National Telecommunications and Information Administration
Broadband Technology Opportunities Program
Finding of No Significant Impact
Vermont Telecommunications Authority, Vermont Fiber Link Project

Summary

Vermont Telecommunications Authority (VTA) applied to the Broadband Technology Opportunities Program (BTOP) for a grant to install 773 miles of new fiber. The new middle mile infrastructure will connect approximately 79,211 households, 13,144 businesses, and 342 community anchor institutions (CAIs) in more than 90 towns. The new network is a hybrid of aerial and buried fiber optic cable within existing roadway and utility line rights-of-way (ROWs). The proposed action passes through 7 counties in Vermont, with network extensions into New Hampshire and Massachusetts, and is referred to as the VTA Vermont Fiber Link Project (Project).

The National Telecommunications and Information Administration (NTIA) awarded a grant for the Project to VTA, 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 will comply with 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.

VTA completed an EA for this Project in April 2011. NTIA reviewed the EA, determined it is sufficient, and adopted it as part of the development of this FONSI.

The Project includes:

- Installing approximately 773 miles of fiber along various existing state, city, or county ROWs aerially on existing utility poles and underground in existing conduit;
- Leasing approximately 17 miles of existing fiber from ION Newco Corporation, providing connection between the two ARRA projects and ring redundancy to both networks;
- Installing electronic telecommunications equipment at customers' premises, in existing buildings, to create key network aggregation and interconnection points; and

- Providing fiber optic connectivity from the middle mile backbone to 342 CAIs, along existing ROWs.

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:

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Purpose and Need

The purpose of the Project is to bring affordable broadband service to unserved and underserved communities in Vermont, New Hampshire, and Massachusetts. The Project will deploy fiber in areas where, to date, it has not been economically feasible to install telecommunications infrastructure. The middle mile infrastructure will provide connectivity throughout 7 counties in Vermont, with network extensions in New Hampshire and Massachusetts, providing opportunities associated with broadband technology to 79,211 households, 13,144 businesses, and 342 CAIs.

Project Description

The Project involves installing 773 miles of middle mile fiber throughout Vermont, New Hampshire, and Massachusetts. The hybrid network will include 96 percent aerial (approximately 747 miles) and 4 percent buried fiber cable (approximately 26 miles). Construction will take place within public highway ROWs, along established electrical distribution or telecommunication cable routes. No cable will be installed outside the public highway ROW.

The middle mile infrastructure consists of backbone network lines and will provide connectivity in 90 communities throughout the state of Vermont and in New Hampshire and Massachusetts. Roughly 60 percent (464 miles) of the new fiber is for the backbone network and 40 percent (309 miles) of the new fiber is for spur routes to connect CAIs to VTA's backbone. VTA will lease approximately 17 miles of fiber optic cable from ION Newco Corporation to complete the proposed fiber network, connect the two ARRA-funded projects, and promote redundancy between the two networks. No buildings or huts will be constructed or installed as part of this project. All equipment will be installed and located in existing buildings that will not require modification.

For the installation of the aerial fiber, VTA will hang the new fiber on existing poles. When a utility owner deems it necessary to replace their existing pole, the specific utility will be responsible for the pole replacement and will follow the utilities' existing maintenance procedures and processes. Aerial cables will be installed by placing a supporting cable strand in the telecom space that has been made ready by moving existing cables and replacing poles or anchors that are insufficient to support additional cable. The cable is then lashed to the supporting strand. Occasionally, new cable placement is accomplished in the electrical space using all-dielectric self-supporting (ADSS) fiber optic cable. Aerial construction will occur year-round, depending on weather conditions, within the normal operating day (thus complying with local noise ordinances).

VTA will use plowing and directional boring techniques for the installation of buried cable. Typically, a plow blade acts more like a knife (2-3 inches in width) during plowing and produces minimal, temporary disruption to the landscape. Directional boring may be used when crossing water ways, wetlands, paved roads, or as required to minimize the disruption of the landscape. Hand holes or pedestals will be installed where the cable needs to be accessed. The minimum depth of the cable will be 36 inches deep and placement will be at approximately the same vertical extent as similar existing cables. Underground construction will begin by mid April and extend into late November, depending on weather conditions, within the normal operating day (thus complying with local noise ordinances).

