Maps.pdf	Urban, Gregory	03/23/2010
Supplemental Information	One Maryland #7392 Subrecipient historical financials.pdf	Urban, Gregory	03/23/2010
Supplemental Information	One Maryland #7392 Vendor letters of support.pdf	Urban, Gregory	03/25/2010
Supplemental Information	One Maryland #7392 Governmental letters of support.pdf	Urban, Gregory	03/25/2010
Supplemental Information	One Maryland #7392 MD Congressional letter of support.pdf	Urban, Gregory	03/25/2010

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Supplemental Information	One Maryland #7392 Draft Agreements.pdf	Urban, Gregory	03/26/2010