TABLE 2-11 FISH SPECIES POTENTIALLY OCCURRING WITHIN THE UPPER SABINE SUBBASIN

COMMON NAME	SCIENTIFIC NAME
channel catfish	*Ictalurus punctatus*
yellow bullhead	*Ameiurus natalis*
PERCIDAE: Perches	
bluntnose darter	*Etheostoma chlorosoma*
dusky darter	*Percina sciera*
redspot darter	*Etheostoma artesiae*
river darter	*Percina shumardi*
slough darter	*Etheostoma gracile*
POECILIIDAE: Livebearers	
western mosquitofish	*Gambusia affinis*

Source: Hendrickson and Cohen 2015.

Threatened and Endangered Species

For this routing study, emphasis was placed on obtaining documented occurrences of special status species and/or their designated critical habitat within the study area. Documented occurrences of unique vegetative communities within the study area were also reviewed. Special status species include those listed by the USFWS (2019b) as threatened, endangered, or candidates for listing and those species listed by TPWD (2019e) as threatened or endangered. POWER requested a GIS data layer of historical known occurrences for listed species and/or sensitive vegetative communities from the TXNDD (2019). For the purpose of this study, the TXNDD information is not used as a substitute for a presence/absence survey, but as an indication of previous occurrences within suitable habitat for the species.

The USFWS regulates activities affecting plants and animals designated as endangered or threatened under the ESA (16 U.S.C. § 1531 et seq.). A USFWS IPaC report request was submitted and received on June 12, 2019 (Consultation Code: 02ETAR00-2019-SLI-1560). This USFWS report identifies potentially occurring federally-listed threatened, endangered, and proposed species and designated critical habitat within the study area (USFWS 2019b). An endangered species is defined as a species in danger of extinction throughout all or a significant portion of its range. A threatened species is defined as likely to become endangered within the near foreseeable future throughout all or a significant portion of its range. Proposed species are those that have been proposed in the Federal Register to be listed under the ESA. The ESA also provides for the conservation of "designated critical habitat," which is defined by the USFWS as the areas of land, water, and air space that an endangered species needs for survival. These areas include sites with food and water, breeding areas, cover or shelter sites, and sufficient habitat to provide for normal population growth and behavior for the species. The IPaC report states there are no designated critical habitats within the study area (USFWS 2019b).

The TPWD also regulates plants and animals designated as endangered or threatened (Chapters 67 and 68 of the Texas Parks and Wildlife Code and § 65.171 - 65.176 of Title 31 of the TAC; and Chapter 88 of the Texas Parks and Wildlife Code and § 69.01 - 69.9 of the TAC). Under Texas law, endangered animal species are those deemed to be "threatened with statewide extinction" and endangered plant species are those "in danger of extinction throughout all or a significant portion of its range." Threatened animal and plant species are those deemed to be likely to become endangered within the foreseeable future.

Threatened and Endangered Plant Species

No federal- or state-listed plant species are listed as potentially occurring within the study area (USFWS 2019b; TPWD 2019e). Review of TXNDD (2019) data did not identify any sensitive vegetation communities mapped within the study area.

Threatened and Endangered Animal Species

The USFWS (2019b) IPaC official species list identifies three federally-listed animal species to consider for the study area. State-listed species in the TPWD (2019e) Annotated County Lists of Rare Species have been included in Table 2-12 for consistency. A brief description of each species' life history, habitat requirements, and documented occurrences within the study area are summarized below. Only USFWS-listed threatened or endangered species are afforded federal protection under the ESA.

TABLE 2-12 LISTED THREATENED AND ENDANGERED ANIMAL SPECIES FOR VAN ZANDT COUNTY

SPECIES		LEGAL STATUS	
Common Name	**Scientific Name**	**USFWS[1]**	**TPWD[2]**
Birds			
bald eagle	*Haliaeetus leucocephalus*	DL	T
black rail	*Laterallus jamaicensis ssp. jamaicensis*	PT[2]	-
interior least tern	*Sterna antillarum athalassos*	E	E
piping plover	*Charadrius melodus*	T	T
red knot	*Calidris canutus rufa*	T	T
swallow-tailed kite	*Elanoides forficatus*	-	T
white-faced ibis	*Plegadis chihi*	-	T
wood stork	*Mycteria americana*	-	T
Mammals			
black bear	*Ursus americanus*	-	T
Mollusks			
Louisiana pigtoe	*Pleurobema riddellii*	-	T
sandbank pocketbook	*Lampsilis satura*	-	T
southern hickorynut	*Obovaria arkansasensis*	-	T
Texas heelsplitter	*Potamilus amphichaenus*	-	T
Texas pigtoe	*Fusconaia askewi*	-	T
Reptiles			
alligator snapping turtle	*Macrochelys temminckii*	-	T
northern scarlet snake	*Cemophora coccinea copei*	-	T
Texas horned lizard	*Phrynosoma cornutum*	-	T

Status abbreviations: E - Endangered, T - Threatened, PT – Proposed Threatened, DL - Federally Delisted

Sources: [1]USFWS 2019b; [2]TPWD 2019e

Federally Listed Species

Interior least tern

The interior least tern is a subspecies of least tern. The USFWS recognizes any nesting least tern that is 50 miles or greater from a coastline as being an interior least tern (Campbell 2003). Interior least terns nest inland along sand and gravel bars within braided streams and rivers as well as salt flats associated with rivers and reservoirs. They are also known to nest on man-made structures (inland beaches, wastewater treatment plants, gravel quarries, etc.) (TPWD 2014). This species may occur within the study area if suitable habitat is available (Lockwood and Freeman 2014).

