officials, executives, supervisory personnel, clerical workers, wage earners, piece workers, and part-time workers. The data excludes employment covered by the Railroad Retirement Act, self-employed persons, and unpaid family workers. A comparison of fourth quarter TWC employment data between 2015 and 2020 indicates that covered employment in Jeff Davis County fell by 56 employees (665 to 609), while Presidio County's covered employment increased by 41 employees (1,721 to 1,762). The total within the State increased by 407, 764 (approximately 3.5 percent percent) during that same period (TWC, 2021).

Fourth quarter 2020 employment data for Jeff Davis and Presidio Counties, and the State are shown in Table 3-8. The leading employment sectors in Jeff Davis County were Leisure and Hospitality (191); Education and Health Services (146); and Trade, Transportation, & Utilities (74). Presidio County's leading employment sectors included Public Administration (529); Education and Health Services (380); and Trade, Transportation, & Utilities (308). Leading employment sectors at the State level were Education and Health Services; Trade, Transportation, & Utilities; and Professional and Business Services (TWC, 2021).

Table 3-8: Covered Employment and Major Economic Sectors, 4th Quarter 2015 and 2020

Employment Sector	Place					
	Jeff Davis County		Presidio County		State of Texas	
	2015	2020	2015	2020	2015	2020
Natural Resources & Mining	–	–	–	–	308,831	231,707
Construction	22	37	74	64	722,017	756,352
Manufacturing	–	–	–	62	865,513	860,339
Trade, Transportation & Utilities	77	74	309	308	2,529,492	2,644,299
Information	–	–	–	–	209,145	203,904
Financial Activities	31	34	55	58	719,432	790,168
Professional & Business Services	17	27	80	68	1,635,768	1,816,128
Education & Health Services	215	146	493	380	2,768,866	2,895,695
Leisure & Hospitality	205	191	201	278	1,272,178	1,214,404
Other Services	22	34	23	15	322,596	315,302
Unclassified	–	–	–	–	4,715	7,432
Public Administration	76	66	486	529	441,506	472,093
Total Employment	**665**	**609**	**1,721**	**1,762**	**11,800,059**	**12,207,823**

Source: TWC (2021)

3.10.4 Community Values

The term "community values" is included as a factor for consideration of transmission line certification under PURA § 37.056(c)(4). Although the term is not formally defined in the statute or PUC rules, the PUC and PUC Staff have recognized a working definition as "a shared appreciation of an area or other natural resource by a national, regional, or local community" in several CCN proceedings.

Burns & McDonnell evaluated the proposed Project for community resources that may be important to a particular community, such as parks or recreational areas, historical and archeological sites, or scenic vistas within the Study Area. Additionally, Burns & McDonnell and AEP Texas solicited input from community leaders and members of the public to gain a better understanding of values of the community. Burns & McDonnell mailed consultation letters to Federal, State, and local officials (Appendix A) and participated in virtual and in-person public open-house meetings with AEP Texas to, among other things, identify and collect information regarding community values and community resources. Input received from the public and community leaders was used in the evaluation of the proposed Project. Community values and community resources are discussed in the following sections as well as in Section 5.2.

3.11 Human Resources

3.11.1 Land Use

The Study Area is located in Presidio and Jeff Davis Counties, in the Trans-Pecos Region of Far West Texas. The city of Marfa, which serves as the county seat for Presidio County is located along the Study Area's southern boundary, and the unincorporated community of Fort Davis, which serves as the county seat of Jeff Davis County, is located along the Study Area's northern boundary. The Study Area is in State Planning Region No. 8 (Upper Rio Grande State Planning Region) and represented by the Rio Grande Council of Governments (RGCOG). The RGCOG is a voluntary association originally created in 1967 to provide continuity to governing and planning between state and local governments. The RGCOG serves 33 local governments, 7 county governments, 12 municipalities, and 14 special districts. The Council of Governments is governed by a board of directors that consists of 19 local officials from the area. The RGCOG serves to advance intergovernmental cooperation and collaboration in the planning, development, and delivery of specific governmental services to its region (RGCOG, 2021).

The Study Area is served by two independent school districts (ISDs). The Fort Davis ISD serves the northern portion of the Study Area to the Jeff Davis/Presidio County line. Fort Davis ISD facilities within the Study Area are located northwest of State Highway (SH) 17 at Buckeye Street and include the Fort Davis High/Junior High School and athletic fields and courts. The Marfa ISD, which serves the southern

portion of the Study Area, operates facilities within the city of Marfa. The Marfa ISD facilities, located north of West Lincoln Street at North Gonzalez Street, include classroom buildings for kindergarten through high school students, gymnasium, auditorium, and athletic fields (Texas Education Agency [TEA], 2021).

3.11.1.1 Existing Land Use and Development

The Study Area is sparsely populated, with most inhabitants residing in Marfa and Fort Davis. Land use within the Study Area is primarily rangeland. According to USDA (2021) National Agricultural Statistics Service (NASS) geospatial data, the total land area of the Study Area is 147,862 acres, with 143,891 acres (97.3 percent) classified as rangeland. Approximately 2,652 acres (1.8 percent) are classified as developed, and 1,248 acres (0.8 percent) are classified as forested. The remaining 0.1 percent of land cover in the Study Area is classified as cropland (67.3 acres) and aquatic (4.2 acres) (USDA, 2021).

Residential development within the Study Area is primarily concentrated in and around the city of Marfa and Fort Davis. Smaller residential subdivisions include Fort Davis Estates located southwest of SH 118 in the northeastern portion of the Study area, and Mano Prieto Estates located east of SH 17 in the northern half of the Study Area.

Commercial development in the Study Area is primarily located in proximity to Fort Davis and Marfa, with a few isolated commercial uses located along main roadways, including the Village Farms, LP large-scale greenhouse farming operations located on the west side of SH 17.

3.11.1.2 Conservation Easements

A conservation easement is a restriction on private property that owners voluntarily place on their property to restrict certain uses and protect natural, productive, or cultural features. The property owner retains legal title to the property and determines the types of uses to allow or restrict. Allowances vary and conservation easement language will be different for each property. The property can still be bought, sold, or inherited, but the easement remains intact and restricts all future owners to certain terms and conditions.

A review of numerous databases such as the USGS Protected Areas Database (USGS, 2021), The Nature Conservancy (TNC, 2021), Texas Land Conservancy (TLC, 2021), Texas Agricultural Land Trust (TALT, 2021), and the National Conservation Easement Database (NCED, 2021), and correspondence received from TPWD, identified two conservation easements located within in the Study Area. A portion of the Marfa Plateau Grassland Megasite Easement, held by TNC, extends into the southwestern most corner of the Study Area. The Marfa Plateau Grassland Megasite Easement in Presidio County was

established in 2000. Additionally, TALT lists agricultural conservation easements on the Dixon Water Foundation and adjacent George Ranch tracts located in the southwestern portion of the Study Area. Although not identified in the reviewed sources, some properties in the Study Area may have some form of conservation easement or agreement that is not listed.

3.11.2 Recreation

A review of the Texas Outdoor Recreation Plan (TORP) (TPWD, 1984), Federal, State, and local maps, and field reconnaissance identified several parks and recreation areas within the Study Area (National Park Service [NPS], 2021; TPWD, 2021a). No Federal or State wildlife refuges or management areas, forests, or grasslands were identified within the Study Area.

The Fort Davis National Historic Site (NHS), a 523-acre historic fort and the immediate surrounding land, was in operation from 1854 to 1891 to protect emigrants, mail coaches, and freight wagons on the Trans-Pecos portion of both the San Antonio-El Paso Road and the Chihuahua Trail. The site, administered by the NPS, features the original layout of officer quarters and infantry barracks of the historic fort, daily tours, exhibits, and learning programs (NPS, 2021). The southernmost portion of the site's property is located along the Study Area's northern boundary, just west of the community of Fort Davis and east of Davis Mountains State Park. The park is also a National Historic Landmark (NHL) and listed in the NRHP.

The Blackwell School in Marfa was designated as an NHS as part of the National Park System in October 2022. Listed in the NRHP in 2019, the Blackwell School was the sole public education institution for the city's Hispanic students from 1909–1965. The Blackwell School site consists of the original 1909 adobe schoolhouse and a smaller 1927 classroom building known as the Band Hall. The buildings contain photographs, memorabilia and interpretive panels that feature quotes and stories from students and teachers. The site is currently open to the public, with limited hours and services. The site is managed by the Blackwell School Alliance, a local nonprofit founded by Blackwell School alumni for the purpose of preserving the school. The Alliance will continue to manage the site until the NPS acquires the property. To formally establish the park, the NPS will work with the city of Marfa to acquire the lands intended in the law (U.S. Department of the Interior, 2022).

The Davis Mountains State Park is a 2,709-acre park located just west of the Fort Davis National Historic Site. The Park highlights the natural qualities and beauty of the Davis Mountains. Lodging is available at the Civilian Conservation Corps (CCC)-built Indian Lodge, and camping is offered as well. The 39-room white adobe lodge, constructed in the 1930s, also features a restaurant and pool. Activities include hiking,

backpacking, interactive ranger programs, mountain biking, equestrian trails, stargazing, geocaching, and birding (TPWD, 1984, 2021a).

Jeff Davis County operates one park within the Study Area, on the west side of SH 17 approximately 0.6 mile southwest of the Fort Davis community. The Jeff Davis County Park has a playground, three ballparks, a soccer field, a track, and large open areas. Within the Study Area, the Fort Davis Veteran's Memorial Park is located at the intersection of Court Ave and SH 17 (TPWD, 1984, 2021a).

Presidio County operates several facilities within the Study Area. Vizcaino Park and Marfa Municipal Golf Course, contiguous properties approximately 1 mile northeast of Marfa, offer public golfing opportunities on a 9-hole golf course, two ballfields, and open space. Just south of the golf course, the county owns fairgrounds used for rodeos at the Marfa Rodeo Arena.

The city of Marfa operates three parks within the Study Area: Coffield Park, Sunset Park, and Travis E. Self Memorial Park. Coffield Park is located along the Study Area's southern boundary, adjacent to the Union Pacific (UP) rail line in Marfa; this park features two ball fields, a basketball court, playground, pavilion, and open space. Sunset Park and Travis E. Self Memorial Park are two small adjacent neighborhood parks in eastern Marfa with a playground, picnic tables, areas designated for dogs, and open space.

The Chihuahuan Desert Research Institute (CDRI) is located approximately 4 miles southeast of Fort Davis on the northeast side of SH 118 in the northeast corner of the Study Area. The CDRI, a nonprofit organization established in 1973, manages and operates the 507-acre Chihuahuan Desert Nature Center and Botanical Gardens that includes semi-desert grasslands, unique igneous rock outcrops, and a canyon with a perennial spring. CDRI is open to the public year-round and includes more than 5 miles of hiking trails, overlooks, botanical gardens, a cactus museum, greenhouse, the Heritage Mining Exhibit, a birding blind, learning displays, a visitor center, and a gift shop (CDRI, 2021).

The TPWD established the Great Texas Wildlife Trails program, which includes a total of nine regional driving trail maps that contain wildlife hotspots across Texas. The maps guide visitors to natural and cultural resource sites open to the public. Review of the TPWD Far West Texas Wildlife Trail, which includes 10 individual wildlife viewing loops, indicates that the southern half of the Davis Mountains Loop is located within the Study Area. The Davis Mountains Loop includes four sites within the Study Area: the Chihuahuan Desert Nature Center, Sunset Park (Marfa), Mountain Trails Lodge and the Outdoor Learning Center (Fort Davis), and Davis Mountains State Park and Indian Lodge (TPWD, 2021b).

Additional recreational activities such as hunting and fishing might occur on private properties throughout the Study Area but are not considered to be open to the general public. TPWD offers Annual Public Hunting (APH) and Limited Public Use (LPU) permits to hunt on over a million acres of land in the State, including not only publicly owned land in State Parks in wildlife management areas, but in approximately 120 game areas leased from private landowners. A search of TPWD's database of these lands showed that none of these publicly accessible private lands for hunting are located within the Study Area (TPWD, 2021c).

3.11.3 Agriculture

Agriculture and related services remain an important economic contributor within Presidio and Jeff Davis Counties. According to the USDA 2017 Census of Agriculture, the total market value of agricultural products sold in Jeff Davis County was recorded at $29,287,000, and the total market value of agricultural products sold in Presidio County was $47,963,000. The counties' livestock inventories are dominated by cattle and calves. Presidio County's 2014 leading crop item in terms of acres is listed as forage crops (hay, haylage), while Jeff Davis County lists grapes and pecans as its two leading crop items (USDA, 2018, 2019).

According to USDA (2021) NASS geospatial data, 143,891 acres (97.3 percent) of the Study Area is classified as rangeland, while only 67.3 acres of the Study Area are estimated to be used for crop production. Cotton is listed as the primary crop within the Study Area (26.5 acres), followed by sorghum (19.1 acres), and winter wheat (16.2 acres) (USDA, 2021). In addition, greenhouse crops are cultivated within the Study Area. Village Farms, LP operates two large greenhouse facilities on the west side of SH 17 between Marfa and Fort Davis.

3.11.4 Utilities

Utility features reviewed include existing electrical transmission lines, distribution lines, pipelines, water wells, and water and gas/oil storage tanks. Data sources used to identify existing electrical transmission and distribution lines include utility company and regional system maps, aerial imagery, USGS topographic maps, additional available planning documents, and field reconnaissance surveys. Electric facilities within the Study Area include AEP Texas 69-kV and 138-kV transmission lines, as well as the Alamito Creek and Fort Davis Substations and other small distribution substations. AEP distribution lines are prevalent throughout the developed portions of the Study Area; however, these features were not mapped or inventoried.

Data was obtained from the RRC, which provided a GIS layer for existing oil and gas wells and pipelines. The RRC dataset, along with aerial photograph interpretation and field reconnaissance, were used to identify and map existing oil and gas facilities. No operating oil and gas wells were identified within the Study Area. Underground natural gas transmission pipelines operated by West Texas Gas (WTG) Processing, LP are located east of SH 17 between Marfa and Fort Davis, (RRC, 2021).

3.11.5 Transportation/Aviation

The major ground transportation features within the Study Area include U.S. Highway (US) 67, US 90, SH 17, SH 118, SH 166, Farm-to-Market Road (FM) 1112, and the Union Pacific railway (TxDOT, 2021a, 2021b, 2021c, 2021d).

- Union Pacific (UP) operates a rail line in the southern portion of the Study Area. It enters the Study Area near the Marfa city center and parallels the north side of US 67/90 east. In late 2019 and early 2020, UP has been expanding the rail siding along this segment, from the existing 8,900 feet to 15,000 feet, to allow the railroad to operate longer trains (Big Bend Sentinel, 2020; TxDOT, 2021a).

- US 67 enters its southern boundary to Marfa, and then runs concurrently with SH 90 eastward towards Alpine.

- US 90 runs across a small section of the southeast corner of the Study Area, concurrent with US 67 until the two U.S. highways split in Marfa.

- SH 17 extends north to south through the western half of the Study Area between Fort Davis and Marfa.

- SH 118 is in the northern portion of the Study Area. It extends from the northwestern boundary through the Davis Mountains, then reenters the Study Area at Fort Davis at SH 17 and extends southeast to exit the Study Area's northeastern quadrant.

- SH 166 occurs in the northwestern portion of the Study Area. It extends southwest from its intersection with SH 17, approximately 1.5 miles south of Fort Davis, and continues southwest to exit the Study Area's western boundary.

- FM 1112 runs from SH 17 in Marfa, northeastward for 2.9 miles to the Marfa Municipal Golf Course. The entire length of FM 1112 occurs within the Study Area.

The transportation grid within the Study Area also includes networks of county, city, residential, commercial, and private ranch roads.

According to the district's interactive Project Tracker, which contains information for each county regarding planned or ongoing improvement projects, several minor maintenance projects are listed for State-maintained roadways within the Study Area; however, no major roadway upgrades or expansion projects are scheduled (TxDOT, 2021d).

A review of the Chart Supplement South Central, U.S. (formerly known as the Airport/Facility directory) (FAA, 2022a), the El Paso Sectional Aeronautical Chart (FAA, 2022b), the TxDOT Airport Directory (TxDOT, 2021e), aerial photography, USGS maps, field reconnaissance, and internet sources identified one public airport within the Study Area, but no private airstrips or heliports. The Marfa Municipal Airport (FAA Identifier MRF) is located on the west side of SH 17 approximately 2.8 miles north of Marfa. This airport has two asphalt runways of 6,203 by 75 feet and 5,309 by 75 feet, as well as a dirt runway with dimensions of 2,825 by 60 feet (AirNav, 2021). No heliports or private airstrips were identified within the Study Area. However, the MacGuire Ranch Airport (FAA Identifier 21TE) is located 0.3 mile south of the Study Area, southeast of Marfa; this private facility features one 6,000 by 65-foot asphalt runway (AirNav, 2021).

3.11.6 Communication Towers

A search of the Federal Communications Commission (FCC) website, online cell tower search engines, and field reconnaissance identified no AM or TV towers within the Study Area; however, one FM tower and two cellular communication towers were identified within the Study Area. The FM tower is located south of the railroad and slightly west of D Street. A cellular tower owned by WWC Texas RSA LP, and used by Verizon, is located on the north side of SH 118, just southeast of Fort Davis and near the Study Area's northern boundary. Additionally, a cellular tower owned by Big Bend Telecom, LTD is located on the north side of US 90 (E. San Antonio St) in eastern Marfa (FCC, 2021; AntennaSearch, 2021; Cell Reception, 2021).

3.11.7 Aesthetic Values

Aesthetics is included as a factor for consideration in the evaluation of transmission facilities in PURA § 37.056(c)(4). The term aesthetics refers to the subjective perception of natural beauty in the landscape, and this section of the document attempts to define and measure the Study Area's scenic qualities. Consideration of the visual environment includes a determination of aesthetic values where the major

potential effect of the Project on the resource is considered aesthetic, or where the location of a transmission line could affect the scenic enjoyment of a recreation area.

Burns & McDonnell's aesthetic evaluation considered potential visual impacts to the public. Areas visible from major roads and highways, or publicly owned or accessible lands (e.g., parks or privately owned recreation areas open to the public) were analyzed. Several factors are taken into consideration when attempting to define the potential impact to a scenic resource that would result from the construction of the proposed transmission line. Among these are:

- Topographical variation (hills, valleys, etc.)
- Prominence of water in the landscape
- Vegetation variety (forests, pasture, etc.)
- Diversity of scenic elements
- Degree of human development or alteration
- Overall uniqueness of the scenic environment compared to the larger region

Based on the above criteria, the Study Area exhibits a high degree of aesthetic quality. Located in the Big Bend Region, the Study Area includes mountain ranges, canyons, and desert, and displays topographic variation, color, and a diversity of scenic elements. The Study Area elevations range from a low of approximately 4,665 feet within Alamito Creek in the southern portion of the Study Area, to a high of approximately 6,358 feet at Blue Mountain in the northwestern corner of the Study Area. The majority of the Study Area is also sparsely populated and therefore exhibits areas with relatively little human development or alteration.

The THC operates the Texas Heritage Trails Program, a Statewide heritage tourism program based on 10 scenic driving trails originally created by TxDOT. This program established 10 regions throughout Texas and enables people to learn about, and be surrounded by, local customs, traditions, history, and culture of the different regions. The trails are marked by special signs along designated highways. The Study Area is located within the Texas Mountain Trail Region, which showcases a variety of landscapes, from desert, prairie steppe, plateau, and mountains, revealing a geological past of more than 600 million years of Paleozoic deep marine sediments, volcanic remnants, and the bending, folding and uplifting of land. It also hosts historic, archeological, and cultural sites. A portion of the original designated Texas Mountain Trail extends through the northeastern corner of the Study Area along SH 118. The THC's brochure of the region lists a total of 13 points of interest and attractions within the Study Area. Four of the points of interest are located within Marfa—the town itself, the Hotel Paisano, the Presidio County Courthouse,

and the Marfa and Presidio County Museum. The other nine points of interest are in the northern portion of the Study Area. They include the historic Prude Ranch; the Indian Lodge in Davis Mountains State Park; Davis Mountains State Park; Fort Davis National Historic Site; Jeff Davis County Courthouse; the community of Fort Davis; Mountain Trails Lodge and Outdoor Learning Center; the Chihuahuan Desert Nature Center and Botanical Gardens; and the Davis Mountain Preserve. (THC, 2021; TxDOT, n.d.).

