

***Environmental Assessment***

***Greater Minnesota Broadband Collaborative  
Eventis Telecom, Inc.***

***May 27, 2011***

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## Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AADT	Annual Average Daily Traffic
ACHP	Advisory Council on Historic Preservation
APE	Area of potential affect
BEA	Bureau of Economic Analysis
BLS	Bureau of Labor Statistics
BTOP	Broadband Technology Opportunities Program
BWSR	Minnesota Board of Water and Soil Resources
CAA	Clean Air Act
CAIs	Community Anchor Institutions
CEQ	Whitehouse Council on Environmental Quality
CH <sub>4</sub>	Methane
CMP	Coastal Management Program
CO <sub>2</sub>	Carbon Dioxide
Coast Guard	U.S. Coast Guard
CSAH	County State Aid Highway
CMP	Coastal Management Program
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
DWDM	Dense Wave Division Multiplex
EA	Environmental Assessment
Enventis	Enventis Telecom, Inc.
ESA	Endangered Species Act of 1973
ESRL	Earth System Research Laboratory
FCC	Federal Communications Commission
USFWS	U.S. Fish and Wildlife Service
GB	Gigabyte
GHG	Greenhouse Gases
GIS	Geographic Information System
Greater Minnesota (and Wisconsin)	Rural areas
HDD	Horizontal Directional Drill
HDPE	High Density Polyethylene
HFCs	Hydrofluorocarbons
IPCC	Intergovernmental Panel on Climate Change
ISP	Internet Service Providers

<b>Acronym/Abbreviation</b>	<b>Definition</b>
LECs	Local Exchange Carriers
LGU	Local Governmental Unit
LUST	Leaking Aboveground/Underground Storage Tank
MAAQS	Minnesota Ambient Air Quality Standards
MB	Megabytes
MCBS	Minnesota County Biological Survey
MDNR	Minnesota Department of Natural Resources
Mn/DOT	Minnesota Department of Transportation
MNRRRA	Mississippi National River and Recreational Area
MPCA	Minnesota Pollution Control Agency
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHD	National Hydrography Dataset
NHIS	Natural Heritage Information System
NHPA	National Historic Preservation Act
NO <sub>2</sub>	Nitrous Oxide
NOAA	National Oceanic and Atmospheric Administration
NPL	National Priorities List
NRHP	National Register of Historic Places
NTIA	National Telecommunications and Information Administration
NWI	National Wetland Inventory
OET	State of Minnesota Office of Enterprise Technology
OIT	State of Minnesota Office of Information Technology
OSHA	Occupational Safety and Health Administration
PFCs	Perfluorocarbons
POP	Point of Presence
PPE	Personal Protective Equipment
PWI	Public Waters Inventory
PWW	Public Waters Wetlands
SF <sub>6</sub>	Sulfur Hexafluoride
SHPO	State Historic Preservation Office
SO <sub>2</sub>	Sulfur Dioxide
STH	State Trunk Highway
TCP	Traditional Cultural Properties
TDM	Time-Division Multiplexing
Twin Cities	Minneapolis and St. Paul
USACE	United States Army Corps of Engineers



Acronym/Abbreviation	Definition
USC	United States Code
USDC	United States Department of Commerce
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
WCA	Wetland Conservation Act
WDNR	Wisconsin Department of Natural Resources
WDOA	Wisconsin Department of Administration
Wi/DOT	Wisconsin Department of Transportation
WMA	Wildlife Management Areas
WPA	Waterfowl Production Area
WWI	Wisconsin Wetland Inventory

# Executive Summary

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Enventis Telecom, Inc. (Enventis), a subsidiary of HickoryTech Corporation, applied to the Broadband Technology Opportunities Program (BTOP) for a grant to use new and existing middle mile fiber optic network systems to connect various community anchor institutions (CAIs) located throughout Minnesota and northwestern Wisconsin to an advanced high-capacity Ethernet broadband network. This statewide Minnesota network leverages Enventis' existing 2,400 mile fiber network with up to 426 route miles of new fiber construction directly connecting each CAI with at least 100 megabytes (MB) of service. This project is referred to as the Greater Minnesota Broadband Collaborative. The National Telecommunications and Information Administration (NTIA) awarded Enventis a grant for the project on August 1, 2010, through the BTOP, as part of the American Recovery and Reinvestment Act. As a recipient of this federal grant, Enventis was required to prepare this Environmental Assessment in accordance with the requirements of the National Environmental Policy Act.

