



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: Easygrants ID: 4866	
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: ENVENTIS TELECOM, INC.
Task: Submit Application - BTOP	Applicant Name: Gregory T Flanagan

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A. General Application Information

Applicant Information	
Name and Federal ID for Applicant	
DUNS Number	079792722
CCR # (CAGE)	1SXB7
Legal Business Name	ENVENTIS TELECOM, INC.
Point of Contact (POC)	WENDY KAMM 5073871704 Ext. wendy.kamm@hickorytech.com
Alternate POC	JOHN MORTON 7635773987 Ext. jmorton@eventis.com
Electronic Business POC	ANDREW BERGER 3202271040 Ext. andrew.berger@hickorytech.com
Alternate Electronic Business POC	JOHN MORTON 7635773987 Ext. jmorton@eventis.com

Name and Contact Information of Person to be Contacted on Matters Involving this Application:	
Prefix	
First Name	Gregory
Middle Name	T
Last Name	Flanagan
Suffix	
Telephone Number	218-740-6153



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Fax Number	
Email	gflanagan@eventis.com
Title	Director, Business Development

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

Project Role	Name	Phone	Email
Secondary Point of Contact	Mr. Walter A., Prahl III	2187406151	wprahl@eventis.com

Environmental Point of Contact

Prefix: Mr. Name: Beddow, Dan Suffix: Telephone Number: 2187406125 Title: Director, Transport Services
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Organization Classification

Type of Organization	For-profit Entity
Is the organization a small business?	No
Does the organization meet the definition of a socially and economically disadvantaged small business concern?	No

Authorized Organizational Representative

AOR Name	KAMM, WENDY
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Result	Notify
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Project Title and Project Description

Project Title: Greater Minnesota Broadband Collaborative

Project Description: The Enventis proposal is a middle mile fiber optic network project connecting 74 community anchor institutions in rural Minnesota to an advanced high capacity Ethernet broadband network. The statewide Minnesota network leverages Enventis’ existing 2400 mile fiber network with 418 miles of new fiber construction directly connecting each community anchor institution with at least 100MB of service.

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.
7. This project will deploy Middle Mile broadband infrastructure and the applicant has proposed to contribute 30 percent or more in non-federal cost match.

Comprehensive Community Infrastructure Components

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



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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: N/A

Easygrants ID: 0

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
0	N/A

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

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:



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Name	Title	Employer
Gregory Flanagan	Director, Business Development and Wholesale Services	Enventis Telecom, Inc.
Walter Prah	President, Wholesale Solutions and Business Development	Enventis Telecom, Inc.
David Christensen	Chief Financial Officer	HickoryTech Corporation
John Finke	President and CEO	HickoryTech Corporation

B. Executive Summary, Project Purpose and Benefits

Essay Question

Executive Summary of the proposed project:

The Greater Minnesota Broadband Collaborative proposal, led by Enventis Telecom (Enventis), details a Comprehensive Community Infrastructure (CCI) category, middle mile project to build a high-capacity Ethernet fiber network directly connecting community anchor institutions throughout Minnesota with 100MB and greater Ethernet service.

Within the state of Minnesota, there are two broadband communication environments: the Twin Cities of Minneapolis and St. Paul (Twin Cities) metro area and greater (or rural) Minnesota. The Twin Cities of Minneapolis and St. Paul residential customers, businesses, and local service providers have multiple choices for low-cost, high capacity broadband services. Multiple Tier 1 Internet backbone networks converge in the Twin Cities of Minneapolis and St. Paul offering choice and competition while keeping prices low. Greater Minnesota customers including rural last mile service providers are either dependent on resellers of Internet service or are faced with very high middle mile transport costs to reach the Tier 1 Internet backbone networks located in the Twin Cities of Minneapolis and St. Paul. The ability to obtain new high capacity Ethernet



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services of 100MB or greater is simply unavailable or unaffordable for many communities in rural Minnesota.

The proposed Enventis network plan seeks to increase access to affordable high-capacity broadband services for customers in Minnesota’s rural communities by connecting them to a high-capacity Ethernet fiber network.

Enventis provides leading edge high capacity fiber-based transport and access services to a widely varied customer base including regional and national telecommunications carriers, LECs, ISPs, wireless carriers, other service providers and small to medium businesses. The core of our service is an extensive statewide fiber network and community access rings, supported by a 24x7x365 Network Operations Center. Enventis began in 1997 and has continued to grow despite tough economic environments. We excel at planning, deploying and managing innovative networking solutions that support business-critical bandwidth requirements and applications and we differentiate our service by utilizing a consultative approach in developing innovative and flexible solutions to deliver the best overall value.

Enventis is a wholly owned subsidiary of HickoryTech Corporation, a diversified communications company with headquarters in Mankato, Minnesota. HickoryTech is in its 111th year of operation with its roots in the local telephone exchange business.

Enventis has collaborated with its partners, the State of Minnesota Office of Enterprise Technology (OET), the University of Minnesota Office of Information Technology (OIT), and the Mayo Clinic, to identify community anchor institutions and partner facilities requiring 100MB Ethernet service connections for delivery of high-capacity Internet or Ethernet private line service using the proposed Enventis high-capacity Ethernet network.

The enhanced Enventis Ethernet fiber network will serve the State of Minnesota by connecting public safety organizations such as county sheriff, emergency management and local police departments to the core State of Minnesota-operated fiber network. It will also provide for transport of high-definition video Telepresence Distance Learning for schools/libraries.

The proposed network will serve the Minnesota State College and University (MnSCU) system by connecting community colleges to the main network. The proposed network includes construction of a new 213 mile fiber optic network route connecting the main University of



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Minnesota campus in the Twin Cities of Minneapolis and St. Paul with the University of Minnesota Duluth (UMD). The new construction will provide the University of Minnesota access to dark fiber connecting its campuses with high capacity 10GB Ethernet service today and higher capacity 40GB and 100GB service in the future. The proposed fiber network facilities installed for the University will also be used by agencies of the State of Minnesota under a cooperative sharing arrangement with the State of Minnesota Office of Enterprise Technology (OET).

Enventis is also proposing to provide 100MB Ethernet connections to 12 Mayo Clinic rural health care facilities throughout southern Minnesota and connect them to its Rochester, Minnesota headquarters. This high-capacity network will enable the Mayo Clinic to provide distance health care training, education and remote telemedicine-based clinical care services to its rural Minnesota patients and health care providers.

Enventis' proposal leverages its existing 2400 mile self-healing physically diverse fiber network and enhances it with the construction of 418 new fiber miles equipped as a 10GB Dense Wave Division Multiplex (DWDM) network. DWDM provides economy of scale to deliver high bandwidth at low cost per bit. The new construction will include two fiber builds – Twin Cities of Minneapolis and St. Paul to Duluth and Brainerd to Moorhead – and includes the extension of middle mile fiber laterals to serve partner sites of interest along the new and existing network. On the middle mile laterals, Enventis will deploy equipment compatible with its existing 40-channel ROADM-based DWDM technology enabling delivery of TDM and Ethernet services. Enventis will place appropriate equipment at partner sites to provide end users with private network services and access to the public Internet through Enventis or a provider of their choice.

The Enventis Ethernet proposed network system is protocol agnostic allowing customers choice in deploying technology and provides carrier neutral access for rural last mile service providers to all Tier 1 Internet service providers and carriers using Enventis interconnection facilities in the Twin Cities of Minneapolis and St. Paul. The Layer 2 backbone services will be route-protected using ring topology, are capable of supporting 10GB per wavelength, and will be field-upgradable to 40GB to 100GB. Since its inception, Enventis has offered wholesale interconnections on a non-discrimination basis to all customers. This wholesale relationship has been managed by the use of mutually agreed upon Master Services Agreements (MSAs) commonly used by telecom carriers. Enventis' existing business practice complies with the



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requirement defined in the 2nd round NOFA to offer interconnection on a non-discrimination basis.

