Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program

Submitted Date:	**Easygrants ID: 7280**
Funding Opportunity: Broadband Technology Opportunities Program	**Applicant Organization:** MID-ATLANTIC BROADBAND COOPERATIVE
Task: Submit Application - BTOP	**Applicant Name:** Tad Deriso

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A. General Application Information

Applicant Information	
Name and Federal ID for Applicant	
DUNS Number	143482482
CCR # (CAGE)	55ZS7
Legal Business Name	MID-ATLANTIC BROADBAND COOPERATIVE
Point of Contact (POC)	TAD DERISO 8047867692 Ext. tad@mbc-va.com
Alternate POC	TEAKA COLE 4345701304 Ext. teaka@mbc-va.com
Electronic Business POC	TAD DERISO 8047867692 Ext. tad@mbc-va.com
Alternate Electronic Business POC	TEAKA COLE 4345701304 Ext. teaka@mbc-va.com

Name and Contact Information of Person to be Contacted on Matters Involving this Application:	
Prefix	
First Name	Tad
Middle Name	
Last Name	Deriso
Suffix	
Telephone Number	18048554057

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Fax Number	14345722357
Email	tad@mbc-va.com
Title	President and CEO

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

Project Role	Name	Phone	Email
Secondary Point of Contact	Gray , Ramsey	4345701307	gray@mbc-va.com
Other Contact	Hunter , Ford	4345701303	hunter@mbc-va.com
Other Contact	Dana , Jones	4345701301	dana@mbc-va.com
Other Contact	Glenn , Ratliff	4345701300	gcr@gcrcompany.com

Environmental Point of Contact

Prefix:
Name: Ford, Hunter
Suffix:
Telephone Number: 14345701303
Title: Network Operations Manager

Organization Classification	
Type of Organization	Cooperative or Mutual
Is the organization a small business?	No

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Does the organization meet the definition of a socially and economically disadvantaged small business concern?	No

Authorized Organizational Representative	
AOR Name	DERISO, TAD
Result	Notify

Project Title and Project Description

Project Title: Middle Mile Expansion for Eastern Virginia

Project Description: Mid-Atlantic Broadband Cooperative will extend our open access middle-mile fiber optic network to vital community anchor institutions in unserved and underserved areas of Eastern Virginia. This network will be connected to carrier meet points in Hampton Roads, Virginia providing a robust and scalable network for telecom service providers to access rural markets in Eastern Virginia.

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.

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.

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Comprehensive Community Infrastructure Components

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?

- No, Applicant is subject to these requirements

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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**
Thomas Andrew Deriso	President and CEO	Mid-Atlantic Broadband Cooperative
Graham Collis Ramsey	General Manager	Mid-Atlantic Broadband Cooperative
Hunter Crowder Ford	Network Operations Manager	Mid-Atlantic Broadband Cooperative
Dana S. Jones	Accounting and Finance Manager	Mid-Atlantic Broadband Cooperative
Glenn Chandler Ratliff Jr.	General Manager	Comspec, Inc. T/A GCR Company

B. Executive Summary, Project Purpose and Benefits

Essay Question

Executive Summary of the proposed project:

The Mid-Atlantic Broadband Cooperative (MBC) is honored to submit this joint BTOP/BIP grant application for consideration. As you will see in this application, MBC was formed in early 2004 as a non-profit cooperative to build, operate and manage a 800+ mile advanced, wholesale, open-access fiber optic backbone network in rural Virginia to promote economic development, private investment and job creation.

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MBC completed the initial network build in September of 2006, and became an operational entity. Since that time, MBC has grown our revenues from $0 to $4.2 million per year, and have kept costs in line with growth. MBC has received over $52 million in grant funding to complete this project, including $6 million from the US Department of Commerce, EDA and $48 million from the Virginia Tobacco Indemnification and Community Revitalization Commission.

MBC was a recent Round One awardee from the NTIA/BTOP program for the middle mile expansion in southern Virginia, which includes $16 million in NTIA funding and $4 million in non-federal grant funding from the Virginia Tobacco Commission.

MBC is a unique success story in that we are cash flow positive, are growing the revenue base and adding employees in a very difficult economic environment. We have helped expand the availability of broadband services to residential and business customers in the region by operating this open-access middle-mile network.

The reason we are proposing this project is that there are many K-12 schools and unserved communities in the eastern region of Virginia that do not have access to fiber optic connectivity. In order to make those connections happen, over $12 million in capital must be expended to complete those builds, and unfortunately there are no additional resources or grant funds available to do so, without the assistance of the critical NTIA/BTOP broadband stimulus program.

This project will result in 28 community anchor institutions including K-12 schools, community colleges, hospital and healthcare facilities, including Old Dominion University and their Modeling and Simulation Center. By connecting directly to the MBC network, many new opportunities for research and economic development will be available from a regional perspective, including direct connectivity to the Rolls Royce manufacturing facility in Prince George County Virginia. MBC has successfully extended the open-access fiber network to other school systems in region and have found that schools are now able to attract more competition from service providers that results in more bandwidth with less cost.

This Middle-mile network will enable last-mile services by the private sector. One of MBC's members, Buggs Island Telephone Cooperative, is currently in due diligence with their application for Broadband Stimulus funding for deployment of a substantial wireless last mile broadband network that will cover this proposed service area, utilizing licensed 700Mhz

spectrum. Their last mile network will result in affordable broadband services to residential and business customers in the region and will be an effective leveraging tool to improve the quality of life and ability of unserved regions to be connected.

As discussed in the "Level of Need" section of this application, the proposed funded service area with a population of 95,000 people sits between two large urban population centers of Richmond, VA (1.2 million) and Norfolk/Hampton Roads, VA (1.7 million). This middle mile project will provide the open-access fiber optic backbone network necessary to allow community anchor institutions in these unserved and underserved markets the ability to acquire advanced broadband services at competitive rates, and will level the playing field for economic development by having MBC's carrier neutral open-access fiber optic network to bring telecom service providers and affordable backhaul services for last mile service providers.

As a wholesale, open-access provider, MBC does not discriminate with any carrier, and encourages interconnection with any and all carriers who desire a connection to the MBC network. To date, over 55 telecom providers have joined our cooperative and are using the network in various forms. Some are buying 10Mbps Ethernet transport to their wireless broadband system on a water tower to serve residential customers, to others buying 2.5Gbps and 10Gbps wavelengths to connect their data centers in rural Virginia to key Internet peering points in Northern Virginia and the Southeastern United States.

We plan to extend the use of our carrier-class SONET/TDM backbone network to allow additional network capacity to be provided to the K-12 school systems. MBC provides Ethernet services over SONET network. From a technical basis, we do this because we offer dedicated bandwidth services ONLY. We do not offer shared connections or routed connections that could result in oversubscription of bandwidth. Our Layer 1 optical transport network is highly beneficial to telecom service providers that utilize our network in that the bandwidth is dedicated and not shared with others. This type of connectivity sets MBC apart from other middle-mile providers, and allows us to deploy flexible Ethernet services (that do not exist from the existing incumbent telephone providers), while maintaining a carrier class system.