Piping plover

The piping plover is a small migratory shorebird that nests within the Great Lakes, Northern Great Plains or Atlantic Coast and winters along the Gulf of Mexico coastline (TPWD 2019e). This species may occur within the study area as an occasional non-breeding winter migrant (Lockwood and Freeman 2014) if suitable stop-over habitat is available.

Red knot

The red knot is a migratory bird which nests in the arctic tundra and overwinters along the Gulf of Mexico coastline. A spring migratory stopover is known in Delaware Bay separating New Jersey and Delaware where the species gorges on horseshoe crab eggs (USFWS 2007). This species is a rare to uncommon non-breeding winter migrant along the Texas coast (Lockwood and Freeman 2014) and may occur within the study area as a non-breeding winter migrant if suitable habitat is available.

Proposed Species

Black rail

In September 2018, the USFWS published a 12-month finding/Proposed Rule in the Federal Register to list the black rail as a threatened species. Final rulemaking for this species is currently ongoing (Federal Register 2018). Black rails occur as scarce year-round residents along the Texas coast. Breeding populations occurring in inland and Atlantic coastline areas migrate to the southeastern U.S. for winter. Nesting habitat includes dense wetland areas, such as marshes, swamps, wet meadows, and pond edges (NatureServe 2019). This species may occur within the study area as a rare migrant if suitable habitat is available.

State Listed Species

Birds

Swallow-tailed kite

The swallow-tailed kite historically occurred along the coastal plains, interior lowlands, and riparian areas throughout the southeastern US and into central Texas. Today in Texas, the species is a rare to uncommon migrant throughout the eastern third of the state and a rare to locally uncommon summer resident in southeast Texas. The most recent breeding records exist from Chambers, Liberty, Orange, and Tyler counties (Lockwood and Freeman 2014). Habitats include lowland forested, swampy areas, ranging into open woodland; marshes, along rivers, lakes, and ponds. Nesting occurs high in tall trees within clearings or on forest woodland edge, usually in pine, cypress, or other deciduous trees (Benson and Arnold 2001). This species may occur within the study area as a rare migrant if suitable habitat is available.

White-faced ibis

The white-faced ibis breeds and winters along the Texas Gulf Coast. Other breeding populations occurring in the northwestern US migrate south to overwinter along the Gulf Coast and in Central America. Preferred habitats include swamps, ponds, rivers, sloughs, irrigated rice fields, freshwater marsh, and sometimes brackish and saltwater marsh. This species is a colonial nester and forages on insects, newts, leeches, earthworms, snails, crayfish, frogs, and fish (TPWD 2019e). This species may occur as a migrant within the study area if suitable habitat is available.

Wood stork

The wood stork is a colonial bird that breeds in Florida, Georgia, South Carolina, and Mexico. Nesting occurs in mangrove or cypress trees within brackish or freshwater swamp habitat. Post breeding, storks from Mexico migrate northward along Mississippi River Valley. Wood storks use prairie ponds, flooded pastures or fields, ditches, and other shallow standing water habitats to forage for fish and other small animals (NatureServe 2019). This species usually roosts communally in tall snags and sometimes in association with other wading birds (TPWD 2019e). This species may occur as an uncommon migrant (Lockwood and Freeman 2014) within the study area, if suitable habitat is available.

Mammals

Black bear

The black bear is a stocky, large, omnivore with black to cinnamon brown fur that consumes insects, roots, and tubers. Preferred habitat includes bottomland hardwoods and large tracts of inaccessible forested areas (TPWD 2019b). It was once thought to be extirpated from Texas, but with the success of conservation efforts in Louisiana, young males have been observed dispersing into east Texas (Comer et al. 2013). TPWD (2019f) reports confirmed black bear sightings have occurred in Bowie, Cass, Marion, Red River, Franklin, and Smith counties. This species may occur as a rare migrant if suitable habitat is available.

Mollusks

Louisiana pigtoe

The Louisiana pigtoe is endemic to streams and moderate sized rivers in the San Jacinto, Sabine, Neches-Angelina, Trinity, Big Cypress, and Sulphur River Basins. The Louisiana pigtoe occurs in slow to moderate flowing streams and rivers with silt, sand, gravel, and clay substrates (USFWS 2017). This species may occur within the study area if suitable aquatic habitat is available.

Sandbank pocketbook

The sandbank pocketbook may be found in small to large rivers within the Lower Neches and Lower Sabine watersheds (NatureServe 2019). This species is poorly known in Texas; however, it may inhabit moderate to swift flowing waters with gravel, gravel-sand, and sand sediments (Howells et al. 1996). The study area occurs outside of the current mapped distribution for the sandbank pocketbook (NatureServe 2019). This species is not anticipated to occur within the study area.