In addition, the Project will connect 342 CAIs directly to the backbone network. A small ground-level hand hole will be placed at each building, with a 1.25-inch riser extending out of the hand hole to connect to the transition box. VTA will drill a hole, approximately 1.25 inches in diameter, through the outside wall of each building through which to feed the cable to the inside of the building. The depth of the cable within the existing ROW to the building is 24 inches; placement of the cable will be approximately at the same vertical extent as the existing cables and utilities.

Alternatives

The EA includes an analysis of the 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.

Hybird Fiber Installation (Preferred Alternative). As noted in the Project Description, this effort will include installing approximately 773 miles of fiber along various existing state, city, or county ROWs aerially on existing utility poles and underground in existing conduit; leasing approximately 17 miles of existing fiber from ION Newco Corporation, providing connection between the two ARRA projects and ring redundancy to both networks; installing electronic telecommunications equipment at customers' premises, in existing buildings, to create key network aggregation and interconnection points; and providing fiber optic connectivity from the middle mile backbone to 342 CAIs, along existing ROWs.

No Action Alternative. No action was also considered. This alternative represents conditions as they currently exist in Vermont, New Hampshire, and Massachusetts. Under the no action alternative, new middle mile infrastructure would not be constructed. Many rural communities would continue to be unserved or underserved with respect to broadband internet access. Additionally, broadband services would not be provided to CAIs in the Project area. The EA examined this alternative as the baseline for evaluating impacts relative to other alternatives being considered.

Alternatives Considered But Not Carried Forward. VTA considered the alternative of installing an all-aerial network. An all-aerial network is not a feasible alternative due to localities where all existing utilities are buried due to aesthetic, historical, or visual resources, or where gaps exist between existing aerial utilities. Because this alternative would require installation of new infrastructure, it would increase the total cost of the Project. Therefore, it was eliminated from further consideration. An all underground network was also considered. However, due to the rocky and mountainous terrain in the project area, the associated increased installation costs would make the project too costly and infeasible. An all underground network also increases the likelihood of encountering below ground archaeological sites, thus increasing potential impacts to that resource. VTA also considered an all-wireless telecommunications network. However, wireless technology is not a viable alternative because of the mountainous terrain; lack of available bandwidth available from an all wireless network; limited Internet connection speeds; a greater potential for interference from other spectrum users; signal fade from weather conditions; and higher installation, operation, and maintenance costs.

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.

Noise

This Project will have no impacts on noise during long-term operation. However, short-term increases in ambient noise levels are expected during the construction period. Noise created by

machinery used during installation will be temporary and localized in nature. To reduce noise impacts, construction activities will occur during weekday daylight hours, in accordance with local noise ordinances. Based on these considerations, no significant impacts on noise are expected to occur as a result of Project implementation.

Air Quality

Potential impacts to air quality associated with this Project will be limited to the construction period, and are primarily from diesel particulate matter (vehicle exhaust) from diesel powered construction equipment and vehicles, and potential fugitive dust caused by site preparation and construction activities. It is also possible that a limited number of poles, owned by other utility companies, may need to be replaced along the Project route. This would result in additional construction along the route and add to potential short-term impacts to air quality. Fiber optic cable installation will result in negligible fugitive dust emissions because plowing and directional boring techniques result in minor disturbance of the ground surface, generating negligible fugitive dust emissions. A short-term minor increase in the use of fossil fuel and associated greenhouse gas (GHG) emissions will occur as a result of Project construction, amounting to approximately 719 metric tons of equivalent CO2 emissions, which is well below the presumptive effects threshold of 25,000 metric tons. BMPs will be implemented to control fugitive dust during the construction phase of the Project. All construction equipment and vehicles will be maintained in good operating condition to minimize exhaust emissions. Based on implementation of these BMPs, construction of the planned network is not expected to have significant adverse impacts on air quality.

Geology and Soils

The Project will be installed both aerially and underground, in previously disturbed, public ROWs. The cable will be installed in these locations to, among other considerations, minimize impacts on geologic and soil resources. Less than 4% of the proposed route will include ground disturbance from underground cable placement using vibratory plowing and directional drilling installation techniques. Both vibratory plowing and directional drilling techniques result in very minor, temporary disruption of the soils. It is also possible that a limited number of poles, owned by other utility companies, may need to be replaced along the Project route. This would result in additional construction along the route and add to potential short-term impacts to geology and soils. Erosion control measures and BMPs will be implemented before, during, and after construction activities. With these measures in place, the Project is not expected to result in significant adverse impacts on geology or soils.

