National Telecommunications and Information Administration
Broadband Technology Opportunities Program
Finding of No Significant Impact
OpenCape Corporation
Fiber Optic Network on Cape Cod and Across Southeastern New England

Summary

OpenCape Corporation applied to the Broadband Technology Opportunities Program (BTOP) for a grant to construct 300 miles of new fiber optic telecommunications backbone and lateral connections on Cape Cod and portions of southeastern New England. Over 70 anchor institutions will be directly connected to the new network, along with several existing central offices along the route, two regional network connection centers, and a regional collocation center. The proposed action also includes a supplementary microwave radio overlay that will provide primary service to Martha's Vineyard and serve as an emergency backup for the remainder of the network. The proposed action is referred to as OpenCape Corporation's Proposed Fiber Optic Network on Cape Cod and Across Southeastern New England (Project).

The National Telecommunications and Information Administration (NTIA) awarded a grant for the Project to OpenCape, through BTOP, as part of the American Recovery and Reinvestment Act (ARRA). The funding must be obligated and the Project completed within three years. This timeline is driven by the laws and regulations governing the use of this ARRA grant funding.

BTOP supports the deployment of broadband infrastructure in unserved and underserved areas of the United States and its Territories. As a condition of receiving BTOP grant funding, recipients must comply with all relevant Federal legislation, including the National Environmental Policy Act of 1969 (NEPA). Specifically, NEPA limits the types of actions that the grantee can initiate prior to completing required environmental reviews. Some actions may be categorically excluded from further NEPA analyses based on the specific types and scope of work to be conducted. For projects that are not categorically excluded from further environmental review, the grant recipient must prepare an Environmental Assessment (EA) that meets the requirements of NEPA. After a sufficiency review, NTIA may adopt the EA, use it as the basis for finding that the project will not have a significant impact on the environment, and issue a finding of no significant impact (FONSI). Following such a finding, the BTOP grant recipient may then begin construction or other activities identified in the EA as the preferred alternative, in accordance with any special protocols or identified environmental protection measures.

OpenCape completed an EA for this Project in October 2010. NTIA reviewed the EA, determined it is sufficient, and adopted it as part of the development of this FONSI.

The Project includes:

- Installing approximately 300 miles of fiber optic cable on existing utility poles and high tension wires within road and public utility rights-of-way (ROWs) throughout Cape Cod and portions of southeastern New England;

- Installing aerial and buried fiber laterals to connect the network with over 70 anchor institutions, existing central offices along the route, and two regional network connection centers in Brockton, Massachusetts, and Providence, Rhode Island;
- Upgrading an existing vacant communications building in Barnstable Village, Massachusetts for use as a regional collocation center; and
- Installing a supplementary microwave radio overlay that will provide primary service to Martha's Vineyard and serve as an emergency backup.

Based on a review of the analysis in the EA, NTIA has determined that the Project, implemented in accordance with the preferred alternative, and incorporating best management practices (BMPs) and protective measures identified in the EA, will not result in any significant environmental impacts. Therefore, the preparation of an EIS is not required. The basis for this determination is described in this FONSI.

Additional information and copies of the Executive Summary of the EA and FONSI are available to all interested persons and the public through the BTOP website (www2.ntia.doc.gov/) and the following contact:

Frank J. Monteferrante, Ph.D.
Environmental Compliance Specialist
Broadband Technology Opportunities Program
National Telecommunications and Information Administration
U.S. Department of Commerce
Room 2830B
1401 Constitution Avenue, NW
Washington, DC 20230
Tel. 202-482-4208
Fax 202-501-8009
Email FMonteferrante@ntia.doc.gov

Purpose and Need

The purpose of the Project is to construct a comprehensive fiber optic network to upgrade the existing telecommunications system on Cape Cod and portions of southeastern New England. Initially, the network will serve over 70 anchor institutions, including emergency school shelters, libraries, colleges, academic research facilities, and town or public safety buildings. The OpenCape core fiber backbone will also serve additional anchor institutions by allowing them to obtain service from the network. The planned network will improve public services and public safety response throughout Rhode Island and southeastern Massachusetts. The network will enhance broadband access capability in underserved areas throughout the region, including Martha's Vineyard and Chappaquiddick Island. The network will also serve low income and minority populations throughout the region. Two of the communities within the Project area,

Fall River and New Bedford, Massachusetts, have among the highest unemployment rates in the State, both of which are currently over 15%. The network will also serve populations in Rhode Island, including those in Providence County with a significant non-white population and a poverty rate higher than the national average.