In 1998, TxDOT published a list of some of the best "Scenic Overlooks and Rest Areas" in Texas, each of which presented particularly strong aesthetic views or settings (TxDOT, 1998). A review of this list found that none of the highlighted scenic overlooks or rest areas are located within the Study Area.

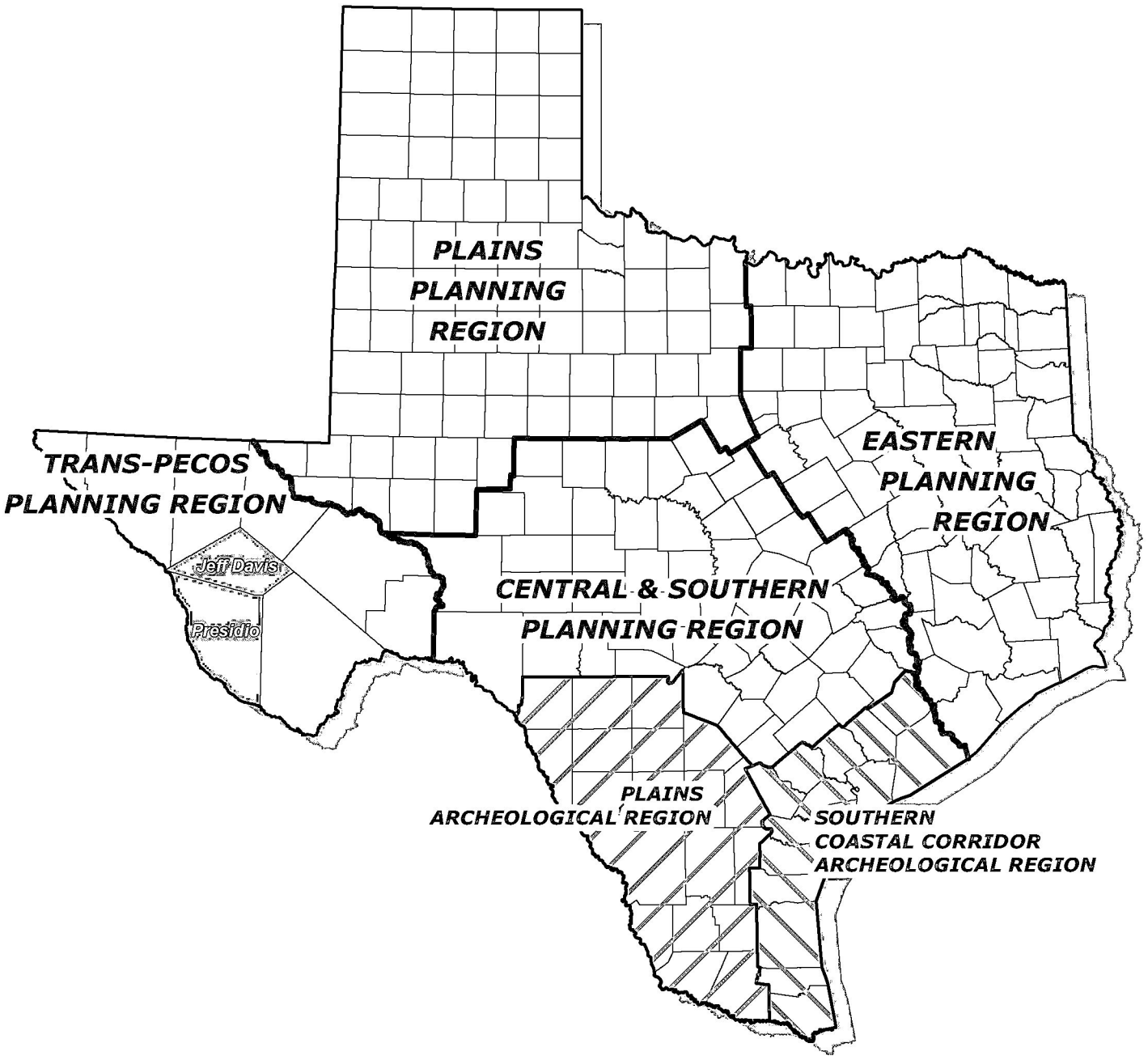
3.12 Cultural Resources

3.12.1 Cultural Overview

As shown on Figure 3-4, Presidio and Jeff Davis Counties are located in the Trans-Pecos Planning Region as delineated by the THC (Mercado-Allinger et al., 1996). This region is constrained by El Paso on its western boundary, the Pecos River on the east, the Rio Grande to the south, and New Mexico to the north. The Trans-Pecos region represents a diverse cultural history extending from Paleoindians to historic European settlements. The archeological record reflects this diversity through a wealth of sites ranging from rock shelters to forts. It is generally accepted that the cultural history of this region is divided into four periods: the Paleoindian, Archaic, Late Prehistoric, and Historic. Each of these periods is briefly summarized below.

3.12.2 Paleoindian

The Paleoindian Period occurred from approximately 10,000 to 6000 B.C. It is characterized by small, highly nomadic bands with a reliance on large mammals such as bison and mammoth for subsistence (Perttula, 2004). Paleoindian sites in the Trans-Pecos region such as the Fresnal Shelter, Pendejo Cave, and Hermit Cave have produced material dating from approximately 10,000 B.C. to 5000 B.C. (Perttula, 2004). The Paleoindian period is divided into three chronological traditions defined by its tool kits: the Clovis Complex (10,000 to 8800 B.C.), Folsom Complex (9000 to 8000 B.C.), and the Plano/Cody Complexes (9000 to 6000 B.C.). The Clovis Complex is the earliest known occupation. It is represented by the fluted lanceolate Clovis projectile point; however, very few Clovis sites have been recorded and none of those maintain their integrity. The Folsom Complex is a more prolific manifestation of the Paleoindians in the region. Sites such as Chispa Creek have produced an artifact assemblage consisting of hundreds of Folsom points, scrappers, and bifacial knives (Perttula, 2004).



NORTH

100 50 0 100

Miles

BURNS McDONNELL

Figure 3-4
Location of Jeff Davis and Presidio Counties
in Relation to the Cultural Resources
Planning Regions of Texas
Alamito Creek to Ft. Davis
138-kV Transmission Line Project

Source: Mercado-Allinger et al. (1996)

Issued: 5/28/2019

The Plano/Cody Complexes are similar to the Clovis Complex in that very few substantial sites have been recorded. Eden and Scottsbluff points have been documented as mostly surface finds throughout the region.

3.12.3 Archaic

The Archaic Period (6000 B.C. to 200 A.D.) signifies a shift from a big-game hunting subsistence strategy to seasonal mobility and generalized subsistence strategies to adapt to increasingly arid conditions. Developments include the introduction of horticulture, agriculture, and residential pit house structures, as well as new projectile point technology, where lanceolate-shaped points gave way to dart points that were stemmed and barbed (Black, 1989; Perttula, 2004). The Archaic Period has been defined mostly through excavations of rock shelters and open-air sites such as the Gardner Springs site, Keystone Dam site, and Fresnal site. Because of the significant span of the Archaic Period, archeologists generally separate it into Early Archaic (6000 to 4000/3000 B.C.), Middle Archaic (4000/3000 to 1200 B.C.), and Late Archaic (1,200 B.C. to 200/900 A.D.).

The Early Archaic is a poorly known phase primarily defined by carbon dating thermal features at the above-mentioned Gardner Springs and Fresnal sites, as well as the Pendejo site (Perttula, 2004). The Middle Archaic in the Trans-Pecos is most clearly represented in the Keystone Dam 33 site. Excavations of 23 features at the site described as round, shallow structures of simple construction have yielded dateable materials between 2500 and 1800 B.C. (Perttula, 2004). The Late Archaic saw the development of horticultural and agricultural practices, as well as the initial use of plain brownware ceramics. Fresnal and Tornillo rockshelter sites have produced ample corn and bean specimens, which offers evidence for the development of cultigens in the Trans-Pecos region.

3.12.4 Late Prehistoric

The Late Prehistoric Period, also known as the Formative Period (200 to 1450 A.D.), is a continuation of increasing agricultural dependence and social integration started in the Late Archaic. These trends include increasingly formal organization of residential settlements and changes in architectural form such as pit houses and contiguous room (Perttula, 2004). The bow and arrow, universally adopted by 1000 A.D. throughout the region, is a common indicator of the Late Prehistoric, with Livermore, Scallorn, Toyah, Perdiz, and Fresno styles occurring in the area at this time (Mallouf, 1999). Although arrow points are less common than Late Archaic dart points, they constitute a larger percentage of points in private collections in far northeastern Chihuahua (Mallouf, 1999). The predominance of lagomorph (rabbit) bones and fish bones suggests a subsistence on small and medium game paired with riverine resources (Perttula, 2004). The Hot Well Pueblo is an intensely dated site that represents the progression of pit

houses to pueblos. Other technological developments of the Late Prehistoric include polychrome ceramics, thermal storage features, groundstone, and possible water control features.

3.12.5 Historic

The earliest known European explorers in Presidio County were the four survivors of the Narváez expedition, including Álvar Núñez Cabeza de Vaca, in 1535. Notes from de Vaca recounts La Junta occupants, called "People of the Cows" living and farming along the Rio Grande and Rio Conchos (Smith, 2010). The earliest known European explorer in Jeff Davis County was Antonio de Espejo in 1583; however, the area was subsequently left to the Mescalero Apaches until 1849 when the Federal government sponsored efforts to make roads westward. These surveys encountered Apache settlements in the Davis Mountains, including "Painted Comanche Camp" (a misnomer) and opened the first wagon road from San Antonio to El Paso through the Davis Mountains (Kohout, 2010). In 1832, the first Anglo settlement in the area was established on Cibolo Creek; however, it was abandoned the same year when the soldiers protecting it were called away to fight the natives. The Chihuahua Trail opened in 1839 as a trade route from Chihuahua City, Mexico, across the future Presidio County to the Red River and on to Missouri. With the annexation of Texas in 1849, Anglo settlement of the area kicked off again and by 1850 enough people lived in the area to establish Presidio County from the Bexar Land District (Smith, 2010).

In 1854, Fort Davis was built in what was then northern Presidio County by the U.S. Army to protect travelers and settlers, but with the outbreak of the Civil War the fort was closed until 1867. The population of the county increased from 580 individuals in 1860 to 1,636 in 1870. Silver was found in the Davis Mountains in 1870, which resulted in the founding of the company town of Shafter and the opening of the Presidio Mine. Presidio County was organized in 1875 as the largest county in the U.S. and Fort Davis was named the county seat. The railroads reached Presidio County in 1882 with construction of the Galveston, Harrisburg, and San Antonio Railway through the northeastern corner of the county (Smith, 2010). Marfa was established as a water stop and freight headquarters along the railroads in 1883 (Bennett, 2018). In 1885, Marfa became the Presidio County seat. Jeff Davis, Brewster, Buchel, and Foley Counties were carved from Presidio in 1887 and Fort Davis became the seat of Jeff Davis County (Smith, 2010).

Ranching was the primary industry in Presidio County until the twentieth century, when the economy gradually shifted to agriculture. Farmers grew cotton, hay, grain, vegetables, peaches, and the now-famous Presidio County cantaloupes (Smith, 2010). Through the mid-twentieth century, cattle subsumed sheep as the dominant livestock in the county (Smith, 2010). Ranching and tourism have been the main

industries in Jeff Davis County, with sheep and goats the primary livestock of the county. Farming has never been a major producer in the economy of the area, with barley being the biggest agricultural industry. In addition to barley, pears, grapes, cotton, plums, prunes, apples, sorghum, peaches, and pecans are also grown in small quantities (Kohout, 2010).

3.12.6 Previous Investigations and Background Review

Burns & McDonnell conducted an examination of the Texas Archeological Sites Atlas (TASA), maintained by the THC and Texas Archeological Research Laboratory (TARL), as well as TxDOT's Historic Districts and Properties of Texas Map, to identify previously conducted cultural resources investigations and previously recorded archeological sites, NRHP-listed properties and districts, NHLs, State Antiquities Landmarks (SALs), historic-age cemeteries, and Official Texas Historical Markers (OTHMs), including Recorded Texas Historic Landmarks (RTHLs), within the Study Area.

This review identified eight previously conducted cultural resources surveys within the Study Area (Table 3-9). The previous surveys were small and primarily within the limits of Marfa and Fort Davis. Most of the Study Area has not been previously surveyed for cultural resources. The review also identified 13 archeological sites, 2 NRHP properties, 5 NRHP districts, 1 NHL, 2 SALs, 11 OTHMS, 12 RTHLs, and 4 historic-age cemeteries within the Study Area (Tables 3-10 and 3-11). Many of the historic-age non-archeological resources have multiple designations (Table 3-10). The Fort Davis NRHP district and NHL boundary do not extend into the Study Area on the TASA. However, in a letter dated July 19, 2021, the NPS indicated portions of Fort Davis NHL, which is also a National Historic Site (NHS), are located within the Study Area. Additional research indicates the site boundary was expanded in 1998 by House of Representatives bill H.R. 3047. Archeological site 41PS1142 is a historic-age cemetery but was not listed as such on the TASA.

Table 3-9: Previous Investigations Within the Study Area

Atlas Number	Survey Date	Investigating Firm	Agency
8400003187	1996	Unknown	Unknown
8400003266	1995	Unknown	Unknown
8500003213	1995	Unknown	USACE
8500009610	1995	Unknown	TPWD
8500009611	1995	Unknown	TPWD
8500012231	2004	Integrated Environmental Solutions	U. S. Customs and Border Protection
8500018395	2010	TPWD	TPWD
8500025308	2011	Atkins	PUC

Table 3-10: Archeological Sites Within the Study Area

Name	Site Type	NRHP Eligible?
41JD4	Prehistoric Open Campsite with Bedrock Mortars	Unknown
41JD5	Prehistoric Campsite	Unknown
41JD68	Prehistoric Bedrock Mortars	Unknown
41JD71	Historic Ranch	Unknown
41JD181	Prehistoric Bedrock Mortars	Unknown
41JD182	Prehistoric Open Campsite	Eligible; designated SAL
41JD183	Jefferson County Courthouse	Listed
41JD187	Prehistoric Open Campsite	Unknown
41JD206	Historic Quarry and Road	Unknown
41PS1103	Prehistoric Open Campsite	Unknown
41PS1104	Prehistoric Open Campsite	Unknown
41PS1141	Historic Farmstead	Portions Determined Ineligible
41PS1142	Historic Cemetery	Eligible

Table 3-11: Historic-Age Nonarcheological Resources Within the Study Area

Name	Designation	County
Grierson-Sproul House	NRHP Property, RTHL	Jeff Davis
El Paisano Hotel	NRHP Property; RTHL	Presidio
Blackwell School	NRHP District; NHS	Presidio
Fort Davis	NRHP District, NHL; NHS	Jeff Davis
Henry M. and Annie V. Trueheart House	NRHP District, RTHL	Jeff Davis
Jeff Davis County Courthouse	NRHP District; SAL; RTHL; also, 41JD183	Jeff Davis
Presidio County Courthouse	NRHP District; SAL; RTHL	Presidio
Marfa Stockyards	OTHM	Presidio
Presidio County	OTHM; 1936 Centennial Marker	Presidio
Confederate President Jefferson Davis	OTHM	Jeff Davis
Jeff Davis County	OTHM; 1936 Centennial Marker	Jeff Davis
First Baptist Church of Fort Davis	OTHM	Jeff Davis
Hotel Limpia	OTHM	Jeff Davis
Methodist Church Building	OTHM	Jeff Davis
Old Fort Davis, C.S.A.	OTHM	Jeff Davis

Name	Designation	County
Ruins of the Ranch Home of Manuel Musquiz	OTHM; 1936 Centennial Marker	Jeff Davis
Presidio – Oldest Town in America	OTHM	Presidio
Humphris-Humphreys House	RTHL	Presidio
Union Mercantile	RTHL	Jeff Davis
Hunter Gymnasium	RTHL	Presidio
Smith-Carlton Adobe House	RTHL	Jeff Davis
St. Paul's Episcopal Church	RTHL	Presidio
Jeff Davis County Jail	RTHL	Jeff Davis
Fort Davis United Methodist Church	RTHL	Jeff Davis
Unknown Grave #1 (Cemetery)	--	Presidio
Pioneer Cemetery	OTHM; Historic Texas Cemetery	Jeff Davis
St Joseph Cemetery; Mexican Cemetery	--	Jeff Davis

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4.0 ENVIRONMENTAL IMPACTS OF THE ALTERNATIVE ROUTES

The evaluation and comparison of potential impacts for each of the nine Alternative Routes was based upon the consideration of the requirements of Section 37.056(c)(4)(A)-(D) of the Texas Utilities Code, the PUC's Substantive Rule 25.101, including the PUC's policy of prudent avoidance, public comments received from the open house meetings, field reconnaissance, and the information received from Federal and State agencies and local officials. Measurements of the environmental criteria were primarily taken from recent aerial photography (2017–2023 ESRI Maxar Satellite imagery; 2022 NAIP; and Google Earth) and from available digital resource layers using GIS software.

Burns & McDonnell professionals with a proficiency in different environmental disciplines (terrestrial and aquatic ecology, land use and planning, cultural resources, and GIS) evaluated the Alternative Routes based upon environmental conditions present along each route and the general routing criteria developed by AEP and Burns & McDonnell. Each Burns & McDonnell evaluator independently analyzed the Alternative Routes and the environmental and land use data presented in Table 4-1 for their technical discipline. This table is located at the end of this section. The potential impacts to natural, human, and cultural resources resulting from the proposed Project are discussed below by discipline.

4.1 Impact on Natural Resources

4.1.1 Impact on Physiography and Geology

Construction of the proposed transmission line will have no significant effect on the physiographic or geologic features and resources of the area. Erection of the structures would require the removal and minor disturbance of small amounts of near-surface materials but would have no measurable impact on the geologic resources or features along any of the alternative routes. The Project will have no significant impact on mineral resources in the Study Area.

4.1.2 Impact on Soils

The construction and operation of transmission lines normally create very few long-term adverse impacts on soils. Transmission lines do not normally cause a conversion of farmland/pastureland because the site can still be used in this capacity after construction. The major potential impact upon soils from any transmission line construction would be erosion and soil compaction. The potential for soil erosion is generally greatest during the initial clearing of the ROW; however, AEP Texas employs erosion control measures during the clearing and construction process. Where existing land cover includes woody vegetation within the ROW, much of this vegetation will be removed to provide adequate space for

construction activities and to minimize corridor maintenance and operational problems. In these areas, only the leaf litter and a small amount of herbaceous vegetation would remain, and both would be temporarily disturbed by the necessary movement of heavy equipment.

Construction of the transmission line would require minimal amounts of clearing in areas that have already been cleared for crops, pastures, and existing road, transmission line, and pipeline ROW. The most important factor in controlling soil erosion associated with construction activity is to revegetate areas that have potential erosion problems immediately following construction. Natural succession would revegetate most of the ROW. Impacts from soil erosion caused by construction activity would be minimized due to the implementation of BMPs designed in the SWPPP.