Southern hickorynut

The southern hickorynut occurs in the Lower Neches and Lower Sabine watersheds (NatureServe 2019) within rivers and creeks with moderate flow and gravel substrates (Howells et al. 1996). The

study area occurs outside of the current mapped distribution for the southern hickorynut (NatureServe 2019). This species is not anticipated to occur within the study area.

Texas heelsplitter

The Texas heelsplitter occurs in the Lower Neches and Lower Sabine watersheds (NatureServe 2019). Habitat requirements are poorly known; however, this species may prefer calm waters with sand and mud substrates. Specimens of this species have been collected from reservoirs which suggest the Texas heelsplitter may also occur in impounded areas (Howells et al. 1996). The study area occurs within the current mapped distribution for the Texas heelsplitter (NatureServe 2019). This species may occur within the study area if suitable habitat is available.

Texas pigtoe

The Texas pigtoe occurs in the Lower Neches and Lower Sabine watersheds (NatureServe 2019) in rivers with mud, sand, and fine gravel substrates. Specimens of the Texas pigtoe have been collected in areas protected by structures or fallen trees (Howells et al. 1996). The study area is located outside of the current mapped distribution for the Texas pigtoe (NatureServe 2019). This species is not anticipated to occur within the study area.

Reptiles

Alligator snapping turtle

The alligator snapping turtle inhabits perennial freshwater ecosystems, such as lakes, canals, rivers, creeks, bayous, and ponds, usually within muddy or thickly vegetated substrates. The species may also enter brackish waters near the coast. They are most active from March through July during the breeding season (Dixon 2013). This species may occur within the study area if suitable habitat is available.

Northern scarlet snake

The northern scarlet snake inhabits hardwood, pine, or mixed forests with soft loamy or sandy soils that occur along swamps or streams. This species utilizes soft soils for burrowing and has also been documented in abandoned fields, grasslands, and roadsides (Dixon 2013). This species may occur within the study area if suitable habitat is available.

Texas horned lizard

The Texas horned lizard inhabits a variety of habitats including open desert, grasslands, and shrubland in arid and semiarid habitats on soils varying from pure sands and sandy loams to coarse gravels, conglomerates, and desert pavements. Their primary prey item is the harvester ant (*Pogonomyrmex* spp.), but they may also consume grasshoppers, beetles, and grubs (Henke and Fair 1998). Historically the Texas horned lizard occurred throughout most of Texas but habitat loss and non-native fire ants (*Solenopsis invicta*) have caused population declines (Dixon 2013). This species may occur within the study area if suitable habitat is available.

3.0 ALTERNATIVE ROUTE DEVELOPMENT

After defining the study area, the results of data collection and reconnaissance surveys were used to develop an environmental and land use composite constraints map to support preliminary alternative routing link development. The POWER planning team was comprised of technical experts within their respective resource fields of land use, aesthetics, ecology, and cultural resources. The composite constraints map was used by the POWER planning team to identify areas of opportunity and constraints for facilitating the development of geographically diverse preliminary alternative routing links for the transmission line. Preliminary alternative routing links were developed to connect the existing SWEPCO Morton Substation and two proposed POC Start Options (A and B) with four proposed POC End Options (1, 2, 3, and 4). The proposed links and POC option locations were reviewed by SWEPCO for engineering and constructability. The existing SWEPCO transmission lines to be used by SWEPCO to terminate the two POC Start Options (A and B) into the SWEPCO Morton Substation were not included in the EA alternative route analysis since they will not be part of the route that SWEPCO will be submitting for PUC approval. These are existing SWEPCO certificated transmission assets and will not be rebuilt but connected with the termination of the POC Start Options (A and B) into the SWEPCO Morton Substation. SWEPCO hosted a public open house meeting on November 19, 2019 to receive public input and comments on the preliminary alternative routing links and POC option locations. Modifications to the preliminary alternative routing links were based on public input, local, state, and federal agency comment, stake-holder meetings, further communication with WCEC, and data refinement. Following the modifications, a set of geographically diverse primary alternative routes were identified from two western POC Start Options to three POC End Option locations (1, 2, and 3) using the modified preliminary alternative routing links from the public meeting input. The evaluation and comparison between the primary alternative routes are presented in Section 4.0. The following sections describe the primary alternative route development process.

3.1 Resource Analysis

The composite constraints map was used as the foundation for the resource analysis. Criteria were developed for each resource to establish constraint parameters which facilitated the identification of preliminary alternative routing links. The following definitions were considered during development of the preliminary alternative routing links:

- Resource Value: A measure of rarity, intrinsic worth, singularity, or diversity of a resource within a particular area.
- Protective Status: A measure of the formal concern as expressed by legal protection or special status designation.
- Present and Known Future Uses: A measure of the level of potential conflict with land management and land use policies.
- Hazards: A measure of the degree to which construction and operation of the transmission line could be affected by a known resource hazard.

Using this framework, overlays of individual resources were mapped to provide a visual representation of constraint areas and potential routing opportunity areas that were identified. Identified constraints were avoided to the extent practicable to minimize potential impacts or conflicts.

3.2 Opportunities and Constraints Evaluation

3.2.1 Existing Linear Corridors

Based on routing criteria in the Texas Utilities Code Section 37.056(c) and 16 TAC § 25.101(b)(3)(B)(i-iii), paralleling or utilizing existing compatible linear routing features are considered potential areas of opportunity when selecting route alternatives for new transmission lines. In general, locating a transmission line adjacent to existing linear routing features typically minimizes environmental impacts due to existing adjacent disturbances, improved access, and decreased habitat fragmentation. Linear routing features identified within the study area include existing electrical transmission lines, roadways, fence lines, and apparent property boundaries.