Project Description

The Project involves construction of a comprehensive fiber optic communications network on Cape Cod and portions of southeastern New England. Approximately 300 miles of core fiber network backbone will be installed on existing utility poles and high tension wires within road and public utility ROWs. Small segments of the fiber will be buried in existing underground conduits, and one portion of the fiber network will be directionally bored beneath the North Cape Cod Canal.

The fiber backbone on Cape Cod will follow two paths. One network path follows Route 28 from the Cape Cod Canal, through Falmouth and Hyannis, to Orleans. A second path will begin at the Cape Cod Canal and follow Route 6A to Provincetown. The two paths will be linked between Hyannis and West Barnstable, and will merge in Orleans. The Cape Cod Canal will be crossed in two spatially separated locations to minimize the chance that Cape Cod will be cut off from network services. A South Canal crossing will be routed through existing conduit on the Railroad Bridge, and a North Canal crossing will be installed via directional boring beneath the Canal. If boring under the canal is, for some reason, not feasible, the alternative method of crossing the North Canal through an existing conduit on the Sagamore Bridge would reduce potential impacts. However, this option would not provide the security and stability of the network that the directional drilling option would afford.

Nearly 40 miles of fiber optic laterals will be installed from the fiber backbone to over 70 anchor institutions. The laterals will be installed as both aerial and buried fiber optic infrastructure. Aerial laterals will be installed parallel to existing aerial utility cables, and buried fiber optic cables will be installed where existing underground conduits exist. Laterals will also be installed to connect the network backbone to existing regional network connection centers in Brockton, Massachusetts and Providence, Rhode Island. These extensions will be installed using existing utility poles, high tension wires, or conduits along road and public utility ROWs. Additional laterals of less than 500 feet will be installed over existing poles or within existing conduits to connect the network to telecommunications central offices operated by Verizon.

The microwave wireless component of the planned network is designed to serve as an emergency backup for the fiber optic network. However, the planned wireless link between Falmouth and Martha's Vineyard will be the primary broadband service link to the island. This part of the network is critical to the overall stability of the communications infrastructure on Cape Cod due to the region's exposure to severe storms with high winds and flooding. Microwave antennas and radios will typically be one to three feet in height, and will be mounted on existing water

towers in Martha's Vineyard and on Penikese Island. Cables to the antennas will normally be installed along the water tower, and painted the same color as the tower to camouflage them. The microwave radios installed on water towers will not be visible from the ground. Other antennas will be installed on existing communication towers or buildings. Where appropriate, antennas may be installed so that the new infrastructure is not easily visible.

In addition, OpenCape has been coordinating with officials from Martha's Vineyard and Penikese Island to explore optimization of broadband solutions for these relatively isolated locations. The tower locations on Martha's Vineyard and on Penikese Island are place holders at this time. OpenCape has engaged Martha's Vineyard officials more fully since the grant award to ensure the best possible solution for the island. Penikese Island presents potential historic and archaeological challenges; however they have expressed desire for inclusion in the network. Best efforts will be made to incorporate the Island into the network while preserving the historical and archaeological integrity of the Island.

Finally, the Project involves leasing and rehabilitating an existing public safety communications building located in the Barnstable County Courthouse Complex on Main Street in Barnstable Village, Massachusetts. The building is currently unoccupied, but will be renovated and furnished with telecommunications equipment to create a regional collocation and data center. Utilities serving the building will also be upgraded to standards required to support a regional data center, including installation of a pad and generator on existing impervious surfaces adjacent to the building. No changes to the existing footprint of the building are planned.

