



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

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| Submitted Date: 3/26/2010 5:57:55 PM | Easygrants ID: 4250 |
| Funding Opportunity: Broadband Technology Opportunities Program | Applicant Organization: DELTA COMMUNICATIONS, L.L.C. |
| Task: Submit Application - BTOP | Applicant Name: Mr. Raymond Lee Cagle |

Table of Contents

- A. General Application Information**
- B. Executive Summary, Project Purpose, and Benefits**
- C. Partners**
- D. Congressional Districts**
- E. Service Area Details**
- F. Community Anchor Summary**
- G. Project Benefits**
- H. Technology**
- I. Project Budget**
- J. Historical Financials**
- K. Project Readiness**
- L. Environmental Questionnaire**
- M. Uploads**



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A. General Application Information

| Applicant Information | |
|--|---|
| Name and Federal ID for Applicant | |
| DUNS Number | 945065498 |
| CCR # (CAGE) | 5KBT0 |
| Legal Business Name | DELTA COMMUNICATIONS, L.L.C. |
| Point of Contact (POC) | RAY CAGLE 6182948026 Ext. rcagle@clearwave.com |
| Alternate POC | SCOTT RIGGS 6182948030 Ext. sriggs@clearwave.com |
| Electronic Business POC | RAY CAGLE 6182948026 Ext. rcagle@clearwave.com |
| Alternate Electronic Business POC | SCOTT RIGGS 6182948030 Ext. sriggs@clearwave.com |

| Name and Contact Information of Person to be Contacted on Matters Involving this Application: | |
|--|--------------|
| Prefix | Mr. |
| First Name | Raymond |
| Middle Name | Lee |
| Last Name | Cagle |
| Suffix | |
| Telephone Number | 618-294-8026 |



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|-------------------|-------------------------|
| Fax Number | 618-969-9820 |
| Email | rcagle@clearwave.com |
| Title | Chief Operating Officer |

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

| Project Role | Name | Phone | Email |
|----------------------------|---------------|------------|----------------------|
| Secondary Point of Contact | Scott , Riggs | 6182948030 | sriggs@clearwave.com |

Environmental Point of Contact

Prefix: Mr.
Name: Cagle, Raymond
Suffix:
Telephone Number: 6182948026
Title: Chief Operating Officer

Organization Classification

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

Authorized Organizational Representative

| | |
|-----------------|------------|
| AOR Name | CAGLE, RAY |
|-----------------|------------|



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|---------------|----------------------|
| Result | Applicant Authorized |
|---------------|----------------------|

Project Title and Project Description

Project Title: Illinois Broadband Opportunities Partnership - Southern

Project Description: The Illinois Broadband Opportunity Partnership – Southern is poised to bring sustainable and high-speed communication services to 23 Illinois counties. The 740.4 mile fiber optic network will interconnect 232 anchor institutions, and provide a private network for an 18-county next generation E911 system. Clearwave's public-private project serves multiple stakeholders and broadband purposes.

CCI Priority Checklist

The following items were selected from the CCI Priority Checklist:

1. This project will deploy Middle Mile broadband infrastructure to community anchor institutions.
2. The project will deploy Middle Mile broadband infrastructure and has incorporated a public-private partnership among government, non-profit and for-profits entities, and other key community stakeholders.
3. This project will deploy Middle Mile broadband infrastructure in economically distressed areas.
4. This project will deploy Middle Mile broadband infrastructure to community colleges.
5. This project will deploy Middle Mile broadband infrastructure to public safety entities.
6. This project will deploy Middle Mile broadband infrastructure and either includes a Last Mile infrastructure component in unserved or underserved areas or has received commitments from one or more Last Mile broadband service providers to utilize the Middle Mile components. Any Last Mile components in rural areas do not exceed 20% of the total eligible costs of the project.
7. This project will deploy Middle Mile broadband infrastructure and the applicant has proposed to contribute 30 percent or more in non-federal cost match.

Comprehensive Community Infrastructure Components

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



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Middle Mile

BIP Applicants

Have you also applied to BIP for funding in the sample proposed funded service area?

- No

If Yes, please provide the project title and Easygrants ID number:

Title of Joint BIP Application:

Easygrants ID:

Other Applications

Is this application being submitted in coordination with any other application being submitted during this round of funding?

- Yes

| Easygrants ID | Project Title |
|----------------------|---|
| 4243 | Illinois Broadband Opportunities Partnership - East Central |

If YES, please explain any synergies and/or dependencies between this project and any other applications.

Illinois Broadband Opportunity Partnership - East Central is part of a statewide coalition poised to bring sustainable and high-speed communication services to all communities across the State of Illinois. These higher-speed services are required to meet a wide range of critical needs, including needs pertaining to education, economic development, healthcare, and public safety. The IBOP partnerships are creating inter-organizational and community partnerships, providing broadband technology assessment and guidance, creating rigorous financial plans, and communicating with core constituencies. The IBOP partnerships will be a catalyst profoundly improving communications for underserved communities throughout Illinois.

One key objective of this initiative will be to implement a statewide core broadband infrastructure, based on optical fiber, that will connect multiple communities in the State in the



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near term. It will also serve as the foundation for additional development and expansion in the future.

Similarly, each of the regions participating in the IBOP partnerships will implement the same core broadband foundation of resources to meet near-term, intermediate-term and long-term needs. Two other IBOP proposals have been submitted by a separate lead entity: IBOP - Northwest, and IBOP - Southern. Additional regional collaborators include SmartChicago, West Central Illinois Next Generation 911 & Community Anchor Middle Mile Network, and Illinois: Cook County & South Suburban Mayors & Managers Association Regionally Connected Consortium.

While each project could operate individually, together they have a far greater impact interconnecting community anchor institutions from all areas of the state. This will have a significant impact upon online learning, health IT, enhanced 911, advanced research, and economic development, and Illinois' ability to implement that National Broadband Plan. These five regional projects will combine to provide fiber to the Illinois Century Network (ICN), the state's education network, and connect the community colleges and public universities to the ICN via fiber. The fiber network will significantly increase the ICN speeds by 16-fold, to 40 Gigabits per second (Gbps) with the capability to expand up to 640 times current capacity, or to 1.6 Terabytes per second (Tbps).

IBOP - East Central is also working with two successful infrastructure projects from Round One – DeKalb Advancement of Technology Authority (DATA) Broadband and Urbana-Champaign Big Broadband (UC2B). The proposed fiber network will interconnect with DATA and UC2B to enable schools, higher education and libraries in these two projects to connect to the Illinois Century Network.

Together, the six projects applying for Round Two funding and the two Round One awardees are expanding the impact of their single project to a statewide effort that will forever change Illinois' schools, colleges, universities, health centers, public safety, and economy.

Individual Background Screening

Is the Applicant exempt from the Department of Commerce requirements regarding individual background screening in connection with any award resulting from this Application?

- No, Applicant is subject to these requirements



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If the answer to the above question is "No," please identify each key individual associated with the Applicant who would be required to complete Form CD-346, "Applicant for Funding Assistance," in connection with any award resulting from this Application:

| Name | Title | Employer |
|------------------|-------------------------|--------------------------|
| Raymond L. Cagle | Chief Operating Officer | Clearwave Communications |

B. Executive Summary, Project Purpose and Benefits

Essay Question

Executive Summary of the proposed project:

Illinois Broadband Opportunities Partnership – Southern

Delta Communications, LLC, dba Clearwave Communications, is a facilities based Competitive Local Exchange Carrier located in rural southern Illinois. We have been providing telecommunications service as well as internet service to southern Illinois since 2002. In February 2010, Clearwave joined the newly-formed Illinois Broadband Opportunities Partnership (IBOP).

Illinois Broadband Opportunity Partnership (IBOP) – Southern is part of a statewide coalition poised to bring sustainable and high-speed communication services to all communities across the State of Illinois. These higher-speed services are required to meet a wide range of critical needs, including needs pertaining to education, economic development, healthcare, and public safety. The IBOP series of partnerships are creating inter-organizational and community partnerships, providing broadband technology assessment and guidance, creating rigorous financial plans, and communicating with core constituencies. The IBOP partnerships will be a catalyst profoundly improving communications for underserved communities throughout Illinois.



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One key objective of this initiative will be to implement a statewide core broadband infrastructure, based on optical fiber, that will connect multiple communities in the State in the near term. It will also serve as the foundation for additional development and expansion in the future.

Similarly, each of the key regions participating in the IBOP series of partnerships will implement the same core broadband foundation of resources to meet near-term, intermediate-term and long-term needs. Four other regional proposals have been submitted by a separate lead entity: IBOP - Northwest, IBOP - Western, and IBOP - East Central, and IBOP - Northeast. A sixth collaborator is the City of Chicago's SmartChicago broadband proposal. The State of Illinois has committed \$11,351,250 of matching funds to the Clearwave application, and is in full support of this partnership as well as Clearwave's BTOP application.

Clearwave's proposed project is a comprehensive community infrastructure fiber optic network covering 23 counties; interconnecting 3 Local Access Transport Areas (LATA); and 33 interconnection points. This portion of Southern Illinois is generally bounded on the north by Interstate 64, on the east by the state of Indiana, on the southeast by the state of Kentucky, and on the southwest by the state of Missouri. The area is predominately rural and the interconnection points are located in 33 communities, ranging in population from less than 1000 to approximately 20,000 (with the exception of one community), of which 20 of the 23 counties in the service area are classified as economically distressed. The communities that our middle mile network will pass through contain approximately 307,136 households and 55,479 businesses.