Transmission Line ROWs

POWER and SWEPCO evaluated paralleling existing transmission lines identified within the study area, which include three 138-kV transmission lines. Limited opportunities for paralleling these transmission lines were identified. In some instances, constraints located adjacent to these transmission lines, their location, or the orientation of these lines precluded paralleling or paralleling for a considerable distance.

Roadway ROWs

POWER evaluated paralleling multiple roadways within the study area, including one FM road (a complete list of roadways is provided in Section 2.2.5). POWER also evaluated paralleling county and local roads (paved and unpaved) within the study area. Opportunities for paralleling roadways were identified, although habitable structures are frequently located near these features and must be considered.

Fence Lines

Fence lines provided several paralleling opportunities within the study area. Fence lines were identified utilizing aerial photography (NAIP 2018) and were often found along apparent property boundaries.

Apparent Property Boundaries

Apparent property boundaries were identified utilizing county appraisal district property boundary information obtained for Van Zandt County (Van Zandt County 2019b). Apparent property boundaries within the study area provided several paralleling opportunities between the Project endpoints where no other existing linear features were present.

3.3 Alternative Route Identification

3.3.1 Preliminary Alternative Routing Link Development

Preliminary alternative routing links were identified by the POWER planning team by using the composite constraints map while also considering the sensitivity to existing resources. Preliminary alternative routing links were developed based upon maximizing the use of opportunity areas while avoiding areas of higher environmental constraint or conflicting land uses. Existing aerial photography was used in conjunction with the composite constraints superimposed to identify optimal locations for preliminary alternative routing link centerlines. POWER utilized the following to identify the preliminary alternative routing links:

- Input received from correspondence with local officials, regulatory agencies, and others.
- Results from reconnaissance surveys of the study area.
- Review of aerial photography.
- Findings of the various data collection activities.
- Environmental and land use constraints data.
- Apparent property boundaries and fence lines.
- Existing compatible linear opportunity areas.
- Locations of existing developments.

The preliminary alternative routing links were developed in accordance with the Texas Utilities Code, Title II, Section 37.056 (c)(4)(A)-(D), 16 TAC § 25.101, including the PUC's policy of prudent avoidance, and are consistent with SWEPCO's transmission line routing principals. It was POWER's intent to develop an adequate number of environmentally acceptable and geographically diverse preliminary alternative routing links while considering such factors as community values, parks and recreation areas, historical and aesthetic values, environmental integrity, route length parallel to existing compatible corridors or parallel to apparent property boundaries, and prudent avoidance. POWER, with input from SWEPCO representatives, developed 39 preliminary alternative routing links, two POC western Start Option locations, and four POC eastern End Option locations that were presented at the public open house meeting (Figure 3-1).

This page left blank intentionally.

Figure 3-1 Preliminary Alternative Routing Links

THIS PAGE IS OVERSIZED AND CAN BE VIEWED IN CENTRAL RECORDS OR THE PUC INTERCHANGE BY DOWNLOADING THE NATIVE FILE (ZIP) FOR THIS ITEM NUMBER IN DOCKET NO. 50669

(This page left blank intentionally.)

3.3.2 Public Involvement Program

SWEPCO hosted a public open house meeting within the community to solicit comments, concerns, and input from residents, landowners, and other interested parties. The meeting was held on November 19, 2019 at the Grand Saline Middle School in Grand Saline, Texas.

Landowners along each of the preliminary alternative routing links were invited to attend. These meetings were intended to solicit comments from landowners and other interested parties concerning the proposed Project. In addition to gathering public input, the purpose of the meetings was to:

- Promote a better understanding of the proposed Project, including the purpose and need for the Project, the benefits and potential impacts of the new transmission line, and the PUC regulatory approval process.
- Inform and educate the public about the routing process, schedule, and the link development process.
- Ensure that the decision-making process adequately identifies and considers the values and concerns of the landowners and other interested parties in the study area.

A public open house meeting invitation was sent to landowners who own property located within 300 feet of the preliminary alternative routing link centerlines. A total of 61 invitations were mailed to individuals and entities for the open house meeting. Each landowner also received a map of the study area depicting the preliminary alternative routing links with their invitation letter. An example of the invitation letter and a copy of the map is provided in Appendix B.

Rather than a formal presentation in a speaker-audience format, the meetings were held in an open house format. Numerous information stations were set up around the meeting room. Each station was devoted to a particular aspect of the Project and was staffed by representatives of SWEPCO, Volkert (SWEPCO's property research consultant), and/or POWER. One set of large display maps (one-inch equals 500 feet scale), illustrations, photographs, and text explaining each topic were presented at the stations. A GIS station was also available to provide additional detail on the proposed preliminary alternative routing links and property ownership boundaries using recent aerial photography of the Project area. Staff at the GIS station were available to answer more detailed questions such as the distance from a specific alternative link centerline to the nearest corner of a habitable structure. Attendees were encouraged to visit each station in a specified sequence so the entire process and Project information could be explained clearly. The numerous information stations format is advantageous because it facilitates one-on-one discussions and encourages personalized attendee interactions. More importantly, the one-on-one discussions with representatives of SWEPCO, Volkert, and POWER encourage more interaction from attendees who might be hesitant to participate in a speaker-audience format.