Alternatives

The EA includes an analysis of alternatives for implementing the Project to meet the purpose and need. NTIA also requires that an EA include a discussion of the no action alternative. The following summarizes the alternatives analyzed in the EA.

Alternative 1 – Primarily Aerial Network with Microwave Overlay (Preferred Alternative). As noted in the Project Description, this alternative consists of installation of a comprehensive fiber optic network covering nearly 300 miles on Cape Cod and portions of southeastern New England. This alternative includes connections to over 70 anchor institutions and several telecommunications facilities, and a supplemental microwave radio overlay. Under this alternative, new cable will be installed aerially on existing utility poles and high tension wires, and underground within existing conduits primarily along road and public ROWs. In addition, two crossings of the Cape Cod Canal will be accomplished by routing cable through existing bridge conduit over the South Canal, and by directional boring for placement of new fiber optic cable beneath the North Canal. If OpenCape determines that it is not feasible to bore beneath the North Canal, this crossing will be accomplished following a contingency plan that involves routing fiber through existing conduit on the Sagamore Bridge.

No Action Alternative. No action was also considered. This alternative represents broadband service conditions as they currently exist on Cape Cod and portions of southeastern New England. Under the no action alternative, there would be no new fiber network construction, and improved broadband services will not be implemented in the Project area. The EA examined this alternative as the baseline for evaluating impacts related to other alternatives being considered.

Alternatives Considered But Not Carried Forward. OpenCape considered the option of installing the fiber optic cable network as primarily underground infrastructure. Placement of fiber in underground conduits provides increased network protection and security during major storm events, hurricanes, and other natural disasters. However, installation of new conduit and buried cable would also be significantly more costly and environmentally disruptive than the current plan. OpenCape considered an all-wireless alternative, but rejected that option because fiber optic networks have a greater carrying capacity than wireless networks and because this historical region is sensitive to the placement of wireless antennas on structures. OpenCape also considered eliminating all wireless technology from the network, but rejected that option because microwave backhaul is essential to creating a primary connection to Martha's Vineyard and a redundant path on the Outer Cape. In addition, Cape Cod is subject to frequent serious storms and is vulnerable to hurricanes. Examination of studies related to the recovery of communications after Hurricane Katrina indicated that wireless communications were restored most quickly. Ultimately, OpenCape retained a primarily aerial network supplemented by use of existing conduit for underground cable installation, except beneath the North Cape Cod Canal where directional boring will be used to install cable beneath the canal. The planned wireless microwave backhaul component was appropriately sized and distributed to effectively meet the need.

Findings and Conclusions

The EA analyzed existing conditions and environmental consequences of the preferred alternative and the no action alternative in 11 major resource areas, including 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. Cumulative impacts of each alternative were also evaluated.

Noise

Noise levels to be generated during most of the cable installation are similar to noise produced during regular maintenance of the existing cables and poles. Short term increases in noise levels will occur during directional boring underneath the canal due to the use of heavy equipment. However, the proposed directional drilling sites are located within existing developed areas and outside residential zones. All construction activities and associated noise will be temporary and limited to typical Monday through Friday working hours. In addition, all Project construction equipment using combustion engines will be equipped with mufflers. Based on these

considerations, no significant impacts on noise are expected to occur as a result of Project implementation.

Air Quality

Use of heavy construction equipment and diesel combustion vehicles during Project construction will result in a minor increase in air pollutant emissions. Operation of a high efficiency diesel generator at the regional collocation building will also result in minor, but long-term air pollutant emissions. Small amounts of Greenhouse gases (GHG) will be generated during construction and generator operation at the regional collocation center. Any effect on climate change will be negligible. Increased telecommunications capacity offered by the Project may reduce long-term vehicle usage and associated GHG emissions enough to offset some or all of the increased GHG emissions generated by the Project. Accordingly, the Project is not expected to result in significant adverse impacts on air quality.

