Building Community Capacity through Broadband (BCCB)

Environmental Assessment (EA)

May 2011

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UW Extension
University of Wisconsin–Extension

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ENVIRONMENTAL ASSESSMENT
SIGNATURE PAGE

FEDERAL LEAD AGENCY:	National Telecommunications and Information Administration (NTIA)
COOPERATING AGENCIES:	None
TITLE OF PROPOSED ACTION:	Building Community Capacity Through Broadband
AFFECTED JURISDICTION:	Southern, Central and Northern Wisconsin
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DOCUMENT DESIGNATION: Environmental Assessment (Final EA)

ABSTRACT: This Environmental (EA) evaluates the Proposed Action of the University of Wisconsin-Extension to install and operate approximately 630 miles of fiber optic cable in existing public right-of-way and to erect 12 new WiMAX towers. This action is funded in part by a grant to UW-Extension under the *American Recovery and Reinvestment Act (ARRA)* of 2009 from the National Telecommunications and Information Administration (NTIA), a Federal agency. This EA has been prepared by UW-Extension for submittal to the NTIA for adoption and in support of the NTIA's decision-making concerning the ARRA funding of this Proposed Action. This EA discusses two alternatives: the Preferred Action Alternative and the No Action Alternative. This EA evaluates possible effects to 11 technical resource areas: noise, air quality, geology and soils, water resources, biological resources, historic and cultural resources, aesthetic and visual resources, land use, infrastructure, socioeconomic resources, and human health and safety. The EA concludes there would be no significant impact, either individually or cumulatively, to the local environment or quality of life associated with implementing the Preferred Action Alternative, provided the environmental commitments, incorporated as part of the Proposed Action and specified in this EA, are implemented.

Environmental Assessment (EA)

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University of Wisconsin-Extension

SEH No. UOWEX 114529

May 2, 2011

Environmental Assessment (EA)

Building Community Capacity through Broadband (BCCB)
University of Wisconsin-Extension

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Executive Summary

Introduction and Background

In 2010, University of Wisconsin-Extension (UW-Extension) was awarded a Broadband Technology Opportunities Program (BTOP) grant from the American Recovery and Reinvestment Act (ARRA). BTOP is part of the National Telecommunications and Information Administration (NTIA). The grant, called Building Community Capacity through Broadband (BCCB), totaled $29.9 million and seeks to advance economic development through expanded broadband access to communities throughout Wisconsin.

BCCB is an unprecedented collaboration led by UW-Extension with statewide public and private partners including University of Wisconsin System, CCI Systems Inc., University of Wisconsin-Madison, Wisconsin Department of Transportation, Wisconsin Educational Communications Board and four demonstration communities. The demonstration communities include the Chippewa Valley Region, Platteville, Superior and Wausau.

To meet NTIA grant requirements, an Environmental Assessment (EA) has been prepared that discusses and evaluates the environmental effects related to the project. This EA fulfills requirements of the National Environmental Policy Act (NEPA) and the Wisconsin Environmental Policy Act (WEPA). It evaluates and discusses the environmental effects related to the installation of approximately 590 miles of new fiber optic cable and use of 40 miles of existing fiber optic cable, It also includes construction of 12 new wireless/Worldwide Interoperability for Microwave Access (WiMAX) towers, use of three existing wireless/WiMAX towers, and the installation of four equipment huts in the four demonstration communities in Wisconsin.

The fiber optic cable installation would occur on existing state and local road right-of-way using a combination of plowing and directional boring methods. The 12 new towers would be less than 200 feet in height. These towers and the three existing towers would be used for wireless/WiMAX deployment in the Chippewa Valley Region. The wireless/WiMAX towers would support public safety agencies and emergency responders in this region.

Purpose and Need

Currently, there is a lack of fiber optic network sufficient to provide high-speed broadband services to rural communities and anchor institutions such as public safety entities, schools, and hospitals in Wisconsin. This lack of modern communication inhibits the ability of individuals and corporations to effectively develop new businesses that require regional, national, or international electronic networking and marketing. Similarly, Internet-based medical consultations and educational opportunities are lacking due to the absence of modern communications networks that would allow the transmission of data-intensive files.