Prime farmland soils, as defined by the NRCS, are soils that are best suited for producing food, feed, forage, or fiber crops. The USDA recognizes the importance and vulnerability of prime farmlands throughout the nation and encourages the wise use and conservation of these soils where possible. The Project would not cross prime farmland soils or cropland. In addition to construction-related impacts described above, the major impact of the Project on soils would be the physical occupation of small areas by the actual support structures. However, most of the ROW would be available for agricultural use once construction of the transmission line is completed.

4.1.3 Impact on Water Resources

4.1.3.1 Surface Water

Construction and operation of the transmission line would have minimal adverse impact on the surface water resources of the area. Potential impacts from any major construction project include short-term disturbances resulting from construction activities, which would result primarily from increased siltation from erosion and decreased water quality from accidental spillage of petroleum and other chemical products. Additionally, activities such as clearing of vegetation may temporarily increase local stormwater runoff volumes and sediment loading. Potential impacts would be avoided whenever possible by spanning surface waters if present, diverting construction traffic around water resources via existing roads, and eliminating unnecessary clearing of vegetation. This may eliminate the necessity of constructing temporary low-water crossings that may result in erosion, siltation, and disturbance of the stream and its biota. If a spanned stream is dry at the time of construction, some bank and streambed alterations may be necessary to facilitate crossing. Such activities will be conducted according to USACE regulations and the SWPPP.

Although impacts would be avoided to the extent practicable, some unavoidable impacts could occur. Paralleling existing ROW would minimize these impacts, as would reducing vegetation removal around surface water features and minimizing ground disturbance. The use of erosion control measures, such as silt fencing and selective clearing, and BMPs regarding the use of chemicals, would also minimize potential impacts. As such, impacts occurring from construction of the proposed transmission line would be short term and minor because of the relatively small area that would be disturbed at any given time, the short duration of the construction activities, the preservation of vegetation adjacent to surface water features where practicable, and the implementation by AEP Texas of BMPs designated in the SWPPP to control runoff from construction areas.

The measurement of the various criteria used in the environmental analysis of the Alternative Routes for this Project is tabulated in Table 4-1 located at the end of this section. No named rivers are crossed by any alternative route; however, either Cienega Creek or its forks (North Fork, Middle Fork, and South Fork) are crossed by all the alternative routes and Musquiz Creek, Alamito Creek, and the South Fork of Alamito Creek are crossed by several alternative routes. The number of stream crossings ranges from 6 crossings (Route C) to 14 crossings (Route H). Additionally, each alternative route parallels streams within 100 feet for some distance. The distances range from approximately 0.20 mile (Routes D, E, F, and I) to 0.80 mile (Route A). Additionally, all the Alternative Routes except one (Route H) cross open water for approximately 0.01 mile.

4.1.3.2 Floodplains

FEMA has conducted detailed floodplain analyses for Jeff Davis and Presidio Counties. Proposed construction could result in locating some transmission line structures within floodplains, particularly in the vicinity of named streams. These structures would be designed and constructed so as not to impede the flow of any waterway or create any hazard during flooding. Construction activities within floodplains would be limited to the Project ROW, and significant efforts should be made to keep structures from being in obvious flood channels. Some scour could occur around structures if flood-flow depths and velocities become great enough. Careful siting of structures should eliminate the possibility of significant scour. The Project should have no significant impact on the function of the floodplain, nor adversely affect adjacent property or downstream property.

Although each of the Alternative Routes crosses mapped 100-year floodplains, impacts would be minor. These crossings range from approximately 1.03 miles for Route B to approximately 1.50 miles for Routes E and F.

4.1.3.3 Groundwater

No adverse impacts to groundwater are expected to occur from the construction and operation of the proposed transmission line. The amount of recharge area that would be disturbed by construction is minimal when compared with the total amount of recharge area available for the aquifer systems in the region. Additionally, if accidental spillage of fuel, lubricants, or other petroleum products from normal operation of heavy equipment during construction activities occurred, it would be unlikely to result in any groundwater contamination. Any accidental spills would be promptly handled in accordance with State and Federal regulations. AEP Texas will take necessary precautions to avoid and minimize the occurrence of such spills.

4.1.4 Impact on the Ecosystem

4.1.4.1 Vegetation

Impacts to vegetation resulting from the construction and operation of transmission lines are primarily associated with the removal of existing woody vegetation within the ROW. The amount of vegetation cleared from the transmission line ROW would be dependent upon the type of vegetation present and whether the ROW will be completely new or involve widening existing ROW. For example, the greatest amount of vegetation clearing would occur in wooded areas, whereas cropland and grassland would require little to no removal of vegetation. Woodland, however, is scarce in the Study Area. Two Alternative Routes (Routes A and C) cross no upland woodland/brushland or bottomland/riparian woodland that would require removal. Routes B, D, E, F, G, H, and I would each cross approximately 0.20 mile of upland woodland/brushland. Additionally, Routes B, D, E, F, and I would cross approximately 0.02 mile of bottomland/riparian woodland and Routes G and H would cross approximately 0.04 mile of riparian woodland.

Pastureland/rangeland, consisting mostly of grasses and other herbaceous vegetation and only scarce amounts of woody vegetation, dominates the Study Area. Minimal clearing would be necessary for construction throughout the areas of pastureland/rangeland. Sensitive plant communities, such as those found along riparian corridors and in wetlands, can often be spanned without the need for clearing. The linear extent of plant communities crossed by the proposed alternative routes was determined using digital aerial photography; the length across potential wetlands was determined by USFWS NWI maps (see Table 4-1 at the end of this section). Vegetation community types intersected by the Alternative Routes were verified in the field, where possible.

Removal of vegetation in wetlands increases the potential for erosion and sedimentation, which can be detrimental to downstream aquatic life and plant communities. Any placement of fill material within WOTUS would represent a permit action that may require notification to the USACE. More detailed field studies would be required to verify the location and amount of jurisdictional wetlands that may be within the ROW of a potential route. Precautions would be taken throughout the construction process to avoid and minimize impacts to wetlands. Depending on the size and vegetation type (shrub/scrub or herbaceous), these areas can be spanned in many instances, although they cannot always be avoided by construction equipment. Placement of approved BMPs for construction and minimization of erosion in disturbed areas would help dissipate the flow of runoff. Placement of silt fences or hay bale dikes between streams and disturbed areas would also help prevent siltation into the waterway. After construction is complete, impacted herbaceous wetlands are likely to recover relatively quickly. However, none of the alternative routes cross USFWS NWI mapped wetlands within the Study Area.

Construction of the facility within the ROW would be performed in such a way as to minimize adverse impacts to vegetation and to retain existing ground cover when practicable. Where necessary, soil conservation practices will be undertaken to protect local vegetation and ensure successful revegetation for areas disturbed during construction. Activities associated with electrical transmission facilities in jurisdictional wetlands are regulated by the USACE under the CWA. If necessary, AEP Texas will coordinate with the USACE prior to clearing and construction to ensure compliance with Section 404 of the CWA to avoid, minimize, or mitigate for unavoidable impacts to waters of the U.S., including wetlands.

4.1.4.2 Aquatic Resources

Impacts to aquatic ecosystems from transmission line construction are generally minor. Aquatic features within the Study Area, such as lakes, streams, and ponds, can generally be spanned. The implementation of sedimentation controls, as prescribed in a Project-specific SWPPP, during construction will help to minimize erosion and sedimentation of area streams. Potential impacts include physical habitat loss or modification, increased runoff, erosion and sedimentation, turbidity, and spillage of petroleum or other chemical products. All these tend to be short-term effects, however, and will vary with the intensity and timing of the construction and location of the PUC-approved route.

Physical habitat loss or modification could result whenever access road crossings intercept a drainage system, through sedimentation due to erosion, increased suspended solids loading, or accidental petroleum spills directly into a creek, lake, or other aquatic feature. Erosion results in siltation and increased suspended solids entering streams, creeks, or lakes, which in turn may negatively affect many

aquatic organisms at many trophic levels. Since aquatic features of the area typically exhibit relatively high turbidities during and following runoff events, small increases in suspended solids during the construction phase are unlikely to have any discernible adverse impact.

The main considerations regarding potential impacts to aquatic systems include the length across open water, distance crossing wetlands, number of stream crossings, and length of ROW paralleling (within 100 feet) streams. Each of the nine Alternative Routes cross one or more types of aquatic habitat, as previously discussed in Section 4.1.3.1 (Surface Water) and Section 4.1.4.1 (Vegetation). All the Alternative Routes cross at least one stream and parallel streams within 100 feet. Additionally, each Alternative Route, with the exception of Route H, cross approximately 0.01 mile of open water. None of the Alternative Routes cross USFWS NWI mapped wetlands.

Routes D, E, F, and I would have the least impact on aquatic resources because they cross the second fewest streams (8) and parallel the shortest distance within 100 feet of streams (0.20 mile). Conversely, Route A would have the greatest impact on aquatic resources of the Alternative Routes because it crosses the third greatest number of streams (11) and parallels within 100 feet of streams for the longest distance (0.80 mile).

4.1.4.3 Wildlife

The impacts of transmission lines on wildlife include short-term effects resulting from physical disturbance during construction, as well as long-term effects resulting from habitat modification, fragmentation, or loss. The net effect from transmission line construction on local wildlife is typically minor. The following section provides a general discussion of the effects of transmission line construction and operation on terrestrial wildlife, followed by a discussion of the possible impact of the alternative routes.

Any required clearing or other construction-related activities would directly and/or indirectly affect most animals that reside within or traverse the transmission line ROW. Heavy machinery may adversely affect smaller, low-mobility species, particularly amphibians, reptiles, and small mammals.

If construction occurs during the breeding season (generally spring to fall), construction activities may adversely affect the young of some species. Heavy machinery may cause soil compaction, which may adversely affect fossorial animals (i.e., those that live underground). Mobile species, such as birds and larger mammals, may avoid initial clearing and construction activities and move into adjacent areas outside the ROW. Construction activities may temporarily deprive some animals of cover and, therefore, potentially subject them to increased natural predation. Wildlife in the immediate area may experience a

slight loss of browse or forage material during construction. However, the prevalence of similar habitats in adjacent areas and vegetation succession in the ROW following construction would minimize the effects of these losses.

The increased noise and activity levels during construction could potentially disturb the daily activities (e.g., breeding, foraging) of species inhabiting the areas adjacent to the ROW. Dust and gaseous emissions should have only minimal effects on wildlife. Although construction activities may disrupt the normal behavior of many wildlife species, little, if any, permanent damage to these populations should result. Periodic clearing along the ROW, while producing temporary negative impacts to wildlife, can improve the habitat for ecotonal or edge species through the increased production of small shrubs, perennial forbs, and grasses.

Transmission line structures will be designed in compliance with the Avian Power Line Interaction Committee (APLIC) standards, as defined in *Reducing Avian Collisions with Power Lines: The State of the Art in 2012* (APLIC, 2012). As such, the danger of electrocution to birds from this Project is anticipated to be insignificant. Some avian species may use transmission line structures or wires for perching and roosting; however, this is not the designed intent of those facilities. Additionally, edge-adapted species (e.g., some flycatchers, northern cardinal [*Cardinalis cardinalis*], northern bobwhite [*Colinus virginianus*], Cooper's hawk [*Accipiter cooperii*], brown-headed cowbird [*Molothrus ater*], and northern mockingbird [*Mimus polyglottos*]) may select the edge habitat created along the changed vegetation areas adjacent to the transmission line ROW (Rochelle et al., 1999).

The transmission line (both structures and wires) could present a hazard to flying birds, particularly migrants. Collision may result in disorientation, crippling, or mortality (New York Power Authority, 2005). Mortality is directly related to an increase in structure height; number of guy wires, conductors, and ground wires; and use of solid or pulsating red lights (an FAA requirement on some structures or structures over 200 feet in height) (Erickson et al., 2005). Collision hazards are greatest near habitat "magnets" (e.g., wetlands, open water, edges, and riparian zones) and during the fall when flight altitudes of dense migrating flocks are lower in association with cold air masses, fog, and inclement weather. The greatest danger of mortality exists during periods of low ceiling, poor visibility, and drizzle when birds are flying low, perhaps commencing, or terminating a flight, and when they may have difficulty seeing obstructions (Electric Power Research Institute, 1993). Most migrant species known to occur in the Study Area, including passerines, should be minimally affected during migration, since their normal flying altitudes are much greater than the heights of the proposed transmission structures (Willard, 1978; Gauthreaux, 1978).

The species most prone to collision are often the largest and most common for resident birds or for birds during periods of non-migration (Rusz et al., 1986; APLIC, 1994); however, over time, these birds learn the location of transmission lines and become less susceptible to wire strikes (Avery, 1978). Raptors, typically, are uncommon victims of transmission line collisions, because of their great visual acuity (Thompson, 1978). In addition, many raptors only become active after sufficient thermal currents develop, which is usually late in the morning when poor light is not a factor (Avery, 1978).

Waterfowl species are particularly vulnerable to collisions with power lines because of their low-altitude flight and high speed. Additionally, species that travel in large flocks, such as blackbirds and many shorebirds, are also vulnerable, because dense flocking makes movement around obstacles more difficult for individuals in the flock (APLIC, 1994).

Utility companies can employ several means to minimize transmission line impacts on birds in flight. The initial placement of a transmission line is the most important consideration (Avery, 1978; APLIC, 1994, 2006). The proximity of a transmission line to areas of frequent bird use (e.g., communal foraging or roosting areas, rookeries, wetlands) is crucial. This is especially true for daily use areas, such as feeding areas or other areas where birds may be taking off or landing regularly (APLIC, 1994, 2006). The position of the individual structures can also help reduce collisions. Faanes (1987), in an in-depth study in North Dakota, found that birds in flight tend to avoid the transmission line structures, presumably because such structures are visible from a distance. Instead, most appear to fly over the lines in the mid-span region. In areas where the transmission line passes between roosting and foraging areas, the structures can be placed in the center of the flyway (i.e., where the birds are more likely to fly) to increase their visibility, in addition to marking the wires.

Faanes (1987) reported that 97 percent of birds observed colliding with a power line did so with the ground (static) wire, largely because of attempts to avoid the conductors. Beaulaurier (1981) found that removal of the ground wire at two study sites in Oregon resulted in a reduction in collisions of 35 percent and 69 percent. However, since overhead static wires are installed on transmission lines for safety and reliability reasons, increasing the visibility of the static wire would be a better alternative, when necessary. Increasing the visibility of the wires by using markers such as orange aviation balls, black-and-white ribbons, or spiral vibration dampers, particularly at mid-span, can reduce the number of collisions. Beaulaurier (1981) reviewed 17 studies involving marking ground wires or conductors and found an average reduction in collisions of 45 percent when compared to unmarked lines.

Negative edge effects can be reduced through native revegetation of disturbed construction areas where necessary and appropriate for safe and reliable operation. Additionally, nest management through platform design (if required), equipment protection, and other physical disincentives to bird use and nesting can avoid negative impacts to birds and power reliability (APLIC, 2006).

In general, the greatest potential impact to wildlife typically results from the loss and fragmentation of woodland and wetland habitats. Woodlands, particularly, are relatively static environments that require greater regenerative time compared with rangeland or emergent wetlands. In most cases, wetlands and small waterbodies can be spanned with little or no resulting impact to wildlife. However, as previously noted, the amount of upland woodland/brushland or bottomland/riparian woodland crossed by any of the alternative routes and the amount of aquatic habitat being crossed is minimal. Therefore, the greatest potential to impact wildlife would be the length of the Alternative Routes, which would present the potential for wire strikes to both migrant and resident birds.

Regarding wildlife impacts, Route E has the least potential for impact because it is the shortest Alternative Route (19.91 miles), parallels the shortest distance within 100 feet of streams (approximately 0.20 mile), and crosses the second fewest streams (8). Generally, the shorter the line the less potential for bird mortality through collision with the structures or wires. Route H is the least desirable from a wildlife standpoint because it is the longest alternative route (29.00 miles), crosses the greatest distance of bottomland/riparian woodland (approximately 0.04 mile), and crosses the most streams (14).

4.1.4.4 Recreationally and Commercially Important Species

Construction of the proposed transmission line is not expected to have significant impacts on recreationally and commercially important species in the Study Area. Game species such as the white-tailed deer, mule deer (*Odocoileus hemionus*), mourning dove, and scaled quail (*Callipepla squamata*) are very mobile and will leave the immediate vicinity during the initial construction phase. Wildlife in the immediate area may experience a temporary loss of browse or forage vegetation during construction; however, the prevalence of similar habitats in adjacent areas will minimize the effect of the loss. The proposed Project would have little or no impact on game fish, waterfowl hunting, or recreational fishing, and no commercial fishing occurs in the Study Area.

4.1.4.5 Endangered and Threatened Species

No listed plant species are expected to be impacted by the proposed Project. Two federally endangered and three federally threatened plant species are listed as potentially occurring in Jeff Davis and Presidio Counties. In Texas, the Guadalupe fescue is only known to occur in Big Bend National Park in Brewster

County. Little Aguja pondweed is endemic to the Davis Mountains where it occurs in still or slowly flowing water of pools in intermittent creeks. Hinckley oak grows on Creosote bush – mariola or lechuguilla – sotol shrublands on arid limestone slopes at mid-elevations. Lloyd's mariposa cactus occurs in Chihuahuan Desert Shrublands on gravely or rocky limestone slopes (Poole et. al, 2007). Wright's (marsh) thistle has a current range that lies outside of Texas. The five federally listed plants would not be expected to occur in the Study Area due to their restricted range and a lack of records within the Study Area. Additionally, one State-listed threatened plant species, Livermore sweet-cicely, is included as occurring in Jeff Davis County; however, its range is restricted and lies outside of the Study Area. Project-related impacts to these plant species are unlikely.

According to USFWS (2023a) and TPWD (2023d), 11 Federal or State-listed endangered or threatened and one experimental population of fish species are of potential occurrence in Jeff Davis and Presidio Counties. They are the federally listed endangered Comanche Springs pupfish and Pecos gambusia; an experimental population of the Rio Grande silvery minnow; and the State-listed threatened Chihuahua shiner, Conchos pupfish, headwater catfish, Mexican stoneroller, Rio Grande chub, Rio Grande shiner, roundnose minnow, speckled chub, and Tamaulipas shiner. These species all have very restricted ranges that lie outside the Study Area or require habitat that doesn't occur within the Study Area. Additional aquatic species of potential occurrence in Jeff Davis and Presidio Counties include the federally endangered diminutive amphipod, phantom springsnail, phantom tryonia, and Texas hornshell, the federally proposed for listing endangered Mexican fawnsfoot and Salina mucket, and the State-listed threatened Limpia Creek springsnail, Metcalf's tryonia, and Presidio County springsnail. Due to the restricted range and lack of suitable habitat within the Study Area, none of these species is expected to occur within the Study Area. Additionally, any aquatic habitat is expected to be spanned to avoid impacts. Overall, the proposed transmission line Project should not adversely affect any endangered or threatened aquatic species.

The Mexican long-nosed bat, which prefers mountainous pine-oak habitats, is not expected to reside in the Study Area because of a lack of suitable habitat. The Study Area lies on the extreme western range of the tricolored bat and the species would only be expected as a rare vagrant. The black bear would only occur in the region as a transient or rare vagrant and would not be expected within the Study Area. The tawny-bellied cotton rat is not expected to reside in the Study Area because of a lack of suitable habitat. None of these mammal species listed as potentially occurring in the Study Area would be adversely affected by the Project.

The State-listed threatened Texas horned lizard and Trans-Pecos black-headed snake are the only terrestrial wildlife species of potential occurrence in the Study Area likely to occur as a permanent resident where potential habitat is present. These species could experience minor temporal disturbance during construction efforts; however, in many instances, potential habitat may be completely avoided, or otherwise spanned to avoid impacts. Overall, the proposed transmission line Project should not adversely affect these species.

The State-listed threatened Mexican Plateau mud turtle and the greater short-horned lizard would not be expected due to a lack of appropriate habitat; however, they may occasionally reside in the Study Area. If they occur in the Project workspace, they may be impacted to some extent by displacement resulting from the initial construction phases of the Project. These impacts would be short term, however, and are not expected to be significant.

