

May 2011



**Final Draft**

**ENVIRONMENTAL ASSESSMENT**

**For**

**LOUISIANA BOARD OF REGENTS**



**and**

**NATIONAL TELECOMMUNICATIONS AND  
INFORMATION ADMINISTRATION (NTIA)**



# Final Draft Report

## ENVIRONMENTAL ASSESSMENT

for

## LOUISIANA BOARD OF REGENTS



and

## NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION (NTIA)



State Contract No. 01-107-09-01  
GEC Project No. 9840.8095101

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April 25, 2011

# EXECUTIVE SUMMARY

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### BACKGROUND

The Louisiana Board of Regents (BOR), on behalf of the Louisiana Broadband Alliance (LBA), consisting of BOR, Louisiana Department of Education, Louisiana Educational Television Authority, Louisiana Department of Health and Hospitals, Louisiana State University (LSU) Agricultural Center's Delta Rural Development Center, and the Louisiana Geographic Information Center, was awarded in March 2010, a grant of \$80.5 million in American Recovery and Reinvestment Act (ARRA) funding from the U.S. Department of Commerce (DOC), National Telecommunications and Information Administration (NTIA) Broadband Technology Opportunities Program (BTOP). This project is designed to advance and support the key purposes of the Commerce Department's Notice of Funds Availability (NOFA) solicitation for the BTOP program:

- Extend broadband access to non-served and underserved areas of the state;
- Provide high-speed broadband access to community "anchor" institutions (e.g., schools, libraries, health facilities); and,
- Spur demand for broadband services, economic growth, and job creation.

The grant is under the Broadband Infrastructure category of projects and defined by BTOP as a *Middle Mile Project*, which is one "that does not predominantly provide broadband service to end users or to end-user devices, and may include interoffice transport, backhaul, internet connectivity, or special access." The plan for this project is to provide a public/private mechanism whereby the grant will fund the installation of a middle-mile fiber infrastructure to which private providers of "last-mile" services for anchor institutions, business and households will then be able to connect for services. This should allow for a substantial reduction of the costs of providing quality high-speed bandwidth services to rural, underserved areas of the state.

In keeping with the project of the NOFA, the LBA targets the following in this project:

- Thirty-two parishes, 12 of which constitute the Louisiana Delta Initiative region in predominantly rural northeast Louisiana and four of which are parishes containing three of Louisiana's federally recognized Indian tribes;
- Eighty-three community anchor institutions (K-12 School districts, parish libraries and FCC Rural Health Care Pilot entities)

The project also holds the potential to facilitate the delivery of quality broadband services to over 100,000 households and 15,000 businesses. These services would be possible and dependent upon private service provider connections to the new fiber infrastructure.

### PROPOSED PROJECT

The project will extend the fiber-optic infrastructure constructed by the state and operated by the Louisiana Optical Network Initiative (LONI). The LONI network, administered under the authority

of the BOR, is a high-speed, fiber optic network that currently connects most higher education institutions and supercomputing resources among six research universities.

The design for this project is to deploy a middle-mile fiber infrastructure backbone that covers approximately 3,488 square miles and approximately 910 fiber route miles as shown in Figure ES-1 (which shows both rural and urban segments), providing open interconnects fiber and bandwidth access to any entity seeking to provide other middle-mile or last-mile services. Rural segments are numbered 001 through 020 and were established for construction utility purposes; urban segments are named for the municipality. The technical design plan is for interconnect points along the fiber route which will be designed to maximize access and connection to new fiber infrastructure by private providers of services.