At the first station, each individual in attendance was asked to sign in and they received a questionnaire that solicited comments on the proposed Project and an evaluation of the information presented at the public meetings. An example copy of the questionnaire is located in Appendix B.

Additional stations provided information regarding the PUC regulatory process, the purpose and need for the Project, the proposed structure type, agencies that were contacted, and link development criteria. In addition, general overview maps showing the study area and all preliminary alternative routing links, constraint maps, and detailed aerial-photography based maps were available for discussion and comment.

Individuals were asked to complete the questionnaire after visiting the information stations and speaking with Project representatives. Completed questionnaires were submitted to SWEPCO either

at the meeting or later by mail; however, not all attendees submitted questionnaires, nor did all respondents answer every question.

A total of 21 individuals attended the public open house meeting, according to the sign-in sheet, with four submitting questionnaires at the meeting. Ten questionnaires were received by mail after the meeting was held. Results from the questionnaires were reviewed and analyzed. Of the respondents that answered the questions, 11 (79%) agreed that the need for the Project was adequately explained. Of those attendees that responded, 86 percent were pleased with the open house format and 93 percent felt that the information provided was helpful to their understanding of the Project.

The questionnaire requested a ranking of 15 criteria that respondents see as the most important considerations for a transmission line route development. They were asked to rank criteria on a scale from 1 to 5, with **1** being the least important factor and **5** being the most important factor. Of those attendees that ranked the criteria, the three criteria that were ranked as being the most important are listed in descending order from more important to less important:

- Maximize distance from residences – 14 (100% of respondents ranked the criteria)
- Maximize length along existing transmission lines – 8 (57% respondents ranked the criteria)
- Minimize visibility of the line – 8 (57% of respondents ranked the criteria)

Attendees were asked if there were other criteria that should be considered, and if they had any comments regarding the listed criteria. Responses included:

- Planning on building a home
- Concerns about impact to property owners
- Concerns about property values
- Concerns about health effects
- Concerns about visibility

Attendees were also asked if there are other features in the study area that are important, and to please describe them, their locations, and to mark them on the map. Written responses included:

- Distance to habitable structures
- Indicated a house, lake and well
- Concerns about trees and animal habitat
- Concerns about property values
- Concerns about visibility

When asked if they had concerns with any particular link, respondents listed multiple links. Links B, C, and Y appeared the most, with three respondents specifying concern with each of these links.

When asked which of four situations applied to them, responses were as follows:

- Ten indicated that a potential link is near their home.
- One indicated that a potential link is near their business.
- Ten indicated that a potential link crosses their land.
- Four indicated that they cultivate their property.

The questionnaire then provided a space for respondents to include any additional remarks and comments. Comments and responses included:

- Planning on building a home

- Concern about impacts to residence
- Concerns about property values

3.3.3 Correspondence with Agencies/Officials

As described previously in Section 2.1.5, POWER contacted federal, state, and local regulatory agencies, elected officials, and organizations regarding the proposed Project. All agency comments, concerns, and information received were taken into consideration by POWER and SWEPCO in the development of the preliminary and primary alternative routing links. Copies of correspondence with the various state and federal regulatory agencies and local and county officials and departments are included in Appendix A.

3.3.4 Modifications to Preliminary Alternative Routing Links

SWEPCO had discussions with WCEC regarding the different connection points at the public open house and after the public open house as well. WCEC voiced concerns regarding the ability to allocate operational and maintenance cost to the increase length in non-energized transmission line for the furthest south connection point (POC End-Option 4) and recommended that SWEPCO delete that termination option. SWEPCO understood these concerns and recommended to POWER that POC End-Option 4 be deleted and the associated Links L, AF, AE, V, N, S, R, and AH.

POWER and SWEPCO personnel performed a review and analysis of the comments and information received at the open house meeting and of information provided during individual meetings and discussions with landowners, interested stakeholders and WCEC. The purpose of the review and analysis was to evaluate areas of concern and to consider revisions to the preliminary alternative routing links.

In response to comments, some preliminary links were added, and some were modified, including links D, F1, F2, H1, H2, I, J, L, N, Q, R, S, V, AE, AF and AH. POC End-Option 4 was also eliminated.

Generally, the changes and additions were made for the following reasons:

- To improve the paralleling of apparent property lines or other physical features.
- To improve the paralleling of compatible ROW.
- To minimize impacts to ponds.

The preliminary alternative routing links are depicted in Figure 3-1.

3.3.5 Primary Alternative Route Development

It was POWER and SWEPCO's intent to identify alternative routing links that, when combined, would form an adequate number of reasonable and geographically diverse primary alternative routes (alternative routes) that reflect all the previously discussed routing considerations.

Following the modifications to the 39 preliminary alternative routing links, the elimination of eight alternative routing links, and the identification of the new alternative routing links, 33 primary alternative routing links resulted. The primary alternative routing links are depicted in Figure 3-2. Numerous possible alternative routes are possible using these 33 primary alternative routing links. Numerous possible alternative routes are possible using various combinations of the primary alternative routing links; however, POWER developed a set of viable, forward progressing, geographically diverse alternative routes. Ultimately, 10 primary alternative routes were developed for the Project.