The Mexican spotted owl occurs in forested mountain systems and sometimes steep rocky canyon lands. These habitat types do not exist within the Study Area. The southwestern willow flycatcher and western yellow-billed cuckoo require riparian habitat with dense willow and cottonwood stands, and the white-faced ibis requires significant aquatic habitat. None of these habitat types exist within the Study Area. The proposed transmission line Project is unlikely to result in adverse impacts to any of these species.

Avian species protected under the ESA that may migrate through the Study Area, such as the northern aplomado falcon, piping plover, red knot, and other bird species that receive protection under provisions of the BGEPA and the MBTA, such as the American peregrine falcon, common black hawk, gray hawk, and zone-tailed hawk, may be affected by the presence of transmission lines. These species may be susceptible to wire strikes. Larger birds are more prone to transmission line collisions because their large wingspans and lack of maneuverability make avoiding obstacles more difficult (APLIC, 1994). However, the normal flying altitudes of most migrant species are greater than the heights of the proposed transmission structures (Gauthreaux, 1978; Willard, 1978). Birds with keen eyesight, such as the American peregrine falcon, are likely to see obstructions such as transmission lines and avoid collisions (Thompson, 1978). Additionally, the Project will be designed following APLIC standards (APLIC, 2012), which will minimize the attractiveness of the structures for perching and nesting.

Monarch butterflies are likely to occur in the Study Area during fall and spring migration; however, any impacts on the species from the Project would be expected to be discountable and insignificant. Additionally, the monarch butterfly is currently listed as a candidate species, which does not provide protection under the ESA.

4.1.4.6 Critical habitat

No federally determined critical habitat has been designated in the Study Area for any endangered or threatened species. Therefore, no impact to critical habitat will occur as a result of the proposed Project.

4.2 Socioeconomic Impact

4.2.1 Impact on Social and Economic Factors

AEP Texas will use its own employees or contractors for the clearing and construction of the transmission line, but some short-term local employment would be generated. A portion of the Project wages would find its way into the local economy through purchases such as fuel, food, lodging, and possibly construction materials. ROW payments for the acquisition of private easements may be made to individuals whose lands are crossed by the transmission line, based on the land value. AEP Texas will also pay State and local taxes on purchases, as well as property tax on both acquired land and improvements made in the transmission line ROW. Permitting, design, and construction costs of the transmission line will be paid via revenue generated from electric transmission service.

Potential long-term economic benefits to the region and the State resulting from construction of this Project are based on the requirement that electric utilities provide an adequate and reliable level of power throughout their service areas. Economic growth and development rely heavily on adequate public utilities, including a reliable electrical power supply. Without this basic infrastructure, an area's potential for economic growth is constrained.

4.2.2 Impact on Community Values

Adverse effects upon community values are defined as aspects of the proposed project that would significantly and negatively alter the use, enjoyment, or intrinsic value attached to an important area or resource by a community. This definition assumes that community concerns are identified with the location and specific characteristics of the proposed transmission line and do not include possible objections to electric transmission lines in general.

Impacts on community values can be classified into two areas: (1) direct effects, or those effects that would occur if the location and construction of a transmission line results in the removal or loss of public access to a valued resource; and (2) indirect effects, or those effects that would result from a loss in the enjoyment or use of a resource due to the characteristics (primarily aesthetic) of the proposed line, structures, or ROW. Impacts on community values, whether direct or indirect, can be more accurately

gauged as they affect recreational areas or resources and the visual environment of an area (aesthetics). Impacts in these areas are discussed in detail in Sections 4.3.2 and 4.3.6 of this report, respectively.

4.3 Impact on Human Resources

4.3.1 Impact on Land Use

Land use impacts from transmission line construction are determined by the amount of land (of varying use) displaced by the actual ROW and by the compatibility of electric transmission line ROW with adjacent land uses. During construction, temporary impacts to land uses within the ROW could occur due to the movement of workers and materials through the area. Construction noise and dust, as well as temporary disruption of traffic flow, may also temporarily affect residents and businesses in the area immediately adjacent to the ROW. Coordination among AEP Texas, their contractors, and landowners regarding access to the ROW and construction scheduling would minimize these disruptions.

4.3.1.1 Habitable Structures

One of the most important measures of potential land use impact is the number of habitable structures located within a specified distance of a route centerline. Habitable structures are defined by 16 TAC § 25.101(a)(3) as:

> *Structures normally inhabited by humans or intended to be inhabited by humans on a daily or regular basis. Habitable structures include, but are not limited to, single-family and multifamily dwellings and related structures, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, churches, hospitals, nursing homes, and schools* (PUC, 2022).

Burns & McDonnell staff determined the number and distance of habitable structures located within 300 feet of the centerline of each primary alternative route using GIS software, interpretation of aerial imagery, and verification during field reconnaissance where possible. To account for the margin of error in horizontal accuracy of aerial imagery, Burns & McDonnell identified habitable structures located within 310 feet of the centerline of each Alternative Route.

Of the nine Alternative Routes being evaluated, Alternative Routes G and H have the fewest habitable structures located within 300 feet of their centerlines (34), followed by Alternative Route D (35), and Alternative Route I (36). By comparison, Alternative Routes A and C have the greatest number of habitable structures located within 300 feet of their centerlines with 50 and 52, respectively. Table 4-1 presents the number of habitable structures located within 300 feet of each Alternative Route. Table 6-2

through Table 6-10 provide the distance and direction of each habitable structure identified within 300 feet of the Alternative Routes. The locations of habitable structures listed in Table 6-2 through Table 6-10 are shown on Figure 2-2 (map pocket).

4.3.1.2 Utilizing/Paralleling Existing Transmission Line ROW

The least impact to land use generally results from building within existing transmission line ROW, followed by building parallel to existing transmission line ROW. Utilizing existing transmission line ROW of sufficient width usually eliminates the need for additional clearing. Additionally, building parallel to existing transmission line ROW, when compared to establishing a new ROW corridor, can also minimize the amount of ROW to be cleared, which generally results in the least amount of impact to landowners, the environment, and the overall aesthetic quality of that area. In fact, the factors listed by 16 TAC § 25.101(b)(3)(B) to be considered in the selection of alternative routes include:

- Whether the routes utilize existing compatible ROW, including the use of vacant positions on existing multiple-circuit transmission lines
- Whether the routes parallel existing compatible ROW
- Whether the routes parallel property lines or other natural or cultural features

For this Project, each Alternative Route will utilize existing transmission ROW from the Alamito Creek Substation. Alternative Route A utilizes 0.16 mile of existing transmission ROW, followed by Alternative Routes B and C (0.14 mile), and Alternative Routes D through I (0.12 mile).

Each Alternative Route also parallels existing transmission line ROW for this Project. Alternative Route E parallels the greatest length of existing transmission line ROW with 18.27 miles (91.8 percent of its total length), followed by Alternative Route F with 17.05 miles. Alternative Route H parallels the least amount of existing transmission line ROW with 1.67 miles.

4.3.1.3 Paralleling Other Existing Compatible ROW

Paralleling other existing compatible ROW (roads, highways, etc.) is also considered to be a positive routing criterion, one that usually results in fewer impacts than establishing a new ROW corridor within an area and is included in the PUC's transmission line certification criteria. In accordance with PUC Substantive Rule § 25.101(b)(3)(B), Burns & McDonnell identified existing compatible ROW for potential paralleling opportunities. In this respect, Alternative Route C parallels the greatest amount of other compatible ROW with approximately 11.55 miles, followed by Alternative Route I with approximately 9.39 miles. By comparison, Alternative Routes E, F, and G do not parallel any other compatible ROW.

4.3.1.4 Paralleling Property Lines

Another important land use and favorable routing criterion under PUC Substantive Rule § 25.101(b)(3)(B) is the length of property lines paralleled. In the absence of existing ROW to follow, paralleling property or fence lines minimizes disruption to agricultural activities and creates less of a constraint to the future development of a tract of land. Updated parcel data was obtained from the Jeff Davis and Presidio County Appraisal Districts for this routing purpose. Where contiguous tracts were under apparent common ownership, these parcels were aggregated and only those outside boundaries that were paralleled were counted for this category; interior parcel lines did not qualify in the count. Each Alternative Route was developed to parallel property lines where feasible, while avoiding other known constraints. Property lines created by existing compatible ROW (e.g., roadways, highways, railroads, etc.) are not double counted in the "Length of ROW parallel to property lines" criterion. Alternative Route G parallels the greatest length of property lines with 4.88 miles, while Alternative Routes D, E, and I do not parallel any apparent property lines.

4.3.1.5 Overall Length of Routes

Finally, the overall length of an Alternative Route can be an indicator of the relative level of land use impacts. Generally, all other things being approximately equal, the shorter the route, the less land is crossed, which would usually result in fewer potential impacts. Alternative Routes E and F are the shortest alternatives (approximately 19.91 miles and 20.26 miles, respectively). Alternative Routes G and H are the longest alternatives at approximately 27.50 miles and 29.00 miles, respectively. Table 4-1 at the end of this section presents the overall length for each Alternative Route.

4.3.2 Impact on Recreation

Potential impacts to recreational land would include the disruption or preemption of recreational activities. No Alternative Route crosses recreational land within the Study Area. However, each Alternative Route (Links 33 and 36) is located within 1,000 feet of the Fort Davis High School athletic field. Additionally, Routes A and C (Link 33) are located within 1,000 feet of the Jeff Davis County Park, and Alternative Route H (Link 9) is located within 1,000 feet of the Marfa Municipal Golf Course. Since the Alternative Routes are not located across any portion of the recreational areas, no interference with any potential recreational activities is anticipated. The Alternative Routes, however, could potentially have aesthetic impacts, which are discussed in Section 4.3.6.

4.3.3 Impact on Agriculture

Impacts to agricultural land uses can generally be ranked by degree of potential impact, with the least potential impact occurring in areas where grazing is the primary use (pasture or rangeland), followed by

cultivated cropland, with forested/wooded land (orchards, commercial timber, etc.) having the highest degree of impact.

None of the Alternative Routes for this Project cross cultivated cropland. Because rangeland constitutes the most substantial land use within the Study Area, each Alternative Route crosses rangeland for nearly their entire length. The length across grazing land/pastureland ranges from a high of 28.79 miles (Alternative Route H) to a low of 19.69 miles (Alternative Route E). Since the ROW for this project will not be fenced or otherwise separated from adjacent lands, no significant long-term displacement of grazing activities would occur. Most existing agricultural land uses may be resumed following construction.

None of the Alternative Routes cross lands with known above-ground mobile irrigation systems (rolling or pivot).

4.3.4 Impact on Transportation/Aviation

Potential impacts to transportation could include the temporary disruption of traffic and potential conflicts with proposed roadway or utility improvements. Increased traffic and congestion may also occur during the construction of the proposed Project. However, the Project would generate only minor construction traffic at any given time or location. This traffic would consist of construction employees' personal vehicles, truck traffic for material deliveries, trucks for structure foundation work, and mobile cranes for structure erection. Such impacts, however, are usually temporary and short-term. AEP Texas will obtain road crossing and access permits from TxDOT for any State-maintained roads or highways crossed by the approved route. Alternative Routes C through I do not cross any U.S. or State highways, while Alternative Routes A and B would cross SH 17 twice. None of the Alternative Routes cross FM roads.

According to FAA Part 77 regulations, Title 14 CFR § 77.9, notification of the construction of the proposed transmission line will be required if structure heights exceed the height of an imaginary surface extending outward and upward at a slope of 100 to 1 for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of a public or military airport having at least one runway longer than 3,200 feet. The FAA also requires notification if structure heights exceed a slope of 50 to 1 for a horizontal distance of 10,000 feet from the nearest runway of a public or military airport with no runway longer than 3,200 feet, and if structure heights exceed a 25 to 1 slope for a horizontal distance of 5,000 feet from landing and takeoff areas for heliports (FAA, 2011). Typical structure heights for this Project will range from approximately 70 to 100 feet, depending on location and design.

One FAA-registered public/military airport having at least one runway longer than 3,200 feet in length located within 20,000 feet of each primary alternative route. The Marfa Municipal Airport (FAA Identifier MRF) is located on the west side of SH 17 approximately 2.8 miles north of Marfa.

No FAA-registered public/military airport having a runway less than 3,200 feet was identified within 10,000 feet of the primary alternative routes, and no heliport was identified within 5,000 feet of the Alternative Routes.

Following PUC approval of a route for the proposed transmission line, AEP Texas will make a final determination of the need for FAA notification, based on specific route location and structure design. If required, a Notice of Proposed Construction or Alteration, FAA Form 7460-1, will need to be completed and submitted to the FAA Southwest Regional Office located in Fort Worth, Texas. The result of this notification and any subsequent coordination with the FAA could include changes in the line design or potential requirements to mark or light some structures.

One private airstrip, the MacGuire Ranch Airport (FAA Identifier 21TE), is located approximately 0.3 mile south of the Study Area with the nearest point of its runway approximately 7,031 feet south of each Alternative Route (Link 1).

The distance between each Alternative Route and the nearest point of the nearest runway was measured using GIS software and aerial imagery interpretation. Table 4-1 presents the number of airports, airstrips, and heliports for each of the alternative routes. Tables 6-2 through Table 6-10 provide a description of the distance and direction from the centerline of each Alternative Route. The locations of the Marfa Municipal Airport and the MacGuire Ranch Airport are shown on Figure 2-2 (map pocket).

4.3.5 Impact on Communication Towers

The proposed transmission line would not be expected to have a significant impact on electronic communications in the Study Area. No commercial AM radio transmitter is located within 10,000 feet of the Alternative Routes. Alternative Routes A, B, and C each have one communication tower (Big Bend Telecom, LTD) located within 2,000 feet of their centerlines. Alternative Routes D through I have no FM radio transmitter, microwave tower, or other electronic installation located within 2,000 feet of their centerlines. Figure 2-2 (map pocket) shows the location of the Big Bend Telecom, LTD communication tower, and Tables 6-2 through 6-4 present more-detailed information regarding distance and direction.

4.3.6 Impact on Aesthetics

Aesthetic impacts, or impacts upon visual resources, exist when the ROW, lines, or structures of a transmission line system create an intrusion into, or substantially alter the character of, an existing scenic view. The significance of the impact is directly related to the quality of the view, in the case of natural scenic areas, or to the importance of the existing setting in the use or enjoyment of an area, in the case of valued community resources and recreational areas.

It is virtually impossible for a new transmission line to have no visual impacts, and construction of the proposed 138-kV transmission line could have both temporary and permanent aesthetic effects. Temporary impacts would include views of the actual construction, including assembly and erection of the structures, and any clearing of the ROW. Where limited clearing is required, the brush and wood debris could have a temporary negative impact on the local visual environment. Permanent impacts from the Project would include the views of the structures and lines themselves, as well as views of cleared ROW from public viewpoints including roadways, recreational areas, and scenic overlooks.

To evaluate aesthetic impacts, field surveys were conducted to determine the general aesthetic character of the area and the degree to which the proposed transmission line would be visible from selected areas. These areas generally include those of potential community value, parks and recreational areas, and the state-maintained roadways that traverse the Study Area. Measurements were made to estimate the length of each Alternative Route that would fall within the foreground visual zone (FVZ) of recreational areas or major highways. A transmission line (structures and wires) is considered to be within the FVZ if it is visible (i.e., not obstructed by terrain, trees, buildings, etc.) within 0.5 mile of an observer. The determination of the visibility of the transmission line from various points was calculated using USGS maps, GIS software, and aerial imagery interpretation.

All the Alternative Routes have some portion located within the FVZ of State highways. Alternative Route H would have the least amount of ROW within the FVZ of State highways with approximately 2.36 miles, followed by Alternative Routes E, F, and G (approximately 5.54 miles each). Alternative Route I would have the greatest length of ROW within the FVZ of State highways with approximately 16.81 miles. Additionally, portions of all Alternative Routes would be within the FVZ of FM roads. The estimated length of ROW within the FVZ of FM roads ranges from a low of approximately 1.51 miles (Alternative Routes D, E, F, G, and I) to a high of approximately 2.13 miles (Alternative Route H).

All of the Alternative Routes would also have some portion located within the FVZ of recreational areas. Alternative Route H would have the greatest length of ROW located within the FVZ of recreational areas

(3.01 miles), followed by Alternative Routes A and C (2.74 miles). Alternative Routes B, D, E, F, G, and I would each have approximately 2.40 miles of ROW located within the FVZ of recreational areas.

4.4 Impact on Cultural Resources

Construction activity has the potential for adversely impacting cultural resource sites. Although this transmission line project is currently being conducted without the need for Federal funding, permitting, or assistance, Federal guidelines established under Section 106 of the National Historic Preservation Act of 1966, as amended, provide useful standards for considering the severity of possible direct and indirect impacts. According to the Secretary of the Interior's Guidelines for protection of historical and archeological resources (36 CFR 800), adverse impacts may occur directly or indirectly when a project causes changes in archeological, architectural, or cultural qualities that contribute to a resource's historical or archaeological significance.

4.4.1 Direct Impacts

Direct impacts include actions that physically damage or alter an archeological site, historically significant building, structure, object, district, or other cultural resource. Typically, these impacts occur during the construction phase of a transmission line project and can result from actual placement of tower locations and lines as well as from activities associated with construction, including clearing vegetation and vehicular and heavy machinery traffic. Archeological sites, which can be surficial or shallowly buried, are particularly sensitive to these impacts.

Historically significant buildings, structures, objects, districts and other landscape-related resources within or adjacent to the Study Area can be directly affected by construction activities. These effects can include direct impacts to the resources themselves via physical destruction or damage, or impacts to their character-defining features, including changes to the overall character of the property's use or alteration of physical features within the property's setting that contribute to its historical significance.

Direct impacts to cemeteries require compliance with the Texas Health and Safety Code, as amended. These rules and regulations are available in Title 13, Part 2, Chapter 22, Rule §22.5 of the TAC. The marked boundaries of historic-age cemeteries are notorious for shifting over time because of several factors including abandonment, the removal or disintegration of headstones or other markers, and the encroachment of new developments. This boundary ambiguity can result in unmarked burials being unintentionally or intentionally excluded from current cemetery boundaries. To limit the potential for a project to impact unmarked burials, the THC recommends all construction projects, including ground

disturbance within 25 feet of a known cemetery boundary, be surveyed in advance by an archeologist for evidence of possible burials within proposed construction areas.

4.4.2 Indirect Impacts

Indirect impacts can include the introduction of visual, atmospheric, or audible elements that diminish the integrity of a property's significant historic features. Often, indirect impacts affect cultural resources located outside of the immediate Study Area and frequently relate to a resource's overall integrity of setting, feeling, or association. Such impacts may include landscape alteration or changes in land use patterns, the introduction of air pollution, increased traffic, or changes in population density. Historic landscapes, buildings, structures, objects, and districts are common resources affected by indirect impacts.

4.4.3 Mitigation

The preferred form of mitigation for impacts to cultural resources is avoidance. Alternative forms of mitigation for direct impacts can be developed for archeological and historical sites and properties through the implementation of an appropriate data recovery program. Indirect impacts to historically significant properties and landscapes can be lessened through careful design choices and landscaping considerations. In some situations, the relocation of historic structures may be another possible form of mitigation.