MBC proposed to build over 170 route miles of new fiber optic cabling, which will ensure connection of all K-12 schools in eastern Virginia that do not have a fiber connection today.

We have identified approximately $12 million dollars in capital costs related to this expansion of fiber optic middle-mile resources. MBC will be investing $1.25 million dollars of our own capital into this project, which is 50% of the required 20% matching funds. Our partner in this project, Old Dominion University, will be investing the remaining $1.25 million to fund the remaining amount. This key support from a public/private perspective is critical in making this middle mile project a success for the unserved and underserved communities in eastern Virginia.

The strategic reasoning that is behind our application for matching Federal grant dollars is that MBC is a proven entity, with a focus on underserved and unserved areas of Virginia, has a business model for how to do open-access networks that has been embraced by other communities. Recent Round One NTIA award winners have reached out to MBC to ask questions about how we set up open-access networks, how our governance structure was developed, and how we operate our network. We are proud to be seen as a successful resource that other NTIA/BTOP awardees look towards to help make their projects successful.

MBC has what few if any other middle-mile providers in rural areas have, which is direct connectivity to Tier 1 Internet peering points in Northern Virginia. MBC has on-net access to Equinix in Ashburn, Virginia where over 190 different carriers interconnect to exchange traffic and IP Transit services. This type of connection is beneficial to the eastern Virginia region, in that we can provide direct connectivity from our ISP and last mile providers in the region to their peering partners, thus improving network performance, reducing costs, and providing a better experience for the residential and business customers that purchase broadband services from MBC telecom service provider members.

The other positive attribute about MBC's proposal is that since we have an existing operational network in place which is up and running today, we can turn up services and start immediately providing middle-mile access to broadband communities once the various fiber segments are completed and tested. We do not need to wait 2 years or more to complete the build, install electronics, and hope to make revenue to make the system viable. MBC will leverage our existing network base that is quite substantial (over 200Gbps of active network backbone capacity, and multiple OC-192 and OC-48 rings providing many middle mile transport circuits).

Using the job creation methodology from the Council of Economic Advisors, we estimate 109 direct job years, and 70 indirect job years and 39 induced job years. MBC has ramped up our

internal staffing to address project management, compliance and reporting, and operational support.

In summary, MBC's grant application presents a substantial value proposition for the return on ARRA dollars invested in the form of new connections, jobs created, and long-term infrastructure built for the benefit of our rural communities. MBC is a strong partner for the grant programs, and many of our political supporters and key stakeholders take comfort in the fact that Federal and State grant dollars have been properly invested in MBC which is proven to be a stable, viable, operationally successful open-access middle-mile network provider.

Project purpose:

MBC's middle-mile project proposal and grant application fits within the statutory purpose of BTOP by the following manner:

Project addresses compelling problem or presents an opportunity consistent with the BTOP statutory goals;

Like most rural markets, the Virginia counties of Southampton, Surry, Isle of Wight, Suffolk and the City of Franklin suffer from lack of broadband availability, high costs from existing providers, and little to no competition for broadband. These markets are between two major metropolitan regions, Richmond, Virginia and Norfolk, Virginia. As with most rural areas situated between metro areas, there is a lack of connectivity, fiber availability and resources available for the rural communities to "hook into" the large fiber networks and make it available to their key institutions and other private sector telecom providers. For instance, Qwest communications has a major fiber optic route along Route 460 that carries a majority of carriers between the Northeastern United States and the Southeastern United States. There is no available access points into these networks to access the carriers or bring that large amount of connectivity to the rural markets.

Project offers an effective solution to that problem or addresses the opportunity

MBC, a proven middle-mile open-access fiber optic network operator, has a solution to those needs. The fiber build proposed in this Round Two application will extend advanced, open access fiber network to the rural, unserved communities in eastern Virginia. By extending

MBC's open access middle mile backbone network to these communities, and tying into carrier interconnection points in Chesapeake, Virginia, this will provide a robust connection for these Eastern Virginia rural communities into the global broadband network infrastructure.

Proposed solution demonstrates broad significance including impact on Round One projects and developments that can be replicated to improve future projects

MBC is grateful to have been awarded a Round One Broadband Stimulus BTOP application from the NTIA. That Round One award extended network facilities towards the eastern part of Virginia. Due to georgraphic restrictions on the matching funding provided for our Round One proposal, we were unable to include the additional rural unserved and underserved communities in Eastern Virginia. This Round Two application will simply extend the fiber optic backbone project into these unserved areas, thus providing a seamless network connecting the unserved and underserved communities of Eastern Virginia.

This proposed project addresses the following BTOP Statutory Purposes:

Provide Access to broadband service to consumers residing in "unserved" areas
MBC has a history of providing access to consumers, however we do not provide the retail part of the equation. MBC provides the middle-mile infrastructure that connects unserved areas to wireless ISP's for instance, and these ISP's use the MBC middle-mile transport network to connect to water towers or communication towers, whereby the ISP places wireless broadband radio transmitters on these facilities, and turns up broadband services for their customers in previously unserved areas.

Provide improved access to broadband service to consumers residing in "underserved" areas
MBC also has a history of accomplishing this very purpose, as indicated by our work with MBC members to connect school systems. While the schools were in areas that would be defined by NTIA under current definitions as "underserved" or even "served" the schools only option for connectivity were T1 or T3 lines with the incumbent phone company. Once MBC extended our open-access wholesale fiber optic network to those schools, and allowed MBC members (private sector telecom providers) to buy transport services from MBC to reach those schools, the schools were able to realize their goal of 100Mbps of dedicated Ethernet capacity from every school

back to a central aggregation point. This type of service on MBC's wholesale open-access network is critical in ensuring their long term success for educating students (their consumers).

Improve Access to and use of, broadband service by public safety agencies
The Appomattox County, Virginia public safety network utilizes an existing MBC tower which is connected to MBC's open-access wholesale network, to improve emergency coordination and public safety components to the residents in the County. The overall network plan proposed by MBC will benefit public safety agencies by allowing access to the MBC open access network and the various members and services that are available on the network.

Stimulate the demand for broadband, economic growth and job creation
In a way, MBC does stimulate the demand for broadband and economic growth and most importantly job creation. While we do not purport to have formal educational programs and academic influence over this process, our reasoning behind saying MBC has this BTOP statutory purpose is that the stimulation of such is our primary goal. MBC was formed as an economic development engine to help bring technology related industries to the region by operation of a carrier-class open-access telecommunications network. There has been much success in this operation, as evidenced by the location of several data center facilities that have created hundreds of millions of dollars of private sector investment, and new companies such as start up web hosting and wireless internet providers who are coming to MBC to start new businesses, using the MBC network infrastructure to do so. Economic development and job creation is at the heart of MBC's mission and we strongly support the interdependence of broadband services as it related to job creation and economic development.

