Broadband Infrastructure Application
Submission to RUS (BIP) and NTIA (BTOP)

Submitted Date: 8/20/2009 5:14:06 AM	**Easygrants ID: 71**
Funding Opportunity: Broadband Initiatives Program and Broadband Technology Opportunities Program	**Applicant Organization:** Zayo Bandwidth, LLC
Task: Submit Application - Infrastructure Programs	**Applicant Name:** Mr. Chris Morley

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A. General Application Information

1. Applicant Information	
1-A. Name, Address, and Federal ID for Applicant	
i. Legal Name:	Zayo Bandwidth, LLC
ii. Employer/Taxpayer Identification Number (EIN/TIN):	262463571
Street 1:	901 Front Street
Street 2:	Suite 200
City:	Louisville
County:	Boulder
State:	CO
Country	United States
Zip/Postal Code:	80027

1-B. Name and Contact Information of Person to be Contacted on Matters Involving this Application:	
Prefix:	Mr.
First Name:	Chris
Middle Name:	
Last Name:	Morley
Suffix:	
Telephone Number:	508-922-1323
Fax Number:	303-226-5614
Email:	cmorley@zayo.com
Title:	Chief Financial Officer

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1-C. Other Required Identification Numbers

i. Organizational DUNS:	807871632
ii. CCR # (CAGE):	5LZP8
iii. Funding Opportunity Number:	1
iv. Catalog of Federal Domestic Assistance Number:	**BTOP CFDA Number:** 11.557 **BIP CFDA Number**: 10.787 **BTOP CFDA Title:** Broadband Technology Opportunities Program **BIP CFDA Title:** Broadband Initiatives Program

1-D Eligible Entities

Please classify your organization. (Note: If there are multiple organizations involved in the project, designate the lead applicant that would enter into a Loan or Grant agreement with the Agency and assume operational and financial responsibility should an award be made). **For-Profit Corporation**

1-E. RUS Borrower Status

No

1-F. Applicant Federal Debt Delinquency Explanation

Is the Applicant Delinquent On Any Federal Debt? **No**
Federal debt delinquency Explanation:

2. Project Description & Project Title

2-A. Project Title: Indiana Middle Mile fiber for Schools, Communities and Anchor Institutions

2-B. Project Description: Zayo Bandwidth, LLC in partnership with I-Light seeks funding from ARRA to complete the "shovel ready" build out of the I-Light optical network to connect 21 Ivy Tech Community College 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 Ivy Tech Community Colleges.

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3. Application ID for Multiple Submissions for Identified Service Areas:

4. Rural Area Determination

At least 75 percent of the proposed service area to be funded falls within rural areas that are unserved or underserved.

No

5. Applications for Rural Areas: Please choose the funding program(s) to which you are submitting this application.

a) BIP broadband infrastructure category to which you are applying:

b) Would you like this Application for Rural Areas to also be considered for BTOP funding?

c) BTOP Infrastructure category for which you are applying.

6. Applications for All Other Areas: Per the NOFA, all applications to fund broadband infrastructure projects in areas that are less than 75% rural must be submitted to NTIA for consideration under BTOP.

BTOP broadband infrastructure category to which you are applying: **Middle Mile**

B. Eligibility Factors

7. Application Submission

BIP and BTOP Factors Selected By Applicant:
Applicant has submitted a completed application and provided all supporting documentation required for the application.
The Project will be substantially complete within 2nd year from the award date, and the project will be fully

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complete by the end of the 3rd year from the award date.
For projects seeking more than $1 million funding, the Applicant agrees to submit a certification, from a Professional Engineer, that attests that a) the system will deliver the stated performance; and b) the projected project will be substantially completed within two years, and fully completed within three years.
The Applicant provides two-way data transmission with advertised speeds of at least 768 kbps downstream and 200 kbps upstream.
Applicant understands and agrees to comply with the nondiscrimination and interconnection obligations outlined in the NOFA.
If applying for a last mile Broadband Infrastructure project, applicant understands and agrees to comply with the last mile coverage obligations as outlined in the NOFA.

Additional Factors for BIP Selected By Applicant

Additional BTOP Factors Selected By Applicant • **Conformity with Statutory Purposes** • **Cost Sharing/Matching** • **Reasonableness of Project Budget**
The project advances at least one of the statutory purposes for BTOP
Applicant has provided documentation that the project would not have been implemented during the grant period without federal grant assistance.

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Applicant has provided a budget that is appropriate to the proposed technical solution and only includes eligible costs.

- **Demonstration the Project Could not be Implemented But For Federal Grant Assistance**
  Applicant is providing matching funds of at least 20 percent towards the total eligible project costs?
  Yes

7-k. Cost Sharing/Matching Fund Explanation

C. Executive Summary

Executive Summary of Project for BIP and BTOP:

8. Infrastructure Projects Executive Summary
Introduction

Zayo Bandwidth, LLC in partnership with I-Light seeks funding from the American Recovery and Reinvestment Act to complete the "shovel ready" build out of the I-Light optical network to connect 21 Ivy Tech Community College 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 Ivy Tech Community Colleges.

Connecting Ivy Tech community colleges is especially critical for the state. The career and technical education offered at the community colleges represents a flexible, tailored solution to an urgent need. Their ability to quickly design curriculum that meets the job retraining needs will play a vital role in the economic recovery. With Indiana's loss of traditional manufacturing, Ivy Tech has become a critical tool in the effort to retrain workers for the new 21st Century careers in the technology and life sciences sectors. Ivy Tech has empowered thousands of Hoosiers who were previously displaced by massive layoffs or industry change. Ivy Tech is the state's largest workforce training provider, offering nearly 20,000 certifications

and one million hours of training annually.

One core element of Ivy Tech's mission as a state-wide community college system is helping Indiana's businesses (small, medium, and large) improve the quality and competitiveness of their workforces and stimulating economic development throughout the state. Objectives address expanding and focusing workforce and economic development activities, fully supporting Indiana's economic development goals and strategies. They have developed and successfully offered targeted retraining programs that have enabled laid-off Hoosiers find new jobs in high-impact industries like biotech and advanced manufacturing.

Zayo Bandwidth, LLC will build 626 miles of new 96 strand fiber connecting 21 Ivy Tech Community Colleges throughout the state of Indiana. Following build-out, the 21 Ivy Tech community colleges will be connected to the I-Light network and have access to all the research facilities and educational networks available via I-Light.

Each Ivy Tech community college will be provided two strands of fiber with I-Light providing the 1G – 10G internet services for each college.

The remaining strands of fiber will be available for Zayo Bandwidth, LLC to provide services to unserved and underserved communities along the fiber path. Each unserved/underserved community will have an interconnect point on the fiber; and in addition, there will be an interconnect point every two miles along the fiber route; ensuring middle mile fiber is available to communities, businesses and anchor institutions. The network will be operated by Zayo Bandwidth Indiana LLC, a wholly owned subsidiary of Zayo Bandwidth LLC. Zayo Bandwidth Indiana LLC has a public utility license from the state of Indiana.

It is expected that that the project will be complete within 18 months, and create a total of 28 jobs and save a total of 35 jobs.

I-Light

The state of Indiana has invested $18M to create the I-Light fiber optic network and connections to institutions, but a slowing economy has impeded plans to complete the work. Currently 33 of Indiana’s public colleges and universities are connected directly to the I-Light

network. The funding requested in this proposal will be used to further complete the I-Light network by providing direct fiber connections for 21 Ivy Tech community colleges throughout the state of Indiana.

The I-Light network connects community anchor institutions and is a unique collaboration in Indiana between colleges and universities, state government, and private sector broadband providers. I-Light has enabled a statewide community forum by connecting colleges and universities directly to I-Light at 1-10 Gigabit speeds with the ability to provide even larger, on-demand wavelengths, and very high capacity connectivity between research and learning communities.

Proposed Funded Service Area

There is one funded service area proposed in this application. The associated fiber consists of new fiber build (626 miles) as well as existing Zayo fiber (481 miles), that will be provided as an in-kind contribution. The contiguous census blocks associated with the service area correspond to both the new and existing fiber. Zayo Bandwidth LLC will be providing a cash match equal to 20% of the new fiber build cost, thus, taking account of the existing Zayo fiber in kind contribution, the grant request is for 70.2% of total project cost.

