



**BROADBAND TECHNOLOGY OPPORTUNITIES PROGRAM (BTOP)  
FINAL ENVIRONMENTAL ASSESSMENT FOR THE  
REGION 18 EDUCATION SERVICE CENTER  
CONNECT SOUTHWEST TEXAS PROJECT  
GRANTEE # 5637**

May 2011

Prepared for:

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# ACRONYMS LIST AND GLOSSARY

## Acronyms

ACRES	Assessment, Cleanup, and Redevelopment Exchange System (Brownfields)
AFS	Air Facility System
APE	Area of Potential Effect
APWL	Air Pollutant Watch List
ARRA	American Recovery and Reinvestment Act
BCVI	Black-capped Vireo
BTOP	Broadband Technology Opportunities Program
CCI	Comprehensive Community Infrastructure
CEC	Commission for Environmental Cooperation
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CGP	Construction General Permit
CO	Central Office
CO2	Carbon Dioxide
CWA	Clean Water Act
DPS	Department of Public Safety
DPS	Distinct Population Segment
EA	Environmental Assessment
EDA	Economically Distressed Area
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESC	Educational Service Center
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Agency
FM	Farm to Market Road
FHWA	Federal Highway Administration
FPPA	Farmland Policy Protection Act
FR	Federal Register
GHG	Green House Gas
GIS	Geographic Information System
Gbps	Gigabytes per Second
ICIS	Integrated Compliance Information System
ISD	Independent School District
IPCC	Intergovernmental Panel on Climatic Change
LLC	Limited Liability Company
MBTA	Migratory Bird Treaty Act
MRLC	Multi-Resolution Land Characteristics Consortium
Mbps	Megabytes per Second
MSAT	Mobile Source Air Toxics
NAAQS	National Ambient Air Quality Standards
NEP	Nonessential Experimental Population
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOI	Notice of Intent



NOT	Notice of Termination
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NTIA	National Telecommunications Information Administration
NWSR	National Wild and Scenic Rivers
OSHA	Occupation Health and Safety Administration
PCS	Permit Compliance System
RCRA	Resource Conservation and Recovery Act
R18ESA	Region 18 Education Service Center
RMP	Risk Management Plan
ROW	Right of Way
SAC	Special Award Conditions
SAL	State Archeological Landmark
SH	State of Texas Highway
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SSA	Sole Source Aquifer
SSTS	Section Seven Tracking System (Pesticides)
SW3P	Storm Water Pollution Prevention Plan
TCEQ	Texas Commission on Environmental Quality
TCNS	Tower Construction Notification System
TGLO	Texas General Land Office
THC	Texas Historical Commission
TNC	The Nature Conservancy
TNDD	Texas Natural Diversity Database
TPDES	Texas Pollutant Discharge Elimination System
TPWD	Texas Parks and Wildlife Department
TWDB	Texas Water Development Board
TxDOT	Texas Department of Transportation
U.S.	United States
USACE	United States Army Core of Engineers
USC	United States Code
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WMA	Wildlife Management Area

## **Glossary**

### **Anchor Institutions**

Government buildings, schools, library, and other institutions that would be the primary locations to which broadband services would be provided

### **Boring**

A sub-surface horizontal drilled hole to place fiber optic cables for telecommunication purposes

### **Broadband**

High-speed telecommunication connection to the Internet as defined by the FCC

### **Cabinet**

3'x5'x5' metal enclosure housing telecommunications equipment

### **Dial-up**

Access to the Internet using a standard telephone connection and a modem

### **Drop**

A telecommunication cable (fiber optic or copper) placed between a hand hole and an anchor institution

### **Hand Hole**

Typically an 8'x8' metal vault placed entirely underground to store fiber optic cables

### **High-Speed**

Access to the Internet other than dial-up

### **Hut**

Small, typically 10'x10'x10' prefabricated composite building housing telecommunications equipment

### **Lashing**

Binding fiber optic cables onto a metal strand placed in the air between utility poles