Because Clearwave is a last-mile service provider, this project will be able to serve multiple purposes and benefit many stakeholders. Critical community organizations, including health care, education, libraries, and public safety will be some of the first to benefit from this network. Our network will be able to address the broadband needs by directly connecting 232 community anchor institutions, including 111 K-12 schools, 9 community colleges, Southern Illinois University, 60 hospitals and public healthcare facilities, 28 PSAPs, and 23 libraries.

We will have an immediate impact on public safety in our service area through a collaborative partnership with the CSI NG 9-1-1 (Counties of Southern Illinois Next Generation 9-1-1). As an example of our commitment to offer broadband access to public safety agencies, we have included in this application funds for an 18-county regional Next Generation 9-1-1 project. These



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funds will enable broadband connectivity for each of the Public Safety Answering Points (PSAPs) in the 18 counties in their project. The grant will also enhance the public safety by providing the broadband access that will facilitate the implementation of the nation's first standards-based Next Generation 9-1-1 (NG 9-1-1) system. In addition to improving access to 9-1-1 for residents in the IBOP - Southern region, the NG 9-1-1 system will enable improved emergency information sharing, and enhanced training, among numerous anchor institutions involved in emergency response (e.g. hospitals; police, fire, and EMS agencies, universities). The Counties of Southern Illinois consortium has committed \$261,261 of matching funds for this portion of the project.

Our service offerings will include high-capacity, symmetrical, point-to-point data as well as Internet services starting at 10 Mbps. Currently, there is limited availability for this type of connectivity in the area, especially inter-LATA connectivity. Where it is available, there is insufficient competition. This lack of competition raises both the wholesale and retail cost for this type of service. Frequently, it is unaffordable for most carriers and end-users. Clearwave commits to follow all of the nondiscrimination obligations of this program.

Public entity pricing (for schools, libraries, public safety, and public healthcare) will be deeply discounted, and available at extremely affordable rates. This pricing takes into consideration that the proposed network is being funded primarily with taxpayer dollars and it is our obligation to give back to our community. The discount that we will offer public entities will be in excess of the 25% that NTIA and RUS recommends from carriers. [REDACTED]

Wholesale point to point and Internet pricing will be available for other carriers, such as Local Exchange Carriers (LECs), Internet Service Providers (ISPs), Wireless Internet Service Providers (WISPs) and Mobile Wireless Carriers in order to connect and provide service to their end users. [REDACTED]

[REDACTED] Pricing will not be distance-sensitive, nor based on which NODE or Connection Point is utilized to provide the connectivity. This will promote the interconnection obligations of this program through agreements with other providers to utilize this carrier class network.



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This project will place 740.4 miles of 96-count fiber cable throughout the project area. The network will conform to SONET and Ethernet standards, with the core network initially operating at both multiple OC48 and multiple 10 Gbps capacity. The primary Internet data source will originate from a carrier hotel in St. Louis, Missouri, and a redundant connection in a carrier hotel in Chicago will be provided through a fiber swap with IBOP - East Central. Both connections will be trunked to Clearwave's proposed office in Marion, Illinois. The proposed design uses a combination of Ethernet (Gigabit-capable), GPON (Gigabit-capable passive optical network) and SONET (DS-3, OC-3, OC-12) services to provide a variety of interconnect options.

Clearwave has demonstrated its ability to implement and operate a broadband infrastructure by its own network build out in southern Illinois as well as our management team's experience with multi-million dollar network build outs at other companies. Clearwave began building its current network in 2002, and has grown to a network that has points of presence in over 20 communities.

The overall infrastructure cost of our project is \$45,395,020. We expect to have enough of the network completed to begin adding subscribers by 2011. Overall expected cumulative subscriber projections are below:

- 2011 – 26
- 2012 – 218
- 2013 – 657
- 2014 – 989
- 2015 – 1319
- 2016 – 1647
- 2017 – 1972
- 2018 – 2296

There have been numerous studies and methodologies for determining the impact of broadband development on employment. We have chosen to use the Council of Economic Advisors' Guide to Job Creation Estimates, per the recommendations of NTIA. Using this, we come up with the following job years created from this project:

- 158 – Direct Job-years
- 157 – Indirect Job-years
- 177 – Induced Job-years



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In summary, Clearwave’s Illinois Broadband Opportunities Partnership – Southern Region proposal will address the lack of affordable broadband in our area that limits economic development, quality of health care, education, and public safety by constructing a 740.4-mile high-capacity fiber network connecting 33 communities in 23 counties.

Project purpose:

Clearwave’s Illinois Broadband Opportunities Partnership (IBOP)- Southern Region middle mile project supports many of the statutory objectives of the BTOP program. Providing improved access to consumers residing in underserved areas, providing access and support to community colleges and institutions of higher learning, improving access to, and use of, broadband service by public safety agencies, public healthcare, and libraries and stimulating economic growth and job creation.

Clearwave is part of a statewide effort called the Illinois Broadband Opportunities Partnership (IBOP). As a partner, Clearwave is applying for funds to build the Southern Illinois Region of the IBOP network. This public/private partnership aims to expand broadband connectivity to K12 schools, higher education, libraries, health care, government, public safety, and other anchor institutions throughout the state. The IBOP partnerships will be a catalyst profoundly improving communications for underserved communities throughout Illinois. One key objective of this initiative will be to implement a statewide core broadband infrastructure, based on optical fiber that will connect multiple communities in the State in the near term. It will also serve as the foundation for additional development and expansion in the future.

The 23 counties that make up the service area of the Southern Region of the IBOP are predominately underserved when it comes to high speed broadband service. The biggest obstacle to expanding broadband to consumers, businesses, and public institutions residing in these rural markets is the lack of affordable high capacity backhaul and high capacity access to the internet. This acutely impacts our educational systems, public safety agencies, health care industry, and economic development. The demand for high capacity bandwidth far exceeds what is available on an affordable basis in this region.

The proposed network will provide improved access to broadband service for consumers residing in underserved markets. Having affordable middle mile access will lower the cost of traditional wireline services such as DSL and T1 and fixed wireless services made available to consumers, and along with a competitive wholesale offering, our project will facilitate the growth of last



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mile projects to reach even more of our unserved population in Southern Illinois. Additionally, our network will be engineered to keep up with the growing demand for available bandwidth, long into the future.

Schools, colleges, libraries, public safety, and public healthcare will be offered deeply discounted pricing, far below what is currently available in the marketplace. The pricing for such organizations takes into consideration that the majority of the proposed network is being funded with taxpayer dollars. The pricing for public entities is designed to create a scenario where the public realizes the maximum benefit for their investment.

Our project includes much needed connectivity for public safety in our region. The National Emergency Number Association (NENA) is preparing a Next Generation National Elements Plan to address compelling public safety needs and related uses for broadband. NENA has identified the Counties of Southern Illinois Next Generation 9-1-1 Association project as a pilot program for how to establish and test next generation 9-1-1 as the basis of such a network in rural America. CSING 9-1-1 is a consortium of 18 Emergency Telephone System Boards which have joined together to perform a major upgrade of emergency communications throughout the region and implement enhanced and next generation 9-1-1 in unserved counties. CSING 9-1-1 has partnered with Clearwave as the provider (pending BTOP funding) for the network connections between Public Safety Answering Points (PSAPs) and database centers.

The IBOP and the CSING 9-1-1 project will receive a great deal of media attention in Southern Illinois. This attention coupled with greater network availability will in turn stimulate demand for broadband as consumers and small businesses see the ways that broadband is being used to improve the lives of people in our area, and the ways that broadband is improving the services that are available from healthcare, education, and public safety.

Having world class bandwidth available in our region will also have a huge impact on economic growth and job creation. Our service area, 23 counties and 33 communities, will now have the selling point of affordable high speed broadband when they are trying to attract businesses to locate in their area. The improvements in healthcare, education, and public safety will also make our communities more attractive for businesses to locate here.

In summary, our proposed plan addresses multiple statutory purposes. We are acutely aware of the lack of affordable bandwidth in the areas we plan to serve, and the network we plan to build



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will solve this problem by providing much needed middle mile fiber transport access, and large amounts of bandwidth to the internet. Our proposal specifically addresses the bandwidth needs of key community assets (schools, medical and healthcare providers, libraries and public safety) and we have a plan to solve those problems. The public safety systems in our area are major components of our proposed network. Lastly, our longtime collaboration with partners such as the Illinois Century Network, Connect SI, Connect Illinois, and others, demonstrates our understanding of the role that broadband plays in our community. With increased availability and reduced costs for connectivity, we are certain that the region we service can see substantial economic growth. The area is rich in the assets necessary for growth such as education, healthcare, transportation, human resources, agriculture, and energy. Broadband is a vital ingredient necessary for this region to prosper.

Recovery Act and Other Governmental Collaboration:

Clearwave will leverage other federal programs and ARRA funds by collaborating with Illinois Broadband Opportunity Partnership (IBOP) - East Central. IBOP is a statewide coalition poised to bring sustainable and high-speed communication services to all communities across the State of Illinois. These higher-speed services are required to meet a wide range of critical needs, including needs pertaining to education, economic development, healthcare, and public safety. The IBOP partnerships will be a catalyst profoundly improving communications for underserved communities throughout Illinois. Similarly, each of the regions participating in the IBOP partnerships will implement the same core broadband foundation of resources to meet near-term, intermediate-term and long-term needs. One other IBOP proposal has been submitted by a separate lead entity: IBOP - Northwest. Additional regional collaborators include SmartChicago, West Central Illinois Next Generation 911 & Community Anchor Middle Mile Network, and Illinois: Cook County & South Suburban Mayors & Managers Association Regionally Connected Consortium. The Clearwave network will interconnect with IBOP – East Central at three of their S. IL POPs in Carbondale, Olney, and Collinsville. Clearwave has agreed to supply IBOP – East Central with dark fiber to all of the colleges in our region to connect these institutions with high capacity transport to IBOP – East Central.