This solution proposes to serve community anchors including healthcare/medical facilities, public safety organizations, state courts, libraries, K-12 schools, community colleges, and other higher education institutions. The new high capacity Ethernet statewide network will connect 36 rural Minnesota cities and towns in 23 counties; nine of these counties are rated as ‘economically distressed’ by the federal Bureau of Labor Statistics (BLS) and the Bureau of Economic Analysis (BEA). The proposed network will enable delivery of a minimum of 100MB of broadband Ethernet services to 74 community anchor institutions and provide access with these new services for 886,000 people living in 315,000 households and provide low cost, high capacity broadband access for over 74,000 small to medium businesses in rural Minnesota.

Enventis and HickoryTech have 455 employees that provide 24x7x365 network and customer service from its offices in Duluth, Edina, Mankato, Minneapolis, Plymouth and Rochester. The company has experienced strong growth, despite the recession, and continues to create new jobs. If the Enventis application is approved, Enventis will indirectly help create demand for jobs at suppliers that produce the materials and equipment used to support this project, will create new jobs for fiber optic network construction crews and hire new permanent employees to provide service for our larger statewide network footprint.

Both Enventis and Hickory Tech are profitable companies and the corporate financials are reported to the public quarterly and annually. Enventis is applying for a \$16,833,617 grant from NTIA for the installation of the new broadband network. Enventis proposes to add a 30% match of \$7,214,407 for a total of \$24,048,024 for the planned network.

Project purpose:

The Enventis plan focuses on providing low cost, high capacity Ethernet service for community anchor institutions including healthcare/medical facilities, public safety organizations, state courts, libraries, K-12 schools, community colleges, universities and state colleges and other essential government institutions. Enventis, working within its public/private collaborative partnership with the State of Minnesota Office of Enterprise Technology (OET), the University of Minnesota Office of Information Technology (OIT), and the Mayo Clinic have identified vital community anchor institutions to be upgraded with new low cost, high quality service providing a minimum of 100MB of connectivity to each community anchor location. The Enventis network



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plan leverages its existing 2400 fiber route mile network and upgrades and enhances it with the addition of 418 fiber route miles of new construction delivering an advanced high capacity Ethernet protocol broadband network. The expanded network will enable the State of Minnesota agencies, University of Minnesota campuses, and the Mayo Clinic to offer a minimum of 100MB of Ethernet connectivity to each location delivered over a 10GB Dense Wave Division Multiplex (DWDM) backbone network. The backbone network will be capable of upgrade to 40GB and 100GB capacities as equipment advances and as upgrades are needed. Enventis' network design provides a self-healing, reliable foundation for lower cost and higher speed networks in the future producing a solid investment both now and as technology advances.

The Enventis network connects its high capacity Ethernet fiber services to nine counties in Minnesota that have been rated 'economically distressed' by the Bureau of Labor Statistics (BLS) and the Bureau of Economic Analysis (BEA). Throughout most of the planned Enventis service area that will be supported by this middle mile network, the availability of high capacity Ethernet services at an affordable price is very low. Rural Minnesota is burdened by low population densities that have not attracted the private capital necessary to offer an Ethernet backbone network delivering high quality services at prices community anchor institutions and rural service providers can afford. The result is the service areas the Enventis network covers, while they do have low speed broadband options, the service is of low quality (low speed) and is offered at a higher cost than is available in major metro areas such as the Twin Cities of Minneapolis and St. Paul. This puts customers and government entities at a comparative disadvantage.

Enventis is proposing to deliver dedicated Ethernet services throughout its rural Minnesota footprint that are simply unavailable today. Ethernet service offerings in rural Minnesota today are 'shared' systems delivered, where available, by cable company carriers. 'Shared' Ethernet services are inherently inferior to dedicated systems offered through the proposed Enventis network in terms of quality, which is extremely important now with the needs of high quality video transmission for conferencing and medical telemedicine applications where each pixel needs to make it to its destination without error. The design of the dedicated Ethernet network provides for a 10GB DWDM network today, upgradable to 40GB and on to 100GB when equipment and demand requires it. Enventis' network is highly efficient and designed for the future. Our customers in rural Minnesota will be able to obtain Ethernet services at prices presently available only in major metro areas like the Twin Cities of Minneapolis and St. Paul.



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The Enventis project plan was carefully designed to provide newly available high capacity Ethernet service to rural Minnesota service providers. Windomnet, a Round 1 \$12 million RUS-BIP grant recipient based in Windom, Minnesota, has endorsed the Enventis proposal because the Enventis network will offer high capacity services to rural users at prices comparable to major metro areas like the Twin Cities of Minneapolis and St. Paul. This will allow Windomnet access to lower cost, high quality Ethernet connectivity and provide additional choice of vendors and increased competition of backbone service providers for its Fiber to the Home project.

The North East Service Cooperative (NESC) is a Round 1 \$43 million RUS-BIP grant recipient building an 830 mile fiber network covering unserved and underserved areas of Northeastern Minnesota. Enventis, who already has a working relationship with NESC, will interconnect its new network in Duluth, Minnesota with the new proposed Enventis fiber route between the University of Minnesota-Duluth and the Twin Cities of Minneapolis and St. Paul. Enventis will offer NESC and its service provider customers direct access to all Tier 1 Internet service providers' regional POP/HUBs located in the Twin Cities of Minneapolis and St. Paul where Enventis has fully protected, fiber diverse interconnections. This synergy enhances the efficiencies of federal government funds awarded in Round 1 with projects awarded in Round 2, complementing each other to the benefit of the community anchor institutions, service providers, residents and businesses of Minnesota.

Recovery Act and Other Governmental Collaboration:

Enventis' proposal significantly enhances the work planned through the Mayo Clinic's BEACON (Health IT Beacon Community Program) grant application. The Beacon Community Program is a \$235 million program of the Department of Health and Human Services based on the Health Information Technology for Economic and Clinical Health Act (HITECH ACT). Mayo is leading the Southeastern Minnesota Community Healthcare Information Technology Collaboration. The 11-county region of southeast Minnesota will collaborate to adopt meaningful-use Health Information Technology (HIT) standards and Health Information Exchange (HIE), with childhood asthma and diabetes metrics. The Enventis network plan calls for the installation of 100MB Ethernet services to 12 Mayo-affiliated clinics in southern Minnesota helping to optimize the Health Information Technology network using the most advanced high capacity Ethernet service available.

The Enventis project plan was carefully designed to provide newly available high capacity Ethernet service to rural Minnesota service providers. Windomnet, a Round 1 \$12 million RUS-



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BIP grant recipient based in Windom, Minnesota, has endorsed the Enventis proposal because the Enventis network will offer high capacity services to rural users at prices comparable to major metro areas like the Twin Cities of Minneapolis and St. Paul. This will allow Windomnet access to lower cost, high quality Ethernet connectivity and provide additional choice of vendors and increased competition of backbone service providers for its Fiber To The Home project.

The North East Service Cooperative (NESC) is a Round 1 \$43 million RUS-BIP grant recipient building an 830 mile fiber network covering unserved and underserved areas of Northeastern Minnesota. Enventis, who already has a working relationship with NESC, will interconnect its new network in Duluth, Minnesota with the new proposed Enventis fiber route between the University of Minnesota-Duluth and the Twin Cities of Minneapolis and St. Paul. Enventis will offer NESC and its service provider customers direct access to all Tier 1 Internet service providers' regional POP/HUBs located in the Twin Cities of Minneapolis and St. Paul where Enventis has fully protected, fiber diverse interconnections. This synergy enhances the efficiencies of federal government funds awarded in Round 1 with projects awarded in Round 2, complementing each other to the benefit of the community anchor institutions, service providers, residents and businesses of Minnesota.

The Enventis network connects its high capacity Ethernet fiber services to nine counties in Minnesota that have been rated 'economically distressed' by the Bureau of Labor Statistics (BLS) and the Bureau of Economic Analysis (BEA).

