BROADBAND TECHNOLOGY OPPORTUNITIES PROGRAM (BTOP)
ENVIRONMENTAL ASSESSMENT FOR THE
PEOPLES TELEPHONE COOPERATIVE, INC.
EAST TEXAS MEDICAL AND EDUCATIONAL FIBER OPTIC NETWORK

March 2011

Final EA

Prepared for:

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ACRONYMS LIST AND GLOSSARY

Acronyms

ABB	American burying beetle
APE	Area of Potential Effect
APWL	Air Pollutant Watch List
ARRA	American Recovery and Reinvestment Act
BGP	Border Gateway Protocol
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
CWA	Clean Water Act
EA	Environmental Assessment
EDA	Economically Distressed Areas
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Agency
GHG	Green House Gas
GIS	Geographic Information System
GLO	General Land Office
IPCC	Intergovernmental Panel on Climatic Change
MBTA	Migratory Bird Treaty Act
MPLS	Multiprotocol Label Switching
MRLC	Multi-Resolution Land Characteristics Consortium
MSAT	Mobile Source Air Toxics
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NEXT	North East Texas (area of SIP)
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
POP	Post Office Protocol
PTC	Peoples Telephone Cooperative
RCRA	Resource Conservation and Recovery Act
ROW	Right of Way
RUS	Rural Utilities Service
SAC	Special Award Conditions

SAL	State Archeological Landmark
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SW3P	Storm Water Pollution Prevention Plan
TCEQ	Texas Commission on Environmental Quality
TCNS	Tower Construction Notification System
THC	Texas Historical Commission
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
USACE	United States Army Core of Engineers
USC	United States Code
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 will be the primary locations to which broadband services will 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

EXECUTIVE SUMMARY

Peoples Telephone Cooperative (Peoples or PTC) is proposing the installation of the East Texas Medical and Educational Fiber Optic Network in order to provide affordable, reliable, and accessible high-speed Internet access to various medical and educational institutions in a 14-county service area in Northeast Texas. The proposed funded service area for this network would expand broadband access in Camp, Delta, Fannin, Franklin, Hopkins, Hunt, Kaufman, Lamar, Rains, Red River, Smith, Titus, Van Zandt, and Wood Counties. Completion of the approximate 645-miles Peoples fiber network will provide middle mile service to approximately 190 community anchor institutions, most of which are educational institutions or health care facilities.

Peoples is proposing to build a 10 gigabit per second middle mile network connecting 55 towns and communities in northeastern Texas in those areas that are unserved or underserved by reliable access to the internet. The East Texas Medical and Educational Fiber Optic Network addresses four 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 telecommunications facilities; and, stimulating economic growth and job creation and development are all priorities of the East Texas Medical and Educational Fiber Optic Network.

The proposed network is large enough to support the current level of need from community anchor institutions, service providers, public safety entities and businesses and to provide the bandwidth and scalability needed to improve future projects and to "future-proof" the infrastructure against near-term growth. Because of the underserved nature of the proposed funded service area, and the pockets of unserved areas within the project footprint, this project would benefit the region. The East Texas Medical and Educational Fiber Optic Network is primarily aimed at creating enhanced educational opportunities and medical services for the rural residents it seeks to serve. However, the same infrastructure that would provide those services would also help to improve public safety and other government services and potentially

drive economic development in the area.

The service area is currently underserved by high-speed internet and requires a high-speed internet backbone of substantial bandwidth to provide primarily medical and education facilities and secondary facilities with opportunity for current high-bandwidth health care and educational support services. The network would serve the rural communities in the area and would pass 100,815 households and 10,326 businesses. The East Texas Medical and Educational Fiber Optic Network would offer 100 Mbps transport service to community anchor institutions, businesses, and last mile service providers at rates much more affordable than what is currently available.

This environmental assessment 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.

Alternatives:

1) The Proposed Action would rely primarily on buried fiber optic lines within existing public roadway rights-of-way (ROWs). In locations where the line crosses waterways, the line would be either directionally bored or attached to existing bridge structures aboveground.

2) The Underground Alternative would, like the Proposed Action, involve the burying of fiber optic lines within existing ROWs. However, unlike the Proposed Action, the Underground Alternative would require boring under all waterways rather than utilizing existing bridge structures above the surface.

3) The Aerial Alternative would require attaching cable to either new or preexisting utility poles.

4) The Wireless Alternative would comprise the construction of microwave or wireless 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 will not be constructed.

While each of the build alternatives would fulfill 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. Projected negative impacts of the Proposed Action to noise, air quality, aesthetic and visual resources, and human health and safety would be limited to the period of actual construction. Sensitive water, biological, and historic and cultural resources will not be negatively affected because the routes will be designed to either avoid those resources or, in the case of historic and cultural resources, bore under those resources as needed. Land use will not be negatively impacted, since the proposed routes all 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, medical facilities, businesses, and residents. In addition, the Proposed Action would represent the most efficient use of resources of the build alternatives.

1.0 CHAPTER 1: PURPOSE AND NEED

1.1 INTRODUCTION

Peoples Telephone Cooperative was organized in Wood County, Texas, in 1952. Peoples is a member-owned co-op that provides low-cost telecommunication services for its customers in East Texas. Profits from the business are returned to the members of the co-op. The PTC mission statement is simple: "It shall be the aim of Peoples Telephone Cooperative to provide dependable area-wide telephone service on the cooperative plan and at the lowest cost consistent with sound economy and good management."

Peoples Telephone Cooperative has established systems and procedures in place for managing its existing network. As an established telecommunications provider with a long history and procedures for handling customer care, provisioning, billing, and system repairs, PTC is well-suited to provide the organizational structure needed to ensure project success.

In rural eastern Texas, many resident, business, and community facilities lack access to affordable broadband service. This area is located between larger urban centers, and while some of the larger towns have access to broadband, their surrounding rural areas are being excluded due to their location on the wrong side of the technological divide. In order to help these rural residents gain access to the technological resources their urban and suburban counterparts regularly utilize, PTC is proposing to construct the East Texas Medical and Educational Fiber Optic Network.

Currently, the service available to the medical and educational facilities that will be served by the East Texas Medical and Educational Fiber Optic Network is prohibitively expensive. The limited availability of bandwidth in the area drives up the cost of last mile services, even at relatively low speeds. This network will bring affordable broadband service to the community anchor institutions, businesses, and residents in the area, thereby expanding access to the educational, medical, and economic resources the Internet has to offer.

The proposed funded service area for the East Texas Medical and Educational Fiber Optic Network consists of 14 counties in eastern Texas: Camp, Delta, Fannin, Franklin, Hopkins, Hunt, Kaufman, Lamar, Rains, Red River, Smith, Titus, Van Zandt, and Wood (Figure 1.1). The

network will serve the rural communities in the area including Bonham, Dodd City, Trenton, Celeste, Quinlan, Lone Oak, Wills Point, Edgewood, Fruitvale, Carter, Van, Lindale, Como, Mt. Vernon, Talco, Bogata, Deport, Cooper, Mt. Pleasant, and Pittsburg and will pass approximately 100,815 households and 10,326 businesses.

The project area is in the East Texas Timberlands, which is a part of the Western Coastal Plain Major Land Resource (NRCS 1996). The topography of the area is nearly level to steep. The drainage pattern is well defined, and many streams dissect the project area. Nearly all of the streams flow in a southeasterly direction. The soils of the counties formed mostly under forest vegetation. Those on uplands are light colored and sandy or loamy, and in unprotected sloping areas, they are subject to water erosion. The soils on flood plains are loamy or clayey (NRCS 1996). Beef cattle, dairy cattle, timber, sweet potatoes, corn, peas, peaches, watermelons, and poultry are the major agricultural products in the project area (NRCS 1996).

Peoples Telephone Cooperative is proposing to build a 10 gigabit per second middle mile network connecting 55 towns and communities in northeastern Texas, specifically in areas that are unserved or underserved by reliable access to the Internet (Figure 1.2). The network would be constructed as a fault tolerant physically redundant ring with linear connections to communities not on the core rings. For reliability and bandwidth efficiency, the fiber optic ring is comprised of three primary overlapping rings. The two main Post Office Protocol (POP) locations for access to upstream Internet connectivity would remain in Dallas and a secondary location would be acquired. Peoples would connect with multiple upstream providers using the Border Gateway Protocol (BGP) at those locations for service provider reliability. Each connection to the upstream Internet providers would be physically established over gigabit Ethernet connections. The electronics network would be built using Multiprotocol Label Switching (MPLS) packet switching technology. Multiprotocol Label Switching was chosen to be able to offer carrier Ethernet services conforming to the Metro Ethernet Forum recommendations for service level agreement standards. Each community would have a new interconnection point for providing access to the MPLS network to the local community anchor institutions. The community anchor institutions would be connected using new lateral distributions to each location. The optic sizing in each community would be based upon the size of the community to accommodate future potential growth.

The National Telecommunications and Information Administration (NTIA) is a U.S. Department of Commerce agency primarily responsible for advising the President about issues of telecommunications and information (NTIA 2010a). As part of the American Recovery and Reinvestment Act (ARRA), the NTIA was granted $4.7 billion to improve access to broadband services, particularly in rural areas. In order to accomplish this task, the NTIA launched the Broadband Telecommunications Opportunities Program (BTOP), through which organizations, like the PTC, can apply for funding with which to improve or create broadband networks. Peoples Telephone Cooperative applied for and received a grant for $28,825,356. As a condition of the grant award, called a Special Award Condition (SAC), PTC must submit this Environmental Assessment (EA), in order to meet the requirements of the National Environmental Policy Act (NEPA) of 1969, and to comply with various laws and regulations including compliance with USFWS Section 7 of the Endangered Species Act (ESA) and Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended.

1.2 PROJECT PURPOSE

The purpose of the East Texas Medical and Educational Fiber Optic Network is to provide affordable, reliable, and accessible high-speed Internet access to various medical and educational institutions in the service area. The East Texas Medical and Educational Fiber Optic Network addresses four Comprehensive Community Infrastructure (CCI) priorities and all five of the statutory purposes outlined by the Recovery Act for the 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 East Texas Medical and Educational Fiber Optic Network.

By providing improved coverage and enhanced broadband infrastructure services in an economically distressed region, the East Texas Medical and Educational Fiber Optic Network aims to address the lack of adequate broadband facilities and to propose a solution comprised of a robust, scalable, and redundant broadband infrastructure. The proposed network is large enough to support the current level of need from the existing community anchor institutions, service providers, public safety entities, and businesses; to provide the bandwidth and

scalability needed to improve future projects; and to "future-proof the infrastructure against near-term growth.

Because of the underserved nature of the proposed funded service area and the pockets of unserved areas within the project footprint, this project would immensely benefit the region. The East Texas Medical and Educational Fiber Optic Network is primarily aimed at creating enhanced educational opportunities and medical services for the rural residents. However, the same infrastructure that would provide those services would also help to improve public safety and other government services and potentially drive economic development in the area.

Because of the large proposed funded service area and the diversity of the community anchor institutions within the service area, the East Texas Medical and Educational Fiber Optic Network addresses each of the five statutory purposes established by the American Recovery and Reinvestment Act (ARRA) legislation for the BTOP initiative.

1.3 PROJECT NEED

The proposed funded service area for the East Texas Medical and Educational Fiber Optic Network consists of 14 counties in eastern Texas: Camp, Delta, Fannin, Franklin, Hopkins, Hunt, Kaufman, Lamar, Rains, Red River, Smith, Titus, Van Zandt, and Wood. The service area is currently underserved by high-speed Internet and requires a high-speed Internet backbone of substantial bandwidth to provide primary medical and educational facilities and secondary facilities with the opportunity for current high-bandwidth health care and educational support services. The network would serve the rural communities in the area and would pass 100,815 households and 10,326 businesses. The East Texas Medical and Educational Fiber Optic Network would offer 100 Mbps transport service to community anchor institutions, businesses, and last mile service providers at rates much more affordable than what is currently available.

As introduced above, the network would also provide middle mile service to 191 community anchor institutions, most of which are educational institutions or health care facilities (Figure 1.3, see Appendix B). This service would allow local schools to improve the educational experiences of their students by integrating 21st century technology into their classrooms. Furthermore, the high-speed connectivity would also allow local medical facilities to improve patient care by

giving them the capacity to send and receive electronic medical records, receive digital x-rays and other diagnostic images, and streamline their online Medicare billing. Other infrastructures that will benefit from this project include police departments, fire departments, city halls, and other government facilities.

2.0 CHAPTER 2: DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

The East Texas Medical and Educational Fiber Optic Network may be constructed and operated under numerous alignments and construction techniques while providing the required high-speed connectivity to medical and educational facilities within the 14-county service area. The following chapter introduces the alternatives analyzed in this EA. The alternatives include:

- The Proposed Action (Preferred Alternative): an alternative relying primarily on buried fiber optic lines within existing public roadway ROWs and select areas where lines will be attached or hung from existing bridge structures;
- The 100% Underground Alternative: an alternative were all fiber optic lines would be buried within existing ROWs;
- The 100% Aerial Alternative: an alternative where all fiber optic lines would be hung from existing or new electricity poles within existing ROWs;
- The 100% Wireless Alternative: an alternative where all high-speed infrastructure would be provided via wireless cellular and microwave connectivity; and
- The No Action Alternative: an alternative in which PTC would construct no optic network within the service area and no additional high-speed connectivity would be available to the service area.

2.1 PROPOSED ACTION

The Proposed Action would consist of fiber optic cables placed at a minimum depth of 36 to 42 inches below the surface in most areas along established streets, roadways, or travel routes in town areas. The proposed action is estimated to total approximately 645.9 miles with 305.8 additional miles of alternate routes under the proposed action.

Plowing would be the primary construction method implemented which requires plowing of the

cable with a ripper attachment. The ripper opens a narrow slot, then inserts and covers the cable in one operation. This is useful in areas where rock contents are minimal and construction paths are free of obstructions. An alternate method, used when required, is making a trench, placing the appropriate sized cables, backfilling, and compacting to restore the ground to its original condition. The Proposed Action would utilize boring under large roads and other existing infrastructure that require avoidance. The cable will then be pulled into place through the bore leaving only a minimal surface disturbance. Where river or stream crossings or U.S. water crossings are encountered, the construction would be either bored or via bridge attachments. Along the primary routes, the Applicant approximates 248 waters crossings to be bored and one crossed aerially. Additionally, the alternatives routes include 111 bored crossings. Boring would also be utilized where alignments are immediately adjacent to select cemeteries and specific documented National Register of Historic Places (NRHP) eligible sites. The alignments for the Proposed Action would utilize existing U.S. Highways, TxDOT ROWs, and County Roads. The alignments are shown in greater detail in Figure 2.1.

Buried cable would be placed to connect subscribers to the switching equipment. Above ground appearances would be limited to locations required for connecting subscribers to the system. This would occur in pedestals (enclosures) supported by stakes or poles. The pedestals would vary in size, depending upon the size of the cable to be spliced, from about six inches square to about one foot by three feet square. Construction equipment would include a Caterpillar D9 tractor or equivalent machinery (Illustration 2.1), backhoe, and directional boring machine. Daily construction timing would occur from sunrise to sundown. No construction activities would occur at night. No construction staging areas would be necessary and no additional ground disturbance would be required. No cell towers would be required under the Proposed Action.

Illustration 2.1 An example of the possible construction equipment used in the placement of fiber optic cable.

The construction timeline for the Proposed Action spans approximately two and one-half to three years or until August 1, 2013 when all middle mile infrastructure to be constructed under this BTOP grant action would be in place (within three years of the notice of Award). Figure 2.2 shows the areas where the work will be conducted in various phases.

Construction would be accomplished using existing roadway infrastructure and no new construction easements or access roadways would be required under the Proposed Action. No areas outside of disturbed ROWs would be required for staging equipment or lay down areas.

Nine telecommunication huts are proposed to be placed immediately adjacent to the ROW. The proposed huts are prefabricated structures and include air conditioning and back-up generators. The huts are 10 feet by 10 feet in size and placed on a slab of concrete or on crushed rocks. Finally, the huts are situated within a 20 feet by 20 feet fence enclosure that also acts as an access area for the structure (See Illustration 2.2). Latitude and Longitude coordinates of the proposed locations are presented in Table 2.1.

Illustration 2.2 Typical Telecommunications Hut.

Table 2.1 Proposed Locations of Telecommunication Huts

Site	Latitude	Longitude
Bonham	33°34'12.32"N	96°12'8.06"W
Paris	33°38'50.51"N	95°30'14.25"W
Mount Pleasant	33° 8'11.27"N	94°58'21.84"W
Quinlan	32°55'5.75"N	96° 7'33.21"W
Emory	32°53'2.51"N	95°45'34.54"W
Canton	32°33'52.51"N	95°51'28.83"W
Mineola	32°41'42.60"N	95°29'8.23"W
Lindale	32°31'59.05"N	95°24'45.81"W
Wills Point	32°42'32.13"N	96°1'4.95"W

Last mile connections to the anchor institutions would be a buried fiber drop to the anchor institution that would follow existing disturbance corridors. Typical construction method would consist of installing a new hand hole outside the anchor institution and boring or plowing fiber drop from a pedestal or hand hole on the buried cable route to the new hand hole at the anchor institution following existing disturbance corridors. Then two, four-inch conduit sweeps would be installed inside the new hand hole at the anchor institution. The four-inch sweeps would be extended to a new outside metal wall box on the anchor institution wall. The conduit would then be extended and terminated, by the core drilling method, inside the anchor institution wall. Then fiber cable would be pushed through the new conduit entrance. The exposed conduit ends, at the new hand hole and anchor institution, would be sealed with a fire retardant permagum type

duct sealant to prevent foreign matter from entering the conduit and connecting infrastructure. Next, bonding closures will be installed and the cables will be grounded. Cable will be installed in fire retardant duct where necessary inside the anchor institution. The latest revision of the National Electrical Safety Code (NESC) and the National Electrical Code (NEC) shall be followed in every case except where local regulations are more stringent, in which case local regulations shall govern. Detailed locations of all anchor institution are included as Appendix B.

2.2 UNDERGROUND ALTERNATIVE

The Underground Alternative would follow the same alignment routing as all other alternatives including the Proposed Action; however, the Underground Alternative would fully utilize trenching and boring techniques for the placement of fiber optic cables. In contrast to the Proposed Action, no lines would be hung from existing bridge structures at select locations.

Burial construction techniques would be consistent with the Proposed Action and follow boring at the same locations including existing infrastructure where necessary such as roadway, waters of the U.S., select cemeteries, and select NRHP sites. On the Underground Alternative, Peoples estimates boring beneath approximately 248 waters bodies on the main lines and 111 along the alternative routes.

Construction timeline and disturbances would be consistent with the Proposed Action. If long distance bores are utilized, in contrast to bridge hangings under the Proposed Action, additional time may be required.

2.3 AERIAL ALTERNATIVE

The Aerial Alternative would follow the same alignment routing as all other build alternatives including the Proposed Action; however, the Aerial Alternative would make use of existing utility poles and install new utility poles where previously no poles existed. Where existing poles are present, the Aerial Alternative would overlash the proposed fiber optic line to existing electricity or telecommunication poles. The construction of improving or installing new aboveground infrastructure is the main difference between the Aerial Alternative and the Proposed Action. The 14-county project area contains minimal existing aerial lines available for use for the Proposed Action, therefore, Peoples anticipates the majority of the Aerial Alternative would require installation of new poles and associated disturbances. For the purposes of this EA,

Peoples estimates 25% of the project will contain existing aerial lines that may be utilized and 10% of the existing poles on the existing lines would require replacement. Additionally, for the purposed of this EA, Peoples estimates 300 foot spans between adjacent poles. Following these estimates, approximately 161 miles of the 645 miles would contain existing pole lines which would include 2842 poles of which 285 would require replacement. The remainder of the alignments (484 miles) would require construction of new aerial lines, and this mileage would equate to 8,526 additional poles to be installed.

Construction techniques would include the placement of the aerial fiber optic cable with the existing facilities through the use of a mechanical lashing machine overlashing the new fiber optic cable onto the existing facilities. Where existing aerials do not exist along the alignments, new aerial lines would be constructed compliant with industry standards and the Rural Utilities Service (RUS) specifications and drawings for construction of aerial plants (RUS 2001). Poles would be installed with sufficient diameter to settle freely and provide sufficient space for proper tampering of backfill. Setting depths would comply with RUS standards and comply with setting in various ground material ranging from soil to solid rock (RUS 2001). All installed poles would be inspected by an engineer prior to backfilling.

2.4 WIRELESS ALTERNATIVE

The Wireless Alternative would not utilize alignments as discussed in the other build alternatives, but rather send data wirelessly via microwave or cellular technology. The layout of receiving sites, necessity of bandwidth, and existing terrain would dictate the location and size of microwave and cellular towers throughout the 14-county project area. Where available, existing towers and tower sites would be utilized to minimize requisite permitting, approvals, infrastructure, and expense. Based on the latest wireless technology, a microwave tower can relay 500 megabytes of data approximately eight miles to the next proximate tower. Following these distances parameters, the 645.9 miles of alignments would correlate to approximately 81 towers along the facility.

