

**Revised Final
Environmental Assessment**

for

**Hardy AnchorRing
BTOP Award #NT10BIX5570035
Hardy County, West Virginia**

April 6, 2011

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EXECUTIVE SUMMARY

Hardy Telecommunications, Inc. (Hardy) is a nonprofit rural cooperative formed over fifty years ago to provide telephone service to Hardy County, West Virginia, an area deemed unprofitable by commercial telephone companies to serve due to sparse populations and rugged mountain terrain. Existing customers, including private individuals, anchor institutions (such as schools, hospitals, libraries and government agencies), public safety institutions and businesses, have a pressing need for greater reliability and increased bandwidth capacity at lower costs. The existing network cannot provide the high capacity needed for economic development and video-based services such as telemedicine and distance learning, and the existing network is not diverse leading to communications outages in the region. These improvements will be critical to economic development, health care, education, public safety and the prosperity and quality of life of Hardy County residents, ensuring that broadband service in the area is at parity with urban areas of the State and the Country.

The Hardy AnchorRing Project is a 119.7-mile high-capacity, geo-diverse fiber-optic Middle Mile ring and laterals to community anchor institutions. It will be an aerial and underground network ring and laterals comprised of 144-strand single mode fiber optic cable using state of the art electronics to deliver high capacity data, voice and video services in the area.

The original network design submitted to NTIA in Hardy's application for funding dated August 29, 2009 estimated that 117 miles of fiber optic cable would be either strung on existing poles or buried using existing conduit, buried within rights-of-way or in disturbed areas. These figures were based on measurements from maps and from Google Earth.

As a condition of the NTIA award, Hardy was required to prepare an Environmental Assessment, submitted to NTIA on August 30, 2010. It should be noted that, at the time of the submittal, the EA listed a total project area of 113 miles. The mileage discrepancy between the earliest submittal and the present time can be accounted for by: a) difference in route mileage when line drawings were converted to CAD drawings and b) refinement of the project from the time of the original submission of the application by Hardy in 2009.

Between submittal of the grant application in August 2009 and award notification in March 2010, Hardy constructed a portion of the work originally proposed in the application. These specific segments were built to fulfill the urgent needs of important anchor institutions that serve Hardy County. Several institutions requested expedited improvements to the system to remedy frequent outages and improve reliability and bandwidth. The total of this previously constructed work is approximately 14 miles of the 119.7 miles.

NTIA subsequently contacted Hardy Telecommunications on January 11, 2011 to explain that these "already built" segments must be reinstated as part of the review package for the stimulus grant application submitted in August, 2009.

Additionally, NTIA notified Hardy that the previously constructed line must be considered part of the federal undertaking covered by the NTIA grant and, therefore, was reinstated as part of the cultural resource review and environmental review process. Accordingly, Hardy is required to insert the previously built components into this environmental assessment, thus combining the previously constructed line and the proposed line to be constructed into one project area. As such, the environmental assessment included identification of positive and adverse effects for the entire undertaking.

Therefore, the new total for the entire project area, both proposed and previously constructed is 119.7 total miles. Construction methodologies are as follows: 107 miles (89.4%) are aerial on existing utility poles, 8.6 miles (7.2 %) will be buried by cat plowing, .72 mile (.6%) will be installed by directional drilling from upland to upland, and 3.4 miles (2.8%) will be buried in existing conduit.

In addition to the actual network construction, one small support building, known as a remote, is necessary to implement the proposed project. Originally, three buildings were proposed, but two were eliminated through further analysis of existing infrastructure. Building construction entails installation of partially pre-fabricated materials. At the site a concrete slab is poured to accommodate the building. The roof and walls are pre-fabricated and are brought to the site and attached to the slab. The building size is approximately 12 x 15 feet and it will be fenced for security purposes. The walls are eight feet tall, with a roof that peaks at 12 feet.

As required by the National Environmental Policy Act (NEPA), three (3) alternatives were identified and fully evaluated. These are the ***Preferred Alternative***, ***Buried Cable Alternative*** and the ***No Action Alternative***. Each is described below.