Enhanced Internet-based educational opportunities are needed throughout Wisconsin, especially in rural areas. By expanding educational opportunities to prepare future workers, and expanding business infrastructure, the BCCB project would also assist in economic stability and development of the state. According to the 2000 Census, twelve of the counties in the project area had an individual poverty rate above the Wisconsin average of 8.7 percent.

The purpose of the BCCB project is to provide high-speed/high capacity broadband Internet services to community anchor institutions, businesses, and residents. The new broadband/fiber optic cable network would serve 182 facilities run by 74 anchor institutions in 39 municipalities in the four demonstration communities of Platteville, the Chippewa Falls area, Superior and Wausau. Anchor institutions include schools, colleges and universities, health care facilities, and municipal and government facilities. BCCB

would also bring higher-capacity broadband closer to an estimated 139,000 homes and 9,000 businesses — opening the door for private companies to buy into the new infrastructure.

BCCB would improve data transmission for a number of anchor institutions, the University of Wisconsin System (UW System) and its network of universities. It would connect many of the UW System campuses to a high-speed data network, enabling these campuses to expand Internet-based educational opportunities for state residents. Similarly, BCCB would serve a number of local schools, allowing for enhanced Internet-based educational opportunities for Wisconsin's local school systems.

The Proposed Action would also improve communications for government facilities, county courthouses, county jails, and public safety departments such as fire and police services. The project would also be beneficial to health care providers, especially in rural areas.

Proposed Action

The Proposed Action is to:

- Install approximately 590 miles of new fiber optic cable and use of 40 miles of existing fiber optic cable
- Construct 12 new wireless/Worldwide Interoperability for Microwave Access (WiMAX) towers and use three existing wireless/WiMAX towers
- Install four equipment huts

The project would connect approximately 182 facilities run by 74 anchor institutions in 16 counties and provide high capacity/high speed broadband services to the community anchor institutions, residents, and business of this region in need of these services.

The fiber optic cable would be installed in existing, publicly-owned road right-of-way. UW-Extension has worked with the Wisconsin Department of Transportation (WisDOT) to obtain permission for the fiber optic cable to be buried in state-owned right of way. Approximately one half-mile of fiber would be installed in US 45 right-of-way on Ho-Chunk lands.

Wireless/WiMAX service would be primarily intended for use by city and county public safety agencies such as emergency medical responders in the Eau Claire/Chippewa Valley Region. To a lesser extent, this service would also be available for use by health care and educational facilities.
In addition to the proposed fiber and tower locations, four new buildings (huts) are proposed to house mechanical equipment. The huts would be located within existing road right-of-way. The huts would be factory built, pre-assembled, all steel, noncombustible huts with a footprint of approximately 9 feet by 13 feet and a height of 9 feet and 6 inches. No access roads would be needed to install or operate the huts.

Summary of Alternatives

UW-Extension considered a number of Alternatives to address the Purpose and Need of the project. These include:

- No Action Alternative
- Underground and Wireless Alternative (Preferred Alternative)
- All-Aerial
- All-Wireless
- All-Underground

No Action Alternative

The No Action Alternative would not implement improved broadband services in the state of Wisconsin. The No Action Alternative is assessed in this EA in order to provide a comparative baseline analysis.

Preferred Alternative

The Preferred Alternative would be a hybrid use of underground placement of fiber optic cable and 15 (12 new and three existing) wireless/WiMAX towers. It would install approximately 590 miles of underground fiber optic cable using plowing and directional boring on existing state and local road right-of-way and use approximately 40 miles of existing fiber optic cable. The Preferred Alternative includes the installation of 12 new towers and utilizing three existing towers on existing city and county lands in the Eau Claire/Chippewa Valley Region for wireless/WiMAX service. The Preferred Alternative also includes the installation of four small huts to house equipment in Clark, Douglas, Iowa and Shawano counties.

A majority of the Preferred Alternative would involve burying fiber optic cable in existing state and local road right-of-way using the plow method. Directional boring would be employed to cross existing environmental features such as rivers, streams and some wetlands. Limited trenching would be used to connect the directional bore areas to the plow areas. These proposed construction methods are relatively low-impact and would minimize the amount of environmental disturbance.

The Preferred Alternative would include the installation of 12 new wireless/WiMAX towers and the use of three existing towers. All towers would be a monopole type tower less than 200 feet in height. Wireless services would be primarily intended for use by city and county public safety agencies in the Eau Claire/Chippewa Valley Region such as emergency medical responders. No access roads would be needed to install or operate the towers.