Generally, the Self-Supporting Cell site would be installed on a 50x50 foot lot of land. First, a D-9 (or equivalent) bulldozer would be used to clear the site and level the area in accordance with the engineered site layout and the Storm Water Pollution Prevention Plan (SW3P). After the land has been cleared, three foundation footings would be installed. These are typically between 3 and 6 feet wide in diameter and are between 6 and 30 feet deep depending on the

soil type. These holes are dug using an auger drill with a 3- to 6-foot wide drill. After the holes have been dug, a rebar cage is lowered into the hole by a mobile crane and high strength concrete is poured from a concrete truck. Also, at this time, the foundation for the hut or cabinet will be poured into the wood frame that has been assembled. While the concrete is hardening, the ground ring will be dug around the tower and building/cabinet foundation using a small backhoe to a depth of at least 40 inches. Typically, 8-foot long ground rods are driven into the bottom of this trench at about 8-foot intervals and each rod is thermo-welded to tinned copper wire. After the ground ring has been covered and the foundation has hardened, the tower can be assembled. The tower steel is delivered to the job site unassembled and each 20-foot section is assembled on site. The first two or three sections can be installed to the foundation using the mobile crane; however, the rest of the sections will be lifted into position using a crane and wenches. The building/cabinet will also be positioned on their foundation using the mobile crane.

2.5 NO ACTION ALTERNATIVE

The No Action Alternative is included in the Environmental Assessment (EA) as a baseline for the comparison of environmental impacts, as required by the National Environmental Policy Act (NEPA). The No Action Alternative, as defined, would include no action by PTC to install any fiber optic network as a part of the Proposed Action. Consequently, the underserved 14-county project area, including medical and educational anchor institutions, would remain without affordable, reliable, and accessible high-speed Internet access.

No construction techniques or timeline would be associated with the No Action Alternative. Additionally, none of the environmental impacts associated with the various build alternatives (beneficial and adverse) would be realized. For example, the increased accessibility of high-speed internet in the 14-county study area would not be realized. However, the construction phase noise and disturbance to the traveling public within the State, county and public ROWs would also not occur under the No Action Alternative.

2.6 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER DISCUSSION

One build alternative which included a section along FM 849 approximately one mile northwest of Lindale in Smith County, Texas was abandoned during the preliminary planning phase.

Review of the Texas Parks and Wildlife National Diversity Database showed a 1995 occurrence of the rough-leaf aster, a rare vascular plant, within the FM 849 ROW. Based on the potential occurrence of the species along the proposed alignment, Peoples decided to eliminate the alignment to avoid any potential impacts.

3.0 CHAPTER 3: DESCRIPTION OF THE AFFECTED ENVIRONMENT

The following chapter discusses the 14-county project area within the parameters of numerous settings including the natural, cultural and human environments.

3.1 NOISE

Construction introduces supplementary noise sources and levels that are atypical of the project area. The following section discusses existing ambient noise and possible noise sources during construction.

The location of the proposed project is limited to existing road ROWs in both rural and urban areas. Current sources of ambient noise along the proposed project alignment include, but are not limited to, automobile and truck traffic, ranching and farming equipment, public works, building services, wind, railroad, and overhead aircraft. Equipment that would emit noise during project construction includes Caterpillar D9 bulldozers, backhoes, and directional boring machines. The noise emission levels listed for these types construction machinery are listed in the table below.

Table 3.1 Example Construction Equipment Noise Emission Levels

Equipment	Max Noise Level at 50ft (dBA)
Caterpillar D9 Bulldozer	85
Backhoe	80
Other Equipment > 5HP	85

Source: FHWA Construction Noise Handbook (FHWA 2010)

Sensitive noise receptors within the project area may include schools, churches, residences, hospitals, and public parks.

3.2 AIR QUALITY

The Clean Air Act (1990) requires the Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) (40 CFR part 50) for pollutants considered harmful to public health and the environment. Principal criteria pollutants include ground-level ozone, lead, carbon monoxide, nitrogen dioxide, sulfur dioxide, and particulate matter. These air pollutants can injure health, harm the environment, and cause property damage.

A State Implementation Plan (SIP) is an enforceable plan developed at the state level that explains how the state will comply with air quality standards according to the Federal Clean Air Act. Smith County is located within the Northeast Texas (NETX) area of the SIP, and Kaufman County is located with the Dallas-Fort Worth Area of the SIP. On March 10, 2009, the governor recommended to the EPA that Smith County and Kaufman County (along with 25 other Texas counties) be designated nonattainment for the 2008 ozone standard (TCEQ 2010a). All other counties within the project area are within attainment (TCEQ 2010a).

No counties are on TCEQ's Air Pollutant Watch List (APWL). Neighboring counties of Bowie and Cass are on the APWL due to hydrogen sulfide (H_2S) emissions from a paper production plant.

Climate, Greenhouse Gases, and Global Warming

Greenhouse gases (GHGs) are components of the atmosphere that trap heat relatively near the surface of the earth, and therefore, contribute to the greenhouse effect and global warming. Most GHGs occur naturally in the atmosphere, and increases in their concentration are a result of human activities such as the burning of fossil fuels. Global temperatures are expected to continue to rise as human activities continue to add carbon dioxide, methane, nitrous oxide, and other greenhouse (or heat-trapping) gases to the atmosphere. Since 1900, the Earth's average surface air temperature has increased by about 1.2 to 1.4ºF. The warmest global average temperatures on record have all occurred within the past 10 years, with the warmest year being 2005 (USEPA 2007). Most of the U.S. is expected to experience an increase in average temperature. Precipitation changes, which are also very important to consider when assessing climate change effects, are more difficult to predict. Whether or not rainfall would increase or decrease remains difficult to project for specific regions (USEPA 2010; IPCC 2007). The extent of climate change effects, and whether these effects prove harmful or beneficial, will vary by region, over time, and with the ability of different societal and environmental systems to adapt to or cope with the change. Human health, agriculture, natural ecosystems, coastal areas, and heating and cooling requirements are examples of climate-sensitive systems. Rising average temperatures are already affecting the environment. Some observed changes include shrinking of glaciers, thawing of permafrost, later freezing and earlier break-up of ice on rivers and lakes, lengthening of growing seasons, shifts in plant and animal ranges, and earlier flowering of trees (USEPA 2010; IPCC 2007).

The proposed project is in Northeast Texas. The climate is humid subtropical, characterized by hot, humid summers and cool winters. Temperatures hover just above freezing (32ºF) in the winter months and approach 100°F in the summer months. Average annual precipitation ranges from 36 to 40 inches in the western part of the subject area and 44 to 52 inches in the eastern portion (Frontier and Associates, LLC 2008).

3.3 GEOLOGY AND SOILS

The geology and soils of East Texas present a diverse complex representing approximately 144 million years of development. The following description provides a basic overview of the geology and soils of the proposed project area.

3.3.1 Geology

The proposed project area lies within the West Gulf Coastal Plain physiographic region, as defined by the U.S. Geological Survey (USGS 2010). More specifically, this northeast portion of the state lies within the Black Prairie physiographic region of Texas (Swanson 1995). The Black Prairie, also known as the Blackland Prairie, overlies rock of primarily Cenozoic age and is characterized by deep black soils that are easily cultivated (Swanson 1995).

The northwestern portion of the study area overlies rock belonging to the Austin, Eagle Ford, Woodbine, and U Washita groups and that dates to the Cretaceous period of the Mesozoic era (144 to 66 million years ago). The northwest-central portion consists of the Navarro and Taylor associations, also dating to the Cretaceous period. The Wilcox and Midway groups dominate the central portion of the study area and date to the Paleocene period of the Cenozoic era (66 to 58 million years ago). The southeastern portion of the study area dates to the Eocene period of the Cenozoic (58 to 38 million years ago) and is dominated by the Claiborne Group. The rivers that cross the study area run through Quaternary alluvium that is younger than two million years. The site geology for the project area is shown in Figure 3.1.

3.3.2 Regional Soils

Major soil associations in the project area include the Houston Black-Heiden-Wilson association, which covers Hunt and Delta Counties, most of Fannin and Kaufman Counties, and portions of Hopkins, Lamar, Rains, Red River, and Van Zandt Counties. The Woodtell-Crockett association comprises most of the soils in Franklin, Rains, Red River, Titus, and Van Zandt

Counties and a portion of the soils in Hopkins, Lamar, Smith, and Wood Counties. The soils in much of Smith and Wood Counties, some of Franklin and Titus Counties, and all of Camp County belong to the Cuthbert-Bowie-Kirvin Association. Finally, the northernmost portions of Fannin and Lamar Counties are dominated by the Gasil-Crosstell-Callisburg soil association. Most of these soils are characterized by clayey subsoil with loamy or clayey surface texture (NRCS 2010a). The soil associations of within the project area are depicted in Figure 3.2.

The Farmland Protection Policy Act is designed to "minimize the impact Federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses" (NRCS 2010b). Project correspondence with the NRCS indicates that no prime or unique farmlands would be affected by the proposed project (see Appendix C for agency correspondence).

3.4 WATER RESOURCES

Water resources are abundant within Northeast Texas and within the project area. Surface water, groundwater, floodplains, coastal management zones, and Wild and Scenic Rivers within the project area are detailed below.

3.4.1 Surface Water

The Federal Water Pollution Control Act Amendments of 1972 established a comprehensive program of regulations and permits to control water pollution within the United States. Section 404 of the Clean Water Act (CWA) was created as a part of the above-mentioned amendments and has become the principal regulatory mechanism to control discharges into wetlands and waters of the United States.

The term "Waters of the United States" is defined to include not only the traditionally navigable waters, but also a broad range of waters, including:

- All interstate waters, including wetlands;
- All other waters, such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sand flats, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce;
- All impoundments of water that fit these definitions;

- Tributaries that are determined to have a significant nexus to any traditional navigable water, including non-navigable tributaries and wetlands adjacent to non-navigable tributaries that are not relatively permanent, and wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary;
- The territorial seas; and
- Wetlands adjacent to waters, other than adjacent to other wetlands.

The project overlays the Neches, Cypress, Sabine, Sulphur, Trinity, and Red River Basins (Figure 3.3). According to a review of Texas Department of Transportation (TxDOT) Geographic Information Systems (GIS) hydrology files, the proposed fiber optic routes cross surface waters at least 651 times within the project area. Surface waters include ephemeral, intermittent, and perennial tributaries, rivers, and reservoirs. The fiber optic routes are proposed to cross six reservoirs: Lake Bonham, Cooper Lake, Lake Monticello, Lake Cypress Springs, Lake Tawakoni, Lake Fork Reservoir, and Lake Quitman. Impacts to all waters of the U.S. would be avoided with the use of horizontal directional boring or by hanging the fiber optic line on an existing bridge or crossing structure. As such a Section 404 permit for fill or discharge into waters of the U.S. would not be required.

Section 303(d) of the 1972 CWA requires states to develop lists of impaired waters every two years. Section 303(d) impaired waters do not meet water quality standards and do not attain one or more standards for their use, including aquatic life use, recreation, public water supply, or fish consumption (TCEQ 2010b). At least 10 impaired waters under Section 303(d) of the CWA may be crossed (Figure 3.4).

Table 3.2 TCEQ Section 303(d) Impaired Waters Within the Project Area

ID	NAME	CLASS	TYPE	LOCATION	BASIN	CODE
0306	Upper South Sulphur River	Classified	Freshwater Stream	From a point 1.0 km (0.6 miles) upstream of SH 71 in Delta/Hopkins County to SH 78 in Fannin County	Sulphur River Basin	1,2,6,9
0507	Lake Tawakoni	Classified	Reservoir	From Iron Bridge Dam in Rains County up to normal pool elevation of 437 feet (impounds Sabine River).	Sabine River Basin	1,2,5,9
0512	Lake Fork Reservoir	Classified	Reservoir	From Lake Fork Dam in Wood County up to normal pool elevation of 403 feet (impounds Lake Fork Creek).	Sabine River Basin	0
0606	Neches River Above Lake Palestine	Classified	Freshwater Stream	From a point 6.7 km (4.2 miles) downstream of FM 279 in Henderson/Smith County to Rhines Lake Dam in Van Zandt County.	Neches River Basin	1,3,0
0404B	Tankersley Creek (unclassified water body)	Unclassified	Freshwater Stream	From the confluence of Big Cypress Creek to the upstream perennial portion of the stream northwest of Mount Pleasant in Titus County	Cypress Creek Basin	6
0303B	White Oak Creek (unclassified water body)	Unclassified	Freshwater Stream	From the confluence of the Sulphur River north of Naples in Morris County to the upstream perennial portion of the stream east of Sulphur Springs in Hopkins County	Sulphur River Basin	1,2
0507B	Long Branch (unclassified water body)	Unclassified	Freshwater Stream	From the confluence of Cowleech Branch Sabine River to the upstream perennial portion of the stream in Greenville in Hunt County	Sabine River Basin	6
0606A	Prairie Creek (unclassified water body)	Unclassified	Freshwater Stream	From the confluence of the Neches River west of Tyler in Smith County to the upstream perennial portion of the stream south of Lindale in Smith County	Neches River Basin	1,3
0202D	Pine Creek (unclassified water body)	Unclassified	Freshwater Stream	From the confluence of the Red River to the upstream perennial portion of the stream west of Paris in Lamar County	Red River Basin	6
0507A	Cowleech Fork Sabine River (unclassified water body)	Unclassified	Freshwater Stream	From the confluence of Lake Tawakoni southeast of Greenville in Hunt County to the upstream perennial portion of the stream south of Celeste in Hunt County	Sabine River Basin	1,2,6

Code Key

Code	Impairment
0	Dissolved Solids Impairment
1	Aquatic Life Use Impairment
2	Dissolved Oxygen
3	Metal in Water
6	Contract Recreation Use Impairment
9	Temperature/pH

Section 10 of the Rivers and Harbors Act (33 U.S.C. 401 et seq) requires authorization from the U.S. Army Corps of Engineers (USACE) for the construction of any structure in or over any navigable water of the United States, the excavation/dredging or deposition of material in these waters, or any obstruction or alteration in a "navigable water." "Navigable waters" of the U.S. are those subject to the ebb and flow of the tide shoreward to the mean high water mark and/or presently used, or have been used in the past, or are susceptible for use to transport interstate or foreign commerce (33 CFR 329.4). Section 10 navigable waters in Northeast Texas include the Neches, Red, Sabine, and Sulphur Rivers (USACE 1999). The portions of these rivers that are considered navigable and within Section 10 jurisdiction are all located downstream of the proposed project. The project area does not include any Section 10 navigable waters.

3.4.2 Groundwater

The project overlays the Neches, Cypress, Sabine, Sulphur, Trinity, and Red River Basins. Major aquifers include the Carrizo-Wilcox aquifer in the eastern portion of the subject area, and the Trinity aquifer in the western portion (TWDB 1994). The major groundwater aquifers within the project area are shown in Figure 3.5.

The Carrizo-Wilcox aquifer extends from Southwest to Northeast Texas, supplying water to 60 Texas counties. Recharge is supplied by water from storm events or from streams infiltrating into the outcrop. In the project area, the Carrizo-Wilcox aquifer receives the majority of its water from the Trinity, Neches, Sabine, and Red River Basins. Pumping for agricultural and industrial needs in Northeast Texas has caused a decline in aquifer levels over the last 50 years (TWDB 1995).

The Trinity aquifer extends through Central Texas from Bandera and Medina Counties northeast to the Red River, and serves as water source for most of the Texas Hill Country region. The Trinity aquifer recharges very slowly, with only 4-5 percent of rainfall reaching the aquifer. The Trinity is projected to be one of the most stressed aquifers in Texas over the next 50 years, with large areas seeing steep decline in water levels (Eckhardt 2010).

A Sole Source Aquifer (SSA) is an aquifer designated by EPA as the "sole or principal source" of drinking water for a given service area; that is, an aquifer which is needed to supply 50% or more of the drinking water for that area and for which there are no reasonably available alternative sources should the aquifer become contaminated (EPA 2010a). According to the Region 6 Sole Source Aquifer map, no sole source aquifers are located within the project area (EPA 2008).

3.4.3 Coastal Management Zones

No coastal management zones are located within the project area (TGLO 2010).

3.4.4 Floodplains

According to the Federal Emergency Management Agency (FEMA), many floodplains are associated with the major tributaries and reservoirs that may be crossed by the proposed project. These areas are subject to flooding during high storm water events.

3.4.5 Wild and Scenic Rivers

Wild and Scenic Rivers are certain selected rivers that possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values (16 USC 1271-1287; P.L. 90-542). No national Wild and Scenic Rivers are located within the project area (NWSR 2010).

3.5 BIOLOGICAL RESOURCES

The following sections address the ecological setting of the project area, including vegetation and wildlife. A detailed discussion of known occurrences of candidate, threatened, and endangered species of potential occurrence in the area affected by the proposed project is included, as well.

3.5.1 Vegetation Communities

According to *The Vegetation Types of Texas* (McMahan et al. 1984), the project area consists of a mosaic of vegetative types, including “crops,” “post oak woods, forest, and grasslands,” “water oak, elm, and hackberry forest,” and “pine hardwood forest.” Ecoregions include blackland prairies, post oak savannah, and piney woods, from west to east, respectively (Gould et al. 1960). According to the Commission for Environmental Cooperation (CEC) Level III Ecological Regions of North America, the project area is within South Texas Plains and East Central Texas Plains (CEC 1997).

Blair (1950) divided the state of Texas into six biotic provinces. A biotic province is a geographic area characterized by occurrence of one or more ecologic associations that differ from the associations in adjacent provinces. Associations may include vegetation, ecological climax, flora, fauna, climate, physiography, and soil (Dice 1943). The western portion of the project area is within the Texan biotic province, and the eastern portion is within the Austroriparian biotic province. Vegetation within the Texan biotic province is characterized by oak-hickory forests, with species like post oak (*Quercus stellata*), blackjack oak (*Quercus marilandica*), and hickory (*Carya buckleyi*). Many of the tall-grass prairies original found on the clay soils in this area have been historically converted to agricultural lands. Vegetation within the Austroriparian biotic province is characterized by long-leaf pine and pine-oak forests. Dominant species in this biotic province in Northeast Texas include loblolly pine (*Pinus taeda*), yellow pine (*Pinus echinata*), red oak (*Quercus rubra*), post oak, and blackjack oak.

The proposed project is within state and county maintained ROWs, which consist of typical roadside and fence line vegetation. The areas of cable placement have previously been disturbed through ground disturbance, mowing, other maintenance, and other utility placement. No clearing is required for any of the cable placement. At select locations where the TxDOT determines vegetation to be of environmental and aesthetic value, boring would be utilized to preserve the natural setting.

The proposed project abuts, but does not intersect, the Caddo National Grasslands Bois D’Arc Unit in northern Fannin County, which is managed for both grazing and wildlife habitat. The grasslands are home to white-tailed deer, coyotes, bobcats, red fox, waterfowl, bobwhite quail, turkey, and songbirds.

3.5.2 Wildlife

The project area is within Northeast Texas, an area of diverse flora and fauna. The western portion of the project area is within the Texan biotic province, and the eastern portion is within the Austroriparian biotic province (Blair 1950).

The Texan and Austroriparian provinces have many species in common. Common mammalian species known from the Texan and Austroriparian biotic province include, but are not limited to: Virginia opossum (*Didelphis virginiana*), common mole (*Scalopus aquaticus*), fox squirrel (*Sciurus niger*), fulvous harvest mouse (*Reithrodontomys fulvescens*), cotton mouse (*Peromyscus gossypinus*), Baird's pocket gopher (*Geomys breviceps*), South Texas bobcat (*Lynx rufus texensis*), red fox (*Vulpes fulva*), raccoon (*Procyon lotor*), river otter (*Lutra canadensis*), and red bat (*Lasiurus borealis*). Common bird species include, but are not limited to: little blue heron (*Florida caerulea*), red-shouldered hawk (*Buteo lineatus*), American kestrel (*Falco sparverius),* southern downy woodpecker (*Dryobates pubescens*), eastern kingbird (*Tyrannus tyrannus*), blue jay (*Cyanocitta cristata*), common grackle (*Quiscalus quiscula*), and field sparrow (*Spizella pusilla*). Lizards and snakes include, but are not limited to: Carolina anole (*Anolis carolinensis*), eastern glass lizard (*Ophisaurus ventralis*), six-lined racerunner (*Cnemidophorus sexlineatus*), blue racer (*Coluber constrictor*), black rat snake (*Elaphe obsoleta*), diamond-backed water snake (*Natrix rhombifora*), eastern ribbon snake (*Thamnophis sauritus*), and western cottonmouth (*Agkistrodon piscivorus*) (Blair 1950).

Four Wildlife Management Areas (WMAs) would be crossed by the proposed project: Old Sabine Bottom Wildlife Management Area (Smith County), Tawakoni Wildlife Management Area (Hunt, Rains, and Van Zandt Counties), Pat Mayse Wildlife Management Unit (Lamar County), and Cooper Wildlife Management Area (Delta and Hopkins Counties) (Figure 3.6). Old Sabine WMA has mostly bottomland hardwood habitat containing large stands of oak, elm, and ash, and a diverse mixture of understory vegetation. Old Sabine WMA maintains fair populations of squirrels, waterfowl, deer, hogs, and turkey (TPWD 2009a). Tawakoni WMA provide fishing and hunting opportunities, as well as habitat for white-tailed deer, feral hog, waterfowl, dove, other migratory game birds, squirrel, quail, rabbits, hares, furbearers, and coyotes (TPWD 2009b). Pat Mayse Wildlife Management Unit and Cooper WMA are primarily used for recreational hunting.