Fit with BTOP CCI Priorities:

Enventis plans to connect 74 community anchor institutions throughout Minnesota with 100MB of Ethernet broadband service via its newly expanded high capacity Ethernet network. Our collaborative public partners are the State of Minnesota OET; and the University of Minnesota, a Land Grant University System with campuses in the Twin Cities of Minneapolis and St. Paul, Rochester, Duluth, Crookston, and Morris, MN. We've also partnered with the Mayo Clinic, a world famous clinic and medical center based in Rochester, MN, which is a not-for-profit 501(c)(3) charitable organization. Working with our collaborative, Enventis has identified key anchor locations in need of high capacity Ethernet service. Enventis' proposed project will connect nine community colleges, 19 healthcare/medical facilities, seven University of Minnesota Extension/Research/Campus locations, eight public safety locations, 10 schools and libraries, and 21 other state and local government locations such as state courts, Departments of Corrections, Departments of Employment and Economic Development, etc, primarily for clients



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of the State of Minnesota OET. Enventis proposes to upgrade its existing 2400 fiber route mile network and add 418 new fiber route miles of construction and equip the network with a 10GB Dense Wave Division Multiplex (DWDM) network infrastructure supporting its next generation, all Ethernet service network at very high capacities.

The Enventis middle mile network will connect high-capacity Ethernet fiber services throughout nine counties in Minnesota that have been rated ‘economically distressed’ by the Bureau of Labor Statistics (BLS) and the Bureau of Economic Analysis (BEA): Clay, Crow Wing, Le Sueur, Morrison, Pine, Rice, Wadena, Waseca and Watonwan. Enventis, working with its collaborative partner the State of Minnesota, is providing direct network connectivity to nine community colleges that are part of the Minnesota State Colleges and Universities (MSCU) system, a network of 32 public colleges and universities with campuses throughout Minnesota. MSCU operates its own intra-college network in cooperation with the State of Minnesota OET. The Enventis proposal calls for the installation of 100MB Ethernet circuits into each community college and then backhauling that circuit to the nearest MSCU/State of Minnesota HUB. These HUBs are located at Minnesota State University – Moorhead, Moorhead, MN; Winona State University, Winona, MN and multiple other subordinate POPs. The Enventis proposal also plans fiber builds into each HUB. Enventis will provide Ethernet broadband network access to eight public safety locations including sheriff and police departments in rural Minnesota.

Enventis plans to aggressively pursue incumbent local telephone, independent Internet Service Providers (ISPs), and new Fiber To The Home (FTTH) operators for services available on the Enventis middle mile network. One such service provider is Windomnet, based in Windom, Minnesota. Windomnet is a Round 1 \$12 million award recipient through the RUS-BIP program and has been funded to build Fiber To The Home networks in rural communities in southern Minnesota. Windomnet has provided a support letter for the Enventis proposal and is delighted to be able to obtain high capacity Ethernet services allowing direct and low cost access to the Tier 1 backbone networks in the Twin Cities of Minneapolis and St. Paul. North East Service Cooperative (NESC), a Round 1 \$43 million RUS-BIP award recipient, who is already a customer of Enventis, plans on interconnecting with the proposed Enventis fiber route connecting Duluth to the Twin Cities of Minneapolis and St. Paul. NESC’s successful application calls for the construction of 830 fiber miles providing dark fiber to local and state government and service providers in unserved and underserved locations throughout Northeastern Minnesota. The Enventis planned fiber build between Duluth and the Twin Cities



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of Minneapolis and St. Paul enhances the NESC network by providing them direct and low cost access to the Tier 1 backbone networks in the Twin Cities of Minneapolis and St. Paul.

Since its inception in 1997, Enventis' mission has been to provide the highest quality telecommunications transport services to its customers. Enventis provides leading edge high capacity fiber-based transport and access services to a widely varied customer base including regional and national telecommunications carriers, LECs, ISPs, wireless carriers, and other service providers based on a policy of non-discrimination. Enventis will provide a 30% match to any federal funds awarded as a result of this Broadband Technology Opportunities Program.

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

- No

Is the applicant delinquent on any federal debt?

- No

If Yes, justification for delinquency:

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: Sub-recipient Name: Johnson, Jim Phone: 6512011016 Email: jim.e.johnson@state.mn.us Address 1: 658 Cedar Street



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<p>Address 2: 500 Centennial Building Address 3: City: St. Paul State: Minnesota Zip Code: 55155 Organization: State of Minnesota Organization Type: State or State Agency Small business: No Socially and economically disadvantaged small business concern: No</p>
<p>Project Role: Sub-recipient Name: Regimbal, Randy Phone: 5072842583 Email: regimbal.randy@mayo.edu Address 1: 200 1st Street SW Address 2: Address 3: City: Rochester State: Minnesota Zip Code: 55905 Organization: Mayo Clinic Organization Type: Non-profit Foundation Small business: No Socially and economically disadvantaged small business concern: No</p>
<p>Project Role: Sub-recipient Name: Cawley, Steve Phone: 6126258855 Email: cawley@umn.edu Address 1: 100 Church Street SE Address 2: Address 3: City: Minneapolis State: Minnesota Zip Code: 55455 Organization: University of Minnesota Office of Information Technology (OIT) Organization Type: Other Small business: No Socially and economically disadvantaged small business concern: No</p>



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

The State of Minnesota Office of Enterprise Technology (OET), the University of Minnesota Office of Information Technology (OIT) and the Mayo Clinic have joined with Enventis in the Greater Minnesota Broadband Collaborative for the purpose of pursuing NTIA-BTOP funds to connect community anchor institutions and partner sites with high-capacity broadband services.

The State of Minnesota OET’s mission is to provide the leadership and resources that improve government services through the effective use of information technology. The Office of Enterprise Technology (OET) provides planning and technical infrastructure services for its principal customers including the citizens of Minnesota, state agencies and constitutional officers, public school systems and higher education institutions, and the local political subdivisions of the State. The State of Minnesota OET operates its own statewide fiber network providing transport services for all agencies of the State of Minnesota including public safety agencies such as sheriff and police departments; the Minnesota Judicial Branch that includes the Supreme Court, Court of Appeals, and District Courts; the Department of Employment and Economic Development (DEED) offices, numerous other state agencies, and the Minnesota State Colleges and University system (including all community colleges). The State of Minnesota OET works closely with the University of Minnesota for planning and implementation of new network investments and cooperatively shares network capacities benefiting both institutions.

The State of Minnesota OET leases a substantial portion of the network it manages including leased transport services provided by Enventis. The State has identified the community anchor institutions it serves that are most in need of the proposed 100MB Ethernet service connections. Enventis will be providing low cost service to the State of Minnesota OET for both 10GB backbone wavelength service and the 100MB connections to its community anchor institutions. Enventis’ competitive service pricing reflects the contribution of capital from the NTIA BTOP award allowing for the low rates.

The University of Minnesota has over 50,000 students and is the fourth largest university in the United States. The University is a federal Land-Grant institution with campuses in Minneapolis, St. Paul, Morris, Crookston, Rochester, and Duluth, Minnesota. Enventis, working with the University of Minnesota Office of Information Technology (OIT), is responding to a Request for Proposal (RFP) issued by OIT in January of 2010, seeking access to dark fiber connecting its principal campuses and other affiliated University locations. As part of its network plan, Enventis proposes to build a new 213 mile fiber route connecting the University of Minnesota –



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Twin Cities campus HUB with the University of Minnesota – Duluth HUB. If awarded NTIA-BTOP funds, Enventis will install a low cost 10GB circuit connecting the two campuses as an interim solution and will begin construction on the new fiber route. Upon completion, Enventis will grant the University of Minnesota OIT ownership rights to the underlying fiber to be used by OIT at any time in the future while Enventis maintains the fiber route and monitors the service 24x7x365. This would provide OIT the assurance of full network control and the ability to upgrade to higher capacity services such as 40GB or 100GB systems as their bandwidth needs increase.