Water Resources

Project construction activities could result in short-term, minor impacts on water resources within the Project area. The Project's fiber route will cross several streams, creeks, and rivers. Whenever these waterways are encountered, the cable will be installed aerially and spanned between poles located well away from the stream banks. This method of spanning a stream or river is not expected to impact the waterways. No new disturbance to surface water or floodplain resources will occur, as cable will be installed aerially and no substantial fills, grading revisions, or changes to impervious surface area will occur in floodplains. In a limited number

of circumstances, replacement of utility poles might be necessary. However, the new pole will be placed as close to the existing pole as possible. In the event that poles are replaced, appropriate BMPs will be used to control erosion and sediment discharge. Heavy equipment used during construction will not enter the stream or river bed. VTA is in the process of completing final, detailed engineering plans, and will consult with the U.S. Army Corps of Engineers (USACE) for a review of water crossings that are subject to Section 404 and Section 10 permits. VTA also will files for applicable permits with the Vermont DEC and EPA New England, as required for each phase of the project. Negligible impacts are anticipated on groundwater resources, as underground fiber installation and potential utility pole replacement are not anticipated to reach groundwater depths and disrupt groundwater flows. No coastal management zones or national wild and scenic rivers are located within the Project area. By avoiding construction in waterways and implementing erosion and sediment control BMPs, VTA will be able to construct the network with no significant impacts on water resources in the Project area.

Biological Resources

The preferred alternative will result in minor impacts on biological resources. Noise and human activity associated with fiber installation are expected to disturb some wildlife species, but these effects will be minor and temporary. Some disturbance to the ground surface and vegetation will also occur during construction activities. This disturbance will be limited to previously disturbed ROWs. In correspondence dated January 11, 2011, the USFWS indicated the project is "not likely to adversely affect" the Indiana bat, dwarf wedgemussel, and Northern bulrush species if avoidance measures are implemented. These avoidance measures include no cutting of trees greater than 5 inches in diameter during April 15th to October 15th in Dorset and Manchester, VT. Also, in areas of the Connecticut River where dwarf wedgemussel is known to occur, directional drilling or plowing should be avoided. Lastly, directional drilling and plowing through wetlands in towns with northeast bulrush records should be avoided. The New Hampshire Fish and Game was also consulted and specified that no project work should occur within a ¼ mile of an active bald eagle nest. If an active bald eagle nest is determined to be within ¼ mile of the project, NH Fish and Game request further review.

Impacts to terrestrial wildlife and their habitats in general are negligible. All project construction will be within the existing ROW, and VTA will implement the Project in compliance with the federal and state agency requirements. Based on this analysis and following the guidance of the USFWS and NH Fish and Game, VTA will be able to construct the fiber network with no significant adverse impacts on biological resources.

Historic and Cultural Resources

In a letter dated September 14, 2010, NTIA initiated National Historic Preservation Act (NHPA) Section 106 consultation with the New Hampshire Division of Historical Resources (NHDHR) on behalf of VTA. NTIA also provided NHDHR with a project description and map of the proposed project area. In an undated letter, VTA followed up with NHDHR and provided the findings of their consultant, CHR Solutions, Inc., regarding potential impacts on historic and cultural resources. Based on the extent of the proposed work in the state of New Hampshire,

VTA (and CHR Solutions, Inc.) concluded that the proposed project should have no adverse effect on historic properties. In a letter dated December 15, 2010, the NHDHR agreed with VTA and concluded that the project would have no adverse effect. The NHDHR stipulated that if the project changed, or if any other historic or archaeological resources are discovered during project implementation, that VTA consult with NHDHR to determine the best course of action.

In a letter dated October 5, 2010, NTIA also initiated NHPA Section 106 consultation with the State Historic Preservation Officer (SHPO), Massachusetts Historical Commission (MHC) on behalf of VTA. NTIA also provided MHC with a project description and map of the proposed project area. MHC responded in a letter dated October 13, 2010, that additional information was required to make a determination on the potential effects, including a more detailed narrative description and more detailed maps. In a letter dated November 23, 2010, CHR Solutions, Inc., provided MHC with the requested documentation on behalf of VTA. In a letter dated December 16, 2010, MHC indicated that the electronic files previously provided could not be opened and requested paper files of the documentation be provided, both to MHC and to the historical commissions of the municipalities in which the project would occur. In a letter dated January 28, 2011, VTA provided additional information to MHC, including information on a programmatic agreement (PA) for the referenced project. In a letter dated March 1, 2011, MHC requested additional information to clarify proposed project changes, including information about connections to any residential, commercial, or institutional building, and clarification about any proposed structures. In a letter dated March 12, 2011, NTIA provided information and clarification on the proposed project to MHC. In a letter dated March 17, 2011, MHC indicated to NTIA that no Massachusetts historic properties are likely to be affected by the proposed project.

