

ENVIRONMENTAL ASSESSMENT

FOR

**BROADBAND TECHNOLOGY OPPORTUNITIES PROGRAM GRANTEE,
#972 MID-ATLANTIC BROADBAND COOPERATIVE,
FIBER OPTIC NETWORK INFRASTRUCTURE PROJECT**

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ACRONYMS AND ABBREVIATIONS

%	Percent
°F	Degrees Fahrenheit
ATWS	Additional temporary workspace
BMP	Best Management Practice
BTOP	Broadband Technology Opportunities Program
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CFR	Code of Federal Regulations
CO	Carbon Monoxide
Co.	County
CO ₂	Carbon Dioxide
CWA	Clean Water Act
dB	Decibel
dBA	A-weighted Decibel
dbh	Diameter at Breast Height
<i>de minimis</i>	Of Minimal Importance
DNL	Day-Night Average Sound Level
EA	Environmental Assessment
ft.	Feet
GHG	Greenhouse Gas
HDD	Horizontal Directional Drilling
HVAC	High Volume Air Conditioning
I	Interstate
i.e.	<i>id est</i> , that is
ISP	Internet Service Provider
kg	Kilogram
kW	Kilowatt
L _{eq}	Equivalent Sound Level
lbs	Pounds
LUST	Leaking Underground Storage Tank

MBC	Mid-Atlantic Broadband Cooperative
Mbps	Millions of Bits (Megabits) Per Second
MOU	Memorandum of Understanding
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NFRAP-N	No Further Remedial Action Plan, (N) Not on the National Priority List
NO _x	Nitrogen Oxides
NOFA	Notice of Funds Availability
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSPS	New Source Performance Standards
NSR	New Source Review
NTIA	National Telecommunications and Information Administration
NWP	Nationwide Permit
O ₃	Ozone
OSHA	Occupational Safety and Health Administration
PCN	Pre-Construction Notification
PM ₁₀	Particulate Matter less than 10 Microns in Diameter
PM _{2.5}	Particulate Matter less than 2.5 Microns in Diameter
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
RCRATDS	RCRA transportation, disposal, and storage facility
RCW	Red-cockaded Woodpecker
ROW	Right-of-Way
SHPO	State Historic Preservation Office(r)
SIP	State Implementation Plan
SO ₂	Sulfur Dioxide
SO _x	Sulfur Oxides
SPCC	Spill Prevention, Control, and Countermeasures Plan
SWL	Solid Waste Landfill
SWPPP	Storm Water Pollution Prevention Plan
T&E	Threatened and Endangered Species
tpy	Tons Per Year
USC	United States Code
USACE	U.S. Army Corps of Engineers
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
VAC	Virginia Administrative Code
VCP	Voluntary Cleanup Program

VDEQ
VDOT
VOC

Virginia Department of Environmental Quality
Virginia Department of Transportation
Volatile Organic Compounds

EXECUTIVE SUMMARY

Mid-Atlantic Broadband Cooperative (MBC) proposes to implement a project to install fiber optic cable in 18 counties in rural Virginia to meet the needs for broadband information technology infrastructure by the unserved and underserved public, learning institutions and public safety and service agencies, including approximately 443 miles of new fiber optic cable and 112 K-12 schools. The project proposes to:

- Improve broadband access for more than 58,000 elementary and high school students.
- Spur affordable broadband service to local consumers by enabling more than 30 Internet service providers to connect to the project’s open network.
- Benefit public safety agencies by providing access to the open network to improve emergency coordination and services.

In accordance with the U.S. Department of Commerce’s National Telecommunications and Information Administration (NTIA) for the Broadband Technology Opportunities Program (BTOP) National Environmental Policy Act (NEPA) guidance, an Environmental Assessment (EA) is required to evaluate the impacts to the environment that may potentially occur due to the Proposed Action. Based on the findings in this EA, a comprehensive analysis of the potential direct and indirect effects and the level of significance of each effect are identified and summarized, including cumulative effects and any anticipated mitigation measures that will be implemented as part of the project. The Proposed Action (Preferred Alternative) and the No Action alternative are compared in Table E-1, below. Implementing the Proposed Action would enable MBC to provide fiber to unserved and underserved areas of southern Virginia. The EA determined there would be no significant impacts as a result of the Proposed Action.