In addition to the proposed route and tower locations, four new buildings (huts) are proposed to house mechanical equipment. The huts would be located within existing road right-of-way in the following counties: Shawano, Douglas, Iowa, and Clark. No access roads would be needed to install or operate the huts.

Dismissed Alternatives

All-Aerial, All-Wireless and All-Underground Alternatives were initially considered and reviewed by UW-Extension but were dismissed from further consideration in the planning process for a variety of reasons.

Analysis of Environmental Effects

The EA discusses the potential effects of the Preferred Alternative related to resources in the 16 counties where the fiber optic cable, wireless/WiMAX towers and huts would be located. Overall, environmental effects are expected to be minimal due to the fact that the fiber optic cable and four huts would be installed in existing road right-of-way. The twelve new towers would be installed on publicly owned lands.

Overall, the Preferred Alternative would have a positive effect on socioeconomic conditions by expanding and providing high-speed, high-capacity broadband Internet capabilities to rural areas and educational institutions and by serving existing and new businesses.

There would be short-term environmental effects related to construction, including increased ambient noise levels, increased CO2 emission, minimal increases in soil erosion, and temporary disturbances to vegetation and animal movements. The Proposed Action would require the crossing of or location of fiber optic cable

adjacent to several state parks and lands. Short-term, construction-related effects such as the presence of construction equipment would be expected but no long-term effects to these resources would be anticipated.

Effects on water resources would be largely avoided by installing the fiber optic cable using the directional boring method instead of the plow method. The possible effects of this activity include the accidental release of drilling fluid into the water, and possible disturbance of lands near the waterway by the use of the drilling equipment. Steps would be taken to avoid erosion-related effects on the streams.

It is possible that during the design stage, it would be determined that installation of fiber optic cable in wetlands cannot reasonably be avoided. During design, the Wisconsin Department of Natural Resources (WDNR) would be consulted to determine if plowing or directional boring would be used at each wetland location. Effects on wetlands are considered short-term and minimal because the disturbances are relatively short in duration and would not substantially alter wetland hydrologic functions.

The fiber optic cable, wireless/WiMAX tower, and hut installation process would result in the crushing of some vegetation by the installation equipment but vegetation can be expected to recover quickly. Seeding would be required to cover bare ground when installation is complete.

A list of threatened and endangered species within the 16 counties affected by the Proposed Action has been provided in the EA. Prior to initiating construction via a biologist or botanist familiar with natural community types would review the project route to identify diverse or relatively undisturbed natural communities that may support rare plants. The US Fish and Wildlife Services (USFWS) has indicated that the Karner blue butterfly may be located in some of the project area. Specific locations of where the butterfly may be found will be determined and reviewed by WDNR prior to initiating construction.

The Proposed Action would result in the installation of one half-mile of cable in US 45 right-of-way on Ho-Chunk lands. More detailed information was sent to the Ho-Chunk Tribal Historic Preservation Officer with a request for concurrence. A Programmatic Agreement has been signed by the State Historic Preservation Officer, the Federal Communications Commission, NTIA and the University of Wisconsin-Extension regarding historic and cultural resources.

The Preferred Alternative would not have any long-term effects on aesthetic and visual resources due to the fact that the fiber optic cable would be located underground. There may be long-term visual effects related to the installation of the wireless/WiMAX towers and huts. There may also be short-term, construction-related effects to two National Scenic Trail crossings.

There would be some effects to municipal and county lands as a result of the fiber optic cable installation and wireless/WiMAX tower installation. Future activities on these lands would have to take into account the location of these features in order to avoid them, or relocate them. The affected municipalities have agreed to these installations and have worked in cooperation with UW-Extension in order for their agencies to receive high-speed Internet capacity.

This EA also outlines the necessary environmental permits and regulatory requirements needed to realize this project. These include notification to Federal Communications Commission (FCC), Federal Aviations Administration (FAA), and local community zoning agencies as to the location and design of the wireless/WiMAX towers. Other permits would include WisDOT right-of-way permits, WDNR permits related to Threatened and Endangered Species and WDNR and USACE permits related to water crossings and resources.