

FINAL ENVIRONMENTAL ASSESSMENT
MERIT REACH-3MC (Rural, Education,
Anchor, Community & Healthcare –
Michigan Middle Mile Collaborative)
PROJECT



Prepared for:
National Telecommunications and
Information Administration (NTIA)

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August 4, 2010

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EXECUTIVE SUMMARY

In January 2010, the National Telecommunications and Information Administration (NTIA) awarded a \$33.3 million federal grant through its American Recovery and Reinvestment Act (ARRA, aka the federal stimulus package) funded Broadband Technology Opportunities Program (BTOP) to Merit Network, Inc. (Merit). As a recipient of this federal grant, Merit is submitting the following Environmental Assessment (EA) to NTIA in compliance with the National Environmental Policy Act (NEPA).

Merit is a nonprofit, owned and governed by the following Michigan universities: Grand Valley State, Ferris State, Michigan State, Central Michigan, Western Michigan, The University of Michigan, Northern Michigan, Lake Superior State, Michigan Technological, Wayne State, Eastern Michigan, and Oakland. Merit provides high-performance networking and services to the research and education communities in Michigan. The Rural, Education, Anchor, Community and Healthcare – Michigan Middle Mile Collaborative (REACH-3MC) Project (the Project) proposes to build a 1,015-mile advanced fiber-optic network through underserved counties in Michigan's Lower Peninsula. The Project will extend Merit's existing 1,600-mile fiber network and provide advanced services previously unavailable to many parts of rural Michigan. REACH-3MC is a component of a larger plan to address underserved areas across the entire state. The purpose of the REACH-3MC Project is to provide affordable, high-performance broadband to homes, businesses, community anchor institutions, and critical community facilities in underserved areas in 33 Michigan counties in the Lower Peninsula. Specific Project objectives include the following:

- Foster economic development and growth in underserved areas of Michigan that lack widely available and affordable broadband services.
- Offer fiber services and speeds from 1.5 Mbps to 10 Gbps to a service area with more than 932,000 community anchor institutions, households, and businesses.
- Collaborate with sub-recipients to offer broadband Internet, voice, and video services to households and businesses.

The REACH-3MC Project's expanded service area includes 33 contiguous counties in Michigan's Lower Peninsula, divided into the Central, Eastern, Southern, and Western Corridors. The Project proposes to directly connect 42 anchor institutions initially, including libraries, universities, community colleges, and community healthcare centers, and is oriented to offer the same advanced network resources to an additional 380 anchors. The fiber network will pass approximately 886,100 households, 45,800 businesses, and 422 identified community anchor institutions, 44 of which are public safety entities. The fiber infrastructure project will use existing road and utility rights-of-way (ROWs) for the entire 1,015 miles of the route. The majority of the Project will occur within existing road ROWs. Only 136 miles (13% of the total route) will occur within existing utility ROWs beyond existing road ROWs. Approximately 86% of the construction will be aerial fiber hung on existing utility poles, with some poles being replaced as needed. No new pole runs are proposed for the Project. Approximately 14% of the construction will involve underground installation of fiber. Where feasible, utilization of existing conduit and directional boring in environmentally sensitive areas will further minimize impacts. Plowing will be used for the remaining underground construction, especially where the lines parallel roadways and in disturbed urban areas lacking significant natural and cultural resources. No new utility corridors will be created. Environmental impacts will be minimized through the utilization of existing, disturbed road and utility ROWs for the entire length of the project.

Broadband access is a critical component for economic development. As Michigan seeks to recover from its significant economic challenges, broadband becomes an even more important foundation for the future. Alternative energy, next generation manufacturing, and other initiatives depend not only on access to information, but on an educated populace well-versed in new technology. In many rural areas of Michigan, the high cost and lack of competition for backhaul service has limited last mile service performance, availability, and affordability for homes,

businesses, schools, libraries, public safety, and other anchor institutions. Last mile providers in parts of Michigan have reported that up to 80% of their costs go to backhaul.

The REACH-3MC Project directly addresses this problem by building 1,015 miles of 72-strand fiber infrastructure into rural and underserved areas. Merit Network, Inc., an established non-profit provider to anchor institutions, together with four commercial service providers, will use the new infrastructure to serve all sectors of the economy. Merit's mission of serving anchor institutions, combined with the sub-recipients' business plans, ensures that households, businesses, and community anchor institutions will all see major benefits from REACH-3MC and that Michigan citizens are engaged in the digital economy.

The alternatives considered for the REACH-3MC Project are all based upon Merit's existing core or backbone fiber network in Michigan's Lower Peninsula, since all proposed fiber routes had to expand from this backbone network. Determining the routes of the proposed fiber paths first involved locating connection points in unserved and underserved areas in the Lower Peninsula. Once connection points were identified, baseline routes were established to the existing backbone network. Route analyses followed, with fiber paths being finalized in a manner that minimized the temporary environmental impacts associated with the Project, while maximizing connectivity between served and unserved areas in the Lower Peninsula. Route finalization included the consideration of the following:

- location of utility poles within vs. outside of road ROWs;
- condition of existing utility poles and need for replacement;
- location and condition of existing conduits;
- distance between backbone network access points, major telecommunications points of presence, and community anchor institutions;
- building infrastructure and network hookup locations at anchor institutions;
- and existing natural features, such as rivers and wetlands.

Alternative 1 involved routing the proposed fiber paths via underground installation only. Alternative 2 considered running the proposed fiber paths via aerial installation only. Alternative 3 considered the use of wireless technology. The Preferred Alternative is comprised of a combination of the aerial and underground installation techniques considered in Alternatives 1 and 2. The "No Action Alternative" involves not constructing the REACH-3MC Project. Without access to high-quality middle mile fiber infrastructure, learning, productivity, and economic development in Michigan would suffer. Therefore, a combination of Alternatives 1 and 2 was ultimately selected as the Preferred Alternative, because it allows for the selection of the most appropriate fiber installation methodology for the various sites along the Project's four corridors. This alternative allows the Project to leverage the time, cost, and environmental benefits of utilizing existing utility poles and underground utility conduits, while saving the more expensive and time-consuming underground installation techniques for areas with no available poles and/or restrictive utility ordinances. Overall, the Preferred Alternative allows implementation of the REACH-3MC Project to proceed with the least amount of adverse environmental impacts, while still meeting the Project's purpose and need—to provide affordable, high-performance broadband to homes, businesses, community anchor institutions, and critical community facilities in unserved and underserved areas in 33 counties in Michigan's Lower Peninsula.

Adverse environmental impacts resulting from the REACH-3MC Project will be minimized through the utilization of existing, previously disturbed utility and road rights-of-way for the entire length of the Project. Therefore, the environmental impacts associated with the REACH-3MC Project are anticipated to be relatively minor and temporary. The proposed Project was found to have no impact to noise, air quality, groundwater, designated Environmental Area, designated Critical Dune, historic architectural, aesthetic/visual, and land use resources. The proposed Project was found to have insignificant adverse impacts to geology/soils, surface water, wetlands, designated Coastal Zones, floodplains, designated Wild and Scenic Rivers, Michigan Natural Rivers, vegetation, wildlife, threatened and endangered species, critical habitats, wetland habitats, archeological/native, public land, environmental justice

populations, and human health and safety resources. The proposed Project was found to have significant positive impacts on infrastructure and socioeconomic resources.