This page left blank intentionally.

Figure 3-2 Preliminary Alternative Routing Links

THIS PAGE IS OVERSIZED AND CAN BE VIEWED IN CENTRAL RECORDS OR THE PUC INTERCHANGE BY DOWNLOADING THE NATIVE FILE (ZIP) FOR THIS ITEM NUMBER IN DOCKET NO. 50669

(This page left blank intentionally.)

The primary alternative routes, their link compositions, and approximate lengths are presented in Table 3-1 and are depicted on Figure 3-3 and Figure 5-1 in Appendix C.

TABLE 3-1 LINK COMPOSITION AND APPROXIMATE LENGTH OF THE PRIMARY ALTERNATIVE ROUTES

PRIMARY ALTERNATIVE ROUTE NUMBER	LINK COMPOSITION	LENGTH (MILES)
1	B-C-AG-AL-O	2.63
2	B-C-W-AL-O	2.57
3	B-C-W-AL-T-AM	3.44
4	B-C-Y-AA-P-AM	3.83
5	B-X-J-K-AA-P-AM	3.82
6	A-Z-I-H2-AK-P-AM	3.14
7	D-F2-AJ-H1-H2-U-AI	2.60
8	E-AB-F1-F2-AJ-H1-H2-U-AI	2.82
9	E-AB-M-G-H1-H2-AK-P-AM	3.53
10	E-AB-M-AC-AD-Q-AI	3.67

This page left blank intentionally.

4.0 POTENTIAL IMPACTS OF THE PRIMARY ALTERNATIVE ROUTES

The potential impacts of each alternative route were compared with respect to community values, park and recreational areas, cultural resources, aesthetics, and environmental integrity. Evaluation of the potential impacts of each of the 10 alternative routes was conducted by tabulating the data for each of the evaluation criteria provided in Table 2-1. The data tabulation for land use and environmental criteria for each alternative route are presented in Table 4-1. A more detailed comparative analysis of potential impacts between primary alternative routes is discussed below.

4.1 Impacts 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 does not include objections to electric transmission lines in general.

Potential impacts to community resources can be classified as direct or indirect. Direct effects are those that would occur if the location and construction of a transmission line resulted in the removal or loss of public access to a valued resource. Indirect effects are those that would result from a loss in the enjoyment or use of a resource due to the characteristics (primarily aesthetic) of the proposed transmission line, structures, or ROW.

4.2 Impacts on Planned Land Use

The magnitude of potential impacts to land use resulting from the construction of a transmission line is gauged by the amount of land (land use type) temporarily or permanently displaced by the actual ROW and by the compatibility of the facility with adjacent land uses. During construction, temporary impacts to land uses within the ROW might occur due to the movement of workers, equipment, and materials through the area. Construction noise and dust, as well as temporary disruptions of traffic flow, might also temporarily affect residents and businesses in the area immediately adjacent to the ROW. Coordination between SWEPCO, its contractors, and landowners regarding ROW access and construction scheduling should minimize these disruptions.

An analysis of compatibility with adjacent land use types was completed for each alternative route. Land use categories identified within the study area include low density rural residences, agriculture, oil and gas facilities, transportation/aviation/utility features, communication towers, and parks and recreation areas.

The evaluation criteria used to compare potential land use impacts include overall alternative route length, route length parallel to existing linear features (including apparent property boundaries), alternative route proximity to habitable structures, alternative route proximity to park and recreational areas, and alternative route length across various land use types. An analysis of the existing land use within and adjacent to the proposed ROW is required to evaluate the potential impacts.

This page left blank intentionally.

Table 4-1 Environmental Data for Route Evaluation

THIS PAGE IS OVERSIZED AND CAN BE VIEWED IN CENTRAL RECORDS OR THE PUC INTERCHANGE BY DOWNLOADING THE NATIVE FILE (ZIP) FOR THIS ITEM NUMBER IN DOCKET NO. 50669

(This page left blank intentionally.)

The length of an alternative route can be an indicator of the relative magnitude of land use impacts. Generally, with all other things being equal, the shorter the route the less land is crossed typically results in fewer potential impacts. The total lengths of the alternative routes range approximately from 2.57 miles for Alternative Route 2, to approximately 3.83 miles for Alternative Route 4. The differences in route lengths reflect the direct or indirect pathway of each alternative route between the Project endpoints. The length of the alternative routes may also reflect the effort to parallel existing transmission lines, other existing linear features and apparent property boundaries, and the geographic diversity of the alternative routes. The total length of each primary alternative route is presented in Table 4-1.

The length of a proposed transmission line within or paralleling existing compatible linear ROWs or apparent property boundaries can reduce potential impacts through a reduction of property and habitat fragmentation. Often reduced ROW widths can also be achieved depending on the ownership of the ROW. Evaluation criteria used to quantify this benefit include length of alternative route within existing transmission line ROW, length parallel and adjacent to existing transmission line ROW, length of route parallel to other existing linear ROWs, and length of ROW paralleling apparent property lines. It should also be noted that if a link parallels more than one existing linear corridor, it was only tabulated once (e.g., a link that parallels both an apparent property line and a roadway will only be tabulated as paralleling the roadway).