The new fiber build passes 80 communities that include 480,358 households, 49,071 businesses, 3,271 health centers, 423 public safety centers, 1070 education centers and 2388 government centers. Please note that these figures are associated only with the new fiber build, and not the existing in-kind contribution fiber. This is to show the incremental impact of the new fiber.

The two strands of fiber provided to each Ivy Tech community college will be managed by I-Light. Zayo Bandwidth, LLC will provide I-Light with a 10 year Indefeasible Right to Use (IRU) for the two dark fiber strands. I-Light will then provide the necessary fiber optic equipment, internet services and NOC services to each community college. Zayo will provide ongoing maintenance of the fiber route, including locates associated with the "Call Before You Dig" program, relocations due to municipal requirements, repair and replacement of damaged fiber due to weather, vandalism, and accidents.

Services provided by I-Light to each Ivy Tech community college include : Gb/s bandwidth to other I-Light members, connectivity to educational and research networks Internet 2 and National LambdaRail and commodity internet access.

Network management for I-Light is provided by the Global Research Network Operations Center (GRNOC) at Indiana University, a premier provider of highly responsive network coordination, engineering, monitoring and installation services that support the advancement of Research and Education networking. The Global GRNOC has become an unrivaled provider of 24x7x365 expert support for the most advanced research networks in the country.

For communities, businesses and anchor institutions along the fiber, Zayo Bandwidth, LLC will make available the following services at each interconnect point: (i) Dedicated Internet Access (ii) SONET Private Line (iii) Wavelengths (iv) Ethernet (v) Dark fiber. Bandwidth available ranges from 10 Mb/s to 10Gb/s.

Non-Discrimination and Interconnection

The core competency of Zayo Bandwidth, LLC is the provision of bandwidth to other carriers, last mile providers, businesses and anchor institutions. Zayo does not discriminate between potential customers, and will sell broadband services to any party wanting to interconnect to the Zayo network. Zayo's approach to the sale of broadband services is completely in line with the non-discrimination and interconnection requirements of the BTOP NOFA. Zayo already provides wholesale broadband services to other wireless and wireline last mile and middle mile providers, showing Zayo has experience negotiating interconnection rates, and welcomes interconnection by other parties.

Type of Broadband System Deployed

The broadband system deployed will be a 96 strand fiber based middle mile network. Two strands of fiber will be used by I-Light for the provision of 1G – 10G services to each Ivy Tech community college, and interconnection to the current I-Light optical network. The remaining fibers will be used to provide lit services or dark fiber to the communities, businesses and anchor institutions along the fiber route. These lit services include advanced data protection architectures for maximum reliability and will include the Zayo operations support and billing

services. It will be possible to provide each end point with at least 100Mb/s bandwidth.

Qualifications of the Applicant

Launched in 2006, Zayo Bandwidth, LLC is managed by a seasoned group of industry veterans. Zayo has grown both organically and by acquisition. Since May of 2007, Zayo has completed acquisitions of eleven businesses. Zayo's recent organic growth includes the following (i) On June 22, 2009 it was announced that Zayo Bandwidth is adding approximately 80 cell towers and commercial buildings to its network in the greater Indianapolis metropolitan area. Zayo's expansion into Indianapolis is their third large-scale Fiber to the Tower (FTT) deployment. (ii) On June 23, 2009 it was announced that Zayo Bandwidth will begin providing fiber-based bandwidth services to the Youngstown, Ohio metro area and providing access to key locations in the greater Youngstown area, including mobile switching centers, central offices and data centers. In addition, Zayo Bandwidth, LLC network statistics include 18,895 Fiber route miles, 1,958 On-Net buildings, 772 On-Net cell sites, 106 LSOs, 354 Interconnects and 776 Additional Buildings. (Interconnects includes: Carrier Hotels/Data Centers, Wireless MSCs, Carrier POPs, Zayo POPs/Huts and CATV Head-Ends.)

Overall Infrastructure Cost of the Broadband System

The overall cost of the broadband network proposed by this project is $35.82M. This includes an in-kind cost contribution of $4.4M for the existing Indiana Zayo fiber. The cost for the new fiber build is $31.42M. The in-kind contribution with the Zayo proposed cash match of $6.28M is 29.8 % of the overall total project cost.

Overall Expected Subscriber Projections for the Project

Most of Zayo Bandwidth, LLC last mile provider customers in Indiana also serve the last mile areas related to this middle mile project. It is expected that introduction of middle mile fiber as proposed by this project will result in additional broadband connectivity to 151K households, 11.8K business customers and 1567 strategic institutions by end of year 2015.

Description of BTOP Project Purpose (BTOP Applicants Only Next Three Questions)

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9. BTOP Statutory Purpose:

Provide access to broadband service to consumers residing in "unserved" areas of the United States.
Provide improved access to broadband service to consumers residing in "underserved" areas of the United States.
Provide broadband education, awareness, training, access, equipment, and support to schools, libraries, medical and healthcare providers, community colleges and other institutions of higher education, and other community support organizations by or through these organizations.
Improve access to, and use of, broadband service by public safety agencies.
Stimulate the demand for broadband, economic growth, and job creation.

10. Description of BTOP Project Purpose:

The purpose of the project is to extend the I-Light network to include 21 Ivy Tech community colleges in addition to making broadband via fiber available at interconnect points along the fiber route. Each interconnect point serving an unserved or underserved area will have "lit" broadband services available, including Dedicated Internet Access, Ethernet, Private Line (SONET protected) and wavelengths as well as dark fiber. For the 21 Ivy Tech community colleges, 2 strands of dark fiber will be provided. Using the 2 strands of dark fiber, I-Light will provide to each Ivy Tech community college Gb/s services including access to the education and research networks Internet 2 and National LambdaRail and connectivity to commodity internet.

Ivy Tech Community College is Indiana's largest higher education institution, with over 130,000 students enrolled last year. Connecting Ivy Tech community colleges to I-Light is especially critical for the state.

As Indiana's provider of workforce education offering nearly 20,000 certifications and one million hours of training annually, access is a critical aspect of Ivy Tech's mission. Ivy Tech has developed several avenues for students to enroll in a wide variety of degree, certificate and/or certification programs. One major avenue for student enrollment is via distance

education, including internet, two-way interactive video, and hybrid courses, which blend the use of distance education media with traditional classroom instruction.

The career and technical education offered at the community colleges represents a flexible, tailored solution to an urgent need. Their ability to quickly design curriculum that meets the job retraining needs will play a vital role in Indiana's economic recovery. With Indiana's loss of traditional manufacturing, Ivy Tech has become a critical tool in the effort to retrain workers for the new 21st Century careers in the technology and life sciences sectors. Ivy Tech has empowered thousands of Hoosiers who were previously displaced by massive layoffs or industry change.

The most compelling problem is that in the many unserved and underserved areas included in this application, there is a lack of cost effective broadband service. Each Ivy Tech community college, as well as the communities, businesses and anchor institutions located within these areas, do not have a reasonable method of getting access to broadband (compared to areas served by middle mile broadband). In the typical scenario, broadband is being provided via T1 lines from the local ILEC. By definition, the T1 lines are providing static bandwidth and is expensive when compared to newer broadband technologies such as carrier ethernet over fiber. Additionally, there are typically just a small number of T1 lines available for a college, leaving many colleges inadequately served and having a detrimental effect on the quality of education for students and faculty at colleges that lie within unserved and underserved areas. Providing fiber with at least 1Gb/s to each community college ensures that students are not disadvantaged in their learning, and are provided a learning experience as high in quality as those attending colleges served urban areas.

Broadband from the interconnect point to residences, businesses and anchor institutions can be provided via last mile providers, or Zayo can build fiber to local anchor institutions. Zayo has over 1958 buildings "on net" in the United States and has a network of over 18,895 fiber route miles.

Each Ivy Tech community college will have access to at least 1Gb/s broadband, as well as access to commodity internet services. For the other communities, businesses and anchor institutions, access of at least 100Mb/s, with maximums at 10Gb/s is provided to each end point.

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In addition to the 21 Ivy Tech community colleges, another 27+ K-12 school systems would become within reach of broadband infrastructure, enabling them to connect to each other and the Internet at new, affordable rates. Over 3271 health institutes are also now in reach of a fiber optic infrastructure, as well as over 2388 city/county and state government offices, 423 public safety agencies, 1070 education institutes, 49,071 businesses and 480,358 households.