Recovery Act and Other Governmental Collaboration:

MBC plans to conduct extensive outreach to communities who are involved in various stages of leveraging Federal Programs. We have identified other entities that are proposing wireless last mile broadband deployment in this service area, and are planning to leverage the MBC proposed middle mile fiber optic network for backhaul to their internet connection points.

MBC believes it is in our interests as well as our region's interest, to jointly pursue programs where a collaboration effort makes sense.

As Old Dominion University is a partner on this project, including their innovative Joint Modeling and Simulation Center with Tidewater Community College, this project's middle mile

fiber connection will be able to leverage those entities needs for connectivity, and enable the further deployment and use of this middle mile network which will leverage the Community College and University research and educational opportunities.

One of the larger network interconnections is COX Communications, a private sector telecom provider in the Norfolk/Hampton Roads region of eastern Virginia. COX provides commercial and wholesale broadband services to over 2,700 buildings in the region, including many of the energy, transportation, housing and research institutions.

The Virginia Department of Transportation (VDOT), who is a member of the Mid-Atlantic Broadband Cooperative and a user of MBC's middle mile fiber optic network, will be able to tie into this network at our two strategic interconnection points with their own fiber optic network. This tie in will assist VDOT with direct connectivity of their Intelligent Transportation Systems (ITS) network in Richmond, Virginia and Southwestern Virginia (Salem, VA). This critical tie-in will enable VDOT to streamline the usage of traffic information, road conditions, emergency and first responder network information, and other needs.

This proposed middle mile expansion project for Eastern Virginia also includes direct connectivity for several hospitals and health care facilities in the region, including Sentara, Obici and Bon Secours. This direct connectivity will improve the information flow of electronic medical records, and will improve the ability of the rural hospitals to have more connectivity options and direct access to other health care network providers that may be pursuing Federal ARRA funding for various stimulus related projects.

Fit with BTOP CCI Priorities:

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

MBC proposes to connect 100% of identified community anchor institutions within the proposed service area for this Eastern Virginia middle mile expansion project. All K-12 schools that do not have a fiber connection today will be connected to ensure the greatest amount of bandwidth available for their use from the telecom providers. In this application, MBC highlights the specific community anchor institutions for each county, and proposes to extend this middle mile fiber directly into those facilities.

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

MBC, as a proven entity with operational experience, and key partnerships in place for the last several years, will meet this requirement. Historically, MBC has found that owning the network infrastructure as an independent organization that embraces open-access networks benefits all parties. For this particular project, we have partnered with Old Dominion University, a state-funded public higher education institution, to enable the connectivity and utilization of the network for educational purposes. This connectivity also includes key interconnections with Paul D. Camp Community College and the Tidewater Community College, whose campus facilities in the proposed service area will be connected. In addition to the 55+ private sector telecom providers that are members of the Mid-Atlantic Broadband Cooperative, COX Communications, a large private sector telecom provider will be working with MBC to provide dark fiber from our two proposed interconnection points back into COX's main central office for carrier neutral collocation, located in Norfolk, Virginia. This location will provide diverse connectivity for the MBC network 100Gbps ring deployment, as well as provide an on-ramp to their expansive network in the urban region of Hampton Roads, Virginia. COX offers wholesale services, so that any private sector telecom provider can utilize the COX network in the region to connect back to the MBC network, and reach a multitude of community anchor institutions. This key partnership allows MBC to receive the necessary connectivity, without the need for using BTOP/NTIA stimulus funds to overbuild the urban Norfolk, Virginia region that already has substantial fiber assets in place.

3. The Project will deploy Middle-Mile broadband infrastructure in economically distressed areas.

The benefit of this project is not to provide more capacity to the urban region of Hampton Roads, rather it is to connect the economically distressed communities in eastern Virginia, while extending the network to the main carrier meeting points in the urban region of Hampton Roads region, thereby creating opportunity for these small, rural, unserved and underserved communities to have fiber connectivity. This project as proposed will deploy infrastructure in the counties of Southampton, Isle of Wight, Surry, and Suffolk Counties and the City of Franklin, Virginia. Recent economic trends have impacted these communities in a negative way. The City of Franklin was the victim of a large plant closure that has impacted over 1,000 Virginian's

employment. These counties and cities have historically had higher than average unemployment, and lower than average wages across the board when compared to more affluent areas of Virginia and the Nation as a whole.

4. This project will deploy Middle Mile Broadband Infrastructure to community colleges

MBC has identified several community colleges in the proposed service area that will be connected. Paul D. Camp Community College has 2 campuses that will receive a direct fiber connection, and the Tidewater Community College in Chesapeake, Virginia will receive a direct fiber connection as part of this project. The Community Colleges will be able to utilize services from private sector telecom providers who will use the MBC middle mile network for transport to the individual institutions.

6. This project will deploy Middle Mile broadband infrastructure and has commitments from one or more Last Mile broadband service providers to utilize the Middle Mile components.

MBC has 55+ telecom service providers that will utilize the network, and COX Communications, who is also a member of MBC, will be utilizing the network to reach their customers in underserved and unserved areas of this region, and tying those connections back to their large network in Hampton Roads. Since the MBC network and this middle mile project is 100% open-access, there are no restrictions on use of the network from private sector telecom providers, and as the MBC network has been operational for over three years with a host of providers already using the network, this middle mile network expansion for eastern Virginia will be utilized.

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:

Project Role: Other
Name: Waterfield, Rusty
Phone: 7576366920
Email: rwater@odu.edu
Address 1: 5115 Hampton Boulevard
Address 2:
Address 3:
City: Norfolk
State: Virginia
Zip Code: 23529
Organization: Old Dominion University
Organization Type: Non-profit Institution
Small business: No
Socially and economically disadvantaged small business concern: No

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

MBC is partnering with Old Dominion University (ODU) as a funding partner that is committing 50% of the required 20% non-federal matching funds. ODU is an important key partner not just because of their financial commitment, but because of their ability to bring educational, research and content availability to the network and their strong partnerships with Community Colleges and university outreach. IN exchange for ODU's funding commitment, they will receive 12 strands of fiber on the new build for middle-mile expansion at no cost. When ODU decides to utilize the fiber strands or place equipment for collocation along the completed middle-mile network, they will pay normal MBC member rates for fiber maintenance and collocation fees.

As a successful operator of an existing open-access middle mile network, MBC does not require any planning or operational support from communities within the service area. MBC has adequate trained staff and resources to address fiber maintenance, locates, equipment provisioning and maintenance, and facility maintenance. While the local communities support this project, they are not required to assist in any planning or operational support.