3.5.3 Federally-Listed Threatened and Endangered Species

Based on an online USFWS list search in October 2010, the USFWS as per the ESA of 1973 federally-listed seven species as endangered, threatened, candidate, or delisted that may occur in Camp, Delta, Fannin, Franklin, Hopkins, Hunt, Kaufman, Lamar, Rains, Red River, Smith, Titus, Van Zandt, and Woods Counties. These include: bald eagle (delisted), least tern, piping plover, Louisiana black bear, American burying beetle, Louisiana pine snake, and Texas prairie-dawn flower. See Figure 3.7 for distribution of county listing of each species.

Section 9 of the ESA prohibits certain activities that may result in the take of federally-listed threatened and endangered species. "Take" is defined in the ESA as "harass, harm, pursue, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." "Harm" has been defined to include activities that modify or degrade habitat in a way that significantly impairs essential behavior patterns and results in death or injury. The USFWS is the agency within the Department of Interior that evaluates the threats to species and recommends whether a species should be listed. The Secretary of Interior makes the final determination on the listing status of a species. In the final rule for listing a species, USFWS will identify the types of activities that may result in death or injury to the species and also the types of activities that will not result in death or injury.

The following table outlines the species listed within the proposed Peoples Fiber Optic Routes project area. Texas Parks and Wildlife provided Texas Natural Diversity Database (TNDD) information on October 6, 2010, in order to assess the potential for threatened, endangered, candidate, or delisted species to occur. The results of the TNDD search are detailed in the species descriptions below.

Table 3.3 Threatened and Endangered Species Occurrence Within the Project Area

SPECIES	SCIENTIFIC NAME	FEDERAL STATUS	COUNTY
Birds			
bald eagle	*Haliaeetus leucocephalus*	Delisted	All Counties
least tern	*Sterna antillarum*	Endangered	Delta, Fannin, Hopkins, Kaufman, Lamar, Rains, Red River, Wood
piping plover	*Charadrius melodus*	Threatened	Delta
Mammals			
Louisiana black bear	*Ursus americanus luteolus*	Threatened	Delta, Fannin, Hopkins, Lamar, Smith
Insects			
American burying beetle	*Nicrophorus americanus*	Endangered	Lamar, Red River
Reptiles			
Louisiana pine snake	*Pituophis ruthveni*	Candidate	Wood
Flowering Plants			
Texas prairie-dawn flower	*Hymenoxys texana*	Endangered	Lamar

Bald Eagle

The bald eagle was originally listed as endangered but was downlisted to threatened on July 12, 1995 (USFWS 1995). The species was delisted by USFWS on July 9, 2007, effective August 8, 2007, and is currently under a five-year post-delisting monitoring (USFWS 2007). Possession or take of the species is still prohibited under the Bald and Golden Eagle Protection Act. The bald eagle is found primarily near seacoasts, rivers, and large lakes where food resources such as fish and waterfowl are readily available. Eagles typically build their nests in mature or old-growth trees, snags (dead trees), cliffs, and rock promontories; nests are usually in the tallest trees with limbs that support a nest that can weigh over 1,000 pounds (USFWS 2007). Nest sites are also commonly within one to two miles of large water bodies such as lakes or reservoirs (Campbell 2003). No critical habitat has been designated in the 48 contiguous states for this species (USFWS 2007).

Review of the TNDD data indicates that the proposed project intersects one known bald eagle occurrence from 2001 at the southeastern portion of Lake Fork Reservoir in northwestern Wood County. Specifically, the project intersects the known occurrence within the FM 2966 and FM 519 rights-of-way (ROW). A desktop review of aerial data indicates that the portions of vegetation in these areas likely contain the appropriate composition and structure for bald eagle nesting sites, especially those areas near the shores of Lake Fork Reservoir. Based on preliminary discussions with the project engineer, under the Proposed Action, the disturbance would be within existing ROWs and within 5 to 10 feet from the edge of road pavement; no

hardwood vegetation would be removed.

Review of the TNDD data also indicates a 1998 bald eagle occurrence at Lake Hawkins in southeastern Wood County a little over one mile from the nearest project alignment. Specifically, the project is 1.3 miles south of the occurrence within the HWY 80 ROW, and approximately 1.1 miles north of the occurrence within the RM 14 ROW. A desktop review of aerial data indicates that the vegetation within and adjacent to the ROW on HWY 80 and FM 14 is not close enough to Lake Hawkins (or to Overton Lake to the south of HWY 80) to contain mature, old growth riparian trees typical for bald eagle nesting sites. Vegetation appears to be limited to immature to moderately mature roadside hardwood vegetation.

Least Tern

The least tern was federally listed as endangered on May 28, 1985 (USFWS 1985a). The least tern is a migrant species whose breeding range in Texas includes three reservoirs along the Rio Grande River, the Canadian River in the northern Panhandle, the Prairie Dog Town Fork of the Red River in the eastern Panhandle, and along the Red River (Texas/Oklahoma boundary) into Arkansas. The species winters along the Central American coast and the northern coast of South America from Venezuela to northeastern Brazil. USFWS has listed the least tern as a possible migrant through most of Texas. From late April to August, the tern uses barren to sparsely vegetated sand, shell, and gravel beaches; sandbars; islands; and salt flats associated with rivers and reservoirs. The terns prefer open habitat and avoid thick vegetation and narrow beaches. As natural nesting sites have become scarce, the terns have used sand and gravel pits, ash disposal areas of power plants, reservoir shorelines, and other manmade sites. The terns nest in a shallow hole scraped in an open sandy area, gravelly patch, or exposed flat (Campbell 2003).

Review of the TNDD data indicates that one known occurrence of the interior least tern is within the 14 counties reviewed for the proposed project. An occurrence site was documented in 1998, 1999, and 2000 on the Red River between Texas and Oklahoma, with up to eight individuals at the occurrence site in 2000. When not in flight, tern activities were limited to non-vegetated sand bars completely surrounded by water. The occurrence site is 14.5 miles northeast of the nearest project alignment.

Piping Plover

The piping plover was listed as endangered in the Great Lakes watershed and threatened elsewhere within its range on December 11, 1985 (USFWS 1985b). All piping plovers on migratory routes outside of the Great Lakes watershed or on their wintering grounds are listed as threatened due to the difficulty of knowing where they breed or were hatched. Texas is considered within the wintering and migration range for the piping plover. Piping plovers in Texas prefer bare or sparsely vegetated tidal mudflats, sand flats, and algal flats. Piping plovers often roost on beaches huddled down in the sand, or behind driftwood or clumps of seaweed and other debris. They also roost among debris in wash-over passes created by hurricanes and storms on barrier islands and peninsulas (Campbell 2003). In Texas, critical habitat was established in various counties along the Gulf Coast, totaling 139,029 acres (USFWS 2009a).

Within the project area, the piping plover is federally-listed as threatened in Delta County, although no TNDD occurrences of the piping plover are reported within Delta County and review of USFWS and other literature provided no information on why this species has been listed in Delta County. The species is a migrant through Texas in late February through mid-May and mid-July through September and may stopover in Delta County. Areas of suitable habitat for migration stopovers by piping plovers include sandy shorelines of lakes and rivers (Campbell 2003).

Louisiana black bear

The Louisiana black bear was federally-listed as threatened on February 7, 1992 (USFWS 1992). The Louisiana black bear is a subspecies of the American black bear (*Ursus americana)*. This species occurs primarily in Louisiana, eastern Texas, and Mississippi. The Louisiana black bear typically inhabits bottomland hardwood forests, although this species has been observed in brackish and freshwater marshes, salt domes, wooded spoil levees along canals and bayous, and agricultural fields. Louisiana black bears also prefer remote areas with little or no human disturbance (TPWD 2007).

The TNDD data do not have any occurrences of the Louisiana black bear, although two known occurrences of the American black bear occur within the 14 counties reviewed for the proposed project. According to TPWD (2007), there were a number of black bear sightings in 1998 near Paris, Texas, in Lamar County.

American Burying Beetle

The American burying beetle (ABB) was listed as endangered on July 13, 1989 (USFWS 1989). Habitat requirements for ABB are not fully understood at this time. The species has been found in various types of habitat including oak-pine woodlands, open fields, oak-hickory forest, open grasslands, and edge habitat (USFWS 2010a), although ABB seems to favor areas undisturbed by human influence (Ratliff 1997). Carrion availability may be more important to the species than vegetation or soil types (USFWS 1991). The current distribution encompasses eight states, including Rhode Island, Massachusetts, South Dakota, Nebraska, Kansas, Arkansas, Texas, and Oklahoma (USFWS 2010a).

The TNDD data specify one known occurrence of the ABB within the 14 counties reviewed for the proposed project at Camp Maxey, a Texas National Guard facility in northern Lamar County. One beetle was identified at Camp Maxey in May 1992. Subsequent surveys did not identify additional specimens until December 2003, when one ABB was identified. A survey in 2004 resulted in 34 captures at Camp Maxey and one capture at the Nature Conservancy land 26 miles east. Investigations in 2005 and 2006 resulted in 233 and 68 capture events, respectively (the low 2006 number is attributed to drought). Regional surveys indicated that the Camp Maxey ABB population does not extend greater than 40 miles east, west, or south (USFWS 2008).

According to design files, one possible alternative for the project traverses along the east side of HWY 271, which is adjacent to the Camp Maxey population of ABB in Lamar County.

Louisiana Pine Snake

The Louisiana pine snake was listed as a Category 2 candidate species on December 12, 1982 [47 FR 58454 58460] (USFWS 1982). The species is generally associated with sandy, well-drained soils, open pine forests (especially longleaf-pine savannah), moderate to sparse midstory, and a well-developed herbaceous understory dominated by grasses. Its activity appears to be heavily concentrated on low, broad ridges overlain with sandy soils (USFWS 2010b). Baird's pocket gophers (*Geomys breviceps*) appear to be an essential component of Louisiana pine snake habitat, as the gophers are a major food source and their burrow systems provide hibernation sites (USFWS 2010b).

Within the project area, the Louisiana pine snake is listed as a candidate species in Wood County. The TNDD data specifies one known occurrences of the Louisiana pine snake within Wood County in 1953, 12 miles east of Quitman, Texas. The current range of this species in Texas is only known within Newton, Sabine, Jasper, and Angeline Counties (USFWS 2009b).

Texas Prairie-Dawn Flower

The Texas prairie-dawn flower was listed as endangered on March 13, 1986 (USFWS 1986). This species is found in small conspicuous, sparsely vegetated areas of fine to sandy compacted soil, often on the lower sloping portion of mima mounds, in coastal prairie grasslands. The species may also occupy bare spots in disturbed areas such as abandoned rice fields, vacant lots, and pastures where pimple mounds have been leveled (USFWS 1990).

The TNDD data specify one known occurrence of the Texas prairie-dawn flower within Lamar County. In 2009, approximately 250 individuals were identified at the entrance of Gamble Goose Refuge on State Route 2820. The Texas Natural Diversity Database states that this is a significant range extension and that these individuals may be a new species. Species were identified at the lower end of a very high quality mima mound/alfisol prairie. As habitat typical of the species, specifically coastal prairie grasslands and high quality mima mound/alfisol prairies, do not appear to be located within the project alignment, no effects to the Texas prairie-dawn flower are anticipated as a result of the project.

3.5.4 Migratory Birds

Under the Migratory Bird Treaty Act (MBTA), it is unlawful “by any means or manner, to pursue, hunt, take, capture, [or] kill” any migratory birds except as permitted by regulation (16 U.S.C. 703-704). Structures that may contain migratory birds, including bridges, are within the project area. Construction plans indicate that installation of the fiber optic line onto the bridges would not disturb any migratory birds roosting beneath. In the event that migratory birds are encountered on-site during project construction, every effort would be made to avoid harm to protected birds, active nests, eggs, and/or young.

3.6 HISTORIC AND CULTURAL RESOURCES

This section discusses the historical and cultural properties that are valuable for our national heritage. The project area covers 14 counties that have been occupied by humans for thousands of years. Numerous prehistoric and historic sites are recorded in the project area.

Section 106 of the NHPA of 1966, as amended, requires federal agencies to "take into account" the "effect" that a project or undertaking will have on historic properties. Historic properties are those included in or eligible for listing in the NRHP. National Register sites may include properties such as structures, buildings, Historic districts, cemeteries, and archeological sites. The results of a site files records search examining known archeological and architectural resources are presented below.

3.6.1 Methodology

Based on information provided by the Texas Archeological Research Laboratory and the Texas Historical Commission's Sites Databases, archeologists from aci consulting created a composite map showing the locations of archeological and historical sites in the project area in relation to the proposed fiber optic line route and hut locations. Over 800 archeological sites were noted within a one-mile buffer of the proposed project area. The project area, or more specifically the Area of Potential Effect (APE), is restricted to the public ROWs where the fiber optic cable will be placed, or in the case of the huts, immediately adjacent to the ROW in public utility easement. After coordination with the SHPO and in order to make the findings more manageable, the buffer was reduced to approximately 100 feet adjacent of the APE, which included 30 archeological sites. Finally, all archeological sites that were within the APE and intersecting the centerline of the proposed route were then documented (n=8). The Texas Archeological Sites Atlas and TARL records were consulted for additional information on each site. For those sites that were recorded as part of projects that have produced reports, the final reports were examined for information on the site boundaries, composition, and potential National Register of Historic Places (NRHP) or State Archeological Landmark (SAL) eligibility. The NRHP was also consulted in a search for listed properties within or abutting the right-of-way of the proposed project to take into consideration Architectural Resources that may be affected by this project. A list of cemeteries located either within the APE or immediately adjacent to the ROW was also compiled.

3.6.2 Archeological Resources

Because of the limited nature of impacts to archeological sites that will be caused by the proposed project, only the archeological sites that actually abut or cross the right-of-way were considered in the compliance analysis. Eight recorded archeological sites intersect the centerline of the proposed fiber optic line route. Of these sites, four are prehistoric (one in Kaufman County, one in Red River County, and two in Wood County), three are historic (one

each in Kaufman, Lamar, and Wood Counties), and one in Smith County has both prehistoric and historic elements. Out of the eight sites, four are considered not eligible by the SHPO based on recommendations in the final reports. Detailed information about all eight sites, including NRHP eligibility, is presented in Table 3.4. Similarly, the hut locations do not have archeological resources within their proposed APE locations as the majority of the archeological sites were located more than one half mile away. All direct impacts to National Register eligible or potentially eligible archeological sites will be avoided through measures agreed upon by the grant recipient and the SHPO. These measures will include either plowing on the other side of the ROW or boring under the site sufficiently as to not disturb any intact deposits. Qualified staff from aci consulting will provide the entry and exit points for boring or plowing to PTC without disclosing the location of the archeological site. Thus, no historic properties (archeological resources) will be affected by the project.

Table 3.4 Archeological Sites Located Within the Project APE

Site Number	Site Type	County	Year Recorded	Location	Eligibility Status Based on Final Reports	Avoidance Measures	Justification/Comments
41KF118	Prehistoric (Habitation site)	Kaufman	1989	Alternate section; SH 34	Not eligible	no avoidance measures necessary	The site is not considered eligible, therefore, avoidance is not necessary
41KF137	Historic (house)	Kaufman	2006	Alternate section; FM429	Not eligible	no avoidance measures necessary	The site is not considered eligible, therefore, avoidance is not necessary
41LR359	Historic (Railroad Grade)	Lamar	2007	Primary line; US 271	Not eligible	no avoidance measures necessary	The site is not considered eligible, therefore, avoidance is not necessary.
41RR314	Prehistoric (Lithic scatter)	Red River	2004	Primary line; US 271	Not eligible	no avoidance measures necessary	The site is considered highly disturbed with little intact remains. No further investigations were recommended
41SM5	Prehistoric and Historic (artifact scatters)	Smith	1941, 2006 revisit	Primary line; US 69	No report written; unknown eligibility	Recommend plowing construction on west side of US 69	The site is recorded as being restricted to the east side of US 69 and likely impacted by the widening of the road; no recommendation of eligibility was given. Avoidance measure is to work on the west side of the highway.

41WD10	Prehistoric (Caddo Habitation site)	Wood	1986, 2006 revisit	Alternate section; FM1804	No report written; Site form says potentially eligible; testing recommended	Boring under site	The site is a Caddo habitation site with evidence of burials present and recorded on both sides of the highway. While the majority of the site is outside of the ROW, encountering human remains is possible within the ROW. Boring under the site is recommended.
41WD25	Prehistoric (Caddo site)	Wood	1935	Primary Line; State Loop FM 564	No report written; unknown eligibility	Boring under site	Because the site is recorded on both sides of the ROW and the site has never been fully assessed for NR eligibility, avoidance measures of boring under the area are recommended.
41WD636	Historic (Railroad Grade)	Wood	2004	Primary Line; State Loop FM 564	Has Potential	Boring under site	Because the site is recorded on both sides of the ROW running perpendicular to Loop FM 564, and the site has never been fully assessed for NR eligibility, avoidance measures of boring under the area are recommended.

3.6.3 Cemeteries

Numerous cemeteries are located within the 14-county project area; however, only 52 are known to fall within the APE or be immediately adjacent to the project ROW. In coordination with the SHPO, avoidance measures are required in order to not inadvertently disturb any unmarked burials that may fall within the ROW. Avoidance strategies include constructing the fiber optic line on the other side of the ROW away from the side having the cemetery, or, in cases where the cemetery boundary is not clear, boring underneath the ground surface to a depth of at least 10-15 feet. It is recommended that Peoples Telephone Cooperative coordinate with TxDOT to determine if further details about the cemetery boundaries are available. Table 3.5 presents the cemeteries and the avoidance measures. Because cemeteries are protected properties, the avoidance measures will ensure that they will not be affected by this project.

Table 3.5 Cemeteries Located Within or Immediately Adjacent to the Project APE

Cemetery	County	Location	Avoidance Strategy
Dodd City Cemetery	Fannin	Hwy 56	plow on south side
Arledge Ridge Cemetery	Fannin	Hwy 78	plow on west side
Fannin Memorial Gardens	Fannin	Hwy 121	plow on east side
Burns Cemetery	Fannin	Hwy 121	plow on east side
100 F Cemetery	Hunt	FM 6	no construction on this route
Boyle Cemetery	Hunt	US 67/Hwy 34	boring at least 10 feet below surface
Mt. Bethel Cemetery	Hunt	CR 3316	boring at least 10 feet below surface
Restland Cemetery	Lamar	FM 137	no construction on this route
Meadow Brook Memorial Park	Lamar	FM 1499	plow on south side
Mt. Tabor Cemetery	Lamar	FM 1499	plow on north side
Forest Lawn Cemetery	Titus	US 67	plow on south side
Liberty Cemetery	Franklin	FM 900	no construction on this route
Prairie Springs	Van Zandt	TX 64	plow on south side
Unknown cemetery 2022 SH19N	Rains	SH 19	plow on west side
Union Grove	Van Zandt	CO 751	plow on east side
Brush Creek Cemetery	Delta	SH 19	plow on west side
Henderson Mosley	Kaufman	CO 328	plow on southwest side
Sulfer Bluff Cemetery	Hopkins	CO 3573	plow on west side
New Birthright Cemetery	Hopkins	Hwy 19	plow on west side
Center Point Church Cemetery	Hopkins	IH 30/US 67	plow north of frontage road
Como Cemetery	Hopkins	CO 2329	plow on northwest side
Greenpond Church Cemetery	Hopkins	FM 2327	no construction on this route
Arbula Cemetery	Hopkins	FM 1567	no construction on this route
Price Family Cemetery	Wood	FM 2966	no construction on this route
Pleasant Grove Memorial Cemetery	Wood	FM 515	no construction on this route
Unknown cemetery (Smyrna)	Wood	CO 4450	boring at least 10 feet below surface
Unknown cemetary (Liberty)	Hopkins	FR 1567	no construction on this route
Waller	Delta	FM 128	no construction on this route
Pilgrims Rest #2	Wood	US Hwy 69	no construction on this route
Cooper Graves	Wood	SH 37	no construction on this route
Unknown cemetary FM 69	Wood	Fm 69	no construction on this route
Lee	Wood	SH 37	no construction on this route
Oak Hill	Van Zandt	Pecan St	plow on the north side
Unknown cemetary (Roadside Park)	Hopkins	HC 3531	plow on the southeast side
Restlawn	Lamar	US Hwy 271	plow on the west side
Woodside	Van Zandt	FM 17	plow on the west side
Silver Lake	Van Zandt	US Hwy 80	plow on the south side
Haven of Memories	Van Zandt	SH 64	plow on the southwest side
Colfax	Van Zandt	CO 1411	plow on the north side
Odd Fellows	Hunt	CR 3601	plow on the west side
Forest Park	Hunt	US Hwy 69 Bus.	boring at least 10 feet below surface

Pierce-Boyd	Wood	FM 17	plow on the west side
Marsh	Smith	CR 313	plow on the north side
Money	Hunt	CR 1001	plow on the northwest side
Hall	Hunt	FM 816	plow on the south side
Tyler Memorial	Smith	SH 64	plow on the north side
Hepsibah	Camp	CR 3510	plow on the north side
Forest Lawn	Kaufman	SH 34	plow on the southeast side
Highland Memorial Gardens	Kaufman	SH 34	plow on the southeast side
Beavers	Wood	CR 3400	plow on the north side
Beavers-Prince	Wood	CR 3419	plow on the south side
Unknown cemetary CR 4450	Wood	CR 4450	boring at least 10 feet below surface

3.6.4 Architectural Resources

The review of the THC Historic Sites Atlas noted that 47 architectural resources are found within a mile of the APE fiber routes (Table 3.6). Similarly, two National Register Historic Districts, the Paris Commercial District and the Church Street Historic District, both in Paris, Lamar County, coincide with the ROW of the proposed fiber optic line on alternate routes. If the project has to be constructed in the Historic Commercial Districts on the alternate routes, the direct impacts would be minimal as boring under the road is planned for those areas. Indirect, visual impacts would be temporary and last as long as the actual construction, which would only be a few days.