Within each community, Zayo will seek out other partners to provide access to broadband service. We already have relationships with multiple Wireless ISPs covering approximately 70% of Indiana. Zayo will work directly with them to determine whether a wireless last mile solution is more cost-effective than a fiber last mile. We then are able to provide transport and bandwidth for those within a short distance from the interconnection point, and bandwidth to the third party provider who can reach more households and enterprises with a wireless last mile. Further, existing ISPs can obtain higher bandwidth to the internet than previously existed. These projects absolutely depend upon economies of scale being reached by marketing, both directly and indirectly, within each locale. Therefore, Zayo will reach out to county services arms within each county (including Convention and Visitor's Bureaus, Behavioral Health, YMCAs, Boys and Girls Clubs, etc.). Further, most city/county seats have an economic development council which assists both vendors and companies in matching assets to ensure stability in the community's economy. Zayo will also actively engage these councils.

The majority of city/county governments that we've worked with have expressed the need for greater broadband for their own use. In partnering with the municipalities themselves, Zayo can provide increased bandwidth and bring partnerships to the table that can provide services such as wireless meter reading, broadcasts from cameras mounted in emergency vehicles to central control, and storage/retrieval of the videos created from emergency vehicles.

Given that this middle mile project
- provides access to broadband to consumers residing in unserved areas of the United States, and
- provides improved access to consumers residing in underserved areas of the United States, and
- with partnership with I-Light, provides access to Gb/s services to 21 community colleges and

- provides broadband access to 423 public safety agencies and
- with the impact Ivy Tech community colleges have on economic growth and job creation

all five statutory purposes of the BTOP program are addressed by this project.

11. BTOP Enhanced Services for Health Care Delivery, Education, and Children:

Zayo Bandwidth, LLC will provide a fiber based network that is architected with specific features to enhance broadband service delivery to health care, education and children.

Redundancy: The ring architecture of the solution ensures a highly available broadband network . High availability means uptime and access to critical systems is available on an as-need basis. Availability of the network is particularly important in medical situations.

Interconnection to national education networks: Each of the Ivy Tech community colleges, via the connection with I-Light, will have access to the national research and education networks Internet 2 and National LambdaRail (NLR). This ensures that students at these community colleges have the same opportunity to access information as those attending institutions of higher education located in served areas.

I-Light not only meets the advanced broadband needs of higher education institutions, but also provides opportunities to partner with private industry engaged in research and education. Well-developed, integrated networking connectivity and capacity statewide is vital to the strategy of promoting Indiana's research and collaboration requirements. I-Light has the capability to provide all higher education institutions across the state with access to other state, regional, and national networks. In addition, I-Light will allow new and deeper partnerships with neighboring states by allowing interconnections between I-Light and similar networks in those states.

Benefit to the greatest population of users: An interconnect point or splice point is being planned for each underserved and unserved area on the fiber route which allows broadband access to be provided to the local community. The combination of fiber and wireless to the local community ensures a large population is covered.

Flexible provisioning of bandwidth: Zayo is able to offer bandwidth upgrades as required. For

example, a hospital may initially require 100Mb/s, but it may be that "success begets success" and with the increased usage of the network, a 1Gb/s link may become necessary. For the Ivy Tech community colleges, 1Gb/s and higher bandwidths will be made available, including access to commodity internet. Further, Zayo offers a variety of hand-off methods, including Ethernet, Private Line, Wavelengths and Dedicated Internet.

The expansion of Zayo's current broadband network to more rural and unserved/underserved areas, provides the opportunity for the most rural healthcare providers to have access to new and unused applications. These include: telemedicine; health information exchange; distance education and training; public health surveillance; emergency preparedness; and trauma system development. By providing rural hospitals with the network infrastructure necessary to run these applications, we expect to see the creation of a true "telehealth network." Rural hospitals can partner with – and connect to – urban hospitals who currently utilize these applications, in order to provide the same levels of care to rural patients.

Our network will pass more than 27 K-12 schools systems, allowing them access to bandwidth that will support voice/video/data applications throughout the schools. Increasing bandwidth to rural schools means that each individual classroom can be wired for internet, and expect response times that are faster than currently available or affordable. Several universities provide tutoring services in which college students majoring in education are assigned to provide tutoring online to K-12 student.

D. Proposed Funded Service Area

12. Proposed Funded Service Area Maps:

12-A. Service Area Map (Reference Number): **19FD-1678-446F-AE82**

12-B. Is the applicant is seeking a waiver for providing less than 100% coverage of a census block. **No**

13. Proposed Funded Service Area (BIP - Last Mile Projects):

Please refer to section M at the end of document.

14. Proposed Funded Service Area (BTOP - Middle Mile Project):

Please refer to section M at the end of document.

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15. Non-Funded Service Area(BIP Only):

16. Coverage Waiver:

Applicant is seeking a waiver for providing less than 100% coverage of a census block.
No
For Response of "Yes" please refer to upload section for additional supporting documentation.

17. Methodology for Area Status:

For our determination of unserved, underserved, and served Census blocks for IN, we used a combination of 1) known broadband service provider presence, 2) an accurate proxy for 3Mbps advertised speed, and 3) survey-based broadband penetration.

Coverage: We compiled a broadband availability database of broadband network presence to determine whether Census blocks are served, unserved, or underserved:

- DSL. Used standard DSL radii from each LEC central office for sufficiently dense wirecenters to calculate number of households with DSL availability by block
- Cable Modem. Compiled database of known cable modem presence by cable system and overbuilder networks to calculate number of households with cable modem availability by block
- WiMax. Digitized published WiMax coverage map for Clearwire to calculate number of households with WiMax availability by block
- 3G Wireless. Digitized published 3G coverage maps for AT&T, Verizon, Sprint, T-Mobile to calculate number of households with 3G wireless availability by block

We calculated the percentage of households within each Census block that are covered by the network contours of each of these technologies. If more than 90% of the households within a Census block have no coverage, it is unserved. If more than 50% of the households within a Census block have no coverage, it is underserved.

Speed: We used cable modem presence by Census block as a proxy to determine the presence of operators advertising data speeds of at least 3Mbps. A random block-level supporting survey shows this proxy to be 95% accurate. If there is no cable modem presence within a block indicating no 3Mbps availability by proxy, it is underserved.

Penetration: We calculated broadband penetration at the Census block level using a 2009

survey by Pew and calibrating to the most current FCC state-level residential high-speed data access lines. We calculated broadband penetration for Indiana using FCC lines and U.S. Census Bureau households. The FCC residential line counts show IN has a penetration of 52%. We used Census block-level demographics and the Pew survey to calculate penetration by block. We calculated that 27% percent of FCC-defined broadband lines in IN were between 200 and 768Kbps and excluded this from the block-level penetration based on the NOFA 768Kbps broadband speed threshold. If broadband penetration for a Census block is less than 40%, it is underserved.

In lieu of a IN broadband map in line with NOFA definitions, we believe our study to be the best Census block-level data and methodology available. Caveats: network availability is based on known provider presence; e.g., some data is unavailable for smaller providers. The presence of advertised 3Mbps service is based on a proxy, which was tested as 95% accurate nationwide. Census-block penetrations are calculated using a statistically significant survey and down-sampled to the Census block level based on the high correlation of demographics and broadband penetration.

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1. PEW Internet report "2009 Home Broadband Adoption" provides broadband penetration by demographic group
2. The FCC report "High-Speed Services for Internet Access" ("FCC Report") provides broadband line counts by state, but defines broadband as 200Kbps or greater in at least one direction
3. The FCC Report gives download speed distribution by technology and technology distribution by type. This and the 2008 Communications Workers of America "Report on Internet Speeds in All 50 States" were used to calculate the percent of FCC residential broadband lines that were between 200 and 768Kbps.

18. Middle Mile Benefits

LAST MILE SERVICE AREAS. The last mile service area for the Indiana Middle Mile Fiber Connection Project is a contiguous set of Census blocks across numerous Census Designated Places and other unnamed places along the fiber route. Included on the route and in the last mile service area are over 100 communities including Indianapolis, Fort Wayne, Evansville, South Bend, Muncie, Anderson, Terre Haute, and many smaller communities.