4.4.4 Summary of Cultural Resource Impacts

The Study Area contains areas with a high probability of containing cultural resource sites; therefore, the proposed transmission line construction does have the potential to impact previously unrecorded cultural resource sites. To assess this potential, areas with a high probability of containing cultural resources (HPAs) were identified along the Alternative Routes. An HPA is an area considered to have a high potential for containing previously unrecorded cultural resources. When identifying HPAs, the topography and the availability of water and subsistence resources are taken into consideration, as well as the effects of geological processes on archeological deposits. Locations that are usually identified as HPAs for the occurrence of prehistoric sites include water crossings, stream confluences, drainages, alluvial terraces, wide floodplains, playa lakes, upland knolls, and areas where lithic or other subsistence resources could be found. Historic sites would be expected adjacent to historic roadways or railways and in areas where structures appear on historic-age maps. HPAs for the Project were identified on TxDOT's Potential Archeological Liability Maps (PALM). A detailed investigation of the Alternative Routes was not performed by an archeologist. Therefore, some of the designated HPAs (as well as the direct and indirect impacts) may change if field archeologists conduct a visual reconnaissance or survey the selected route.

The results of the background review identified numerous archeological sites and historic age non-archeological resources within the Study Area. However, the background review indicated the majority of the Study Area has not been previously surveyed for cultural resources. Additionally, the THC requested an archeological survey of the selected route and documentation of any buildings 45 years or older within the Project because of the multiple previously recorded resources within the Study Area and high potential for additional undocumented resources (see Section 5.1, Correspondence with Agencies and Officials and Appendix A).

The Alternative Routes for the Project are made up of unique combinations of 41 links that comprise nine Alternative Routes. Each Alternative Route was individually examined for the number and type of previously recorded cultural resources that are either crossed by or located within 1,000 feet of the proposed ROW and for the approximate amount of HPA delineated along each of the Alternative Routes. During the background review, one previously recorded archeological site, 41JD187, was identified within 1,000 feet of Alternative Routes G and H. The site does not have an NRHP eligibility determination listed on the TASA, but the site form indicates the site has research potential and contains features, including a stacked stone structure, a cairn or possible burial, and a possible teepee ring. No other previously recorded cultural resources sites were identified within 1,000 feet of any of the Alternative Routes. Alternative Routes G, A, and B cross the greatest length of HPA with approximately 12.94 miles, 12.63 miles, and 12.42 miles, respectively. Alternative Route D (8.36 miles) crosses the least amount of HPA, followed by Alternative Route I with 9.22 miles and Alternative Routes E and F with approximately 9.41 miles of HPA each. Table 4-1 presents the number of cultural resource sites and the length of HPA for each Alternative Route.

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Table 4-1: Environmental Data for Alternative Route Evaluation (by Route) Alamito Creek to Fort Davis 138-kV Transmission Line Project

		Route A	Route B	Route C	Route D	Route E	Route F	Route G	Route H	Route I
Land Use										
1	Length of Alternative Route	25.78	26.02	22.05	21.57	19.91	20.26	27.50	29.00	22.28
2	Number of habitable structures[a] within 300 feet[b] of ROW centerline	52	45	50	35	37	42	34	34	36
3	Length utilizing existing transmission line ROW	0.16	0.14	0.14	0.12	0.12	0.12	0.12	0.12	0.12
4	Length of ROW parallel to existing transmission line ROW	6.94	9.03	6.94	12.31	18.27	17.05	14.21	1.67	9.23
5	Length of ROW parallel to other existing compatible ROW (roads, highways, railways, etc. - excluding oil and gas pipelines)	7.20	5.17	11.55	5.61	0	0	0	0.27	9.39
6	Length of ROW parallel to property lines (not following existing ROW)[c]	4.30	4.11	0.06	0	0	1.42	4.88	4.31	0
7	Sum of evaluation criteria 3, 4, 5, and 6	18.60	18.45	18.69	18.04	18.39	18.59	19.21	6.37	18.74
8	Percent of evaluation criteria 3, 4, 5, and 6	72.15	70.91	84.76	83.63	92.37	91.76	69.85	21.97	84.11
9	Length of ROW across parks/recreational areas[d]	0	0	0	0	0	0	0	0	0
10	Number of additional parks/recreational areas[d] within 1,000 feet of ROW centerline	2	1	2	1	1	1	1	2	1
11	Length of ROW across cropland	0	0	0	0	0	0	0	0	0
12	Length of ROW across pastureland/rangeland	25.33	25.64	21.81	21.37	19.69	20.06	27.29	28.79	22.07
13	Length of ROW across cropland or pastureland with mobile irrigation systems	0	0	0	0	0	0	0	0	0
14	Length of ROW parallel to pipeline ROW (less than 500 feet from route centerline)[e]	4.17	5.77	4.17	8.75	14.6	13.38	7.25	0.97	5.77
15	Number of pipeline crossings	3	3	3	5	5	5	5	3	3
16	Number of transmission line crossings	7	7	7	6	6	6	4	2	4
17	Number of U.S. and State highway crossings	2	2	0	0	0	0	0	0	0
18	Number of FM/RM road crossings	0	0	0	0	0	0	0	0	0
19	Number of FAA-registered public/military airfields[f] within 20,000 feet of ROW centerline (with runway >3,200 ft)	1	1	1	1	1	1	1	1	1
20	Number of FAA-registered public/military airfields[f] within 10,000 feet of ROW centerline (with runway <3,200 ft)	0	0	0	0	0	0	0	0	0
21	Number of private airstrips within 10,000 feet of ROW centerline	1	1	1	1	1	1	1	1	1
22	Number of heliports within 5,000 feet of ROW centerline	0	0	0	0	0	0	0	0	0
23	Number of commercial AM radio transmitters within 10,000 feet of ROW centerline	0	0	0	0	0	0	0	0	0
24	Number of FM radio transmitters, microwave towers, and other electronic installations within 2,000 feet of ROW centerline	1	1	1	0	0	0	0	0	0
Aesthetics										
25	Estimated length of ROW within foreground visual zone[g] of U.S. and State highways	13.21	14.09	15.91	12.17	5.54	5.54	5.54	2.36	16.81
26	Estimated length of ROW within foreground visual zone[g] of FM/RM roads	1.79	1.66	1.66	1.51	1.51	1.51	1.51	2.13	1.51
27	Estimated length of ROW within foreground visual zone[g] of parks/recreational areas[d]	2.74	2.40	2.74	2.40	2.40	2.40	2.40	3.01	2.40
Ecology										
28	Length of ROW through upland woodland/brushland	0	0.20	0	0.20	0.20	0.20	0.20	0.20	0.20
129	Length of ROW through bottomland/riparian woodland/brushland	0	0.02	0	0.02	0.02	0.02	0.04	0.04	0.02
30	Length of ROW across potential wetlands[h]	0	0	0	0	0	0	0	0	0
31	Length of ROW across known occupied habitat of federally listed endangered or threatened species	0	0	0	0	0	0	0	0	0
32	Number of stream crossings	11	13	6	8	8	8	11	14	8
33	Length of ROW parallel (within 100 feet) to streams	0.80	0.37	0.55	0.20	0.20	0.20	0.57	0.36	0.20
34	Length of ROW across open water (ponds, lakes, etc.)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0	0.01
35	Length of ROW across 100-year floodplains	1.33	1.03	1.42	1.18	1.50	1.50	1.43	1.11	1.12
Cultural Resources										
36	Number of cemeteries within 1,000 feet of ROW centerline	0	0	0	0	0	0	0	0	0
37	Number of recorded cultural resource sites crossed by ROW	0	0	0	0	0	0	0	0	0
38	Number of additional recorded cultural resource sites within 1,000 feet of ROW centerline	0	0	0	0	0	0	1	1	0
39	Number of NRHP-listed or determined-eligible sites crossed by ROW	0	0	0	0	0	0	0	0	0
40	Number of additional NRHP-listed or determined-eligible sites within 1,000 feet of ROW centerline	0	0	0	0	0	0	0	0	0
41	Length of ROW crossing areas of high archeological/historical site potential	12.63	12.42	9.68	8.36	9.41	9.41	12.94	11.81	9.22

Note: all length measurements in miles except for criterion #8, which is expressed as a percentage.

(a) Single-family and multi-family dwellings and related structures, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, churches, hospitals, nursing homes, schools, or other structures normally inhabited by humans or intended to be inhabited by humans on a daily or regular basis.

(b) Due to the potential inaccuracies of the aerial photography and data utilized, all habitable structures within 310 feet have been identified.

(c) Property lines created by existing road, highway, or railroad ROW are not double counted in the "Length of ROW parallel to property lines" criterion.

(d) Defined as parks and recreational areas owned by a governmental body or an organized group, club, or church.

(e) Not included in length of route parallel to compatible ROW.

(f) As listed in the Chart Supplement South Central U.S. (FAA, 2022a, formerly known as the Airport/Facility Directory South Central U.S.) and FAA (2022b).

(g) One-half mile, unobstructed.

(h) As mapped by the USFWS NWI.

Route	Links
A	1-2-4-6-7-8-11-12-16-VT2-21a-20a-19-33-36
B	1-2-5-6-7-8-11-12-16-VT2-21a-20a-19-32-34-35-36
C	1-2-5-6-7-8-11-12-16-VT2-21a-20a-20b-20c-29-33-36
D	1-3-7-8-11-12-16-VT2-21a-21b-21c-20c-28-30-34-35-36
E	1-3-7-8-11-12-16-VT2-21a-21b-21d-23-27-30-34-35-36
F	1-3-7-8-11-12-16-VT2-21a-21b-21d-24-26-27-30-34-35-36
G	1-3-7-8-11-13a-VT1-VT2-13b-17-22-25-26-27-30-34-35-36
H	1-3-7-9-17-18-VT2-22-31-35-36
I	1-3-7-8-11-12-16-VT2-21a-20a-20b-20c-29-32-34-35-36

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5.0 PUBLIC INVOLVEMENT ACTIVITIES

5.1 Correspondence with Agencies and Officials

Burns & McDonnell contacted the following Federal, State, and local agencies and officials by letter in July 2019 to solicit comments, concerns, and information regarding potential environmental impacts, permits, or approvals for the construction of the proposed single-circuit 138-kV transmission line within the Study Area. A map of the Study Area was included with each letter. A second letter was sent to these same agencies in October 2023. An example of the letters and copies of the responses received are included in Appendix A (Agency Correspondence).

Federal

- Federal Emergency Management Agency (FEMA)
- Natural Resources Conservation Service (NRCS)
- U.S. Fish and Wildlife Service (UFWS)
- U.S. Army Corps of Engineers (USACE), Albuquerque District
- Environmental Protection Agency (EPA)
- Federal Aviation Administration (FAA)
- National Park Service (NPS)
- Department of Defense (DoD) Military Aviation and Installation Assurance Siting Clearinghouse

State

- Texas Parks and Wildlife Department (TPWD)
- TPWD, Wildlife Habitat Assessment Program
- Texas General Land Office (GLO)
- Texas Commission on Environmental Quality (TCEQ)
- Texas Historical Commission (THC)
- Texas Water Development Board (TWDB)
- Texas Department of Transportation (TxDOT), El Paso District
- TxDOT, Aviation Division
- TxDOT, Environmental Affairs Division
- Railroad Commission of Texas (RRC)
- Rio Grande Council of Governments

County

- Jeff Davis County Judge

- Jeff Davis County Precinct 1 Commissioner
- Jeff Davis County Precinct 2 Commissioner
- Jeff Davis County Precinct 3 Commissioner
- Jeff Davis County Precinct 4 Commissioner
- Jeff Davis County Underwater Conservation District
- Brewster-Presidio-Jeff Davis County Farm Service Agency
- Presidio County Judge
- Presidio County Precinct 1 Commissioner
- Presidio County Precinct 2 Commissioner
- Presidio County Precinct 3 Commissioner
- Presidio County Precinct 4 Commissioner
- Presidio County Underwater Conservation District

Other Local Jurisdictions

- City of Marfa – Mayor
- Superintendent – Marfa Independent School District (ISD)
- Superintendent – Fort Davis ISD
- Superintendent – Valentine ISD
- The Nature Conservancy (TNC)
- Texas Agricultural Land Trust
- Texas Land Conservancy
- Texas Land Trust Council

As of the date of this document, written replies to the letters sent on July 3, 2019, have been received from the following: FAA, FEMA, NRCS, DoD, NPS, GLO, RRC, THC, TPWD, and Brewster-Presidio-Jeff Davis County Farm Service Agency. Copies of all responses are included in Appendix A. Written replies to the letters sent on October 10, 2023, have been received from the following: FAA, FEMA, NRCS, DoD, GLO, THC, TPWD, and TxDOT. In addition to letters sent to the agencies in July 2019 and the follow-up letters in October 2023, Burns & McDonnell reviewed the NDD Element Occurrence Records from the TPWD, Information for Planning and Consultation (IPaC) from the USFWS, and TASA (through TARL and the THC) to verify or update cultural and natural resource records for the Study Area. All agency comments, concerns, and information received were taken into consideration by Burns & McDonnell and AEP Texas in the preparation of this EA and in the evaluation of the alternative routes. Additionally, the information received from the agencies will be taken into consideration by AEP

Texas before and during construction of the Project. The following is a summary of the comments provided by Federal, State, and local officials that have responded as of this writing.

- The FAA responded via email dated July 8, 2019, stating that if any construction or alterations may affect navigable airspace, FAA Form 7460-1 (Notice of Proposed Construction or Alteration) must be filed electronically. AEP will coordinate with the FAA as necessary once a route is approved for construction. The FAA responded to the October letter via email dated October 30, 2023, stating that once the project coordinates are submitted, the Obstruction Evaluation Group will check to ensure that there is no conflict with aviation safety.

- The FEMA responded with a letter dated July 16, 2019, requesting that the community floodplain administrator be contacted for the review and possible permit requirements for the Project, and if federally funded, the agency requested the Project comply with EO11988 and EO11990. The agency also provided contact information for both the Jeff Davis County Judge and the Presidio County Road and Bridge Supervisor. FEMA provided a similar response to the October 2023 letter on October 30, 2023.

- The NRCS responded with a letter dated July 28, 2019, stating that the Study Area does not involve a USDA-NRCS Wetland Reserve Easement (WRE), a component of the Agricultural Conservation Easement Program (ACEP). The major concerns within the Study Area involve depth to restrictive layer. The agency included two Custom Soil Resources Reports for the Study Area, one for each county, which included the soil physical and chemical properties and additional restrictions. The agency stated that the major concerns with the Study Area involve depth to restrictive layer and recommended the use of approved erosion control methods. In its response on October 20, 2023, to the October 2023 letter, the NRCS again mentioned the restrictive layer and again provided two Custom Soil Resources Reports for the Study Area, one for each county.

- The DoD Military Aviation and Installation Assurance Siting Clearinghouse responded with a letter dated August 7, 2019, stating that the transmission line Project will have minimal impact on military operations conducted in the area. The DoD provided a similar response to the October 2023 letter on December 1, 2023.

- The NPS responded with a letter dated September 4, 2019, noting that portions of Fort Davis National Historic Site, which is also a National Historic Landmark (NHL), are located within the Study Area.

- The GLO responded with a letter dated July 11, 2019, stating that it does not appear to have any environmental issues or land use constraints associated with the project. A follow-up phone call was conducted between the GLO's Right-of-Way Manager of Leasing Operations and Burns & McDonnell on July 19, 2019, to discuss land classifications and whether GLO lands occurred in the Study Area, of which they did not. GLO provided a similar response to the October 2023 letter on October 17, 2023.

- The RRC responded with a letter dated July 19, 2019, and provided a website address for the agency's GIS information concerning existing oil and gas well and pipeline locations. The RRC also provided contact information for oil and gas drilling permits and for pipelines.

- The THC responded with a letter dated July 19, 2019, stating that multiple, previously recorded archeological sites, including NRHP-listed properties and cemeteries, have been identified within or in the immediate vicinity of the Study Area. The agency also stated that much of the Study Area has never been surveyed and recommended that the final proposed route be surveyed by a professional archeologist. The THC responded to the October 2023 letter on November 1, 2023, stating that an archeological survey is required.

- The TPWD responded with a letter dated August 14, 2019, providing a list of species that could be impacted by the proposed Project if suitable habitat is present. The agency provided a list of regulations pertaining to the Project and recommendations on how to comply with these regulations. TPWD also provided information and recommendations for conservation easements, managed areas, water resources, the MBTA, and EMST. The TPWD also responded with a letter dated March 25, 2022, updating the previous response. In addition to the above, TPWD also provided information and recommendations for International Dark Skies Designation/Lighting. Responding on November 10, 2023, to the October 2023 letter, TPWD stated that the recommendations provided in the 2019 and 2022 comment letters remain applicable and had no additional comments.

- Although it did not respond to the July 2019 letter, TxDOT responded to the October 2023 letter on October 25, 2023, stating that there are no responsive documents to the request and provided contact information related to permits, easements, or other approvals.

- The Brewster-Presidio-Jeff Davis County Farm Service Agency responded with a letter dated July 16, 2019, stating that to the agency's knowledge no permits, easements, etc. that need the Farm Service Agency's approval are required.

Although letters were sent to the USFWS on July 3, 2019 and October 10, 2023, this agency often no longer responds to such letters but instead requests that the applicant use IPaC on its website. Burns & McDonnell accessed IPaC several times during the development of this document, the latest of which was September 19, 2023, to request an Official Species List, which also generates an official consultation response letter and tracking number. IPaC generated a list identifying federally threatened, endangered, and proposed to be listed species; designated critical habitat; and candidate species that may occur within Jeff Davis and Presidio Counties. The IPaC response letter also provided definitions of the affected determinations and referenced the MBTA and BGEPA. A copy of the response letter generated by IPaC is included in Appendix A.

5.2 Public Involvement Program

Because of the COVID-19 pandemic, AEP Texas was unable to hold an in-person open-house public meeting in the fall of 2021 in the Study Area for its proposed Project. Instead, AEP Texas presented a virtual town-hall meeting via Webex Live to the public on November 9, 2021; however, due to technical difficulties and landowner comments, it was decided that in-person public meetings would need to be held at a future date. Additionally, AEP Texas developed a Project website (AEPTexas.com/AC-FD) to provide Project-related information to landowners.

5.2.1 Landowner Invitation Packet

An informational packet was mailed to landowners within 300 feet of the preliminary link centerlines on October 19, 2021, inviting them to participate in the virtual town-hall meeting held November 2, 2021, from 6:00 to 7:30 p.m.; however, a second letter was mailed on October 25, 2021, stating that the date of the virtual town-hall meeting had been changed to November 9, 2021. Additionally, the DoD Military Aviation and Installation Assurance Siting Clearinghouse was also provided notice of the presentation on October 19, 2021. Unfortunately, due to technical difficulties during the November 9, 2021, virtual town-hall meeting, some attendees were unable to participate.

A total of 111 invitation packets were mailed to landowners for the virtual town-hall meeting. The invitation packet included an invitation letter with the Project website (AEPTexas.com/AC-FD), a map identifying preliminary transmission line links, a list of frequently asked questions, and a questionnaire with a self-addressed stamped return envelope. An example of the invitation letter and a copy of the attachments are provided in Appendix B (Public Involvement).

5.2.2 Project Website

The Project website (AEPTexas.com/AC-FD) includes an interactive map of the preliminary

alternative links and end points, and tab to a recorded virtual open house that includes the following topics:

- How the System Works
- Project Need and Benefits
- Project Map
- Project Timeline
- Environmental and Land Use Criteria
- Agencies Contacted
- Routing Process
- Project Review Process
- ROW Activities
- Construction Process

5.2.3 Virtual Town-Hall Meeting

The virtual town-hall meeting was presented via Webex Live with a formal presentation in a speaker-audience format followed by a question-and-answer session with a panel. The panelists included representatives from AEP Texas, Right of Way Service, Inc. (an AEP transmission ROW vendor), and Burns & McDonnell (environmental/routing consultant) to answer questions the participants may have about the Project. The virtual town-hall meeting included a PowerPoint presentation about the Project and an overview of the website content. To encourage interactions and participation, the WebEx chat feature was enabled throughout the virtual meeting and microphones of the call-in participants were unmuted during the question and answering session. Of the 111 landowners invited, approximately 20 logged on to view the presentation.

