ENVIRONMENTAL ASSESSMENT

INDIANA MIDDLE FIBER PROJECT
AWARD NT10BIX5570025

PREPARED FOR:
ZAYO BANDWIDTH, LLC
LOUISVILLE, COLORADO

AND

NATIONAL TELECOMMUNICATION AND INFORMATION ADMINISTRATION
BROADBAND TECHNOLOGY OPPORTUNITIES PROGRAM
WASHINGTON, D.C.

OCTOBER 2010
REVISED NOVEMBER 2010
PROJECT NO. G100287

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LIST OF ABBREVIATIONS/ACRONYMS

APE	Area of Potential Effects
BTOP	Broadband Technology Opportunities Program
BMP	Best Management Practice
CE	Categorical Exclusion
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CFR	Code of Federal Regulations
CO	carbon monoxide
CORRACTS	Federal facilities subject to Corrective Action under RCRA
DOC	Department of Commerce
DSL	digital subscriber line
EA	Environmental Assessment
FCC	Federal Communication Commission
FONSI	Finding of No Significant Impact
FTC&H	Fishbeck, Thompson, Carr & Huber, Inc.

LIST OF ABBREVIATIONS/ACRONYMS (*continued*)

Gb/s	Gigabits per second
GRNOC	Global Research Network Operations Center
HDD	horizontal directional drilling
IAC	Indiana Administrative Code
IDEM	Indiana Department of Environmental Management
IDNR	Indiana Department of Natural Resources
IGS	Indiana Geological Survey
INRC	Indiana Natural Resources Commission
IRU	Indefeasible Right to Use
INDOT	Indiana Department of Transportation
ITCC	Ivy Tech Community College
LMCP	Lake Michigan Coastal Program
LUST	leaking underground storage tank
Mb/s	Megabits per second
MS4	Municipal Separate Storm Sewer System
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO_2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOC	network operations center
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRHP	National Register of Historic Places
NTIA	National Telecommunications and Information Administration
NWI	National Wetlands Inventory
O_3	ozone
PA	Programmatic Agreement
Pb	lead
$PM_{2.5}$	particulate matter smaller than 2.5 microns
PM_{10}	particulate matter smaller than 10 microns
ROW	right of way
SAC	Special Award Conditions
SHPO	Indiana State Historic Preservation Office
Sonet	Synchronous Optical Network
TCNS	Tower Construction Notification System
THPO	Tribal Historic Preservation Officer
TSDF	treatment, storage, or disposal facility
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish & Wildlife Service
USGS	U.S. Geological Survey
VRP	Voluntary Remediation Program
WQC	Water Quality Certification
Zayo	Zayo Bandwidth, LLC

EXECUTIVE SUMMARY

Zayo Bandwidth, LLC (Zayo), in partnership with I-Light, seeks to utilize funding from the American Recovery and Reinvestment Act to complete a "shovel ready" build-out of the I-Light optical network to connect 21 Ivy Tech Community College (ITCC) campuses in the state of Indiana. In addition, Zayo will make broadband services available to all the intermediate communities, businesses, and anchor institutions between the ITCCs.

This Project was initiated to address two areas of need:

- Expansion of the I-Light network and connection of ITCCs to the I-Light network, in order to meet the needs of the research and education community.
- Provide broadband services to unserved/underserved areas of Indiana, in order to meet the needs of rural/agricultural, poor, and/or impoverished communities regarding education, employment, economics, health care, and public safety.

The ITCC is Indiana's largest higher education institution, with over 130,000 students. The career and technical education offered at the community colleges play a vital role in economic recovery, by retraining workers for new 21st century careers in the technology and life sciences sectors. ITCC is the state's largest workforce training provider.

Most broadband services in Indiana become less available the further one travels away from larger metropolitan areas and the Indiana University's campuses. The availability of a DSL (digital subscriber line) or fiber optic cable service is limited or nonexistent in rural areas.

Zayo proposes to build 645 miles of new, 96-strand fiber middle mile network, which will be used to further complete the I-Light network. This Project will connect the 21 ITCC campuses to the 42 colleges and universities already on the I-Light network, thus advancing research, education, healthcare, and economic opportunities throughout Indiana. Each ITCC will be allocated two strands of fiber, which will provide 1 Gb to 10 Gb (Gigabit) internet services to each college. The two strands of fiber will be managed by I-Light.

In addition, the Project expects to spur affordable broadband service to local consumers in more than 100 communities along the route, over 70% of which are in underserved areas, by allowing local Internet service providers to connect to the Project's open network. Each unserved/underserved community will be provided an interconnect point on the fiber. In addition, there will be an interconnect point every 2 miles along the fiber route, ensuring the middle mile

fiber is available to communities, businesses, and anchor institutions. Figure 1.0 (Location Map) shows the location of the proposed fiber network.