Within this region, Zayo will enable interconnection for last mile service providers as well as critical community facilities, community anchor institutions and public safety entities. Zayo is a non-discriminatory provider of wholesale transport services to any party interested in purchasing such capacity.

LAST MILE INTERCONNECTION POINTS. There are over 8,500 points interconnection entities in this region, including community anchor institutions. Of these, nearly 500 are identified interconnection potential points with telecommunication providers. These include but are not limited to ILECs, cable modem providers, CLECs, and other communications carriers. Identified ILECs include: AT&T, Bloomingdale Home Telephone, Cincinnati Bell, Communications Corp. Of Indiana, Embarq, Frontier, Geetingsville Telephone, Hancock Rural Telephone, Home Telephone, Ligonier Telephone, New Paris Telephone, Northwestern Indiana Telephone, Perry-Spencer Rural Telephone, Smithville Telephone, Sunman Telephone, Swayzee Telephone, Sweetser Rural Telephone, Verizon, and Yeoman Telephone. Identified cable companies include Almega Cable, Bright House Networks, Cequel Communications, Charter Communications, Citizens Telephone, Comcast Cable Communications, Global Com, Insight Communications, Ligonier Telephone, Longview Communications, Mediacom, New Paris Telephone, Rapid Communications, Sunman Telecommunications, Swayzee Tele Broadband, TDS Telecom, Time Warner Cable, and WideOpenWest. Enabling these last mile providers will extend broadband access to approximately 1.4 million residents in 540,000 households and over 900,000 employees in 59,000 businesses.

COMMUNITY ANCHOR INSTITUTIONS. Zayo will provide dark fiber facilities to its partner I-Light to connect to 21 schools across Indiana. Zayo has also identified an additional number of critical community facilities, community anchor institutions, and public safety entities including 3,983 in health care related fields, 2,393 government entities, 1,235 education-based facilities and 501 are directly related to public safety.

Providing broadband services to partners I-Light and 21 schools as well as the other identified anchor institutions will enable better access to teachers, students, doctors, patients and many other community anchor end-users.

END USER PROJECTIONS. We forecast that this project will stimulate growth in subscriber penetration from current levels of 39.6% to 90% after five years. This translates into 239,000 new residential broadband subscribers after five years. We also forecast new broadband adoption by 33,000 businesses. The methodology supporting these forecasts is described in Attachment H.

VULNERABLE POPULATIONS. Many of these residents are in need*; 41% are

disadvantaged by income, 18% by advanced age and 21% by ethnicity. Additionally, 25% of the community population is comprised of children, who will significantly benefit from this broadband project. Currently, 19% of adults in the service area did not complete a high school diploma. This project has as a key purpose addressing the broadband gap within school to help foster learning for children and increase graduation rates.

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* "Disadvantaged by income" population defined as percent of pop. with income lower than $35,000
* "Disadvantaged by ethnicity" population is defined as the total % of non-white population
* "Disadvantaged by advanced age" population is defined as the % of pop. 60 years of age and older
* "Children" population is defined as the % of pop. under 17

E. Proposed Service Offering

19. Broadband Service Offerings for Last Mile Project:

Please refer to upload section at the end of the document.

20. Service Offerings for Middle Mile Project:

Please refer to upload section at the end of the document.

Competing Service Providers

21. Existing Broadband Service Providers and Services Offered:

Please refer to upload section at the end of the document.

Non-Discrimination, Interconnection

22. Description of Network Openness:

The core competency of Zayo Bandwidth LLC, is as a provider of bandwidth. Zayo is predominantly a middle mile provider for other telecommunication companies (including wireless and wireline companies), last mile providers as well as a provider of bandwidth to businesses and anchor institutions. For connectivity to residential households Zayo provides

bandwidth via last mile providers.

Zayo will provide bandwidth and broadband services to any party that wants to interconnect to Zayo's fiber network. Zayo already provides bandwidth and fiber connectivity to the major wireless and wireline carriers, that includes both last mile and middle mile providers, as well as connectivity to local last mile providers. Zayo thus has experience in negotiating rates, and the management and billing of all its customers.

This explanation of the core strength of Zayo shows the approach Zayo takes to network openness and non discrimination is completely aligned with the requirements of NTIA with regards to network openness and network non discrimination.

Zayo Bandwidth collaborates with both enterprise and wholesale customers with large and growing needs for bandwidth. The network itself consists of over 18,895 fiber route miles in 23 states. As a carrier's carrier, Zayo has relationships with major carriers (local and interexchange carriers), CATV companies, internet providers, wireless companies and enterprises requiring bandwidth solutions that require fiber optics.

Zayo accommodates companies requiring internet traffic in one of two ways. First, Zayo can provide transport and bandwidth, or transport alone. Specifically, Zayo's internet offer (ie. transport and bandwidth) is a wholesale service in which the customer (enterprise or wholesale) is obligated to provide their own Class of Service or Quality of Service parameters, DNS, firewall services, encryption and filtering. Second, Zayo offers to simply provide transport to multiple internet backbone providers. In this arrangement, Zayo would carry traffic from a customer's location directly to a third party provider. This third party would then provide the internet portal, and any/all features (CoS/QoS, DNS, firewall, encryption and filtering).

In either arrangement, Zayo's network passes traffic on a FIFO basis, and on a "per circuit" basis, and does not discriminate or "favor" any lawful content or application. As a wholesale provider, Zayo does not provide a managed network service offer, but does publish both Customer Care and Network Control Center information on its public web site.

Further, either of the above two scenarios allows companies to take advantage of the openness of Zayo's network. In order for Zayo to provide for a physical interconnection of exchange

traffic, companies can place orders directly with Zayo for on-net locations. Zayo's current on-net buildings include most major data centers, carrier hotels, LEC Serving Offices and IXC POPs in Zayo's footprint. Alternatively, when a requested location is currently "off-net" companies can build directly to a mutually acceptable interconnect (splice) point on our network, or Zayo can extend the existing network to the required location. New builds are thus handled on an Individual Case Basis, are quoted on a "cost-plus" basis, and open to any company with acceptable credit.

By providing both transport and bandwidth, Zayo ensures that its customers have access to all major internet providers as well as through Zayo directly. The network has interconnect points at regular intervals, and provides for transport to over 390 recognized meet points, including Zayo POPs, Carrier POPs, LEC Serving Offices and Carrier Hotels.

Non-Discrimination and Interconnection (BTOP applicants only for next three questions)

23. Non-Discrimination Obligations (applicable to Last Mile and Middle Mile Applicants):

Adhere to the minimum non-discrimination requirements as set forth in the NOFA.
Display the nondiscrimination practices in a prominent location on the service provider's web page, and provide notice to customers of changes to these policies.

24. Interconnection Obligations (applicable to Last Mile Applicants):

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25. Interconnection Obligations Middle Mile Applicants:

Adhere to the minimum interconnection requirements as set forth in the NOFA.
Display the interconnection policies in a prominent location on the service provider's web page, and provide notice to customers of changes to these policies.
Commit to offering wholesale access to network components and services such as wavelength or fibers at reasonable rates and terms.
Commit to binding private arbitration of disputes concerning interconnection obligations.

Cost Effectiveness and Affordability

26. Cost per Household (BTOP only):

It was communicated by email from BTOP that this question does not need to be answered for middle mile projects.

However, to answer the question as best as can be done for middle mile projects, the number of households addressed in the corresponding last mile areas of this project is 480,358 households. If the cost of the new network build of $31,425,394 is divided by total number of households, we arrive at a cost per household. $31,425,394/480,358 = $65 per household.

27. Affordability

This project, in partnership with I-Light, will make available Gb/s (broadband) services to 21 Ivy Tech community colleges as well as broadband transport and internet upstream services from 10Mb/s to 10Gb/s to communities, businesses and anchor institutions.

Gb/s services are not currently available at the Ivy Tech community colleges and are not offered by current middle mile providers. The revenue opportunity derived from these colleges does not provide sufficient payback to justify fiber construction, without the assistance of government funding .

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The state of Indiana has invested $18M to date to build the I-Light backbone. The I-Light business model took advantage of this initial investment by the state to subsidize connectivity to each community anchor institution presently accessing the network. I-Light is a not for profit community anchor network which has established a rate structure that allows members to connect at the lowest possible cost while still providing a life cycle replacement funding model to build reserves for renewal of fiber leases and to refresh backbone hardware.