The National Emergency Number Association (NENA) is preparing a Next Generation National Elements Plan and is also applying for BTOP funds to address compelling public safety needs and related uses for broadband. As part of this initiative, Clearwave has partnered with the Counties of Southern Illinois (CSI) for an 18 county regional Next Generation 911 project. Funds are being requested in this application to enable connectivity to broadband for each of the



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Public Safety Answering Points (PSAPs) in the CSI. The grant will also enhance the 911 system by (1) connecting each of the CSI PSAPs on a private and secure Emergency Services IP network (ESInet), and (2) facilitating the implementation of the nation’s first standards-based Next Generation 911 (NG911) system. The NG911 system will enable improved emergency information sharing, and enhanced training, among numerous anchor institutions involved in emergency response (e.g. hospitals; police, fire, and EMS agencies, universities).

Clearwave has been in contact and had meetings with the Illinois Department of Transportation (IDOT) to open up a line of communication to coordinate construction activities with the goal of conserving resources during the construction of the network and future expansion projects. IDOT has agreed to cooperate by working the Clearwave to help secure the necessary right-of-ways needed to construct the proposed network to speed up construction. A letter of support from IDOT is included in our Supplemental Attachments.

Fit with BTOP CCI Priorities:

1. This project will deploy Middle Mile broadband infrastructure to community anchor institutions.

Within the scope of the proposed CCI project, Clearwave has identified 232 key community institutions within the underserved areas of Southern Illinois, to include community colleges, schools, libraries, public safety, and public healthcare organizations. As part of the initial construction of the network Clearwave proposes to build last mile connectivity to all of these institutions. Funded by the revenue from the initial anchor institutions, Clearwave will continue to build fiber to other remaining anchor institutions to further expand the coverage of the network.

2. This project will deploy Middle Mile broadband infrastructure and has incorporated a public-private partnership among government non-profit entities, and other key community stakeholders.

A key component to the Clearwave application is the public/private partnership with the CSI NG911 group (Counties of Southern Illinois Next Generation 911). The proposed network will connect 28 PSAPs (Public Safety Answering Points) as part of the consortium of 18 Emergency Telephone System Boards. This initiative is part of the National Emergency Number Association’s (NENA) Next Generation National Elements Plan to address compelling public



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safety needs and related uses for broadband. NENA has identified the Counties of Southern Illinois Next Generation 9-1-1 Association project as a pilot program for how to establish and test NG 9-1-1 as the basis of such a network in rural America.

We are also part of a private/public partnership called The Illinois Broadband Opportunities Partnership (IBOP). IBOP is a state-wide coalition that was established to ensure that all communities in the State have access to affordable and sustainable communication services required to meet a wide range of critical needs, including those related to education, economic development, health care, public safety, and quality of life. To obtain these objectives, this partnership is engaged in multiple forward looking activities focused on developing policy, creating inter organizational and community partnerships, providing broadband technology assessment and guidance, creating rigorous financial plans, and communicating with constituencies. To continue to progress in these areas, the Illinois partnership has developed this proposal in response to the opportunity made possible by American Recovery and Reinvestment Act Broadband Stimulus Funds program. This proposed initiative will be a catalyst that will allow the Illinois partnership to profoundly improve communications for underserved communities throughout the State. One key objective of this initiative will be to implement a State-wide core broadband foundation, based on optical fiber, that will connect multiple communities in the State in the near term and that will be used for additional development and expansion in the future. Similarly, each of the key regions participating in the Illinois partnership will implement core broadband foundation resources to meet near and long term needs.

3. This project will deploy Middle Mile broadband infrastructure in economically distressed areas.

The proposed project will bring much needed backhaul and internet connectivity to 33 communities in Southern Illinois. Of the 23 counties the network will reside in, 20 are considered economically distressed by the U.S. Department of Transportation/ Federal Highway Administration’s “Planning, Environment, Realty” HEPGIS map.

4. This project will deploy Middle Mile infrastructure to Community Colleges.

This project will provide infrastructure to the following Community Colleges:



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John A. Logan College
Shawnee Community College
Southeastern Illinois Community College
Frontier Community College
Olney Central College
Wabash Valley College
Rend Lake Community College
Southwestern Illinois College
Kaskaskia College

5. This project will deploy Middle Mile broadband infrastructure to public safety entities.

A key component to the Clearwave application is the public/private partnership with the CSI NG911 group (Counties of Southern Illinois Next Generation 911). The proposed network will connect 28 PSAPs (Public Safety Answering Points) as part of the consortium of 18 Emergency Telephone System Boards. This initiative is part of the National Emergency Number Association's (NENA) Next Generation National Elements Plan to address compelling public safety needs and related uses for broadband. NENA has identified the Counties of Southern Illinois Next Generation 9-1-1 Association project as a pilot program for how to establish and test NG 9-1-1 as the basis of such a network in rural America.

6. This project will deploy Middle Mile broadband infrastructure and either includes a Last Mile infrastructure component in unserved or underserved areas or has received commitments from one or more Last Mile broadband service providers to utilize the Middle Mile Components. Any Last Mile components in rural areas do not exceed 20% of the total eligible costs of the project.

Clearwave provides last mile service in the areas covered by this Middle Mile Project. Clearwave also has commitments from the following last mile service providers to utilize our Middle Mile Components:

Clearwave Communications
EDT Specialist
Comnet US
Maximum Broadband



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| | |
|--|--|
| Submitted Date: 3/26/2010 5:57:55 PM | Easygrants ID: 4250 |
| Funding Opportunity: Broadband Technology Opportunities Program | Applicant Organization: DELTA COMMUNICATIONS, L.L.C. |
| Task: Submit Application - BTOP | Applicant Name: Mr. Raymond Lee Cagle |

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

As part of the Illinois Broadband Opportunity Partnership we have received a matching commitment of \$11,351,250 from the State of Illinois through the Department of Commerce and Economic Opportunity (DCEO). We have \$261,261 matching funds from CSI NG911. We have outside investors that will provide \$2,267,256 in matching funds.

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

- No

Is the applicant delinquent on any federal debt?

- No

If Yes, justification for delinquency:

Are you seeking a waiver of any requirement set forth in the NOFA that is not mandated by statute or applicable law?

- No

Is the applicant a current recipient of a grant or loan from RUS?

- No

C. Partners

Are you partnering with any other key institutions, organizations, or other entities for this project?

- Yes

If YES, key partners are listed below:

| |
|---|
| Project Role: Other Name: Lustig, Pat Phone: 6189886911 Email: plustig@jc911.org Address 1: 300 North Park Avenue Address 2: Address 3: |
|---|



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City: Herrin
State: Illinois
Zip Code: 62948
Organization: CSI 9-1-1 LLC
Organization Type: Non-profit Association
Small business: No
Socially and economically disadvantaged small business concern: No

Project Role: Other
Name: Sorenson, Lori
Phone: 2175576565
Email: lori.sorenson@illinois.gov
Address 1: 120 West Jefferson St.
Address 2:
Address 3:
City: Springfield
State: Illinois
Zip Code: 62702-5103
Organization: Illinois Broadband Opportunities Partnership - East Central
Organization Type: State or State Agency
Small business: No
Socially and economically disadvantaged small business concern: No

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

Clearwave has partnered with the Counties of Southern Illinois 9-1-1 (CSI 911). CSI 911 is an association of 18 counties in southern Illinois, that is working to provide Next Generation 9-1-1-equipment and services. Clearwave is committed to offering new or substantially upgraded service to community anchor institutions and to serving public safety entities that have indicated a need for access or improved access to broadband service. Demonstrating our commitment to offer broadband access to public safety agencies, included in the application are funds for an 18 county regional Next Generation 9-1-1 project. Specifically, funds are requested to enable connectivity to broadband for each of the Public Safety Answering Points (PSAPs) in the Counties of Southern Illinois (CSI). The grant will also enhance the broadband connectivity provided by Clearwave by (1) connecting each of the CSI PSAPs on a private and secure Emergency Services IP network (ESInet), (2) interconnecting the CSI network to the Indiana statewide wireless 9-1-1 network enabling a multistate regional project that connects multiple PSAPs, and (3) facilitating the implementation of the nation’s first standards-based Next



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Generation 9-1-1 (NG9-1-1) system. In addition to improving access to 9-1-1 for residents in the CSI region, the NG9-1-1 system will enable improved emergency information sharing, and enhanced training, among numerous anchor institutions involved in emergency response (e.g. hospitals; police, fire, and EMS agencies, universities). For their part, CSI 911 is providing \$261,261 in matching funds toward the project.

Illinois Broadband Opportunity Partnership (IBOP)- East Central is part of a statewide coalition poised to bring sustainable and high-speed communication services to all communities across the State of Illinois. These higher-speed services are required to meet a wide range of critical needs, including needs pertaining to education, economic development, healthcare, and public safety. The IBOP partnerships are creating inter-organizational and community partnerships, providing broadband technology assessment and guidance, creating rigorous financial plans, and communicating with core constituencies. The IBOP partnerships will be a catalyst profoundly improving communications for underserved communities throughout Illinois.

One key objective of this initiative will be to implement a statewide core broadband infrastructure, based on optical fiber, that will connect multiple communities in the State in the near term. It will also serve as the foundation for additional development and expansion in the future.

