

The logo for UC2B is contained within a blue rectangular border. It features the text "UC2B" in a blue, sans-serif font at the top. Below the text is a stylized orange graphic consisting of a large rectangle with a smaller rectangle inside it, and several horizontal lines connecting the inner and outer rectangles, resembling a ladder or a structural frame.






UC2B

Urbana-Champaign  
Big Broadband  
Below & Above Ground  
NTIA BTOP Applications

August 20, 2009



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Infrastructure Application
- 59  Above Ground  
Public Computing Centers Application
- 135  Above Ground  
Sustainable Broadband Adoption Application
- 187  Infrastructure Attachments & Maps  
Combined Letters of Support
- 435  Above Ground  
Combined Attachments

Items submitted with more than one application are only provided here once.



The logo for UC2B is contained within a blue-bordered square. At the top, the letters "UC2B" are written in a blue, rounded, sans-serif font. Below the text is a stylized orange outline of a building or structure. It consists of a large outer rectangle with a smaller inner rectangle centered horizontally. The inner rectangle has three horizontal lines across its width, and a vertical line on its left side that extends down to the bottom of the outer rectangle, creating a series of nested rectangular shapes.

UC2B

Urbana-Champaign  
Big Broadband  
Infrastructure

Answers to NTIA On-Line Forms



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

<b>Submitted Date:</b> 8/20/2009 4:17:28 PM	<b>Easygrants ID:</b> 1724
<b>Funding Opportunity:</b> Broadband Initiatives Program and Broadband Technology Opportunities Program	<b>Applicant Organization:</b> Board of Trustees of the University of Illinois
<b>Task:</b> Submit Application - Infrastructure Programs	<b>Applicant Name:</b> Ms. Kathy Young

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## A. General Application Information

1. Applicant Information	
1-A. Name, Address, and Federal ID for Applicant	
<b>i. Legal Name:</b>	Board of Trustees of the University of Illinois
<b>ii. Employer/Taxpayer Identification Number (EIN/TIN):</b>	376000511
<b>Street 1:</b>	Office of Sponsored Programs & RA
<b>Street 2:</b>	1901 S First St, Suite A
<b>City:</b>	Champaign
<b>County:</b>	Champaign
<b>State:</b>	IL
<b>Country</b>	United States
<b>Zip/Postal Code:</b>	61820-7406

1-B. Name and Contact Information of Person to be Contacted on Matters Involving this Application:	
<b>Prefix:</b>	Ms.
<b>First Name:</b>	Kathy
<b>Middle Name:</b>	
<b>Last Name:</b>	Young
<b>Suffix:</b>	
<b>Telephone Number:</b>	217-333-2187
<b>Fax Number:</b>	217-239-6830
<b>Email:</b>	smeltzer@illinois.edu
<b>Title:</b>	Director



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<b>1-C. Other Required Identification Numbers</b>	
<b>i. Organizational DUNS:</b>	04-154-4081
<b>ii. CCR # (CAGE):</b>	4B808
<b>iii. Funding Opportunity Number:</b>	1
<b>iv. Catalog of Federal Domestic Assistance Number:</b>	<b>BTOP CFDA Number:</b> 11.557 <b>BIP CFDA Number:</b> 10.787 <b>BTOP CFDA Title:</b> Broadband Technology Opportunities Program <b>BIP CFDA Title:</b> 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). **Local, State, or Other Government Entity**

**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:** Urbana-Champaign Big Broadband - Below Ground (UC2B Middle Mile & Last Mile Infrastructure)

**2-B. Project Description:** UC2B is an intergovernmental consortium of the University of Illinois and the cities of Urbana and Champaign providing fiber-optic broadband connectivity to the community's anchor institutions, fiber-to-the-home connectivity in underserved neighborhoods, improved access/support to public computing centers, and a sustainable adoption and educational outreach program for vulnerable populations.





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

There are three linked submissions from the Urbana-Champaign Big Broadband Consortium. They inform and enable each other and provide an integrated solution for the Identified Service Area.

BTOP Infrastructure:  
Urbana-Champaign Big Broadband - Below Ground (UC2B Middle Mile & Last Mile Infrastructure)

BTOP Public Computing Center:  
Urbana-Champaign Big Broadband - Above Ground PCC (UC2B Public Computing Centers)

BTOP Sustainable Broadband Adoption:  
Urbana-Champaign Big Broadband - Above Ground SA (UC2B Sustainable Broadband Adoption)

**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**



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## 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 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



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<b>Additional BTOP Factors Selected By Applicant</b>
<ul style="list-style-type: none"> <li>• <b>Conformity with Statutory Purposes</b></li> <li>• <b>Cost Sharing/Matching</b></li> <li>• <b>Reasonableness of Project Budget</b></li> </ul>
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.
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

<b>7-k. Cost Sharing/Matching Fund Explanation</b>

## C. Executive Summary

### Executive Summary of Project for BIP and BTOP:

#### 8. Infrastructure Projects Executive Summary

Although the University of Illinois at Urbana-Champaign has an international reputation for technology leadership and innovation, within a half-mile of the campus are neighborhoods where the promise of information technology has yet to be realized. Through a three-pillar



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approach, the Urbana-Champaign Big Broadband (UC2B) Consortium seeks to leap frog the most vulnerable populations in our community to the head of the technology line with fiber-optic Big Broadband connectivity. We see the three proposals as both individually and collectively necessary, as they complement each other in many ways.

While this proposal is primarily a Middle Mile project, it has a Last Mile, Fiber-to-the-Home (FTTH) pilot project component. The proposed funded service area for this Middle Mile fiber-optic project is the community surrounding the University. In addition to the cities of Urbana and Champaign, the service area also includes portions of Champaign County and the Village of Savoy.

The Urbana-Champaign community has a rich history of making computing facilities available to the public. The Don Moyer Boys and Girls Club, the Bethel A.M.E. Church, the Independent Media Center and three local library facilities all have heavily used computer labs. However budgets have not kept up with demand for computer access and for bandwidth.

The users of these and other public computing facilities deserve and require technology and bandwidth on par with what students and staff at the University take for granted. At this time, in our Age of Information, many necessary services are only available to those with access to adequate computer and networking resources: jobs require online application, payroll, benefits, banking information are on-line, healthcare resources are on-line, and the list will continue to grow.

The UC2B Public Computing Center proposal is half of our "Above Ground" proposals, and the second pillar in the suite of UC2B proposals. It will address the human and technology needs for Public Computing Centers, while this Middle Mile proposal will economically deliver fast public Internet bandwidth that is guaranteed for the next five years.

The third pillar of the UC2B set of proposals is for a Sustainable Broadband Adoption program in our vulnerable communities. The University of Illinois has long sponsored programs in the local community and throughout the state to help span the digital divide. In the early days of the Internet, many Champaign County residents of all income levels were first exposed to the Internet and email via a free-dial-up account on Prairienet, the groundbreaking public Internet service sponsored by the University. Throughout the last decade, the National Center for



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Supercomputing Applications (NCSA) - where the Mosaic web browser was created - has sponsored national and local educational outreach programs for k-12 students, teachers, and administrators.

The UC2B Sustainable Broadband Adoption proposal provides the opportunity for educators and researchers from the University to collaborate with clergy and with other community leaders to craft an education program that will ensure that no citizen lacks the skills necessary to participate in a digital society. Equipped with the newly acquired skills, potentially 2,500 underserved households within the community will be served for decades to come as a result of the FTTH component of the UC2B Middle Mile proposal.

This brief overview of the two additional UC2B proposals illustrates how we intend to build upon the work defined by this proposal - the UC2B Middle Mile Below Ground proposal. The remainder of this discussion will detail this proposal.

The proposed funded service areas include:

- The entire UC2B Below Ground project including Middle Mile and Last Mile: 110 contiguous census block groups in Urbana, Champaign and Savoy.
- Four Last Mile (Fiber-to-the-Home) service areas: Eleven total census blocks spanning Urbana and Champaign
- One service area comprised of eight contiguous census block groups
- Three service areas comprised of single stand-alone census block groups

We are in active discussions with four potential providers of Internet Protocol (IP)-based services over the UC2B FTTH system. While some providers are only interested in delivering Internet bandwidth, other providers are interested in Internet as well as television and phone services. We fully expect the households and businesses in the proposed service area to have competitive service plan options from commercial providers. Letters of support from two of those providers are attached in our collection of supporting letters.

Thanks, in part, to a donation of \$60,000 per year for five years by the University's Office of the Vice Chancellor for Public Engagement, we will purchase public Internet bandwidth in Chicago at wholesale rates and transport it to this community with unused capacity on the University's fiber network, ICCN, which links its three campuses in Chicago, Springfield and Urbana-Champaign. As a result, we will offer a consortium-provided "Community Network



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Service" (CNS) for households that fall below a certain income threshold. The UC2B CNS will provide 5 Mbps of symmetrical bandwidth to the public Internet and 100 Mbps of "on net" connectivity to the targeted low income households and to all of the Critical Institutions at a monthly cost of \$19.99.

The UC2B Network will be an open access network and will actively seek multiple providers of IP-based services. Our interconnection and non-discrimination policies will go beyond the minimum obligations desired by the Federal Communications Commission and NTIA. They are already posted at: [www.UC2B.net](http://www.UC2B.net)

The University of Illinois has long maintained a local peering point referred to as "CMI-Hub" (named after the FAA designation for our local airport.) ISP's are able to peer with each other and with the University at the CMI-Hub via BGP4 protocols. The performance and cost efficiencies brought about by local peering are substantial. The network design for the UC2B Network will allow all ISP's to peer at layer 3 while serving their customers on the UC2B fiber infrastructure via layer 2.