In a letter dated September 14, 2010, NTIA also initiated NHPA Section 106 consultation with the Vermont Division for Historic Preservation (VTDHP) on behalf of VTA. NTIA also provided VTDHP with a project description and a map of the proposed project area. In a letter dated October 21, 2010, VTDHP acknowledged receipt of the initiation letter from NTIA and the project materials. VTDHP made a preliminary finding that given the extent of the project, it is likely that new cable will pass through historic districts and near historic buildings – but that the addition of fiber optic cable lines to existing utility poles and lines is not likely to adversely affect any historic properties. VTDHP made it clear that they would review the project in full once the eligible historic sites within the area of potential effect (APE) was finalized by VTA. On November 30, 2010, VTA provided VTDHP with the electronic shape files (maps) for all proposed routes. Subsequent consultations with VTDHP required that a PA be developed between VTA and VTDHP.

On April 29, 2011, VTA, VTDHP, and NTIA entered into a PA, which defines the procedures for identifying and mitigating potential impacts on cultural resources, which could occur from the Project. The PA establishes a review protocol for the Project and states that VTA will seek SHPO concurrence on the final network design, determination, and route selection. The PA further stipulates that NTIA shall ensure that the terms of the PA are executed prior to initiating any phase of construction of the Project. The PA also establishes professional standards; defines

NTIA's responsibility to authorize construction; and specifies confidentiality, a protocol for inadvertent discovery of archaeological sites or human remains, dispute resolution, and various administrative provisions.

All parties agreed that placement of fiber optic cable via construction on existing poles, placement of replacement poles within 6 feet of an existing pole, and buried construction within 10 feet of existing buried infrastructure are exempt from the PA requirements. VTA will identify the locations of these exempt activities on detailed maps showing all project components, and provide this documentation to the SHPO. The locations of exempt activities will be considered "cleared areas" and associated construction can proceed in accordance with Stipulation VII of the PA. For activities that are not exempt, additional review by a qualified archaeologist will be required. VTA will work with the SHPO and NTIA to keep them informed of the process, including final network design.

For each project phase, VTA will identify all ground disturbing activities that are not exempt and establish the locations relative to the APE for historic properties. VTA will identify any known archaeological resources located in the APE and assess the likelihood that locations of non-exempt Project ground disturbance coincide with areas where there is a high probability for encountering archeological resources eligible for listing on the NRHP. If, after the assessment, a qualified archeologist concludes that a finding of no historic properties affected is appropriate, or avoidance measures can be implemented to ensure no adverse effect on historic properties, no further review under the terms of the PA is required. If, however, the archeologically sensitive area cannot be avoided, VTA will conduct an archaeological study to identify and evaluate any archaeological resources at the location of the non-exempt activities. If no historic properties are identified, no further review under the terms of the PA is required. If historic properties are identified, VTA will consult with the SHPO to determine the significance of such resource(s) and proceed with construction and/or alternatives to comply with applicable avoidance measures, in accordance to SHPO's recommendations. After archeological review and analysis of any found materials has been completed, VTA will return all found artifacts and archaeological materials to the landowner. VTA will submit any and all proposed revision to Project plans, design and specifications to NTIA for review and approval prior to implementing any changes. NTIA, in consultation with the SHPO and VTA, will determine what, if any additional survey and analysis is needed to take into account effects to historic properties, pursuant to Stipulations II and IV. NTIA will take into account the timely recommendations of these parties in carrying out actions it deems in the public interest and appropriate to avoid, minimize, or mitigate adverse effects on historic properties. Based on these consultations, through implementation of SHPO stipulations, and through implementation of the requirements outlined in the PA, the Project will have no adverse effect on historic and cultural resources.

Through the Tower Construction Notification System (TCNS), NTIA provided Project details to 6 tribes interested in the Project's geographical location (New Hampshire, Massachusetts, and Vermont). VTA received responses from three tribes that were notified of the Project. Two tribes responded via TCNS; one indicated no further interest but requested notification if the scope of work changed or if human remains are discovered. VTA followed up with the other

two tribes requesting additional information on the project. Upon receiving additional project information, both tribes indicated no further consultation is necessary, but if archaeological materials, including human remains, are discovered during construction, construction should stop immediately, and state and tribal representatives should be contacted..

