

# FINAL ENVIRONMENTAL ASSESSMENT

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## CONNECTING APPALACHIAN OHIO-MIDDLE MILE CONSORTIUM PROJECT

PREPARED FOR:  
NATIONAL TELECOMMUNICATION AND  
INFORMATION ADMINISTRATION (NTIA)

ON BEHALF OF:  
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## EXECUTIVE SUMMARY

In 2010, several public and private organizations, including Horizon Telecom, a 115-year old rural, independent telephone company, headquartered in Chillicothe, Ohio; the Ohio Academic Resources Network (OARnet); three Economic Development Districts of the U.S. Department of Commerce's Economic Development Administration representing the 321 city and 34 county governments across the region; the Southern Ohio Health Care Network (SOHCN); and the K-12 Information Technology Centers (ITCs), formed the Connecting Appalachian Ohio-Middle Mile Consortium (CAO-MMC) to bring broadband services to unserved and underseverd regions of southern and eastern Ohio.

With funding from the National Telecommunication and Information Administration's (NTIA) Broadband Technology Opportunities Program (BTOP), the CAO-MMC will expand the region's existing fiber networks to fill gaping, persistent holes in fiber-optic connectivity in southern and eastern Ohio by constructing 1,960 new miles of fiber – more than doubling the fiber in the service area – and bringing middle-mile speeds of up to 10 gigabytes per second (Gbps) to 34 targeted counties.

The project will directly connect approximately 600 regional community anchor institutions, including:

- 25 community colleges, 15 university campuses and 4 career training centers serving 55,656 students
- 34 county 911 Public Safety Answering Points (PSAPs)
- 212 healthcare facilities and county health departments, including 14 Federally Qualified Health Centers, 5 Critical Access Hospitals, 4 Rural Health Clinics and he Chillicothe Veterans Administration (VA) Hospital and its 5 outpatient clinics
- 231 K-12 school buildings serving 110,000 students
- 34 industrial parks

Of the 34 counties that will benefit from this project:

- 31 are economically distressed
- 15 are designated as "distressed" or "at-risk" by the Appalachian Regional Commission (ARC)
- 13 endure unemployment 3.5% or more above the national average, with a peak of 19.1%
- 15 suffer from poverty rates 5% or more above the national average, with a peak of 29.6%

The region also includes the 11 poorest counties in Ohio and also supports above-average concentrations of vulnerable populations including veterans, aged, disabled, impoverished, unemployed and medically underserved.

Once constructed, the CAO-MMC Project will:

- Enhance and expand broadband in a region comprising more than 700,000 households and 37,000 businesses
- Spur new or improved high-speed internet access for these consumers by enabling local internet service providers to connect to the new open network
- Supplement the SOHCN's existing 13-county Rural Health Care Pilot Project, which leverages funds from the Federal Communications Commission (FCC) to bring telemedicine and electronic medical records adoption to small clinics and rural hospitals in the region
- Allow SOHCN to expand several successful telemedicine programs for neonatal intensive care, stroke care, psychiatric treatment and emergency medicine across the region
- Enable SOHCN to establish home telehealth services, improving outcomes and driving demand for the last-mile service providers
- Support the deployment of electronic health records and health information exchange
- Extend fiber connectivity to 32 (over 30 percent) of Ohio's Multi-Agency Radio Communications System (MARCS) towers in the region, improving public safety radio and mobile data capacity for the State Highway Patrol, Department of Rehabilitation & Correction, and the Ohio Emergency Management Agency
- Become a vehicle for collaboration among county and municipal law enforcement, first responders, state-level agencies, and Federal Homeland Security operations
- Provide metro-ethernet services to link these institutions to one another and to the premier research and education networks nationwide including OARnet, Merit, PennREN, and I-Light. In addition, the CAO-MMC connectivity to commercial networks will give students and faculty the opportunity to learn from, interview with, and work remotely for industry leaders.
- Bring broadband connectivity to five state park conference centers, creating tourism jobs by luring back group retreats and family vacationers these facilities have lost due to lack of broadband
- Interconnect with the networks of BTOP awardees OneCommunity and ComNet, providing a far-reaching solution to Appalachian Ohio's broadband needs.