The virtual town-hall meeting was intended to solicit comments and input from citizens and landowners concerning the proposed Project. In addition to gathering public input, the virtual town hall had the following objectives:

- Promote a better understanding of the proposed Project, including the purpose, need, potential benefits and impacts of the proposed transmission line, and the PUC regulatory process
- Inform the public regarding the routing procedure, schedule, and decision-making process
- Ensure that the decision-making process accurately identifies and considers the values and concerns of the public and community leaders

At the end of the meeting, participants were encouraged to review the material on the website, and to submit the questionnaire online or through the mail. Due to technical difficulties encountered during the

virtual town-hall meeting, and landowner input and comments received from the virtual town-hall meeting, AEP decided that in-person public meetings would be held.

5.2.4 In-Person Open-House Public Meetings

An additional informational packet was mailed to landowners within 300 feet of the preliminary link centerlines on December 29, 2021, inviting them to the participate in the in-person open-house public meetings. Two in-person open-house public meetings were held by AEP Texas for the proposed Alamito Creek to Fort Davis 138-kV transmission line project. The meetings took place at the Dirks-Anderson Elementary School Gym in Fort Davis, Texas, on January 19, 2022, from 6:00 to 7:30 pm and at the Marfa Activities Center in Marfa, Texas, on January 20, 2022, from 6:00 to 7:30 pm. A total of 111 notice letters for the in-person open-house meetings were sent by first class mail to individuals and entities listed on the current county tax rolls as an owner of land located within 300 feet of the preliminary route links. The invitation letter and other pertinent open-house meeting information can be found in Appendix B. The meetings were intended to solicit comments from landowners, citizens, and public officials concerning the proposed project. The in-person meetings had the same objectives as the virtual town-hall meeting. Rather than a formal presentation in a speaker-audience format, the meetings were held in an open-house format. AEP Texas representatives and Burns & McDonnell staff set up several information stations around the meeting room. Each station was devoted to a particular aspect of the routing study and was manned by AEP Texas representatives or Burns & McDonnell staff. Large displays of maps, illustrations, and text explaining each topic were presented at the stations. Several computer stations were also available that provided an opportunity for attendees to view enlargements of their properties and enter information. Interested citizens and property owners were encouraged to visit each station in a particular order so that the entire process and general Project development sequence could be explained clearly. The open-house/information-station format is advantageous because it allows attendees to process information in a more relaxed manner and allows them to focus on their areas of interest and ask specific questions. More importantly, the one-on-one discussions with AEP Texas representatives and Burns & McDonnell staff encourage more interaction from those citizens who might be hesitant to participate in a speaker-audience format.

At the first station, visitors signed in and were provided with questionnaires to fill out, along with a map for reference. The questionnaire solicited comments on landowner and citizen concerns as well as an evaluation of the information presented at the meetings. A sample copy of the questionnaire provided at the in-person open-house meetings is included in Appendix B. Completed questionnaires were received by AEP Texas either at the meetings or later by mail.

A total of 36 citizens/landowners signed in at the in-person open-house public meetings (21 on Wednesday, January 19, and 15 on Thursday, January 20). A total of twenty-three completed questionnaires were received by AEP Texas following the virtual and in-person meetings.

5.2.5 Questionnaire Results

Two slightly different questionnaires were provided for the virtual town-hall meeting and the in-person open-house public meetings. The questionnaires solicited comments on landowner and citizen concerns as well as an evaluation of the information presented during the presentation. A blank copy of each questionnaire is included in Appendix B. Nine completed virtual town-hall meeting questionnaires and 14 in-person open-house public meeting questionnaires were received by AEP Texas. However, not all respondents answered every question, nor did all persons who viewed the presentation or attended an open-house meeting complete a questionnaire. The following is a summary of questionnaire responses received by AEP Texas.

Nine questions were asked on the virtual town-hall meeting questionnaire, while two additional questions were asked for a total of 11 questions on the in-person open-house public meeting questionnaire. Question 1, on both questionnaires, asked if respondents had viewed the Project information on the AEP Texas website at AEPTexas.com/AC-FD. Fourteen respondents (61 percent) indicated they had, and seven respondents (30 percent) indicated they had not. The remaining two respondents (9 percent) did not provide a response to this question.

Question 2 on the in-person open-house public meeting questionnaire asked if the respondent had attended the in-person open-house public meeting on January 19, 2022, in Fort Davis and Question 3 on the in-person open-house public meeting questionnaire asked if the respondent had attended the in-person open-house public meeting on January 20, 2022, in Marfa. Eight of the 14 respondents (57 percent) answered "yes" and 4 (28 percent) answered "no" to attending the in-person open-house public meeting on January 19, 2022, in Fort Davis, while 4 of the 14 respondents (28 percent) answered "yes" and five (36 percent) answered "no" to attending the in-person open-house public meeting on January 20, 2022, in Marfa. Question 2 on the virtual town-hall meeting questionnaire asked if the respondent planned to or had viewed/participated in the virtual town-hall meeting on November 2, 2021 (which was changed to November 9, 2021). Five of the nine respondents (56 percent) answered "yes;" the other four answered "no."

Question 4 on the in-person open-house public meeting questionnaire (Question 3 on the virtual town-hall meeting questionnaire) asked respondents if the following three subjects had been explained adequately:

the regulatory process at the Public Utility Commission; the purpose and need for the transmission project; and the process to develop proposed routing links. Twenty-one of the 23 respondents (91 percent) said that the regulatory process at the Public Utility Commission had been explained adequately, while two did not respond. Twenty of the 23 respondents (87 percent) said that the purpose and need for the transmission project had been explained adequately, one said that it had not been explained adequately, and two did not respond. Nineteen of the 23 respondents (83 percent) said that the process to develop proposed routing links had been explained adequately, one said that it had not been explained adequately, and three did not respond.

Question 5 on the in-person open-house public meeting questionnaire (Question 4 on the virtual town-hall meeting questionnaire) asked respondents to say what they did not understand in the previous question (Question 4 on the in-person open-house public meeting questionnaire and Question 3 on the virtual town-hall meeting questionnaire) and to say how AEP Texas could improve this explanation. Eleven respondents (48 percent) answered this question, with individuals commenting on different issues, including getting the virtual site up and running properly; providing more information than was provided in the informational packet; providing a better understanding of preliminary links and proposed routing links and routes; how the final route would be decided; and where the existing line was located. Other comments included thanking those helping to explain the Project, political justice issues, and not wanting more transmission line poles located in the area.

Question 6 on the in-person open-house public meeting questionnaire (this question was not on the virtual town-hall meeting questionnaire) asked respondents if they believed the public open-house format and the information that was provided was helpful for understanding the transmission line project. Eleven of the 14 respondents (79 percent) answered "yes" to both parts of the question, while 3 (21 percent) did not respond.

Question 7 on the in-person open-house public meeting questionnaire (Question 5 on the virtual town-hall meeting questionnaire) presented respondents with 13 factors that are considered in the routing of a transmission line project and asked them to rate each factor on a scale of 1 to 5 from not important (1) to very important (5). Twenty-one of the 23 respondents (91 percent) rated the factors; however, not all these respondents rated all the factors. The average rating for each factor (in descending order of importance) is as follows:

- Maximize distance from residences, businesses, and schools – 4.6
- Minimize visibility of the line – 4.4

- Minimize impacts on streams and rivers – 4.2
- Minimize impacts to archaeological and historic sites – 4.2
- Maximize length along property boundary lines – 4.1
- Minimize loss of trees – 4.1
- Maximize distance from parks and recreational facilities – 4.0
- Maximize length along existing transmission lines – 3.9
- Minimize length through wetlands/floodplains – 3.8
- Minimize length through grassland or pasture – 3.7
- Maximize length along highways or other roads – 3.7
- Minimize length across cropland – 3.6
- Minimize total length of line (reduces cost of line) – 3.3

For Question 8 on the in-person open-house public meeting questionnaire (Question 6 on the virtual town-hall meeting questionnaire), respondents were asked if they wanted to comment on the factors listed in the previous question (Question 7 on the in-person open-house public meeting questionnaire and Question 5 on the virtual town-hall meeting questionnaire) or add any additional factors they think should be considered. Twelve of the 23 respondents (52 percent) respondents had comments, including that the route should run along roads and highways as much as possible; away from properties and homes as much as possible in a manner to reduce visibility and eye pollution and to not hurt property values; mitigating erosion; and reseeding disturbed areas with native grass seed.

Question 9 on the in-person open-house public meeting questionnaire (Question 7 on the virtual town-hall meeting questionnaire) asked if there were any other features in the Study Area that respondents felt were important and to describe them/mark them on a map. Six of the 23 respondents (26 percent) had comments, stating their concerns for the viewshed, loss of pronghorn habitat, impacts on the research involved at the Dixon Water Foundation's Mimms Unit Ranch, and that using the existing route would be the best solution.

Question 10 on the in-person open-house public meeting questionnaire (Question 8 on the virtual town-hall meeting questionnaire) asked that if respondents had a concern with a particular transmission line link shown on the map, to identify the link and to describe their concern. Sixteen of the 23 respondents (70 percent) respondents provided links (7, 8, 9, 10, 11, 12, 13, 17, 18, 19, 20, 21, 22, 23, 24, 27, 30, 34, 35, and all links) and had comments, stating their concerns for the proximity to their residence; obstruction of viewsheds; loss of bird and pronghorn habitat; disturbance of archaeological sites, vegetation, and the ecosystem; and problems with erosion.

Question 11 on the in-person open-house public meeting questionnaire (Question 9 on the virtual town-hall meeting questionnaire) asked respondents to check all situations that applied to them. The question also asked to specify which potential link would be near their home or business or crossing respondent's land. Additionally, it asked that if the respondent's land is cultivated, was all or some of the land being cultivated, and if the land was being irrigated, was it by a travelling system or by gravity feed. Eighteen of the 23 respondents (78 percent) provided information and numerous respondents checked more than one situation.

- Eleven respondents (48 percent) said that a potential link was near their home. All 11 respondents identified one or more links (Links 7, 8, 9, 10, 11, 12, 13, 17, 18, 20, 21, 22, 23, and 24).
- Four respondents (17 percent) said that a potential link was near their business, but only two identified the links (Link 10 and all the links) and one identified the substation near Fort Davis school.
- Twelve respondents (52 percent) said that a potential link crosses their land, and all identified one or more links (Links 7, 8, 9, 10, 11, 12, 13, 17, 18, 20, 21, 22, 23, 24, and all the links).
- Three respondents (13 percent) said that their property was cultivated. Although the respondents did not respond whether all or part of their land was cultivated, two said that the cultivated property was irrigated by travelling system and one responded that it was irrigated by gravity feed.

Respondents were also given the opportunity to provide additional comments. Five of them did. The first respondent stated that Link 10 bisects the entire Dixon Water Foundation Mimms Unit Ranch and compromises several ongoing research and demonstration projects. The second respondent stated that the proposed Project will impact the Calamity Creek Ranch and that using the existing route would be the least impacting option. The third simply responded that they were the county judge. The fourth respondent stated the potential links affect their business due to a loss of grassland for livestock and erosion. The fifth responded by stating that consideration should be taken for people's homes and views when submitting the preferred routes to the PUC.

In addition to the questionnaires, the Big Bend Conservation Alliance provided a letter with concerns in response to the virtual town-hall meeting. They wanted more information on the outreach plan to residents of Sal si Puedes and requested a more inclusive public hearing process involving more bilingual and user-friendly connections. Additionally, they requested EMF materials and requested an opportunity to beautify the surroundings of the Alamito Creek Substation.

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6.0 ALTERNATIVE ROUTE EVALUATION

The purpose of this study was to identify and evaluate the most viable Alternative Routes for the proposed 138-kV transmission line between the existing Alamito Creek and Fort Davis Substations, and to recommend the routes that would have the least adverse environmental impact. Burns & McDonnell developed and completed an environmental analysis of nine Alternative Routes for further analysis, the results of which are shown in Table 4-1 (Section 4.0). The environmental evaluation was a comparison of the potential impacts of each Alternative Route strictly from ecological, land use, and cultural resources perspectives based upon the measurement of 41 environmental criteria (Tables 2-1 and 4-1).

Burns & McDonnell then used this information to evaluate and rank the Alternative Routes and recommend an Alternative Route that best balances potential land use, ecological, and cultural resource impacts to AEP Texas. AEP Texas considered Burns & McDonnell's recommendations in addition to engineering and constructability constraints, maintenance, operations, cost, and comments from agencies and the public; and then selects one Alternative Route that AEP Texas believes best addresses the requirements of applicable portions of PURA and PUC Substantive Rules, as is required for the CCN Application.

6.1 Burns & McDonnell's Environmental Evaluation

Burns & McDonnell professionals with a proficiency in different environmental disciplines (terrestrial and aquatic ecology, land use and planning, cultural resources, and GIS) evaluated the nine primary Alternative Routes based on their potential impacts. Each technical lead independently analyzed the Alternative Routes and the environmental and land use data presented in Table 4-1 and ranked the Alternative Routes for their specific technical discipline. The evaluators then met as a group and discussed their independent results. The relationship and relative sensitivity among the major environmental factors were determined by the group. The group used a consensus approach to evaluate the potential impact of the nine Alternative Routes. The group then selected an Alternative Route that best satisfies a balance between the major environmental factors, as well as ranking the remaining Alternative Routes, all based strictly upon the environmental data considered. The results of this ranking are summarized in Table 6-1 and reflect the order of their potential environmental impact, with 1st having the least potential impact and 9th having the greatest potential impact.

Table 6-1: Burns & McDonnell's Ranking of Alternative Routes

Ranking	Land Use	Ecology	Cultural Resources	Consensus
1st	E	E	D	E
2nd	F	F	I	F
3rd	D	D	E	D
4th	I	I	F	I
5th	C	C	C	C
6th	A	A	B	A
7th	B	B	A	B
8th	G	G	H	G
9th	H	H	G	H

The land use evaluator based their ranking on the amount of existing transmission line ROW utilized and paralleled; the amount of other compatible ROW paralleled; and the overall length of each Alternative Route, the number of habitable structures located within 300 feet; and potential aesthetic impacts (length within the foreground visual zone of highways, FM roads, and parks and recreation areas). Comparing these categories, the evaluator selected Alternative Route E as the best route, Alternative Route F as second, Alternative Route D as third, and Alternative Route I as fourth strictly from a land use perspective.

The ecological evaluator considered that very little clearing of woodland/brushland would be required for any Alternative Route; therefore, the greatest potential impacts to ecological resources within the Study Area would be potential avian wire strikes associated with the transmission line. Also taken into consideration were the number of stream crossings and the length of the route paralleling streams within 100 feet. The ecologist ranked Alternative Route E as having the least-potential impact, followed by Alternative Routes F, D, and I.

The cultural resources evaluator ranked the nine Alternative Routes based on the number of previously recorded sites crossed and located within 1,000 feet, and the amount of HPA. The top four ranked routes in this evaluator's professional opinion, and from a cultural resources perspective only, were Alternative Routes D, I, E and F.

Following the evaluation by discipline, the group of evaluators discussed the relative importance and sensitivity of each set of criteria (land use, cultural, and natural resources) as applied to the nine Alternative Routes and the Study Area. Among these alternatives and considering the environmental and

land use data in Table 4-1, the group decided that overall length of route; amount of existing transmission line ROW utilized and paralleled; the amount of other compatible ROW paralleled; potential aesthetic impacts; and number of stream crossings and streams paralleled within 100 feet were the primary factors in selecting a recommended route and ranking the Alternative Routes in order of preference. Secondary factors included the number of habitable structures located within 300 feet, and the amount of HPA.

All the Alternative Routes are considered viable and environmentally acceptable routes that provide geographic diversity. Burns & McDonnell's routing team ranked Alternative Route E as the route that best balances land use, ecology, cultural resources, and certain PUC routing criteria. Alternative Routes E, F, D, and I were then determined to have the least potential cumulative impacts and ranked in order of preference.

In summary, Burns & McDonnell's decision to recommend Alternative Route E as the route that best balances the PUC routing criteria related to land use, ecology, and cultural resource, was based primarily on the following advantages among the objective criteria:

Alternative Route E:

- Is the shortest route (approximately 19.91 miles)
- Utilizes and parallels the greatest combined length of existing transmission line ROW (approximately 18.39 miles)
- Utilizes and parallels the greatest percentage of linear features (existing transmission line ROW, other existing compatible ROW, and apparent property lines) for 92.37 percent of its overall length
- Has the second-least potential aesthetic impacts (second shortest length within the foreground visual zone of highways, FM roads, and parks and recreation areas combined at 9.45 miles)
- Has the fourth-fewest habitable structures located within 300 feet (37)
- Has the second-fewest stream crossings (8) along with Routes D, F, and I
- Parallels the shortest distance within 100 feet of streams (0.2 mile) along with Routes D, F, and I
- Crosses the third-least amount of HPA (9.41 miles) along with Route F

Therefore, based upon its evaluation of this Project and its experience in transmission line routing, Burns & McDonnell recommends Alternative Route E from an overall land use and environmental perspective. Considering all pertinent factors related to land use, ecology, and cultural resources, it is Burns &

McDonnell's opinion that Alternative Route E best addresses the applicable criteria in PURA § 37.056(c)(4) and the PUC Substantive Rules.

Figure 2-2 (map pocket) shows the approximate locations of habitable structures and other land use features in the vicinity of the Alternative Routes. Habitable structures and other land use features are listed and described with respect to their distance and direction from each Alternative Route in Table 6-2 through Table 6-10.

Table 6-2: Habitable Structures and Other Land Use Features in the Vicinity of Alternative Route A

Route Links Combination: 1-2-4-6-7-8-11-12-16-VT2-21a-20a-19-33-36				
Feature ID Number[a]	**Structure/Feature**	**Distance from Centerline[b] (feet)**	**Direction**	**Nearest Alternative Route Link**
1	Mobile Home	259	SE	1
2	Single-family residence	286	S	1
3	Single-family residence	153	S	1
4	Single-family residence	297	S	1
5	Single-family residence	129	S	1
6	Mobile Home	198	SW	1
7	Single-family residence	259	SW	1
8	Single-family residence	302	S	4
8a	Mobile Living Unit	307	S	2
9	Mobile Home	15	W	1
10	Mobile Home	115	W	1
11	Single-family residence	19	S	2
12	Mobile Home	152	S	2
13	Mobile Home	79	S	2
14	Single-family residence	23	S	2
15	Single-family residence	207	S	2
16	Single-family residence	196	S	2
17	Single-family residence	196	S	2
18	Single-family residence	26	S	2
19	Single-family residence	4	S	2
20	Single-family residence	16	S	2
21	Mobile Home	223	E	1
22	Mobile Home	180	E	1

Route Links Combination: 1-2-4-6-7-8-11-12-16-VT2-21a-20a-19-33-36				
23	Mobile Home	134	E	1
24	Mobile Home	120	NE	1
25	Single-family residence	81	N	2
26	Single-family residence	83	N	2
27	Single-family residence	247	N	2
28	Single-family residence	74	N	2
29	Single-family residence	73	N	2
30	Single-family residence	146	N	2
31	Single-family residence	192	N	2
32	Single-family residence	231	N	2
33	Mobile Home	72	N	2
34	Mobile Home	61	N	4
35	Mobile Home	65	N	4
35a	Mobile Living Unit	63	N	4
36	Single-family residence	117	N	4
37	Mobile Home	160	N	4
54	Commercial (Mobile Morticians of Texas)	66	E	33
55	Mobile Home	161	E	33
55a	Mobile Living Unit	199	E	33
56	Single-family residence	106	E	36
57	Single-family residence	298	E	36
58	Single-family residence	252	NE	36
59	Fort Davis ISD Building	186	N	36
60	Mobile Home	270	N	1
61	Mobile Home	217	NE	1
64	Living Unit	288	SE	1
65	Single-family residence	290	S	1
66	Mobile Living Unit	305	S	4
67	Mobile Living Unit	308	S	4
100	MacGuire Ranch Airfield	7,031	S	1
101	Cellular Tower (Big Bend Telecom, LTD)	1,832	S	4
103	Marfa Municipal Airport	6,876	W	11
104	Jeff Davis County Park	141	W	33

Route Links Combination: 1-2-4-6-7-8-11-12-16-VT2-21a-20a-19-33-36				
105	Fort Davis High School Athletic Field	222	N	33

(a) All habitable structures and other land use features are located on Figure 2-2 (map pocket).
(b) Due to the potential horizontal inaccuracies of the aerial photography and data utilized, all habitable structures within 310 feet have been identified.