I-Light, operating as a non-profit entity, offers monthly rates to all higher education institutions (including the 21 Ivy Tech community colleges) connected to the backbone in Indiana. The full rate list, starting at $1,500/month for 1GB VLAN is shown in attachment B.

Zayo Bandwidth LLC provides high speed connectivity to both enterprise and wholesale customers. Services include wholesale internet connectivity (10M to 1G) and transport services (45M to 10G) to major carrier hotels, data centers LEC Serving Offices and Carrier POPs. Transport services are also available for hospitals, government and eduction institutions with connectivity requirements between two or more locations.

Because the network will have open access to all potential customers, any customer can build fiber directly to the access point, or opt for Zayo to build to a nearby meet point. Zayo's on-net rate sheet provides internet access (bandwidth and transport) for on-net sites, or customers meeting at the Zayo interconnection points at the rates shown in attachment B.

Because entities in these areas today receive internet transport and bandwidth based on a distance based local loop fee, a T1 (1.5Mb/s) of internet access typically costs between $500 and $800 monthly. Gigabit transport to a major city is typically priced on a per Mb/s basis, ranging from $35 per Mb/s to $70 per Mb/s.

When a customer is "off-net" (i.e. doesn't build their own fiber to the interconnect point, but relies on Zayo to extend the network), Zayo's price model is based on any costs needed to extend the network (fiber build, outside and inside plant), and the price is then a "cost-plus" model. This proposal, if funded, solves for a major component of the cost to deliver services to unserved and underserved communities by extending "middle-mile" network closer to customer end points. Because ISPs and carriers are target markets for these larger bandwidth

pipes, the ISP or carrier can rely on oversubscription and market penetration to keep down prices to small businesses and residential customers. We typically see end user prices beginning at $35 monthly for 1 Mb/s downstream internet bandwidth. Through enablement of middle-mile transport, competition amongst local service providers purchasing broadband and transport services from Zayo, will be able to enter the market with a reduced cost structure, enabling reduced price points and higher bandwidth to end users.

F. Technology Strategy

28. Technology Type:

Wireline - xDSL
Wireline - Coaxial Cable
Wireline - Fiber-optic Cable
Wireless - Terrestrial Fixed
Wireless - Terrestrial Mobile

Other:

29. System Design
Introduction:

The Zayo Bandwidth Middle Mile Proposal leverages dark fiber, DWDM (Dense Wave Division Multiplexing), and SONET (Synchronous Optical Network) technologies to provide Point to Point Private Line, Ethernet, Wavelength, Dark Fiber and Dedicated Internet services to last mile providers and end users.

High count single mode fiber is being deployed in rings and linear spurs off of Zayo

Bandwidths existing network infrastructure to maximize the reach of the proposal. DWDM and SONET technologies are being deployed over the fiber to enable 1.5M to 10G services from the newly reached communities to the Zayo network infrastructure and the internet. The proposal provides interconnect points for connectivity to last mile providers or end users in the various markets via strategically placed points along the fiber path.

Services:

The proposal leverages Interconnection Points in the network to deliver services to last mile providers and end users. Interconnection points will be capable of delivering Ethernet, Private Line, Wavelength, Dark Fiber and Dedicated Internet Access services from 1.5Mbps to 10Gbps via industry standard interfaces.

A last mile provider or end user can connect to Zayo Bandwidth at any interconnection point via 2 fiber or 4 fiber optical interfaces. A 2 fiber interface is provided for Ethernet, Wavelength, and Unprotected SONET services while a 4 Fiber interface is used to provide Protected SONET services. The interconnection will leverage industry standard SONET interfaces at OC3, OC12, OC48, or OC192 SONET rates for the various service types, or can leverage standard Gigabit or 10Gigabit Ethernet interfaces for Ethernet private line, Wavelength, and Dedicated Internet Access services. A last mile provider or end user can also request that Zayo Bandwidth extend from a standard interconnection point to their facility. In this case Zayo Bandwidth would construct new fiber from an interconnection point to the customers designated premise and deploy equipment at the premise as appropriate for the requested service type. This extension is provided on an Individual Case Basis (ICB) and is dependent on the distance and complexity of the build.

Fiber:

The proposal includes the deployment of 626 miles of new 96+ count Single Mode Fiber (SMF) optic cable. The new cable provides connectivity to the 21 Ivy Tech community colleges and is interconnected with the 481 route miles of Zayo Bandwidths existing fiber facilities in Indiana.

Fiber is the most flexible communications technology available. Ethernet, Private Line,

Wavelength, and Dedicated Internet Access services from 1.5Mbps to 10Gbps can be delivered over fiber with the deployment of economical optical equipment. Fiber is also the most scalable communications technology. When equipped with optical transport equipment a single pair of fiber can support up to 400Gbps of service capacity. This service capacity is only limited by the optical equipment available today and will grow in capacity and flexibility as the optical equipment grows.

Optronics

The proposal includes the deployment of DWDM and SONET optical equipment. The DWDM equipment that will be deployed is capable of up to 400Gbps of service capacity and has the ability to directly terminate Ethernet, Private Line, Wavelength, and Dedicated Internet Access services. The equipment is designed with redundancy and scalability to insure the long term reliability of the network. The SONET equipment deployed is scalable from OC3 to OC192 network side interfaces and is also capable of directly terminating Ethernet, Private Line, and Dedicated Internet services. It is also architected with redundancy to insure the long term reliability of the network.

Based on fiber distance and desired services multiple node types will be deployed. The node types include Service Termination, Amplification/Regeneration, and Aggregation.

Service Termination nodes provide for the direct termination of the desired services. These nodes are the closest to the end customer and are capable of terminating Private Line, Ethernet, and Dedicated Internet Access services. Various sizes and types of service termination nodes will be deployed based on the type and size of service required.

Amplification/Regeneration nodes are used when fiber distances between Service Termination nodes or a Service Termination node and an Aggregation node exceed the specifications of the optics to be deployed. These node types amplify the optical signal or as required regenerate the digital signal to extend the reach of the network.

Aggregation nodes are similar to Service Termination nodes and are capable of terminating Private Line, Ethernet and Dedicated Internet Access services along with multiplexing the various services from Service Termination nodes onto higher order signals for transport across

the network.

Reliability:

Along with the carrier class design of the optronics to be deployed, much of the network will be deployed in rings.

Ring architectures leverage nodes connected in a closed path. Each node has an East and West facility connecting it to the adjacent node with the west facility of the 1st node connected to the east facility of the last node. With nodes connected in this configuration Zayo Bandwidths SONET equipment will leverage Bi-Directional Line Switched Rings (BLSR) or Uni-Directional Path Switched Rings (UPSR) to provide fully protected services. With this level of SONET protection and diverse fiber optic paths the network is capable of providing highly reliable services with an availability of 99.999%.

Sustainability:

As the new network is interconnected with Zayo Bandwidths existing Indiana network, end users and last mile providers can purchase Private line, Ethernet, and Dedicated Internet Access services across the entire state of Indiana. Along with these intra-state services the architecture allows services to traverse the entire Zayo Bandwidth network. Last mile providers and end users will be able to leverage Zayo Bandwidths existing network covering over 18,895 route miles of fiber, 23 states and 129 markets to connect to over 1,958 on net buildings.

Internet Connectivity:

Connectivity from the end user or last mile provider to the Internet is enabled via every interconnect point in the network. Each interconnect point has the ability via connection to the existing Zayo Bandwidth network to connect to a Zayo Bandwidth IP POP. A Zayo Bandwidth IP POP has connectivity either directly or via Zayo Bandwidths IP Network to Tier 1 Internet Providers. The primary IP POP in Indiana is the Zayo POP on Henry St. in Indianapolis.

Network Operations:

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The Zayo NCC in Tulsa, OK has visibility to the entire Zayo Bandwidth network and is the center of Zayo Bandwidth operations. The NCC is staffed 24 hours per day, 7 days per week, 365 days per year. The team utilizes a single network monitoring system, a single set of processes, and talented, cross-trained personnel versed in the entire suite of services we support to deliver industry leading levels of service to our customers.