The Project is expected to:

- Provide 413 points of interconnection along the route on a wholesale basis, enabling last mile providers to serve an area with an estimated 480,358 households; 49,071 businesses; and almost 4,800 anchor institutions, including 3,271 health centers, 1,070 education centers, 423 public safety organizations, and 2,388 government offices.
- Greatly improve rural health care by providing broadband services that allow for the transmittal of electronic medical records between clinics and hospitals. It would also allow for improved health awareness for poor rural areas in Indiana, and more immediate contact with health care specialists.
- Leverage broadband to stimulate economic development and bolster the state's career and technical education offerings, given the current economic conditions and the loss of traditional manufacturing jobs in the state.
- Partner with six socially and economically disadvantaged small businesses in implementing the Project.
- Result in additional broadband connectivity to 151,000 households, over 11,000 business customers, and 1,567 strategic institutions by end of year 2015.
- Create 28 jobs and save 35 jobs.

The following fiber installation methods were evaluated in this Environmental Assessment:

- Aerial installation using existing utility poles.
- Aerial installation using new utility poles.
- Underground installation using the vibratory plowing method.
- Underground installation using directional boring methods.
- Underground installation using trenching methods.
- Underground installation using existing conduit/duct located under a stream or in road right-of-way (ROW).
- Aboveground installation using existing conduit/duct attached to a bridge spanning a stream.

- Aboveground installation by attaching new conduit to a bridge spanning a stream
- No action alternative.

None of the listed alternatives is an appropriate installation technique for all segments of the proposed fiber route. The preferred alternative consists of a hybrid of installation methods, selected to minimally impact the surrounding environment. Following are the preferred installation methods to be utilized for all areas not containing a bridge crossing, in order of preference:

- Aerial installation using existing utility poles.
- Underground installation using existing conduit/duct.
- Underground installation using vibratory plowing methods.
- Underground installation using directional boring methods.

Aerial installation encompasses approximately 90% of the proposed route. Aerial installation is the least environmentally destructive method, due to lack of soil disturbance during installation; and it is expected that there will be minimal to no impact to the surrounding/adjacent area with the use of this alternative. The plowing method will be utilized in upland areas where utility poles are absent, and wetlands and high quality habitat are not present. Directional boring will be utilized at road and railroad crossings, and to avoid wetlands and high quality habitat, if needed.

Following are the installation methods to be utilized at bridge crossings, in order of preference:

- Aerial installation using existing utility poles on each side of a stream.
- Underground installation using existing conduit/duct located under a stream.
- Aboveground installation using existing conduit/duct attached to a bridge spanning a stream.
- Aboveground installation by attaching new conduit to a bridge spanning a stream.
- Aboveground installation by installing new poles within the ROW on either side of a stream.
- Underground installation by installing new conduit/duct under a stream using directional boring techniques.

The method of installation in areas without utility poles will be determined during the Project's engineering phase, and will be based on professional judgment and best engineering practices. Table ES summarizes the anticipated impacts of the Preferred Alternative and the No Action Alternative.

Table ES - Potential Effects of the Preferred Alternative and the No Action Alternative

Resource	Alternatives	
	Preferred	No Action
Noise	Minor, localized, temporary effects during installation due to noise generated by construction activities.	None
Air	Temporary increase in air pollutants associated with vehicle exhaust during installation. No effects during operation.	None
Geology/Soils	Minor disturbance of soil during plowing and directional boring.	None
Water	Minor, temporary potential for sedimentation resulting from plowing and directional boring. Will be managed and prevented with the implementation of standard best management practices during construction.	None
Biological	Negligible and temporary disturbance of some wildlife species due to noise and human presence associated with installation and maintenance of the fiber.	None
Historical/ Cultural	Impact will be evaluated and minimized through adherence to the Programmatic Agreement.	None
Aesthetic/ Visual	Negligible impact from an additional cable on existing utility line. Minimal, temporary disturbance of the ground surface during construction.	None
Land Use	None	None
Infrastructure	Minimal temporary increase in nonhazardous construction waste.	None
Socioeconomic	Stimulate local economies during the installation and construction phase; new and enhanced high speed broadband access to educational, medical, and governmental agencies, as well as businesses, communities, and rural residences within unserved/underserved areas of Indiana; economic growth, job creation, improved education, and additional health care services for low income, rural areas.	Negative impact upon educational, health, and government establishments, and the currently unserved/underserved communities, due to poor availability of information services.
Human Health/Safety	Positive effects due to increased ability of electronic transfer of medical records and medical consultations.	Impairs human health by not providing improved broadband services to the medical community.