The UC2B Network will be an all IP network. We believe that IP will continue to be the foundation of all telecommunications and that over the next two decades more services will be developed and offered across IP-based infrastructure. The specific technology we have chosen for the delivery of IP services to homes and businesses is a Wave Division Multiplexed Passive Optical Network (WDM-PON.) This technology has already been commercially deployed in countries such as South Korea, where residents served by WDM-PON enjoy much faster speeds at much lower costs than what Americans typically have available.

WDM-PON provides many of the cost and operational savings of a Gigabit Passive Optical Network (GPON) and its many variants, but offers a single solution that is both secure and scalable on a customer-by-customer basis. In order to have a sustainable business model while primarily serving low-income households, we realize reducing complexity and operating expenses is an important factor. We believe WDM-PON offers our community a technology that we will not outgrow for decades at a reasonable cost per subscriber. Future customer electronic refreshes will be able to increase capacity without the need to change central equipment.



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The total cost of this proposal is \$31.2 million, which covers the cost of the Middle Mile and Last Mile fiber infrastructure, the WDM-PON electronics at both ends, and the routers, switches and other systems needed to design and install the infrastructure, maintain and support the framework, and to facilitate or provide the services utilizing the infrastructure.

The UC2B Last Mile network will make fiber-to-the-home a possibility for up to 4,650 households and 218 businesses. Due to the subsidized cost of residential installation and the subsidized UC2B Internet service, we expect higher than typical residential adoption rates. By the end of the three years, we project 54% residential adoption and 29% business adoption.

The construction phase of the UC2B Middle Mile project will require thirteen 3-person crews to build the seven fiber rings and the fiber to the curb over 12 months spread over the 2010 and 2011 fiber construction seasons. The final phase of bringing fiber from the curb to the home and installing the household electronics will require another 6 crews of three people each, which will also be working for 12 months spread over the two years. Operationally, this infrastructure will require 2 full-time networking professionals, and 6 full-time help-desk / customer service employees. 59 jobs will be created during construction, with at least 8 jobs continuing through operations.

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

**9. BTOP Statutory Purpose:**





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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.
Provide broadband education, awareness, training, access, equipment, and support to organizations and agencies that provide outreach, access, equipment and support services to facilitate greater use of broadband service by low-income, unemployed, aged, and otherwise vulnerable populations.
Provide broadband education, awareness, training, access, equipment, and support to job-creating strategic facilities located within a defined economic zone, or community as designated by a State authority, Department of Commerce , HUD or USDA.
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 "Above Ground" and the "Under Ground" Urbana-Champaign Big Broadband (UC2B) proposals address the following statutory objectives of the BTOP program:

- Improved broadband service in "under served areas".
- Broadband education, awareness, training, access, equipment and support to schools, libraries, medical and healthcare providers, higher education institutions, and other community support organizations.
- Equip outreach agencies with tools and knowledge to facilitate greater use of broadband service by vulnerable populations.
- Empower job-creating strategic facilities with broadband tools and knowledge.
- Improve access to and use of broadband service by public safety agencies
- Stimulate the demand for broadband, economic growth, and job creation.

Since the ARRA became law, faculty and staff from the University of Illinois, city staff members from Urbana and Champaign, and a host of community leaders and volunteers have





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been meeting to discuss how community Big Broadband may address many of the historical technological, social and economic inequalities in our community. These meetings clearly revealed many efforts already moving toward an advanced community network infrastructure and a high level of readiness for immediate action.

In three public forums with scores of attendees, we listened to a wide spectrum of the community and heard a lot of different thoughts about broadband availability and what the community's definition of broadband should be. Ideas included the need for better connectivity for our "Critical Institutions", the need for more public computing centers, and the need for education and training to assure that the most vulnerable among us were equipped with the knowledge and the skills to use broadband to its fullest advantage.

The initial vision for UC2B was that it would be a single comprehensive grant proposal that addressed all of the above and more. For good reasons, the NOFA required us to subdivide our plans into "Above Ground" and "Below Ground" proposals, but intellectually and financially the three UC2B proposals are interlaced. Part of the revenue from the Middle Mile and Last Mile services detailed in this proposal will fund and provide sustainability for the Public Computing Centers and the Sustainable Adoption program after the BTOP grants have ended.

This specific proposal is designed to provide 100 Mbps connectivity to more than 135 Critical Institutions in the greater Urbana-Champaign community, which includes the Village of Savoy and parts of Champaign County. (Throughout this application we will use the term "Critical Institutions" from Attachment H to refer to all Anchor Institutions, Public Safety agencies, Public Computing Centers, Schools, Libraries and Senior activity/living centers.)

This proposal gets its strength not only from the fiber rings and advanced WDM-PON technology we seek to deploy, but also from the training and the education that will be made possible by the linked UC2B Sustained Adoption proposal. The 47 public computing centers funded by the UC2B Public Computing Center proposal will get their Internet connectivity from the fiber rings constructed by this proposal. The sum of these three proposals is greater than the individual parts.

Critical Institutions that will benefit from the UC2B Middle Mile fiber rings include: 30 public schools, 8 private schools, 3 public libraries, a Boys' and Girls' club, a Job-Training Center, an



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Adult Education facility, three hospitals, multiple clinics, the U-C Independent Media Center, Parkland College, and the University of Illinois.

Letters of support from the numerous agencies that work with vulnerable populations throughout the communities are included in this application package. The Office of the University's Vice Chancellor for Public Engagement generously donated \$60,000 per year for five years to purchase one Gbps of public Internet bandwidth at wholesale rates. This enables the UC2B Community Network to be a source for economical, high-performance, fiber-based Big Broadband to more agencies in the community that work with low-income families, single mothers, the young, and the old. Coupled with that connectivity will be training and other resources in the form of the traveling "cybernavigators" that are described in the UC2B Sustainable Adoption proposal.

The UC2B Last Mile network, a WDM-PON fiber-to-the-home (FTTH) pilot, will invest in underserved areas of town that private telecommunications providers tend to pass by with new technology. The vulnerable populations, where benefit is maximized, will not only be the first in the community to have the advanced technological capabilities but will also have educational opportunities available via the 47 public computing centers that will be funded by the UC2B Public Computing Centers proposal.

Public safety will be improved by connecting city and rural volunteer fire stations as well as the University-owned Willard Airport (CMI) to other local safety agencies via the fast, reliable and redundant fiber-based network. This application includes a letter of support from METCAD, which is the PSAP for Champaign County.

We have found some unexpected partners with unexpected uses for Big Broadband. The Champaign-Urbana Mass Transit District (CU-MTD) operates an award-winning bus system throughout the community. The CU-MTD has provided part of the UC2B local matching funds, because they want to connect to the main off-campus bus shelters, so they can provide up-to-date information on when a particular bus will arrive. Additionally they plan to install security cameras in the bus shelters to increase the safety of their riders. The CU-MTD is about to deploy this system in their campus area shelters, and UC2B will allow them to expand these services throughout the community.



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At the campus bus shelters, the University is also providing campus Wi-Fi access for the convenience of students, faculty, and staff. As UC2B fiber is built out to the community bus shelters, the UC2B will work with the CU-MTD to make Wi-Fi coverage available in those shelters as well.

Another unexpected investor in UC2B services is our local sanitary district. The Urbana-Champaign Sanitary District (UCSD) operates two main waste treatment plants at opposite corners of the community and a number of pumping stations. Keeping the pumping stations synchronized with the treatment plants has typically required dedicated T-1's or dial-up circuits that have not always been adequate. UC2B fiber connectivity will bring necessary bandwidth to the two treatment plants and 7 primary pumping stations. UCSD's plans for using fiber give an entirely new meaning to "Critical Institution" and are another example of how the local community has already recognized the potential that UC2B can deliver.

The established association between the University and NTIA is extensive. Notably, the digital archives of NTIA's original TOP program are housed at the University's Graduate School of Library Science (GSLIS). The UC2B Project will preserve this affinity and will produce an educational model. University students and scholars are already studying and documenting the successes and lessons learned so that this model can be disseminated and improved upon in any community in the United States.

The WDM-PON technology that we are proposing is new, but well established outside of the United States. Every other community we have talked to about our project has told us that they are considering it for their communities. We foresee organizations from around the country converging on this community to see how well WDM-PON has met our needs and to learn from our experiences. We welcome and encourage that. The fundamental purpose of the University is to not only create and share knowledge, but to provide vehicles to expand education. Big Broadband will be one of those vehicles.

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

Within the UC2B Middle Mile proposed funded service area are two regional hospitals with 433 total beds, eight multi-specialty medical clinic facilities, and a public health center that provides care to low-income families. The low-income residents who live in the Last Mile proposed funded service area, do not typically turn to broadband technology for assistance with health issues, because up until now broadband technology has not been available at affordable



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rates.

The UC2B Community Network Service will change that equation. Network-connected remote diagnostic equipment will be feasible. High definition network-connected web cams will allow patients and medical staff to bridge physical space constraints for consultations. Even the lowest income patient on the UC2B Community Network will have a 100 Mbps connection to these medical facilities. Carle Hospital has embraced this value, as evidenced in their letter of support, and are developing plans to utilize this enhanced connectivity to better serve their patients at lower costs. As more and more of the community become connected, medical organizations will also expand their broadband-based capabilities.