The Mayo Clinic is a not-for-profit foundation with a medical practice dedicated to the diagnosis and treatment of virtually every type of complex illness. Mayo provides clinic and hospital services from its flagship location in Rochester, Minnesota with affiliate clinics located throughout southern Minnesota. Mayo, working with Enventis, has identified 12 Mayo Clinic affiliate locations to be brought on-net with 100MB of services that will then be backhauled to the main Rochester location using the proposed Enventis broadband Ethernet network. The contribution of capital from the NTIA BTOP award allows Enventis to offer the Mayo Clinic services at prices competitive with those of the larger metro markets.

D. Congressional Districts

Applicant Headquarters

- Minnesota

Project Service States

Minnesota

Project Service Areas

Minnesota - 1

Minnesota - 2

Minnesota - 3



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Minnesota - 4

Minnesota - 5

Minnesota - 6

Minnesota - 7

Minnesota - 8

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:	Greater Minnesota
Rural Classification of the Last Mile Service Area:	Rural
Service Status of the Last Mile Service Area:	Served



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If Service Status is "Underserved" please select at least one applicable option from this list.

Total Square Miles in Service Area: 1,600
Total Population in Proposed Service Area: 886,000
Total Number of Households in Service Area: 315,000
Total Number of Businesses in Service Area: 74,000
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 74
Unemployment Rate in the Service Area: 7
Median Income in the Service Area: 45,826
Estimated Percentage of Households with Access to Broadband: 85
Estimated Percentage of Households Subscribing to Broadband: 45

F. Community Anchor Summary

Community Anchor Summary	
Schools (k-12)	4
Libraries	6
Medical and Healthcare Providers	19
Public Safety Entities	8
Community Colleges	9
Public Housing	0
Other Institutions of Higher Education	7
Other Community Support Organization	0
Other Government Facilities	21
TOTAL COMMUNITY ANCHOR INSTITUTIONS	74



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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
TOTAL MINORITY SERVING INSTITUTIONS	0

G. Project Benefits

Demographics	
Jobs	
How many direct jobs-years will be created from this project?	261
How many indirect jobs will be created from this project?	97
How many jobs will be induced from this project?	94

Methodology used to estimate jobs:

Enventis has applied the recommended Council of Economic Advisors (CEA) methodology as well as an internal analysis of direct hires by role and responsibilities to produce the job-years estimates for the Greater Minnesota Broadband Collaborative Project. Applying the CEA methodology of \$92,135 per job-year figure against the project scope of \$24,048,024 results in 261 total direct job-years. Further applying the ration of 64% of the job-years representing direct and indirect efforts and 36% of the job-years representing induced efforts yields a total of 167 direct and indirect job-years and 94 induced job-years. From a direct staffing perspective, Enventis anticipates adding multiple positions that will be staffed for an indefinite period of time. The specific new positions added would include one engineer, one assistant engineer, two technicians, one Network Operations Center technician, one provisioning staff and one sales



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person for a total of seven new FTE positions. For the purpose of this calculation, the time frame used was 10 calendar years. Seven new positions over a 10 year time period results in 70 direct job-years. The total of all jobs would be 70 direct job-years, 97 indirect job-years (167 minus 70) and 94 induced job-years.

Project Impact:

The Enventis proposal leverages its existing 2400 mile fiber optic network with the construction of 418 new miles of fiber backbone network and lateral fiber extensions directly reaching 74 community anchor institutions in the service areas connected. The combined network is a 10G DWDM network providing low cost, high capacity Ethernet services for 23 rural Minnesota counties, serving 886,000 people in 315,000 households. The proposed Enventis network footprint will reach over 74,000 rural Minnesota businesses. Enventis' network includes the extension of middle mile fiber laterals serving partner sites of interest along the new and existing network. Enventis has worked closely with our collaborative partners to identify 74 community anchor institutions in the proposed funded service area that are in need of or would benefit greatly from improved access to high-capacity, competitively priced bandwidth services. These include healthcare/medical facilities, public safety organizations, state courts, libraries, K-12 schools, community colleges, universities and other higher education institutions, and other essential State of Minnesota government agencies. Presently, many of these community anchor locations are handicapped with very low capacity speed limited to T1 (1.544Mb) which is wholly inadequate for their current needs and prevents their users from taking advantage of new video-enabled applications requiring high capacity transport services.

Enventis is directly connecting the proposed 74 community anchor institutions with Ethernet service connections with a minimum of 100MB of service capacity. These new high capacity circuits can be used to connect to the State of Minnesota OET-operated network, enabling county sheriffs to reach the centralized Bureau of Criminal Apprehension (BCA) database in St. Paul. This criminal information database is expanding its service offerings to include fingerprint, criminal files, and video files which require higher capacity circuits that the new Enventis network provides. Also, the Judicial branch of the State of Minnesota courts system require higher capacity circuits to reach the State of Minnesota OET-operated network for new video-based services such as taking remote, video-based, affidavits and depositions. As noted in this application, low cost, high capacity Ethernet services are unavailable or too costly in most of rural Minnesota. The Enventis proposal solves these problems.



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The Enventis plan connects each service area with a potential Ethernet capacity of 10GB, utterly transforming the potential of communication services in those areas. Higher education institutions like community colleges will be able to connect directly to the State of Minnesota OET network via 100MB Ethernet private line service which will be built into each college and backhauled, using the new Enventis network, to the nearest State of Minnesota POP/HUB. This upgraded network capacity will allow faculty and students to access a wide array of state and national video-enabled distance learning programs providing increased educational opportunities to a much broader group of people, particular within rural communities. Access to top educators at a regional or national level will improve each community college’s curriculum and educational programs offered.

The Enventis plan for constructing a new 213 mile fiber route between the University of Minnesota – Twin Cities HUB and the University of Minnesota – Duluth campus will dramatically improve the connection and data transmission speeds for its students and staff. The increased capacity will also allow faculty and staff of the Duluth campus to join the Internet2 National Research and Development Network of which the University of Minnesota-Twin Cities is part. Today the Duluth campus is relegated to inferior lower speed connections compared to the rest of the University system which inhibits its ability to participate in grant opportunities from federal and private sources that require very high capacity and high quality Ethernet communication services to transmit large amounts of data. If awarded NTIA-BTOP funds, Enventis will install a low cost 10GB circuit connecting the two campuses and ensuring the University of Minnesota a future-enabled network where upgrades to 40GB and 100GB transmission systems can be added as capacity needs demand it and equipment becomes available.

Enventis’ proposed installation of 100MB connections to 12 Mayo Clinic satellite locations throughout southern Minnesota aims to deliver a low cost, high quality service allowing each facility to participate in and offer telemedicine options to include remote patient care, training, education, and advanced remote surgery applications. Telemedicine programs increase access to quality medical care and world-renowned providers for both rural Minnesota residents and patients throughout the country. There are sweeping changes underway in America’s healthcare system and increased broadband access and connectivity will be needed to support these changes and provide quality medical care to all Americans.



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Additionally, the expanded Enventis network will have a significant impact for existing rural telecommunications and broadband service providers by offering a lower cost, high quality Ethernet service which is either not available today in some locations or, when available, can only be delivered over an outmoded and high cost infrastructure which is slowly being succeeded by the new Ethernet network standard. Enventis is uniquely positioned to provide our rural Minnesota service provider customers' direct access to nearly all Tier 1 Internet backbone service providers with major points of presence in the Twin Cities of Minneapolis and St. Paul. Enventis has built direct fiber interconnection facilities that are protected and diverse into AT&T, Cogent Communications, Level 3, Sprint-Nextel and Verizon Business who are Tier 1 Internet backbone providers. Using the proposed Enventis network, last mile service providers located in rural Minnesota will be able to obtain low cost, high quality direct access providing a choice of Tier 1 backbone providers. Enventis, from its very inception in 1997, has been providing leading edge high capacity transport and access services to a widely varied customer base including regional and national telecommunications carriers, LECs, ISPs, wireless carriers, other service providers and small to medium businesses. The core of our service is an extensive statewide fiber network and community access rings supported by a 24x7x365 Network Operations Center. The expanded network will increase our network footprint and the wholesale services we provide as a leading carrier-neutral fiber transport service provider in Minnesota.