Similarly, each of the regions participating in the IBOP partnerships will implement the same core broadband foundation of resources to meet near-term, intermediate-term and long-term needs. Two other IBOP proposals have been submitted by a separate lead entity: IBOP - Northwest, and IBOP - Southern. Additional regional collaborators include SmartChicago, West Central Illinois Next Generation 911 & Community Anchor Middle Mile Network, and Illinois: Cook County & South Suburban Mayors & Managers Association Regionally Connected Consortium.

While each project could operate individually, together they have a far greater impact interconnecting community anchor institutions from all areas of the state. This will have a significant impact upon online learning, health IT, enhanced 911, advanced research, and economic development, and Illinois' ability to implement that National Broadband Plan. These five regional projects will combine to provide fiber to the Illinois Century Network (ICN), the state's education network, and connect the community colleges and public universities to the ICN via fiber. The fiber network will significantly increase the ICN speeds by 16-fold, to 40



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Gigabits per second (Gbps) with the capability to expand up to 640 times current capacity, or to 1.6 Terabytes per second (Tbps).

IBOP - East Central is also working with two successful infrastructure projects from Round One – DeKalb Advancement of Technology Authority (DATA) Broadband and Urbana-Champaign Big Broadband (UC2B). The proposed fiber network will interconnect with DATA and UC2B to enable schools, higher education and libraries in these two projects to connect to the Illinois Century Network.

Together, the six projects applying for Round Two funding and the two Round One awardees are expanding the impact of their single project to a statewide effort that will forever change Illinois' schools, colleges, universities, health centers, public safety, and economy.

D. Congressional Districts

Applicant Headquarters

- Illinois

Project Service States

Illinois

Project Service Areas

Illinois - 1

Illinois - 12

Illinois - 15

Illinois - 19

Will any portion of your proposed project serve federally recognized tribal entities?



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➤ No

Indicate each federally recognized tribal entity your proposed project will serve.

Have you consulted with each of the federally recognized tribal entities identified above?

➤ No

E. Service Area Details

Is the applicant seeking a waiver for providing less than 100% coverage of a service area?

➤ No

Project Details

Service Area Type: Middle Mile
Service Area Name: Illinois Broadband Opportunities Partnership - Southern Region
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

| |
|--|
| <p>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.</p> |
|--|

Total Square Miles in Service Area: 10,026
Total Population in Proposed Service Area: 785,552
Total Number of Households in Service Area: 307,136
Total Number of Businesses in Service Area: 55,479
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 731
Unemployment Rate in the Service Area: 13
Median Income in the Service Area: 40,207
Estimated Percentage of Households with Access to Broadband: 73
Estimated Percentage of Households Subscribing to Broadband: 36



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F. Community Anchor Summary

| Community Anchor Summary | |
|---|------------|
| Schools (k-12) | 111 |
| Libraries | 23 |
| Medical and Healthcare Providers | 60 |
| Public Safety Entities | 28 |
| Community Colleges | 9 |
| Public Housing | 0 |
| Other Institutions of Higher Education | 1 |
| Other Community Support Organization | 0 |
| Other Government Facilities | 0 |
| TOTAL COMMUNITY ANCHOR INSTITUTIONS | 232 |
| | |
| Historically Black colleges and Universities | 0 |
| Tribal Colleges and Universities | 0 |
| Alaska Native Serving Institutions | 0 |
| Hispanic Serving Institutions | 0 |



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| | |
|---|---|
| Native Hawaiian Serving Institutions | 0 |
| TOTAL MINORITY SERVING INSTITUTIONS | 0 |

G. Project Benefits

Demographics

| Jobs | |
|--|-----|
| How many direct jobs-years will be created from this project? | 158 |
| How many indirect jobs will be created from this project? | 157 |
| How many jobs will be induced from this project? | 177 |

Methodology used to estimate jobs:

The estimates were calculated using the Council Of Economic Adviser’s Guide to job creation estimates.

Project Impact:

Clearwave’s Middle Mile Project represents the Southern Region of the Illinois Broadband Opportunities Partnership (IBOP). IBOP is a state-wide coalition that was established to ensure that all communities in the State have access to affordable and sustainable communication services required to meet a wide range of critical needs, including those related to education, economic development, health care, public safety, and quality of life. This proposed initiative will be a catalyst that will allow the Illinois partnership to profoundly improve communications for underserved communities throughout the State. One key objective of this initiative will be to implement a State-wide core broadband foundation, based on optical fiber, that will connect multiple communities in the State in the near term and that will be used for additional development and expansion in the future. This Public/Private partnership will impact our community anchor institutions, last mile service providers, and the business community.

Community Anchor Institutions:

Clearwave has been working with many community anchor institutions as we have developed our plan. We will directly connect with 232 of these institutions during our construction. We have letters of support from many of these institutions indicating their desire to utilize the bandwidth that this project will bring.



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Southern Illinois University (SIU) in Carbondale, Illinois is a community anchor institution that will be impacted by this project. SIU is a major research University with an enrollment of over 20,000 students. Because of the existing lack of bandwidth in our region SIU is restricted to [REDACTED] bandwidth. This bandwidth is insufficient for their needs and makes them uncompetitive with their peer universities. This project eliminates this problem and will allow them to increase their bandwidth to [REDACTED] for little if any increase in their current cost. This will have a significant impact on their missions of teaching, research, and service technology. The impact will go beyond the walls of the University and will have a ripple effect in our region since SIU is the largest employer in this area.

The community colleges and K-12 schools in our region experience similar limitations and struggles to keep up with the demand for bandwidth. Our project will connect directly to 9 community colleges. These institutions are: John A. Logan College in Carterville, Shawnee Community College in Ullin, Southeastern Illinois Community College in Harrisburg, Southwestern Illinois College in Belleville, Frontier Community College in Fairfield, Olney Central College in Olney, Wabash Valley College in Mt. Carmel, Kaskaskia College in Centralia, and Rend Lake Community College in Ina. These community colleges provide an important education option that supports the economic development of our region. This project will impact their ability to increase the connectivity with students within and outside of their specific districts. It will allow them to grow their distance learning initiatives in a way that is not possible with the current level of bandwidth that is available today. This will also impact their ability to connect with other learning institutions throughout our region that will further enhance their ability to provide the best possible education to their students. Helping these community colleges will also have a positive impact on our local economies because we will be creating a more educated and trained workforce. We will also connect to 111 K-12 Schools which are listed in the community anchor institution attachment. These schools are in need of additional internet bandwidth and also connectivity to community colleges and universities to facilitate a more collaborative learning environment for students in our 33 community area.

Healthcare is another sector that is negatively affected by the lack of bandwidth in our region. We plan on immediately connecting to 60 of these institutions. Clearwave is currently working with Health Care Providers in Southern Illinois to develop a plan to connect Health Care facilities to our network so that the Health Care facilities can implement HIE (Health Information Exchange). The impact of our competitively priced and increasingly accessible fiber network would be to reduce barriers to Electronic Health Exchange and Electronic Medical



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Record adoption. Additionally, this improved network would simplify health information access and communication among providers and clinicians. The envisioned Health information Exchange will serve as a central data repository that enables providers to securely exchange patient data across a region with other healthcare organizations. Through the implementation of this HIE, the region's health care providers will: 1) improve patient safety, quality of care, efficiency of workflow and more; 2) facilitate a closed-loop referral management across the entire community; and 3) enable participation in state, and national health information networks.

Another group of Community Anchor Institutions that we will connect to immediately is 23 public libraries. The impact that improved connectivity to these libraries is significant. Thousands of the residents in our region rely on the public library for access to online opportunities that might otherwise be out of reach to them due to lack of available connectivity where they live or economic reasons. For many, the public library represents the only place where people can go within the community to get free access to the internet. Although most of the libraries are connected to the internet, many are finding their connections insufficient to meet their patron's demands for bandwidth. This project will solve the lack of affordable bandwidth for these libraries.

We will also have an immediate impact on public safety in southern Illinois. Through our partnership with the Counties of Southern Illinois 9-1-1 Association (CSI 9-1-1) we will connect 28 Public Safety Answering Points (PSAPs) in an 18 county region. CSI 9-1-1 is part of a nationwide pilot program through NENA to develop a Next Generation 911 (NG911) network. Clearwave's Middle Mile Project will provide the connectivity needed to make possible this NG911 project that will connect these 28 PSAPs allowing for voice, video, and data/text 911 communications. This will allow for 911 communications support, improved interoperability, and location-specific emergency alerts. The bandwidth needs of the CSI 9-1-1 NG911 project cannot be met with what is currently available. Our project will also bring connectivity to three counties that do not currently have even traditional 9-1-1 service.

Last Mile Service Providers:

Clearwave is a last mile service provider in the region and will utilize the middle mile infrastructure to enhance our service offerings. The impact on our last mile business is that it will greatly lower our backhaul costs as well as our cost to connect to the internet. Having a fiber backbone that we own instead of lease will also help secure our bandwidth needs for many years to come.



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Because of the attractive wholesale rates that Clearwave will establish, we anticipate several last mile service providers will utilize our network. Our rates will represent a significant savings to their current costs. Service providers that have expressed an interest in utilizing this network include: EDT Specialist, Comnet US, and Maximum Broadband.

Business Community:

The Southern Illinois Middle Mile Project will also have a positive impact on the business community in our region. Clearwave currently serves over 1100 business accounts that have broadband connections ranging from DSL to multiple T-1s. We are seeing a growing need for more and more bandwidth from commercial accounts. We see an increasing number of inquiries into fiber to the business projects. One limiting factor in some of these projects is the high cost of backhaul and bandwidth in our area. This project will greatly reduce the cost of backhaul and bandwidth, thus lowering the cost that local businesses will have to pay for the connectivity they need.