## **Purpose and Need**

The primary purpose of the project is to provide affordable high-capacity broadband services to rural communities in Minnesota and Wisconsin. Many rural communities in Minnesota are currently unable to obtain high-capacity Ethernet services of 100 MB or greater because the systems are either not available in their region or the costs are too high for the local customers, creating competitive disadvantages to those businesses and customers located in these rural areas. The Greater Minnesota Broadband Collaborative project will increase access for those CAIs within these rural communities to an affordable high-capacity Ethernet fiber network.

Enventis collaborated with three partners, the State of Minnesota Office of Enterprise Technology, the University of Minnesota Office of Information Technology, and the Mayo Clinic, to identify CAIs and partner facilities requiring 100 MB Ethernet service connections for delivery of high-capacity Internet or Ethernet private line service. Through this collaborative effort, the project will expand long-distance learning and training opportunities throughout the state, while offering high-capacity broadband services to community organizations and Internet service providers in the area.

## **Project Description**

Enventis proposes to expand its existing system by constructing an additional 321 route miles of fiber network and up to approximately 105 route miles of laterals to provide high-capacity broadband services to up to 129 CAIs. The proposed fiber network will consist of two new middle mile routes, including one middle mile route from Minneapolis to Duluth (182 route miles) and the other middle mile route from Brainerd to Moorhead (139 route miles). New laterals will be constructed off these two middle mile routes, as well as off Enventis' existing fiber network.

The fiber network system will be constructed almost entirely underground within existing rights-of-way of state highways, county roads, and municipal streets. The fiber optic cable will be installed at

least 42-inches below the ground surface using primarily horizontal directional drill (HDD) or vibratory plow methods, depending on site conditions and the types of features to be crossed

### **Alternatives**

Prior to selecting its preferred alternative for the Greater Minnesota Broadband Collaborative project, Enventis evaluated and considered other alternatives to address the purpose and need of the project and to assess potential environmental impacts. Alternatives that were evaluated included alternate technology and construction methodologies, the use of existing carrier's fiber network systems, route alternatives, and the no action alternative.

The preferred alternative, as described in the above project description, was selected because it best meets the overall purpose and need of the project by providing affordable high-capacity broadband network services to a large number of rural communities located in Minnesota and Wisconsin. These communities are currently either not served or are served by shared Ethernet services of inferior quality. Other alternatives that were considered but not further evaluated in the EA include:

- Use of wireless technology;
- Installation of the fiber optic cable aboveground;
- Use of an existing carrier's network system; and
- Selection of another route alternative.

Under the no action alternative, Enventis would not install its proposed high-capacity broadband fiber optic network, including the two middle mile routes and laterals, to serve the various CAIs located in rural Minnesota and Wisconsin. This no action alternative would not meet the stated purpose and need of the project and those rural communities currently not being served by a high-capacity broadband network would continue to lack this service. This alternative serves as a baseline for assessing the impacts of the preferred alternative.

### **Geology and Soils**

The fiber optic cable installation will not adversely affect the geology or soils within the project area. Construction will occur within existing road rights-of-way that have been previously disturbed. The placement of buried fiber optic cable will not alter the soil properties. Appropriate best management erosion control practices will be implemented in accordance with the applicable state and local permits and approvals in areas that are disturbed by the construction activities.

### **Water Resources**

Numerous wetlands and waterbodies are crossed by the proposed middle mile and lateral routes. A total of 34 miles of wetlands and approximately 210 streams and rivers are crossed by these routes. The waterbody crossings include 14 trout streams and three state Wild and Scenic Rivers. The fiber optic cable will be installed across the wetlands using either vibratory plow or HDD techniques, depending on site conditions at the time of installation. The waterbodies will be crossed using either HDD techniques or by attaching the cable to an existing bridge. These construction techniques will result in minor, temporary impacts to wetlands that are plowed and no adverse impacts to wetlands

and waterbodies that are drilled. Wetlands disturbed by construction activities will be restored to preconstruction elevations and conditions. Enventis will obtain the applicable permits from state and federal agencies for construction activities in wetlands and for crossing regulated waterbodies.

### **Biological Resources**

The fiber optic cable will be installed in existing road rights-of-way, which provide limited fish and wildlife habitat. The routes cross or are adjacent to several public lands that provide fish or wildlife habitat but the fiber optic cable will be installed within the existing road rights-of-way through these areas. No significant habitats were identified in the proposed construction areas of the middle mile and lateral routes.