Public school students from the lowest economic background in our community live in the proposed Last Mile FTTH service area. Broadband will level the field in the classroom, and will enable our high school graduates to access more opportunities. Teachers and students will utilize innovative broadband-dependent communications technologies in ways we are only beginning to imagine, but that we are poised to explore, test and deliver.

The University's Community Informatics Initiative sponsors the Youth Community Informatics program for community disadvantaged youth to explore how informatics can and does impact them, their schools, their homes, and the community. This group has been meeting and producing community-based projects for nearly two years and are thus prepared and qualified to lead the way. The enhanced teacher-to-student and teacher-to-parent communication via broadband will be a tremendously positive development.

The proposed UC2B Middle Mile plan connects 38 public and private elementary, middle and high schools. Because of the "schools of choice program", Champaign students could attend a neighborhood school or they could attend a school several miles across town. Every school in the community will be connected to the UC2B Community Network Service via the UC2B Middle Mile proposal. With inexpensive web cams, schools can offer interactive help with homework directly to students living in the proposed Last Mile service area, a service that is increasingly being seen as a necessity given the mounting concerns over likely absences due to the potential H1N1 flu pandemic.

Also, the University has plans to build a "TeacherTube"-like searchable and bookmarkable



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repository of HD video-based educational objects. Providing such high quality resources over the community broadband network will change both formal and informal education by providing broadcast quality video resources, free and available anywhere on the network--- school, libraries, community centers, home, or hotspots.

The local Public Broadcasting affiliate, WILL-TV-AM-FM, which currently streams its AM and FM radio stations over the public Internet, has committed to streaming its four digital television signals over the UC2B Community Network. Through programs offered by the Public Broadcasting Service, WILL-TV will provide access to a growing library of archives from 40-plus years of local and national PBS programming on-line. Full programs in High Definition, and short segments as searchable and reusable Learning Objects, will be available on demand. Additional multimedia materials, which have never before been broadcast will be available on-line and will enable teachers to find essential video segments, images, or audio clips for any given lesson.

## **D. Proposed Funded Service Area**

### **12. Proposed Funded Service Area Maps:**

**12-A.** Service Area Map (Reference Number): **CF63-2C41-41F2-9328**

**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.

### **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.





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**17. Methodology for Area Status:**

Champaign-Urbana Community Internet Survey, 2009  
Methodology Report

**Introduction**

The Champaign-Urbana Community Internet Survey, 2009 was conducted to estimate the number of households that have broadband Internet access in certain areas of the cities of Champaign and Urbana, Illinois.

The target population for the survey was defined to be all occupied housing units in each of 38 census block groups identified based upon characteristics of lower socioeconomic status. A random sample of household addresses stratified by block group was selected, and face-to-face interviews were conducted with adult residents who were located and willing to participate.

**Sampling Frame**

Data files containing all street addresses within the 38 pre-identified block groups were obtained from information technology personnel for the cities of Champaign and Urbana. Duplicate records and non-residential addresses were removed. Residential addresses were identified by county property codes.

**Face-to-face Interview Survey Methodology**

A fourteen-question survey instrument was developed jointly by stakeholders in the project. Selected households were mailed letters prior to receiving first contact by interviewers in the field. Face-to-face interviewers were trained in standard interviewing techniques and procedures. Most interviews were conducted in English, but a subset of interviewers was trained to conduct interviews in Spanish. Face-to-face interviews were conducted between July 29 and August 1, 2009. Cases were rotated through a maximum of three visit attempts on different days at different times of day.

**Weighting**

Weights were calculated to adjust for unequal selection probabilities and non-response. Also, the frame total for each stratum was adjusted by the final estimated eligibility rate for each stratum. Two final weights, in units of households, were constructed: one summing to the population estimate, and one summing to the completed sample size.



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### 18. Middle Mile Benefits

The attached maps shows the UC2B Middle Mile proposed funded service area (shaded in light blue) and the Last Mile (fiber-to-the-home pilot) project in the underserved census block groups (shaded in yellow). The Middle Mile proposed funded service area, which includes 137 "Critical Institutions", can best be described as all of Champaign and Urbana, Illinois with additional small portions of Champaign County and the Village of Savoy.

The Champaign County 2000 Census Tract Block Groups that make up the Middle Mile proposed funded service are: 1-2, 1-2, 1-3, 1-4, 2-1, 2-2, 3-1, 3-2, 3-3, 3-4, 4-1, 4-2, 4-3, 5-1, 5-2, 5-3, 5-4, 6-1, 6-2, 6-3, 6-4, 7-1, 7-2, 7-3, 8-1, 8-2, 9.01-1, 9.01-2, 9.01-3, 9.02-1, 9.02-2, 10-1, 10-2, 10-3, 10-4, 10-5, 10-6, 11-1, 11-2, 11-3, 11-4, 12.01-1, 12.01-2, 12.01-3, 12.01-4, 12.03-1, 12.03-2, 12.03-3, 12.03-4, 12.04-1, 12.04-2, 12.05-1, 12.05-2, 12.06-1, 12.06-2, 13.01-1, 13.01-2, 13.01-3, 13.01-4, 13.01-5, 14-1, 14-2, 51-1, 52-1, 52-2, 52-3, 53-1, 53-2, 53-3, 53-4, 53-5, 54-1, 54-2, 54-3, 54-4, 54-5, 54-6, 54-7, 54-8, 55-1, 55-2, 55-3, 55-4, 55-5, 55-6, 55-7, 56-1, 56-2, 56-3, 56-4, 56-5, 57-1, 57-2, 57-3, 57-4, 57-5, 57-6, 58-1, 58-2, 58-3, 58-4, 58-5, 58-6, 59-1, 59-2, 59-3, 50-4, 60-1, 60-1, 60-2.

The UC2B Community Network Service will offer public Internet access to low-income families connected to the UC2B Network via the Last Mile FTTH project. The Middle Mile project interconnects homes in the 11 census block groups where FTTH will be initially offered with the "Critical Institutions", which includes anchor institutions, schools, public safety agencies, libraries, senior living facilities and more.

The UC2B Network, which includes both the Middle Mile and Last Mile networks, will utilize the same WDM-PON technology. Thus, a "Critical Institution" directly connected to one of the seven Middle Mile fiber rings can receive the same services or even connect directly to another "Critical Institution" that is located in the Last Mile service area.

The primary benefactors of the UC2B Middle Mile network will be the clients and patrons of the 137 Critical Institutions that will be connected to Big Broadband. Attached to this application are dozens of wonderful letters of support from organizations that support youth, battered women, senior citizens, people with disabilities and a host of minority populations. They all understand the importance of having access to Big Broadband in their community centers and where they live. Because UC2B has both above Ground and Below Ground



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components, they see the opportunity for lasting change in their communities.

Schools are Critical Institutions, and the Illinois Century Network (ICN), a state agency providing public Internet services to public institutions, has many educational subscribers in this community and also has a major Point of Presence (POP) on the University campus. Unit 4 schools in Champaign and Unit 116 schools in Urbana will be able to use UC2B fiber to facilitate direct Ethernet connections with ICN's routers in Scott Hall, which will enable better public Internet connectivity and will ultimately provide access to enhanced educational tools for 9,300 students in Unit 4 and 3,752 students in Unit 116.

METCAD is an intergovernmental agency that is the PSAP for Champaign County, handling 911 calls and dispatching first responders. METCAD has a radio system for contacting first responders and coordinating between various public safety agencies.

It becomes a public safety concern whenever that radio system fails. As the attached letter of support indicates, METCAD is eager to have increased reliability by way of the UC2B Middle Mile fiber, which will provide a back-up system for their critical radio towers. This level of availability is essential for all public safety entities as it could easily impact matters of life and death.

The Lincoln Trail Libraries System (LTLS) provides circulation services to 117 member libraries spread over 9 Illinois counties. Typically those member libraries transfer data to and from the LTLS office in north Champaign via ICN. Legacy T-1 circuits cannot deliver the current LTLS data needs. UC2B fiber will help LTLS in two ways.

First, LTLS will be able to use the UC2B Middle Mile fiber to connect directly via Ethernet to ICN. This alone will improve the responsiveness of the circulation systems in its 117 member libraries, most of which are outside the proposed funded service area, by eliminating the T1 bottleneck at the main facility.

Second, both the Urbana Free Library and the Champaign Public Library will be able to utilize UC2B fiber to make direct Ethernet connections to LTLS and move their traffic totally off the ICN link. By doing so, their data traffic will no longer be competing with inter-library traffic over congested links, which will impact thousand of users every week. This will also improve





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network performance for the patrons of the other 115 LTLS member libraries, for those two large libraries will not longer be contending for bandwidth on the LTLS ICN connection.

We have had preliminary discussions with 4 service providers about providing commercial services on the UC2B network. The two who have shown the most interest - Consolidated Communications - an ILEC, and Champaign Telephone Company - a CLEC have written letters of support that are included with this application.

## 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:

UC2B: An Open Access Infrastructure

In accordance with FCC 05-151, the FCC's Broadband Policy Statement, UC2B will be a non-discriminatory, open access network where service providers can competitively provide services including, but not limited, to data and video. As a result, UC2B subscribers will have competitive options for accessing lawful Internet content, applications and services via devices of their choice.

The open access framework allows for small, local providers as well as the tier 1, global



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providers to deliver services and content without discrimination of traffic type or performance degradation resulting from traffic manipulation, to any UC2B subscriber. There will not be any performance advantages provided via traffic shaping for specific content or for a particular ISP.