D. Congressional Districts

Applicant Headquarters

- Virginia

Project Service States

Virginia

Project Service Areas

Virginia - 1

Virginia - 2

Virginia - 3

Virginia - 4

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

- No

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

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

- Yes

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: Middle Mile Expansion for Eastern Virginia
Rural Classification of the Last Mile Service Area: 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.
No more than 50% of the households in the proposed funded service area have access to facilities-based, terrestrial broadband service at greater than the minimum broadband transmission speed;
No fixed or mobile broadband service provider advertises broadband transmission speeds of at least 3 mbps downstream in the proposed funded service area;
The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: **640**
Total Population in Proposed Service Area: **95,361**
Total Number of Households in Service Area: **35,421**
Total Number of Businesses in Service Area: **346**
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: **41**
Unemployment Rate in the Service Area: **8**
Median Income in the Service Area: **40,282**
Estimated Percentage of Households with Access to Broadband: **30**
Estimated Percentage of Households Subscribing to Broadband: **17**

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F. Community Anchor Summary

Community Anchor Summary	
Schools (k-12)	17
Libraries	0
Medical and Healthcare Providers	4
Public Safety Entities	0
Community Colleges	2
Public Housing	0
Other Institutions of Higher Education	1
Other Community Support Organization	0
Other Government Facilities	4
TOTAL COMMUNITY ANCHOR INSTITUTIONS	**28**
Historically Black colleges and Universities	0
Tribal Colleges and Universities	0
Alaska Native Serving Institutions	0
Hispanic Serving Institutions	0
Native Hawaiian Serving Institutions	0

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TOTAL MINORITY SERVING INSTITUTIONS	**0**

G. Project Benefits

Demographics

Jobs	
How many direct jobs-years will be created from this project?	109
How many indirect jobs will be created from this project?	70
How many jobs will be induced from this project?	39

Methodology used to estimate jobs:
MBC utilized the methodology suggested by the Council of Economic Advisors, published May of 2009. This job creation method will ensure that estimates are accurate and use currently available ARRA methods to produce those job creation numbers.

Project Impact:
MBC proposes to directly connect 28 anchor institutions, which are listed in our application. These 28 community anchor institutions include K-12 schools, community colleges, hospitals, and other educational institutions. Today, these institutions are served by the incumbent carrier (Verizon-former GTE), and Charter communications, a regional cable operator. The broadband availability is primarily TDM services (T1 or DS3). Charter does provide cable modem services to some institutions ranging from 3Mbps to 5Mbps of download speeds. To our knowledge, there are no wireless broadband internet service providers in the proposed service area.

As with all the fiber connections for community anchor type institutions MBC has completed in our regional network, the open-access fiber provides the link for affordable, scalable infrastructure. The minimum transport speed connection is 10Mbps on our all-optical network. The scalability of each community anchor institution is 1Gbps (or 1,000Mbps) without extensive equipment changeouts. This level of bandwidth availability will ensure the current and future bandwidth needs are met with no substantial up-front costs, and that the community anchor institution has the opportunity to choose any provider they wish, with no capital costs to change providers. That is the benefit of open-access networks, and a benefit that MBC has helped provide to hundreds of similar institutions throughout our rural footprint.

When we discuss the proposed project with the community anchor institutions, they are excited about the possibilities. The Community Colleges have a statewide contract for services that is ending soon, and have the opportunity to entertain quotes from new telecom service providers in the next 18 to 24 months, which is perfect timing for the completion of this construction project to extend open-access middle mile fiber to those institutions.

One of the benefits MBC also designs into our middle-mile expansions is the ability for telecom service providers to use the middle-mile network to deploy new wireless broadband services or build additional last-mile fiber optic networks to homes and businesses. We have proven over and over in our existing network with existing members that building middle mile fiber to key community anchor institutions then provides a "jumping off point" for those providers to extend connectivity to a new communications tower, or an existing water tower, or other vertical infrastructure, to enable the deployment of broadband to unserved communities along the middle-mile fiber route. By using the community anchor institutions as the build to points, this gives MBC the ability to offer wholesale transport services to other telecom service providers for the deployment of their networks.

The benefits of extended broadband capacity to anchor institutions and residential/business customers has been well documented and is well known, so MBC will not go into a great amount of detail on the benefits a community will receive from this middle-mile network.

Vulnerable Populations:

The Counties of Surry, Isle of Wight, Suffolk, Southampton and the City of Franklin are rural in nature, and as such have a degree of vulnerable populations. Data from the 2000 census shows that the highest percentage of senior citizens 65 yrs or older are from the City of Franklin (18%), Southampton County (14%), Surry County (14%), Isle of Wight (12%) and Suffolk County (11%). If the percentage of young people ages 15yrs or younger are included in a vulnerable population assessment, the following is a percentage of population. Suffolk county (23%), Isle of Wight County (21%), Surry County (21%), City of Franklin (20%) and Southampton County (18%).

While this middle-mile project will not serve these vulnerable populations directly with a last mile build, there are other telecom service providers that will offer broadband services in the regional footprint. We are also aware that several counties have implemented computer learning centers to help elderly citizens learn new skills with computers and technology.

Submitted Date:	**Easygrants ID: 7280**
Funding Opportunity: Broadband Technology Opportunities Program	**Applicant Organization:** MID-ATLANTIC BROADBAND COOPERATIVE
Task: Submit Application - BTOP	**Applicant Name:** Tad Deriso

Level of Need:

The existing state of infrastructure in the proposed service area is similar to the Charles Dickens' novel "The Tale of Two Cities". The proposed funded service area for this project has a population of 95,361 and sits between two giant population centers; Richmond, Virginia (1.2 million population) and Hampton Roads, Virginia (1.7 million population). These population centers have substantial fiber optic networks and broadband capabilities today. Interestingly enough, there is a large fiber optic backbone network that stretches from Washington, DC to Raleigh, North Carolina, and goes through the Norfolk area. Qwest communications is the owner of this route, and the route from Richmond to Norfolk follows CSX rail line tracks that parallel Route 460, which is where part of this proposed service area is located. However, that network is designed for long haul transport between major markets. The only "access" to this network near the proposed service area is in Waverly, Virginia where a small communications hut sits with equipment to amplify and regenerate optical signals between Richmond and Hampton Roads markets, with no ability to add or drop circuits.

In addition, the local carriers (Verizon and Charter Communications) have fiber optic backbone networks in the region that serve their communications facilities and customers, but do not offer open-access networks. If a carrier wanted to access a rural community, they would have to buy a retail T1 service from Verizon which will cost anywhere from $900 to $1,200 per month (when compared to Richmond or Hampton Roads markets where a T1 price is $300 per month). Additionally a T1 line has 1.5Mbps of bandwidth, which is a far cry from the needed bandwidth of community anchor institutions. The only option for community anchor institutions to increase bandwidth to their facilities is to order additional T1 lines, or upgrade to a DS3 line with 45Mbps of bandwidth. However, the cost structure for that circuit is multiplied by many times, making the cost of service unaffordable for the anchor institutions in the region. According to our findings, Verizon does not offer Ethernet services in all of the proposed service area, and Charter has limited reach in that they do not serve all of the proposed service area. Additionally, Charter does not offer open-access services on their network, again only offering retail services to other carriers that may need backhaul or connectivity to deploy their broadband services.