Geology and Soils

Directional boring for the North Cape Cod Canal crossing will result in a bored pathway beneath the waterway and one 4-foot by 4-foot area of disturbance within previously disturbed areas on either side of the canal. Equipment staging areas will also be established within previously disturbed areas. The directional drilling is not anticipated to cause significant adverse impacts on existing geology and soils. The Project is not expected to result in significant adverse impacts to geology and soils.

Water Resources

Operation of the cable to provide data transmission will have no impact on water resources. Furthermore, most Project construction components (e.g. hanging aerial fiber, running cable through existing conduits, installation of microwave antennas) will have no adverse impacts on water resources in the Project area.

Although erosion and sedimentation associated with directional drilling beneath the North Canal has the potential to adversely impact water resources, OpenCape and its contractors will implement best practices for avoiding such impacts. OpenCape will file permits and agreements for this portion of the Project with the U.S. Army Corps of Engineers (USACE) and the towns of Bourne and Sandwich. Silt fences or similar sediment barriers will be installed at the directional drilling sites. Until it can be properly disposed, drilling mud will be contained on site in a manner that prevents sediments and other materials from entering the watercourse.

In a letter dated June 16, 2010, the Rhode Island Coastal Resources Management Council indicated that the Project is below their review thresholds. In a letter dated June 29, 2010, the Massachusetts Office of Coastal Zone Management indicated that the only component of the Project requiring further review is the boring beneath the North Canal. A second review of the North Canal crossing will be conducted to satisfy permitting requirements.

Some existing poles, high tension wires, or underground conduits to be used for this Project are located within the 100-foot wetlands buffer area. However, as long as the municipality is consulted, installation of these cables is exempt from the Massachusetts Wetlands Protection Act and most local wetlands protection regulations. No construction will occur within any wetlands or surface water resources as part of this Project. Wetland buffer areas will be maintained in their naturally vegetated condition to the extent practicable, and will be revegetated with native vegetation where disturbance is unavoidable. Although the planned directional drilling sites are located within the 100-year floodplain on both sides of the Cape Cod Canal, no permanent or temporary adverse effects on floodplains are expected. The only designated Wild and Scenic River in the vicinity of the Project is the Taunton River. The fiber path will cross this river via existing cable conduits, thereby avoiding significant impacts to the Taunton River.

Based on these consultations and assessments, and through implementation of the best management practices identified above, the Project is not expected to have significant adverse impacts on water resources.

Biological Resources

According to the Massachusetts and Rhode Island Natural Heritage and Endangered Species Programs, habitats of rare or endangered species are located in the vicinity of the planned network backbone and along the paths to the regional network connection centers. In a letter dated January 4, 2010, the U.S. Fish and Wildlife Service (USFWS) indicated that individual review is not required for certain activities associated with routine highway maintenance and upgrade. Because the planned fiber optic cable installation will occur on existing poles and highway ROWs, potential impacts are likely to be equivalent to those resulting from routine highway maintenance. However, if native vegetated communities are disturbed during construction, OpenCape will replant these areas with native non-invasive species.

On July 27, 2010, the USFWS NE office indicated that they "concur with [OpenCape's initial] determination that there are no species present in the action area for this Project." Because the microwave component of the Project involves only collocation of telecommunications equipment on existing towers, this portion was also determined to have no potential impact on biological resources. Therefore, no significant adverse impacts to biological resources are anticipated as a result of Project implementation.

Historic and Cultural Resources

OpenCape has been consulting with the State Historic Preservation Officers (SHPOs) in Massachusetts and Rhode Island, interested Tribal Historic Preservation Officers (THPOs), and other consulting parties regarding the potential for impacts on significant or potentially significant historical or archaeological sites.