Contact was initiated with the SHPO and TxDOT to find out whether any historical bridges were listed as eligible or potentially eligible that may be affected if fiber optic lines are attached to bridges in order to span waterways. Coordination with TxDOT indicated that one bridge, State Highway 5 Bridge at High Creek, was listed on the NRHP; however, that bridge is no longer in place and will not be impacted by this project. No other potentially eligible historic bridges were located within the project area according to the TxDOT information on bridges. One telecommunication hut is located about .35 miles from the Sam Rayburn House site; however, the small nature of the hut and the distance from the NRHP site, it is unlikely that the hut will have any visual impact to the NRHP listed site. Thus, because of the avoidance measures in place such as boring under the roads and the temporary or limited nature of visual impacts, no historic properties (historic architectural resources) will be affected by the project.

Table 3.6 National Register Properties Within One Mile of the Project APE

County	National Register Site Name	Address	City
Lamar	Baty--Plummer House	708 W. Sherman Street	Paris
Lamar	Latimer, William and Etta, House	707 W. Sherman Street	Paris
Lamar	Wright, Edgar and Annie, House	857 Lamar Street	Paris
Lamar	Bailey--Ragland House	433 W. Washington	Paris
Lamar	Baldwin, Benjamin and Adelaide, House	714 Graham Street	Paris
Lamar	Brazelton, Thomas and Bettie, House	801 W. Sherman Street	Paris
Hunt	Camp, William and Medora, House	2620 Church St.	Greenville
Lamar	Daniel, J. M. and Emily, House	216 4th Street SW	Paris
Lamar	First Church of Christ, Scientist	339 W. Kaufman	Paris
Lamar	First Presbyterian Church	410 W. Kaufman	Paris
Lamar	First United Methodist Church	322 Lamar St.	Paris
Fannin	Haden House	603 W. Bonham St.	Ladonia
Lamar	High House	352 W. Washington Street	Paris
Lamar	Johnson--McCuistion House	730 Clarksville	Paris
Lamar	Lamar County Hospital	625 W. Washington	Paris
Lamar	Maxey, Samuel Bell, House	812 E. Church St.	Paris
Lamar	Morris--Moore House	744 3rd Street NW	Paris
Lamar	Preston, Thaddeus and Josepha, House	731 E. Austin	Paris
Lamar	Ragland House	208 5th Street SW	Paris
Rains	Rains County Courthouse	100 E. Quitman St.	Emory
Fannin	Rayburn, Sam, Library and Museum	800 W. Sam Rayburn Dr.	Bonham
Fannin	Rayburn, Samuel T., House	1.5 mi. W of Bonham on U.S. 82	Bonham
Lamar	Rodgers--Wade Furniture Company	401 3rd Street SW	Paris
Lamar	Santa Fe-Frisco Depot	1100 W. Kaufman	Paris
Lamar	Scott--Roden Mansion	425 S. Church St.	Paris
Lamar	St. Paul's Baptist Church	454 2nd Street NE	Paris
Fannin	Texas and Pacific Railroad Depot	1 Main St.	Bonham
Lamar	The House at 705 3rd Street SE	705 3rd Street SE	Paris
Lamar	Trigg, W. S. and Mary, House	441 12 Street SE	Paris
Lamar	Wise--Fielding House and Carriage House	418 W. Washington	Paris
Lamar	Atkinson--Morris House	802 Fitzhugh	Paris
Lamar	Carlton--Gladden House	2120 Bonham Street	Paris
Hunt	Central Christian Church	2611 Wesley St.	Greenville
Fannin	Clendenen-Carleton House	803 N. Main St.	Bonham
Lamar	Gibbons, John Chisum, House	623 6th Street SE	Paris
Hunt	Hunt County Courthouse	2500 Lee St.	Greenville
Lamar	Jenkins, Edwin and Mary, House	549 5th Street NW	Paris
Hunt	Katy Depot	3102 Lee St.	Greenville
Wood	Lott, Howard L. and Vivian W.,House	311 E. Kilpatrick St.	Mineola
Hunt	Mayo Hall	Monroe and Stonewall Streets	Commerce
Lamar	McCormic--Bishop House	603 8th St., SE	Paris
Lamar	Means--Justiss House	537 6th Street SE	Paris
Hunt	Post Office Building	Lee at King St.	Greenville
Hunt	President's House	SW of Circle Dr.,	Commerce
Red River	Red River County Courthouse	Public Sq.	Clarksville
Red River	Smathers-Demorse House	E. Comanche St.	Clarksville
Fannin	Trout, Thomas and Katherine, House	705 Poplar St.	Honey Grove

Lamar	Paris Historic Commercial District	Downtown Paris	Paris
Lamar	Church Street Historic District	Church Street, Downtown Paris	Paris

3.6.5 Native American Resources

Tribal consultation with federally-recognized tribes who may have an interest in the project area was initiated by the NTIA on October 22, 2010 through the FCC's Tower Construction Notification System (TCNS). The Tonkawa Tribe noted on November 10, 2010 that there are no known burials of Tonkawa ancestors within the project area; however, if artifacts or remains are encountered during the construction, they request to be contacted immediately, along with other appropriate Agencies, of the discovery. On March 9, 2011, further explanation of the nature of the project including the absence of towers and inclusion of buried fiber optic cables in existing ROW was sent directly to tribes who had indicated through the TCNS that they may need additional information. In addition, a more detailed map of the proposed routes was included with the letter to the tribes (see Chapter 6, Chapter 7, and Appendix C).

3.7 AESTHETIC AND VISUAL RESOURCES

The Gulf Coast Plain of Northeast Texas is characterized by upland post oak savannah and prairies dissected by rivers and streams which provide low relief. Stands of hardwoods including oak, elm, and ash are found in the bottomlands along with understory vegetation. The small pockets of prairie contain a diverse assemblage of flora including tall grasses such as big blue stem and Indian grass, a wide variety of legumes, along with members of the aster family (MacRoberts and MacRoberts 2003). The entirety of the build alternative would occur within existing highway ROWs and the immediate area would include the existing transportation corridor and any other adjacent utility corridors.

The project area includes portions of the Neches, Cypress, Sabine, Sulphur, Trinity, and Red River Basins (see Figure 3.3). As noted in Section 3.4, the fiber optic routes cross surface waterways approximately 651 times. The crossings of the larger waterways are noted here. The Red River is the northern boundary of Fannin, Lamar, and Red River Counties. The fiber optic route extends to the Red River in Lamar County north of Pat Mayse State Park. Lamar and Red River Counties are bordered to the south by the Sulphur River. The northern branch of the Sulphur River marks the northern extent of Delta County while the southern boundary is marked by a southern branch of the same river. The fiber optic route crosses the Sulphur River in three locations. The third river in the project area, the Sabine River, marks the southern

extent of Rains, Wood, and Upshur Counties and the northern extent of Smith and Van Zandt Counties. The fiber optic route crosses the Sabine River in three places in along the borders of Wood, Van Zandt, and Smith counties. The fiber optic route crosses the Sabine between Wood and Smith Counties and a branch of the fiber optic route crosses the river between Rains and Van Zandt Counties.

The municipal, state, and federal parks along the fiber optic routes are listed in Table 3.7. Nineteen municipal parks are adjacent to the routes. One federal park, Little Sandy National Wildlife Refuge, in Wood County is adjacent to a fiber optic route. A section of the fiber optic route abuts both the northern and southern parts of the Lyndon B. Johnson National Grassland in Fannin County.

Table 3.7 Municipal, State, and Federal Parks Near Proposed Routes

Distance from line	County	Park	Jurisdiction
adjacent	Fannin	Lyndon B. Johnson National Grassland	federal
adjacent	Delta	Harmon Park	municipal
adjacent	Fannin	Leonard City Park	municipal (Leonard)
adjacent	Fannin	Catron Park	municipal (Bonham)
adjacent	Hopkins	Sulphur Springs Country Club	municipal
adjacent	Hunt	City Park	municipal (Greenville)
adjacent	Hunt	Jones Park	municipal (Greenville)
adjacent	Hunt	Carver Park	municipal (Greenville)
adjacent	Hunt	MHW Park	municipal (Greenville)
adjacent	Lamar	Paris County Country Club	municipal
adjacent	Smith	Wilks Park	municipal (Tyler)
adjacent	Smith	Northside Park	municipal (Tyler)
adjacent	Titus	Sam Parker Field	municipal (Mt. Pleasant)
adjacent	Titus	Keith Park	municipal (Mt. Pleasant)
adjacent	Titus	Fair Park	municipal (Mt. Pleasant)
adjacent	Titus	Heritage Park	municipal (Mt. Pleasant)
adjacent	Wood	Little Sandy National Wildlife Refuge	federal
adjacent	Wood	unnamed	municipal (Quitman)
adjacent	Wood	Mineola Recreation Area	municipal
adjacent	Wood	Trail at Mineloa Nature Preserve	municipal
1.8 miles	Delta	Cooper Lake State Park	state
1.7 miles	Hopkins	Cooper Lake State Park South Sulphur Unit	state
> 1 mile	Franklin	unnamed	municipal
> 1 mile	Franklin	Mary King Park	municipal
> 1 mile	Franklin	Walleye Park	municipal
> 1 mile	Franklin	Cypress Creek Park	municipal
< 1 mile	Camp	unnamed	municipal (Pittsburg)
< 1 mile	Fannin	Simpson Park	municipal (Bonham)

< 1 mile	Fannin	unnamed	municipal (Bonham)
< 1 mile	Fannin	City Memorial Park	municipal (Trenton)
< 1 mile	Hopkins	Coleman Park	municipal (Sulphur Springs)
< 1 mile	Hopkins	City Park	municipal (Sulphur Springs)
< 1 mile	Hopkins	Pacific Park	municipal (Sulphur Springs)
< 1 mile	Hunt	Sand Hills Golf Course	municipal
< 1 mile	Hunt	unnamed playing field	municipal (Commerce)
< 1 mile	Hunt	Lyndon Baines Johnson Park	municipal (Commerce)
< 1 mile	Lamar	Walker Park	municipal (Paris)
< 1 mile	Lamar	Record Park	municipal (Paris)
< 1 mile	Lamar	Pat Mayse State Park	state
< 1 mile	Lamar	Pat Mayse State Wildlife Management Area	state
< 1 mile	Lamar	Wade Park	municipal (Paris)
< 1 mile	Rains	Jenkins Park	municipal
< 1 mile	Rains	unnamed	municipal
< 1 mile	Rains	Historical Church Park	municipal
< 1 mile	Red River	New Century Stadium	municipal
< 1 mile	Red River	unnamed park	municipal
< 1 mile	Smith	Old Sabine Bottom National Wildlife Management Area	federal
< 1 mile	Smith	Rose Garden Pond	municipal (Tyler)
< 1 mile	Smith	Woldert Park	muncipal (Tyler)
< 1 mile	Smith	Gassaway Park	municipal (Tyler)
< 1 mile	Smith	Willow Brook Country Club	municipal (Tyler)
< 1 mile	Titus	Dellwood Park	municipal (Mt. Pleasant)
< 1 mile	Titus	Oaklawn Park	municipal (Mt. Pleasant)
< 1 mile	Van Zandt	unnamed	municipal (Edgewood)
< 1 mile	Wood	Wells Park	municipal (Hawkins)
< 1 mile	Wood	unnamed	municipal (Mineola)

Twenty-nine municipal parks lie within one mile of a fiber optic route. Two state parks, Pat Mayse State Park and Pat Mayse State Wildlife Management Area, are also less than one mile from a route. Old Sabine Bottom National Wildlife Management Area is also less than one mile from a line. Cooper Lake State Park and the South Sulphur Unit of Cooper Lake State Park are less than two miles from a section of the fiber optic route.

National Historic Register properties are listed in Table 3.6 in Section 3.6. These properties can also be considered aesthetic or visual resources. Three properties in Lamar County, the Baty-Plummer House, William and Etta Latimer House, and Edgar and Annie Wright House, are located within 100 feet of a proposed fiber optic route. An additional 27 National Historic Register properties are within a quarter of a mile of a fiber optic route and 17 are within one mile

of a route.

3.8 LAND USE

The project area is mostly located in rural areas outside larger urban centers. Land use along the proposed fiber optic routes includes mostly residential, commercial, agricultural, medical, educational, and community facilities. According to the Multi-Resolution Land Characteristics Consortium (MRLC), land cover types include mostly pasture/hay interspersed with cultivated croplands, woody wetlands, developed areas, and forests. Within the service area of the project, there are 158,795 households, 10,531 businesses, and 191 community anchor and public safety institutions. Land uses within the project area are shown in Figure 3.8.

3.9 INFRASTRUCTURE

Businesses and residents of the proposed project area have access to electrical, natural gas, and waste disposal services. Electrical services are predominantly provided by regional electrical cooperatives, natural gas is primarily provided by provide gas companies, and waste disposal services are provided by cities, towns, or provide collection companies.

3.9.1 Telecom Availability

A 2009 market study indicated that broadband access in the project area is extremely limited and that where it is available, it is at speeds below the federal standard and is prohibitively expensive (PTC 2010). As discussed earlier in the land use section, the 14-county study area is primarily comprised of rural areas lacking urban core development. This deficiency has lead to a high cost per user of upgrades to high-speed broadband access, therefore creating an area with very little access to affordable, reliable broadband access.

3.9.2 Factors That Affect Availability

As noted above, the limited urban density or core is the primary factor affecting the availability of broadband infrastructure within the 14-county project area. No geophysical limiting factors (i.e. rugged, steep topography; lowland wetland/aquatic habitat; or geology) are present that substantively affect the availability of broadband. Similarly, no substantive restricted land use exists within the project area which would impede the current availability (such as restricted or protected lands, geopolitical boundaries, or otherwise).

3.9.3 Transportation Network

Interstate Highways 20 and 30 bisect the proposed project area, connecting the Dallas/Fort Worth metropolitan area situated west of the project area to Texarkana and Shreveport, respectively, situated east of the project area. A network of state and county roads, most of them paved, connect the various municipalities and rural areas within the project area.

3.10 SOCIOECONOMIC RESOURCES

Executive Order (EO) 12898 “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” requires each Federal agency to “make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations.”

In compliance with EO 12898 regarding Environmental Justice, this project was assessed in order to determine whether or not the proposed activities would have a disproportionate adverse impact on low-income or minority populations. The U.S. Department of Health and Human Services poverty guideline for a family of four is $22,050 in 2010. Based on 2000 U.S. Census Bureau data, the median household income in the project counties ranges between $27,558 in Red River County to $44,743 in Kaufman County; therefore, it does not appear there are any low income populations present. However, ten counties are "economically distressed," according to data compiled by the Federal Highway Administration. This designation is based on income data from the Bureau of Economic analysis and employment data from the Bureau of Labor Statistics. According to 42 U.S.C. 3161, Economically Distressed Areas (EDAs) are areas where the unemployment rate is 1% or more above the national average or the per capita income is 80% or less of the national average.

Table 3.8 includes the approximate race percentages of populations present within the project counties.

Table 3.8 Minority Population Distribution within the Project Area

Minority Population Distribution										
	Non Hispanic or Latino									
	White Alone	Black or African American	American Indian and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Some Other Race	Two or More Races	Hispanic or Latino	Total	% Minority*
Camp	7507	2201	25	19	5	6	79	1707	11549	35%
Delta	4616	440	29	6	2	0	69	165	5327	13%
Fannin	26298	2482	234	81	7	14	373	1753	31242	16%
Franklin	8129	364	46	18	0	2	57	842	9458	14%
Hopkins	25946	2525	166	79	13	19	245	2967	31960	19%
Hunt	61170	7183	478	413	47	54	885	6366	76596	20%
Kaufman	54424	7472	369	330	12	54	727	7925	71313	24%
Lamar	39116	6493	478	191	11	23	573	1614	48499	19%
Rains	8183	263	67	30	1	6	84	505	9139	10%
Red River	10868	2538	79	17	1	3	139	669	14314	24%
Smith	118598	33129	562	1201	29	119	1547	19521	174706	32%
Titus	16782	2970	96	120	3	13	174	7960	28118	40%
Van Zandt	42619	1390	231	84	10	5	600	3201	48140	11%
Wood	31848	2243	167	69	8	19	296	2102	36752	13%

* (Total Population – White Alone Population) ÷ Total Population = % Minority

Source: U.S. Census Bureau, 2000, Main Data Sets with Detailed Tables, Summary File 1, Table P4

3.11 HUMAN HEALTH AND SAFETY

Fiber optic cables themselves do not pose a human health or safety threat. These systems do not release hazardous chemicals or radiation. Under the Proposed Action, the cables would be buried and so would not represent a physical boundary that could be dangerous to humans. Under the Aerial Alternative, the lines would be hung from existing and newly installed utility poles which would be situated at an elevated height sufficient to not conflict with regular pedestrian activities.

Because the proposed fiber optic line would be installed in existing road ROW, there is some danger to construction workers and/or motorists during the installation process. However, all workers would follow Occupation Health and Safety Administration (OSHA) practices and would conform to TxDOT and other applicable municipal requirements for road safety. These requirements would include traffic control plans with signage and flaggers, requirements for personal protective equipment like safety vests and helmets, training regarding heavy machinery, and access to first-aid and hazardous materials collection equipment. Appendix E contains a Safety Manual, which provides details on safety policies and procedures for the project.

3.11.1 Hazardous Materials

In addition to the human health and safety concerns associated with the implementation of the proposed project, hazardous waste sites in the vicinity of the project area must also be considered. The EPA oversees the Superfund project, which is designed to "clean up the nation's uncontrolled hazardous waste sites" (EPA 2010b). The EPA maintains data on many hazardous waste sites and, depending on the severity and type of waste, lists these sites on the National Priorities List (NPL) (EPA 2010c). Brownfields are another term for abandoned or underused industrial or commercial properties that may be contaminated with hazardous waste (EPA 2010d). In 2010, the EPA compiled many of the agency's databases into one geospatial data download system. The geospatial system includes the entire agency's Featured Environmental Interests including:

- Superfund National Priority List
- RCRAInfo-EPA and State Treatment, Storage and Disposal facilities
- Toxic Release Inventory System
- Integrated Compliance Information System (ICIS) and Permit Compliance System (PCS)
- RCRAInfo- large quantity generators
- Air Facility System (AFS) – Major discharges of air pollutants
- RCRAInfo- Corrective Actions
- RMP- Risk Management Plan
- SSTS- Section Seven Tracking System (Pesticides)
- ACRES – Brownfields Properties

Querying the database for facilities within 100 feet and 500 feet of the project, produced 10 and 50 results, respectively. Table 3.9 below details all registered facilities within 100 feet of the project. All environmental registered facilities within 500 and 100 feet of the project area are shown in Figure 3.9. None of the sites within 100 feet of the project are Superfund sites on the National Priority List. All are located outside of the public ROW, adjacent to the proposed alignments, and none are anticipated to interact with the public ROW where the proposed project is anticipated.

Table 3.9 USEPA Brownfield Sites within 100 feet of the Project

Facility Name	USEPA Registry No.	Facility Type	Location
SUIZA MORNINGSTAR FOODS INC	110000458040	Food Production	Adjacent to public ROW
OCEAN SPRAY CRANBERRIES INCORPORATED	110002132077	Food Production	Adjacent to public ROW
BUNKER PLASTICS INC	110009501770	Plastic Manufacturing	Adjacent to public ROW
ESTES INC	110010747068	Pharmaceutical Manufacturing	Adjacent to public ROW
PARIS ASPHALT PLANT	110034879228	Asphalt and Concrete Manufacturing	Adjacent to public ROW
WATSON BROS., INC.	110038241266	Furniture Manufacturing	Adjacent to public ROW
CROP PRODUCTION SERVICES 5023	110038238421	Pesticide Producer	Adjacent to public ROW
CROP PRODUCTION SERVICES 5082	110038236726	Pesticide Producer	Adjacent to public ROW
PHILIPS LIGHTING COMPANY	110000457979	Electrical Equipment Manufacturer	Adjacent to public ROW
GRAND THEATER	110038756003	Brownfield Grant Recipient	Adjacent to public ROW

During construction the contractor's safety work plan should include management and response requirements in the event contaminated media is encountered.

4.0 CHAPTER 4: ENVIRONMENTAL IMPACTS

Each of the four build alternatives and the No Action Alternative would impact the existing human and natural environment differently. On many occasions, the alternatives' respective impacts are variations on a common theme differing by minor factors. The following sections present each alternative's potential impacts on the resource categories presented in Chapter 3.