None of the alternative routes have length proposed within existing transmission line ROW.

Alternative Routes 1, 2, 3, 4, and 5 each parallel existing transmission line ROW for approximately 0.59 mile. The remaining five alternative routes do not parallel existing transmission line ROW.

The alternative routes with lengths paralleling other existing linear features including roadways and railways range from 0.06 mile each for Alternative Routes 7 and 8, to approximately 2.23 miles for Alternative Route 3.

The length of alternative routes that parallel apparent property boundaries ranges from zero (0) mile each for Alternative Routes 1 and 2, to approximately 2.00 miles for Alternative Route 10.

A more representative account for the consideration of whether new transmission line routes are proposed within existing compatible ROW or parallel to existing compatible ROWs, apparent property lines, or other natural or cultural features is demonstrated with the percentage of each total route length within and parallel to the total length of these features. All the alternative routes parallel existing linear features for some portion of their total length. The percentage of the alternative routes within or paralleling existing linear features ranges from 48 percent for Alternative Route 7, to 93 percent for Alternative Route 2.

4.2.1 Impacts on Developed and Residential Areas

Typically, one of the most important measures of potential land use impacts is the number of habitable structures located in the vicinity of each alternative route. Based on direction provided by the PUC, habitable structure identification is included in the CCN filing. POWER determined the number of habitable structures located within 300 feet of each alternative route centerline by using GIS software, interpreting aerial photography, and by verifying findings during reconnaissance surveys.

All of the alternative routes have habitable structures located within 300 feet of their centerlines. Alternative Routes 3, 6, and 9 have the most habitable structures located within 300 feet of the centerlines with seven habitable structures each. Alternative Route 1 has the least habitable structures

within 300 feet of its centerline with one. The number of habitable structures within 300 feet of each alternative route centerline is provided in Table 4-1.

Tables 5-2 through 5-11 present detailed information on habitable structures and other land use features in the vicinity of the alternative routes. All known habitable structure locations are shown on Figure 5-1 in Appendix C.

4.2.2 Impacts 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 cultivation is not the primary use (pastureland/rangeland), followed by cultivated croplands, which often has a higher degree of potential impact. Construction of the transmission line does not preclude agricultural activities from resuming after construction is completed. Due to the relatively small area affected (location of the structures) and the short duration of construction activities at any one location, such impacts should be both minor and temporary on agricultural land uses.

Seven of the alternative routes cross some length of cropland areas. Alternative route lengths crossing cropland areas range from zero (0) mile each for Alternative Routes 1, 2, and 3, to approximately 0.51 mile for Alternative Route 4.

All of the alternative routes cross pastureland/rangeland areas. The ROW for this Project will not be fenced or otherwise separated from adjacent lands and no significant long-term displacement of farming or grazing activities will occur. Alternative route lengths crossing pastureland areas range from approximately 0.91 mile for Alternative Route 8, to approximately 2.89 miles for Alternative Route 5.

None of the alternative routes cross lands with any known mobile irrigation systems (rolling or pivot).

4.2.3 Impacts on Lands with Conservation Easements

There are no known conservation easements in the study area. SWEPCO will coordinate with landowners during transmission line construction and service for continued operation of ongoing or existing land management activities.

4.2.4 Impacts on Oil and Gas Facilities

Oil and gas wells and associated treatment facilities and pipelines were identified within the study area. During the route development process, SWEPCO and POWER applied a set-back distance of 200 feet from the alternative route centerlines to identified well heads using 2019 RRC data layers, aerial photo interpretation, and GIS software generated measurements. None of the alternative routes cross any known pipelines or are parallel to existing pipeline ROW. If any pipelines are later identified and crossed by the PUC approved alternative route, they will be indicated on engineering drawings and flagged prior to construction. SWEPCO will notify and coordinate with pipeline companies as necessary during transmission line construction and operation.

4.2.5 Impacts on Transportation/Aviation/Utility Features

Transportation Features

Potential impacts to transportation could include temporary disruption of traffic or conflicts with proposed future roadways and/or utility improvements. Traffic disruptions would include those

associated with the movement of equipment and materials to the ROW and increased traffic flow and/or periodic congestion during the construction phase of the Project. Given the rural nature of the study area, these impacts are typically considered minor, temporary, and short-term. SWEPCO will coordinate with the agencies in control of the affected roadways to address these traffic flow impacts. As mentioned in Section 2.2.5, there are no roadway projects listed in the TxDOT Project Tracker within the study area.

No US Hwys and SHs are crossed by any of the alternative routes. All of the alternative routes cross one FM road. Prior to construction, SWEPCO will be required to obtain road-crossing permits from TxDOT when crossing state-maintained roadways.

Aviation Facilities

The Project is not anticipated to have significant effects on aviation operations within the study area.

No public FAA registered airports with at least one runway longer than 3,200 feet are located within 20,000 feet of any of the alternative routes. There are no FAA registered airports where no runway longer than 3,200 feet is located within 10,000 feet of any of the alternative routes; and there are no heliports within 5,000 feet of any of the alternative routes.