On June 11, 2010, the Massachusetts Historical Commission (MHC) recommended completion of an archaeological desktop survey of the Project route. A licensed archeologist conducted this

review and results were provided to MHC and the Rhode Island Historic Preservation and Heritage Commission (RIHPHC). The survey showed that the planned Project impact areas are unlikely to contain significant archaeological resources. Nevertheless, MHC issued comments to OpenCape on July 6, 2010, requesting additional information on potential direct and indirect effects on historic and cultural resources and potential visual impacts on historic structures. Based on these comments, OpenCape agreed to limit below ground construction to existing utility trenches and previously disturbed areas. OpenCape has also committed to work with USACE to avoid any potential for adverse effects on the Cape Cod Canal which is eligible for inclusion on the National Register of Historic Places (NRHP). In a letter dated September 2, 2010, MHC indicated that "no further historic properties identification effort is required for the directional drill aspect of the Project," pending the USACE determination of effect.

MHC also found that placement of cable on existing utility poles, high tension wires, and conduits along road and public utility ROWs is unlikely to adversely affect any historic properties, and that the fiber optic laterals to anchor institutions will have "no adverse effect" on the identified historic properties. Finally, MHC found that no historic properties will be affected by the microwave radio overlay tower facilities, and that installation of microwave radio equipment on the Penikese Island School rooftop will have "no adverse effect" on historic resources in this area. In a letter dated October 1, 2010, MHC concurred with the Project's No Adverse Effect determination. The RIHPHC indicated on July 30, 2010, that they have "no objections to the undertaking." On September 10, 2010, the Massachusetts Board of Underwater Archaeological Resources (BUAR) found that, based on the limited nature of directional drilling below the bottom of Cape Cod Canal, "the Project is unlikely to impact submerged archaeological resources."

Rehabilitation of the existing vacant communications building in the Barnstable County Courthouse Complex will require review by the Barnstable Old King's Highway Historic Committee. The possible replacement or supplementation of the existing pad and generator on an existing impervious surface adjacent to the building is the only exterior improvement anticipated to fall within the jurisdiction of the Committee. The sizing of the generator will be better defined during the engineering/design phase of the Project. Once the generator has been sized, OpenCape will notify the Barnstable Old King's Highway Historic District Committee. If the proposed generator is any larger than the existing generator, a Certificate of Appropriateness will be submitted to the Committee. Adjustments, if necessary, may be made so the generator can be the same size or smaller than the current equipment. The local Historic District Committee must approve work associated with the regional collocation facility prior to Project implementation.

Federally recognized Native American tribes with interest in the project area were notified of the Project using the Federal Communications Commission's (FCC) Tower Construction Notification System (TCNS). One THPO from the Mashantucket Pequot Tribe in Connecticut responded by recommending a Phase I Archaeological Reconnaissance Survey be conducted in

undisturbed areas. On August 12, 2010, after receipt of Project-specific historical and archaeological assessments, the THPO concurred with OpenCape's recommendations and conclusions for minimizing potential impacts on historic and cultural resources.

Based on these consultations and guidance from the commenting agencies, the Project is not expected to have adverse impacts to historic and cultural resources.

Aesthetic and Visual Resources

The visual impacts of the proposed project are expected to be minimal. The existing utility poles and high tension wires to be used for this Project already maintain multiple, similarly sized cables and wires. Aerial laterals to anchor institutions will be installed parallel to existing aerial utility cables, and buried fiber optic cables to anchor institutions will be installed where existing underground conduits currently exist. Microwave antennas and radios will typically be one to three feet in height, and will be mounted on existing water towers. Cables to the antennas will be painted the same color as the tower to camouflage them. Where appropriate, antennas and radios will be installed in a manner that will minimize visibility of the new infrastructure. The directional drilling beneath the Cape Cod Canal is anticipated to have limited and temporary impacts on aesthetic and visual resources due to the presence of construction equipment. Accordingly, the Project is not expected to have significant adverse impacts on this resource area.

Land Use

No land use changes are required to implement this Project. New cable will be primarily installed on existing utility poles or in existing conduits in previously disturbed ROWs. The planned regional collocation building was formerly used for similar communications purposes. The planned fiber optic network does not appear to be in conflict with any local zoning codes or ordinances or local comprehensive plans. Accordingly, the Project will have no significant impact on land use.