4.1 NOISE

Proposed

The Proposed Action is not located along a new alignment and would not increase existing ambient noise levels upon completion and operation. Construction of the Proposed Action may cause minimal impacts to areas adjacent to project routes, potentially including sensitive receptors, as the purpose of the project is to install broadband service for those sensitive receptors. Equipment that would emit noise during project construction may include Caterpillar D9 bulldozers, backhoes, and directional boring machines, which typically range in noise emissions from 80-85 dBA at 50 feet.

Noise associated with the construction of the project is difficult to predict. Heavy machinery, the major source of noise in construction, is constantly moving in unpredictable patterns. However, construction normally occurs during daylight hours when occasional loud noises are more tolerable. None of the receivers is expected to be exposed to construction noise for a long duration; therefore, any extended disruption of normal activities is not expected. Provisions would be included in the plans and specifications that require the contractor to make every reasonable effort to minimize construction noise through abatement measures such as work-hour controls, minimize use of loudest equipment to standard work hours, speed control, minimizing idling equipment, proper maintenance of equipment and muffler systems and accommodate neighbor noise maintenance requests to the maximum extent practicable.

In addition to the use of standard noise reduction best management practices, Peoples would require the use of Personal Protection Equipment (PPE) such as ear protection by construction personnel during loud construction activities. Detailed specification for PPE and noise thresholds for their use on the project are included in the Project Safety Plan attached as Appendix E.

Operation of a 20kw generator would occur for 15 minutes once per week at each of the nine hut locations in order to assure operation in case of emergency. The sound rating for the generator is 72dB at 23 feet. The minimal amount of operating time for the generators would not cause noise impacts to surrounding areas. Additionally, based on review of aerial imagery and proposed hut locations, the huts are not located adjacent to potentially sensitive receptors.

Underground

Noise from construction machinery would be generated during trenching and/or boring activities during installation of the Underground Alternative. Once installed, the operation of the Proposed Action would not add to ambient noise levels. The major difference between the Proposed Action and the Underground Alternative focuses on the boring or hanging of fiber optic lines across major water bodies. In the Underground Alternative, no fiber optic lines would be hung from bridges. This would equate to additional use of a boring machine within the project area, and these boring machines may create additional noise disturbance during construction.

Aerial

During installation of the Aerial Alternative, noise from the construction machinery would be generated. Additional machinery would be needed for the pole and line work which may create additional noise. Once installed, the operation of the Proposed Action would not add to ambient noise levels.

Wireless

During installation of the Wireless Alternative, noise from the construction machinery at the wireless communication towers would be generated. Once installed, the operation of the Wireless Alternative may contribute to ambient noise levels at microwave and wireless tower locations. These locations would contain electrical as well as heating, ventilating, and air conditioning facilities which may emit low decibel background noise during operations.

No Action

The No Action Alternative would have no noise impacts within the project area, including sensitive receptors.

4.2 AIR QUALITY

Proposed

The Proposed Action would constitute a short-term minor increase in the use of fossil fuel and associated GHG emissions during construction. Green House Gas emissions would occur as a result of project construction. The construction of the fiber optic lines would result in the release of approximately 3,961.36 metric tons of equivalent CO_2 emissions per the NTIA Guideline calculations (NTIA 2010b). Construction of the nine telecommunication hut sites would result in the release of approximately 7.08 metric tons of equivalent emissions. Emergency generators housed at these huts would operate one day per week at each of the nine hut locations. Generators would use 0.68 gallons of natural gas per week, which produces negligible CO_2 emissions.

The Council on Environmental Quality (CEQ) issued draft guidance on when and how federal agencies should consider GHG emissions and climate change in the NEPA. The draft guidance includes a presumptive effects threshold of 25,000 metric tons of CO_2 equivalent emissions from an action (CEQ 2010). The GHG emissions associated with the Proposed Action, a total of 3,968.44 metric tons, are well below the CEQ threshold. Therefore, GHG emissions from the Proposed Action would not contribute appreciably to climate change or global warming. Carbon dioxide emissions were calculated for the machinery that would be used during the construction process for all alternatives.

During the construction phase of this project there may be temporary increases in air pollutant emissions from construction activities, equipment, and related vehicles. The primary construction related emissions are particulate matter (fugitive dust) from site preparation and construction and non-road mobile source air toxics (MSAT) from construction equipment and vehicles. The primary MSAT emission related to construction is diesel particulate matter from diesel powered construction equipment and vehicles.

These emissions are temporary in nature (only occurring during actual construction) and it is not possible to reasonably estimate impacts from these emissions due to limitations of the existing models. However, the potential impacts of particulate matter emissions will be minimized by dust control measures such as covering or treating disturbed areas with dust suppression techniques, sprinkling, covering loaded trucks, and other dust abatement controls, as appropriate. The MSAT emissions will be minimized by measures to encourage use of EPA required cleaner diesel fuels, limits on idling, increasing use of cleaner burning diesel engines,

and other emission limitation techniques, as appropriate.

However, considering the temporary and transient nature of construction related emissions as well as the mitigation actions to be utilized, it is not anticipated that emissions from construction of this project will have any significant impact on air quality in the area.

Underground
Any impacts to air quality from the Underground Alternative would occur during construction activities similar to the Proposed Action. Different construction equipment would be utilized during installation of a fully buried line, but the time frame for construction, vehicle trips, and fuel needs are anticipated to be very similar to those for the Proposed Action. As such, CO_2 emissions are anticipated to be similar as well.

Aerial
Any impacts to air quality from the Aerial Alternative would occur during construction activities similar to the Proposed Action. Different construction equipment would be utilized during installation of a fully aerial or underground line, but the time frame for construction, vehicle trips, and fuel needs are anticipated to be very similar to those for the Proposed Action. As such, CO_2 emissions are anticipated to be similar as well.

Wireless
Any impacts to air quality from the Wireless Alternative would occur during construction. Project Engineers anticipate that fuel needs may be 40 to 50 percent less than for the Proposed Action as less fiber optic line installation would be required. As such, CO_2 emissions would total 1,980.68 to 2,376.82 metric tons for the Wireless Alternative per NTIA Guideline calculations (NTIA 2010b). This alternative provides a fractional decrease in CO_2 emissions over the Proposed Action, Underground Alternative, or Aerial Alternative.

No Action
The No Action Alternative would result in the release of 0 metric tons of equivalent CO_2 emissions.

4.3 GEOLOGY AND SOILS

The following section describes the projected impacts of the various installation alternatives on the geology and soils of the proposed project area as well as on the prime or unique farmlands

of the area.

Proposed

Because the Proposed Action is located entirely in existing highway ROW and disturbed corridors and because of the limited nature of impacts to the earth of the proposed project, it is unlikely that the project would cause significant adverse effects to the geology, soils, or prime or unique farmland of the project area. The site geology and soils within existing ROWs in which the proposed alignment would be predominantly plowed and secondarily bored have already been altered during their conversion to transportation use. Depending on the level of service and design, the existing ROW disturbances include at a minimum grading, contouring and placement of sub grade, road base and asphalt to at maximum grading for drainage, mixing of subsoils with soil stabilization materials, compaction, placement of sub-base, base and concrete roadway material. Additionally, in regional State and county roadways the long-term ROW maintenance and other utilities would have also contributed to the non-native, disturbed setting. Accordingly, the anticipated impacts to geology and soils from the placement of fiber optic lines at depth of 36-42 inches within the ROW and disturbed areas is not anticipated to significantly alter the geology and soil setting from its baseline disturbed condition.

Underground

Although the Underground Alternative would require the disturbance of soil for the burying of the fiber optic cable, the cable would be installed in previously-disturbed contexts and so would cause no additional adverse effects to the geology, soils, or prime or unique farmland of the project area. The Underground Alternative would have relatively more disturbance in comparison to the Proposed Alternative based on all of the alignments occurring below grade. This relative increase would be minimal for two reasons: 1) the majority of the Proposed is underground and (as discussed above) the geologic and soil setting within the existing ROW is already substantially disturbed by roadway construction and maintenance.

Aerial

The Aerial Alternative would not require the burial of fiber optic cable and so would cause no adverse effects to the geology, soils, or prime or unique farmland of the proposed project area. The Aerial Alternative would require the replacement of aging existing utility poles and the installation of new utility poles where no current aerial line exists. Based on the estimation laid out in Section 2.3, Peoples approximates the Aerial Alternative to require replacement of 285

existing poles and the construction of 8,526 new poles. These utility pole improvements would disturb the existing ROWs at discrete locations and at greater depths than the Proposed Action. Based on the Rural Utilities Service (RUS) guidelines that would be followed for all pole replacement and installation (RUS 2001), depths of pole disturbance vary depending on the parent material in which they are placed (generally varying from 5 feet to 8 feet in depth). The general construction phase surface disturbance around each pole at installation is anticipated to be less than 25 feet in radius, and would vary dependent on setting and construction technique.

Wireless

The Wireless Alternative would not require the burial of fiber optic cable and as so, would cause similar effects to the geology, soils, or prime or unique farmland of the proposed project area. As presented in Section 2.4, The Wireless Alternative would require installation and maintenance of approximately 81 towers within the project area. Each of these towers would require approximately 50 feet by 50 feet of ground disturbance at the tower location. The permanent surface disturbance to geology and soil would include three foundation footings approximately 3-6 feet in width and 6-30 feet in depth. Additional permanent disturbance would include placement of a building within the existing area of disturbance.

No Action

The No Action Alternative for the proposed project would have no effect on the geology, soils, or prime or unique farmland of the project area.

4.4 WATER RESOURCES

The following section addresses any potential impacts to surface water, groundwater, floodplains, coastal management zones, and Wild and Scenic Rivers within the project area for each alternative. Temporary erosion and sedimentation controls would be implemented during all alternatives, including the Proposed Action, for preventing impacts to water resources as required under the Texas Pollution Discharge Elimination System (TPDES). Various best management practices used during construction may include: backfilling trenches, silt fences, straw bales, straw mat blanketing, replacement of or reseeding of existing grass, and replacement of existing flora. A detailed plan is discussed in Section 6.5 National Pollution Discharge Elimination System.

4.4.1 Surface Water Including Wetlands

Proposed

The Proposed Action would intersect at least 651 streams and rivers during installation and any adjacent wetlands. Impacts to streams and rivers and adjacent wetlands would be avoided with the use of horizontal directional boring or by hanging the fiber optic line on an existing bridge or crossing structure. An assessment of water resources and discussion of the avoidance procedures was submitted to the USACE on November 19, 2010. The USACE confirmed that this project would not involve activities subject to the requirements of Section 404 or Section 10 and would not require Department of Army authorization as all impacts to waters of the U.S. (including wetlands) will be avoided. A copy of the letter is included in Appendix C.

Underground

This alternative would involve boring underneath all waters of the U.S. within the project area during the fiber optic line installation process. No impacts to surface waters would occur. Portions of the fiber optic line alignment require bridge hangings to cross waters of the U.S. or aerial installation to connect to subscribers.

Aerial

The Aerial Alternative would also avoid impacts to waters of the U.S. Impacts to streams and rivers would be avoided by hanging the fiber optic line on an existing bridge or crossing structure. No new poles would be installed within waters of this U.S. for this alternative.

Wireless

This alternative would not involve the installation of any fiber optic lines across surface waters.

No Action

The No Action Alternative would have no adverse impacts to surface waters.

4.4.2 Groundwater

Proposed

Limited ground disturbance is anticipated during the fiber optic line installation process. Construction would involve plowing with a ripper attachment. The ripper opens a narrow slot, inserts the cable, and covers it in one operation. This is useful in areas where rock contents are minimal and construction paths are free of obstructions. An alternate method, used when

applicable, is making a trench, placing the appropriate sized cables, backfilling and compacting to restore the ground to its original condition. The fiber optic cables would be placed at a minimum depth of 36 to 42 inches below the surface. Construction at this depth is not anticipated to disrupt groundwater flows. As such, no impacts to groundwater are anticipated from the Proposed Action. Furthermore, according to the Region 6 Sole Source Aquifer map, no sole source aquifers are located within the project area (EPA 2008).

Underground

Ground disturbance from this alternative is similar to that of the Proposed Action, which would mostly be buried. Construction methods would be identical, involving construction at depths that are not anticipated to disrupt groundwater flows. As such, no impacts to groundwater are anticipated from the Underground Alternative. However, portions of the fiber optic line alignment require bridge hangings to cross waters of the U.S. or aerial installation to connect to subscribers.

Aerial

Ground disturbance during the installation of a fully aerial fiber optic line would be limited to installation of poles to support the aerial cables. Depending on soil type, pole burial depth would be around 6 feet deep. Construction at this depth is not anticipated to disrupt groundwater flows.

Wireless

Ground disturbance for the Wireless Alternative would be limited to disturbance during installation of wireless communication tower poles. Depending on soil type, pole burial depth would be around 6 feet deep. Construction at this depth is not anticipated to disrupt groundwater flows.

No Action

The No Action Alternative would have no adverse impacts to groundwater, but the purpose and need for the project would not be met.

4.4.3 Coastal

No coastal management zones are located within the project area. No impacts to coastal management zones are anticipated under any of the build alternatives and No Action Alternative.

4.4.4 Floodplains

Proposed

The Proposed Action crosses FEMA floodplains. The facilities proposed would be installed beneath grade and would result in no substantial fills or other grading revisions. No impacts to floodplains are anticipated from the Proposed Action.

Underground

Ground disturbance from this alternative is similar to that of the Proposed Action, which would mostly be buried. The Proposed Action crosses FEMA floodplains. The facilities proposed will be installed beneath grade and will result in no substantial fills or other grading revisions. No impacts to floodplains are anticipated from the Underground Alternative. However, portions of the fiber optic line alignment require bridge hangings to cross waters of the U.S. or aerial installation to connect to subscribers.

Aerial

The Aerial Alternative would generally cross over FEMA floodplains between utility poles. The only ground disturbance for this alternative would result from utility pole installation, which would be placed outside of FEMA floodplains. No impacts to floodplains are anticipated from the Aerial Alternative.

Wireless

No disturbance to floodplains is anticipated in this alternative as the wireless communications towers would be located outside of floodplains.

No Action

The No Action Alternative would not result in any impacts to floodplains.

4.4.5 Wild and Scenic Rivers

No national Wild and Scenic Rivers are located within the project area. No impacts to Wild and Scenic Rivers would result from any of the build alternatives and No Action Alternative.

4.5 BIOLOGICAL RESOURCES

The following section addresses potential impacts to vegetation communities, wildlife, migratory birds, and federally-listed species within the project area for each alternative.

4.5.1 Vegetation Communities

Proposed

The proposed project is within state and county maintained ROW and disturbance corridors, which consists of typical roadside and fence line vegetation. The areas of cable placement have previously been disturbed through ground disturbance, mowing, other maintenance, and other utility placement. No clearing is required for any of the cable placement. No impacts to vegetation are anticipated from the Proposed Action.

At select locations where the TxDOT determines vegetation to be of environmental and aesthetic value, boring would be utilized to preserve the natural setting. Reseeding is not planned due to the width of the cable plow.

Underground

The fully Underground Alternative would involve trenching or plowing in maintained ROW, which consists of typical roadside and fence line vegetation. The areas of cable placement have previously been disturbed through ground disturbance, mowing, other maintenance, and other utility placement. No impacts to vegetation are anticipated from the Underground Alternative. However, portions of the fiber optic line alignment require bridge hangings to cross waters of the U.S. or aerial installation to connect to subscribers.

Aerial

This alternative would result in little disturbance to vegetation as the majority of the fiber optic cables would be hung on utility poles. Disturbance to vegetation would be limited to pole installation. This limited disturbance would not result in significant impacts to local vegetation.

Wireless

Minimal disturbance to vegetation is anticipated in this alternative as disturbance would be limited to the footprint of the wireless communication tower. Communications towers would not be located within areas with sensitive vegetation species or within managed areas.

No Action

The No Action Alternative would not result in any impacts to vegetation.

4.5.2 Wildlife

Proposed

The Proposed Action does not anticipate adverse impacts to Texas wildlife species. The majority of the fiber optic cables would be installed underground. Impacts to species that may inhabit typical ROW vegetation would be minimal and would only take place during construction. To avoid aquatic species habitat, cable would either be bored or hung from an existing crossing structure when crossing rivers and tributaries. Aerial cables or towers, which could interfere with bird flight patterns, are not proposed for this alternative.

Texas Parks and Wildlife Department was contacted by letter dated October 6, 2010 requesting confirmation of a "no effect" determination to state-listed threatened and endangered species (see Appendix C). On November 4, 2010, Peoples received written confirmation that TPWD agreed with the no effect determination of the Proposed Action to state-listed threatened and endangered species.

Underground

The Underground Alternative does not anticipate any impacts to Texas wildlife species. The majority of the fiber optic cables would be installed underground. Impacts to species that may inhabit typical ROW vegetation would be minimal and would only take place during construction.

Aerial

Impacts to avian and bat species from a fully Aerial Alternative may include minor confusion or injury during collisions with the cables. Fiber optic cables do not transmit electricity; therefore electrocution would not be anticipated. Habitat for ground-dwelling species would be temporarily impacted during installation of the utility poles or installation of new cable line on

existing poles. Impacts would be limited to areas within the existing ROW. No impacts to aquatic species are anticipated as cables would traverse above rivers and tributaries.

Wireless

A Wireless Alternative may result in impacts to avian and bat species due to collisions at communication towers causing disorientation or injury. Minimal disturbance to ground-dwelling species is anticipated in this alternative as disturbance would be limited to the footprint of the wireless communication tower. Communications towers would not be located within WMAs.

No Action

The No Action Alternative would not result in any impacts to Texas wildlife species, but the purpose and need of the project would not be met.

4.5.3 Threatened and Endangered Species

Section 9 of the ESA prohibits certain activities that may result in the take of federally-listed threatened and endangered species. "Take" is defined in the ESA as "harass, harm, pursue, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." "Harm" has been defined to include activities that modify or degrade habitat in a way that significantly impairs essential behavior patterns and results in death or injury. In the final rule for listing a species, USFWS will identify the types of activities that may result in death or injury to the species and also the types of activities that will not result in death or injury.

Section 7 of the ESA requires all federal agencies to consult with the USFWS if an "action" may affect federally-listed species or their designated habitat. The USFWS Arlington Ecological Field Services office was contacted by letter dated October 6, 2010 with the intent of initiating informal consultation under Section 7 of the ESA, including a no-effect determination. On October 13, Peoples received verbal confirmation that USFWS, Arlington Field Office agreed with the no effect determination of the Proposed Action. NTIA also submitted an initiation letter to the USFWS, Austin Ecological Field Services Office on October 25, 2010. Peoples representatives spoke with the Austin Ecological Field Services Section 7 coordinator in December 2010 and received confirmation the Arlington Field Services Office would be the lead office for coordination. On December 23, Peoples representatives transmitted to USFWS Arlington Field Services Office a letter detailing NTIA's no effect determination for the project. On December 27, 2010, USFWS Arlington Field Services Office provided email correspondence

confirming review of the documentation and not further action required. Both correspondences are included in Appendix C. Further coordination including informal or formal consultation with USFWS under the Section 7 process is not anticipated for the proposed project.

Texas Parks and Wildlife provided TNDD information on October 6, 2010, in order to assess the potential for threatened, endangered or candidate species to occur. The results of the TNDD search are detailed in the species descriptions below, as well as potential impacts to federally-listed species as a result of the five project alternatives. A map of the TNDD species occurrences is included as Figure 3.7.

Proposed

Bald Eagle

The proposed project crosses at least seven existing reservoirs within the counties where the bald eagle has been delisted. Reservoir shorelines and adjacent vegetation may be utilized by the species during mating and nesting activities. However, based on preliminary discussions with the project engineer, the footprint of the disturbance during fiber optic line installation will be limited to existing road ROW. As such, no effects to the bald eagle are anticipated as a result of the project. If a nest were to be encountered, the project would comply to meet all the guidelines set forth in the National Bald Eagle Management Guidelines (Appendix D).

Least Tern

The proposed project crosses at least five existing reservoirs within the counties that list the interior least tern as endangered. Reservoir shorelines may be utilized by the species during mating and nesting activities. However, based on preliminary discussions with the project engineer, the footprint of the disturbance during fiber optic line installation will be limited to existing road ROW. Installation of the fiber optic lines within or adjacent to sandbars or shorelines is not within the scope of the project. As such, no effects to the interior least tern are anticipated as a result of the project.

Piping Plover

Within the project area, the piping plover is federally-listed as threatened in Delta County, although no TNDD occurrences of the piping plover are within the Delta County and review of USFWS and other literature provided no information on why this species has been listed in Delta County. The species is a migrant through Texas in late February through mid-May and

mid-July through September and may stopover in Delta County. Areas of suitable habitat for migration stopovers by piping plovers include sandy shorelines of lakes and rivers (Campbell 2003). Within Delta County, the project alignment crosses various tributaries and is less than a mile from Cooper Lake Reservoir and Cooper City/Big Creek Reservoir. However, based on preliminary discussions with the project engineer, the footprint of the disturbance during fiber optic line installation will be limited to existing road ROW. Installation of the fiber optic lines within or directly adjacent to sandy shorelines is not within the scope of the project. As such, no effects to the piping plover are anticipated as a result of the project.