**Table E-1
Effect Comparison of Alternatives**

Resource Area	Proposed Action (Preferred Alternative)	No Action Alternative
Noise	Short- and long-term minor adverse effects to the noise environment would be expected due to equipment noise during cable installation and node facility construction, and the addition of backup generators at the facilities. The Proposed Action would not introduce long-term incremental increases in noise environment. Noise associated with the project would end with completion of cable installation and construction. The temporary increases would be relatively small and would not have a significant cumulative effect on the overall noise environment.	No Impact
Air Quality	Short-term minor impacts to air quality would be expected with the implementation of the Proposed Action. Direct and indirect air emissions would not to exceed <i>de minimis</i> thresholds, be “regionally significant”, or contribute to a violation of any federal, state, or local air regulation. Air emissions would be limited to temporary mobile and non-road source emissions from construction equipment and vehicles installing the cable, and those from back-up generators at the node facilities and would limited to the immediate vicinity. Estimated emissions generated by the Proposed Action would be <i>de minimis</i> and would not be regionally significant. Therefore, cumulative effects to air quality would be negligible.	No Impact

**Table E-1
Effect Comparison of Alternatives**

Resource Area	Proposed Action (Preferred Alternative)	No Action Alternative
Geology and Soils	Sub-surface excavation would not be expected to occur for the completion of the Proposed Action with the exception of horizontal directional drilling. This type of drilling protects the integrity of the surface resources by circumventing them and installing the cable below the surface. The subsurface geology would not be expected to be significantly impacted by the construction and implementation of the Proposed Action. The Proposed Action would not be expected to contribute cumulative geology or soil impacts that exceed the threshold of significance. Additionally, there are unrelated projects planned along the Right-of-Way (ROW) that may have greater impact within the site of the Proposed Action.	No Impact
Water Resources	Potential minor effects of the proposed action include exposing the uppermost water level in aquifers occurring at shallow depths, impacts due to parking and refueling vehicles, contact with drilling fluids, accidental spills and impacts to wetlands that are hydraulically connected to surficial groundwater. The principal impact of construction on surface waters will be an increase in the suspended sediment loads, resulting in increased turbidity levels and downstream sedimentation and resulting decreased dissolved oxygen levels in streams. Impacts to water resources due to the implementation of the proposed action would not be expected to exceed the threshold of significance. Cumulatively, there are unrelated projects planned along the ROW, including road upgrades, road and sidewalk extensions, sewer extensions, as well as waterline maintenance and improvements. These potential future projects may have greater impact to the water resources within the site of the proposed action. Thus, the proposed action would not be expected to contribute cumulative impacts that exceed the threshold of significance. Impacts to water resources will be avoided or minimized by compliance with state and federal laws as well as the use of construction BMPs and mitigation measures to mitigate adverse effects.	No Impact
Biological Resources	The Proposed Action could cause direct impacts to common flora and fauna and indirect impacts associated with the loss of habitat due to construction activities and the increased use of areas. Impacts to any of the biological resources identified in this assessment due to the implementation of the proposed action would not be expected to exceed the threshold of significance. There are unrelated projects planned along the ROW that may have greater impact to the biological resources within the site of the proposed action. Thus, the proposed action would not be expected to contribute cumulative impacts that exceed the threshold of significance.	No Impact
Historic and Cultural Resources	Some construction activities occurring under the Proposed Action with the potential to disturb cultural resources are transporting equipment, leveling, drilling, and installing fiber optic cable. These activities can cause an adverse impact to cultural resources by altering drainage patterns, creating fugitive dust, and crushing the resources. The proposed project would cross 40 recorded architectural resources, of which 18 have been determined to be eligible for the NRHP and 11 archeological sites. Of the 112 schools, 42 are over 50 years old. SHPO has been contacted in regard to the proposed plan, and they have not rendered an opinion regarding potential impacts. Cumulative impact of the projects should be less than significant, depending on compliance with existing regulations and SHPO's opinion.	No Impact
Aesthetic and Visual Resources	Short- and long-term minor adverse effects on visual and aesthetic resources would be expected during construction in areas temporarily being altered by the use of construction equipment and the delivery of construction materials. Visual quality along the proposed route has been predominantly altered by the past development and will be altered by future planned development, such as sidewalk construction and replacement, road renovation, sewer and waterline extensions and corridor studies. Given the larger impacts to visual resources from these other planned activities and any past or future activities, cumulative impacts added from the proposed project would be minimally adverse and are not expected to result in a significant impact.	No Impact