Layer 2 network devices, which will aggregate service providers, create an economical, simple, and equal mechanism from which services & content can be offered. Additionally, Layer 3 network devices will provide peering opportunities for all UC2B providers, which ultimately save on bandwidth charges for all parties. The goal is to provide an economical, easily accessible path for service providers to deliver exceptional, competitive services to any UC2B subscriber.

Service providers (video, Internet, etc) connect to the UC2B infrastructure via Layer 2 aggregation switches. Each provider is assigned dedicated VLANs that facilitate the distribution of services to their respective subscribers. To assist service providers in cutting costs, Layer 3 (L3) peering routers will provide direct, "on-net" access between providers. In other words, for potential applications like distance learning or telemedicine, a subscriber of ISP #1 can access another entity subscribing to ISP #2 via L3 peering. In doing so, traffic sent "off-net" to the public Internet is reduced, which reduces bandwidth costs for participating ISPs and improves network performance for subscribers.

In summary, the UC2B infrastructure is an open access network based upon the following principles:

- \* UC2B Network subscribers will benefit from the innovation created through service provider competition.
- \* Providers of lawful Internet applications or content will not be discriminated against. All traffic will be neutrally routed regardless of origin or packet type.
- \* When choosing a service provider, UC2B Network subscribers should be able to make informed decisions. Thereby, all UC2B service providers will be required to display network management policies in a prominent location on their web page. UC2B's network management policies are already on-line at: [www.UC2B.net](http://www.UC2B.net)



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\* UC2B Network subscribers will have access to public Internet service offerings.

\* Providers can interconnect on the UC2B Network. This maximizes the service choices for UC2B Network subscribers.

By creating and enforcing an open access infrastructure, UC2B subscribers will benefit from maximized choice at competitive rates. Additionally, local and global service providers are given equal, non-biased opportunities to expand a subscriber portfolio, which in turn creates economic development momentum.

**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):**

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 the project facilities at reasonable rates and terms.
Commit to binding private arbitration of disputes concerning interconnection obligations.



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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):**

The UC2B Last Mile network will cover 65 miles passing 4650 households. The cost of providing fiber-to-the-curb (FTTC) is \$1,750 per household, which includes:

- Fiber, conduit and hand-holes - \$2,660,233
- Labor to install fiber, conduits, hand-holes, WDM-PON splitters - \$5,320,466
- WDM-PON splitters and Node electronics - \$156,800

The anticipated FTTH adoption rate is 54%, or 2500 homes. Extending fiber into the home costs an additional \$1,500 per home, which covers:

- Fiber and outdoor equipment - \$256,250
- Labor to install fiber, customer premise equipment - \$1,025,000
- Indoor wiring - \$768,750
- Electronics - \$1,700,000

Based upon the previously defined formulae, the cost to provide FTTH is approximately \$4755 per household:



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4650 households passed @ \$1,750 each = \$8,137,500  
2500 households connected @ \$1500 each = \$3,750,000  
Total UC2B FTTH cost = \$11,605,500  
Total cost per home (2500 homes) = \$4755

**27. Affordability**

Many different service offerings will be available on the UC2B Network. For Last Mile (LM) services, many UC2B subscribers will negotiate pricing directly with their ISP. For low-income households, a \$19.99 per month lifeline Internet service, the UC2B Community Network Service (UC2B CNS), will deliver 5Mbps symmetrical public Internet access and 100Mbps symmetrical access to all other UC2B-connected entities.

A survey of current local LM service providers revealed that there is no 5Mbps symmetrical service available. The closest service offering, which is 3Mbps downstream and 512Kbps upstream is \$30.00 per month. Therefore, the UC2B CNS will provide more connectivity at a more affordable price.

UC2B Middle Mile (MM) service offerings include port charges and bandwidth fees. A customer using an ISP would pay the ISP for the UC2B port charges plus whatever that ISP charges for the Internet bandwidth and any other supplied services. The ISP would then pay UC2B for the port charges for its customers.

Port Charges:

100Mbps - \$19.99 per month

1Gbps - \$39.99 per month

Bandwidth services for Private VLANs:

10MB - \$100 per month (includes the \$19.99 100Mbps Port Charge)

100Mbps - \$400 per month (includes the \$19.99 100Mbps Port Charge)

1Gbps - \$1,200 per month (includes the \$39.99 1Gbps Port Charge)

Note, "Critical Institutions" will only incur port charges as they will qualify for the UC2B CNS program.

Entities choosing to interconnect, like a main bank to a branch office, may do so utilizing the



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private VLANs. Public Internet access will be contracted directly with participating ISPs.

A survey of local MM providers revealed limited availability at significantly higher rates than proposed by UC2B. A typical example is a currently offered 100Mbps service at \$1,293 per month, which includes \$475 in port fees and an \$818 100Mbps Committed Information Rate (CIR).

A key no additional cost benefit that sets the UC2B service offerings apart from other providers is the "on net" concept. With both the LM and MM networks, subscribers may choose to purchase bandwidth packages from participating ISPs; however, regardless of the public Internet bandwidth purchased, the subscriber will have a minimum "on net" connection of 100Mbps. For example, students in households that purchase 5Mbps of public Internet access will have a 100Mbps entryway to education resources or to any "Critical Institution" on the UC2B Network. This is a benefit that is currently not offered by any other provider.

## F. Technology Strategy

### 28. Technology Type:

Wireline - Fiber-optic Cable

**Other:**

### 29. System Design

#### Overview

The UC2B Network infrastructure consists of new fiber installations including rings throughout the entire proposed Middle Mile funded service area, laterals to "Critical Institutions" and Fiber-to-the-Home connectivity in underserved neighborhoods. To avoid wayward vehicles, weather and rodent-related issues, all fiber will be buried.

WDM-PON is the technology selected to deliver services across the fiber infrastructure. WDM-PON, which is a new PON solution, delivers dedicated wavelengths to end-users. The





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benefit is that available bandwidth can easily grow without a forklift upgrade to the entire system. As enhanced optics become available, minimal equipment upgrades will allow this system to grow to 10 Gbps and beyond. This is a significant measure to ensure that the UC2B network remains relevant for twenty-plus years. The approximate equipment cost per connection with WDM-PON is \$750.

#### Last Mile

FTTH will be offered in the Last Mile proposed funded service areas. Each residential structure will be equipped with an Optical Network Terminal (ONT), which will terminate the fiber and provide connections for end-user devices, such as IP-TV set top boxes or computers. Fiber connecting the ONT to the FTTH network will be buried. Each FTTH service area will connect to the nearest 32-way WDM-PON splitter/filter device, which will be buried in an environmentally stable enclosure in a handhold.

#### Middle Mile

"Critical Institutions" will also utilize the WDM-PON infrastructure. Similar to a residential installation, an ONT will terminate the lateral fiber, which interconnects at the WDM-PON splitter in a handhold. Most residential and business connections will be 100Mbps. Connections will also be available at 1Gbps.

#### Interconnection Points

The design of the UC2B Middle Mile fiber rings and WDM-PON Last Mile Fiber-to-the-Home system allows for many Interconnection Points. If a provider or a customer can get to any one of the proposed 491 splice points on the 76-mile Middle-Mile conduit infrastructure, we will have enough fiber available to connect them to any other Interconnection Point on any of the seven rings, including the two nodes that will house the layer 2 and layer 3 core electronics. In fact, they will be able to redundantly connect to either node from any of the 491 Interconnection Points on any of the seven fiber rings.

Of those 491 Interconnection Points, 52 of them will be located in Last Mile underserved areas. Some 11% of all of the Interconnection Points on the Middle Mile infrastructure will be in underserved areas.

In those Last Mile underserved areas, there will 166 handholds where WDM-PON



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splitters/filters are housed. Each of those WDM-PON splitters/filter locations can also serve as an Interconnection Point for the network. Adding the 166 Interconnection Points in the Last Mile areas to the 52 Middle Mile Interconnection points in the underserved areas yields a total of 218 Interconnection points in underserved areas. Out of the 657 total Interconnection Points, the 218 in underserved areas work out to roughly 33%.

#### Core

Each splitter/filter in a handhold will connect to an Optical Line Terminal (OLT) WDM-PON device, which will be housed in one of two University Nodes, which are secure facilities with controlled environments and battery/generator backup power.

All of the OLTs will redundantly connect to two aggregation switches. Because the aggregation switches will be the core of the network, they will be chassis-based with high performance backplanes supporting standards-based protocols, high port density with 10 Gbps support availability, and redundant power supplies. These switches will also provide the centralized platform from which providers may offer services. Unique VLANs, without any sort of traffic prioritization, will be provisioned for each provider. Approximate costs for aggregation switches are \$85,000 each.

"Point-to-point" VLANs for private use will also be provisioned on the aggregation switches. For example, if a medical facility required private connection services between satellite facilities, a dedicated, private virtual link would be assigned.

For those entities requiring dedicated physical connections, dedicated fiber can be secured via IRU agreements with UC2B. A typical UC2B fiber IRU will have a twenty-year term and will include fiber costs along with annual fiber maintenance fees.

Each provider will also connect to redundant peering routers, which will cost \$150,000 each. The peering routers, which will also co-locate in one of two University Nodes, require high performance backplanes supporting standards-based protocols, ample memory to hold extensive routing tables, high port density with 10 Gbps support availability, and redundant power supplies. The objective is to maximize the traffic that remains "on net". By eliminating the need to use the public Internet, traffic traversing between service providers without leaving the UC2B network is utilizing "free bandwidth".