From a last mile perspective, DSL coverage is limited in the proposed service area, and where it is available is a good alternative for customers who need up to a 1 megabit connection for less than $50 per month. Cable modem services are also adequate for the under $50 per month connection that residential and small business customers receive. However, we strongly argue the point that DSL and cable modems are not adequate broadband connections for community

anchor institutions, and as such, these institutions need direct fiber connectivity fed from a carrier-neutral, open-access, wholesale non-discriminatory source such as MBC.

When the question is asked "Does this region have existing fiber optic backbone infrastructure" the answer is yes. The second question must be "can this region access that fiber optic backbone infrastructure to bring new telecom providers and services into the region" the answer is no. We do not refute the existence of fiber backbones, but we disagree with the notion that they are accessible and useable to benefit the rural communities.

At current time, the community anchor institutions have little to no choice when it comes to competitive carriers. Additionally, the existing technology in the region does not provide Ethernet access that is proven to be a more scalable, more affordable connectivity method versus traditional SONET/TDM infrastructure.

The National Broadband Plan recently published from the US Federal Communications Commission makes note that community anchor institutions including schools, libraries, community colleges, and the like should have access of at least 1Gigabit per second (approximately 1,000 times the capacity of a T1 line). For the existing carriers to implement this type of connectivity would be cost prohibitive, and would not make sense for a capital investment. The good news is that MBC's mission of bringing advanced wholesale, open access fiber networks to rural communities helps eliminate this barrier for advancement and will ensure a future proof infrastructure for years and years. Another critical point of note is that as an open-access network, every telecom provider who wished to use the network may do so at the same rates and structure as all members. That means that Verizon and Charter, the two incumbent carriers in the region, may utilize MBC dark fiber, or even MBC lit transport to these community anchor institutions, so that they can serve them without a large capital cost up front.

MBC has successfully worked with other providers in the Southern Virginia region, including COX and Comcast, two incumbent providers, to utilize the MBC network to reach their customers cost effectively in areas they could not reach. VerizonBusiness is a large user of the MBC network, using high capacity transport services to reach their end customers in Verizon footprint where the Verizon facilities are inadequate to provide the needed connectivity speeds due to outdated infrastructure. Again, this is not to be critical of Verizon or the other incumbents, but is simply being used to point out the facts that community anchor institutions in rural regions

with low population centers need the same connectivity options as other community anchor institutions located in major urban population centers.

There is a defined need for Old Dominion University to have access to diverse routes for connectivity to the National Lambda Rail (NLR) network located in McLean, Virginia. MBC has on-net connectivity to that location and services the transport needs of MBC members to that location. Currently, ODU purchases a large amount of bandwidth from Verizon to access that location in Northern Virginia, and it is a single path, meaning when there are outages on that network, it takes down ODU's connection to the NLR grid. ODU has discussed their needs with other carriers including Qwest and Level3, but to keep the costs affordable, the route the circuit would carry from those other providers rides in the same fiber sheath as Verizon's fiber network, thus eliminating the diversity availability. ODU desires to purchase a large amount of bandwidth from another carrier, but utilize the MBC open-access network to provision that circuit. The MBC network does not share any common points or routes with Qwest or the other carriers, and is a completely diverse network. This will enable ODU to have two private sector providers, at affordable rates, and improve their ability to leverage national and international connectivity to the largest research network in the world, all made possible by this NTIA/BTOP investment in infrastructure.

COX communications also serves many of the healthcare and related facilities in the Hampton Roads region. To expand upon their health-net network that will benefit all healthcare providers by providing a substantial bandwidth capable network, they must connect all hospital institutions to their network. Our proposed fiber interconnection points with COX communications allow us to offer transport services to COX for connecting the outlying facilities and allowing the end users (hospitals and clinics) to have access to robust facilities. According to COX, there are no adequate facilities in place today from the various providers to allow connectivity at the speeds required.

Another MBC member, Buggs Island Telephone Cooperative, owns the 700mHz spectrum in Southampton, Surry and Isle of Wight counties, and has submitted an NTIA/BTOP proposal for last-mile funding for their wireless network, which is currently in due diligence. The network design for deployment of this advanced wireless last mile network necessitates a fiber connection to a tower, and minimum speeds of 10Mbps, with a proposed connection of 50Mbps back to the Buggs Island Telephone network in Bracey, Virginia (that MBC currently serves). To make the connections feasible, BIT needs dedicated Ethernet connectivity to these tower sites, and the

existing carriers in the region are unable to offer dedicated Ethernet services. Therefore, it is critical that MBC's middle mile project be able to support companies like BIT and others who desire to deploy advanced wireless networks, whether they be licensed, or unlicensed, wifi or Wimax, to ensure the greatest options and opportunities for backhaul of the wireless traffic back to their network interconnection points.

H. Technology

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:

MBC has utilized recently completed information from the Commonwealth of Virginia Statewide Broadband Mapping initiative. This initiative (which MBC was heavily involved in) resulted in carriers around the State indicating the areas they served for wireless and wireline services, and the resulting data was compiled in an ESRI Shape File map, which is loaded into our mapping system to identify census blocks and show existing and new middle-mile fiber optic routes.

The maps we have included in our application show unserved, underserved and served areas.

Unserved is defined by MBC as having no access to broadband services, other than dial up internet services. That means that no more than 90% of the households have access to facilities-based terrestrial broadband services at speeds at least 768kbps downstream, 200kbps upstream;

Underserved is defined by MBC as having access to one or more wireless OR wireline broadband service provider in a given census block. Although a broadband provider exists, there are several factors that indicate why the area is deemed to be underserved. MBC has indicated in

the census block tables why each block was considered underserved. MBC has included the following abbreviations for ease of matching the NOFA definitions with MBC definition. (AC) Access: The definition of "AC" matches with the NOFA definition of "no more than 50% of the households in the proposed funded service area have access to facilities-based terrestrial broadband services at greater than the minimum speeds of at least 768kbps downstream, 200kbps upstream. (SP) Speed: The definition of "SP" matches with the NOFA definition of "no fixed or mobile terrestrial broadband service provider advertises broadband transmission speeds of at least 3Mbps downstream in the proposed funded service area. (SB) Subscribers: The definition of "SB" matches with the NOFA definition of "the rate of broadband subscribership for the proposed funded service area is 40 percent of households or less.".

Served areas are defined as having access to more than 1 or more wireline service provider and meets the NOFA definition of Served.

An important distinction to make in methodology for area status is the piece for middle mile services for strategic community facilities. For instance, we propose to deliver 100Mbps of direct Ethernet transport to every K-12 school in the service area. In many cases, if any area shows "served" by definition it is for households that have a high percentage of broadband availability at faster speeds. Bottom line, if the local telephone company cannot deliver 100Mbps Ethernet services to the schools regardless of if the area is served, underserved or unserved, then that should be noted somewhere.

Overall, MBC has utilized information gathered by the State of Virginia from their recent broadband mapping efforts, and that is the information used to determine our service area and middle-mile routes and termination points.