The Enventis plan includes newly available high capacity Ethernet service for rural Minnesota service providers. Windom net, a Round 1 \$12 million RUS-BIP grant recipient based in Windom, Minnesota, has endorsed the Enventis proposal because the Enventis network will offer high capacity services to rural users at prices comparable to major metro areas like the Twin Cities of Minneapolis and St. Paul. This will allow Windom net access to lower cost, high quality Ethernet connectivity and provide additional choice of vendors and increased competition of backbone service providers for it Fiber to the Home project.

Another Round 1 \$43 million RUS-BIP grant recipient, the North East Service Cooperative (NESC), who is already a customer of Enventis, plans to build an 830 mile fiber network reaching unserved and underserved areas of northeastern Minnesota. Enventis will interconnect the new NESC network in Duluth, Minnesota with the proposed Enventis fiber route between the University of Minnesota-Duluth and the Twin Cities of Minneapolis and St. Paul. Enventis will offer NESC and its service provider customer's direct access to all Tier 1 Internet service providers' regional POP/HUBs located in the Twin Cities of Minneapolis and St. Paul where Enventis has fully protected, fiber diverse interconnections. This synergy enhances the



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efficiencies of federal government funds awarded in Round 1 with projects in Round 2, complementing each other to the benefit of the community anchor institutions, service providers, residents and businesses of northeastern Minnesota and the entire state.

Vulnerable Populations:

N/A

Level of Need:

The Enventis project proposal calls for the installation of a middle mile fiber network offering high capacity Ethernet connectivity to 74 community anchor institutions identified, with advice from the State of Minnesota Office of Enterprise Technology (OET), the University of Minnesota Office of Information Technology (OIT), and the Mayo Clinic, as locations needing 100MB of broadband connectivity or higher.

The Enventis proposal is not designed to compete with existing service providers offering customer services in the planned service coverage areas. In fact, the Enventis plan provides existing service providers with new choices for backbone services on a wholesale basis from every service area on the proposed Enventis network, leading to lower prices and higher quality.

One of Enventis' key missions, from its beginning as a carrier-neutral fiber transport carrier in 1997, is to provide high-capacity fiber based transport to service providers and carriers on a wholesale basis. Enventis commits, as part of its application for NTIA-BTOP funds, to maintain its practice of selling its services at the most competitive rates possible. Enventis will continue to provide its last mile service provider customers with direct access to Tier 1 service providers in Minneapolis/St. Paul thereby providing access to the highest quality, lowest priced services at rates comparable to those found in major metro areas.

Enventis is offering two types of service as part of its proposal: 1) Backbone transport in the form of wavelengths at capacities of 2.5GB or 10GB 2) 100MB Ethernet service connections offered directly to community anchor institutions for the delivery of Internet service or as Ethernet private lines to be connected to a larger network. This is the proposed solution for State of Minnesota agencies that would obtain 100MB connections from Enventis and backhaul those services to the nearest State of Minnesota POP/HUB. The Enventis proposal also includes the delivery of 100MB Ethernet private line service to 12 Mayo Clinic-affiliated healthcare facilities throughout rural Minnesota which will then be backhauled to the Mayo Clinic headquarters in Rochester, Minnesota using the Enventis network.



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Enventis will offer backbone wavelength service to all service providers or carriers within the proposed funded service area that request it. Enventis will also offer all rural service providers the ability to order 100MB or higher Ethernet service to directly connect to Tier 1 Internet backbone networks in the Twin Cities of Minneapolis and St. Paul. Enventis is fully interconnected with most Tier 1 Internet backbone providers that serve Minnesota including AT&T, Cogent, Level 3 Communications, Sprint-Nextel, and Verizon Business.

Enventis' proposal includes the extension of middle mile fiber laterals off of new and existing network extending from Minneapolis through southwestern Minnesota and terminating at Sioux Falls, South Dakota. Zayo Corporation, based in Louisville, Colorado has been identified as a potential competitor along this corridor. The proposed Enventis laterals connecting back to the Twin Cities of Minneapolis and St. Paul offer 100MB dedicated Ethernet service which is currently unavailable from any provider in several service areas along this route including Luverne, Worthington, Windom and St. James. To our knowledge, there are no existing service providers or carriers offering 100MB Ethernet service in these local service areas. Nearly all of the rural last mile services for residential and business customers are offered by Qwest Communications based in Denver, Colorado.

The Enventis project plan calls for the installation of a new fiber route from an existing Enventis POP or fiber headend located in Brainerd, Minnesota to Moorhead, Minnesota and directly into the State of Minnesota POP/HUB located on the Minnesota State-Moorhead campus. This route is served by Zayo Corporation and Aurora Fiber Networks which is based in Moorhead. Arvig Communications (ACS) has some fiber assets near the proposed Enventis service areas, but is primarily a last mile service provider for its customers in Perham and Detroit Lakes, Minnesota. Qwest and Charter Cable Communications also offer service in a portion of the service areas connected along this northwest fiber route from Brainerd to Moorhead including Moorhead, Detroit Lakes, and Wadena. The proposed Enventis network offers a dedicated high capacity Ethernet transport service using 10GB DWDM transmission system which is not currently available from any service provider or carrier along this entire northwest route.

Enventis' proposal includes the installation of a new fiber route connecting the University of Minnesota – Duluth with the main campus POP/HUB of the University of Minnesota – Twin Cities. This fiber build is necessary as evidenced by a Request for Proposal (RFP) issued by the University of Minnesota's Office of Information Technology (OIT) on January 29th, 2010. The



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University of Minnesota has attempted to obtain high capacity Ethernet broadband services connecting the main campus with the 2nd largest campus in the University of Minnesota system located in Duluth, but was confronted by the reality that high capacity service was not readily available or, if available, not at a price the University could afford. The University RFP clearly states its need for ownership rights to the underlying fiber infrastructure so that it can be upgraded to 40GB and 100GB transmission systems when need is established and equipment is available. The Enventis project plan calls for the construction of a new 213 mile fiber route connecting the two campuses and providing the University of Minnesota a finished 10GB dedicated Ethernet service, while guaranteeing the University of Minnesota rights of ownership to the underlying dark fiber if the University should ever choose to install its own equipment on this fiber. This proposal allows the option for the University to control its underlying network resources, but continue to use an Enventis-provided ‘finished’ wavelength service supporting its network, as Enventis currently does, with 24x7x365 Network Operations Center (NOC) support and monitoring service. Enventis is proposing to the University of Minnesota that if awarded NTIA-BTOP funds, it will construct the fiber network route for the University and offer it at a rate more affordable than if procured independently. The cost of this service is a vital concern to the University of Minnesota as it has been subject to severe budget cut-backs from the State of Minnesota for more than a decade. The most recent ‘Great Recession’ has made this lack of funding an even more acute problem.

Enventis, itself, is a service provider along the Twin Cities of Minneapolis and St. Paul to Duluth route offering transport services to wireline and wireless carriers into the Duluth service area as do several other regional providers including Charter Cable Communication, Wisconsin Independent Network (WIN) and Zayo. These providers offer services between Minneapolis and Duluth but do so via Wisconsin or central Minnesota network routes thereby missing the community anchor institutions this proposal is meant to serve. Enventis will be installing high-capacity services for proposed community anchor institutions in Pine City, Forest Lake, Harris, Hinckley, North Branch, Rush City, Sandstone, Stacy, Wyoming and White Bear Lake with lateral fiber builds into each community off the newly constructed fiber route. Most of these locations are served by Qwest and local cable companies. Each of these service providers or carriers is a last mile provider of voice and residential and business high speed Internet service. Enventis is not a last mile competitor to any of these companies and hopes to offer its high capacity Ethernet transport services to each on a wholesale basis.