A total of four alternatives were initially considered in this Environmental Assessment (EA). These include:

1. Proposed Action – Use of existing utility infrastructure to provide 1,960 new miles of fiber-optic network through the 34 county project area by installing cable over 90 percent of the length of the project on existing poles located along existing road right-of-ways (ROW) or within existing utility line corridors.

2. Buried Cable Alternative – Install 1,960 miles of fiber optic cable in roadside trenches (buried) within existing road ROW and, to a lesser extent, along existing utility line corridors.
3. Wireless Alternative – Establish and construct a network of radio towers and microwave radios to provide wireless broadband. This alternative was soon excluded from further consideration prior to analysis, as it failed to adequately support the broadband widths desired, would require a larger amount of ground disturbance relative to the Proposed Action and Buried Cable Alternative, and would result in greater visual impacts. In addition, this alternative was determined to be less reliable than fiber-optic projects.
4. No Action Alternative – Do nothing.

This EA analyzes the Buried Cable and No Action Alternatives relative to the Proposed Action. The Proposed Action was found to have less environmental impact than the Buried Cable Alternative in some of natural resource areas (noise, air quality, soils, biological resources, water, and historical/cultural). However, in both alternatives, potential impacts were found to be minor. Potential impacts to aesthetics and visual resources, socioeconomic resources, infrastructure, human health and safety, and cumulative impacts were determined to be similar for both alternatives. The No Action Alternative was found to have more negative effects with respect to socioeconomic resources relative to the Proposed Action and Buried Cable alternatives. Table ES-1 provides a comparative matrix that summarizes environmental impacts among the three alternatives.

Overall, the results of the EA indicate that the Proposed Action for the CAO-MMC project would not cause significant or otherwise detrimental impacts to the environmental resources examined in the EA. While the Proposed Action extends through largely rural areas that are home to low-income populations, this project will bring broadband access to these regions at reasonable, competitive prices. As a result, this project will provide significant benefits to these economically distressed areas without any substantial environmental impacts.

**Table ES-1  
Summary of Environmental Impacts for Horizon CAO-MMC Fiber Optic Cable Project**

Resource	Alternatives		
	Proposed Action	Buried Action	No Action
<b>Noise</b>	Minor, temporary, localized noise will occur from construction equipment during installation and periodic maintenance. No effects during operation.	Minor, temporary, localized noise will occur from construction equipment during installation and periodic maintenance. Noise will be greater and longer in duration due to need for more and heavier construction equipment. No effects during operation.	None
<b>Air</b>	Temporary increase to priority pollutants (particulate matter and ozone-related pollutants) due to emissions from construction vehicles used during installation and occasional maintenance activities. No effects during operation.	Temporary increase to priority pollutants (particulate matter and ozone-related pollutants) due to emissions from construction vehicles used during installation and occasional maintenance activities. Effects will be greater due to need for more and heavier construction equipment. No effects during operation.	None
<b>Climate, Greenhouse Gases and Global Warming</b>	Greenhouse Gas Emissions from the Proposed Action are well below the CEQ threshold. Greenhouse Gas Emissions from the Proposed Action will not contribute appreciably to climate change and global warming.	Greenhouse Gas Emissions from the Buried Cable Alternative are well below the CEQ threshold. Greenhouse Gas Emissions from the Proposed Action will not contribute appreciably to climate change and global warming.	None
<b>Geology/Soils</b>	Minimal to no impacts to geology or soils, where underground installation will have to occur over approximately 10 percent of the project area.	Minimal temporary impacts to soil due to plowing, trenching, and directional boring to install project. Effects will be minor due to small areas of impact and shallow depth of installation.	None
<b>Water</b>	Minimal to no effect on surface waters due to installation of fiber-optic cable on existing poles. Surface water impacts from minor soil disturbance in small areas of underground installation will be minimized using best management practices (BMPs).	Minimal but potentially more effect on surface waters due to soil disturbance from horizontal directional drilling techniques. Impacts can be minimized by placement of access holes at least 50 feet away from water bodies and by use of BMPs.	None