Louisiana Black Bear

As the Louisiana black bear prefers remote areas with little human disturbance, the likelihood of encountering a bear within the project area during construction is highly unlikely. Additionally, the project does not anticipate removing any bottomland vegetation typical of this species' habitat. No effects to the Louisiana black bear are anticipated as a result of the proposed project.

American Burying Beetle

The species has been found in various types of habitat including oak-pine woodlands, open fields, oak-hickory forest, open grasslands, and edge habitat (USFWS 2010a), although ABB seems to favor areas undisturbed by human influence (Ratliff 1997). Throughout the entirety of Lamar County the disturbance during fiber optic line installation would be limited to 5 to 10 feet from the edge of road pavement. These areas have been previously disturbed through ground disturbance, mowing, other maintenance, and other utility placement. As such, these ROW areas are not anticipated to provide appropriate undisturbed habitat for the ABB. No effects to ABB are anticipated from the proposed project.

Louisiana Pine Snake

Within the project area, the Louisiana pine snake is listed as a candidate species in Wood County. The TNDD data specifies one known occurrence of the Louisiana pine snake within Wood County in 1953, 12 miles east of Quitman, Texas. The current range of this species in Texas is only known within Newton, Sabine, Jasper, and Angeline Counties (USFWS 2009b). No effects to the Louisiana pine snake are anticipated as result of the proposed project.

Texas Prairie-Dawn Flower

This species is found in small conspicuous sparsely vegetated areas of fine to sandy compacted soil, often on the lower sloping portion of a mima mounds, in coastal prairie grasslands. The species may also occupy bare spots in disturbed areas such as abandoned rice fields, vacant lots, and pastures where pimple mounds have been leveled (USFWS 1990). As habitat typical of the species, specifically coastal prairie grasslands and high quality mima mound/alfisol prairies, do not appear to be located within the project alignment, no effects to the Texas prairie-dawn flower are anticipated as a result of the project.

On December 23, 2010, Peoples representatives transmitted to USFWS Arlington Field Services Office a letter detailing NTIA's no effect determination for the project. On December 27, 2010, USFWS Arlington Field Services Office provided email correspondence confirming review of the documentation and not further action required. Both correspondences are included in Appendix C. No further coordination including informal or formal consultation with USFWS under the Section 7 process is anticipated for the proposed project.

Underground

This alternative is similar to the Proposed Action, of which a majority will be buried. No effects to bald eagle, least tern, piping plover, Louisiana black bear, American burying beetle, Louisiana pine snake, or Texas prairie-dawn flower are anticipated from this alternative.

Aerial

This alternative would involve the installation of fiber optic cables between new or existing utility poles. Near reservoirs and river shorelines, new aerial cables could cause disorientation or injury to least terns and bald eagles. U.S. Fish and Wildlife Service recommends best management practices to prevent birds from colliding with utility lines, towers, and poles, including burying utility lines in important eagle areas, such as reservoirs and river shorelines known to have eagle nests (USFWS 2007). If installed above, below, or between existing lines, it would not present additional impediments to what already exists.

Ground disturbance for the Aerial Alternative would be limited to utility pole installation or construction movements while hanging the cables on existing poles. These minimal activities are not anticipated to effect piping plover, Louisiana black bear, American burying beetle, Louisiana pine snake, or Texas prairie-dawn flower.

Wireless

Infrastructure installation from this alternative would be limited to wireless communication towers. Near reservoirs and river shorelines, communication towers could cause disorientation or injury to least terns and bald eagles. In order to avoid impacts to these species, wireless towers would need to be installed in upland areas distant from known or suspected bald eagle or least tern habitat. Ground disturbance for the Wireless Alternative would be limited to utility tower installation and associated construction movements. These minimal activities are not anticipated to effect piping plover, Louisiana black bear, American burying beetle, Louisiana pine snake, or Texas prairie-dawn flower.

No Action

The No Action Alternative would have no adverse impacts to federally-listed species.

4.5.4 Migratory Birds

Proposed

Structures that may contain migratory birds, including bridges, are within the project area. Construction plans indicate that installation of the fiber optic line onto the bridges would not disturb any migratory birds roosting beneath. Additionally, no wireless communication towers are proposed for the project that would cause migratory bird collisions or visibility challenges. In the event that migratory birds are encountered on-site during project construction, every effort would be made to avoid harm to protected birds, active nests, eggs, and/or young.

Underground

In this alternative, no infrastructure, including towers or aerial cables, that might disorient or injure migratory birds is proposed. The Underground Alternative would have no adverse impacts to migratory birds.

Aerial

This alternative would involve the installation of fiber cables between new or existing utility poles. New aerial cables could cause disorientation or injury to least terns and bald eagles. If installed above, below, or between existing lines, it would not present additional impediments to what already exists and no impacts to migratory birds would be anticipated.

Wireless

The Wireless Alternative would contain approximately 81 communication towers that could cause migratory bird collisions or visibility challenges. Appropriate tower placement and lighting may mitigate these issues. USFWS has promulgated guidelines for site selection , construction and operation of communications towers (USFWS 2000). These guidelines recommend towers be constructed no more than 199 feet above ground level using construction techniques which do not require guy wires; use of monopole towers and lattice structures are suggested. USFWS advises towers be unlit, and not adjacent to wetlands, known bird concentration areas (e.g., state or Federal refuges, staging areas, rookeries), in known migratory or daily movement flyways, or in habitat of threatened or endangered species (USFWS 2000).

To the maximum extent practicable, Peoples would follow USFWS guidelines limiting towers to less than 199 feet in height. Should the towers exceed 199 feet, require guy wires and or require lighting, additional impacts to migratory birds may occur.

No Action

The No Action Alternative would have no adverse impacts to migratory birds, but the purpose and need for the project would not be met.

4.6 HISTORIC AND CULTURAL RESOURCES

4.6.1 Archeological and Architectural Resources

Proposed

Because of the avoidance strategies that will be implemented and followed by the grant recipient, no National Register Properties will be adversely affected by the Proposed Action. The SHPO concurred with the findings and avoidance strategies and the concurrence letter is presented in Appendix C. The approved avoidance strategies consist of avoidance within the existing ROW or boring under intact archeological deposits and cemeteries. Entry and exit points for boring and plowing would be provided to PTC by aci consulting without disclosing site locations.

Underground

Because the Underground Alternative includes avoidance measures, no archeological resources would be impacted by the project.

Aerial

This alternative would result in little or no impact to historical and cultural resources and be limited to pole installation or the utilization of existing poles within the ROW.

Wireless

There are no towers associated with this project. Thus, no visual impacts will occur on NRHP properties nor will any direct impacts occur on archeological resources.

No Action

The No Action Alternative would have no impact on any historical or cultural resources.

4.6.2 Native American Resources

Proposed

Tribal consultation with federally-recognized tribes who may have an interest in the project area was initiated by the NTIA on October 22, 2010 through the FCC's TCNS. As of March 9, 2011, only one Tribal organization has responded to the notification. The Tonkawa Tribe noted on November 10, 2010 that there are no known burials of Tonkawa ancestors within the project area; however, if artifacts or remains are encountered during the construction, they request to be contacted immediately, along with other appropriate Agencies, of the discovery. On March 9, 2011, further explanation of the nature of the project including the absence of towers and inclusion of buried fiber optic cables in existing ROW was sent directly to the tribes along with a more detailed map of the proposed routes. Because of the avoidance strategies that will be implemented and followed by the grant recipient, no Native American Resources will be adversely affected by the Proposed Action.

Underground

Because of the avoidance strategies that will be implemented and followed by the grant recipient, no Native American Resources will be adversely affected by the Underground Alternative.

Aerial

This alternative would result in little or no impact to Native American Resources and be limited to pole installation or the utilization of existing poles within the ROW.

Wireless

There are no towers associated with this project. Thus, no impacts will occur on any Native American Resources.

No Action

The No Action Alternative would have no impact on any Native American Resources.

4.7 AESTHETIC AND VISUAL RESOURCES

Proposed

The Proposed Action would involve the placement of buried fiber optic cables 36 to 42 inches below the surface along existing rural roadways as well as town streets by either plowing or boring. Aesthetic impacts at any individual location would be limited to a brief period of time during construction. The primary construction impact will be the presence of construction equipment. Plowing is expected to move at a rate of one mile per day, so aesthetic impacts would be temporary and short-lived. Boring, which greatly minimizes surface disturbance, would be conducted at some stream and river crossings as well as areas adjacent to cemeteries and NRHP sites. One telecommunication hut is located about .35 miles from the Sam Rayburn House site; however, the small nature of the hut and the distance from this NRHP site, it is unlikely that the hut will have any visual impact to the NRHP listed site. Permanent aesthetic impacts would be limited because the fiber optic lines will be buried underground. At stream and river crossings, cables may alternatively be attached to bridges. Impacts to aesthetics would also be minimal and for bridge attachments.

Underground

The Underground Alternative will have no long-term effect on aesthetics. Short-term aesthetic impacts would be limited to the duration of construction which should be less than one day at any given location. Boring where necessary would occur in the same manner as the Proposed Action. No cables would be attached to bridges at stream and river crossings which would eliminate permanent changes in aesthetics at these locations.

Aerial

This alternative would have no impact on aesthetics in locations with existing electricity poles. However, the construction of new electricity poles in existing ROWs would have a long-term effect on aesthetics in areas without existing electricity poles.

Wireless

The Wireless Alternative would involve the construction of towers. Towers would have a permanent impact on aesthetics within viewing distance of the towers, however, no towers are included in the project scope.

No Action

The No Action Alternative would have no adverse effects on existing infrastructure in the proposed project area.

4.8 LAND USE

Proposed

The project area is mostly located in rural areas outside larger urban centers. Land use along the proposed fiber optic routes includes mostly residential, commercial, agricultural, medical, educational, and community facilities. The project would be located within existing ROWs and disturbed areas. As the Proposed Action activities are typical within ROWs and utility easements, no adverse impacts to land use are anticipated.

Underground

Underground fiber optic lines would be installed along the same route as the Proposed Action, and will also be limited to existing ROW in rural areas outside larger urban centers. No adverse impacts to land use are anticipated.

Aerial

Aerial fiber optic lines would be installed along the same route as the Proposed Action, and will also be limited to existing ROW in rural areas outside larger urban centers. No adverse impacts to land use are anticipated.

Wireless

The Wireless Alternative would involve fewer land use types as physical disturbance would be limited to communication tower sites. Towers would be located in a similar environmental setting as the other alternatives, including rural areas near residential, commercial, agricultural, medical, educational, and community facilities. No adverse impacts to land use are anticipated.

No Action

The No Action Alternative would have no adverse impacts to land use.

4.9 INFRASTRUCTURE

Proposed

The Proposed Action for the proposed project would have no substantive adverse effects on existing infrastructure. During construction existing roadways would be impacted as little as practicable, any disturbance to pavement or concrete would be repaired as appropriate, and directional boring would be used to place cable under large roads where necessary. The Proposed Action offers to improve telecommunications infrastructure in the project area by providing fast, affordable broadband service to many households and businesses as well as schools and medical facilities.

Underground

Similar to the Proposed Action, the Underground Alternative would have no substantive adverse effects on existing infrastructure. Construction activities would be conducted in a manner to minimally disrupt the traveling public as practicable. The Underground Alternative would bore as opposed to hanging fiber optic cables along existing bridges and would not pose a substantive difference in infrastructure impacts in comparison to the Proposed Action.

Aerial

The Aerial Alternative for the proposed project may have additional effects on existing infrastructure in comparison to the Proposed Action and Underground Alternative, specifically utilities on existing aerial lines. If the Aerial Alternative utilizes existing utility poles and lashes over existing lines, then any construction or operational phase conflict would be managed during the time of potential impact to minimize any down time or long term maintenance constraints. Based on the limited distribution of existing aerial utility lines available for use within the project area, the construction of new utility lines may improve the availability of aerial utility structures for use by other users in the area.

Wireless

The Wireless Alternative would likely require less construction activities within existing ROWs than the Proposed Action and Underground Alternative, and therefore, may consequently impact the traveling public less. During the operation phase of the project, wireless and

microwave towers would not directly affect existing infrastructure, but may preclude the location and staking of other microwave transmissions and cellular expansions in their immediate vicinity. As detailed in the Section 2.4, the Wireless Alternative would include approximately 81 tower locations each requiring approximately 50 feet by 50 feet disturbance areas. Accordingly, approximately 4.6 acres would be converted from existing land use to that of tower facilities.

No Action

The No Action Alternative would have no adverse effects on existing infrastructure in the proposed project area.

4.10 SOCIOECONOMICS

Proposed

Because transport costs are currently high in the proposed service area, current last mile providers have to charge a premium for their Internet services. As a result, in the portions of the proposed service area where broadband service is currently available, it is prohibitively expensive for most community anchor institutions, businesses, and consumers. All of the counties in the proposed funded service area, with the exception of Smith and Van Zandt, have been designated as "economically distressed," according to income and unemployment data compiled by the Federal Highway Administration. Because these areas are already economically distressed, many consumers cannot afford to pay a premium for broadband, and the area needs broadband to aid economic development and job growth. The Proposed Action would make broadband services more reliable and affordable for thousands of rural customers who currently cannot afford it. The network would pass 100,815 households and 10,326 businesses.

The Proposed Action would allow local schools to improve the educational experiences of their students by integrating 21st century technology into their classrooms. It would allow local medical facilities to improve the patient experience by giving them the capacity to send and receive electronic medical records, receive digital x-rays and other diagnostic images, and streamline their online Medicare billing.

Without affordable access to broadband, communities within the proposed project area risk the continued loss of local industries and jobs. In many east Texas counties the unemployment rate has already exceeded 10%. This area needs to find new ways to grow its economy in the 21st

century, and the availability of broadband service will undoubtedly play an important role in driving that economic development. Additionally, the number of jobs estimated to be created or saved by installation of this specific project is approximately 313 job years. Of the total number of job years, 100 are estimated to be direct jobs, 100 are indirect jobs, and 113 are induced effects.

Underground

Installation of an underground cable network would not adversely impact low-income or minority populations. Similar to the Proposed Action, this alternative would result in the provision of affordable broadband service to community anchor institutions, businesses, and other underserved consumers, as well as stimulate job creation through economic development.

Aerial

Installation of aerial fiber optic lines would not adversely impact low-income or minority populations. However, aerial cable is susceptible to severe weather that may cause network outages and decreased network life span.

Wireless

The Wireless Alternative would not adversely impact low-income or minority populations.

No Action

The No Action Alternative would have no adverse effects on existing socioeconomics in the proposed project area.

4.11 HUMAN HEALTH AND SAFETY

Proposed

The Proposed Action for the proposed project is not anticipated to have significant adverse effects on human health or safety. The fiber optic cables themselves do not discharge any harmful byproducts, and the installation of the cables would be handled carefully and in compliance with existing regulations as well as according to a safety plan (See Appendix E). Examples of the use of safety measures for both contractors and the public include safety vests and helmets, signage, temporary road closures, detouring, use of barriers, flaggers, access to first aid and extensive safety training. See Appendix E for a detailed Safety Manual suggested for the project.

Because the proposed project lies entirely in existing ROW and disturbance corridors, it would likely not cause additional disturbance to EPA regulated sites. As presented in Chapter 3.11, the project abuts 10 EPA environmentally regulated facilities. None of these facilities fall within the project area. None of the facilities are NPL Superfund sites and only one, the vacant Grand Theater in downtown Paris, Texas, is a Brownfield. No impacts to these regulated facilities are anticipated under the Proposed Action.

Underground

The Underground Alternative would be very similar in action of the Proposed Action as it relates to human health and safety. The Underground Alternative for the proposed project is not anticipated to have significant adverse effects on human health or safety. The fiber optic cables themselves do not discharge any harmful byproducts, and the installation of the cables would be handled carefully and in compliance with existing regulations. Because the proposed project lies entirely in existing ROW, it would likely not cause additional disturbance to regulated sites.

Aerial

Similar to the Proposed Action, the Aerial Alternative would be constructed on existing and new utility poles within existing ROW and is not anticipated to have significant effects on human health or safety. Implementation of different construction techniques would be required for the placement and stabilizing of new utility poles, which may include cranes and other heavy machinery. Any such heavy machinery unique to the Aerial Alternative would be operated within the range of safe use and in accordance with applicable OSHA safety requirements and safety plans as what is presented in Appendix E.

Wireless

The Wireless Alternative is not anticipated to have significant adverse effects on human health or safety. Similar to the Aerial Alternative, implementation of different construction techniques would be required for the staking and construction of microwave and cellular towers, which may include cranes and other heavy machinery. Any such heavy machinery unique to the Wireless Alternative would be operated within the range of safe use and in accordance with applicable OSHA safety requirements and safety plans (See Appendix E).

No Action

The No Action Alternative for the proposed project would not have any negative effects on human health or safety. No EPA-listed NPL, Resource Conservation and Recovery Act (RCRA), or Brownfield sites would be encountered.

4.12 INDIRECT AND CUMULATIVE IMPACTS

The CEQ defines direct effects as those which are caused by the action and occur at the same time and place [40 CFR § 1508.8].

The CEQ defines indirect effects as those which are caused by the action and are later in time and farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems [40 CFR § 1508.8]. As such, indirect effects of the Peoples Fiber Optic Network could occur outside of the defined study area.

The CEQ defines cumulative effects as those which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time [40 CFR § 1508.7]. As such the cumulative effects of the Peoples Fiber Optic Network could also occur outside of the study area.

4.12.1 Past, Current, and Future Projects

The 14-county study area in Northeast Texas is predominantly rural in setting with few regionally larger towns and cities including Tyler and Paris, Texas. The entirety of the approximate 600-miles Peoples Fiber Optic Network would be wholly contained within existing public road ROW (county, TxDOT, and Federal Highway Administration). Understandably, maintenance (such as regular mowing, brush removal, and regular asphalt repair) is anticipated for all ROWs in which the fiber optic network would be located. Additionally, improvements are anticipated within regional infrastructure corridors. One may also reasonably predict additional utilities within these existing ROWs; albeit anticipated utility infrastructure may be anticipated at a lesser demand than more urbanized areas within Texas due to the rural, underserved nature of the study area.

4.12.2 Indirect Effects of the Project

Socio-economical beneficial effects derived from health care and educational facilities due to the increased access to reliable high-speed Internet connectivity is the most likely indirect effect from any of the build alternatives, including the Proposed Action. It is unlikely these indirect impacts will rise to the level of significant impacts. These indirect effects may include more comprehensive, reliable, and faster health services for residents within the 14-county project area. Additionally, high-speed Internet connectivity at educational facilities would allow better connection to outside resources currently unavailable for their use. Both of these potential indirect effects may be delayed after any potential implementation of any build alternative, including the Proposed Action.

Increased accessibility to high-speed Internet may indirectly lead to increase regional development which may, in turn, cause additional noise, air, land use, aesthetics, infrastructure, and socio-economic impacts. However, any such potential development would be required to comply with applicable local, state, and federal regulations managing such impacts. Since the entirety of the project would be located within existing ROWs for regional road infrastructure, indirect impacts to geologic, soils, waters, wildlife (including threatened, endangered, candidate, and delisted species), cultural, and human health (hazardous materials) are anticipated to be less likely within maintained regional road infrastructure.

4.12.3 Cumulative Effects of the Project

Cumulative impacts are those of the Proposed Action when taken into consideration with other action in past, present, or reasonably foreseeable future. All direct impacts associated with the Proposed Action would occur within existing regional roadway ROWs. As discussed earlier in this EA, these direct impacts are not anticipated to rise to the level of significant impacts. The Proposed Action anticipates the vast majority of the fiber optic network to be installed underground via trenching activities. These activities, occurring in existing, maintained ROW, are minimal in nature. The past and present activities within the ROWs focus on vehicular transportation, but also include pedestrian and bicycle facilities. These ROWs also include existing buried and overhead utilities. It is reasonable to anticipate the ongoing maintenance of these past and present facilities and for future expansions to add vehicular capacity, additional sidewalks and others, or additional utilities. All such reasonably foreseeable actions would be required to comply with applicable local, state, and federal regulations managing potential

environmental impacts. The additive or cumulative impacts to the resources discussed in this document are not anticipated to rise to the level of significant.

5.0 CHAPTER 5: SELECTION OF THE PREFERRED ALTERNATIVE

The purpose of the East Texas Medical and Educational Fiber Optic Network is to provide affordable, reliable, and accessible high-speed Internet access to various medical and educational institutions in the service area. The service area is currently underserved by high-speed Internet and requires a high-speed Internet backbone of substantial bandwidth to provide primary medical and educational facilities and secondary facilities with the opportunity for current high-bandwidth health care and educational support services. The selection of a preferred alternative is based on the various build and no build alternatives introduced; the presentation of the existing human, natural, and cultural environment presented in Chapter 3; and the respective effects to the environment from the various build and no build alternatives in Chapter 4. The ability of an alternative to meet the stated purpose and need of the project and avoid significant impacts to the environment were the primary factors in weighing the comparative alternatives.

The No Build and Wireless Alternatives do not meet the purpose and need of the project. The No Build Alternative would not provide affordable, reliable, and accessible high-speed Internet. Based on discussion with project engineers, the Wireless Alternative would not be able to support the requisite bandwidth capacity and subsequently would also fail to meet the purpose and need of the project.