### **Last Mile**

Connection from the telecommunication service providers middle mile to the telecommunications subscriber

### **Middle Mile**

Locations defined as between primary telecommunications points of service

### **Plowing**

A machine sliced hole typically 36 to 42 inches deep and about 3 to 4 inches wide for placement of fiber optic cables

### **Served**

The subscriber (institution, business, home) to which telecommunications service is being provided

**Trenching**

An open-cut hole 12" to 18" wide to connect fiber optic cables placed by boring or plowing

**Underserved**

Areas classified by the FCC receiving a service that is less than the standard broadband service

**Unserved**

Areas, businesses, homes to which no telecommunication service is provided

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## EXECUTIVE SUMMARY

The Region 18 Education Service Center (Region 18) proposes to construct the Connect Southwest Texas fiber optic network to deploy new, high-speed middle-mile infrastructure across 15 counties in west Texas. The infrastructure would improve broadband connectivity and access speeds, in order to provide critical educational, economic, and medical services. Region 18 (primary fiscal agent) and five telco providers (Dell City Telephone, Big Bend Telephone, Poka Lambro, Wes-Tex Cooperative, and Hill Country Telephone) form a partnership to construct three new microwave towers, modify one existing tower, and deploy about 195 miles of middle-mile infrastructure to benefit up to 200 community anchor institutions (CAIs), including schools, public safety entities, libraries, government facilities, institutions of higher learning, healthcare providers, and an observatory.

Region 18 ESC as an organization serves 19 counties in southwest Texas: Andrews, Brewster, Crane, Culberson, Ector, Glasscock, Howard, Jeff Davis, Loving, Martin, Midland, Pecos, Presido, Reagan, Reeves, Terrell, Upton, Ward and Winkler. The proposed project, however, will only be executed in 15 of those counties (Andrews, Brewster, Crane, Culberson, Howard, Jeff Davis, Loving, Midland, Pecos, Presido, Reagan, Reeves, Upton, Ward and Winkler) through the construction of a fiber network or towers. The remaining four counties (Ector, Terrell, Glasscock and Martin) are being served by other telecommunication companies with other funding and are not part of this environmental assessment (EA). Additionally, some of the originally proposed information since the application and fact sheet has changed due to some proposed CAIs not participating as originally agreed upon or other logistical reasons. Despite these changes, this EA represents the most current and up-to-date information concerning the counties where construction will be conducted, the proposed infrastructure that will be placed, and the community anchor institutions that will be directly participating in the project.

The Region 18 project would construct a fiber path that would enable access speeds between 10 Megabits per second (Mbps) and 1 Gigabit per second (Gbps), and backbone speeds as high as 10 Gbps across southwest Texas. The project would facilitate more affordable and accessible broadband service by enabling local internet

service providers to utilize the project's open network, consisting of new fiber routes and microwave towers and the existing local microwave network.

This project addresses six Comprehensive Community Infrastructure (CCI) priorities and all five of the statutory purposes outlined by the Recovery Act for the Broadband Technology Opportunities Program (BTOP). These include the following:

- providing service to unserved and underserved areas;
- building the infrastructure needed for community anchor institutions like schools, libraries, healthcare providers, and community support organizations;
- deploying broadband to benefit vulnerable populations or economic development zones;
- enhancing public safety through improved telecommunication facilities; and,
- stimulating economic growth and job creation and development.

These are all priorities of the Region 18 project.

The service area is currently underserved by high-speed internet and requires a high-speed internet backbone of substantial bandwidth to local anchor institutions with opportunity for current high-bandwidth support services. In addition to serving Region 18, it is estimated from US Census Bureau statistics that 40,000 households and 8,000 businesses would be able to benefit from this development. Specifically, the Region 18 project will directly support 14 public safety entities such as Department of Public Safety (DPS) and law enforcement offices, 20 public schools, 4 libraries, 1 university research center (McDonald Observatory), 1 healthcare provider, 5 public housing facilities, and 18 municipal government facilities such as City Halls, Fire Departments, or Judicial facilities. The remaining 9 CAI connections include handhole connections for facilities. Within the 15 county project region, 20 school districts are expected to benefit from the proposed development. Additionally, the plan would deploy or improve the videoconferencing capabilities at all of the included educational institutions and work with the Texas DPS to link its locations in the communities of Midland, Alpine, and Fort Stockton, TX, to the network.