Construction of the proposed project will not affect any known federally listed species in the project area because the construction activities will be limited to existing road rights-of-way. On September 20, 2010, the NTIA initiated informal Section 7 consultation with the U.S. Fish and Wildlife Service (USFWS). On October 21, 2010, the USFWS provided an email message stating that their records do not indicate the presence (or critical habitat) of species federally listed as endangered, threatened, candidate, or proposed within the project area.

Although numerous state-listed species were identified in the vicinity of the project routes, none were identified within the proposed construction areas. Because the fiber optic cable will be installed in previously disturbed rights-of-way, it is unlikely that state-listed species will be adversely affected by construction of the project. A few state-listed reptile species (e.g., Blanding's turtle, wood turtle, and gopher snake) were identified in proximity to portions of the routes and these species could periodically inhabit road rights-of-way. As part of permitting of the project, Enventis consulted with the Minnesota and Wisconsin Department of Natural Resources (MDNR and WDNR) to ensure that the project will not adversely affect these state-listed species. The MDNR determined that it is unlikely that state-listed species will be adversely affected by construction of the project. The WDNR did not make a determination on potential impacts to state-listed species.

### **Land Use, Infrastructure, and Socioeconomic Resources**

Installation of the fiber optic cable will not adversely affect land use, infrastructure, and socioeconomic resources in the project area. The cable will be installed in existing road rights-of-way and will not affect the current or future use of the roads for transportation. During construction, equipment and associated support vehicles may periodically disrupt traffic flow as they enter and exit the roadway but any delays to motorists are expected to be minimal and temporary. Enventis will coordinate with the various state and county transportation departments along the proposed routes during the permitting process to develop plans and procedures for minimizing disruption of traffic on adjacent roadways.

Installation of the fiber optic cable will not have negative impacts on socioeconomic conditions in the project area. The broadband network will provide benefits associated with high-speed Internet access to underserved populations, particularly within rural areas of the project. These benefits

include enhanced employment opportunities due to the potential for e-commuting and online collaboration, and educational opportunities via online education and connected classrooms.

### **Aesthetics and Visual Resources**

The project will not adversely affect aesthetic and visual resources in the project areas. Aesthetic disruptions will generally be limited to the construction period and will be primarily associated with the short-term presence of construction equipment. Permanent aesthetic impacts will be limited as the conduits will be installed underground and optical splice enclosures will be located below-grade in vaults and handholes, within previously disturbed right-of-way areas. The two Point of Presence (POP) buildings to be constructed in Sandstone and North Branch will be built in existing commercial areas and will not have adverse visual impacts on the surrounding developed areas.

### **Historic and Cultural Resources**

The NTIA initiated coordination and Enventis consulted with federally recognized Native American tribes and the Minnesota and Wisconsin State Historic Preservation Offices (SHPOs) regarding the proposed project. The Minnesota SHPO requested that a Phase IA archaeological assessment be completed and the Wisconsin SHPO requested additional information on cultural resources along the proposed routes. On December 29, 2010, a cultural resources literature review report was submitted to the Minnesota and Wisconsin SHPOs for their review. Addendum reports were submitted to the Minnesota SHPO on March 7, 2011 and May 19, 2011 summarizing the results of a cultural resources literature review of several route revisions along the Minnesota portion of the route.

Numerous known archaeological sites and National Register of Historic Places (NRHP)-listed or eligible architectural history properties were identified within 500 feet of the proposed routes, including cemeteries and earthworks possibly containing burials. Seven of the archaeological sites and one of the historic structures identified appear to be located within the project area.

All seven archaeological sites identified within the project area are located in Wisconsin. Six of these sites (47DG0006, 47DG0036, 47DG0037, 47DG0085, 47DG0093, and 47DG0095) are located in previously disturbed areas and it is unlikely that any intact archaeological material associated with the sites would be found within the project area because the project area is located completely within existing road rights-of-way, which have been previously disturbed. Based on the proximity of burial site 47DG0006 to the proposed alignment, there is a possibility that archaeological material and/or human remains associated with this site could be encountered during the installation of the cable. To comply with Wisconsin State Statute 157.70 and Wisconsin Administrative Code § HS 2.02(15), 2.04 (2), limited subsurface investigation is required to determine the presence of and potential impacts to Site 47DG0006. On March 22, 2011, the Wisconsin SHPO concurred that no historic properties regulated under Section 106 of the National Historic Preservation Act will be affected by construction of the proposed project. However, the Wisconsin SHPO stated that Enventis must comply with state burial laws and investigate burial site 47DG0006 prior to construction. Enventis will conduct this investigation and consult with the Wisconsin SHPO on the findings.