The NCC team: Proactively monitors the network, addressing issues before they result in service impact; Responds to and resolves network events quickly, reducing downtime and impact to the services; Provides one-call resolution to customer concerns regarding circuit troubles. They work to continually improve systems, optimize processes, upgrade the Zayo Bandwidth network, and train personnel as technology evolves, to insure Zayo Bandwidth is delivering a premier customer experience.

30. Network Diagram:

Please refer to upload section at the end of document.

31. Certification by Professional Engineer:

Please refer to upload section at the end of document.

32. Buy American Waiver Request:

Is the applicant seeking an individual waiver of the Buy American provision? **Yes**

Buy American Waiver Request – Legal Justification

Zayo Bandwidth LLC seeks to implement the limited waiver as described below. All broadband equipment used in this project will conform to this limited waiver. No broadband equipment will be used that does not conform to the limited waiver granted by Secretary of Commerce.

The National Telecommunications and Information Administration (NTIA) hereby provides notice that on June 19, 2009, the Secretary of Commerce granted a limited waiver of section 1605 of the American Recovery and Reinvestment Act of 2009 (Recovery Act), Pub. L. No. 111–5, 123 Stat. 115, 303 (2009) with respect to certain broadband equipment that will be used in projects funded under the Broadband Technology Opportunities Program (BTOP).

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33. Choice of Service Provider:

Does the project's Infrastructure and the Company's business plan allow more than one provider to serve end users in the proposed funded service area?

Yes

G. Project Milestones and Completion Factors

Timeline & Milestones

34. Infrastructure Build-out Timeline:

Please refer to upload section at the end of the document.

35. Licenses, Regulatory Approvals and Agreements:

Zayo Bandwidth LLC is experienced in implementing large scale middle mile projects and understands the certifications, agreements and permits required for a successful and timely implementation.

Zayo Bandwidth Indiana LLC is certified as a Utility company in Indiana, as evidenced by the following certificate :

i) Certification of Territorial Authority issued by the Indiana Utility Regulatory Commission (please see supplementary information to this application.)

Prior to fiber lay, Zayo Bandwidth is required to obtain :

i) Right of Way permits
ii) Land leases for 2 huts
iii) Railroad crossing permits
iv) Pole attachment permits

v) Conduit usage licenses with the LEC
vi) Actual land Right of Way negotiation with private land owners (should there be an instance where we need to cross private property due to lack of existing public or utility Right of Way.)
vii) Construction permits.

If successful in grant award, Zayo Bandwidth will work immediately to secure right of way permits for the fiber lay, and land leases for 2 required huts.

Zayo has experience obtaining right of way permits, and foresees no issues or roadblocks in obtaining right of way permits for the new fiber build in Indiana.

Zayo foresees no issues in obtaining land leases for the 2 huts. There is flexibility in where the huts can be located and Zayo typically encounters no issues in negotiating and signing land leases for huts. The time required to obtain a land lease for huts is approximately 2 months, however, laying of fiber can take place in parallel, and in fact, there will be no activity held up due to the land lease negotiation.

Negotiation with respect to above permits and leases will start immediately on award notification.

36. Construction and Vendor Contracts

Zayo Bandwidth LLC will rely on experienced contractors to perform the fiber lay. It is planned to use the below contractors. Each of these contractors have been previously engaged by Zayo Bandwidth LLC in prior projects and perform work in a timely manner and to high quality levels as required by Zayo. Included in this list of contractors are 6 socially or economically disadvantaged contractors. Support letters from these contractors can be found in the supplemental information attached to this application. Each of the below contractors is ready to start work on receipt of a Purchase Order from Zayo, and can start work at the time required by Zayo to meet the project build out schedule shown in response to question 34.

OnPoint Consulting
1724 Churchman Avenue
Indianapolis, IN 46203

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JDH Contracting
8109 Network drive
Plainfield, IN

Turnkey Network Solutions
7020 Southbelt drive SE
Caledonia, MI 49316

Metropolitan Communications Group
488 Norristown Road
Suite 241
Blue Bell, PA 19422

Socially and Economically Disadvantaged Small Business Concerns :

K and M Thompson
5060 E. 62nd street
Indianapolis, IN 46220

CSU Inc.
3648 Shaddy lane
Plainfield, IN 46168

Corbitt and Sons Construction
8728 Robbins road
Indianapolis, IN 46268

lyoder@jus-com.com
Jus-Com INC – Small Business
9250 Corporation Dr
Indianapolis, IN 46256
(317) 570-3969
cell: (317)509-0277

rogersc@247cable.com
24/7 Cable – Installation services. - Minority Owned
111 market Place Suite 103
Baltimore, MD 21202

AtlantiCom Communications, LLC - Installation services – (Woman owned)
3968 Brookridge Drive
Mechanicsburg, PA. 17050
717-319-9000

Qualification of Management Team and Organizational Readiness

37. Management Team Resumes:

Please refer to upload section at the end of the document.

38. Organizational Readiness:

Zayo Bandwidth, LLC today owns and supports a multi-state network consisting of over 18,895 fiber route miles. The Zayo Bandwidth management team has deep and extensive experience in telecommunications and are recognized leaders throughout the industry. The company is supported by five main organizations: Sales, Service Delivery, Operations, Finance and Legal.

Sales is responsible for day-to-day revenue generation, engagement with current and prospective customers, and overall customer satisfaction. The sales organization consists of both wholesale and enterprise representatives. Wholesale Directors market services to ILECs and Carriers (AT&T, Verizon, Sprint, Qwest, Frontier, etc.) while Enterprise Directors focus on high-bandwidth users such as Higher and K-12 Education, Hospital & Medical, Internet and Wireless Internet Service Providers, regional wireless and wireline companies.

Service Delivery is responsible for the installation and activation of new services. Project Managers are assigned to each circuit or group of circuits. Project Managers work with Outside Plant on permit, Rights of Way and build timeframes, Inside Plant on equipment required on the Zayo network to bring circuits into activation, and Material Management on

Customer Premises Equipment needed at the customer's location. The Service Delivery team averages over 380 orders per month, including new installations, upgrades, downgrades and disconnects.

Operations has responsibility for engineering which includes Solution Design at the customer location and overall reinforcement of the network build-out. This team processes an average of 260 design requests monthly, which provide input to customers requesting interconnection to Zayo's network. Zayo's Network Operations Center, staffed 24x7x365 supports all customer services and interfaces within Operations to determine the most efficient method of restoring services during outage and degradation situations. The NOC processes an average of 750 tickets per month, for services spanning Zayo's 18,000+ network.

The Zayo Finance team has responsibility for all P&L areas, and interfaces with every department to ensure that 1) customer quotes are presented accurately, 2) services will meet the need of the customer while ensuring a baseline of profit for Zayo, and 3) governing new builds in a timeframe that meets the needs of the customer while supporting Zayo's overarching expansion goals. This team also includes Zayo's billing and collections department, which ensures billing and bill-payments are accurate and work performed within expected timeframes. As part of Zayo's ongoing Customer Care team, Accounts Payable and Account Receivable interface directly with customers and vendors, and involve field personnel whenever necessary to ensure that all teams are involved in any customer issues.

Our Legal department oversees individual agreements from customers, vendors and city/state/federal governments. They are responsible for contract preparedness, implementation of appropriate franchise agreements, filing for CLEC franchises and Certificates of Public Convenience and Necessity applications. This department also leads any acquisition or merger activities as Zayo expands its network.

Regarding I-Light, and the support of the 21 Ivy Tech community colleges, The I-Light network support team is part of University Information Technology Services at Indiana University, the team has partnered with the Global Research Network Operations Center (GRNOC) at Indiana University to provide operational and engineering support for the I-Light Network. I-Light staff and the GRNOC are housed in a cutting edge operations center facility at the Informatics & Communications Technology Complex in Indianapolis. The GRNOC

support both the Internet2 and National Lambda Rail research networks as well as many regional optical networks and international connections.

Other

39. Organizational Chart:

Please refer to upload section at the end of document.

40. Legal Opinion:

Please refer to upload section at the end of document

41. Government and other Key Partnerships:

This project is partnered with I-Light for the provision of broadband to 21 Ivy Tech community colleges in Indiana. I-Light is the State of Indiana's optical fiber network for higher education. This project provides 2 strands of fiber to each community college, allowing Gb/s broadband services to be provided by I-Light.