Description of Network Openness:

MBC has embraced the concept of open-access networks since our inception in January of 2004. It is absolutely critical that networks built with public funds that will benefit the public use be open to any and all providers, including incumbent telephone company and MSO cable companies.

MBC has a long and successful track record with open-access networks, as evidenced by our successful project in Southern Virginia. Over 50 telecommunications service providers use the MBC network today to reach un-served and underserved markets. These customers range from

billion dollar companies like Verizon Business, Qwest and Level3 Communications, down to small wireless ISP's, and local competitive exchange carriers.

The proposed middle-mile network build project shall be a wholesale, open access network built for use by retail telecommunications service providers.

From a policy perspective, MBC does not discriminate against any carrier, and is open to all interconnection requests. Most carriers like Embarq, AT&T, Cavalier Telephone, Qwest, Verizon Business, Level3, Comcast and others interconnect with MBC today for a variety of Layer 1 transport requirements, and MBC has completed Master Service Agreements with those carriers.

MBC connects to both the "public" internet and peering exchanges in several locations, including carrier neutral interconnection facilities of TelX at 56 Marietta Street in Atlanta, Georgia, Level3 gateway in McLean, Virginia (1755 Old Meadow Road), Level3 Synergy Sites in Charlotte and Raleigh, North Carolina and Richmond, Virginia, Equinix facility in Ashburn, Virginia and the Terremark NAP of the Capital Region in Culpeper, Virginia. MBC brings a wide range of carrier neutral interconnection options to this project, which will greatly exceed the NTIA requirements for non-discrimination and network interconnection obligations.

As a primarily Layer 1 optical transport provider, MBC does not and will not block access or packet shaping, or restrictions on connectivity or bandwidth utilization. MBC provisions either wavelength or Ethernet circuits over our SONET network infrastructure at the STS-1 level, thus ensuring that when a telecom provider buys 100Mbps of transport services, they have a dedicated 100Mbps pipe for their services.

System Design:

MBC has proposed utilizing our existing system design of carrier-class optical transport network delivery. This design has been highly successful at bringing advanced, middle-mile open-access telecommunications services to un-served and underserved communities in Virginia.

For this proposed Middle-mile project, we offer the following comments on our proposed infrastructure buildout, including fiber backbone, Node facilities, Electronics, and Internet backbone access requirements.

Fiber Backbone Infrastructure
MBC proposed use of SMF-28E, single mode 144 strand fiber optic cable and 24 strand fiber cable to individual community anchor institutions in 12 fiber loose tube configuration using armored sheathing. Installation will be direct buried along roadway right of ways (thru existing MBC agreements with the Virginia Department of Transportation). Where aerial facilities are needed, fiber will be placed in the communications zone of existing pole facilities and will utilize existing pole attachment agreements with providers already in place by MBC. Handholes will be placed at road crossings and other locations to facilitate access of last mile providers and lateral fiber builds to water towers, existing communication towers, etc. to the middle-mile backbone project.

Node Facilities
MBC proposed to build Four (4) new node facilities along the route, which will be 12'x20' pre-cast concrete structures, and will provide carrier neutral cross connect and interconnection points in the communities. The Node facilities are designed with 200amp single phase power, dual HVAC systems, emergency generator backup with low-emission EPA rated diesel fuel powered systems, and substantial grounding and monitoring systems.

Electronics
MBC will utilize carrier class providers of optical transport equipment to facilitate the lighting of the network to provision services along the middle-mile route. MBC proposes to deploy 100Gbps DWDM network provided by Infinera, a California based company that MBC has used for the past 4 years to light long haul and regional DWDM networking capabilities.

MBC will extend our Ciena (formerly Nortel) Optical Metro Edge 6500 series system to the nodes to facilitate the provisioning of lower bandwidth speeds for aggregation at the community anchor institutions, and for carriers and other service providers who only require 10mbps, 50mbps or 100mbps connections to their end points.

This network Backbone System will tie back into MBC's existing network interconnection points in Emporia, VA and Dinwiddie, VA and will be robust enough to handle the interconnection facilities and requirements (both short-term and for the foreseeable future) of last mile service providers in the proposed funded service area. Optical transport services will be provided from 10Mbps up to 10Gbps for telecom service providers.

All Electronics will be powered using redundant power, and will be monitored and managed 24x7x365, from MBC's existing Network Operations Center.

Internet Backbone Access
MBC operates a 100% on-net facilities based network that connects unserved and underserved communities in Virginia to key Internet peering points and interconnection facilities. MBC has our own network equipment in the Equinix IBX facility located in Ashburn, VA. Many MBC telecom service provider customers are using MBC to transport their circuits to Ashburn, where MBC cross connects to various IP Transit providers. This has dramatically reduced the cost of internet access in the region, and greatly expanded the competitive landscape of the number and types of carriers now able to reach formerly unserved and underserved areas of Virginia.

Reasoning of Infrastructure Choices
Fortunately for the NTIA, MBC has already invested a substantial amount of money ($52 million to date) to provide access into the key peering points in Northern Virginia and the Southeastern United States, manage over 800 route miles of fiber optic sheath that is owned and controlled by MBC, and implement creative and cost effective policies that showcase middle-mile access projects as the key to revitalizing regional economies.

MBC has proven that networks built to carrier-class standards and operated as a wholesale network with open-access policies for any and all telecom service providers are beneficial to the communities served, and result in more last-mile, telecom service providers to access the network to enable deeper reach into un-served markets as well as increase their bandwidth to the commodity internet while reducing their ongoing costs at the same time.

We have found that this type of infrastructure also provides an opportunity to offer flat-rate pricing on the regional network. This is important as it creates a level playing field for all telecom providers

Upgrade and Scalability of Network
MBC has designed this network with upgrade and scalability in mind. As with all of our network builds, ease of upgrade is critically important, as many of our customers require fast upgrades to support their growing telecommunications businesses. For instance, when we provision a 100Mbps transport circuit, we provision that on a 1Gbps Ethernet port. If the customer needs to

increase to 150Mbps or 200Mbps, MBC can do that remotely and requires about 10 minutes to re-provision the circuit.

Upgrading the system is simple, as additional cards can be added to increase backbone speeds. The installed network can scale to 400Gigabits per second by just adding additional cards in the equipment. MBC utilizes Ciena (former Nortel) and Infinera as our primary equipment providers, and will continue using that equipment for cost effective utilization. MBC has invested over $500,000 in network operations and management software systems from the two vendors, and this standardization will ensure a cost effective equipment deployment for this middle mile expansion project.