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It is important to note that the proposed Enventis network is being offered into nine counties that have been classified as ‘economically distressed’ by the Bureau of Labor Statistics (BLS) and Bureau of Economic Analysis (BEA) for high unemployment and low income. The ‘distressed’ service area counties served by Enventis in its project proposal are: Clay, Crow Wing, Le Sueur, Morrison, Pine, Rice, Wadena, Waseca and Watonwan counties.

The Enventis project plan also adds limited laterals to its existing network serving southern and southeastern Minnesota. These laterals will provide dedicated Ethernet broadband network offerings of 100MB service to targeted community anchor institutions identified by our collaborative partners. Today, these partners cannot obtain Ethernet broadband services in this area from the current Local Exchange Carrier, Qwest and have struggled to find alternative solutions using local service providers such as Hiawatha Broadband Communications, Jaguar Communications or Charter Cable Communication in the limited areas where they offer service.

The Greater Minnesota Broadband Collaborative was developed following an extensive analysis on the competitive broadband environment in Minnesota and the result of immediate needs for service by our collaborative partners. While options for broadband service exist throughout Minnesota, there are still many customers including state agencies that still require access to high capacity Ethernet transport at competitive prices. Enventis’ proposal serves to meet this need for 23 rural Minnesota counties and more than 886,000 people.

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:

- N/A



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Description of Network Openness:

In researching and preparing the Greater Minnesota Broadband Collaborative proposal, Enventis has thoroughly reviewed all guidelines and supporting documents including the associated Notice of Funds Availability (NOFA). Enventis fully understands the NOFA requirements and is in compliance with the nondiscrimination and network interconnection obligations. Although Enventis has partnered with the State of Minnesota OET, University of Minnesota OIT and the Mayo Clinic on this proposal, Enventis will be solely responsible for network operation and upholding the nondiscrimination and network interconnection obligations. As part of this proposed middle mile project, Enventis will provide Layer 1 transport services including wavelengths and point-to-point TDM services such as DS1, DS3, OC-n (if needed) and Ethernet. Enventis will also provide Layer 2 switched Ethernet and Layer 3 MPLS private networking services to customers throughout the proposed network service area.

Enventis will adhere to the principles contained in the Federal Communication Commission’s Internet Policy Statement (FCC 05-151, adopted August 5, 2005). Specifically, customers will have the ability to access the Internet through Enventis’ network or through another service provider’s interconnection to Enventis’ middle mile platform. Users accessing Enventis’ network will be allowed to access all lawful services including the Internet content of their choice and will be entitled to run applications and use services of their choice, subject to the needs of law enforcement. Customers will be allowed to connect to their choice of legal devices, provided those devices do not harm the Enventis network.

Access to Enventis’ middle mile services will be available to customers at competitive market rates. Access will be available to existing wholesale customers at current interconnection points and Enventis will negotiate in good faith to establish new interconnection points upon request. Should good faith negotiations fail, Enventis agrees to commit to binding arbitration to resolve any differences.

Network usage will not be limited; users on Enventis’ network will have a choice of service levels. By default, Layer 1 TDM service is a guaranteed bandwidth service; Layer 2 and 3 services will be offered with a choice of five classes of service and user defined bandwidth profiles. Enventis will employ generally acceptable network management practices and its interconnection policies will be displayed on its website. Enventis will provide its customers with notice of changes to these policies.



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System Design:

Enventis designed the proposed solution to increase access to high-capacity broadband services for customers in Minnesota’s rural communities by connecting them to a high-capacity fiber network. The design centers around three key segments: new fiber construction from the Twin Cities of Minneapolis and St. Paul to Duluth, new fiber construction from Brainerd to Moorhead, and the extension of middle mile fiber laterals to serve partner sites of interest and reach community anchor institutions. Enventis has selected wire-based technology which will be constructed as buried fiber. This method affords the highest reliability at the lowest cost point and allows for economical increase in bandwidth to support customer needs. Enventis will use single mode fiber because this type of fiber has been proven to retain its connectivity and path reliability and is not subject to fade due to vegetation or adverse weather conditions (rain, frost, snow). This is especially important in Minnesota, where temperatures can range from -40 to 100 F degrees.

On the new fiber construction routes, Enventis will build 418 new fiber miles equipped as a 10GB Dense Wave Division Multiplex (DWDM) network. DWDM was chosen as it provides economy of scale to deliver high bandwidth pipes at a low cost per bit and is capable of transporting both TDM and Ethernet services which offers a choice to end users. Enventis will install a 10GB Layer 2 ring topology over the new DWDM system that will integrate with the existing Layer 2 network at core POP locations. The DWDM platform will support 2.5GB and 10GB wavelength services and is capable of supporting 40GB and 100GB services as equipment advances and capacity is needed. Enventis will deploy Cisco equipment to provide DWDM and Layer 2 crossponder technology.

The extension of middle mile fiber laterals will allow Enventis to leverage existing network facilities and deploy equipment compatible with its existing 40-channel ROADM-based DWDM network enabling the delivery of TDM and Ethernet services. The expanded network was designed as a ring topology system. Enventis will first construct new Points of Presence (POPs) at five Minnesota locations: Moorhead, Detroit Lakes, Wadena, Sandstone and Pine City. From these new POPs, Enventis will aggregate services from end user sites (partner sites and community anchor institutions) near these locations as well as other sites along the new or existing routes. The aggregated bandwidth will be delivered to existing core POP sites on the Enventis network (approximately 10 POP sites). All services will be delivered either to carrier-neutral facilities (such as the 511 or TriTech Buildings in the Twin Cities of Minneapolis and St. Paul) or to partner sites. Enventis can support a robust and redundant Ethernet service by the use



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of three discreet and diverse network peering locations (Minneapolis (511 Building), Mankato (Central Office), and Duluth (GOB)). At each location, Enventis is connected to at least one unique Tier 1 Internet supplier.

The system was designed to provide options to the end user based on cost effectiveness and service needs; both SONET-based and Ethernet services are available on each of the constructed routes and all laterals. In areas where the anchor tenant requires high reliability services, Enventis will use SONET-based Packet-over-SONET (PoS) technology to ensure the highest level of uptime (five nines or greater). SONET-based service will initially be deployed using modular-based equipment such as the Fujitsu 4100 ES series and can be upgraded from OC12 to OC192 while in service. Fujitsu equipment allows migration from a mixed service of TDM and Ethernet (PoS) to a pure or native Ethernet service. All SONET services are protected services with <50ms protection switching. The use of link aggregation (LAG) or link aggregation control protocol (LACP) will allow the highest level of protection for critical services as required by medical, public safety and state facilities.

At end user sites where scalability is crucial, Enventis will deliver a native Ethernet solution. Native Ethernet services will initially be deployed using a combination of Cisco and Extreme products. These services can be upgraded from 1GB to 10GB trunks while in service. This equipment was selected based on its long-standing track record of reliability throughout Enventis' existing network. All equipment deployed by Enventis will meet Metro Ethernet Forum (MEF) standards for Ethernet services delivery (MEF 9 and MEF 14).

BTOP funding is required for the two distance builds and extension of middle mile fiber laterals. Enventis already has interconnections with regional and national carriers as well as an existing MPLS and core DWDM network in place and will not require BTOP funds to support the existing network.

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?