Having affordable bandwidth available in southern Illinois will also have the impact of drawing more businesses to the area. The current level and pricing of bandwidth in our region is an impediment to many businesses to even consider our region for potential new locations. With unemployment in southern Illinois reaching 13%, having the ability to draw new businesses to the area will have an impact on the economic development of our region.

Vulnerable Populations:

Currently no vulnerable populations exist in the proposed service areas.

Level of Need:

The 23 counties that make up the service area of our Illinois Broadband Opportunities Partnership - Southern Region Project are underserved when it comes to high speed broadband service. The biggest obstacle to expanding broadband to consumers, businesses, and public institutions residing in these rural markets is the lack of affordable high capacity backhaul and high capacity access to the internet. This acutely impacts our educational systems, health care industry, public safety agencies and economic development. In general, the need for high capacity bandwidth far exceeds what is available on an affordable basis in this region, a problem that will be getting exponentially more critical as time passes.



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The lack of affordable broadband in our region stems from the lack of competition. Increased competition is beneficial because it gives consumers wider choices and provides sellers with stronger incentives to minimize costs, therefore eliminating waste and creating greater efficiencies. Competition increases the likelihood that cost savings resulting from efficiency gains will be passed on to a firm's customers, who may be either final consumers or other firms (in which case costs of those firms are also lowered). Thus, the importance of competition for achieving a higher rate of innovation and adoption of new technologies over time is critical for sustaining and fostering broadband availability in rural Southern Illinois.

Rural markets, such as in Southern Illinois tend to be more, rather than less vulnerable to anticompetitive practices than more developed areas. The reasons include: (a) high entry barriers for facilities based competitive service providers due to high costs associated with constructing network infrastructure and (b) a greater proportion of smaller, sparsely populated markets vertically controlled by long incumbent providers such as ILECs and Cable providers, and the challenges for smaller competitive firms to achieve a return on investment (ROI) in these markets.

Clearwave has been a leader in broadband development in the region for many years, and understands the needs of the community and of the anchor institutions. If it were at all possible to build the proposed network prior to the announcement of the ARRA, Clearwave would have already done so. It has been its long standing opinion that the only way this problem would be solved is through government intervention through a program such as BTOP.

Existing service providers:

Currently, high capacity connectivity to the internet is available from Tier 1 providers, but only in a limited number of POPs within the region, and with limits to the amount of bandwidth available from any one provider being limited to OC-48 (2.4Gbps) or less. Additionally, there are only two providers offering high capacity fiber transport in the region, neither of which are a Tier 1 provider, and both providers' networks are limited to a small geographic portion of the region of the proposed network, making it nearly impossible to distribute large amounts of bandwidth away from the core of the network and into the remote areas of the region. Additionally, the cost for leasing access to these fiber networks is cost prohibitive. Subsequently, for our transport needs Clearwave is forced to subscribe to costly and limited capability ILEC provided DS-3 services for transport to the majority of its POPs. Currently, the ILEC Verizon



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does not offer dark fiber, fiber to the premise, or high capacity transport over fiber between locations. Clearwave and other ISPs in the region are forced to work with the limited options available in order to attempt to make their business plans successful and meet the needs of their customers.

Utilizing existing service providers to build the proposed network would be cost prohibitive even if the bandwidth did exist, or the providers upgraded their networks to increase capacity. Based on our current costs per megabit with the incumbent carrier and other transport providers the cost to lease just one 10 Gbps connection between each of the 33 nodes in the proposed project would be in excess of \$4,000,000 per month. The proposed network calls for three to six 10 Gbps wavelength between nodes. At this network capacity the monthly cost to lease this service would be in excess of \$10,000,000. With a project cost of \$45,395,020 the payback would be conservatively less than 2 years even with reduced capacity.

Having access to affordable fiber services and purchasing bandwidth directly from Tier 1 provider at a major internet hub such as St. Louis, Missouri or Chicago, IL, is the only way for Clearwave to continue to expand upon its footprint and to keep up with the growing demand for high capacity broadband in the region, while keeping its operating costs in line.

Clearwave continues to search for new alternatives to meet the needs of our infrastructure, to include trying to arrange financing to build our own fiber transport. All such attempts have met with failure as securing the necessary financing to build a fiber network has been impossible. We are forced to continue to operate with limited options from our incumbent providers. The key factor for not being able to sustain the network using existing provider is the high market prices for bandwidth and transport caused by lack of competition in the region.

Served vs. Unserved/Underserved:

Data from the Current Population Survey (October 2007), prepared by the United States Bureau of Census, indicated that rural Illinois households had an average Broadband Subscribership rate of only 34.57%. This is less than the 40% threshold set in the BTOP application documentation



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and therefore indicates that rural Illinois communities are underserved as per the ARRA definition. Due to the fact that the lowest speed considered as broadband in 2007 was 200 kbps, it can be reasonably projected that if the new broadband minimum broadband definition of 768 kbps is applied, the actual Broadband Subscribership percentage for rural Illinois would be much lower, thereby more firmly establishing the underserved nature of these communities.

We also used the latest published FCC 477 data to confirm our area status as underserved. Using the Residential Fixed High-Speed Connections per 1000 Households (BTOP/BIP Definition) data, we used the mid range number. For example if the range was 200 to 400 per 1000, we used 300. Using this methodology for the counties of our service area we have a subscription rate of 36%.

We further confirm our designation as underserved by the letters we have received from our anchor institutions. In particular Southern Illinois University and our community colleges all reference the lack of affordable pricing for adequate bandwidth speeds. Our Public Safety agencies also document the lack of connectivity in their letters of support.

General Economic Conditions:

In general the economy of Southern Illinois, where the proposed network will reside, can be classified as distressed. The economy is predominantly rural with primary industries being agriculture; coal mining; healthcare and social services; and government employers. The economy in Southern Illinois has dramatically declined over the past 18 months due to the recession and the fiscal crisis at the State of Illinois. All but 3 of the 23 counties that the network will connect are considered “distressed” by the U.S. Department of Transportation/Federal Highway Administration. And as of December 2009 the 23 counties included in the proposal have an average unemployment rate of 13%. (Source: Illinois Department of Employment Security, Economic Information and Analysis)

Solving the problem:

Clearwave’s Illinois Broadband Opportunities Partnership - Southern Region project will address the lack of affordable broadband in our area that limits economic development, quality of health care, education, and public safety by constructing a 740.4 mile High Capacity Fiber Network



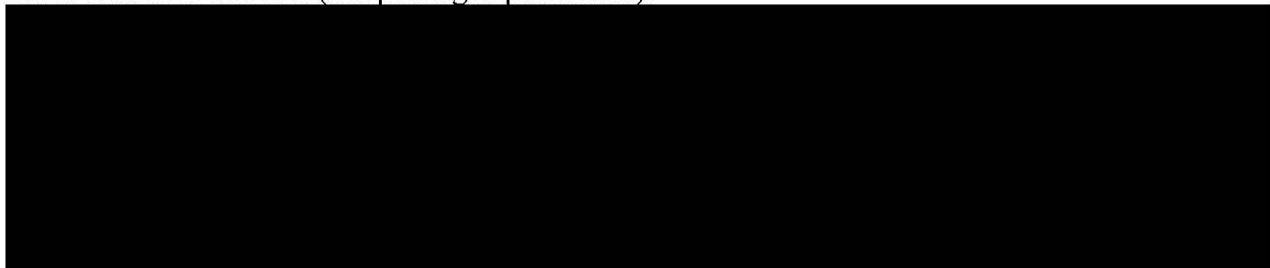
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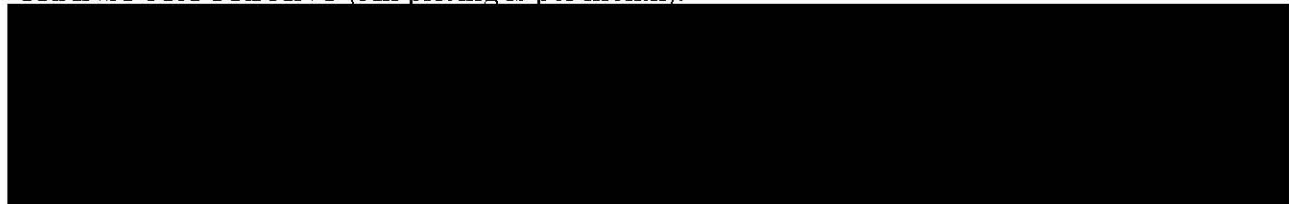
connecting 33 communities in 23 counties. The Illinois Broadband Opportunities Partnership - Southern Region will provide improved access to broadband service for consumers residing in underserved markets. Having affordable middle mile access will lower the cost of high capacity fiber to the premise services, as well as traditional wire line services such as T1 or DSL, and Fixed Wireless services, and create opportunities for other technologies such as Mid-band Ethernet services to be deployed. Additionally, with development of a competitive wholesale offering, Clearwave’s project will facilitate the growth of last mile projects by third party providers to reach even more of our unserved population in Southern Illinois. Finally, our network will be engineered to keep up with the growing demand for available bandwidth, long into the future.

Due to the limited availability of fiber transport and connectivity to the internet, current pricing for both internet and point to point data services is prohibitive for service providers and end users alike.

INTERNET PRICING (All pricing is per month):



TRANSPORT PRICING (All pricing is per month):



WHOLESALE PRICING (All pricing is per month):





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Summary:

In summary, the lack of existing infrastructure to support high capacity data services, and the high cost of the existing lower capacity services do not allow the bandwidth needs of the service area to be met. Dark fiber is either not available in the service area or is cost prohibitive to purchase. A new fiber network utilizing equipment capable of offering and transporting high bandwidth services must be built. Attempting to make use of existing service provider networks for any portion of the project would drive up end user costs and limit bandwidth available to each customer.