Table 6-3: Habitable Structures and Other Land Use Features in the Vicinity of Alternative Route B

Route Links Combination: 1-2-5-6-7-8-11-12-16-VT2-21a-20a-19-32-34-35-36				
Feature ID Number[a]	**Structure/Feature**	**Distance from Centerline[b] (feet)**	**Direction**	**Nearest Alternative Route Link**
1	Mobile Home	259	SE	1
2	Single-family residence	286	S	1
3	Single-family residence	153	S	1
4	Single-family residence	297	S	1
5	Single-family residence	129	S	1
6	Mobile Home	198	SW	1
7	Single-family residence	259	SW	1
9	Mobile Home	15	W	1
10	Mobile Home	115	W	1
11	Single-family residence	19	S	2
12	Mobile Home	152	S	2
13	Mobile Home	79	S	2
14	Single-family residence	23	S	2
15	Single-family residence	207	S	2
16	Single-family residence	196	S	2
17	Single-family residence	196	S	2
18	Single-family residence	26	S	2
19	Single-family residence	4	S	2
20	Single-family residence	16	S	2
21	Mobile Home	223	E	1
22	Mobile Home	180	E	1
23	Mobile Home	134	E	1
24	Mobile Home	120	NE	1
25	Single-family residence	81	N	2
26	Single-family residence	83	N	2

Route Links Combination: 1-2-5-6-7-8-11-12-16-VT2-21a-20a-19-32-34-35-36				
27	Single-family residence	247	N	2
28	Single-family residence	74	N	2
29	Single-family residence	73	N	2
30	Single-family residence	146	N	2
31	Single-family residence	169	E	5
32	Single-family residence	202	E	5
33	Mobile Home	72	N	2
34	Mobile Home	52	W	5
35	Mobile Home	131	W	5
35a	Mobile Living Unit	100	W	5
36	Single-family residence	124	W	5
37	Mobile Home	135	W	5
56	Single-family residence	106	E	36
57	Single-family residence	298	E	36
58	Single-family residence	252	NE	36
59	Fort Davis ISD Building	186	N	36
60	Mobile Home	270	N	1
61	Mobile Home	217	NE	1
64	Living Unit	288	SE	1
65	Single-family residence	290	S	1
100	MacGuire Ranch Airfield	7,031	S	1
101	Cellular Tower (Big Bend Telecom, LTD)	1,939	S	2
103	Marfa Municipal Airport	6,876	W	11
105	Fort Davis High School Athletic Field	251	N	36

(a) All habitable structures and other land use features are located on Figure 2-2 (map pocket).
(b) Due to the potential horizontal inaccuracies of the aerial photography and data utilized, all habitable structures within 310 feet have been identified.

Table 6-4: Habitable Structures and Other Land Use Features in the Vicinity of Alternative Route C

Route Links Combination: 1-2-5-6-7-8-11-12-16-VT2-21a-20a-20b-20c-29-33-36				
Feature ID Number[a]	**Structure/Feature**	**Distance from Centerline[b] (feet)**	**Direction**	**Nearest Alternative Route Link**
1	Mobile Home	259	SE	1

Route Links Combination: 1-2-5-6-7-8-11-12-16-VT2-21a-20a-20b-20c-29-33-36				
2	Single-family residence	286	S	1
3	Single-family residence	153	S	1
4	Single-family residence	297	S	1
5	Single-family residence	129	S	1
6	Mobile Home	198	SW	1
7	Single-family residence	259	SW	1
9	Mobile Home	15	W	1
10	Mobile Home	115	W	1
11	Single-family residence	19	S	2
12	Mobile Home	152	S	2
13	Mobile Home	79	S	2
14	Single-family residence	23	S	2
15	Single-family residence	207	S	2
16	Single-family residence	196	S	2
17	Single-family residence	196	S	2
18	Single-family residence	26	S	2
19	Single-family residence	4	S	2
20	Single-family residence	16	S	2
21	Mobile Home	223	E	1
22	Mobile Home	180	E	1
23	Mobile Home	134	E	1
24	Mobile Home	120	NE	1
25	Single-family residence	81	N	2
26	Single-family residence	83	N	2
27	Single-family residence	247	N	2
28	Single-family residence	74	N	2
29	Single-family residence	73	N	2
30	Single-family residence	146	N	2
31	Single-family residence	169	E	5
32	Single-family residence	202	E	5
33	Mobile Home	72	N	2
34	Mobile Home	52	W	5
35	Mobile Home	131	W	5
35a	Mobile Living Unit	100	W	5

Route Links Combination: 1-2-5-6-7-8-11-12-16-VT2-21a-20a-20b-20c-29-33-36				
36	Single-family residence	124	W	5
37	Mobile Home	135	W	5
52	Single-family residence	280	E	20c
53	Commercial (Valley Farms Greenhouse)	249	W	29
54	Commercial (Mobile Morticians of Texas)	66	E	33
55	Mobile Home	161	E	33
55a	Mobile Living Unit	199	E	33
56	Single-family residence	106	E	36
57	Single-family residence	298	E	36
58	Single-family residence	252	NE	36
59	Fort Davis ISD Building	186	N	36
60	Mobile Home	270	N	1
61	Mobile Home	217	NE	1
64	Living Unit	288	SE	1
65	Single-family residence	290	S	1
100	MacGuire Ranch Airfield	7,031	S	1
101	Cellular Tower (Big Bend Telecom, LTD)	1,939	S	2
103	Marfa Municipal Airport	6,876	W	11
104	Jeff Davis County Park	141	W	33
105	Fort Davis High School Athletic Field	222	N	33

(a) All habitable structures and other land use features are located on Figure 2-2 (map pocket).
(b) Due to the potential horizontal inaccuracies of the aerial photography and data utilized, all habitable structures within 310 feet have been identified.

Table 6-5: Habitable Structures and Other Land Use Features in the Vicinity of Alternative Route D

Route Links Combination: 1-3-7-8-11-12-16-VT2-21a-21b-21c-20c-28-30-34-35-36				
Feature ID Number[a]	**Structure/Feature**	**Distance from Centerline[b] (feet)**	**Direction**	**Nearest Alternative Route Link**
1	Mobile Home	259	SE	1
2	Single-family residence	286	S	1
3	Single-family residence	153	S	1

Route Links Combination: 1-3-7-8-11-12-16-VT2-21a-21b-21c-20c-28-30-34-35-36				
4	Single-family residence	297	S	1
5	Single-family residence	129	S	1
6	Mobile Home	198	SW	1
7	Single-family residence	259	SW	1
9	Mobile Home	15	W	1
10	Mobile Home	115	W	1
11	Single-family residence	105	W	1
12	Mobile Home	178	W	1
13	Mobile Home	171	W	1
14	Single-family residence	205	W	1
21	Mobile Home	164	E	3
22	Mobile Home	116	E	3
23	Mobile Home	56	E	3
24	Mobile Home	34	E	3
25	Single-family residence	70	W	3
26	Single-family residence	213	W	3
27	Single-family residence	266	W	3
38	Mobile Home	34	E	3
39	Single-family residence	74	W	3
40	Single-family residence	216	W	3
41	Single-family residence	284	E	3
52	Single-family residence	280	E	20c
56	Single-family residence	106	E	36
57	Single-family residence	298	E	36
58	Single-family residence	252	NE	36
59	Fort Davis ISD Building	186	N	36
60	Mobile Home	22	E	3
61	Mobile Home	17	E	3
62	Mobile Living Unit	57	E	3
63	Mobile Living Unit	8	E	3
64	Living Unit	288	SE	1
65	Single-family residence	290	S	1
100	MacGuire Ranch Airfield	7,031	S	1
103	Marfa Municipal Airport	6,876	W	11

Route Links Combination: 1-3-7-8-11-12-16-VT2-21a-21b-21c-20c-28-30-34-35-36				
105	Fort Davis High School Athletic Field	251	N	36

(a) All habitable structures and other land use features are located on Figure 2-2 (map pocket).
(b) Due to the potential horizontal inaccuracies of the aerial photography and data utilized, all habitable structures within 310 feet have been identified.

Table 6-6: Habitable Structures and Other Land Use Features in the Vicinity of Alternative Route E

Route Links Combination: 1-3-7-8-11-12-16-VT2-21a-21b-21d-23-27-30-34-35-36				
Feature ID Number[a]	**Structure/Feature**	**Distance from Centerline[b] (feet)**	**Direction**	**Nearest Alternative Route Link**
1	Mobile Home	259	SE	1
2	Single-family residence	286	S	1
3	Single-family residence	153	S	1
4	Single-family residence	297	S	1
5	Single-family residence	129	S	1
6	Mobile Home	198	SW	1
7	Single-family residence	259	SW	1
9	Mobile Home	15	W	1
10	Mobile Home	115	W	1
11	Single-family residence	105	W	1
12	Mobile Home	178	W	1
13	Mobile Home	171	W	1
14	Single-family residence	205	W	1
21	Mobile Home	164	E	3
22	Mobile Home	116	E	3
23	Mobile Home	56	E	3
24	Mobile Home	34	E	3
25	Single-family residence	70	W	3
26	Single-family residence	213	W	3
27	Single-family residence	266	W	3
38	Mobile Home	34	E	3
39	Single-family residence	74	W	3
40	Single-family residence	216	W	3
41	Single-family residence	284	E	3
42	Single-family residence	297	W	23

Route Links Combination: 1-3-7-8-11-12-16-VT2-21a-21b-21d-23-27-30-34-35-36				
47	Single-family residence	282	E	23
48	Single-family residence	138	E	23
56	Single-family residence	106	E	36
57	Single-family residence	298	E	36
58	Single-family residence	252	NE	36
59	Fort Davis ISD Building	186	N	36
60	Mobile Home	22	E	3
61	Mobile Home	17	E	3
62	Mobile Living Unit	57	E	3
63	Mobile Living Unit	8	E	3
64	Living Unit	288	SE	1
65	Single-family residence	290	S	1
100	MacGuire Ranch Airfield	7,031	S	1
103	Marfa Municipal Airport	6,876	W	11
105	Fort Davis High School Athletic Field	251	N	36

(a) All habitable structures and other land use features are located on Figure 2-2 (map pocket).
(b) Due to the potential horizontal inaccuracies of the aerial photography and data utilized, all habitable structures within 310 feet have been identified.

Table 6-7: Habitable Structures and Other Land Use Features in the Vicinity of Alternative Route F

Route Links Combination: 1-3-7-8-11-12-16-VT2-21a-21b-21d-24-26-27-30-34-35-36				
Feature ID Number[a]	**Structure/Feature**	**Distance from Centerline[b] (feet)**	**Direction**	**Nearest Alternative Route Link**
1	Mobile Home	259	SE	1
2	Single-family residence	286	S	1
3	Single-family residence	153	S	1
4	Single-family residence	297	S	1
5	Single-family residence	129	S	1
6	Mobile Home	198	SW	1
7	Single-family residence	259	SW	1
9	Mobile Home	15	W	1
10	Mobile Home	115	W	1
11	Single-family residence	105	W	1
12	Mobile Home	178	W	1

Route Links Combination: 1-3-7-8-11-12-16-VT2-21a-21b-21d-24-26-27-30-34-35-36				
13	Mobile Home	171	W	1
14	Single-family residence	205	W	1
21	Mobile Home	164	E	3
22	Mobile Home	116	E	3
23	Mobile Home	56	E	3
24	Mobile Home	34	E	3
25	Single-family residence	70	W	3
26	Single-family residence	213	W	3
27	Single-family residence	266	W	3
38	Mobile Home	34	E	3
39	Single-family residence	74	W	3
40	Single-family residence	216	W	3
41	Single-family residence	284	E	3
43	Single-family residence	286	N	24
44	Single-family residence	195	N	24
45	Single-family residence (casita)	145	N	24
46	Single-family residence	278	W	24
46a	Workshop	279	E	24
49	Single-family residence	218	W	24
50	Single-family residence (casita)	205	W	24
51	Single-family residence (casita)	140	W	24
56	Single-family residence	106	E	36
57	Single-family residence	298	E	36
58	Single-family residence	252	NE	36
59	Fort Davis ISD Building	186	N	36
60	Mobile Home	22	E	3
61	Mobile Home	17	E	3
62	Mobile Living Unit	57	E	3
63	Mobile Living Unit	8	E	3
64	Living Unit	288	SE	1
65	Single-family residence	290	S	1
100	MacGuire Ranch Airfield	7,031	S	1

Route Links Combination: 1-3-7-8-11-12-16-VT2-21a-21b-21d-24-26-27-30-34-35-36				
103	Marfa Municipal Airport	6,876	W	11
105	Fort Davis High School Athletic Field	251	N	36

(a) All habitable structures and other land use features are located on Figure 2-2 (map pocket).
(b) Due to the potential horizontal inaccuracies of the aerial photography and data utilized, all habitable structures within 310 feet have been identified.

Table 6-8: Habitable Structures and Other Land Use Features in the Vicinity of Alternative Route G

Route Links Combination: 1-3-7-8-11-13a-VT1-VT2-13b-17-22-25-26-27-30-34-35-36				
Feature ID Number[a]	**Structure/Feature**	**Distance from Centerline[b] (feet)**	**Direction**	**Nearest Alternative Route Link**
1	Mobile Home	259	SE	1
2	Single-family residence	286	S	1
3	Single-family residence	153	S	1
4	Single-family residence	297	S	1
5	Single-family residence	129	S	1
6	Mobile Home	198	SW	1
7	Single-family residence	259	SW	1
9	Mobile Home	15	W	1
10	Mobile Home	115	W	1
11	Single-family residence	105	W	1
12	Mobile Home	178	W	1
13	Mobile Home	171	W	1
14	Single-family residence	205	W	1
21	Mobile Home	164	E	3
22	Mobile Home	116	E	3
23	Mobile Home	56	E	3
24	Mobile Home	34	E	3
25	Single-family residence	70	W	3
26	Single-family residence	213	W	3
27	Single-family residence	266	W	3
38	Mobile Home	34	E	3
39	Single-family residence	74	W	3
40	Single-family residence	216	W	3
41	Single-family residence	284	E	3

Route Links Combination: 1-3-7-8-11-13a-VT1-VT2-13b-17-22-25-26-27-30-34-35-36				
56	Single-family residence	106	E	36
57	Single-family residence	298	E	36
58	Single-family residence	252	NE	36
59	Fort Davis ISD Building	186	N	36
60	Mobile Home	22	E	3
61	Mobile Home	17	E	3
62	Mobile Living Unit	57	E	3
63	Mobile Living Unit	8	E	3
64	Living Unit	288	SE	1
65	Single-family residence	290	S	1
100	MacGuire Ranch Airfield	7,031	S	1
103	Marfa Municipal Airport	6,876	W	11
105	Fort Davis High School Athletic Field	251	N	36
-	Cultural Resource Site[c] (41JD187)	522	-	-

(a) All habitable structures and other land use features are located on Figure 2-2 (map pocket).
(b) Due to the potential horizontal inaccuracies of the aerial photography and data utilized, all habitable structures within 310 feet have been identified.
(c) To protect their integrity, archeological sites are not shown on Figure 2-2.

Table 6-9: Habitable Structures and Other Land Use Features in the Vicinity of Alternative Route H

Route Links Combination: 1-3-7-9-17-18-VT2-22-31-35-36				
Feature ID Number[a]	**Structure/Feature**	**Distance from Centerline[b] (feet)**	**Direction**	**Nearest Alternative Route Link**
1	Mobile Home	259	SE	1
2	Single-family residence	286	S	1
3	Single-family residence	153	S	1
4	Single-family residence	297	S	1
5	Single-family residence	129	S	1
6	Mobile Home	198	SW	1
7	Single-family residence	259	SW	1
9	Mobile Home	15	W	1
10	Mobile Home	115	W	1

Route Links Combination: 1-3-7-9-17-18-VT2-22-31-35-36				
11	Single-family residence	105	W	1
12	Mobile Home	178	W	1
13	Mobile Home	171	W	1
14	Single-family residence	205	W	1
21	Mobile Home	164	E	3
22	Mobile Home	116	E	3
23	Mobile Home	56	E	3
24	Mobile Home	34	E	3
25	Single-family residence	70	W	3
26	Single-family residence	213	W	3
27	Single-family residence	266	W	3
38	Mobile Home	34	E	3
39	Single-family residence	74	W	3
40	Single-family residence	216	W	3
41	Single-family residence	284	E	3
56	Single-family residence	106	E	36
57	Single-family residence	298	E	36
58	Single-family residence	252	NE	36
59	Fort Davis ISD Building	186	N	36
60	Mobile Home	22	E	3
61	Mobile Home	17	E	3
62	Mobile Living Unit	57	E	3
63	Mobile Living Unit	8	E	3
64	Living Unit	288	SE	1
65	Single-family residence	290	S	1
100	MacGuire Ranch Airfield	7,031	S	1
102	Marfa Municipal Golf Course	15	S	9
103	Marfa Municipal Airport	12,577	N	7
105	Fort Davis High School Athletic Field	251	N	36
-	Cultural Resource Site[c] (41JD187)	522	-	-

(a) All habitable structures and other land use features are located on Figure 2-2 (map pocket).
(b) Due to the potential horizontal inaccuracies of the aerial photography and data utilized, all habitable structures within 310 feet have been identified.
(c) To protect their integrity, archeological sites are not shown on Figure 2-2.

Table 6-10: Habitable Structures and Other Land Use Features in the Vicinity of Alternative Route I

Route Links Combination: 1-3-7-8-11-12-16-VT2-21a-20a-20b-20c-29-34-35-36				
Feature ID Number[a]	**Structure/Feature**	**Distance from Centerline[b] (feet)**	**Direction**	**Nearest Alternative Route Link**
1	Mobile Home	259	SE	1
2	Single-family residence	286	S	1
3	Single-family residence	153	S	1
4	Single-family residence	297	S	1
5	Single-family residence	129	S	1
6	Mobile Home	198	SW	1
7	Single-family residence	259	SW	1
9	Mobile Home	15	W	1
10	Mobile Home	115	W	1
11	Single-family residence	105	W	1
12	Mobile Home	178	W	1
13	Mobile Home	171	W	1
14	Single-family residence	205	W	1
21	Mobile Home	164	E	3
22	Mobile Home	116	E	3
23	Mobile Home	56	E	3
24	Mobile Home	4	E	3
25	Single-family residence	70	W	3
26	Single-family residence	213	W	3
27	Single-family residence	266	W	3
38	Mobile Home	34	E	3
39	Single-family residence	74	W	3
40	Single-family residence	216	W	3
41	Single-family residence	284	E	3
52	Single-family residence	280	E	20c
53	Commercial (Valley Farms Greenhouse)	249	W	29
56	Single-family residence	106	E	36
57	Single-family residence	298	E	36

Route Links Combination: 1-3-7-8-11-12-16-VT2-21a-20a-20b-20c-29-34-35-36				
58	Single-family residence	252	NE	36
59	Fort Davis ISD Building	186	N	36
60	Mobile Home	22	E	3
61	Mobile Home	17	E	3
100	MacGuire Ranch Airfield	7,031	S	1
103	Marfa Municipal Airport	6,876	W	11
105	Fort Davis High School Athletic Field	251	N	36

(a) All habitable structures and other land use features are located on Figure 2-2 (map pocket).
(b) Due to the potential horizontal inaccuracies of the aerial photography and data utilized, all habitable structures within 310 feet have been identified.