Yes

I. Project Budget



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Project Budget		
	Federal Grant Request	Match
Last Mile	0	0
Middle Mile	16,833,617	7,214,407
Total	16,833,617	7,214,407

Project Budget Total: \$24,048,024

Match Percent: 30.0%

Projects Outside Recommended Funding Range:

- N/A

Outside Leverage	
Applicant is providing matching funds of at least 20% towards the total eligible project costs?	Yes
Matching cost detail	In support of the Greater Minnesota Broadband Collaborative, Enventis will provide a 30% match to the federal grant funds requested through the Broadband Technology Opportunities Program. Enventis has performed extensive financial analysis on the proposed project and is projecting a total project budget of \$24,048,024. Enventis will provide a grant match of \$7,214,407 and is requesting a federal grant of \$16,833,617. The grant match will be self-funded through the internal capital budget of HickoryTech Corporation, Enventis' parent company and does not require any type of financing. All funding will be used to increase Enventis' network infrastructure.
Unjust enrichment	N/A
Disclosure of federal and/or state funding sources	N/A
Budget reasonableness	Enventis used its standard project costing process in establishing project costs for the Greater Minnesota Broadband Collaborative. The list of community anchor institutions was generated based on direct dialogue with our collaborative partners used as input to Enventis'



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	<p>mapping system. The mapping system was then used to engineer the most efficient routes feasible to serve these partner locations. The total route miles developed in the design process is 418 miles which includes the long distance fiber construction and the extension of middle mile fiber laterals. The unit price per mile for the outside plant portion of this application is based on existing agreements with contractors as well as final costs from recent outside plant projects. This unit price is also segmented by urban versus rural construction.</p> <p>The next step in establishing the costs was to identify the required equipment and buildings needed to light the fiber. The fiber spans between equipment has been engineered to ensure the proper signal is maintained within the tolerance of the equipment as well as optimally place backbone access points for partner aggregation. The analysis established two equipment/building locations for each of the two long distance fiber construction routes in addition to the equipment needed at existing end points. The remaining cost component is the access equipment. The unit cost for the access equipment was established with existing negotiated and vendor-approved discount levels. The number of units for the access equipment is taken directly from the proposed partner site lists.</p>
Demonstration of need	<p>HickoryTech Corporation (HTCO), the parent company of Enventis, has a limited budget of capital expenditure initiatives it can fund. Its limits come from a combination of source-of-capital limitations, and also from pressure to show positive earnings and free-cash-flow, due to our status as a publicly traded, for-profit company.</p> <p>We select which capital projects to fund each year based on alignment with our long-term strategic plan, and there is intense competition within the organization for the limited funding. Our current 5-year capital spending plan – adopted in December 2009 – had identified projects totaling \$25.5M, \$19.3M, and \$19.2M for the years 2010, 2011, and 2012 respectively, and did not include the projects for which we are applying for funding under the BTOP. Therefore, although the specific projects presented in this document and its attachments are consistent with our strategy, they were not prioritized</p>



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	<p>highly enough to be funded within our limited capital expenditure allowance.</p> <p>The projects which typically go into our capital budgets are those with internal rates of return of at least 20% annually. The projects in this application would not have met this threshold without the assistance from BTOP, due to the rural nature of the project and the resultant lower cash flow.</p> <p>With the assistance of \$16,833,617 of BTOP funding for project capital expenditures, we can achieve a minimum acceptable internal rate of return (IRR) for us to consider them in our plans. For our IRR calculations we use Net Present Value discount rates of 15%, and found an IRR of 41% for this project.</p>
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Funds to States/Territories

States	Amount of Federal Grant Request
Minnesota	16,833,617

Funds to States/Territories Total: \$16,833,617

J. Historical Financials

Matching Funds			
	2007	2008	2009
Revenue	156,649,000	153,175,000	139,102,000
Expenditures	148,038,000	145,146,000	127,829,000
Net Assets	31,932,000	29,749,000	34,546,000
Change in Net Assets from Prior Year	1,846,000	-2,183,000	4,797,000
Bond Rating (if applicable)	N/A	N/A	N/A



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Task: Submit Application - BTOP	Applicant Name: Gregory T Flanagan

K. Project Readiness

BTOP Organizational Readiness

Eventis' proposed project design leverages its existing 2400 mile self-healing physically diverse fiber network and enhances it with the construction of 418 new fiber miles including two long distance builds and the extension of middle mile fiber laterals. Eventis has a long history of designing and engineering custom transport solutions and has the necessary internal systems in place to support the proposed services. Eventis relies on Circuit Vision for network management and customer care, PeopleSoft as a billing platform and SalesLogix as a Customer Relationship Management tool. Each of these systems has been in use for a number of years and each has the capacity to support the expanded network and customer base.

Eventis has successfully provided transport services to each of our key partners (the State of Minnesota, the University of Minnesota and the Mayo Clinic) for many years and will remain on lead for the design and implementation of the proposed services. Eventis will work directly with each of our partners to design, test and implement all custom solutions and middle mile extensions. All Eventis custom solutions are deployed and undergo rigorous testing at one of three regionally diverse warehouse locations before being implemented at a customer site. This helps to ensure the design specifications and verifies that all necessary equipment functions as intended and meets our stringent standards for maximum uptime. Utilizing this approach has greatly reduced issues with installation and testing at new customer locations. Eventis maintains a full complement of spare equipment at each of these warehouse locations so that replacement parts are readily available should problems occur when the service is in use.

Eventis employees have extensive experience in all areas of telecommunications including engineering, technical support, billing, sales and executive leadership. Eventis technicians and engineers attend mandatory training sessions several times per year on industry protocols, equipment advancements, software upgrades and installation requirements. Eventis executives and directors attend many key telecom events and trade conventions to stay on the cutting edge of any industry changes or trends and new product development. A team of more than 80 people, including all levels of engineering, technical support, sales and executive management will be involved in supporting this initiative and the expanded network and services Eventis is proposing herein.



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Construction and Vendor Contracts

Eventis will be utilizing our existing contractor partnerships to provide a portion of the services proposed herein. Eventis employs a team of 18 individuals in our Outside Plant (OSP) group to plan and coordinate all contractor activities. Outside Plant refers to the physical cabling, supporting infrastructure, and any equipment or hardware needed to deploy telecommunications services.

Eventis has several vendors under contract to provide construction services and utilizes a competitive bid process when selecting vendors for new builds or network upgrades. Eventis has negotiated agreements in place with equipment vendors to ensure timely delivery of all network equipment and components. If awarded, Eventis anticipates using at least four telecommunications contractors to provide all OSP construction of the proposed network. Eventis anticipates using a minimum of three telecommunications equipment vendors to supply the equipment necessary to light the service. Eventis will use existing and new internal employees for network design, engineering, splicing, project management and installation of network hardware.

Eventis, and its contractors and equipment vendors, will be in full compliance with all state and federal safety and construction regulations. Vendor's equipment will meet or exceed Network Equipment-Building System (NEBS) requirements for use in end user locations and central offices.

Customer Base

The scope of the Eventis proposal provides a new middle mile network into areas within Minnesota that are not currently supported by Eventis' existing 2,400 mile self-healing diverse fiber network. The main existing customer base in the Proposed Funded Service Area that would be supported by this expansion are the 74 community anchor institution locations of Eventis' collaborative partners, the State of Minnesota OET, University of Minnesota OIT, and the Mayo clinic. In addition our analysis reflects that the new middle mile network would pass 84 tower sites used by wireless providers with whom Eventis has an existing business relationship to provide transport services in other service areas. Additional new business customers and new third party service providers are expected to make up the remainder of the customer base.

Licenses, Regulatory Approvals and Agreements

The proposed Greater Minnesota Broadband Collaborative was designed to leverage Eventis' existing statewide network and it is our intent to use existing buildings and network locations



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where feasible. Enventis will negotiate new building leases or land leases where necessary, however the proposed solution is built entirely on public lands. The construction of the new fiber routes and some lateral middle mile fiber extensions, will require Enventis to procure all necessary permits for Right of Way access. Enventis has interconnects in place with Local Exchange Carriers for local loop leases and the regulatory authority in Minnesota to support the expanded network.