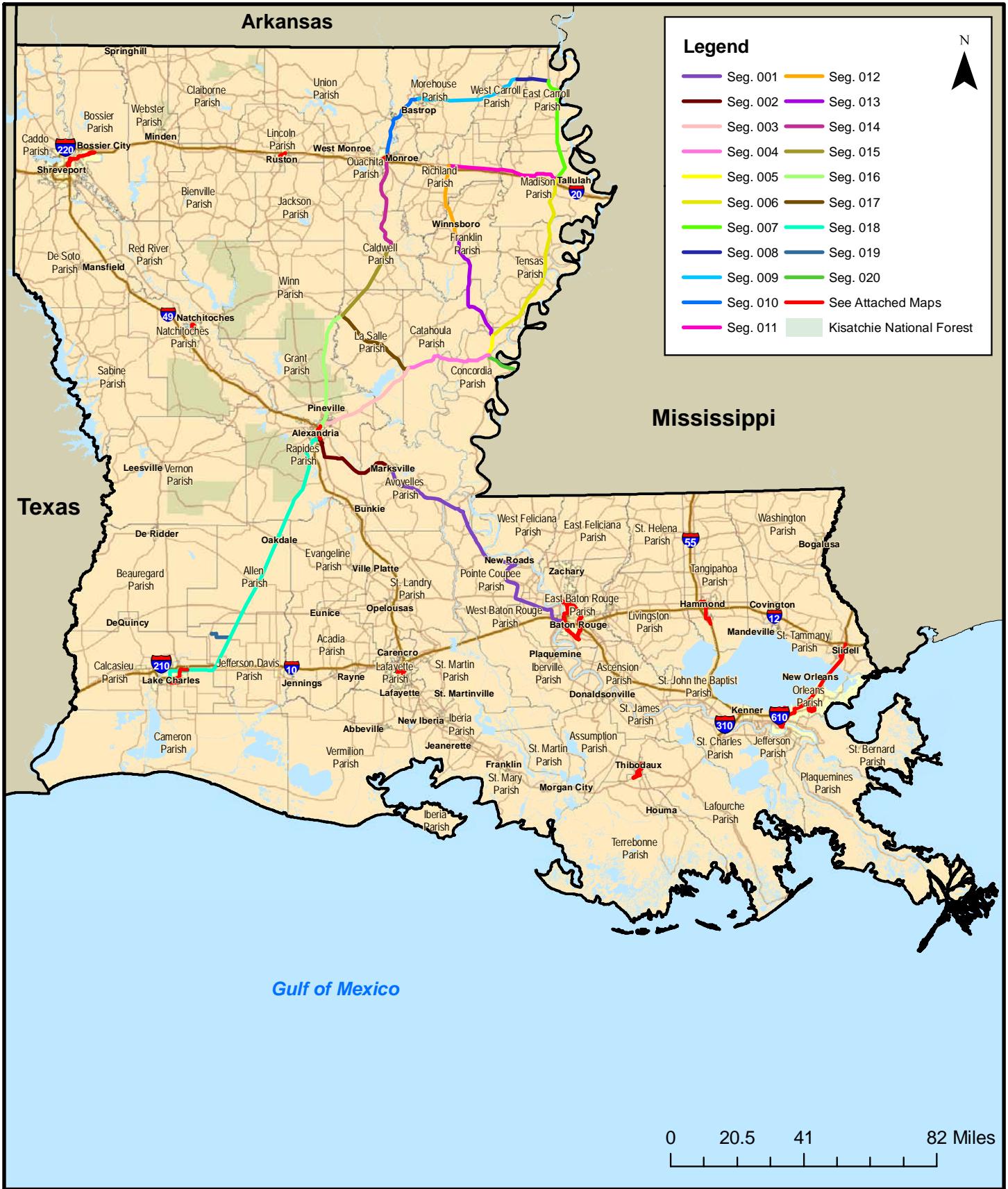
The project's primary targets will be the following 32 parishes:

1. The 12 parishes in the Louisiana Delta Initiative: Caldwell, Catahoula, Concordia, East Carroll, Franklin, Madison, Morehouse, Ouachita, Pointe Coupee, Richland, Tensas, and West Carroll;
2. The four parishes of three federally recognized native American Indian Tribes: LaSalle, Avoyelles, Allen, and Jefferson Davis; and
3. 16 additional Parishes necessary to complete the fiber infrastructure design: Bossier, Caddo, Calcasieu, East Baton Rouge, Grant, Jefferson, Lafayette, Lafourche, Lincoln, Natchitoches, Orleans, Rapides, St. Tammany, Tangipahoa, Terrebonne, and West Baton Rouge.

The middle-mile infrastructure to be constructed will have the technical ability to provide interconnection points enabling last-mile and/or middle-mile providers connecting to the fiber network to supply up to 1,000 Mbps to anchor institutions and 20 Mbps for businesses and households. By utilizing the fiber network assets, the middle-mile and last-mile providers should target a rate reduction of 25 percent for related service offerings. LBA will periodically review the availability of service providers and targeted broadband services within a given service area to determine the effectiveness of the private providers in delivering these services and their pricing structure.

The engineering design for this project is to deploy a middle-mile fiber optic infrastructure (i.e., not to include direct connection to the end users) that will be routed within existing rights-of-way along approximately 910 miles of state and federal highways in rural areas and city or parish streets and roads in urban areas. The design also provides 36 interconnect points along the fiber route within highway right-of-way (ROW) that will be designed to maximize access and connection to the new fiber infrastructure by private providers of broadband services.

The construction design is to place two 1.25 inch HDPE conduits (into which the fiber optic cable will be installed) by three methods: trenching/plowing, horizontal direct drilling, and structure mounting. For trenching/plowing, the conduit will be buried to a depth of four feet below soil surface within the existing ROW. The preferred method of burying at this time is the plow method which is done by use of a bulldozer pulling a plow that simultaneously cuts through the soil and installs the conduit to the desired depth. If the trench method is used, upon installation of the conduit, the trench will be immediately backfilled with excavated soil and native vegetation will be allowed to regenerate. For horizontal directional drilling (HDD),



**Legend**

— Seg. 001	— Seg. 012
— Seg. 002	— Seg. 013
— Seg. 003	— Seg. 014
— Seg. 004	— Seg. 015
— Seg. 005	— Seg. 016
— Seg. 006	— Seg. 017
— Seg. 007	— Seg. 018
— Seg. 008	— Seg. 019
— Seg. 009	— Seg. 020
— Seg. 010	— See Attached Maps
— Seg. 011	— Kisatchie National Forest