Preferred Alternative:

This alternative takes advantage of long stretches of existing utility infrastructure in existing rights-of-way by installing fiber on existing utility poles. It also utilizes existing buried conduit where available. Some cat plowing in uplands will be needed in some areas to install fiber, but it is minimal. Finally, all wetlands and waterbodies will be crossed either aerially on existing utility poles as described above, or by directionally drilling beneath them from upland-to-upland. Therefore, wetland impacts are avoided and land-disturbing activities are minimized, thereby reducing the potential for impacts to historic and archaeological resources as well as impacts from erosion and sedimentation. This combination of installation techniques also takes into account the construction limitations dictated by the mountainous terrain that characterizes the Potomac Highlands region in Hardy County. Construction techniques by mile are as follows: 107 miles (89.4%) aerial on existing poles; 8.6 miles (7.2%) buried by cat plowing, .72 mile (.6%) by directional drilling; and, 3.4 miles (2.8%) buried in existing conduit. Within the

project route, 338 wetlands would be crossed (335 aerially, one by directional drilling and two by installation in existing conduit).

The Preferred Alternative results in very minimal, if any, impacts to biological resources primarily due to the construction techniques of aerial installation on existing utility poles, directional drilling from upland to upland within wetlands and/or waterbodies and an extremely limited amount of cat plowing in uplands. Because the vast majority of the construction involving cat plowing is located along maintained, highly disturbed road rights-of-way, the impacts to biological resources are negligible.

The construction of the small building will involve land disturbance of approximately .004 acre. The proposed location is in a cleared field adjacent to an electrical substation. Therefore, land disturbance will be minimal.

This alternative meets the project goals by providing a modern and reliable broadband network. It would provide high quality service to residents, businesses and institutions, and would provide possible opportunities to attract businesses to this area which has been heavily adversely affected by the economic downturn.

Buried Cable - Non-Preferred Alternative:

This alternative would also take advantage of existing rights-of-way by trenching the conduit primarily along roads. It would also involve directional drilling of wetlands and waterbodies to avoid impacts to those resources. It is similar to the Preferred Alternative in that it avoids wetland impacts. It also would address significant social and economic factors that have been disadvantageous to the region.

However, it would dramatically increase the amount of land-disturbing activities (along 116.3 miles of the project area, taking into account the 3.4 miles of installation in existing conduit) as well as the duration and cost of construction, especially in light of the geology of the area. This would equate to a greater potential for environmental impacts from erosion and sedimentation, because in specific areas, geology would hinder cat plowing and trenching with a back hoe would most likely be required. This would also increase the potential for impacts to historic and archaeological resources.

The construction of the small building will involve land disturbance of approximately .004 acre. The proposed location is in a cleared field adjacent to an electrical substation. Therefore, land disturbance will be minimal.

The Buried Cable - Non-Preferred Alternative would result in significant disturbance to biological resources through the extensive amount of land disturbance that would be required due to construction activities. Such land disturbance also increases the potential for impacts to threatened and endangered species.

No Action Alternative:

Not pursuing this project would have no impact on biological and physical resources but would have a significant negative impact on the social and economic resources of Hardy County. It would provide no solution to the current “bandwidth-constrained” user environment and lack of network diversity and reliability that have been deemed critical to the region. This alternative would continue and prolong the current communication status in this economically depressed area. Public safety would also suffer as public safety agencies and institutions would not be provided with modern, reliable communication capabilities.

The No Action Alternative would have no impact on biological resources.

A summary of the analysis between the three alternatives is provided below in table format.

This Environmental Assessment (EA) fully analyzes these alternatives with respect to environmental effects, including human health, economic and social effects, in accordance with NEPA requirements. Based on this EA, the Preferred Alternative would result in less environmental impact to most natural resource areas (noise, air quality, water, biological, historical/cultural, land use, geology and soils) than the Buried Cable – Non-Preferred Alternative. The Buried Cable – Non-Preferred Alternative would also potentially result in an increase in adverse human health and safety impacts due to the longer construction duration. Potential impacts to infrastructure and aesthetic/visual resources would be slightly greater from the Buried Cable – Non-Preferred Alternative due to increased construction time and the type of construction required. Additionally, the Buried Cable – Non-Preferred Alternative would be extremely expensive and would delay the project completion due to the additional time required for installation. The No Action alternative, while obviously the least environmentally damaging, would not fulfill the project purpose of providing upgraded broadband facilities to Hardy County.