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### Community Network Service (CNS)

To this point, all UC2B infrastructure and equipment discussed are currently non-existent. To ensure adequate yet affordable public Internet bandwidth availability for vulnerable populations, the UC2B CNS will leverage existing University assets and University funds to provide public Internet service for a minimum of five years. The University's Office of the Vice Chancellor for Public Engagement has contributed \$60,000 per year for five years to secure public Internet bandwidth in Chicago, which will be backhauled via the existing DWDM fiber network that interconnects the three University of Illinois campuses. Additional DWDM hardware is necessary to complete a dedicated lambda that will redundantly connect to a wholesale public Internet provider in Chicago. The approximate one-time cost of the additional DWDM hardware is \$197,000.

Transport services like what is proposed for UC2B CNS are costly. A survey of inter-lata transport services revealed an average monthly rate of \$3,500. To minimize startup costs and to facilitate the establishment of a customer base, the University suggests that the \$3,500/month transport fees serve as an in-kind operational contribution for 5-years.

In addition to DWDM gear, two "ISP" routers, at an approximate cost of \$125,000 each, will be required to serve as route points for the UC2B CNS. Like the peering routers, the CNS routers must have a high-performance backplane supporting standards-based protocols, ample memory, high port density with 10GB support availability, and redundant power supplies.

### Network Longevity

The UC2B network infrastructure will bring value to our communities for decades. Constructing end-to-end connections with buried fiber is a lasting solution. Enabling the fiber to deliver services with WDM-PON electronics also lengthens the lifespan of the UC2B network. Upgrades for advanced capacity can easily be achieved by replacing optics rather than replacing all of the electronics. The switching and routing fabric that will be used also allows for growth with minimal equipment replacement.



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**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? **No**

**Buy American Waiver Request – Legal Justification**

**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:**

The Urbana-Champaign Big Broadband (UC2B) Consortium's three founding members (the cities of Urbana and Champaign, and the University of Illinois) control 99% of the right of way that will be used to install the underground fiber-optic cable for this project. The Public Works directors from both cities and the Telecommunications Outside Plant manager for the University have been involved in the creation of the Consortium. We do not expect any issues



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with obtaining permission to use city or University right of way.

The Village of Savoy and Champaign County control the other 1% of the right of way that will be needed for the fiber conduits and manholes. Both the Village and the County are aware of this project and have provided letters of support, which are on pages 40 and 41 in the attached collection of letters for Question 41. In short, we do not anticipate any issues gaining permission to use the various rights-of-way the Consortium will need.

The UC2B Middle Mile fiber does however cross three separate sets of railroad tracks a total of 13 times and two different Interstate highways a total of 10 times. Our construction manager has built fiber plant throughout the State of Illinois and specifically in Urbana and Champaign for both cable TV and telephone companies, and has successfully acquired the appropriate permits for all of those fiber construction projects. We anticipate similar success with UC2B.

While we do not underestimate neither the difficulty of obtaining railroad permits nor the length of time it could take, we only need four railroad permits to be able to turn up our first two rings and provide services to the first-year fiber-to-the-home customers. We will concentrate our efforts on those four crossings and will file the permit requests the week after we learn of NTIA funding.

We do not anticipate using any aerial fiber, so pole attachments should not be an issue for this project.

The City of Urbana, the City of Champaign, the University and the State of Illinois have all pledged money and support for this project. Based on that support and financial commitments, we believe that we will be able to acquire whatever approvals we need to complete this project in a timely manner.

### **36. Construction and Vendor Contracts**

The Urbana-Champaign Big Broadband (UC2B) Consortium is a public agency and as such is subject to the purchasing rules and laws of the State of Illinois. The UC2B Consortium intends to rely heavily on the use of contractors and vendors to do the final fiber-optic cable plant design and the physical construction of that infrastructure. The infrastructure engineering will be competitively bid in accordance with state law and local regulations as will the fiber plant construction that is based on those engineering designs.



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While we have a steady stream of phone calls from vendors desiring to do this work, there are no signed contracts. We cannot in good faith bid this work before we know if we have NTIA BTOP funding. This is a project that “but for” federal assistance would not be possible. It would violate state law to sign contracts for work of this magnitude without competitive bidding.

So, as soon as we know we have ARRA funding, our first activity will be to issue an RFP for one or more engineering firms to do the detailed infrastructure design for the rings and the underserved FTTH areas that we intend to build in 2010. Once those contracts have been awarded and the designs produced, we will be able to bid the construction work that is based on those designs.

Some of this work will happen over the winter, when it is usually not advisable to attempt fiber construction in Central Illinois. Even so, we will get a slightly late start in 2010 and we have apportioned the work between the two years accordingly.

Once the 2010 construction has been bid, we can bid the engineering and eventually the construction for 2011. If we have a late winter, it is possible that some of the 2011 construction could be started late in 2010, but we are not counting on that.

All construction will be coordinated and managed by the University’s Outside Plant staff. Members of the University’s WAN team will install the network electronics and configure them.

#### **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:**

The lead agency for the Urbana-Champaign Big Broadband (UC2B) Consortium will be the University of Illinois at Urbana-Champaign. The Policy Board of the Consortium will make



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policy decisions for all aspects of the operations of the Consortium. The members of that Policy Board are appointed by the three founding entities of the Consortium. The entire Intergovernmental Agreement is included in the bundle of materials for Question #41 and can be found starting on page 25.

For the construction phase of this project and for at least the first 5 years of operations, networking staff from the University will operate the backbone network, and the WDM-PON equipment that will be used to deliver services to end users, Critical Institutions and private VLAN customers.

The Wide Area Network (WAN) team is composed of 6 network engineers, who currently maintain and support the University's Urbana-Champaign campus network as well as the 568-mile Dense Wave Division Multiplex (DWDM) fiber network, the ICCN, which connects the University's three campuses to each other, to research networks, to peering partners and to the public Internet.

The campus network covers more than 1468 acres connecting 300 plus buildings with mostly 1 Gbps links to a 10 Gbps backbone. The campus network utilizes more than 145 routers and another 1200 switches and provides wired and wireless service to more than 60,000 students, faculty, and staff utilizing more than 75,000 network devices.

The University's WAN team will install, configure, and maintain the UC2B Infrastructure, which is comprised of two switches, four routers and eventually some 2,700 Optical Network Terminals. The WAN team will also coordinate with potential service providers to provision their services across the UC2B infrastructure to their corresponding subscribers.

Community Network Service (CNS) customer service will be provided by the Community Help Desk, which is defined in the UC2B Sustainable Broadband Adoption proposal. ISPs will provide customer service to their respective customers.

The University's Outside Plant team assembled for this project has years of experience in municipal and long haul fiber construction and is ready to manage this project. The University's staff will oversee the fiber infrastructure design and construction in both cities, as well as on the University's campus.



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One of the values of the Consortium agreement is that it allows for UC2B to benefit from the existing staffs of the members. While University staff will be handling the technical aspects of the network; financial, legal and HR staff from one of the other entities may be called on to perform those functions for the Consortium. Such services will be compensated, but when the Consortium only needs an attorney a couple of times a year, it works out well to have a several person “in-house” legal staff available to do that work.

The local PSAP – METCAD – functions in this fashion. While they are an intergovernmental agency, they get their financial, legal, billing and HR support from the City of Champaign under a contract that compensates the city for those services. In many ways, UC2B was modeled after METCAD.

On the networking side, we only expect the day-to-day network operations to require 2 FTE’s by the fifth year, but we will have a pool of 6 network engineers to draw from. That gives us access to 24x7 coverage as well as vacations and holidays while keeping operating expenses low. Keeping the expenses low in the early years of the Consortium’s operations will be very important to sustainability.

## 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:

The Urbana-Champaign Big Broadband (UC2B) Consortium is itself a collaboration of three public entities (the University of Illinois at Urbana-Champaign, the City of Urbana and the City of Champaign) that have each approved the attached Intergovernmental Agreement (which starts on page 25 of the attachment for this question) to form the Consortium. The signature pages were being routed throughout the various official channels at the time of this





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submission.

That intergovernmental agreement allows for additional entities to join in the future, and we expect Champaign County and the Village of Savoy to do so. Both the Village of Savoy and Champaign County have provided letters supporting the UC2B proposals, which can be found on pages 41 and 42 of the attachment. The Consortium will manage the ongoing operations of the UC2B network with one of the three founding organizations always functioning as the lead agency. For the purposes of the BTOP grants, the lead agency is the University.

In addition to the three founding entities, five other public and one private organization have endorsed the UC2B proposals in the strongest way possible, with their dollars. Those letters of commitment start on page 2 of the attachment.

There are 14 letters of support from community partners that include religious groups, libraries and community centers; 21 letters from organizations representing vulnerable populations that range from battered women, to the disabled, to senior citizens; 2 that involve job training; 2 from Public Safety agencies including our local PSAP; 2 from healthcare agencies; 9 are from schools that represent tens of thousands of students from grade schools through graduate schools; and another 7 from local businesses, media and arts groups. Organizations that rarely see eye-to-eye on many issues are in absolute agreement that Big Broadband is needed for our Critical Institutions and that the UC2B Middle Mile proposal is the way to deliver it.

#### **42. Recovery Act and Other Governmental Collaboration.**

The UC2B infrastructure proposal increases the Broadband connectivity of three partners in the Illinois Rural Health Network, which has received a \$21 million grant from the Federal Communications Commission to improve the connectivity to rural medical facilities throughout the State of Illinois.