H. Technology

Technology Type

Indicate the technology that will be used to deliver last mile services. The following items were selected:

Wireline - Fiber-optic Cable

Other:

Technology Questions

Methodology for Area Status:

Data from the Current Population Survey (October 2007), prepared by the United States Bureau of Census, indicated that rural Illinois households had an average Broadband Subscribership rate of only 34.57%. This is less than the 40% threshold set in the BTOP application documentation and therefore indicates that rural Illinois communities are underserved as per the ARRA definition. Due to the fact that the lowest speed considered as broadband in 2007 was 200 kbps, it can be reasonably projected that if the new broadband minimum broadband definition of 768 kbps is applied, the actual Broadband Subscribership percentage for rural Illinois would be much lower, thereby more firmly establishing the underserved nature of these communities.



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Description of Network Openness:

Network Openness: Delta Communications, LLC dba Clearwave Communications hereafter referred to as ("Clearwave") to customers/users of the Clearwave Internet Service ("Service") and/or the Clearwave Network.

1. **ILLEGAL USE:** Users may use the Service and the Clearwave Network only for lawful purposes. Transmission, distribution or storage of any material in violation of any law or regulation is prohibited. This includes, without limitation, material protected by copyright, trademark, trade secret or intellectual property right used without proper authorization, and material that is obscene, defamatory, constitutes an illegal threat or violates export control laws.

2. **NETWORK:** Clearwave Communications will not favor any lawful Internet applications or content over others, which ensures neutral traffic routing.

a) Clearwave will not give preferential treatment to affiliated services, or charge some application and content providers for "fast lanes" that would put others at a competitive disadvantage.

b) Clearwave acknowledges that this applies only to Internet applications and content, that is, those that transverse the public network. Clearwave will offer, if requested, managed services such as telemedicine, public safety i.e. 911 communications, and distance learning, which use private connections or virtual private networks, rather than the public Internet.

c) Clearwave will display its network management policies in a prominent location on the service providers Web page and provide notice to customers of changes to these policies

d) The user undertakes to conform to the Internet protocols and standards.



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

| | |
|--|---|
| Submitted Date: 3/26/2010 5:57:55 PM | Easygrants ID: 4250 |
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e) The user may not circumvent user authentication or security of any host, network, or account (referred to as "cracking" or "hacking"), nor interfere with service to any user, host, or network (referred to as "denial of service attacks").

f) The user may not use application that overloads the Clearwave Network by whatever means. Use of IP multicast other than by means provided and coordinated by Clearwave is likewise prohibited.

g) Users who violate systems or network security may incur criminal or civil liability. Clearwave will fully co-operate with investigations of suspected criminal violations, violation of systems or network security under the leadership of the police, relevant authorities, etc.

h) Clearwave agrees to offer to the public, interconnection to the Network and/or Internet, where technically feasible without exceeding the current or reasonably anticipated capacity limitations, on reasonable rates and terms to be negotiated with requesting parties.

3. SYSTEMS AND NETWORK SECURITY: Violations of system or network security are prohibited, and may result in criminal and civil liability. Clearwave will investigate incidents involving such violations and will involve and co-operate with the police, relevant authorities, etc. if a criminal violation is suspected.

This policy can be found posted at clearwave.com

System Design:

PROPOSED NETWORK

OVERVIEW: With this BTOP 'middle mile' application, Clearwave Communications plans to replace and expand its existing network with a modern broadband network. The backbone portion of the proposed network will consist of 664.8 miles of 96-fiber cable, and will expand Clearwave's local presence from the existing 21 communities to 31. The distribution portion of the proposed network includes 75.6 miles of fiber cable to serve a select group of 232 community anchor institutions. The initial group of anchor institutions includes local schools, libraries, colleges, hospitals, and a major enhancement and expansion of the area's E911 system. Additional communities served by the proposed network expansion include: Albion, Belleville, Cairo, Christopher, Fairfield, Flora, McLeansboro, Mount Carmel, Nashville, and Ullin. The expansion will increase Clearwave's footprint to cover a population of approximately 785,552 and pass 307,136 households and 55,479 businesses.



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The network is designed to be a fully redundant ring network. The network will primarily be a Dense Wavelength Division Multiplexing (DWDM) network and will conform to SONET and Ethernet standards, with wavelengths of the main rings operating at a 2 x 10 Gbps Ethernet and 4 x OC48 level. The spurs or outlying legs will operate initially at a 10 Gbps Ethernet and 1 x OC-48 level. The primary internet data source will originate from a POP in St. Louis, Missouri, and will be trunked to Clearwave's proposed office in Marion, Illinois. While the proposed network will allow Clearwave to provide area public institutions with a quality, affordable, and expandable communication/data system, the robust nature of the network will also provide private entities the reliability they require and the capability they would expect only in much larger, more urban areas.

KEY PROPOSED NETWORK COMPONENTS/ CONNECTIVITY

INTERNET SOURCE: The internet source for this project will be at a carrier hotel at 900 Walnut Street, St. Louis, Missouri. Clearwave will purchase a 96 count fiber facility from this point to an interconnect point across the Mississippi River in East St Louis. Additional internet interconnection point will be established in Chicago, Illinois.

NETWORK ACCESS/TRANSPORT EQUIPMENT (INSIDE PLANT): Network access equipment will be located in collocation areas at 33 network nodes and at the proposed switching office in Marion, Illinois. Typical equipment at the nodes will include framing, shelving, chassis, transport and access cards, cabling, etc.

OUTSIDE PLANT EQUIPMENT: This project places 740.4 miles of 96-fiber cable throughout the project area. For network reliability, plans call for the fiber to be buried, and placed along public rights of way. Burying the fiber will require a combination of plowing, trenching, and boring. To facilitate future network expansion, a duct will be placed in the trench alongside the cable in areas of extreme placement conditions, such as very rocky areas. To allow for easy access, standard hand-holes will be placed along the route at predetermined locations.

LAND AND BUILDINGS: This project requires that a building to house switching and circuit equipment be located in the vicinity of the Marion, Illinois industrial park. To satisfy this need, Clearwave will purchase a building and renovate it to meet their needs.



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| | |
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CUSTOMER PREMISE EQUIPMENT: Along with the placement of the backbone middle mile network, Clearwave Communications will also place distribution fiber to all of the 232 anchor institutions identified in the plan. Where this occurs, Clearwave will place the equipment and installation required to terminate and extract the bandwidth and associated data desired by the customer.

ADVANTAGES OF NETWORK AS DESIGNED

This project is being constructed to provide a modern, reliable, bandwidth rich network to serve a region where nearly 75% of the service area is classified as rural, is underserved from a bandwidth perspective, but has tremendous potential for growth. Extensive planning by Clearwave's Network Management Team and various vendors has ensured that the design of the proposed network is tailored to fit the present and future needs of the southern Illinois region.

The proposed design is a combination of 10 Gbps Ethernet and SONET technologies. Leveraging existing collocation space and shelving placed in previous projects, Clearwave will initially install minimal amounts of each type of equipment in nodes as required, tailoring the network to the needs of its customers. This approach, coupled with close monitoring of customer requirements, will allow Clearwave to efficiently increase network capacity as demand grows and take advantage of new technology as it develops. The benefit of a fiber facility is that future needs can be addressed solely with equipment additions and enhancements.

Speed – Initial service offerings will be 10 Mbps to 1 Gbps with 10Gbps available in all areas if required by end users. Total aggregate network capacity of the central rings will be 8 x OC48 for SONET traffic (DSL, T1, DS3, OC3, etc) and 80 Gbps for Ethernet traffic (GPON and Dedicated Ethernet). Network Capacity on the outlying spurs will be a minimum of OC48 for the SONET traffic and 10 Gbps for the Ethernet Traffic. This will allow for Gigabit connectivity at any point on the network and up to 10 Gbps connectivity on the main rings with outlying areas easily upgradeable to support end user 10 Gbps connections with the addition of cards. Capacity across the network will be upgradeable with the addition of 10GE transport cards for up to 400 Gbps per each 2 fibers. The total capacity of the network with using just half of the available fibers (48) will be 9600 Gbps. As new DWDM transport cards are released, the addition to the system of faster 40 Gbps and 100 Gbps cards will allow the capacity of the system to be upgraded even further.



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Is the applicant seeking a waiver pursuant to section IX.C of the NOFA so as to sell or lease portions of the award-funded broadband facilities during their life?