I-Light will act as the anchor customer for this middle mile network. Zayo is currently reaching out to hospitals, libraries, public safety institutions and local community organizations at the communities along the fiber path – for the provision of broadband. The provision of a 'splice point' at each unserved and underserved area provides an interconnect point.

Zayo is also discussing with last mile providers ensuring high speed broadband availability to residential households along the fiber route.

The role of I-Light in the project will be as a customer. I-Light intend to purchase a long term IRU (indefeasible right to use) for the fiber strands, allowing I-Light to provide service to the Ivy Tech community colleges. Please see attached letter of intent between Zayo and I-Light, conditional on being awarded grant funds.
Letter of intent, support letters and contact details from I-Light and the community colleges and schools are attached.

The network in Indiana will be operated by Zayo Bandwidth Indiana LLC, which holds a

utility license in Indiana. Zayo Bandwidth Indiana LLC is a wholly owned subsidiary of Zayo Bandwidth LLC.

42. Recovery Act and Other Governmental Collaboration.

This project is well positioned to leverage other state or federal programs. By providing high speed broadband connectivity to 21 Ivy Tech community colleges enables optimum use of National Science Foundation grants.

I-Light has encouraged it's school partners to apply for NSF grants. With high speed broadband connectivity there can be more effective use of NSF grant awards. Collaboration between physically separate schools on research projects is enabled with broadband and in particular, the connectivity enabled to the education and research networks Internet 2 and National LambdaRail provides a strong foundation for grant applications. The 21 Ivy Tech community colleges can now participate fully in the NSF grant application process.

An excellent example of collaboration is called the Indiana Advanced Electric Vehicle Training and Education Consortium, which aims to help the U.S. recapture a vital technology domain while preparing state workers for an industry of the future. Purdue, Notre Dame and Indiana University-Purdue University Indianapolis are to offer, within traditional engineering degrees, certificates that qualify graduates to work with technologies such as advanced car batteries. Ivy Tech would offer an associate's degree in electric vehicle technology, allowing graduates to service electric vehicles and Purdue Calumet and Indiana University-Northwest would work advanced vehicle technology into their chemical engineering programs. The universities are planning to offer some courses through the Web. The collaboration to help this project succeed will require the usage of the I-Light network. The goal is to develop a statewide educational and training program for the next generation of engineers, and the technological work force for the state of Indiana,

Indiana Higher Education- Improving accountability systems, particularly through the development of state-of-the-art student performance data systems. Without better data on college students, programs, and outcomes, it is difficult or impossible to make good decisions on reallocation of resources, strengthening academic programs, and improving student services.. New comprehensive K-16 student unit record data systems are being developed in Florida and other states. Lumina supports the development of improved data systems in Indiana and other states, national efforts to improve data, the development of new indicators of

the performance of education systems, and learning how data can be used by policymakers and education professionals to make better decisions. The I-Light network makes it possible to transfer such data across the large 1GB pipes without filling up necessary internet pipes.

Indiana Economic Development – University and College research play a substantial role in the economic fortunes of that state. Though the research on the connection between major research activity and economic well being and growth is somewhat lacking in direct, quantifiable empirical evidence, there is a wealth of data and anecdotal evidence showing a clear correlation between research activity at major research universities and healthy economic activity. The I-Light network brings the tools to necessary and promotes research and education to community anchors in the proposed cities and towns throughout Indiana. This allows research to take place outside of a vacuum and promotes opportunities never before seen and opportunities not possible without the involvement of the I-Light network.
Further, the proposed route includes an interconnection point in East Chicago, IN, a designated HUD area. Providing middle mile service and partnerships with last mile providers in this area will stimulate job efficiency and creation.

Community Involvement (BTOP Applicants Only)

43. Partnering with Disadvantaged Businesses

Zayo Bandwidth LLC plans to use a significant number of contractors for the implementation of this project. Zayo typically contracts out to experienced telecommunication construction firms the laying of the fiber.

Within the contractors that Zayo plans to use include a number of socially and economically disadvantaged small businesses. Their details are given below, with support letters attached. Zayo has used each of these contractors in prior projects. Each contractor has been notified of Zayo's timeline for construction and can meet Zayo's required timeline.

K and M Thompson
5060 E. 62nd street
Indianapolis, IN 46220

CSU Inc.
3648 Shaddy lane
Plainfield, IN 46168

Corbitt and Sons Construction
8728 Robbins road
Indianapolis, IN 46268

lyoder@jus-com.com
Jus-Com INC – Small Business
9250 Corporation Dr
Indianapolis, IN 46256
(317) 570-3969
cell: (317)509-0277

rogersc@247cable.com
24/7 Cable – Installation services. - Minority Owned
111 market Place Suite 103
Baltimore, MD 21202

AtlantiCom Communications, LLC - Installation services – (Woman owned)
3968 Brookridge Drive
Mechanicsburg, PA. 17050
717-319-9000

H. Project Budget

44. General Overall Budget

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Budget	Loan Request	Grant Request	Equity	Debt	Bond	Other
Network & Access Equipment (switching, routing, transport, access)		**890,400**	**222,600**			
Outside Plant (cables, conduits, ducts, poles, towers, repeaters, etc.)		**22,288,589**	**5,572,147**			
Buildings and Land – (new construction, improvements, renovations, lease)		**320,000**	**80,000**			
Customer Premise Equipment (modems, set-top boxes, inside wiring, etc.)						
Billing and Operational Support Systems (IT systems, software, etc.)						
Operating Equipment						

(vehicles, office equipment, other)						
Engineering/ Professional Services (engineering design, project management, consulting, etc.)		**1,641,326**	**410,332**			
Testing (network elements, IT system elements, user devices, test generators, lab furnishings, servers/computers, etc.)						
Site Preparation						
Other						
TOTAL BROADBAND SYSTEM		**25,140,315**	**6,285,079**			

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Total Budget: **$** 31,425,394

45. Detailed Budget:

Please refer to upload section at the end of the document.

Sustainability

46. Reasonableness

Overview

Proposed project is aligned with Zayo's existing business strategy. The company has extensive experience operating 19,000 mile network selling transport services. Zayo operates with industry leading profitability metrics achieving 43% EBITDA margins on revenues of $145M per year reinforcing the ability to cost effectively deploy capital to extend fiber network to its target customers. Following describes specific costs and reasonableness based on Zayo's extensive expertise in operations and procurement.

Project Capital Costs

Zayo's total project cost budget totals $31.4M with request for funding under BTOP program of $25.1M. Following provides overview on assumptions utilized to support costs:

Fiber Construction:

Construction of fiber network totals $29.8M, 94.9% of total project costs. Following items are included within this area: a) Fiber Optic Cable – Material & Placement b) Conduit – Material & Placement c) Design, Documentation d) Project Management (outsourced) and Engineering Consulting e) Fiber Splicing. Detailed segmentation of costs and assumptions included within Question #50 response. Aggregate fiber construction equates to $9.00/foot. Based on Zayo's experience building fiber across the US and more specifically within Indiana, Zayo believes this to be a reasonable and standard cost to construct fiber. Over recent six months, Zayo built ~200 route miles in Indiana related to a fiber to the tower application. Costs on this application averaged $8.75/ foot for portions completed to date. Additionally, Zayo has an additional opportunity to deploy fiber to 160 towers and has conducted and received competitive bids with

pricing at $9.00 per route mile. Based on Zayo's own experience in constructing fiber with a network comprised of greater than 19,000 miles, Zayo believes this pricing to be reasonable and within Zayo's core expertise.

Equipment:

Equipment costs total $1.1M, 3.5% of total project costs.
To enable lit services to 80 un-served and underserved communities along the route, proposed costs include equipment to light core network enabling lit service transport services. Costs include 20 nodes along core network at a price of $55,650 per node specifically for Wave Division Multiplexing (WDM) and OC-192 transport optical equipment. Zayo purchases in excess of $20M annually in this type of equipment and as such has negotiated significant price discounts with vendors.

Colocation NRC Payments to ILEC:

Colocation NRC payments to ILEC total $400,000, 1.3% of total project costs.
These costs from tariffed price sheets by Incumbent Local Exchange Carrier (ILEC) at fixed rates in each region.