This environmental assessment preliminarily evaluates five alternatives for the proposed

project based on projected impacts to various facets of the region's natural, cultural, and socioeconomic environment. These areas of analysis include 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. The build alternatives would all follow the same route, one of several that are possible. Routes that would have significant negative impacts on one or more resource areas were removed from consideration.

Preliminary Alternatives:

- 1) The Proposed Action would rely on buried, bored, wireless and aerial fiber optic paths within existing public roadway ROWs and easements. In locations where the line crosses waterways, the line would be either directionally bored or attached to existing utility poles spanning the waterway. The Proposed action would rely primarily on buried (preferentially plowed) fiber placement. Where existing and accessible aerial lines are present, the Proposed Action may utilize existing lines, but no new aerial line construction is anticipated. Three towers are included in the Proposed Action and one attachment to an existing tower in Mentone, Texas. The Big Bend Marathon Tower would consist of a new 50-foot H-frame tower at the Marathon High School; the Big Bend Fort Stockton Tower would consist of a similar 50-foot H-frame tower at an existing Big Bend Telephone site; the Halamicek Ranch Tower would consist of installation of a new 85-foot tall tower on private property; and the Mentone Tower attachment would consist of an 18-inch microwave dish attached to an existing 50-foot tower. No huts are proposed. Approximately 195 miles of fiber is proposed including 15 miles of aerial attachment and 180 miles of fiber optic line buried by various techniques.
- 2) The Underground Alternative would, like the Proposed Action, involve the burying of fiber optic lines within existing ROWs and easements. However, unlike the Proposed Action, the Underground Alternative would utilize no aerial or wireless methods and would require boring under all waterways rather than utilizing existing utility poles above the surface.
- 3) The Aerial Alternative would require attaching cable to either new or pre-existing utility poles.
- 4) The Wireless Alternative would comprise the construction of microwave or cell towers

to send the broadband signal wirelessly across the region. No fiber optic cable would be installed.

5) If the No Action Alternative is chosen, the network would not be constructed.

Following preliminary review the fully buried, aerial and wireless routes were considered but eliminated from further discussion due to their elevated anticipated impacts and/or inability to fulfill the purpose and need of the project. Subsequently, only the proposed action alternative and no action alternative were discussed in Chapter 4.

After the submission of the draft EA, further review by Dell Telephone of their proposed route to McDonald Observatory through Texas Nature Conservancy property indicated that the route was too cost prohibitive and potential adverse impacts to endangered species and cultural resources were possible. Because the McDonald Observatory was being served by another participating telco, it was decided that dropping the route from the proposal would not put the Observatory at a disadvantage. As a consequence, earlier agency correspondence may make reference to the Dell Telephone route, but it has now been eliminated from the proposal and not included in this final EA.

While each of the build alternatives may fulfill part or all of the purpose and need of the project and would be constructed in existing ROWs, the alternative chosen as preferred would cause minimal negative environmental impacts to the study area because existing structures would be utilized where possible and would require minimal ground disturbance along the network route. The Proposed Action's projects minor short-term and negligible long-term negative effects to noise, air quality, aesthetic and visual resources, and human health and safety limited to the construction phase. Sensitive water, biological, and historic and cultural resources would not be negatively affected because the routes would be designed to either avoid those resources or, in the case of historic and cultural resources, bore under those resources as needed. It is not anticipated that land use would be negatively impacted since the proposed routes predominantly fall within existing public ROWs. Socioeconomic resources and human health and safety would be positively affected by the Proposed Action because of the increased access to broadband services by schools, public safety entities, businesses, municipal facilities, and residents. In addition, the Proposed Action would represent the

most efficient use of funding resources of the build alternatives.