Carle Hospital and Provena Hospital in Urbana are both in the UC2B Last Mile proposed funded service area and both are teaching hospitals for University of Illinois medical students. Both hospitals and the University support rural health programs, and with UC2B fiber they will have low-cost high-bandwidth connectivity to the emerging state network that the FCC grant is funding. The UC2B fiber will also be an enabler for their telemedicine programs.

The C-U Mass Transit District's involvement in UC2B was detailed earlier. C-U MTD was the



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recipient of \$2.75million in ARRA funding for several projects including the purchase security cameras for their bus shelters. UC2B fiber will provide the connectivity that those cameras will need to be effective.

All eleven of the Census Block Groups that make up the four UC2B Last Mile service areas are targeted areas for HUD Community Development Block Grant Distribution. Several of them are in Enterprise Zones and several are in Tax Increment Financing Districts as well.

One the State level, Public Act 096-0038, which was signed into law on July 13th, provides \$50 million in state matching funds for ARRA Broadband deployment projects in the State of Illinois. The combined UC2B projects have secured \$3.5 million from this program, subject to NTIA approval of our BTOP grant applications. The commitment letter from the State of Illinois is page #4 in the attached collection of letters for Question #41 and the \$3.5 million is shown in our summary of matching funds.

The Illinois Fire Service Institute (IFSI), which is located on the University of Illinois campus, is submitting their own BTOP Broadband application for statewide broadband connectivity for fire stations. IFSI provides on-line and on-site training and education to first responders from across Illinois and the Midwest. They are the official state fire academy and through the Illinois Terrorism Task Force, ISFI is the delivery agent for Technical Rescue, Hazardous Materials, and National Incident Management System (NIMS) training for the State of Illinois.

In 2004, IFSI created 19 programs, which were approved by the Department of Homeland Security to train community responders to collaborate and respond to large disasters while waiting for FEMA assistance. Through the Department of Transportation IFSI manages a Hazardous Materials Emergency Preparedness grant, or HMEP.

To keep providing high levels of public safety training when fire department travel budgets are constrained, IFSI is looking to move even more of its training materials on-line. For that to be effective however, individual fire stations need Big Broadband connections so that the firefighters can take advantage of the on-line training. Should IFSI's BTOP grant request not be funded, the UC2B project will still connect 16 municipal and volunteer fire stations back to IFSI at 100 Mbps each. UC2B will enable IFSI to pilot its new on-line programs and fine-tune them. Better training for first responders is a top public safety priority.





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On a local level, the discussions leading up to the creation of the UC2B Consortium by the University and the cities of Urbana and Champaign have increased the awareness of the need for fiber conduits in the public works departments of both cities. While there is a new state law that mandates the placement of conduits for fiber optic networks on new state road projects, the local Public Works Directors are now factoring conduit into their future road building and repairing plans. We believe these are the sorts of efficiencies that the Recovery Act anticipates and encourages.

**Community Involvement (BTOP Applicants Only)**

**43. Partnering with Disadvantaged Businesses**

For the UC2B Middle Mile Infrastructure proposal, we have not been able to identify a local Disadvantaged Small Businesses to partner with that is either an electrical contractor or in the directional boring business - the two main skill sets this project will require.

However, we have arranged for a local union electrical contractor that specializes in communications cabling to implement a special apprentice program for this project. Champaign Telephone Company has agreed to take on six IBEW apprentices from the low-income areas being served by our fiber-to-the-home project to do the work of bringing fiber from the curb to the home and installing the Optical Networking Units and inside cabling.

We will need to bid this work, but we can make an apprentice program a requirement of our RFP, so even if Champaign Telephone does not win the bid, by the end of the two years of FTTH installations, there will be six members of the community who will be well on their way to becoming journeymen union electricians. Champaign Telephone has already been in contact with IBEW Local 601 and they are supportive of this plan. A letter from Champaign Telephone about this plan is on page #82 of the attached bundle of materials for question #41.

So while we do not have a Disadvantaged Small Businesses partner for this Infrastructure proposal, the UC2B project will lay the groundwork for the creation of a socially and economically disadvantaged electrical contracting business.



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The UC2B Public Computing Center proposal does partner with a socially and economically disadvantaged small business (SDB), to regularly clean the computers, keyboards and mice at the Public Computing Centers. With the predicted onset of new strains of flu, having clean systems in the Public Computing Centers is an important precaution.

## 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)		2,368,097				
Outside Plant (cables, conduits, ducts, poles, towers, repeaters, etc.)		21,229,754	4,393,021			
Buildings and Land – (new construction, improvements, renovations, lease)						
Customer Premise Equipment (modems, set-top boxes, inside wiring, etc.)		750,000				
Billing and Operational Support Systems (IT systems, software, etc.)			30,000			
Operating Equipment			10,000			



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(vehicles, office equipment, other)						
Engineering/ Professional Services (engineering design, project management, consulting, etc.)			725,000			
Testing (network elements, IT system elements, user devices, test generators, lab furnishings, servers/computers, etc.)			190,000			
Site Preparation			500,000			
Other			1,004,128			
<b>TOTAL BROADBAND SYSTEM</b>		24,347,851	6,852,149			



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**Total Budget:** \$ 31,200,000

**45. Detailed Budget:**

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

**Sustainability**

**46. Reasonableness**

The UC2B proposal will provide Middle Mile connectivity for 137 "Critical Institutions", including schools, medical facilities, public safety agencies, senior living centers and public computing centers. The attached collection of letters from many of those organizations speaks eloquently to the needs and to the broad-based community support for this project.

Additionally this project will provide Middle Mile connectivity for a Fiber-to-the-Home (FTTH) pilot project serving an estimated 2,500 underserved, low-income households. It will also enable commercial Internet providers throughout the Urbana-Champaign community to improve their available bandwidth and lower their costs.

It is not reasonable that the schools that educate our children and the agencies that provide services to our vulnerable populations have to spend excessive scarce resources on public Internet connectivity. The UC2B Middle Mile network will service the "Critical Institutions" in our community for the next 20 years.

If the \$19.2 million that it will take to build the UC2B Middle Mile network were only to be used to provide connectivity for just those 137 "Critical Institutions" for the next 20 years, that would be a monthly cost of \$584 a month per institution.

For roughly the cost of two 1.5 Mbps T-1 circuits, schools, libraries, senior centers and public computing centers will have 100 Mbps connectivity to each other and to the public Internet. For the first five years of this project, the University will be donating funds for the UC2B Community Network Service to secure and back haul a 1 Gbps public Internet connection from Chicago utilizing the University's existing WDM fiber ring. We know that there will be far more than 137 organizations that benefit from the UC2B rings, so in reality the cost per organization over the next 20 years will be even less.



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The UC2B proposal also has a Last Mile component that will be life changing for the underserved, low-income residents in the proposed Last Mile funded service areas. The households within those service areas will have fiber-based access to 5 Mbps of symmetric public Internet connectivity and 100 Mbps of connectivity to the 137 "Critical Institutions" and other community resources.

The one-time cost per projected household subscriber is \$4,800. While fiber is more expensive than some other technology alternatives, it has been argued that our children and grandchildren will ultimately pay for the ARRA funding for these BTOP grants. With UC2B, our grandchildren will be able to enjoy using this WDM-PON system in 20 years. No other delivery technology is as flexible and as future proof as WDM-PON, and we believe that makes it the only reasonable long-term technology investment.

We know that the demand for bandwidth will only increase in the next five years, and we probably cannot begin to predict what it will be in 10 or 15 years. An investment in fiber-based Big Broadband in 2010 is the only solution that will still look wise in 2025 or 2030.

Spreading the \$12 million installation cost of just the FTTH fiber and the WDM-PON electronics over 20 years and over 2,500 subscribers yields a cost of \$20 per household per month. That too is a very reasonable investment for it delivers the potential of Big Broadband to our most vulnerable underserved households.

Private service providers with statewide franchises are not installing their latest technology in the areas that will be served by the UC2B FTTH pilot. It is not reasonable to leave a vulnerable segment of our community behind. UC2B will put them out front, and keep the playing field level for the next two decades.



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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**

The three founding members of the Urbana-Champaign Big Broadband (UC2B) Consortium are the City of Urbana, the City of Champaign and the University of Illinois at Urbana-Champaign. Each entity's initial investment in the intergovernmental agency was determined by the amount of dark fiber that each entity wanted on the UC2B fiber rings for its own purposes and then applying a per-strand-mile figure to those needs.

Those investments will be used to cover all aspects of the local matches for the three UC2B grant proposals. Exactly \$1,050,000 total from those three sources has been allocated as the local matching funds for the two UC2B "Above Ground" proposals for Public Computing Centers and Sustainable Adoption. Together those two proposals total \$5 million.

For this Middle Mile Infrastructure proposal, the local capital funding sources are as follows:

Cash contributions:

University of Illinois: \$510,971, which is 1.64% of the total project.

City of Champaign: \$498,070, which is 1.60% of the total project.

Champaign Unit 116 Schools: \$622,557, which is 2.00% of the total project.

Champaign Telephone Company: \$587,698, which is 1.88% of the total project.

Urbana-Champaign Sanitary District: \$120,000, which is 0.38% of the total project.

Champaign-Urbana Mass Transit District: \$339,103, which is 1.09% of the total project.

Lincoln Trail Libraries System: \$30,000, which is 0.10% of the total project.

State of Illinois: \$3.5 million, which is 11.29% of the total project





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Total of all Cash Contributions: \$6,554,074, which is 21.01% of the total project

In-Kind Contributions:

Urbana Unit 116 schools: \$298,075, which is 0.96% of the total project.