Addressable Market Subscribers

Zayo engaged Altman Vilandrie & Co. (AV&Co.) to determine subscriber addressable market in 80 unserved and underserved communities serving as basis for Revenue assumptions. AV&Co specializes in market sizing focused on telecommunications services. Please reference detailed assumptions description under Question #50 for more detailed discussion

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47. Historical Financial Statements:

Please refer to upload section at the end of the document.

48. Broadband Subscriber Estimates:

Please refer to upload section at the end of the document.

49. Other Services:

Please refer to upload section at the end of the document.

50. Pro Forma 5-Year Financial Forecast and Assumptions:

Please refer to upload section at the end of the document.

51. Commitment of Capital Funding Support

Zayo Bandwidth, LLC will be providing an equity contribution of $6.29M coupled with a $4.4M in-kind contribution leveraging existing network. In aggregate, Zayo's contributions represent a 29.8% match toward total project cost of $35.83M ($31.4M net of in-kind contribution).

As of end of June 2009, Zayo Bandwidth, LLC had a cash balance of $6M. In addition, Zayo's parent company Zayo Group, LLC maintains $35-$40M cash on hand and contribute any funds required towards Zayo Bandwidth, LLC required $6.29M match.

Zayo Bandwidth, LLC as an operating business unit, transfers excess cash flow generated from operations to Zayo Group, LLC as well as drawing for any funding requirements. Zayo Bandwidth, LLC has real time access for up to $40M in cash funding from Zayo Group, LLC under its Operating Agreement.

BTOP Requirements

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52. Matching Funds:

a. Cash: $ 6,285,079.00
b. In-Kind: $ 4,400,000.00
c. Percent of Total Project Cost: 30

53. Demonstration of Financial Need:

Demonstration of Financial Need

Zayo's requirement for funding under BTOP program to fund proposed project is demonstrated through review of economic business case summarized in table below.

(For the table, please see Supplemental Information 1. Response to this question and associated table showing scenarios are present in Supplemental Information 1 attachments.)

Under Scenario 1, assuming no grant financing, Zayo's initial project deployment costs of $31.4M would not be paid back through cash flows generated from operations over five (5) year period. Using a 15% Weighted Average Cost of Capital (WACC) and discounting current and future period cash flows produces a negative net present value (NPV) of cash flows of($19.2M). In other words, if Zayo funded this project with initial investment of $31.4M, cash flows generated from operations would not pay back that investment and overall present value of that investment, even with positive future cash flows would be negative ($19.2M). The reason for this negative investment profile is driven by the expense and distance involved in expanding network to typically un-served and underserved areas generally materially distant from both Zayo's and other telecommunication providers network infrastructure. Due to this exorbitant cost, the markets addressed in this application have gone underserved with limited choices for telecommunication services at affordable rates.

In scenario 2, where government funds 80% or $25.1M toward funding deployment of network and service offerings to proposed un-served and underserved areas, Zayo is able to generate positive returns as initial investment is reduced from $31.4M to $6.3M. Using same net present value (NPV) calculations as under scenario 1, the present value of cash flows results in positive $2.6M as cash flows generated from operations payback and provide reasonable return on Zayo's reduced $6.2M out-of-pocket investment returning 28% per year (IRR); a reasonable

target return rate for businesses like Zayo.

This economic business case comparison demonstrates where Zayo would not have otherwise made investment to extend network and service offerings to the targeted underserved and un-served areas without the 80% or $25.1M government funding under the BTOP program.

54. Unjust Enrichment

This project and Zayo Bandwidth, LLC has not received and has not applied for any Federal support for non-recurring costs for the proposed service area.

55. Disclosure of Federal and/or State Funding Sources

Since 1999 the State of Indiana has invested a total $18M to create the I-Light fiber optic network and connections to institutions, but a slowing economy has impeded plans to complete the work. There have been no requests for federal or state funding regarding the broadband connectivity between I-Light and the 21 Ivy Tech community colleges. And there have been no federal or state funding requests regarding bringing middle mile fiber to the service area proposed in this application.

I. Self Scoring – BIP Only Self Scoring

56. Self Scoring Sheet

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Criteria	Method	Points	Self Scores
PROJECT PURPOSE			
Proportion of Rural Residents Served in Unserved Areas	1 point for every 10,000 unserved households	Up to 5	
Rural Area Targeting	1 point for every 5% increase in the rural service area up the minimum 75% rural area requirement	Up to 5	
Remote Area targeting	1 point for every 50 miles a service area is located from a non-rural area	Up to 5	
Title II Borrower	If you are or were a Title II borrower	5	
Recovery Act and other governmental collaboration	1 point will be awarded for each governmental or Recovery program the applicant is partnering with	Up to 5	
PROJECT BENEFITS			
Performance of the offered services	If a last mile wireline project delivers 20M to household – if a last mile wireless projects delivers 2M to end-user – if a middle mile projects delivers 100M to end points	**10**	
Affordable of services offered	Points awarded based on the proposed rate structure and the logistics of the proposed service area	Up to 5	

Choice of service provider	If the proposed infrastructure is available to be used by multiple service providers	**5**	
Critical Community Facilities	If discounted rate packages at least 25% lower than advertise rates are available to critical facilities	**5**	
PROJECT VIABILITY			
Applicant's organizational capability	Points will be awarded on the strengths and accomplishments of key management	Up to 12	
Community Support	If a letter of support has been received from a designated representative of the community for every community in the proposed service territory	2	
Ability to promptly start project	If the applicant can demonstrate that all licenses and regulatory approvals have been received, contractors and vendors are ready to enter into contracts, and equity has been deposited into applicant accounts	10	
Socially and economically disadvantaged small businesses (SDB), as defined by section 8(a) of the Small Business Act, 15 U.S.C. §637.	If the applicant is a Section 8(a) entity	1	
PROJECT BUDGET AND SUSTAINABLITY			
Reasonableness of the budget	Points will be awarded based the	Up to 5	

	adequacy of the proposed budget		
Leverage of outside resources (outside funding/financing requested)	(i) 10 points if this ratio is greater than 100% (ii) 7 points if this ratio is between 100% and 75% (iii) 5 points if this ratio is between 75% and 50% (iv) 3 points if this ratio is between 50% and 25% (v) 1 points if this ratio is lower than 25%	10	
Extent of grant funding (Grant funds/loan funds)	(i) 0 points if this ratio equals 100% (ii) 1 points if this ratio is between 100% and 75% (iii) 3 points if this ratio is between 75% and 50% (iv) 5 points if this ratio is lower than 50% (v) 10 points if no grant funds are requested	10	
Total Points		100	

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J. BTOP Certification Requirements

Certification (Requested for BTOP)

Please refer to upload section at the end of the document regarding following uploads.

1. U.S. Department of Commerce, Broadband Technology Opportunities Program
2. SF-424D Assurances—Construction Programs (Schedule N)
3. CD-511, Certification Regarding Lobbying (Attachment O)
4. SF-LLL, Disclosure of Lobbying Activities (Attachment P)
5. CD-512, Certification Regarding Lobbying—Lower-Tier Covered Transactions (Attachment Q) This certification will not be required until the time of the grant award, because it applies to subcontractors, etc.

K. BIP Certification Requirements

Certification (Requested for BIP)

Please refer to upload section at the end of the document regarding following uploads.

1. Equal Opportunity and Nondiscrimination Certification
2. Certification Regarding Architectural Barriers
3. Uniform Relocation Assistance and Real Property Acquisition - Policies Act of 1970 Certification
4. Certification Regarding Debarment, Suspension, and Other Responsibility Matters – Primary Covered Transactions
5. Certification Regarding Lobbying for Contracts, Grants, Loans, and Cooperative Agreements

6. Network Design and Implementation Plan Certification (to be complete for projects requesting more than $1 million in federal assistance)

L. Schedules

Schedule: A-1 Congressional Districts

1. State the Congressional District of the Applicant's headquarters
Colorado - 2

2. State the Congressional District for each area covered by the Project.
Indiana - 1

Indiana - 2

Indiana - 3

Indiana - 4

Indiana - 5

Indiana - 6

Indiana - 7

Indiana - 8

Indiana - 9

M. Proposed Funded Service Area Details (BIP & BTOP)

13. Proposed Funded Service Area (BIP - Last Mile Projects):