The Aerial Alternative would be substantially more expensive due to the cost to improve existing utility pole infrastructure and install new utility pole infrastructure. Additionally, aerial lines are susceptible to failure due to weather and other disruptions. Based on this, it was determined the Aerial Alternative does not satisfactorily meet the purpose and need, specifically, the elements of affordability and reliability.

The Proposed Action and Underground Alternative both meet the purpose and need of the project. These alternatives are very similar in design, construction, and maintenance, and subsequently anticipated impacts to the environment are very similar. The Proposed Action allows for the potential use of hanging utilities to existing bridge structures. Based on review of all TxDOT bridges along the project, no historical bridges exist which may impede the hanging

of fiber optic utilities from existing bridges. The allowance for flexibility in application and avoidance of impacts, provides benefit to the engineers during detailed design. The ability to hang fiber optic lines along existing bridge structures may allow for avoidance of impacts to waters, wetland, and other surface and subsurface features. The ability to hang fiber optic lines along existing bridge structures may also be considerably less expensive then the cost to bore parallel to the existing bridge structure. Based on this avoidance, flexibility, potential cost benefit and the Proposed Action's ability to meet the purpose and need of the project, the Proposed Action has been selected as the Preferred Alternative.

6.0 CHAPTER 6: APPLICABLE ENVIRONMENTAL PERMITS AND REGULATORY REQUIREMENTS

The following information pertains to applicable environmental regulatory requirements and permits for the Proposed Action.

6.1 USFWS SECTION 7 CONSULTATION

Section 7 of the ESA requires all federal agencies to consult with the USFWS if an "action" may affect federally-listed species or their designated habitat. The USFWS Arlington Ecological Field Services office was contacted by letter dated October 6, 2010 with the intent of initiating informal consultation under Section 7 of the ESA, including a no-effect determination. On October 13, Peoples received verbal confirmation that USFWS, Arlington Field Office agreed with the no effect determination of the Proposed Action. NTIA also submitted an initiation letter to the USFWS, Austin Ecological Field Services Office on October 25, 2010. Peoples representatives spoke with the Austin Ecological Field Services Section 7 coordinator in December 2010 and received confirmation the Arlington Field Services Office would be the lead office for coordination. On December 23, Peoples representatives transmitted to USFWS Arlington Field Services Office a letter detailing NTIA's no effect determination for the project. On December 27, 2010, USFWS Arlington Field Services Office provided email correspondence confirming review of the documentation and not further action required. Both correspondences are included in Appendix C. Further coordination including informal or formal consultation with USFWS under the Section 7 process is not anticipated for the proposed project.

6.2 TEXAS HISTORICAL COMMISSION (THC-STATE HISTORIC PRESERVATION OFFICE)

In compliance with Section 106 of the NHPA of 1966 (as amended), the Texas SHPO and NTIA concurred that the proposed project would not have an adverse effect on National Register eligible or listed archaeological and historical property sites provided PTC adhere to the planned avoidance measures. A copy of the letter of concurrence by the Texas SHPO is provided in Appendix C.

6.3 TRIBAL ORGANIZATIONS

In October 2010, NTIA notified potentially affected Native American tribes during the initial consultation phase of the project through the FCC using their TCNS. As of December 14, 2010, only one Tribal organization has responded to the notification. The Tonkawa Tribe noted on November 10, 2010 that there are no known burials of Tonkawa ancestors within the project area; however, if artifacts or remains are encountered during the construction, they request to be contacted immediately, along with other appropriate Agencies, of the discovery. On March 9, 2011, further explanation of the nature of the project including the absence of towers and inclusion of buried fiber optic cables in existing ROW was sent directly to the tribes along with a more detailed map of the proposed routes. The Southern Ute Tribe (Neil B. Cloud), Comanche Nation (Kelly Glancy), Delaware Nation (Tamara Francis), Choctaw Nation of Oklahoma (Terry D. Cole), Caddo Nation (Robert Cast), and Mescalero Apache Tribe (Holly B. Houghten), Cherokee Nation (Richard L. Allen) and United Keetoowah Band of Cherokee Indians (Lisa C. Stopp) were sent the additional information.

6.4 CLEAN WATER ACT SECTION 404

Section 404 of the CWA regulates discharges into wetlands and waters of the United States. Impacts to streams and rivers would be avoided with the use of horizontal directional boring or by hanging the fiber optic line on an existing bridge or crossing structure. An assessment of water resources and discussion of the avoidance procedures was submitted to the USACE on November 22, 2010. On December 22, 2010 the USACE confirmed that no Section 404 authorization is necessary as all impacts to waters of the U.S. will be avoided. A copy of the letter is included in Appendix C.

6.5 NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM

The Construction General Permit (CGP) is the general permit available to operators as part of the National Pollutant Discharge Elimination System (NPDES), a program initially administered in Texas by the EPA. As of March, 2003, the Texas Pollutant Discharge Elimination System (TPDES) program implements the federal NPDES program requirements for storm water associated with construction activities in Texas. The EPA retains the authority to conduct monitoring and inspection of TPDES program authorized sites; however; the program is now under the authority of the TCEQ.

This CGP presents operators with all requirements up front, allowing facility operators to become familiar with, and prepare for, activities such as stormwater pollution prevention plan (SW3P) implementation and regular inspections, prior to applying for permit coverage. The key condition of the CGP is the development and implementation of a construction SW3P. The EPA and TCEQ encourage multiple operators at a construction site to develop a comprehensive SW3P. Other requirements include conducting regular inspections and reporting releases of reportable quantities of hazardous substances.

To apply for permit coverage under the CGP in Texas, an operator must complete and submit a Notice of Intent (NOI) form to the TCEQ. To discontinue permit coverage, an operator must complete and submit a Notice of Termination (NOT) to the TCEQ upon satisfying the appropriate permit conditions described in the CGP.

The proposed project is subject to the TPDES CGP, as it will disturb greater than five acres of soil. This mandates that an NOI be submitted to TCEQ with subsequent implementation of a SW3P. Submittal of the NOI is the mechanism by which the regulated entity receives permit coverage, and preparation and implementation of the SW3P is the means by which the entity complies with the provisions of the CGP.

The following erosion and sediment control methods may be used during the course of construction on this project:

- Backfilling trenches,
- Silt Fences,
- Straw Bales,
- Straw Mat Blanketing for Final Stabilization,
- Replacement or Reseeding of Existing Grasses,
- Replacement or Reseeding of Existing Flora.

The above methods will be utilized in areas where extensive excavation is to be done or in areas where storm water runoff from the construction corridor could possibly enter the watershed of the Final Receiving Waters. When excavations are to take place (i.e. boring and trenching) silt fences or straw bales may be placed downstream from the excavation site to minimize the transport of soil. Sediment must be removed from sediment traps no later than the time that design capacity has been reduced by 50%. If sediment escapes the site,

accumulation must be removed at a frequency to minimize further negative effects, and whenever feasible, prior to the next rain event. The natural landscape shall be restored at all sites and along the construction corridor to minimize post construction erosion. In areas where residents have established vegetative cover, this cover should be removed with care, stockpiled near the construction zone and then replaced after the site has been backfilled and leveled to the original condition.

In areas where excavations have occurred, backfilling will be done in the same day to cover exposed trenches. Silt fences and straw bales can be removed when final stabilization is in place. The site will be considered to have final stabilization when seventy percent (70%) of natural vegetative cover is re-established.

The threat of thunderstorms increases the probability of flash flooding in the project area. In the event that a thunderstorm is approaching the construction site, the amount of exposed soil should be minimized and erosion and sediment control devices should be inspected to ensure their integrity.

During the construction of the project, if soil exposure is kept to a minimum and final stabilization measures are installed properly, the surface runoff conditions will return to their original state.

Measures to control other sources of storm water contamination, such as solid and hazardous wastes, shall be included as part of this SW3P. These measures include, but are not limited to:

- Proper Equipment Maintenance and Management Practices

  All equipment should be inspected for leaks that might contaminate storm water runoff. These leaks must be repaired as soon as possible, and any fluid that did leak onto the natural soil must be cleaned up and disposed of in accordance with regulations.

  The following procedures should be implemented to minimize pollution of storm waters.

  - Park equipment in areas not influenced by storm water runoff.
  - Place equipment in an area with storm water controls in place (berms,

intercepting trenches, silt fences, etc.).

- Use drip pans or drop cloths to catch drips and spills, if you drain and replace motor oil, radiator coolant or other fluids on site. Collect all used fluids, store in separate containers and recycle whenever possible.
- Perform major maintenance, repair work off-site.
- Conduct all vehicle/equipment maintenance and refueling at one location, preferably away from storm drains.
- Do not use diesel fuel to lubricate equipment or parts.
- Steam clean equipment only in areas with runoff controls to prevent oils and greases from entering surface water drainage systems.
- Clean up spills as soon as possible to keep absorption into natural soils to a minimum.

- Safe Solid Waste Handling and Disposal Practices

  The following steps should be taken to ensure proper storage and disposal of construction site wastes:

  - Designate a waste collection area onsite that does not receive a substantial amount of runoff from upland areas and does not drain directly to a water body.
  - Ensure that containers have lids so they can be covered before periods of rain, and keep containers in a covered area whenever possible.
  - Schedule waste collection to prevent the containers from overfilling.
  - Collect, remove, and dispose of all construction site wastes at authorized disposal areas. A local environmental agency can be contacted to identify these disposal sites.

- Spill Prevention and Cleanup Procedures

  Listed below are some of the hazardous materials that could be found on construction sites.

  - Gasoline and Diesel
  - Greases and other Petroleum Products
  - Solvents and Curing Compounds
  - Transmission, Hydraulic, and Motor Oils

  The following steps should be taken to ensure the proper disposal of hazardous materials:

- Train all employees in proper handling of fuels and other hazardous materials.
- Train all employees on the proper disposal of unused hazardous materials and the container they were stored in.
- Local waste management authorities should be consulted about the requirements for disposing of hazardous materials.
- A hazardous waste container should be emptied and cleaned before it is disposed of to prevent leaks.
- The original product label should never be removed from the container as it contains important safety information. Follow the manufacturer's recommended method of disposal, which should be printed on the label.
- If excess products need to be disposed of, they should never be mixed during disposal unless specifically recommended by the manufacturer.
- Clean up spills immediately. For hazardous materials, follow cleanup instructions on the package. Use an absorbent material such as sawdust or kitty litter to contain the spill.
- Clean up spills on dirt areas by digging up and properly disposing of contaminated soil.

6.6 TXDOT PERMITS

TxDOT has been informed of the proposed project and permits will be applied for later in the project. Permits are generally defined for a six-month construction window and not obtained until later in the project timeline.

6.7 GLO STATE WATERS PERMIT

The Texas General Land Office (GLO) received information on the project on October 12, 2010 and reviewed the water crossings to determine if permits are necessary. The GLO has authority over the riverbeds in Texas due to the Texas Natural Resources Code (Subchapter G. Easements, Section 51.291) and the Texas Administrative Code (Title 31, Part 1, Chapter 13, Subchapter B). On December 3, 2010 the GLO stated that one crossing of the Sabine River at the boundary of Smith and Wood Counties will require an easement permit. All other crossings for the primary routes are Small Bill and need no surface easement. On December 8, 2010 the GLO also indentified one crossing on alternate routes, the Boggy Creek in Red River, as

requiring an easement permit (See email correspondence in Appendix C).

6.8 SECTION 10 RIVERS AND HARBORS

Section 10 of the Rivers and Harbors Act (33 U.S.C. 401 et seq) requires authorization from the USACE for the construction of any structure in or over any navigable water of the United States, the excavation/dredging or deposition of material in these waters, or any obstruction or alteration in a "navigable water." The project area does not cross any Section 10 navigable waters and no permits are required as presented in a letter from USACE dated December 22, 2010 (See correspondence in Appendix C).

7.0 CHAPTER 7: AGENCIES, PERSONS CONSULTED

The following chapter details the regulator agencies and persons consulted during the preparation of this EA (see Appendix C). Additionally included in the EA is list of preparers (see Chapter 8).

7.1 USFWS

7.1.1 October 6, 2010. CHR Solutions, Inc. letter to Tom Cloud, Arlington Field Office.

7.1.2 October 13, 2010. USFWS Arlington Field Office provided verbal confirmation of no effect to federal species on.

7.1.3 October 25, 2010. NTIA letter to Adam Zerrenner, Austin Field Office. No verbal receipt to date.

7.1.4 December 2010, aci consulting telephone conversation withL. Roberts, USFWS Austin Field Office, Section 7 Coordinator confirming Arlington Field Services Office as lead office.

7.1.5 December 23, 2010, aci consulting provided USFWS with NTIA's no effect determination in letter form.

7.1.6 December 27, 2010. John Morse, USFWS, Arlington Field Service Office provided email confirming review and no further action required.

7.2 THC (SHPO)

7.2.1 NTIA initiation letter on October 22, 2010 from NTIA.

7.2.2 Meeting with Bill Martin, THC/SHPO, November 4, 2010.

7.2.3 A SHPO consultation letter asking for concurrence on "no historic properties affected" was sent on December 30, 2011. The SHPO concurred with the findings on December 31, 2010.

7.3 TRIBES

7.3.1 NTIA Tribal notification through the FCC TCNS on October 22, 2010.

7.3.2 The Tonkawa Tribe noted on November 10, 2010 that there are no known burials of Tonkawa ancestors within the project area.

7.3.3 Letter to the Neil B. Cloud of the Southern Ute Tribe clarifying project.

7.3.4 Letter to Kelly Glancy of the Comanche Nation on March 9, 2011 clarifying project.

7.3.5 Letter to Tamara Francis of the Delaware Nation on March 9, 2011 clarifying project.

7.3.6 Email to Terry D. Cole of the Choctaw Nation of Oklahoma on March 9, 2011 clarifying project.

7.3.7 Email to Robert Cast of the Caddo Nation on March 9, 2011 clarifying project.

7.3.8 Letter to Holly B. Houghten of the Mescalero Apache Tribe on March 9, 2011 clarifying project.

7.3.9 Email to Richard L. Allen of the Cherokee Nation on March 9, 2011 clarifying project.

7.3.10 Email to Lisa C. Stopp of the United Keetoowah Band of Cherokee Indians on March 9, 2011 clarifying project.

7.4 USACE

7.4.1 CHR Solutions, Inc. letter on October 6, 2010 to USACE.

7.4.2 Project Number, Manager assigned in letter dated October 22, 2010 from USACE.

7.4.3 Received letter November 5, 2010 from USACE about permit status.

7.4.4 CHR Solutions, Inc. sent another letter on November 22, 2010 clarifying the project.

7.4.5 USACE sent letter on December 22, 2010 to CHR Solutions confirming that no permits are required for this project.

7.5 TPWD

7.5.1 CHR Solutions, Inc. email October 6, 2010 to TPWD.

7.5.2 Written confirmation of no impacts and recommendations on November 4, 2010.

7.6 GLO

7.6.1 CHR Solutions, Inc. email on October 12, 2010; verbal confirmation with the GLO indicates they are still reviewing the project to determine if permits are necessary.

7.6.2 GLO sent email to CHR Solutions, Inc. on December 3, 2010 that one crossing of the Sabine River at the boundary of Smith and Wood Counties will require an easement permit and on December 8, 2010 indicating that the crossing on the Boggy Creek in Red River requires an easement permit.

7.7 NRCS

7.7.1 An email was sent by CHR Solutions, Inc. on October 6, 2010 to NRCS.

7.7.2 A response from NRCS was received on November 4, 2010 with a notice to proceed.

7.8 USFS

7.8.1 CHR Solutions, Inc. sent an email on October 6, 2010 to USFS.

7.8.2 CHR Solutions, Inc. had a phone conversation on October 14, 2010 confirming that the project does not extend onto USFS property.

7.9 PUBLIC NOTICE/ PROCESS/ PUBLIC OFFICIALS

7.9.1 No comments have been received from the public.

8.0 CHAPTER 8: LIST OF PREPARERS

8.1 PEOPLES TELEPHONE COOPERATIVE

Steven Steele, Assistant General Manager

8.2 CHR Solutions

Sam Harlan, Director Advanced Technologies, Systems Planning

Gene Harwell, Senior Project Manager

Matt Hearn, Engineer

Keeton Walden, Engineer

Joe Mendez, GIS Services Lead Technician

Roy Patrick, Director

8.3 aci consulting

Kevin Ramberg, Senior Biologist

Ann M. Scott, Director, Cultural Resources Division

Mark Adams, Project Geologist

Robin Benson Barnes, Archeologist

Robin Greffe, Biologist

Jenni Hatchett Kimbell, Archeologist

Charlie Roberts, GIS Technician

Chris von Wedell, Archeologist

9.0 CHAPTER 9: REFERENCES

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Appendix A
Figures

Appendix B
Anchor Institutions

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Facility Name	Address	City	County	Zip	Facility Type	Latitude	Longitude	Connection	Equipment	Enclosure
Alba	145 Broadway St	Alba	Wood	75410	Other Government Facility	32.792448	-95.634063	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Arbala		Arbala	Hopkins		Other Government Facility	32.988159	-95.653519	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Argo		Argo	Titus	75558	Other Government Facility	33.186445	-94.854434	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Bailey	103 N Main St	Bailey	Fannin	75413	Other Government Facility	33.433390	-96.165310	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Bogata	128 N Main St	Bogata	Red River	75417	Other Government Facility	33.471035	-95.213591	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Bonham	301 E 5th St	Bonham	Fannin	75418	Other Government Facility	33.578181	-96.176633	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Bonham	327 North Main St	Bonham	Fannin	75418	Other Government Facility	33.576364	-96.179465	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Bonham Fire Dept	2509 N Center St	Bonham	Fannin	75418	Other Government Facility	33.609246	-96.174483	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Brashear	Interstate Highway 30 and Farm Road 2653 in west central Hopkins County	Brashear	Hopkins	75428	Other Government Facility	33.119709	-95.723525	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Brinker		Brinker	Hopkins		Other Government Facility	33.127201	-95.492203	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Caddo Mills	2313 Main St	Caddo Mills	Hunt	75135	Other Government Facility	33.066419	-96.228591	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Campbell	115 W Main St	Campbell	Hunt	75422	Other Government Facility	33.149650	-95.952349	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Canton	119 N Buffalo St	Canton	Van Zandt	75103	Other Government Facility	32.556766	-95.863620	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Canton EDC	119 N Buffalo St	Canton	Van Zandt	75103	Other Government Facility	32.556766	-95.863620	Buried Drop	Cisco 1941/K9	Exist Telecom

										Closet
Celeste	201 N US Hwy 69	Celeste	Hunt	75423	Other Government Facility	33.294239	-96.195275	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Commerce	1119 Alamo St	Commerce	Hunt	75428	Other Government Facility	33.250100	-95.898531	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Commerce	1227 Washington St	Commerce	Hunt	75429	Other Government Facility	33.250184	-95.900547	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Commerce		Commerce	Hunt	75428	Other Government Facility	33.250440	-95.898194	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Como	104 Mills St	Como	Hopkins	75431	Other Government Facility	33.063254	-95.473064	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Cooper	91 North Side Sq	Cooper	Delta	75432	Other Government Facility	33.374712	-95.687924	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Cooper Lake		Cooper Lake			Other Government Facility	31.168900	-100.077148	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Cunningham		Cunningham	Lamar	75434	Other Government Facility	33.426540	-95.362038	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Delta County (Cooper)	41 West Side Square	Cooper	Delta	75432	Other Government Facility	33.374155	-95.688834	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Deport	201 Main St	Deport	Lamar	75435	Other Government Facility	33.527100	-95.315604	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Dodd City	304 S Caney St	Dodd City	Fannin	75438	Other Government Facility	33.574647	-96.077690	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
East Tawakoni?	288 Briggs Blvd	East Tawakoni	Rains	75453	Other Government Facility	32.899670	-95.960775	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
East Texas Medical Center Satellite Location	106 Medical Circle	Sulphur Springs	Hopkins	75482	Medical or Healthcare Provider	33.158100	-95.597578	Buried Drop	Cisco ME-3400G	Telecom Closet
East Texas Medical	117 Winnsboro St	Quitman	Wood	75783	Medical or Healthcare Provider	32.796368	-95.445284	Buried Drop	Cisco ME-3400G	Telecom Closet