The Minnesota SHPO has reviewed a majority of the proposed middle mile routes and concurred that there will be no adverse effect to historic properties (Minnesota SHPO letters dated January 27, 2011 and April 6, 2011). The only portion of the middle mile routes not previously reviewed by the Minnesota SHPO is a minor route revision in North Branch, Minnesota. This revision was included in the Addendum II cultural resources literature review report submitted to the Minnesota SHPO on May 19, 2011. No previously identified archaeological sites are identified along this proposed revisions and, therefore, it is assumed that the SHPO will concur that there will be no adverse effect to historic properties.

The one historic structure identified in the project area is NRHP-listed Bridge Number 5718 (PN-SSC-018), located in Pine County, Minnesota, which carries Trunk Highway 123 over the Kettle River, falls within the proposed Minneapolis to Duluth middle mile route. Initially, Enventis proposed to directionally bore under the Kettle River in this area; however, the shallow bedrock made this option not feasible. Therefore, Enventis initiated consultation with the Minnesota Department of Transportation (Mn/DOT) to determine possible ways to attach to the bridge without adversely affecting its historic characteristics. Through these consultation efforts, Mn/DOT has approved the use of a void in the railing of the bridge. Initial indications from the Mn/DOT Cultural Resources Unit (CRU) suggest that they believe this proposed attachment will result in no adverse effect to the historic property, pursuant to the Minnesota Historic Sites Act (M.S. 138.661 - 138.669). An application requesting permission to attach to the bridge was submitted to Mn/DOT on May 27, 2011, but a formal letter indicating a no adverse effects determination has not been received. Once Mn/DOT CRU has issued their effects determination pursuant to state law, a letter will be provided to the Minnesota SHPO to obtain their concurrence that the proposed attachment will have no adverse effect on the historic bridge.

There are no known NRHP-listed or eligible architectural history properties located within 500 feet (encompassing more than one block) of the general locations of the proposed POP buildings in Sandstone and North Branch. Because these buildings will be constructed within existing commercial areas where there are no known architectural history properties, there will be no impacts on architectural resources. In its January 27, 2011 letter, the Minnesota SHPO stated these buildings will have no effect on any above ground historic properties provided that the new buildings are not placed within, adjacent to, or in view of any historic property or district that is listed in or eligible for listing in the NRHP.

To identify if any potential TCPs may be impacted by the proposed project, the NTIA consulted with federally recognized Native American tribes that are located near or have indicated ancestral ties to the project area. Of the 29 tribes or tribal organizations contacted for this project, three responded to the original TCNS notification with no issues and 10 requested additional information. Of the 10 that requested additional information, 9 determined that they have no issues with the proposed project or did not respond within 30 days of receiving the additional information. The Fort Peck Assiniboine and Sioux Tribes (FPT), however, requested that an archaeological literature review and ethnohistorical study of the project APE be conducted. The additional information was provided to the FPT on May 9, 2011 and there has been no further response since.

## **Air and Noise Quality**

During construction of the project, air emissions will be generated as a result of the use of construction equipment including vibratory plows, directional drilling equipment, and rock saws. Emissions from this construction equipment will be temporary and minor and will be limited to the duration of the construction activities along the routes.

The proposed project will cause short-term minor increases in the use of fossil fuel and associated greenhouse gas emissions during construction. Total emissions of greenhouse gases during construction will depend on total fuel consumption by construction equipment. Total fuel consumption will likely be a function of the rate of construction and specific equipment needs dependent upon terrain and obstacles encountered during construction. Greenhouse gas emissions are expected to be well under the Council of Environmental Quality's presumptive effects threshold of 25,000 metric tons.

Noise levels generated from the construction equipment are expected to be similar in character and level to the existing traffic noise on the adjacent roadways, and are not expected to have significant impacts on sensitive receptors in the vicinity of the project.

## **Human Health and Safety**

The project is not expected to have any direct impacts on human health and safety during normal operations. During construction of the project, however, human health and safety concerns may arise where construction activities occur in close proximity to traffic along roadways and where excavation occurs in close proximity to contaminated sites. Enventis has developed a health and safety plan and will follow appropriate agency health and safety guidance to minimize impacts to the health and safety of the public and workers.

## **Cumulative Impacts**

Because the proposed project will be constructed within existing road rights-of-way, the primary cumulative impact is the potential for additional traffic congestion and delay due to the construction of this project during the same time period as other planned road projects. Traffic congestion and delay are typically experienced during most road construction projects. The proposed project could add to traffic congestion and delay depending on the nature and spatial requirements of other planned road projects.