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APPENDIX A - AGENCY CORRESPONDENCE

BURNS McDONNELL

July 3, 2019

Mr. / Ms._____
Title
Agency / Office
Street Address
City, State, Zip Code

Re: Request for Information
AEP Texas Alamito Creek to Ft. Davis 138-kV Transmission Line Project
Jeff Davis and Presidio Counties, Texas

Dear Mr. / Ms._____:

American Electric Power Texas, Inc. (AEP Texas) will be filing an application with the Public Utility Commission of Texas (PUC) to amend its Certificate of Convenience and Necessity (CCN) to construct new electric transmission facilities in Jeff Davis and Presidio Counties.

The proposed transmission facilities will include a new single-circuit 138-kilovolt (kV) transmission line between the existing Alamito Creek Substation located in the northeastern portion of the City of Marfa, and the existing Fort Davis Substation located in the southern portion of the community of Fort Davis (Project). The proposed transmission line will be approximately 20 miles in length, and will require a 100-foot wide right-of-way (ROW). Please refer to the attached map for the location of the study area and the termination points.

Burns & McDonnell is preparing an Environmental Assessment (EA) and Alternative Routing Study for the proposed Project that will support AEP Texas's CCN application with the PUC. Burns & McDonnell is in the process of collecting and evaluating information to identify environmental, cultural, and land use constraints that exist in the study area. Burns & McDonnell will consider and evaluate these constraints when developing and evaluating potential alternative routes between the Project's endpoints. As part of this effort, we are asking that your agency or office relate any environmental or land use concerns that you may have regarding the siting and potential environmental effects from the construction of these facilities within the designated study area.

We would appreciate receiving information related to any permits, easements, or other approvals that your agency or office requires. We would also like to request information related to any major proposed development or construction projects that your agency or office may be planning, or is aware of, within the study area. Your input on any of the following resources as they relate to your agency or office will assist the project team in evaluating the proposed Project:

- Land use (current or proposed land development projects, park/recreation areas, etc.)
- Aesthetics

8911 North Capital of Texas Highway \ Building 3, Suite 3100 \ Austin, TX 78759
O 512-872-7130 \ F 512-872-7127 \ burnsmcd.com

- Water quality and wetlands
- Soils and geology
- Wildlife, vegetation, and fisheries (including threatened and endangered species)
- Socioeconomics (population, employment, growth, current/future development)
- Cultural resources (historic and archeological sites)
- Transportation and roads (proposed airport and roadway expansions, construction, operations, and maintenance)

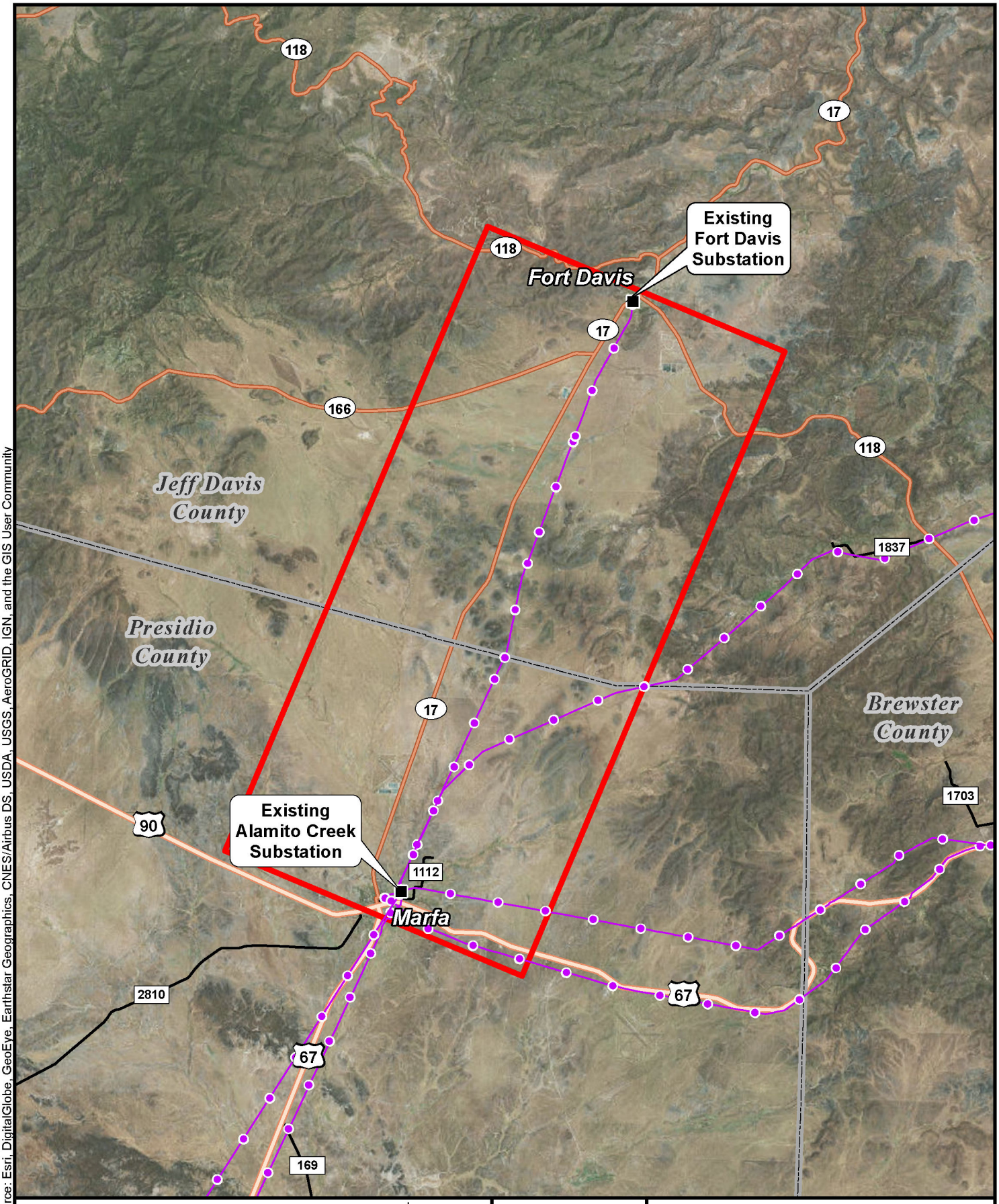
Burns & McDonnell would like to thank you in advance for your comments, which will be an important consideration in our assessment of potential environmental and land use impacts of the proposed transmission line. If you have any questions concerning this project or our request for information, please contact me at tjademski@burnsmcd.com or 512-872-7131. Your earliest reply will be appreciated.

Sincerely,

Thomas J. Ademski
Project Manager

TA/ta

Attachment
cc: Dewey Peters, AEP
Randy Roper, AEP



Project Endpoint

Existing Transmission Line

Study Area

NORTH

0 2 4 8

Miles

BURNS McDONNELL

Alamito Creek to Ft. Davis
138-kV Transmission Line Project
AEP Texas
Jeff Davis & Presidio Counties, TX

Path: \\bmcd\dfs\Clients\ENS\AEPSvc\116177_Alamito-FtDav\Studies\Geospatial\DataFiles\ArcDocs\Agency_Contact_Map_A2FD.mxd gacox 6/18/2019

Source: ESRI; USDA NAIP "Texas" (2016); Burns & McDonnell Engineering Company, Inc

Issued: 6/18/2019

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JEFF DAVIS COUNTY

The Honorable Kerith Sproul-Hurley
Jeff Davis County Judge
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Fort Davis, TX 79734

Jody Adams
Jeff Davis County Precinct 1 Commissioner
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Todd Jagger
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41336 State Hwy 118
Fort Davis, TX 79734

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Jeff Davis County Precinct 3 Commissioner
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PRESIDIO COUNTY

The Honorable Cinderalla Guevara
Presidio County Judge
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Marfa, TX 79843

Brenda Silva Bentley
Presidio County Precinct 1 Commissioner
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Presidio County Precinct 4 Commissioner
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Mayor
City of Marfa
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Marfa, TX 79843-0787

Graydon Hicks
Superintendent
Fort Davis Independent School District
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Oscar Aguero
Superintendent
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Valentine Independent School District
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Lori Olson
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Ademski, Thomas J (Tommy)

From: Felix, Doug CTR (FAA) <Doug.CTR.Felix@faa.gov>
Sent: Monday, July 8, 2019 8:47 AM
To: Ademski, Thomas J (Tommy)
Subject: AEP Texas Alamito Creek to Ft. Davis 138-kV Transmission Line Project, Jeff Davis and Presidio Counties, Texas
Attachments: Burns and McDonnell Letter dated 07-03-2019 reference AEP Texas Alamito Creek to Ft. Davis 138-kV Transmission Line Project, Jeff Davis and Presidio Counties, Texas.pdf

Mr. Ademski,

In response to the attached Burns and McDonnell letter dated July 03, 2019 regarding the AEP Texas Alamito Creek to Ft. Davis 138-kV Transmission Line Project, Jeff Davis and Presidio Counties, Texas, the following information is provided.

As stated in Title 14 of the Code of federal Regulations (14 CFR) Part 77, Objects that Affect the Navigable Airspace, the primary objectives of the Federal Aviation Administration (FAA) are to promote air safety and the efficient use of the navigable airspace.

To accomplish this mission, aeronautical studies are conducted based on information provided by proponents on FAA Form 7460-1, Notice of Proposed Construction or Alteration. If Burns and McDonnell sponsors any construction or alterations which may affect navigable airspace and the proposals meet FAA notice filing criteria, the FAA requests that FAA Forms 7460-1 be filed ELECTRONICALLY via https://oeaaa.faa.gov/oeaaa/external/portal.jsp as necessary for each of the proposals. The website contains instructions for using the program and contains a "Notice Criteria Tool" to determine if notice to the FAA is required for locations included in the proposal. If notice to the FAA is required, instructions are available at the website for electronically filing proposals for transmission line structures as necessary.

For future reference, you may contact the Obstruction Evaluation Group at 10101 Hillwood Parkway, Fort Worth, Texas 76177 or (817) 222-5934.

Thank you,

Doug Felix
Federal Aviation Administration
Obstruction Evaluation Group
AJV-15
Tetra Tech AMT Support
10101 Hillwood Parkway
Fort Worth, TX 76177

Office: 817-222-5934
doug.ctr.felix@faa.gov

Please visit our website:
https://oeaaa.faa.gov

Federal Aviation Administration

U. S. Department of Homeland Security
FEMA Region 6
800 North Loop 288
Denton, TX 76209-3698

FEMA

FEDERAL EMERGENCY MANAGEMENT AGENCY
REGION 6
MITIGATION DIVISION

RE: Request for Information, AEP Texas Alamito Creek to Ft. Davis 138-Kv Transmission Line Project, Jeff Davis and Presidio Counties, Texas

NOTICE REVIEW/ENVIRONMENTAL CONSULTATION

☐ We have no comments to offer. ☒ We offer the following comments:

WE WOULD REQUEST THAT THE COMMUNITY FLOODPLAIN ADMINISTRATOR BE CONTACTED FOR THE REVIEW AND POSSIBLE PERMIT REQUIREMENTS FOR THIS PROJECT. IF FEDERALLY FUNDED, WE WOULD REQUEST PROJECT TO BE IN COMPLIANCE WITH EO11988 & EO 11990.

Jeff Davis County
The Honorable George Grubb
County Judge
P.O. Box 836
Fort Davis, Texas 79734

Presidio County
Ruben Carrasco, Road and Bridge Supervisor
P.O. Box 1521
Presidio, Texas 79845
pcroadsrucv@co.presidio.tx.us
(432) 229-3528

REVIEWER:

Colleen Sciano
Floodplain Management and Insurance Branch
Mitigation Division
(940) 383-7257

DATE: July 16, 2019

19·7·53237

Date Rec'd: 7/11/19		
Rec'd by: KZ		
	Action	Info
RA		X
Deputy RA		X
XA		
Analyst		
RES		
REC		
MIT	X	
MSD		
NP		
Grants		
File		X
Suspense Date: 7/25/19		

BURNS McDONNELL

July 3, 2019

Tony Robinson
Regional Administrator
Region VI
Federal Emergency Management Agency
FRC 800 North Loop 288
Denton, TX 76209-3698

Re: Request for Information
AEP Texas Alamito Creek to Ft. Davis 138-kV Transmission Line Project
Jeff Davis and Presidio Counties, Texas

Dear Mr. Robinson:

American Electric Power Texas, Inc. (AEP Texas) will be filing an application with the Public Utility Commission of Texas (PUC) to amend its Certificate of Convenience and Necessity (CCN) to construct new electric transmission facilities in Jeff Davis and Presidio Counties.

The proposed transmission facilities will include a new single-circuit 138-kilovolt (kV) transmission line between the existing Alamito Creek Substation located in the northeastern portion of the City of Marfa, and the existing Fort Davis Substation located in the southern portion of the community of Fort Davis (Project). The proposed transmission line will be approximately 20 miles in length, and will require a 100-foot wide right-of-way (ROW). Please refer to the attached map for the location of the study area and the termination points.

Burns & McDonnell is preparing an Environmental Assessment (EA) and Alternative Routing Study for the proposed Project that will support AEP Texas's CCN application with the PUC. Burns & McDonnell is in the process of collecting and evaluating information to identify environmental, cultural, and land use constraints that exist in the study area. Burns & McDonnell will consider and evaluate these constraints when developing and evaluating potential alternative routes between the Project's endpoints. As part of this effort, we are asking that your agency or office relate any environmental or land use concerns that you may have regarding the siting and potential environmental effects from the construction of these facilities within the designated study area.

We would appreciate receiving information related to any permits, easements, or other approvals that your agency or office requires. We would also like to request information related to any major proposed development or construction projects that your agency or office may be planning, or is aware of, within the study area. Your input on any of the following resources as they relate to your agency or office will assist the project team in evaluating the proposed Project:

- Land use (current or proposed land development projects, park/recreation areas, etc.)

8911 North Capital of Texas Highway \ Building 3, Suite 3100 \ Austin, TX 78759
O 512-872-7130 \ F 512-872-7127 \ burnsmcd.com

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- Aesthetics
- Water quality and wetlands
- Soils and geology
- Wildlife, vegetation, and fisheries (including threatened and endangered species)
- Socioeconomics (population, employment, growth, current/future development)
- Cultural resources (historic and archeological sites)
- Transportation and roads (proposed airport and roadway expansions, construction, operations, and maintenance)

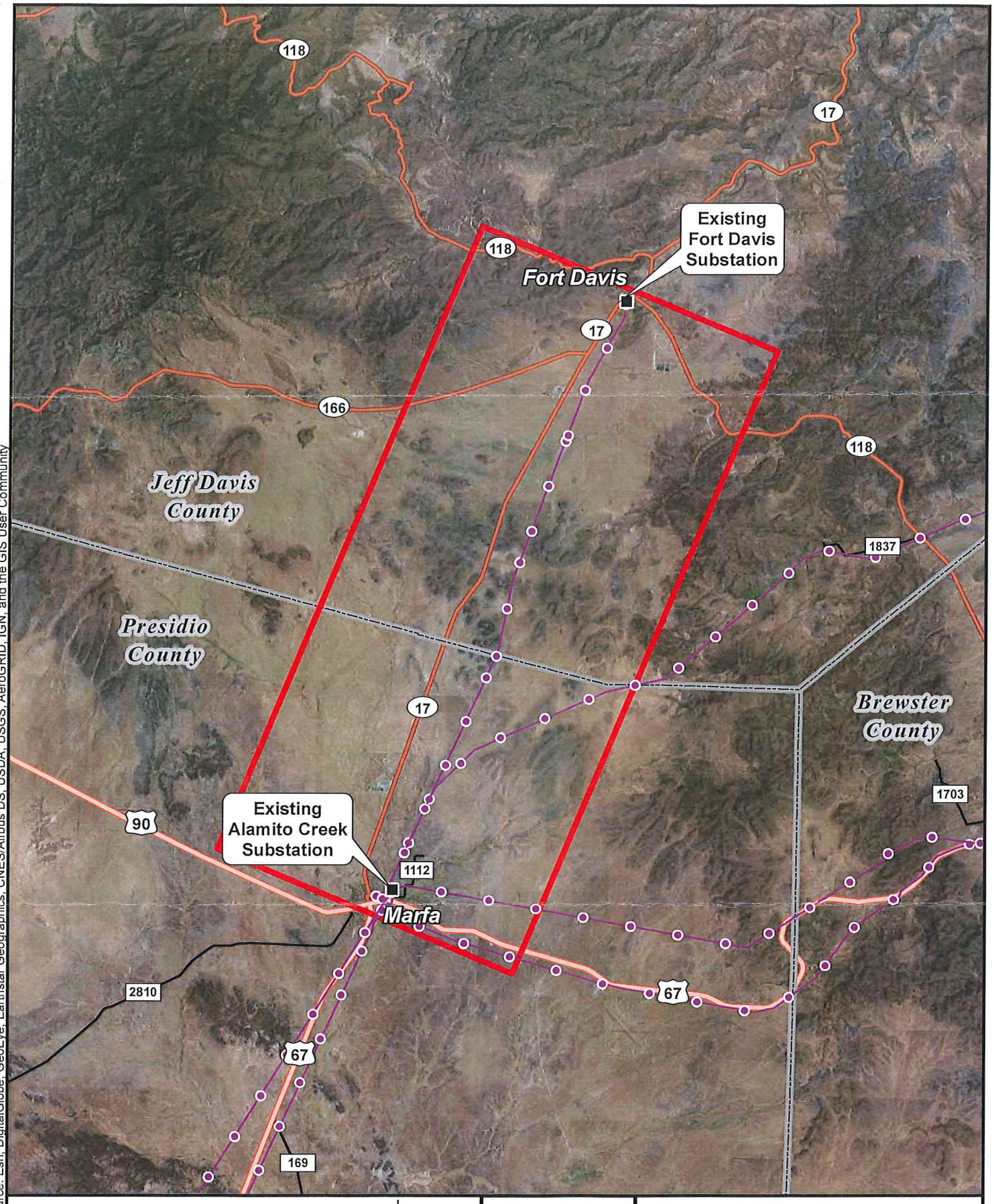
Burns & McDonnell would like to thank you in advance for your comments, which will be an important consideration in our assessment of potential environmental and land use impacts of the proposed transmission line. If you have any questions concerning this project or our request for information, please contact me at tjademski@burnsmcd.com or 512-872-7131. Your earliest reply will be appreciated.

Sincerely,

Thomas J. Ademski
Project Manager

TA/ta

Attachment
cc: Dewey Peters, AEP
Randy Roper, AEP



Project Endpoint

Existing Transmission Line

Study Area

NORTH

0 2 4 8

Miles

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Alamito Creek to Ft. Davis
138-kV Transmission Line Project
AEP Texas
Jeff Davis & Presidio Counties, TX

Source: ESRI; USDA NAIP "Texas" (2016); Burns & McDonnell Engineering Company, Inc

Issued: 6/18/2019

USDA

United States Department of Agriculture

Farm
Production
and
Conservation

Farm
Service
Agency

Brewster/Presidio/
Jeff Davis
County Farm
Service
Agency
1805 State
Highway 118 Ste. 1
Alpine, TX
79830

Voice:432-837-2325
Fax:844-496-7931

July 16, 2019

TO Thomas J. Ademski
8911 N Capital of Texas Highway
Building 3, Suite 3100
Austin, TX 78759

FROM Brewster/Presidio/Jeff Davis County Farm Service Agency

SUBJECT **Request for CRP Information**

Thomas,

To my knowledge there are no permits, easements, etc. that the Farm Service Agency Requires approval on.

Regards,

Kallie Lovelace, CED

Kallie Lovelace
County Executive Director