**Table E-1
Effect Comparison of Alternatives**

Resource Area	Proposed Action (Preferred Alternative)	No Action Alternative
Land Use	Row crops, forest/woodlands, pasture/hay, transitional (Open Land), open water, low intensity residential, commercial/industrial/transportation, and wetlands were identified in the project corridor. Where aerial facilities are necessary, existing pole attachments will be used to minimize impacts. Construction and operation of the project will disturb land use along the existing ROW temporarily during construction, and land uses will be allowed to revert to pre-construction. The cumulative impact of the proposed action would be minimal and temporary, and the proposed action would not be expected to contribute cumulative impacts of any significance.	No Impact
Infrastructure	Short-term minor adverse and long-term moderate beneficial effects on infrastructure would be expected with the implementation of the Proposed Action. Short-term effects would be from increases in both passenger vehicle and truck traffic during installation of the cable and construction of the node facilities. Long-term effects would be from upgrading the regional fiber-optic infrastructure. The project would not noticeably affect or disrupt the normal or routine functions of public institutions, roads, electricity, and other public utilities and services in the project area, so the Proposed Action would not be expected to contribute cumulative impacts that exceed the threshold of significance.	No Impact
Socioeconomic Resources	The proposed project would contribute minimally to the other socioeconomic activity associated with the other planned projects in the area, and most of these projects would only temporary increase employment during construction. The project is anticipated to create only five new operational positions. This would not appreciably affect unemployment given this small number and the large project area. Any environmental justice impacts should be less than significant even in the areas with high populations of minority and low-income individuals since the project would not create a disproportionate adverse effect. If anything, improving the schools' Internet access would be a beneficial impact and would help these groups. The cumulative impact would be expected to be less than significant.	No Impact
Human Health and Safety	Potentially hazardous wastes sites were identified within the vicinity of the project area, as reported by First Alert Technology Corporation for sites with a potential for impacts to media within one eighth mile on each side of the proposed cable-path segments. The effects of installing the fiber optic cable adjacent to, or through potential areas where hazardous waste have been released could pose a risk to the construction workers performing invasive actions and maintenance activities after cable installation or to the public if contaminated soil becomes airborne (fugitive dust) during the cable installation activities or from uncontrolled runoff of contaminated soil at excavation sites. The proposed project would contribute to the overall effects of the invasive activities on the public and local construction crews; however, proper management to mitigate fugitive dust, runoff, proper protection for site workers, and decontamination procedures will minimize these effects. Other planned projects may have greater impact to the human health risks within the area of the proposed action, so the proposed action would not be expected to contribute cumulative impacts that exceed the threshold of significance.	No Impact

As shown in Table E-1, there would be no change from existing conditions and no potential for cumulative impacts resulting from the No Action alternative. Adverse impacts can be mitigated through avoidance, minimization, remediation, reduction, or compensation. Certain mitigations are required by law, while others are standard practices. Mitigations assist MBC in maintaining compliance with environmental regulations. With the implementation of the BMPs listed in Table E-2, no mitigation measures are necessary or required.

Table E-2
Best Management Practices

Noise	<p>Proper maintenance of construction equipment and minimizing the idle time of equipment and vehicles would reduce noise levels. Construction would be limited to daytime hours when possible.</p> <p>The project may involve the installation of Horizontal Directional Drilling (HDD) segments at major roads and at water crossings. The specific entry and exit points for the HDDs sites have not been finalized. MBC is currently in the process of evaluating potential noise mitigation measures to ensure noise effects at HDD locations remain less-than-significant and that noise levels do not exceed local, state or federal noise standards.</p> <ul style="list-style-type: none"> • Construction and drilling personnel will wear adequate personal hearing protection to limit exposure and ensure compliance with federal health and safety regulations. • Sound generating equipment would be enclosed partially enclosed with noise barriers at all HDD locations. • Noise monitoring would be conducted in the early stages of drilling, and, if necessary, additional noise control measures would be implemented to reduce noise to levels below 65 dBA DNL, or levels specified by applicable local noise ordinance. <p>Additional BMPs under consideration include the following:</p> <ul style="list-style-type: none"> • Enclose Power Unit — The drilling rig power unit would be enclosed. • Enclose mud pumps and engines — The mud pumps and engines would be partially or totally enclosed. • Enclose generator sets — Generator sets would be totally enclosed or acoustically packaged generators would be used. • Modify back-up alarms — Back-up alarms on mobile equipment would be modified. • Restrict the use of mobile equipment — Use of mobile equipment would be restricted during nighttime hours. • Temporary hay bales as noise barriers — Hay bales would be placed on site as a temporary noise barrier when required.
Air Quality	<p>The following BMPs will be implemented to prevent unnecessary particulate matter from becoming airborne:</p> <ul style="list-style-type: none"> • Use of water for control of dust, the grading of roads, or the clearing of land; • Paving of roadways and maintaining them in a clean condition; • Covering open equipment for conveying or transporting material likely to create objectionable air pollution when airborne; and, • Promptly removing spilled or tracked dirt or other materials from paved streets.
Geology and Soils	<p>Unwanted effects of most construction activities would be accomplished through standard design and construction procedures. The disturbed areas would be kept to the minimum necessary, and sedimentation and erosion controls would be implemented during construction when appropriate. The construction contractor would be required to implement measures consistent with the MBC SWPPP and Erosion & Sediment Control BMPs. These may include soil stabilization techniques as well as bank stabilization along water bodies. For the aboveground alternative, any soil disturbance would be contained to disturbance caused by the use of heavy machinery. Compacted and temporarily disturbed areas of soil would be expected, and BMPs would be implemented to maintain this below the threshold of significance. Should there be the need to install new poles, BMPs would again be implemented to decrease any adverse soil effects such as re-vegetation within the impacted area.</p>