POTENTIAL EFFECTS OF THE PREFERRED, BURIED CABLE AND NO ACTION ALTERNATIVES Hardy AnchorRing Project			
RESOURCE	Preferred	ALTERNATIVES	
	Buried Cable – Non-Preferred	No Action	
Noise	No or minimal noise will be generated. Noise consistent with existing traffic noise from right-of-way.	Noise somewhat greater than Preferred Alternative due to more construction equipment needed. Construction operations longer duration.	No impact
Air	Minimal impacts from small construction equipment. Short duration of construction. Particulate emissions negligible and controllable.	More and larger equipment needed. Longer duration of construction. Overall minimal impact.	No impact
Geology/Soils	Temporary disturbance from plowing or drilling. Existing soils mostly already disturbed. Majority of installation aerial.	Temporary soil disturbance from plowing and drilling may occur. Greater potential for erosion and sedimentation.	No impact
Water	No impacts, due to directional boring (upland-to-upland) under all water resources.	Temporary wetland and water quality impacts may result from erosion and sedimentation.	No impact
Biological	Minimal impacts due to installation on existing utility poles and directional drilling of wetlands and/or waterbodies. Potential impacts minimized due to majority of aerial installation.	Land disturbance activities may occur from trenching.	No impact
Historical/Cultural	Impacts minor as installation is on existing poles with existing utilities. Consistent with existing land uses. Only change in land use would be construction of one small building.	Greater potential impacts due to extensive plowing and drilling. No impact other than temporary during construction.	No impact
Aesthetic/Visual			No impact
Land Use		Consistent with existing land uses. Only change in land use would be construction of one small building.	No impact

POTENTIAL EFFECTS OF THE PREFERRED, BURIED CABLE AND NO ACTION ALTERNATIVES

Hardy AnchorRing Project

		ALTERNATIVES	
RESOURCE	Preferred	Buried Cable – Non-Preferred	No Action
Infrastructure	Minimal impacts due to extensive use of existing infrastructure (poles). Dramatic improvement to existing telecommunications infrastructure.	Make use of existing right-of-way but not poles. Dramatic improvement to existing telecommunications infrastructure.	Negative impact to telecommunications infrastructure for failing to upgrade.
Socioeconomic	Long-term positive impacts by upgrading telecommunications capabilities. Temporary construction jobs created, and long-term local jobs created by improved economic development from availability of state-of-the-art telecommunications capabilities in the County. Increase in land values and tax base for area. Improvements in educational outcomes from access to interactive, video-based distance learning.	Positive impacts by upgrading telecommunications capabilities. Temporary construction jobs created, and long-term local jobs created by improved economic development from availability of state-of-the-art telecommunications capabilities in the County. Increase in land values and tax base for area. Improvements in educational outcomes from access to interactive, video-based distance learning.	Negative impacts from failure to provide upgraded telecommunications capabilities. Negative economic impact from reduced job creation. Lower land values and tax base for area. Interactive, video-based distance learning infeasible.
Human Health/Safety	No adverse human health or safety impacts expected. Positive impacts to safety from improved telecommunication capabilities for public safety agencies and health care.	Some increase in potential impacts from greater earth-disturbing activities, more equipment needed and longer construction duration.	Societal impact due to degraded telecommunications infrastructure for safety and health care institutions.
Cumulative Impacts	No adverse long term cumulative impacts from construction. Considerable cumulative positive impacts from improvements to telecommunications infrastructure.	No adverse long term cumulative impacts from construction. Considerable cumulative positive impacts from improvements to telecommunications infrastructure.	Considerable negative long term cumulative impacts from failure to provide upgraded telecommunications infrastructure.