Center Satellite Location										
East Texas Medical Center Satellite Location	2701 US Hwy 271 N	Pittsburg	Camp	75686	Medical or Healthcare Provider	33.032667	-94.961442	Buried Drop	Cisco ME-3400G	Telecom Closet
East Texas Medical Center Satellite Location	500 Hwy 37 S	Mt Vernon	Franklin	75457	Medical or Healthcare Provider	33.177153	-95.233457	Buried Drop	Cisco ME-3400G	Telecom Closet
Ector	206 N Main St	Ector	Fannin	75439	Other Government Facility	33.578529	-96.273324	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Edgewood	105 SW Front St	Edgewood	Van Zandt	75117	Other Government Facility	32.697573	-95.886730	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Edgewood	105 SW Front St	Edgewood	Van Zandt	75117	Other Government Facility	32.697573	-95.886730	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Emory	329 N Texas St	Emory	Rains	75440	Other Government Facility	32.874979	-95.765305	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Emory EDC	329 N Texas St	Emory	Rains	75440	Other Government Facility	32.874979	-95.765305	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
ETMC First Physicians Location	108 Parker St	Quitman	Wood	75783	Medical or Healthcare Provider	32.796189	-95.443354	Buried Drop	Cisco ME-3400G	Telecom Closet
ETMC First Physicians Location	113 W Main St	Van	Van Zandt	75790	Medical or Healthcare Provider	32.524290	-95.637503	Buried Drop	Cisco ME-3400G	Telecom Closet
ETMC First Physicians Location	14069 FM 849	Lindale	Smith	75771	Medical or Healthcare Provider	32.472241	-95.449809	Buried Drop	Cisco ME-3400G	Telecom Closet
ETMC First Physicians Location	2410 S Main	Lindale	Smith	75771	Medical or Healthcare Provider	32.483437	-95.395873	Buried Drop	Cisco ME-3400G	Telecom Closet
ETMC First Physicians Location	322 US Hwy 271	Bogata	Red River	75417	Medical or Healthcare Provider	33.471947	-95.218727	Buried Drop	Cisco ME-3400G	Telecom Closet
ETMC First	506 Hwy 37S	Mt Vernon	Franklin	75457	Medical or	33.177054	-95.233494	Buried Drop	Cisco ME-	Telecom

Physicians Location					Healthcare Provider				3400G	Closet
ETMC First Physicians Location	5875 S SH 37	Mineola	Wood	75773	Medical or Healthcare Provider	32.698380	-95.484428	Buried Drop	Cisco ME-3400G	Telecom Closet
ETMC Fitness Center	237 S Trades Day Blvd	Canton	Van Zandt	75103	Medical or Healthcare Provider	32.555344	-95.861294	Buried Drop	Cisco ME-3400G	Telecom Closet
Grand Saline	203 N E Pacific	Grand Saline	Van Zandt	75140	Other Government Facility	32.672642	-95.708383	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Grand Saline	2-3 NE Pacific	Grand Saline	Van Zandt	75140	Other Government Facility	32.672590	-95.709669	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Grayson County College	1201 E 9th St #2-403	Bonham	Fannin	75418	Community College	33.581669	-96.167107	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Greenville	2713 Stonewall St	Greenville	Hunt	75403	Other Government Facility	33.138173	-96.107119	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Greenville	2821 Washington St	Greenville	Hunt	75403	Other Government Facility	33.139050	-96.109454	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Hagansport		Hagansport	Franklin		Other Government Facility	33.340561	-95.254578	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Harts Bluff		Harts Bluff	Red River		Other Government Facility	33.397202	-94.955803	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Harvard		Harvard	Camp	75686	Other Government Facility	33.069550	-94.964859	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Hawkins	109 Beaulah	Hawkins	Wood	75765	Other Government Facility	32.586697	-95.205378	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Hawkins	200 N Beaulah St	Hawkins	Wood	75765	Other Government Facility	32.588981	-95.205103	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Hoard		Hoard	Wood	75773	Other Government Facility	32.642170	-95.384163	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Honey Grove	511 N 5th	Honey Grove	Fannin	75446	Other Government Facility	33.583242	-95.909926	Buried Drop	Cisco 1941/K9	Exist Telecom Closet

Honey Grove	633 - 6th St #1	Honey Grove	Fannin	75446	Other Government Facility	33.584144	-95.909372	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Hopkins County Memorial Hospital	115 Airport Rd	Sulphur Springs	Hopkins	75482	Medical or Healthcare Provider	33.156363	-95.600053	Buried Drop	Cisco ME-3400G	Telecom Closet
Jarvis Christian College	Corner of Hwy 80 E & Private Road 7631	Hawkins	Wood	75765	Community College	32.590967	-95.211762	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Johntown	4 Miles SE of Bogata, TX	Johntown	Red River		Other Government Facility	33.451021	-95.193333	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Klondike		Klondike	Delta	75448	Other Government Facility	33.330879	-95.759105	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Ladonia	100 Center Plz	Ladonia	Fannin	75449	Other Government Facility	33.425116	-95.952287	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Ladonia PD	100 E Main St	Ladonia	Fannin	75449	Other Government Facility	33.425017	-95.946050	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Lake Creek		Lake Creek		75450	Other Government Facility	33.450694	-95.595826	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Leesburg		Leesburg	Camp	75451	Other Government Facility	32.987590	-95.083094	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Leonard	111 W Collin St	Leonard	Fannin	75452	Other Government Facility	33.380583	-96.247747	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Lindale	110 E Hubbard St	Lindale	Smith	75771	Other Government Facility	32.515784	-95.409512	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Lindale	201 N Main St	Lindale	Smith	75771	Other Government Facility	32.516741	-95.409825	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Lindale City Hall	201 N Main St	Lindale	Smith	75771	Other Government Facility	32.516741	-95.409825	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Lindale City Office	106 Valley St	Lindale	Smith	75771	Other Government Facility	32.516486	-95.410049	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Lone Oak	115 Town Sq	Lone Oak	Hunt	75453	Other Government	32.995631	-95.941268	Buried Drop	Cisco 1941/K9	Exist

					Facility					Telecom Closet
Miller Grove		Miller Grove	Hopkins		Other Government Facility	33.020351	-95.804161	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Miller's Cove	IH-30 & Miller St	Winfield	Titus	75493	Other Government Facility	33.159090	-95.112829	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Mineola	101 East Broad St	Mineola	Wood	75773	Other Government Facility	32.663625	-95.489092	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Mineola	300 Greenville Ave	Mineola	Wood	75773	Other Government Facility	32.675795	-95.486549	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Mt Pleasant	1604 N Jefferson	Mt Pleasant	Titus	75455	Other Government Facility	33.182513	-94.973569	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Mt Pleasant	501 N Madison	Mt Pleasant	Titus	75455	Other Government Facility	33.159374	-94.969656	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Mt Vernon	109 N Kaufman St	Mt Vernon	Franklin	75457	Other Government Facility	33.188820	-95.221681	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Mt Vernon/Franklin Cnty COC	109 S Kaufman	Mt Vernon	Franklin	75457	Other Government Facility	33.187095	-95.221656	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Newsome		Newsome	Camp		Other Government Facility	32.976891	-95.139801	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Northeast Texas Community College	2886 FM 1735	Mt Pleasant	Titus	75455	Community College	33.170960	-94.970231	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Oak Grove		Oak Grove	Delta		Other Government Facility	32.531345	-96.319378	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Owentown/ Wynona Fire Dept	11525 State Highway 155 N	Tyler	Smith	75708	Other Government Facility	32.435621	-95.201255	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Paris	135 - 1st St SE	Paris	Lamar	75460	Other Government Facility	33.660364	-95.555231	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Paris	8 West Plaza	Paris	Lamar	75460	Other Government	33.661231	-95.557300	Buried Drop	Cisco 1941/K9	Exist

					Facility					Telecom Closet
Paris EDC	1125 Bonham St	Paris	Lamar	75460	Other Government Facility	33.660586	-95.567411	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Paris Junior College	1202 Houston St	Sulphur Springs	Hopkins	75482	Community College	33.141651	-95.619242	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Paris Junior College	2400 Clarksville St	Paris	Lamar	75460	Community College	33.653294	-95.531081	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Paris Junior College	9315 Jack Finney Blvd	Greenville	Hunt	75402	Community College	33.079521	-96.077254	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Pecan Gap	116 - 3rd St, Pecan Gap	Pecan Gap	Delta	75469	Other Government Facility	33.437267	-95.846536	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Pickton Fire Dept	3967 FM 269S	Pickton	Hopkins	75471	Other Government Facility	33.013939	-95.395164	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Pine		Pine	Camp	75686	Other Government Facility	32.913120	-94.969254	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Pittsburg	200 Rusk Street	Pittsburg	Camp	75686	Other Government Facility	32.995248	-94.967113	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Pittsburg	202 Jefferson St	Pittsburg	Camp	75686	Other Government Facility	32.995027	-94.965399	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Point	365 N Locust St	Point	Rains	75472	Other Government Facility	32.934205	-95.874231	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Presbyterian Medical Center, now Trinity Mother Frances	719 W Coke Rd	Winnsboro	Wood	75494	Medical or Healthcare Provider	32.947869	-95.305179	Buried Drop	Cisco ME-3400G	Telecom Closet
Purley		Purley	Franklin		Other Government Facility	33.092079	-95.264183	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Quinlan	104 E Main St	Quinlan	Hunt	75474	Other Government Facility	32.910487	-96.134320	Buried Drop	Cisco 1941/K9	Exist Telecom Closet

Quinlan	711 E Quinlan Pkwy	Quinlan	Hunt	75474	Other Government Facility	32.903332	-96.123373	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Quitman	100 Gov Hogg Pkwy	Quitman	Wood	75783	Other Government Facility	32.818344	-95.434269	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Quitman	101 N Main St	Quitman	Wood	75783	Other Government Facility	32.795845	-95.451739	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 10 - Boles	9777 FM 2101	Quinlan	Hunt	75474	School (k-12)	32.947318	-96.101499	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 10 - Bonham	1005 Chestnut	Bonham	Fannin	75418	School (k-12)	33.582707	-96.176631	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 10 - Campbell	409 W North St	Campbell	Hunt	75422	School (k-12)	33.151143	-95.954201	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 10 - Canton	225 W Elm St	Canton	Van Zandt	75403	School (k-12)	32.549384	-95.865976	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 10 - Celeste	200 S 5th St	Celeste	Hunt	75423	School (k-12)	33.292809	-96.198802	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 10 - Commerce	3800 Sregit Dr	Commerce	Hunt	75429	School (k-12)	33.242904	-95.923726	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 10 - Dodd City	602 N Main St	Dodd City	Fannin	75438	School (k-12)	33.577985	-96.075069	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 10 - Ector	301 S Main	Ector	Fannin	75439	School (k-12)	33.575096	-96.273022	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 10 - Greenville Christian School	8420 Jack Finney Blvd	Greenville	Hunt	75402	School (k-12)	33.086028	-96.080371	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 10 - Greenville ISD	3504 King St	Greenville	Hunt	75401	School (k-12)	33.132663	-96.111386	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 10 - Honey Grove	540 - 6th St	Honey Grove	Fannin	75446	School (k-12)	33.583306	-95.909097	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 10 -	#1 Tiger Alley	Leonard	Fannin	75452	School (k-12)	33.389728	-96.240855	Buried Drop	Cisco 1941/K9	Exist

Leonard										Telecom Closet
Region 10 - Lone Oak	8162 Hwy 69 S	Lone Oak	Hunt	75453	School (k-12)	32.988377	-95.932435	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 10 - Quinlan	301 E Main St	Quinlan	Hunt	75474	School (k-12)	32.910344	-96.131698	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 10 - Trenton	500 Ballentine	Trenton	Fannin	75490	School (k-12)	33.426166	-96.340412	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 10 - Wills Point	338 W North Commerce	Wills Point	Van Zandt	75169	School (k-12)	32.734272	-96.001559	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 10 - Wolfe City	505 W Dallas St	Wolfe City	Hunt	75496	School (k-12)	33.367707	-96.074894	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 7 - Alba-Golden	1373 CR 2377	Alba	Wood	75410	School (k-12)	32.759631	-95.586705	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 7 - Edgewood	804 E Pine	Edgewood	Van Zandt	75117	School (k-12)	32.693703	-95.874937	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 7 - Fruitvale	141 VZ CR 1901	Fruitvale	Van Zandt	75127	School (k-12)	32.683906	-95.802566	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 7 - Grand Saline	400 Stadium Dr	Grand Saline	Van Zandt	75140	School (k-12)	32.684282	-95.713613	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 7 - Hawkins	231 Hawk Dr	Hawkins	Wood	75765	School (k-12)	32.583402	-95.206400	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 7 - Lindale	920 Hubbard	Lindale	Smith	75771	School (k-12)	32.516354	-95.397167	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 7 - Martins Mill	301 FM 1861	Martins Mill	Van Zandt	75754	School (k-12)	32.412528	-95.792154	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 7 - Mineola	1000 W Loop 564	Mineola	Wood	75773	School (k-12)	32.684570	-95.499904	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 7 - Quitman	1101 E Goode St	Quitman	Wood	75783	School (k-12)	32.795990	-95.429066	Buried Drop	Cisco 1941/K9	Exist Telecom Closet

Region 7 - Rains (Emory)	1759 W US Hwy 69	Emory	Rains	75440	School (k-12)	32.891324	-95.790456	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 7 - Van	549 E Texas St	Van	Van Zandt	75790	School (k-12)	32.525345	-95.629308	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 7 - Winnsboro	207 E Pine St	Winnsboro	Wood	75494	School (k-12)	32.960137	-95.287619	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 7 - Winona	611 Wildcat Dr	Winona	Smith	75792	School (k-12)	32.492228	-95.182797	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 7 - Yantis	105 W Oak St	Yantis	Wood	75497	School (k-12)	32.930403	-95.576053	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 8 - Chapel Hill	FM 1735	Mt Pleasant	Titus	75456	School (k-12)	33.157100	-94.968554	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 8 - Chisum	3250 Church St	Paris	Lamar	75462	School (k-12)	33.624109	-95.563697	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 8 - Como-Pickton	13017 TX Hwy 11	Como	Hopkins	75431	School (k-12)	32.976810	-95.308601	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 8 - Cooper	440 SW 3rd St	Cooper	Delta	75432	School (k-12)	33.371979	-95.690173	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 8 - Fannindel	601 W Main	Ladonia	Fannin	75449	School (k-12)	33.425188	-95.952626	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 8 - Harts Bluff	3506 FM 1402	Mt Pleasant	Titus	75455	School (k-12)	33.172231	-94.962419	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 8 - Miller Grove	7819 FM 275 South	Cumby	Hopkins	75433	School (k-12)	32.998618	-95.798894	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 8 - Mt Pleasant	2110 N Edwards	Mt Pleasant	Titus	75456	School (k-12)	33.176168	-94.990297	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 8 - Mt Vernon	501 Hwy 37 S	Mt Vernon	Franklin	75457	School (k-12)	33.177151	-95.233385	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 8 - North	1994 FM 71 West	Sulphur Springs	Hopkins	75482	School (k-12)	33.270475	-95.617261	Buried Drop	Cisco 1941/K9	Exist Telecom

Hopkins										Closet
Region 8 - North Lamar	3201 Lewis Ln	Paris	Lamar	75460	School (k-12)	33.689600	-95.549587	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 8 - Paris	1920 Clarksville	Paris	Lamar	75460	School (k-12)	33.655598	-95.536124	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 8 - Pittsburg	402 Broach St	Pittsburg	Camp	75686	School (k-12)	33.005832	-94.978264	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 8 - Prairiland	466 FM 196 South	Pattonville	Lamar	75468	School (k-12)	33.573214	-95.390460	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 8 - Rivercrest	4100 US Hwy 271 S	Bogata	Red River	75417	School (k-12)	33.478210	-95.213819	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 8 - Roxton	303 Denton St	Roxton	Lamar	75477	School (k-12)	33.548450	-95.727845	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 8 - Saltillo	150 CR 3534	Saltillo	Hopkins	75478	School (k-12)	33.183384	-95.343252	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 8 - Sulphur Bluff	1027 CR 3550	Sulphur Bluff	Hopkins	75481	School (k-12)	33.331329	-95.392010	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 8 - Sulphur Springs	631 Connally St	Sulphur Springs	Hopkins	75482	School (k-12)	33.138325	-95.609115	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 8 - Winfield	113 School St	Winfield	Titus	75493	School (k-12)	33.170820	-95.110064	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Region 8 Educational Service Center	2230 N Edwards	Mt Pleasant	Titus	75455	School (k-12)	33.176357	-94.996957	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Rocky Mound		Rocky Mound	Camp		Other Government Facility	33.017880	-95.020804	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Roxton	105 N Pecan	Roxton	Lamar	75477	Other Government Facility	33.547350	-95.724919	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Roxton	105 N Pecan	Roxton	Lamar	75477	Other Government Facility	33.547350	-95.724919	Buried Drop	Cisco 1941/K9	Exist Telecom Closet

Saltillo	sixteen miles east of Sulphur Springs at the intersection of US 67 and FM 900	Saltillo	Hopkins	75478	Other Government Facility	33.182860	-95.330329	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Savoy	108 E Hayes St	Savoy	Fannin	75479	Other Government Facility	33.599709	-96.366921	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Sulphur Bluff		Sulphur Bluff	Hopkins		Other Government Facility	33.332718	-95.399649	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Sulphur Springs	125 S Davis St	Sulphur Springs	Hopkins	75482	Other Government Facility	33.136630	-95.602879	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Sulphur Springs EDC	1200 Enterprise Ln	Sulphur Springs	Hopkins	75482	Other Government Facility	33.136933	-95.603005	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Talco	400 W Broad St	Talco	Titus	75487	Other Government Facility	33.362154	-95.099826	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Talco	400 W Broad St	Talco	Titus	75487	Other Government Facility	33.362154	-95.099826	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Texas A&M - Commerce	2600 S Neal St	Commerce	Hunt	75428	Community College	33.238090	-95.908720	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Tira		Tira	Hopkins	75482	Other Government Facility	33.324066	-95.589657	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Toco		Toco	Lamar		Other Government Facility	33.651253	-95.648845	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Trenton	216 Hamilton	Trenton	Fannin	75490	Other Government Facility	33.431121	-96.339684	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Trinity Mother Frances Clinic	113 Airport Rd Ste 301	Sulphur Springs	Hopkins	75482	Medical or Healthcare Provider	33.156360	-95.600026	Buried Drop	Cisco ME-3400G	Telecom Closet
Trinity Mother Frances Clinic	117 N Winnsboro	Quitman	Wood	75783	Medical or Healthcare Provider	32.796368	-95.445284	Buried Drop	Cisco ME-3400G	Telecom Closet
Trinity Mother	1302 N Pacific	Mineola	Wood	75773	Medical or Healthcare Provider	32.678100	-95.484323	Buried Drop	Cisco ME-3400G	Telecom Closet

Frances Clinic										
Trinity Mother Frances Clinic	18780 Interstate 20	Canton	Van Zandt	75103	Medical or Healthcare Provider	32.590129	-95.882677	Buried Drop	Cisco ME-3400G	Telecom Closet
Trinity Mother Frances Clinic	3203 S Main	Lindale	Smith	75771	Medical or Healthcare Provider	32.474985	-95.391313	Buried Drop	Cisco ME-3400G	Telecom Closet
Trinity Mother Frances Clinic	5321 FM 14	Hawkins	Wood	75765	Medical or Healthcare Provider	32.653717	-95.224782	Buried Drop	Cisco ME-3400G	Telecom Closet
Trinity Mother Frances Clinic	719 W Coke Rd Medical Ofc Bldg #4	Winnsboro	Wood	75494	Medical or Healthcare Provider	32.918627	-95.268968	Buried Drop	Cisco ME-3400G	Telecom Closet
Trinity Mother Frances Clinic	886 E Lennon Ste 105	Emory	Rains	75440	Medical or Healthcare Provider	32.869087	-95.758404	Buried Drop	Cisco ME-3400G	Telecom Closet
Trinity Urgent Care	18780 Interstate 20	Canton	Van Zandt	75103	Medical or Healthcare Provider	32.590129	-95.882677	Buried Drop	Cisco ME-3400G	Telecom Closet
Trinity Urgent Care	3203 S Main	Lindale	Smith	75771	Medical or Healthcare Provider	32.474985	-95.391313	Buried Drop	Cisco ME-3400G	Telecom Closet
University of Texas Health Center at Tyler	11937 US Hwy 271	Tyler	Smith	75708	Medical or Healthcare Provider	32.423898	-95.209138	Buried Drop	Cisco ME-3400G	Telecom Closet
Van	170 W Main St	Van	Van Zandt	75790	Other Government Facility	32.524544	-95.638692	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Van	189 S Maple St	Van	Van Zandt	75790	Other Government Facility	32.523634	-95.637008	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
West Tawakoni?	1533 E State Hwy 276	West Tawakoni	Hunt	75474	Other Government Facility	32.903221	-96.013730	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Wills Point	307 N 4th St	Wills Point	Van Zandt	75169	Other Government Facility	32.710426	-96.008116	Buried Drop	Cisco 1941/K9	Exist Telecom

										Closet
Wills Point EDC	120 N 5th St	Wills Point	Van Zandt	75169	Other Government Facility	32.708471	-96.009058	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Winfield	200 Cleveland St	Winfield	Titus	75493	Other Government Facility	33.167350	-95.112199	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Winnsboro	100 E Broadway	Winnsboro	Wood	75494	Other Government Facility	32.957270	-95.290320	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Winnsboro	100 E Broadway	Winnsboro	Wood	75494	Other Government Facility	32.957270	-95.290320	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Winona	520 Dallas St	Winona	Smith	75792	Other Government Facility	32.492666	-95.171464	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Wolfe City	101 E Main St	Wolfe City	Hunt	75496	Other Government Facility	33.370803	-96.069851	Buried Drop	Cisco 1941/K9	Exist Telecom Closet
Yantis	100 N Main St	Yantis	Wood	75497	Other Government Facility	32.930884	-95.575069	Buried Drop	Cisco 1941/K9	Exist Telecom Closet

Appendix C
Agency Correspondence

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Appendix D
Bald Eagle Management Plan

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Appendix E
Safety Manual

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