SPIN Number

Enventis Telecom, Inc. has a Federal Communications Commission Universal Service Fund Provider Identification Number (SPIN) of 143003845. All customers, including our partners, that request support through USAC and list Enventis as their service provider use this number.

L. Environmental Questionnaire

Project Description

Enventis designed the proposed solution to increase access to high-capacity broadband services for customers in Minnesota’s rural communities by connecting them to a high-capacity network. The design centers around three key segments: new fiber construction from the Twin Cities of Minneapolis and St. Paul to Duluth, new fiber construction from Brainerd to Moorhead, and the extension of middle mile fiber laterals to reach community anchor institutions. Enventis has selected wire-based technology which will be constructed as buried fiber located in existing public rights-of-way. On the new fiber construction routes, Enventis will build 418 new fiber miles equipped as a 10GB Dense Wave Division Multiplex (DWDM) network that will integrate with the existing Layer 2 network at core POP locations. Enventis will first construct new Points of Presence (POPs) at five Minnesota locations: Moorhead, Detroit Lakes, Wadena, Sandstone and Pine City. From these new POPs, Enventis will aggregate services from end user sites (partner sites and community anchor institutions) near these locations as well as other sites along the new or existing routes. The locations in Moorhead, Detroit Lakes and Wadena will be co-locations in existing telecommunication offices and no building modifications will be required other than the addition of rack mounted equipment. The locations at Sandstone and Pine City will be new buildings (12’ x 18’) located on small lots in those communities.



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Property Changes

Enventis will first construct new Points of Presence (POPs) at five Minnesota locations: Moorhead, Detroit Lakes, Wadena, Sandstone and Pine City. The locations in Moorhead, Detroit Lakes and Wadena will be co-locations in existing telecommunication offices and no building modifications will be required other than the addition of rack mounted equipment. The locations at Sandstone and Pine City will be new buildings (12' x 18') located on small lots in those communities. These building locations are typically in a commercial zoned area within the community.

Fiber optic cable placement will be within the existing public rights-of-way and utilizes standard permitting and placement methodologies to bury the cable.

Buildings

As part of the proposed Greater Minnesota Broadband Collaborative, new buildings will be required in the Minnesota communities of Sandstone and Pine City. These buildings will be 12' x 18' in size and constructed of aggregate concrete wall panels. The proposed buildings will be manufactured by Thermobond.

The sites in Moorhead, Detroit Lakes and Wadena will be co-locations in the existing incumbent telecommunications provider's building. No building construction is planned for the co-location sites.

Fiber optic cable will be placed in existing previously disturbed public rights-of-way.

Wetlands

The plan was designed specifically to avoid encroachment on wetland areas. There are two Minnesota communities requiring new building sites: Sandstone and Pine City. These buildings will be erected on property that is zoned for the placement of buildings. The fiber optic cable used to connect these sites to the proposed network will be placed within existing public rights-of-way and should not affect wetland areas.

Critical Habitats

This project will include the placement of two small equipment buildings (12' x 18'), one each in the communities of Pine City, Minnesota and Sandstone, Minnesota. Both Pine City and Sandstone are located in Pine County Minnesota. Each building is to be placed on a small lot and should have minimal effect to the surrounding environment. All fiber optic cable will be placed



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in public rights-of-way using common placement methodology which will minimize the effect on the surrounding environment including any threatened, endangered, or candidate species in these areas.

Enventis proposes to build fiber optic middle mile linear cable through or within the following Minnesota counties: Becker, Blue Earth, Carlton, Cass, Chisago, Clay, Cottonwood, Crow Wing, Dodge, Freeborn, Goodhue, Le Sueur, Morrison, Mower, Nobles, Olmsted, Otter Tail, Pine, Ramsey, Rice, Rock, Sherburne, St. Louis, Steele, Todd, Wabasha, Wadena, Waseca, Washington, Watonwan and Winona. As per the U.S. Fish and Wildlife Service website, this has the potential to affect the following species:

Candidate – Spectaclecase (mussel), Sheepnose Mussel, Dakota Skipper, Eastern Massasauga;
Recovery – Arctic peregrine falcon;
Threatened – Gray wolf, Canada Lynx, Western prairie fringed Orchid, Prairie bush-clover, Leedy’s roseroot;
Endangered - Higgins eye (pearlymussel), Winged Mapleleaf, Minnesota dwarf trout lily, Topeka shiner, Karner blue butterfly.

Floodplain

The Greater Minnesota Broadband Collaborative does not include plans to build sites in any 100 or 500-year floodplains. All fiber optic cable middle mile linear builds have been designed to be in public rights-of-way.

Protected Land

As part of the system design and planning process for this project, Enventis has consulted Minnesota’s State Historic Preservation Office (SHPO) and discussed the proposed network expansion with their compliance officer. Detailed design maps are being made available to the Minnesota SHPO for review. The SHPO office will review the design maps to determine the proximity of our proposed route to any properties on the National Register of Historic Places. Enventis’ practice of using public right-of-way for all middle mile linear builds reduces the likelihood of any archaeological issues.

Enventis’ proposed network expansion does include any builds on or through tribal lands.

Coastal Area



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The Greater Minnesota Broadband Collaborative includes new fiber construction originating in Duluth, Minnesota at Enventis’ Point of Presence (POP) and extending south to the Twin Cities of Minneapolis and St. Paul metro area. The origination point, Duluth, Minnesota is on the shore of Lake Superior which is a defined Coastal Boundary of Minnesota. All linear facilities and middle mile extensions will be placed using standard fiber optic cable placement methodology and will be placed in public road right-of-way.

Brownfield

The plan was designed specifically to avoid encroachment on any known brownfield sites. Enventis has verified this by cross referencing maps on the Environmental Protection Agency website with Enventis proposed route designs.



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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	CCI Service Offerings and Competitor Data Attachment_FINAL_032510.xls	Flanagan, Gregory	03/25/2010
Network Diagram	Eventis Network Diagram_FINAL_032410.pdf	Flanagan, Gregory	03/25/2010
Build Out Timeline	CCI Build-Out Timeline Attachment_032510.pdf	Flanagan, Gregory	03/25/2010
List of Community Anchors and Points of Interest	CAI_FINAL_032310.xls	Flanagan, Gregory	03/25/2010
Management Team Resumes and Organization Chart	ManagementTeamResumesandOrgChart_032510.pdf	Flanagan, Gregory	03/25/2010
Government and Key Partnerships	Eventis Telecomm--Letters of Support_032510.pdf	Flanagan, Gregory	03/26/2010
Historical Financial Statements	HistoricalFinancialStatements_031710.pdf	Flanagan, Gregory	03/25/2010



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Budget Narrative	CCI Budget Narrative Attachment_Enventis_FINAL_032610.pdf	Flanagan, Gregory	03/26/2010
Detailed Budget	CCI Detailed Budget_FINAL_032610.xlsx	Flanagan, Gregory	03/26/2010
Pro-forma Forecast	CCI Pro Forma Financial Projections_FINAL_032610.xls	Flanagan, Gregory	03/26/2010
Subscriber Estimates	CCI Subscriber Estimates Attachment_FINAL_032410.xls	Flanagan, Gregory	03/25/2010
Dashboard Metrics	CCI Key Metrics Dashboard Attachment_FINAL_032610.pdf	Flanagan, Gregory	03/26/2010
Service Area Data	CCI Service Areas Attachment_032510_FINAL_mw_v2.xlsx	Flanagan, Gregory	03/26/2010
Waivers	CCI Waiver Attachment_SaleofAssets_032410.doc	Flanagan, Gregory	03/25/2010
Network Maps	Greater MN Broadband Collaborative_Map FINAL.pdf	Flanagan, Gregory	03/25/2010
BTOP Certifications	BTOPCertification_032510.pdf	Flanagan, Gregory	03/25/2010
SF-424 C and D	SF424CandD_FINAL_032510.pdf	Flanagan, Gregory	03/26/2010



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