No

I. Project Budget

| Project Budget | | |
|----------------|-----------------------|-------------------|
| | Federal Grant Request | Match |
| Last Mile | 0 | 0 |
| Middle Mile | 31,515,253 | 13,879,767 |
| Total | 31,515,253 | 13,879,767 |

Project Budget Total: \$45,395,020

Match Percent: 30.6%

Projects Outside Recommended Funding Range:



| Outside Leverage | |
|--|---|
| Applicant is providing matching funds of at least 20% towards the total eligible project costs? | Yes |
| Matching cost detail | <p>MATCH COST DETAIL</p> <p>State of Illinois: \$11,351,250 represents 25% of the overall budget. This cash match is a grant that can be used for infrastructure. CSI NG911: \$261,261 represents .6% of the overall budget. This cash match is a match that can be used for infrastructure. Private Investor: \$2,267,256 represents 5% of the overall budget. This cash match is an equity investment that can be used for infrastructure.</p> |



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| | The overall cash match for this project represents 30.6% of the total project cost |
| Unjust enrichment | This project is not receiving nor have we applied for any Federal support for non-recurring costs in the area for which we are seeking this award. |
| Disclosure of federal and/or state funding sources | <p>Clearwave has applied for and been awarded \$11,351,250 in matching funds from the State of Illinois. It is part of the Illinois Jobs Now! Capital Plan that is described below.</p> <p>ILLINOIS JOBS NOW! The 2009 Illinois Capital Bill, signed into law on July 13, provides \$50 million to Illinois' Department of Commerce and Economic Opportunity (DCEO) for grants and loans to help achieve some of the goals of the American Recovery and Reinvestment Act of 2009 (ARRA). To create Illinois jobs and expand access to all the benefits of world-class broadband networks, the State intends to offer financial commitments to cover a portion of stimulus funded broadband project matching costs.</p> <p>The Illinois Jobs Now! Capital Plan contains \$50,000,000 for broadband deployment projects that will be used to help Illinois applicants leverage the ARRA's broadband grant and loan opportunities.</p> <p>The State of Illinois Department of Commerce and Economic Opportunity (DCEO) will award up to \$50,000,000 in total funding commitments to successful ARRA grant and loan applicants who expand and strengthen broadband, health information technology, telemedicine, distance learning, or public safety network infrastructure in Illinois.</p> <p>STATE GOAL This State funding program aims to maximize broadband-related opportunities in Illinois by investing in American Recovery and Reinvestment Act projects that will promote economic development and job creation. Consistent with the goals of the ARRA, priority will</p> |



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| | <p>go to projects that build broadband infrastructure and accelerate the deployment and adoption of broadband in rural, unserved and underserved communities in Illinois.</p> <p>UNIVERSAL SERVICE FUND Clearwave does not currently receive Universal Service Funds. We are in the process of receiving our ETC status from the State of Illinois and once approved we will be able to apply for some Universal Service Fund support. Any support we anticipate would only involve funds for expenditures on the voice side of our service, not the broadband side.</p> |
| Budget reasonableness | <p>The project submitted for funding consideration by Clearwave Communications is designed to not only provide the present and future residents of Southern Illinois with an advance broadband delivery system, but to do so at a reasonable cost. From both an Outside Plant (OSP) and equipment perspective, Clearwave personnel have partnered intensely with local, regional, and national vendors and contractors to meet this goal.</p> <p>The OSP network requires the largest capital outlay in the proposed project. To assist in the design and costing effort, Clearwave enlisted the services of Joseph D. Fail Engineering of Bay Springs, Mississippi (JDFEC). JDFEC has over 40 years of experience in the building of REA/RUS networks, and utilizes the latest in engineering techniques. Melding JDFEC’s experience with local knowledge and leveraging the area’s generally accommodating favorable soil conditions, the entire turnkey OSP network is slated to be constructed for less than \$6.85 per foot. This cost is slightly below average rates of other areas. However, Clearwave has commitments from multiple vendors to construct the plant using these rates. Clearwave is constructing a buried network to minimize future maintenance costs and provide the most reliable network possible. In addition, Clearwave is committed to utilize directional boring construction in urban, congested areas to minimize disruption to the local areas. The timeframe for completion of the proposed plant is within reason and has been based on local averages</p> |



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| | |
|--|---|
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| | <p>for the number of feet that can be constructed on average in a given day. These numbers have been confirmed in comparison to actual construction projects completed over the last 12 months.</p> <p>From an equipment perspective, Clearwave has utilized the expertise of its own staff along with that of Cisco Systems and Calix Corporation to design and cost the customer premise, access and transport networks. The size of this network and the competitive nature of this industry ensures that all volume discounts will apply and pricing commitments. Lead times and delivery schedules have also been obtained from the respective vendors and are in line with the proposed plan.</p> <p>A review of the project’s budget reveals that overhead, such as engineering, has been kept to a minimum, approximately 6% of the project cost. This is attainable due to the size of the project and its Greenfield nature. To further conserve valuable resources, Clearwave has located an existing building to purchase and renovate in order to house the planned central office in lieu of constructing a new facility.</p> <p>Clearwave Communications has no doubt, that if awarded funds for this project, it will be completed on time and on budget. Clearwave personnel have working knowledge and/or relationships with several area outside plant construction contractors, allowing Clearwave the flexibility to choose and to supplement sufficient reputable manpower necessary to complete the job as scheduled.</p> |
| Demonstration of need | <p>Clearwave’s proposed project is for \$45,395,020. The State of Illinois has committed \$11,351,250 of matching funds and we have commitments for an additional \$2,528,517 in matching funds for a total of \$13,879,767 of matching funding, or 30.6% of the total project budget, pending BTOP approval.</p> <p>We have not tried to acquire funding for the entire amount for the project. Bank financing continues to be unobtainable even for small projects, and the economy has not been conducive to raising private</p> |



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capital from investors. Even if we could borrow the funding for the project, the proforma indicates we could not support a project of this size given our projected revenues, nor would we support a project of this size given our current revenues. [REDACTED]

To date, we have been unsuccessful in acquiring any bank financing for fiber construction projects from banks in our region. The banks in this region are extremely conservative with regards to commercial lending, not interested in project financing, and are not willing to take the risk to invest in fiber projects as they do not have an understanding as to how to collateralize the assets. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

In summary, due to the current economic conditions, the barriers to raising the capital necessary to build the proposed network, and the low rate of internal return on the project even if fully funded by BTOP, there is very little likelihood that this network would be built without grant funding.



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| | |
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Funds to States/Territories

| States | Amount of Federal Grant Request |
|----------|---------------------------------|
| Illinois | 31,515,253 |

Funds to States/Territories Total: \$31,515,253

J. Historical Financials

| Matching Funds | 2007 | 2008 | 2009 |
|--------------------------------------|------|------|------|
| Revenue | | | |
| Expenditures | | | |
| Net Assets | | | |
| Change in Net Assets from Prior Year | | | |
| Bond Rating (if applicable) | | | |

K. Project Readiness

BTOP Organizational Readiness

Clearwave is a facilities based CLEC in southern Illinois offering wireline voice and data services to approximately 1110 business and 2773 residential subscribers. These accounts represent over 5600 access lines and over 2000 broadband lines. Clearwave operates as a full service Internet Service Provider (ISP) offering connectivity over Fiber, T1, DSL, and Fixed Wireless.

We have contracted with Joseph D. Fail Engineering Company, Inc. (Fail Engineering) to provide engineering support for our project. Fail Engineering was established in 1967 by Mr.



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| | |
|--|--|
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Joseph D. Fail originally to serve as an engineering consultant to local operating telephone companies participating in the Rural Utilities Service loan program. From inception, Fail Engineering has provided the communications community with a broad array of engineering services dedicated to telephone companies (ILEC's), long distance carriers, CLEC's, ISP's, CATV's, prisons, colleges, as well as, state and local governments and other commercial concerns.

Support systems in place follow:

Sales: Corporate sales operations consist of a Sales Manager, three Commercial Account Executives and four Business Offices/Retail Outlets. Clearwave's sales operations are supported by a team of engineers experienced in developing solutions for existing and potential customers that can be implemented effectively, and support the customer during pre/post installation.

Network Management: Upon completion of the fiber network, Clearwave will staff a 24x7x365 Tier 2 Network Operations Center (NOC) to actively monitor network and provide direct support for enterprise customers. Clearwave uses active polling software (WhatsUp Gold) to check status and availability of all core and access network components and also enterprise customer CPE/routers. Each major platform, access (Calix), transport (Cisco) and route/switch (Cisco) will have management software that will provide proactive alerts (email, SMS, etc) of equipment/port/fiber failures.

Provisioning: An established set of ordering and provisioning practices and procedures are in place and conducted by a group of well trained and experienced personnel.

Customer Support: Our technical support team consists of three levels of support. Tier 1 support consists of customer care handling the call live and trying to solve any problems that would be simple and easy to resolve. Tier 2 support has three people that are 24 hours a day and 7 days a week with highly trained skills that handle all problems that the Tier 1 support can't solve. Tier 3 consists of our Chief Technology officer along with our President. In addition, Clearwave has 8 outside technicians that support our customer's issues at the customer premise.

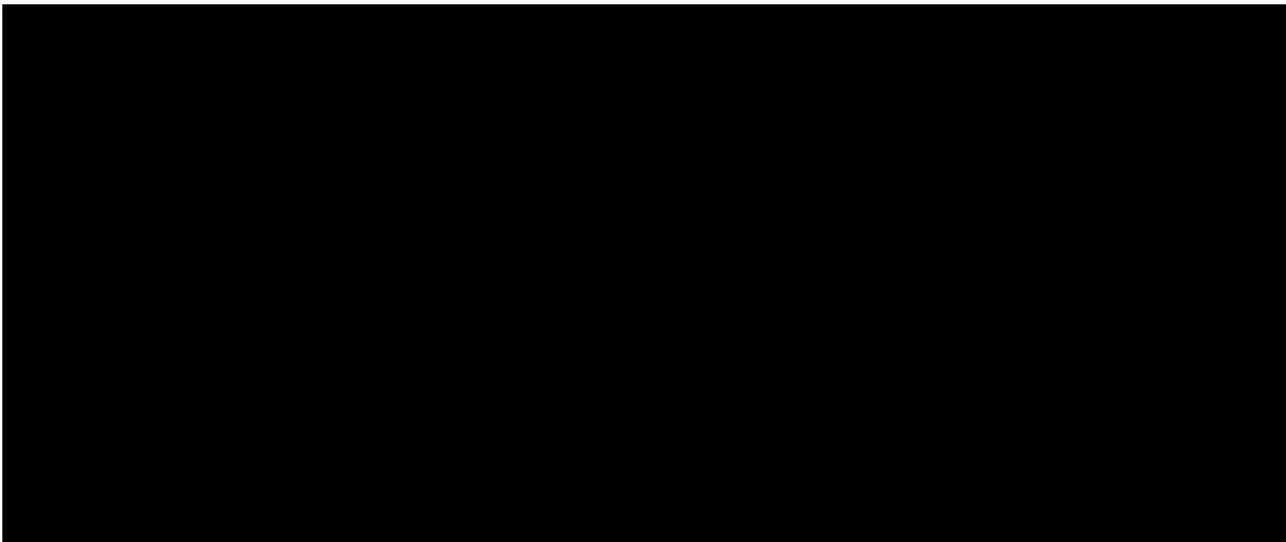
Billing: Clearwave has been using its current billing system for over five years. We have also linked this system to our trouble ticket software, as well as a reporting database.