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**
Last Mile	0	0
Middle Mile	10,023,247	2,505,812
Total	10,023,247	2,505,812

Project Budget Total: $12,529,059

Match Percent: 20.0%

Projects Outside Recommended Funding Range:

-

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

eligible project costs?	
Matching cost detail	Mid-Atlantic Broadband Cooperative is providing matching cash funds of $1,252,906 which is 10% of the total project budget. Old Dominion University Research Foundation is providing the remaining matching cash funds of $1,252,906 which is also 10% of the total project budget.
Unjust enrichment	No federal support for this project is currently being received nor has any federal support been previously applied for in the area MBC is seeking an award.
Disclosure of federal and/or state funding sources	No federal or state funding has been received relative to activities or projects associated with this application.
Budget reasonableness	The proposed budget of $12,529,059 represents construction of the following facilities: • 170 route miles of fiber cable • Four node shelters for housing electronic equipment • SONET and DWDM transport equipment The OSP construction cost estimate is $8,260,120 which covers the installation of 170 route miles of fiber at an average cost of $48,589 per mile, or $9.20 per foot. These costs include all materials and labor to complete the construction, and for the additive costs of $160,000 in permitting fees for railroad crossings, and $795,000 for bridge attachments and cable placement over waterways. MBC has constructed over 800 fiber route miles in its five year history, and the cost estimate is based on historical data. The estimated cost of the four node shelters is $532,000. This estimate was calculated by using MBC historical costs on a per node basis of $58,000 for the shelter, $50,000 in site preparation, $25,000 for a backup generator. The $2,937,139 in network costs for Infinera DWDM equipment, Nortel SONET equipment, and supporting hardware such as DC power systems, routers, etc. are based on budgetary quotations

	received from OEMs. The component requirements were determined by MBC Technical Staff's evaluation of the network topology and the services likely to be subscribed to by the anchor institutions in this proposal. The remaining $799,800 in costs are the estimates for outside plant engineering, legal fees, project management, project inspection, environmental assessment costs, and grant administration. The estimate is based on MBC historical cost data.
Demonstration of need	This analysis displays that the project is not financially attractive and could not be financed commercially since positive cash flow is not reached within the eight year period. Without a BTOP grant the investment will not be made. The project is sustainable with a BTOP grant, and will be cash flow positive from year 3. This project's merit cannot be measured in financial gain as it strives to improve the educational resources of an entire region. As a stand-alone project, no single school district could undertake a project of this nature. The project can only be achieved by addressing the entire region, leveraging the economies of scale, and taking advantage of the past investment in the MBC regional backbone network and operational support systems.

Funds to States/Territories

States	Amount of Federal Grant Request
Virginia	10,023,247

Funds to States/Territories Total: $10,023,247

J. Historical Financials

Matching Funds			
	2007	**2008**	**2009**

Revenue	7,336,338	8,804,252	12,501,929
Expenditures	3,038,543	1,913,476	3,852,329
Net Assets	34,232,135	40,151,735	42,188,266
Change in Net Assets from Prior Year	2,281,494	5,919,600	2,036,531
Bond Rating (if applicable)			

K. Project Readiness

BTOP Organizational Readiness

Mid-Atlantic Broadband Cooperative is prepared to implement, manage and operate the advanced, open-access middle mile network that is proposed. As a recent award winner in Round one of the NTIA/BTOP program, MBC has developed comprehensive plans for managing that project, and has hired necessary staff to assist with project reporting, tracking, budgeting, project management, operational support and overall fiscal compliance.

MBC is a successful operator of an existing wholesale open-access network, and currently manages a broadband network comprised of more than 800 miles of fiber in Southern Virginia in our regional/metro network. We also manage over 1,200 miles of long haul fiber tying our rural regional network into major Internet exchange and peering points in Northern Virginia and the Southeastern United States.

Our senior management team has substantial experience in the telecommunications field. MBC has an eleven member Board of Directors dedicated to MBC's regional economic development mission that provides governance and policy decisions corresponding to MBC activities.

The senior management team at MBC is comprised of Tad Deriso, President & CEO and Gray Ramsey, General Manager. Hunter Ford is our Network Operations Manager and is in charge of coordinating maintenance and construction activities for our regional network. We are hiring seven more people to work with MBC, however those positions have not been filled as of the filing of this application. Resumes of our new project managers and staff will be provided to NTIA upon request in the due diligence process.

Network Management, Billing and Customer Care operations are already being done by MBC, and we will not require any additional grant support for those types of operations.

MBC, as a successful, existing wholesale carrier, is well qualified to carry out the full implementation and ongoing operational support requirements. MBC has a fully operational network that has been up and running for over 3 years and has a comprehensive understanding of billing, customer care, network operations, network maintenance, financial reporting, and overall management. MBC's ability to integrate this projects operation into the daily operations of MBC is not an issue. MBC will establish a separate department to track grant activities, revenues, expenses for assurances of auditing and government transparency requirements. As MBC has been the recepient of over $55 million in grants from State and Federal agencies for broadband network deployment, we understand the requirements of separate accounting and accountability for the project expenditures and take this responsibility very seriously.

MBC's existing carrier members are anxious for this project to be completed, as it will enable their services to be expanded to other unserved and underserved markets in eastern Virginia, thus improving the access for middle-mile services to those affected regions.

Construction and Vendor Contracts

The contractors we intend to rely on for the building and implementation of the new network include Better Cable Systems Inc., RACO, Inc. and Telephone Engineering Consultants (TEC). Both Better Cable Systems Inc. and RACO Inc. will be contracted to lay the fiber optics for the building and implementation of the proposed network. MBC has an ongoing relationship with RACO, Better Cable Systems and TEC, and are ready to start immediately. We have used these companies for several years and are confident in their abilities to provide the best costs, as indicated with their ongoing relationship with MBC.

For equipment purchases, MBC has existing purchase and license agreements with Ciena (now Nortel) and Infinera for optical transport equipment that will be used on this project. MBC managed services company technicians will be responsible for the installation, testing and turn up of that equipment.

Customer Base

MBC's customer base consists primarily of telecommunications service providers. As a wholesale entity that provides open-access transport services, it is important that MBC not provide retail broadband services. While MBC will build fiber into the community anchor institutions within the proposed funded service area as part of this middle mile project, MBC will not provide services (or bill for services) directly to those middle mile institutions.

While not all of MBC's 55+ telecom provider members will use the middle mile network in eastern Virginia, a couple who will utilize the network to reach customers include COX Communications, Buggs Island Telephone Cooperative, Telpage, Cavalier Telephone, Level3, VerizonBusiness, Kinex, Ntelos, Digital Bridge Communications, KDL, AboveNet, and Core180.

Our approach of enabling telecom service providers to utilize the middle-mile network funded by this project is a proven winner, and our customers are excited about the prospects of extending their reach into these unserved and underserved communities in Eastern Virginia.

Licenses, Regulatory Approvals and Agreements

Dues to MBC's considerable experience in operating and managing a large middle-mile telecommunications network, few licenses and agreements will be needed for successful implementation and operation of the project. The pertinent license, regulatory approvals and agreements are as follows:

Land Leases: MBC will acquire those leases with the County owned land that is part of our placement of shelter buildings. These are long term easements and MBC has successfully negotiated over 24 of those agreements for our existing network deployment.

Rights of Way: MBC has an executed, ongoing Memorandum of Understanding with the Virginia Department of Transportation for use of their right of way for the entire state. We will not be required to renegotiate another agreement, as our existing agreement will cover this project.