Infrastructure

The Project will improve communications infrastructure throughout Cape Cod and portions of southeastern New England. In addition, OpenCape has executed a memorandum of understanding (MOU) with the regional power company, NSTAR, to develop a synergistic model of broadband and smart grid technologies in exchange for access to existing utility poles. Environmental consequences to transportation during construction activities would be temporary and minor. Detours may be expected on local roads, but will not be necessary along any major highways. Overall, and despite these minor transportation disruptions, the Project is expected to have significant positive impacts on local infrastructure resources.

Socioeconomic Resources

The Project is anticipated to have a positive impact on socioeconomic resources by enhancing telecommunications throughout the region. The enhanced telecommunications infrastructure

will, in turn, promote economic investment in the region, increase educational opportunities, and greatly enhance public safety. In addition, Project implementation itself is not expected to have a disproportionately negative environmental impact on minority or low income populations in the area.

Human Health and Safety

The Project will not have any significant impacts on human health and safety. During directional drilling, a perimeter fence and signage will be installed to mark out and restrict public access to the construction zone. Best practices for traffic control and worker safety will also be implemented during Project installation. All Project operations will be conducted in compliance with Occupational Health and Safety Administration guidelines and personnel will be properly trained and equipped to work in the ROW. Police details will be on-site at all times during construction along active roadways to ensure that traffic does not threaten worker safety. All work will be performed in such a manner as to provide safe passage at all times for the public with minimum disruption to traffic. Suitable detours will be provided, identified, and maintained when the Project necessitates closure of roads.

Cumulative Impacts

The potential increase in noise related to cable installation and directional drilling activities will be temporary, and similar to that produced by regular maintenance of existing cables and poles. Because only one generator will be installed at the regional collocation center, and because that generator will be similar to existing equipment in size, that component of the Project will not have a significant additional impact on cumulative noise in the area. Based on the limited scope and nature of planned activity, cumulative Project-related impacts on air quality, water quality, and biological resources are not expected. In addition, as discussed above, the Project was designed to avoid impacts to historical and cultural resources, geology and soils, land use, and aesthetic and visual resources. Consequently, cumulative Project-related impacts are not anticipated in these resource areas. There will be positive cumulative impacts on infrastructure, human health and safety, and socioeconomic resources in the form of improved telecommunication capacity, increased educational opportunities, and greatly enhanced public safety throughout Cape Cod and portions of southeastern New England.

There is a minor cumulative impact to infrastructure, as the Project involves adding cable to existing utility poles, which can only accommodate a finite number of cables and associated equipment. Accordingly, there may be less available space for potential future cables and lines on existing poles. To minimize potential cumulative impacts on highway infrastructure, OpenCape is corresponding with the Federal Highway Administration (FHA), Massachusetts Highway Department (MHD), Rhode Island Department of Transportation (RIDOT), and local Departments of Public Works in an attempt to coordinate scheduling and avoid conflicts with routine maintenance and repair activities required for continued operation of the existing roadways and utility lines.

Decision

Based on the above analysis, NTIA concludes that constructing and operating the Project as defined by the preferred alternative, identified BMPs, and protective measures, will not require additional mitigation. A separate mitigation plan is not required for the Project. The analyses indicate that the proposed action is not a major Federal action that will significantly affect the quality of the human environment. NTIA has determined that preparation of an EIS is not required.

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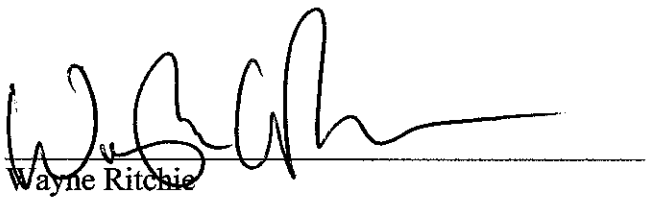

Wayne Ritchie
Chief Administrative Officer
Office of Telecommunications and Information Applications
National Telecommunications and Information Administration

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