**Table E-2
Best Management Practices**

Water Resources	<p>Storm water regulations require measures, such as silt fences, buffer zones, and check dams, to be implemented during construction to prevent sediment from leaving the site and to protect water quality. Appropriate facility design and construction waivers would be followed to prevent floodplain impacts. MBC will protect and minimize potential adverse impacts to streams by implementing the following:</p> <ul style="list-style-type: none"> • Expediting construction and limiting the amount of equipment and activities in waterbodies; • Constructing waterbody crossings as perpendicular to the axis of the waterbody channel as engineering and routing conditions allow; • Maintaining ambient downstream flow rates; • Removing all construction material and structures from the waterbody after construction; • Permanently stabilizing stream banks and adjacent upland areas after construction; and • Inspecting the ROW periodically during and after construction and repairing any erosion controls and/or performing restoration, as needed, in a timely manner. <p>The methods to be used for waterbody crossings are all trenchless crossings that involve either horizontal drilling or boring of the cable under the waterbody or an aerial spanning of the waterbody. Specifications and detailed BMPs will be finalized following completion of detailed design and permitting activities.</p>
Biological Resources	<p>The amount of vegetation disturbed by construction activities would be kept to the minimum amount necessary. Disturbed areas would be landscaped or reestablished with groundcover using indigenous species to reduce or prevent wind and water erosion, and to limit the establishment of undesirable (invasive) weed species. Additionally, horizontal drilling or aerial crossings will be used when warranted.</p>
Historic and Cultural Resources	<p>Standard operating procedures would be followed if previously unknown Native American remains or artifacts are discovered during construction.</p>
Aesthetic and Visual Resources	<p>Once completed, the fiber-optic line would be mostly underground or visually blend with existing utility structures. Post construction re-vegetation efforts would ensure that this feature does not impact visual resources in the area. Visual mitigation by revegetating with wildflowers would potentially result in minor to major beneficial impacts and would also concur with current roadside aesthetic goals.</p>
Land Use	<p>Installation of the cable will be direct buried, using the direct plow method of underground installation, along roadway rights-of-way through existing agreements with the Virginia Department of Transportation (VDOT). Where aerial facilities are needed due to terrain, environmentally sensitive areas or traffic congestion issues, fiber will be placed in the communications zone of existing pole facilities and will utilize existing pole attachment agreements with providers already in place by MBC. Construction ROW will be temporarily disturbed during construction but will be allowed to revert to natural conditions after construction is completed.</p>
Infrastructure	<p>Traffic would increase because of additional vehicles and possible traffic delays near the cable installation locations and node facilities' construction sites. Such effects would be minimized by placing staging areas where they interfere with traffic the least. Traffic plans would be prepared to address detour routes and road and/or lane closures, including signing and public notification. Slow-moving construction equipment would be scheduled to enter and exit the area before or after morning and evening peak traffic hours whenever possible. Heavy vehicles would be equipped with backing alarms, two-way radios, and Slow Moving Vehicle signs when appropriate. Further, cable installation across roads and railways may use directional drilling in accordance with applicable crossing permits and approval requirements. The use of directional drilling allows the cable to be lain horizontally beneath water and roadways without disrupting the entire surface area. This process allows for the avoidance of traffic interruptions.</p>
Socioeconomic Resources	<p>No BMPs suggested.</p>
Human Health and Safety	<p>BMPs suggested to limit fugitive dust as part of the geology and soils recommendations.</p>