Railroad crossing permits: There are several railroad crossings required for this project, and MBC will work with the railroad permitting agencies to complete the required paperwork. MBC has over 30 existing crossing agreements with railroads and do not anticipate any lengthy delays for completion of the permits.

SPIN Number

MBC, as a wholesale provider of transport services, does not provide retail telecommunications services. Therefore, MBC does not have a FCC Universal Service Fund Service Provider Identification Number (SPIN). Many of MBC's telecom provider members do have SPIN numbers, and would be utilizing those numbers when bidding on Form 470 bids for K-12 and other educational type broadband bids for services.

L. Environmental Questionnaire

Project Description

MBC understands and complies with this request and commits fully to design considerations and construction activities that will not have an adverse impact on the environment. The MBC network proposed construction consists of 170 miles of aerial and underground/buried fiber optic cable and the installation of 4 communication huts.

Property Changes

The aerial cable will be placed on existing utility pole mounted infrastructure. This construction will substantially utilize existing utility pole line infrastructure and will not require new digging except where pole replacement may be required in the existing right of way.

The buried cable will be placed in previously disturbed City, County and State right-of-ways. This will consist of placing with a vibratory plow with occasional directional bores and open trenching to a depth of 36 inches. MBC enjoys preferred treatment allowing for construction within the confines of limited access highways through a Memorandum of Understanding with the Virginia Department of Transportation.

The amount of property excavated for the buildings will be 30 feet by 30 feet. The current land use is Industrial/Commercial or Business Park and is zoned as such.
The buildings are planned to be placed in Business and or Industrial Parks owned by the Counties or other municipalities within the scope of the project. Information garnered from the

National Integrated Land System web site indicates that no buildings or cables will be located on Federal Lands.

Buildings

The buildings are precast concrete with a pebble coating and measuring 12 feet by 20 feet. The buildings will be located on municipality property that has been previously disturbed.

The fiber cables will be located on the Virginia Department of Transportation Right of Way or on existing utility pole lines.

Wetlands

Wetlands are present near the project and it is proposed to bury the fiber cable on Virginia Department of Transportation right-of way through the vicinity of the wetlands. The wetlands will not be affected by construction of this project, although MBC will follow proper permit and environmental mitigation practices to ensure proper construction of the fiber network near wetlands.

Critical Habitats

The proposed project is located in the counties of Surry, Isle of Wight, Southampton, Suffolk and the City of Franklin, Virginia. MBC did not identify any threatened, endangered or candidate species on the U.S. Fish and Wildlife Services Web site in our initial assessment for critical habitats.

Floodplain

MBC takes great care to ensure the communication huts (12'x20') concrete buildings are not located in any floodplain. To maintain a carrier class network, it is critical that the impact of floods or other natural disasters not affect the network facilities.

The cables will cross floodplain areas via Virginia Department of Transportation right-of-way or existing utility pole lines. The fiber is protected from floods as it is either buried or placed on aerial pole lines well above any potential flood water. MBC has enjoyed a working relationship with the U.S. Army Corps of Engineers in the past and expects to obtain permitting for the cable from the proper agencies. The FEMA maps are included for detailed clarification.

Protected Land

The proposed project will be placed on Virginia Department of Transportation right-of-way or on existing utility pole lines and should have no impact on any protected land or historic places. Additionally, a more involved study will be completed during the Environmental Assessment and before construction to determine if any alternatives or mitigations will be required. MBC will consult with Virginia's State Historic Preservation Office to ensure compliance.

Coastal Area

According to MBC findings, the counties of Surry, Isle of Wight and Suffolk are located within the boundaries of the coastal zone management area. MBC intends to abide by all regulations and apply for all necessary permitting within the Coastal Zone Management Area in Virginia. This information was analyzed from the NOAA Office of Ocean and Coastal Resource Management's Web Site.

Brownfield

The proposed project is not located within any brownfield site that has been identified on the EPA Website.

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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	18.1Service Offerings and Competitor Data.xlsx	Deriso, Tad	03/25/2010
Network Diagram	18.2 Network Diagram.pdf	Deriso, Tad	03/25/2010
Build Out Timeline	18.3 CCI Build-Out Timeline.pdf	Deriso, Tad	03/25/2010
List of Community Anchors and Points of Interest	18.4 CCI Anchor Detail and POI Final.xlsx	Deriso, Tad	03/25/2010
Management Team Resumes and Organization Chart	18.5 Mgmt Team.Org Chart.pdf	Deriso, Tad	03/25/2010
Government and Key Partnerships	18.6 ODU Match Letter.pdf	Deriso, Tad	03/26/2010
Historical Financial Statements	18.7 Historical Financial Statements.pdf	Deriso, Tad	03/25/2010
Budget Narrative	18.8 CCI Budget Narrative.pdf	Deriso, Tad	03/25/2010

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Detailed Budget	18.9 Detailed Budget.xlsx	Deriso, Tad	03/25/2010
Pro-forma Forecast	18.10 Pro Forma Forecast.xlsx	Deriso, Tad	03/25/2010
Subscriber Estimates	18.11 Subcriber Estimates.xlsx	Deriso, Tad	03/25/2010
Dashboard Metrics	18.12 Key Metrics Dashboard.pdf	Deriso, Tad	03/25/2010
Service Area Data	18.13 CCI Service Area Data.xlsx	Deriso, Tad	03/25/2010
Network Maps	18.15 MBC TidewaterMap1&2.pdf	Deriso, Tad	03/25/2010
BTOP Certifications	18.16 BTOP Certification.pdf	Deriso, Tad	03/25/2010
SF-424 C and D	18.17 SF424C.SF424D.pdf	Deriso, Tad	03/25/2010
Supplemental Information	Map 1.pdf	Deriso, Tad	03/25/2010
Supplemental Information	Map 2.pdf	Deriso, Tad	03/25/2010
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Supplemental Information	BIT MBC Letter of Support.pdf	Deriso, Tad	03/25/2010
Supplemental Information	Cox Letter of Support - MBC.pdf	Deriso, Tad	03/25/2010
Supplemental Information	WHRO Letter of Support.pdf	Deriso, Tad	03/26/2010
Supplemental Information	Dana Jones Form CD-346.pdf	Deriso, Tad	03/26/2010
Supplemental Information	Glenn Ratliff Form CD-346.pdf	Deriso, Tad	03/26/2010

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Funding Opportunity: Broadband Technology Opportunities Program	**Applicant Organization:** MID-ATLANTIC BROADBAND COOPERATIVE
Task: Submit Application - BTOP	**Applicant Name:** Tad Deriso

Supplemental Information	Graham Ramsey Form CD-346.pdf	Deriso, Tad	03/26/2010
Supplemental Information	Hunter Ford Form CD-346.pdf	Deriso, Tad	03/26/2010
Supplemental Information	Tad Deriso CD-346.pdf	Deriso, Tad	03/26/2010