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| | |
|--|--|
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Construction and Vendor Contracts



Clearwave intends to use a competitive bidding process for the construction of the fiber and for the purchase of the [REDACTED] transport network equipment. Clearwave will make all attempts to use local contractors except where extremely cost prohibitive.

Customer Base

Clearwave Communications has served the telecommunications and internet needs of Southern Illinois since 2002. Clearwave has a customer base of 3,883 accounts consisting of 1,110 business and 2,773 residential accounts. These accounts represent over 5,600 access lines and over 2,000 broadband lines. Our broadband lines can be broken down by 1,906 DSL, 135 T1, and 87 Wireless. Clearwave's entire customer base is located within the proposed funded service area.

Clearwave has business accounts in almost every sector. Many of these accounts are considered community anchor institutions. We currently do business with hospitals and health care organizations, educational facilities, municipal governments, and public safety. We are acutely aware of the expanding demand that these organizations have for bandwidth. Our middle mile project will provide much needed affordable bandwidth for these and other organizations in our



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| | |
|--|--|
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proposed service area. Because of the impact this project will have on our area, we have received strong letters of support from many of these organizations.

Licenses, Regulatory Approvals and Agreements

CLEC Certification for the State of Illinois - Status: Completed and Active

Adoption of Interconnect Agreement with Verizon North Inc., and Verizon South Inc. in the State of Illinois - Status: Completed and Active

Adoption of Interconnect Agreement with Illinois Bell Telephone Company in the State of Illinois - Status: Completed and Active

Equipment space lease at 900 Walnut St. St Louis, MO - Status: Lease in hand, waiting for award decision to execute.

Memorandum of Understanding with the State of Illinois, Department of Central Management Services (CMS). CMS is the lead for the Illinois Broadband Opportunities Partnership (IBOP)-East Central.

SPIN Number

Delta Communications dba Clearwave Communications Service Provider Identification Number (SPIN): 143023299

L. Environmental Questionnaire

Project Description

Internal modifications will be made to one building. The Clearwave Central Office in Marion, Illinois will be remodeled inside to accommodate a network operations center area housing computers, screens and other telecommunications equipment for up to five persons. In this same location two additional rooms will be created with separate access to each. These rooms will be constructed of poured concrete walls and ceilings and will be hardened to protect the contents of the rooms. The first room will house all of the aggregation network equipment. This equipment



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| | |
|--|---|
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will be housed in racks with integrated cooling and power. The room will also have redundant cooling systems. Power will be backed up by a site generator placed outside the structure. Access to the room will be secured via electronic locks. The second room will have similar racking, cooling and redundant power and will be made available to anyone wishing to collocate in the central office facility.

Each of the ILEC central offices and the carrier hotel referenced in this application will have additional transport and access equipment in the form of shelves and cards added, but no other internal modifications will be made.

The outside plant construction project will use a variety of methods to bury the fiber. This will include plowing where possible to limit the impact on the ground, trenching and boring. All activity will be in previously disturbed right-of-ways almost entirely along state highways.

Property Changes

No property will be disturbed by the construction of any structures since only internal modifications will be made to existing structures. The installation of fiber will be in previously disturbed right-of-ways so no property will need to be cleared or excavated. Any ground disturbed will be returned to its previous condition and where ground cover is removed by construction activities the location will be reseeded.

Some portions of the fiber routes will pass through federally owned lands as per the map viewer on the web site: <http://www.geocommunicator.gov>. The locations of these routes are as follows: On highway 37 near Rend Lake, on county road 16 between Carterville and Carbondale near Crab Orchard Lake and on highway 51 South in Ullin. In all 3 cases the fiber will be installed in the right-of-way along the respective roads.

Buildings

Only one building will be modified, the Clearwave Central Office in Marion. The modifications will only be internal and will consist of adding and relocating walls and adding network equipment. The building is a single story structure 120' wide by 250' deep. The network operations center area will be approximately 1500 square feet and located at the front of the building. The equipment areas created inside the facility will be 20' x 40' and 20' x 60' and will be located in the middle of the building.



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| | |
|--|--|
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The fiber installation will be in previously disturbed public right-of-way, except in the case of building entrances to anchor institutions and ILEC central office collocations. In the case of anchor institutions all available conduits or ducts will be used, and if no available duct space exists, close coordination with the anchor institutions as to the location and route of the fiber installation will insure minimal impact to the area. In the case of ILEC central office collocation entrances, duct space exists from the building to the nearest public right-of-way requiring no additional construction to place new ducts.

Wetlands

No wetlands are present on or near the Clearwave Marion Central Office building to be renovated as part of the project. Wetlands are present on or near the fiber construction routes proposed in the project. Most of these are small streams and creeks with the exception of two lakes, Rend Lake and Crab Orchard Lake. Also there is a fiber route between Murphysboro and Chester that borders the Mississippi River. The fiber will be placed in the public right-of-way on this state highway. Also the fiber will cross the Mississippi River near St Louis using a purchased fiber duct that has already been previously installed.

Critical Habitats

No site of the proposed project is within or near a critical habitat for any threatened, endangered, or candidate species. There will be no direct or indirect affect to a critical habitat since no project site requires the excavating, clearing or otherwise permanently disturbing of the grounds in or near the site.

Floodplain

The Clearwave Central Office in Marion, Illinois is not located within a 100 or 500-year floodplain per the floodplain maps obtained from the Federal Emergency Management Agency Web site. Portions of the fiber construction project are located within 100-year flood plains, but it is widely acknowledged that the operation of fiber optic service and the integrity of passive splice points are not contingent on 100-year flood related activity. All efforts will be made to locate splice enclosures, pedestals and vaults on high ground in areas that see frequent flooding to minimize difficulty in maintenance during wet periods.

Protected Land



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| | |
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There are no properties listed in the National Register of Historic Places within a one mile radius of the Clearwave Marion Central Office building. This is the only building to be modified within the scope of the project. This building itself is not a historic property. No portion of the project is on tribal lands.

Coastal Area

No portion of the proposed project is within the boundaries of a coastal zone management area.

Brownfield

No portion of the proposed project is located within a brownfield site, per the maps found at the web site:
<http://iaspub.epa.gov/Cleanups/>



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Uploads

The following pages contain the following uploads provided by the applicant:

| Upload Name | File Name | Uploaded By | Uploaded Date |
|--|---|----------------|---------------|
| Service Offerings and Competitor Data | Service Offerings Competitor Data.xls | Cagle, Raymond | 03/22/2010 |
| Network Diagram | CCI - Network Diagram.pdf | Cagle, Raymond | 03/25/2010 |
| Build Out Timeline | Build-out Timeline.pdf | Cagle, Raymond | 03/24/2010 |
| List of Community Anchors and Points of Interest | CCI-Anchor Detail and POI.xls | Cagle, Raymond | 03/22/2010 |
| Management Team Resumes and Organization Chart | Resumes and Org Chart.pdf | Cagle, Raymond | 03/24/2010 |
| Government and Key Partnerships | CCI - Government and other Key Partnerships.pdf | Cagle, Raymond | 03/25/2010 |
| Historical Financial Statements | Historical Financial Statements.pdf | Cagle, Raymond | 03/23/2010 |
| Budget Narrative | CCI Budget Narrative Template.pdf | Cagle, Raymond | 03/25/2010 |



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

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|--|--|--|--|
| Submitted Date: 3/26/2010 5:57:55 PM | | Easygrants ID: 4250 | |
| Funding Opportunity: Broadband Technology Opportunities Program | | Applicant Organization: DELTA COMMUNICATIONS, L.L.C. | |
| Task: Submit Application - BTOP | | Applicant Name: Mr. Raymond Lee Cagle | |

| | | | |
|--------------------------|---|----------------|------------|
| Detailed Budget | Detailed Budget.xls | Cagle, Raymond | 03/25/2010 |
| Pro-forma Forecast | CCI - Pro Forma Financial Projections.xls | Cagle, Raymond | 03/25/2010 |
| Subscriber Estimates | Subscriber Estimates.xlsx | Cagle, Raymond | 03/24/2010 |
| Dashboard Metrics | CCI Key Metrics Dashboard.doc | Cagle, Raymond | 03/24/2010 |
| Service Area Data | BTOP Service Area Template.xls | Cagle, Raymond | 03/25/2010 |
| Network Maps | CCI - Network Map.pdf | Cagle, Raymond | 03/25/2010 |
| BTOP Certifications | BTOP Certifications.pdf | Cagle, Raymond | 03/24/2010 |
| SF-424 C and D | SF-424C.pdf | Cagle, Raymond | 03/24/2010 |
| Supplemental Information | IBOP Southern Letters of Support.pdf | Cagle, Raymond | 03/26/2010 |