**Table ES-1 (Continued)  
Summary of Environmental Impacts for Horizon CAO-MMC Fiber Optic Cable Project**

Resource	Alternatives		
	Proposed Action	Buried Action	No Action
<b>Biological</b>	<p>Minor, temporary, localized impacts to wildlife due to noise and cutting of vegetation to access overgrown areas during construction and routine maintenance activities.</p> <p>No effect or not likely to affect threatened or endangered species.</p>	<p>Louder noise disturbance during construction and maintenance (relative to Proposed Action) due to need for heavier construction equipment.</p> <p>No effect or not likely to affect threatened or endangered species.</p>	None
<b>Historical/Cultural</b>	<p>A Programmatic Agreement (PA) signed by the NTIA, Ohio SHPO and Horizon on May 5, 2011 establishes strategies for avoiding or minimizing impacts.</p> <p>No adverse effect on cultural resources.</p>	<p>Negligible impact on archaeological resources, if contained within existing right-of-way. No effect on historic resources.</p>	None
<b>Aesthetic/Visual</b>	<p>Negligible impact from the addition of aerial fiber -optic cable on existing utility line along ROW or in utility corridor.</p>	<p>Minimal, temporary soil disturbance will be visible in some locations but not substantial.</p>	None
<b>Land Use</b>	None	None	None
<b>Infrastructure</b>	<p>Minimal, temporary increase in nonhazardous construction waste</p>	<p>Minimal, temporary increase in nonhazardous construction waste</p>	None
<b>Socioeconomic</b>	<p>Substantial positive impacts by providing broadband access to unserved and underserved areas in the project area.</p>	<p>Same positive benefits as the Proposed Action.</p>	<p>Substantial negative impact to unserved and underserved communities and areas due to the loss of the opportunity to have broadband access.</p>
<b>Human Health and Safety</b>	<p>Potential positive effects due to increased opportunities for electronic medical consultations, better communications among healthcare and emergency service providers and other safety-related services (law enforcement, fire, and emergency management agencies)</p>	<p>Same positive benefits as the Proposed Action.</p>	None

**Table ES-1 (Continued)  
Summary of Environmental Impacts for Horizon CAO-MMC Fiber Optic Cable Project**

Resource	Alternatives		
	Proposed Action	Buried Action	No Action
<b>Cumulative Impacts</b>	<p>Potential positive cumulative impacts, as the Proposed Action will help communities:</p> <ul style="list-style-type: none"> <li>• attract and retain businesses</li> <li>• increase opportunities to learn outside of the classroom</li> <li>• provide additional access to government services</li> <li>• promote tourism</li> </ul> <p>Private residents will be able to:</p> <ul style="list-style-type: none"> <li>• More easily accomplish everyday tasks</li> <li>• Access a wider variety of entertainment opportunities</li> <li>• Access and research a wider range of employment opportunities</li> <li>• Gain additional means to communicate with friends and family</li> <li>• Access educational opportunities from home</li> </ul> <p>Businesses will benefit from:</p> <ul style="list-style-type: none"> <li>• Greater access to the global marketplace</li> <li>• Increased options to compare prices and shop for supplies</li> <li>• More efficient purchasing of supplies online</li> <li>• Increased marketing and advertising opportunities</li> <li>• Exposure to a wider customer base</li> <li>• Increased attraction of job seekers to an area</li> </ul>	Same positive benefits as the Proposed Action.	None