Letters of commitment from each of those entities are included in the bundle of materials submitted for Question #41. They are pages 6 through 23 in that document.

All of the entities investing cash in the UC2B Consortium will be allowed to make three equal payments over three fiscal years. The first payment will be due January 10th, 2010. The second payment will be due on October 10th, 2010 and the third payment will be due on October 10th, 2011.

Champaign Unit 4 Schools, C-U Mass Transit District and Champaign Telephone Company will enter into Indefeasible Right of Use Agreements to acquire the rights to use dark fiber on some of the UC2B rings. U-C Sanitary District, and Lincoln Trail Libraries are funding lateral fiber construction to their facilities so that they can purchase layer-two transport and Internet services over the UC2B fiber network.

Urbana Unit 116 Schools is donating some existing linear fiber that connects some of their facilities to each other and to the Internet as an in-kind contribution. The \$298,075 reflects that actual cost of installing that fiber and associated hardware, which was installed in the last two years.

The State of Illinois is providing \$3.5 million in matching funds as is evidenced by their letter to that effect, which is page #4 in the bundle of letters for Question #41.

## BTOP Requirements



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**52. Matching Funds:**

- a. Cash: \$ 6,554,074.00
- b. In-Kind: \$ 298,075.00
- c. Percent of Total Project Cost: 22

**53. Demonstration of Financial Need:**

The attached financial projections show that the Urbana-Champaign Big Broadband (UC2B) Consortium has at least a chance of being sustainable. The sales projections are neither overly aggressive nor overly conservative, but there is not much room for additional expense.

Those projections would be completely under water if the Consortium had to cover debt service on the roughly \$24 million that UC2B is seeking in ARRA assistance for this project. There is no possible way that this project would be funded privately with that level of debt on its books from day one.

While the University from time-to-time does things that are in the public interest, even though they may not benefit the institution's bottom line, we have attached a letter from the Urbana' campus's Chief Budget Officer - Mike Andrechak - which confirms that were it not for federal assistance, the UC2B project could not be funded by the University. That letter may be found as page #109 in the bundle of materials for Question #41.

The three UC2B proposals are perfect examples of projects that "but for" ARRA funding would not be implemented.

**54. Unjust Enrichment**

We are not receiving nor have we requested any other Federal support for non-recurring costs associated with any of the UC2B Proposals.

**55. Disclosure of Federal and/or State Funding Sources**

\$50 million of the 2009 State of Illinois Capital Spending Bill has been reserved for grants to help provide partial project matching costs for ARRA-funded broadband projects from Illinois. The combined UC2B Proposals have received a pledge of \$3.5 million in state funds. The letter from the Department of Commerce and Economic Opportunity detailing that grant is attached to this application and is page #4 in the bundle of supporting materials for Question



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#41. That is the only non-local funding source for UC2B.

## **I. Self Scoring – BIP Only Self Scoring**

### **56. Self Scoring Sheet**



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Criteria	Method	Points	Self Scores
<b><u>PROJECT PURPOSE</u></b>			
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	
<b><u>PROJECT BENEFITS</u></b>			
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	<b>10</b>	
Affordable of services offered	Points awarded based on the proposed rate structure and the logistics of the proposed service area	Up to 5	



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<b>Task:</b> Submit Application - Infrastructure Programs		<b>Applicant Name:</b> Ms. Kathy Young	

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	
<b><u>PROJECT VIABILITY</u></b>			
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	
<b><u>PROJECT BUDGET AND SUSTAINABILITY</u></b>			
Reasonableness of the budget	Points will be awarded based the	Up to 5	



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	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	
<b>Total Points</b>		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





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- 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  
Illinois - 15

2. State the Congressional District for each area covered by the Project.  
Illinois - 15

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

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

**Proposed Funded Service Area Name:** UC2B Last Mile 55-6  
**Census Blocks in Proposed Funded Service Area:** 55-6  
**Community Name:** Urbana, Illinois  
**Rural Classification of the Community:** Non-Rural  
**BIP - Service Status:**

<b>BIP - If Service Status is "Underserved" please select at least one applicable option from this list.</b>

**BTOP – Service Status:** Underserved

<b>BTOP - If Service Status is "Underserved" please select at least one applicable option from this list.</b>
The rate of broadband subscribership for the proposed funded service area is 40% of households or less.



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**Total Square Miles of Community:** 11  
**Total Population :** 692  
**Total Number of Households:** 368  
**Total Number of Businesses:** 30  
**Total Number of Critical Community Facilities, Anchor Institutions and Public Safety Entities:** 4

**Proposed Funded Service Area Name:** UC2B Last Mile Main Urbana  
**Census Blocks in Proposed Funded Service Area:** 53-1, 53-2, 53-5, 54-5  
**Community Name:** Urbana, Illinois  
**Rural Classification of the Community:** Non-Rural  
**BIP - Service Status:**

<b>BIP - If Service Status is "Underserved" please select at least one applicable option from this list.</b>

**BTOP – Service Status:** Underserved

<b>BTOP - If Service Status is "Underserved" please select at least one applicable option from this list.</b>
The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

**Total Square Miles of Community:** 11  
**Total Population :** 2,810  
**Total Number of Households:** 1,184  
**Total Number of Businesses:** 76  
**Total Number of Critical Community Facilities, Anchor Institutions and Public Safety Entities:** 5

**Proposed Funded Service Area Name:** UC2B Last Mile Main Champaign  
**Census Blocks in Proposed Funded Service Area:** 2-1, 2-2, 7-1, 7-3  
**Community Name:** Champaign, Illinois  
**Rural Classification of the Community:** Non-Rural  
**BIP - Service Status:**

<b>BIP - If Service Status is "Underserved" please select at least one applicable option from this list.</b>
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**Broadband Infrastructure Application  
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**BTOP – Service Status:** Underserved

<b>BTOP - If Service Status is "Underserved" please select at least one applicable option from this list.</b>
The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

**Total Square Miles of Community:** 17  
**Total Population :** 4,165  
**Total Number of Households:** 1,868  
**Total Number of Businesses:** 68  
**Total Number of Critical Community Facilities, Anchor Institutions and Public Safety Entities:** 11

**Proposed Funded Service Area Name:** UC2B Last Mile 9.01-3  
**Census Blocks in Proposed Funded Service Area:** 9.01-3  
**Community Name:** Champaign, Illinois  
**Rural Classification of the Community:** Non-Rural  
**BIP - Service Status:**

<b>BIP - If Service Status is "Underserved" please select at least one applicable option from this list.</b>

**BTOP – Service Status:** Underserved

<b>BTOP - If Service Status is "Underserved" please select at least one applicable option from this list.</b>
The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

**Total Square Miles of Community:** 17  
**Total Population :** 1,555  
**Total Number of Households:** 700  
**Total Number of Businesses:** 25  
**Total Number of Critical Community Facilities, Anchor Institutions and Public Safety Entities:** 2



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

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<b>Funding Opportunity:</b> Broadband Initiatives Program and Broadband Technology Opportunities Program		<b>Applicant Organization:</b> Board of Trustees of the University of Illinois	
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**Proposed Funded Service Area Name:** UC2B Last Mile 12.01-2  
**Census Blocks in Proposed Funded Service Area:** 12.01-2  
**Community Name:** Champaign, Illinois  
**Rural Classification of the Community:** Non-Rural  
**BIP - Service Status:**

<b>BIP - If Service Status is "Underserved" please select at least one applicable option from this list.</b>

**BTOP – Service Status:** Underserved

<b>BTOP - If Service Status is "Underserved" please select at least one applicable option from this list.</b>
The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

**Total Square Miles of Community:** 17  
**Total Population :** 1,464  
**Total Number of Households:** 530  
**Total Number of Businesses:** 19  
**Total Number of Critical Community Facilities, Anchor Institutions and Public Safety Entities:**

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

**Middle Mile Span Name:** UC2B Middle Mile  
**Census Blocks in Middle Mile Span:** 1-2, 1-2, 1-3, 1-4, 2-1, 2-2, 3-1, 3-2, 3-3, 3-4, 4-1, 4-2, 4-3, 5-1, 5-2, 5-3, 5-4, 6-1, 6-2, 6-3, 6-4, 7-1, 7-2, 7-3, 8-1, 8-2, 9.01-1, 9.01-2, 9.01-3, 9.02-1, 9.02-2, 10-1, 10-2, 10-3, 10-4, 10-5, 10-6, 11-1, 11-2, 11-3, 11-4, 12.01-1, 12.01-2, 12.01-3, 12.01-4, 12.03-1, 12.03-2, 12.03-3, 12.03-4, 12.04-1, 12.04-2, 12.05-1, 12.05-2, 12.06-1, 12.06-2, 13.01-1, 13.01-2, 13.01-3, 13.01-4, 13.01-5, 14-1, 14-2, 51-1, 52-1, 52-2, 52-3, 53-1, 53-2, 53-3, 53-4, 53-5, 54-1, 54-2, 54-3, 54-4, 54-5, 54-6, 54-7, 54-8, 55-1, 55-2, 55-3, 55-4, 55-5, 55-6, 55-7, 56-1, 56-2, 56-3, 56-4, 56-5, 57-1, 57-2, 57-3, 57-4, 57-5, 57-6, 58-1, 58-2, 58-3, 58-4, 58-5, 58-6, 59-1, 59-2, 59-3, 50-4, 60-1, 60-1, 60-2  
**Last Mile Service Area Name:** UC2B Last Mile 12.01-2  
**Community Name:** Champaign, Illinois  
**Rural Classification of the Community:** Non-Rural