All construction will be restricted to previously disturbed areas. If any cultural material is discovered during construction, the SHPO will be notified immediately and all activities halted until a qualified archaeologist assesses the cultural remains. If any human skeletal remains or protected Native objects are uncovered during construction, construction will stop immediately, and all consulting parties will be contacted. Based on these consultations, guidance from the commenting agencies, and additional protective measures to be implemented by VTA, the Project is not expected to have significant adverse impacts on historic and cultural resources.

Aesthetic and Visual Resources

The Project primarily involves installing aerial fiber optic cable along major right-of-ways along previously disturbed road way ditches, utility corridors, and through the Green Mountain National Forest. No cable will be installed outside of the public ROW. Fiber installation will have a short-term, minor, and temporary impact on aesthetic and visual resources due to the presence of construction equipment. To minimize aesthetic and visual impacts, all construction equipment will be removed at the end of the workday. VTA consulted with the Green Mountain National Forest in Vermont, since 12.75 miles of existing aerial utility lines are within the National Forest System lands of the Manchester Ranger District. In correspondence dated January 11, 2011, The Green Mountain National Forest, concurred that the proposed project would have minor environmental effects if the following mitigation measures are put in place: VTA will immediately notify the Green Mountain National Forest of any and all antiquities or other objects of historic or scientific interest, including historic or prehistoric ruins, fossils, or artifacts discovered; VTA will be responsible for any future improvement relocation of the right-of-way; and VTA will be responsible for the prevention and control of noxious weeds and invasive species arising from authorized use. With these measures in place, the Project is not expected to have a significant adverse impact on aesthetic and visual resources in the Project area.

Land Use

The fiber will be installed in previously disturbed ROWs. Some portions of the fiber route may be installed along utility ROWs or within ROWs in institutional and other government (i.e. USDA-FS) properties. In all cases, VTA will obtain permission from the ROW owners before work begins. Installation of the new fiber will not change the current land use. Therefore, the Project will have no significant impact on land use.

Infrastructure

Project construction activities will not interrupt the traffic flow along the Project route. The Project will improve communications infrastructure and is expected to result in improved transfer of information between CAIs, businesses, and individuals residing within the communities along the Project route. Overall, the Project will have a positive impact on

infrastructure in New Hampshire, Massachusetts, and Vermont, and will not result in significant impacts on infrastructure.

Socioeconomic Resources

The Project will provide improved communications infrastructure to residents who do not have access to broadband services in New Hampshire, Massachusetts, and Vermont. The middle mile fiber backbone will also benefit these communities by providing broadband capabilities to 342 CAIs. An increase in both short-term and long-term employment opportunities are also anticipated as a result of the Project. The Project will have positive impacts on socioeconomic resources, and will not result in significant impacts on socioeconomic resources.

Human Health and Safety

It is unlikely that hazardous wastes will be encountered during Project installation, because most construction will be completed by attaching fiber to utility poles. In areas where there are known contaminants, they are contained and are undergoing various stages of clean-up and remediation. No fiber optic cable will be constructed near the three Superfund sites located in the Project area.

All construction activities will be conducted by qualified, licensed contractors. The contractors will follow specific safety regulations, including the Federal Highway Administration (FHWA) requirements and the Manual on Uniform Traffic Control Devices to promote highway safety and traffic control standards. Workers will be required to meet OSHA standards for worker visibility, equipment signage, and licensing requirements. Work within urban areas shall maintain safe pedestrian routes. Work conducted in or around school zones will be coordinated with school district officials to ensure safe passage for pedestrian and bus traffic. A plan will be in place for accident prevention that provides regular inspections of jobsites, materials, and equipment by competent persons. Construction in the Green Mountain National Forest will meet permit requirements for the protection of sensitive receptors in the area. With implementation of these protocols, the Project will not generate any significant adverse worker or traffic-related health or safety issues. Further, the new fiber will provide broadband service and directly connect medical facilities. The Project will enhance emergency and medical services and improve human health and safety throughout the Project area.

Cumulative Impacts

As described above, the Project will not have significant adverse impacts on any of the environmental resource areas evaluated in the EA. As such, no cumulative impacts on the environment are anticipated.

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.

Issued:

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