**LONI Statewide Overview Map**

Figure: ES1	
Date: January 2011	
Scale: 1 inch = 41 miles	
Source: GEC	
Map Id: 408095101-2654	

the conduit will be bored with the only areas of surface disturbance being the ground entry and exit points. These areas will also be restored to original conditions following boring completion. All HDD routes, as well as entry and exit points, will be within highway ROW along the conduit route, handholes will be installed at approximately 5,000 foot intervals with intermediate handholes being buried and splice point handholes will be mounted flush with the surface. Waters of the U.S., including adjacent wetlands, as well as other sensitive or construction limited areas will be traversed using this method. In cases where the above methods are impracticable, such as major rivers, where the distance would be greater than the maximum single reach of HDD, existing conduit on bridge spans will be utilized. Of the 36 interconnect facilities, 21 will be new structures and 15 will utilize existing structures. The new structures will consist of a 10-foot by 10-foot pre-constructed building, surrounded by security fencing to occupy a total area of approximately 20 feet by 20 feet. These structures will also be constructed within existing state or local government ROW. Emergency generators, either natural gas or diesel powered, will be installed at each interconnect.

## **ENVIRONMENTAL ASSESSMENT**

The purpose of this Environmental Assessment (EA) is to fulfill the requirements of the National Environmental Policy Act (NEPA) of 1970, which mandates that federal governmental actions must be evaluated for their potential environmental impacts prior to the commencement of the project. The proposed project is a federal project because it is being funded through a federal statute, the ARRA.

## **ALTERNATIVES**

Proposed Action Alternatives initially considered for the project include:

- Fiber optic cable buried underground (direct burial)
- Fiber optic cable buried underground in conduit (burial in duct)
- Fiber optic cable suspended aerially (aerial)
- Wireless

Three of these, direct burial, aerial, and wireless were eliminated from further consideration early in the planning process, as follows:

- Direct burial was determined to have a shorter life cycle than either of the other two alternatives and has proven to be less secure and reliable than burial in duct.
- Aerial suspension and wireless were determined to be exposed to knock downs, environmental conditions (fluctuating temperatures, wind, sunlight, damage from wildlife), and vandalism. Additionally, aerial suspension requires increased maintenance and life cycle costs.

Therefore, this EA analyzes the effects of the Proposed Action, fiber optic cable buried in conduit, and the No-Action Alternative, in which no construction will take place and the Louisiana fiber optic network will not be expanded.

## ENVIRONMENTAL CONSEQUENCES

Table ES-1 presents a summary of the environmental consequences identified as a result of the Proposed Action and No-Action alternatives.

**Table ES-1. Environmental Consequences of the Proposed Action and No-Action Alternatives**

Resource	Alternatives	
	Proposed Action	No-Action
<b>Noise</b>	Short-term, minor noise from installation construction equipment.	Existing highway traffic noise would continue.
<b>Air Quality</b>	Short-term, minor increase in air emissions from construction equipment engines. Possible temporary, minor increase in fugitive dust emissions from vehicular movement and interconnect facility construction.	Current levels of exhaust emissions would continue to be released from motor vehicle traffic.
<b>Geology and Soils</b>	Minimal impact to soils during the plow-buried operation and HDD installation of the cable.	Soils in the ROW will be occasionally disturbed during placement of other new utilities, maintenance of existing utilities, drainage projects, etc.
<b>Water Resources</b>	Largely unaffected as all significant water resources will be crossed via HDD or structure mounted	No impact.
<b>Biological Resources</b>	The avoidance of disturbance to sensitive terrestrial and aquatic habitats by routing in existing ROW and HDD or structure mounted will result in no significant impact to these resources.	The occasional road-kill of wildlife within the ROW will continue at its current rate.
<b>Historical and Cultural Resources</b>	In rural areas, there are known historic or cultural resources existing within the proposed action ROW; however, these will be avoided by installation on the opposite side of the highway or by HDD under the site. In urban settings, historic buildings and districts will be avoided in routing the new fiber cable.	No impact.
<b>Aesthetic and Visual Resources</b>	Temporary, minor impacts will occur due to construction equipment during installation. A few new small huts will be necessary to shelter interconnect facilities throughout the project.	No impact.
<b>Land Use</b>	No significant changes in land use will result from the project.	The proposed project land will continue to be utilized as ROW for utilities and highway drainage.



Resource	Alternatives	
	Proposed Action	No-Action
<b>Infrastructure</b>	The proposed project will have no significant impact to infrastructure. Should the area of fiber cable be needed for future highway expansion, it can be easily moved to another area within the ROW.	The existing infrastructure would remain, with no impacts.
<b>Socioeconomics</b>	Beneficial impacts to socioeconomics will result in the form of better communication capabilities, increased educational opportunities, commercial development potential, and higher security.	The un-served and underserved areas of the state would continue to be hampered by the lack of high speed communications that the proposed project will bring. The universities to be served will continue to lag behind competing institutions due to a slower, outdated communication network.
<b>Human Health and Safety</b>	No impacts are anticipated to human health and safety as a result of the proposed project.	No impacts.

**CONCLUSIONS**

The results of the evaluation conducted in this EA indicate that the Proposed Action will result in no significant environmental impacts and that a Finding of No Significant Impacts (FONSI) should be prepared and signed as a final decision.