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**BIP – Service Status:**

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

**BTOP - Service Status:** Underserved

**BTOP - If Service Status is "Underserved" please select at least one applicable option from this list.**  
The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

**Total Square Miles of Service Area:** 17  
**Total Population :** 1,464  
**Total Number of Households:** 530  
**Total Number of Businesses:** 19  
**Total Number of Critical Community Facilities, Anchor Institutions and Public Safety Entities:**

**Middle Mile Span Name:** UC2B Middle Mile

**Census Blocks in Middle Mile Span:** 1-2, 1-2, 1-3, 1-4, 2-1, 2-2, 3-1, 3-2, 3-3, 3-4, 4-1, 4-2, 4-3, 5-1, 5-2, 5-3, 5-4, 6-1, 6-2, 6-3, 6-4, 7-1, 7-2, 7-3, 8-1, 8-2, 9.01-1, 9.01-2, 9.01-3, 9.02-1, 9.02-2, 10-1, 10-2, 10-3, 10-4, 10-5, 10-6, 11-1, 11-2, 11-3, 11-4, 12.01-1, 12.01-2, 12.01-3, 12.01-4, 12.03-1, 12.03-2, 12.03-3, 12.03-4, 12.04-1, 12.04-2, 12.05-1, 12.05-2, 12.06-1, 12.06-2, 13.01-1, 13.01-2, 13.01-3, 13.01-4, 13.01-5, 14-1, 14-2, 51-1, 52-1, 52-2, 52-3, 53-1, 53-2, 53-3, 53-4, 53-5, 54-1, 54-2, 54-3, 54-4, 54-5, 54-6, 54-7, 54-8, 55-1, 55-2, 55-3, 55-4, 55-5, 55-6, 55-7, 56-1, 56-2, 56-3, 56-4, 56-5, 57-1, 57-2, 57-3, 57-4, 57-5, 57-6, 58-1, 58-2, 58-3, 58-4, 58-5, 58-6, 59-1, 59-2, 59-3, 50-4, 60-1, 60-1, 60-2

**Last Mile Service Area Name:** UC2B Last Mile 9.01-3

**Community Name:** Champaign, Illinois

**Rural Classification of the Community:** Non-Rural

**BIP – Service Status:**

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

**BTOP - Service Status:** Underserved

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



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The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

**Total Square Miles of Service Area: 17**  
**Total Population : 1,555**  
**Total Number of Households: 700**  
**Total Number of Businesses: 25**  
**Total Number of Critical Community Facilities, Anchor Institutions and Public Safety Entities: 2**

**Middle Mile Span Name:** UC2B Middle Mile  
**Census Blocks in Middle Mile Span:** 1-2, 1-2, 1-3, 1-4, 2-1, 2-2, 3-1, 3-2, 3-3, 3-4, 4-1, 4-2, 4-3, 5-1, 5-2, 5-3, 5-4, 6-1, 6-2, 6-3, 6-4, 7-1, 7-2, 7-3, 8-1, 8-2, 9.01-1, 9.01-2, 9.01-3, 9.02-1, 9.02-2, 10-1, 10-2, 10-3, 10-4, 10-5, 10-6, 11-1, 11-2, 11-3, 11-4, 12.01-1, 12.01-2, 12.01-3, 12.01-4, 12.03-1, 12.03-2, 12.03-3, 12.03-4, 12.04-1, 12.04-2, 12.05-1, 12.05-2, 12.06-1, 12.06-2, 13.01-1, 13.01-2, 13.01-3, 13.01-4, 13.01-5, 14-1, 14-2, 51-1, 52-1, 52-2, 52-3, 53-1, 53-2, 53-3, 53-4, 53-5, 54-1, 54-2, 54-3, 54-4, 54-5, 54-6, 54-7, 54-8, 55-1, 55-2, 55-3, 55-4, 55-5, 55-6, 55-7, 56-1, 56-2, 56-3, 56-4, 56-5, 57-1, 57-2, 57-3, 57-4, 57-5, 57-6, 58-1, 58-2, 58-3, 58-4, 58-5, 58-6, 59-1, 59-2, 59-3, 50-4, 60-1, 60-1, 60-2  
**Last Mile Service Area Name:** UC2B Last Mile Main Champaign  
**Community Name:** Champaign, Illinois  
**Rural Classification of the Community:** Non-Rural  
**BIP – Service Status:**

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

**BTOP - Service Status:** Underserved

**BTOP - If Service Status is "Underserved" please select at least one applicable option from this list.**  
 The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

**Total Square Miles of Service Area: 17**  
**Total Population : 4,165**  
**Total Number of Households: 1,868**  
**Total Number of Businesses: 68**  
**Total Number of Critical Community Facilities, Anchor Institutions and Public Safety Entities: 11**



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**Middle Mile Span Name:** UC2B Middle Mile

**Census Blocks in Middle Mile Span:** 1-2, 1-2, 1-3, 1-4, 2-1, 2-2, 3-1, 3-2, 3-3, 3-4, 4-1, 4-2, 4-3, 5-1, 5-2, 5-3, 5-4, 6-1, 6-2, 6-3, 6-4, 7-1, 7-2, 7-3, 8-1, 8-2, 9.01-1, 9.01-2, 9.01-3, 9.02-1, 9.02-2, 10-1, 10-2, 10-3, 10-4, 10-5, 10-6, 11-1, 11-2, 11-3, 11-4, 12.01-1, 12.01-2, 12.01-3, 12.01-4, 12.03-1, 12.03-2, 12.03-3, 12.03-4, 12.04-1, 12.04-2, 12.05-1, 12.05-2, 12.06-1, 12.06-2, 13.01-1, 13.01-2, 13.01-3, 13.01-4, 13.01-5, 14-1, 14-2, 51-1, 52-1, 52-2, 52-3, 53-1, 53-2, 53-3, 53-4, 53-5, 54-1, 54-2, 54-3, 54-4, 54-5, 54-6, 54-7, 54-8, 55-1, 55-2, 55-3, 55-4, 55-5, 55-6, 55-7, 56-1, 56-2, 56-3, 56-4, 56-5, 57-1, 57-2, 57-3, 57-4, 57-5, 57-6, 58-1, 58-2, 58-3, 58-4, 58-5, 58-6, 59-1, 59-2, 59-3, 50-4, 60-1, 60-1, 60-2

**Last Mile Service Area Name:** UC2B Last Mile Main Urbana

**Community Name:** Urbana, Illinois

**Rural Classification of the Community:** Non-Rural

**BIP – Service Status:**

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

**BTOP - Service Status:** Underserved

**BTOP - If Service Status is "Underserved" please select at least one applicable option from this list.**  
The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

**Total Square Miles of Service Area:** 11

**Total Population :** 2,810

**Total Number of Households:** 1,184

**Total Number of Businesses:** 76

**Total Number of Critical Community Facilities, Anchor Institutions and Public Safety Entities:** 5

**Middle Mile Span Name:** UC2B Middle Mile

**Census Blocks in Middle Mile Span:** 1-2, 1-2, 1-3, 1-4, 2-1, 2-2, 3-1, 3-2, 3-3, 3-4, 4-1, 4-2, 4-3, 5-1, 5-2, 5-3, 5-4, 6-1, 6-2, 6-3, 6-4, 7-1, 7-2, 7-3, 8-1, 8-2, 9.01-1, 9.01-2, 9.01-3, 9.02-1, 9.02-2, 10-1, 10-2, 10-3, 10-4, 10-5, 10-6, 11-1, 11-2, 11-3, 11-4, 12.01-1, 12.01-2, 12.01-3, 12.01-4, 12.03-1, 12.03-2, 12.03-3, 12.03-4, 12.04-1, 12.04-2, 12.05-1, 12.05-2, 12.06-1, 12.06-2, 13.01-1, 13.01-2, 13.01-3, 13.01-4,





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13.01-5, 14-1, 14-2, 51-1, 52-1, 52-2, 52-3, 53-1, 53-2, 53-3, 53-4, 53-5, 54-1, 54-2, 54-3, 54-4, 54-5, 54-6, 54-7, 54-8, 55-1, 55-2, 55-3, 55-4, 55-5, 55-6, 55-7, 56-1, 56-2, 56-3, 56-4, 56-5, 57-1, 57-2, 57-3, 57-4, 57-5, 57-6, 58-1, 58-2, 58-3, 58-4, 58-5, 58-6, 59-1, 59-2, 59-3, 50-4, 60-1, 60-1, 60-2

**Last Mile Service Area Name:** UC2B Last Mile 55-6

**Community Name:** Urbana, Illinois

**Rural Classification of the Community:** Non-Rural

**BIP – Service Status:**

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

**BTOP - Service Status:** Underserved

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

The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

**Total Square Miles of Service Area: 11**

**Total Population : 692**

**Total Number of Households: 368**

**Total Number of Businesses: 30**

**Total Number of Critical Community Facilities, Anchor Institutions and Public Safety Entities: 4**

## N. Uploads

In order to improve system performance and help ensure that all applicants are able to complete their applications by the deadline, we have changed the way your application PDF is created.

This PDF contains all of the information you entered throughout the Easygrants data entry screens. PDF copies of all documents that have been uploaded can be viewed and printed separately from the **Main page of the application after you submit**. These will continue to be available to you in read-only format after your application has been submitted.