Following PUC approval of a route for the proposed transmission line, SWEPCO will make a final determination of the need for FAA notification based on the approved alternative route location and structure design. The result of this notification, if required, could include changes in the line design and/or potential requirements to mark the conductors and/or light the structures.

There are no known private airstrips located within 10,000 feet of the alternative routes.

Utility Features

Utility features identified within the study area include existing electrical transmission lines, distribution lines, and pipelines. Potential impacts to oil and gas facilities were discussed previously in Section 4.2.4. Water wells and water tanks are scattered throughout the study area and were mapped and avoided to the extent practicable. If these utility features are crossed by or are in close vicinity to the alternative route centerline approved by the PUC, SWEPCO will coordinate with the appropriate entities to obtain necessary permits or permission as required.

Three existing electric transmission lines were identified within the study area. None of the alternative routes cross existing transmission lines.

4.2.6 Impacts on Electronic Communication Facilities

None of the alternative routes are located within 10,000 feet of any commercial AM radio towers. One cell tower is located within 2,000 feet of the alternative route centerlines of Alternative Routes 1, 2, 3, 4, 5, and 6.

The distance of the electronic communication facility from the nearest route was measured using GIS software and aerial photograph interpretation. The other communication facility (Figure 5-1 Map ID 200) is located approximately 844 feet from Link B and approximately 1220 feet from Link A. Tables 5-2 through 5-11 present detailed information on locations of such electronic communication features and other land use features in the vicinity of the alternative routes. All identified communication facility locations are shown on Figures 3-3 and Figure 5-1 in Appendix C.

4.2.7 Impacts on Parks and Recreation Areas

Potential impacts to parks or recreation areas include the disruption or preemption of recreation activities. No parks or recreational areas were identified within the study area.

None of the alternative routes cross or have additional parks or recreation areas located within 1,000 feet of their centerlines.

4.3 Impacts on Socioeconomics

Construction and operation of the proposed transmission line is not anticipated to result in a significant change in the population or employment rate within the study area. SWEPCO normally uses contract labor supervised by SWEPCO employees during the clearing and construction phases of transmission line projects. Construction workers for the Project would likely commute to the work site on a daily or weekly basis instead of permanently relocating to the area. The temporary workforce increase would likely result in an increase in local retail sales due to purchases of lodging, food, fuel, and other merchandise for the duration of construction activities. No additional staff would be required for line operations and maintenance. SWEPCO is required to pay sales tax on purchases and is subject to paying local property tax on land or improvements as applicable.

4.4 Impacts on Cultural Resources

Methods for identifying, evaluating, and mitigating impacts to cultural resources have been established for federal projects or permitting actions, primarily for purposes of compliance with the National Historic Preservation Act. Similar methods are often used when considering cultural resources affected by state-regulated undertakings. In either case, this process generally involves identification of significant (i.e., national or state-designated) cultural resources within a Project area, determining the potential impacts of the Project on those resources, and implementing measures to avoid, minimize, or mitigate those impacts.

Impacts associated with the construction, operation, and maintenance of transmission lines can affect cultural resources either directly or indirectly. Construction activities associated with any proposed project can adversely impact cultural resources if those activities alter the integrity of key characteristics that contribute to a property's significance, as defined by the standards of the NRHP or the Antiquities Code of Texas. These characteristics might include location, design, setting, materials, workmanship, feeling, or association for architectural and engineering resources, or archeological information potential for archeological resources.

Absent best management practices, proper mitigation and avoidance measures, the types of resources that could be adversely impacted by the direct and indirect impacts of a transmission line include archeological sites, historic buildings, structures, landscapes, and districts.

4.4.1 Direct Impacts

Typically, direct impacts could be caused either by the actual construction of the line or through increased vehicular and pedestrian traffic during construction. Additionally, an increase in vehicular and/or pedestrian traffic might damage surficial or shallow subsurface sites. Direct impacts might also include isolation of a historic resource from, or alteration of, its surrounding environment.

4.4.2 Indirect Impacts

Indirect impacts include those effects caused by the Project that are farther removed in distance or that occur later in time but are reasonably foreseeable. These indirect impacts might include introduction of visual or audible elements that are out of character with the resource or its setting. Indirect impacts might also occur as a result of alterations in the pattern of land use, changes in population density, accelerated growth rates, or increased pedestrian or vehicular traffic.

4.4.3 Mitigation

The preferred form of mitigation for direct and indirect impacts to cultural resources is avoidance through Project modifications. Additional mitigation measures for direct impacts might include implementing a program for data recovery excavations if an archeological site cannot be avoided. Indirect impacts on historical properties and landscapes can be lessened through careful design and landscaping considerations, such as using vegetation screens or berms if practicable. Additionally, relocation might be possible for some historic structures.

4.4.4 Summary of Cultural Resource Impacts

The distance of each recorded site located within 1,000 feet of the nearest primary route link and alternative route was measured using GIS software and aerial photography interpretation. A review of the Texas Historic Sites Atlas and TASA records (THC 2019a and 2019b), described in Section 2.4, indicate no State Antiquities Landmarks, NRHP-listed or determined-eligible bridges, National Historic Trails, or cemeteries are recorded within 1,000 feet of the alternative routes. Two archeological sites, 41VN92 and 41VN93 are located within 1,000 feet of the alternative routes. Sites 41VN92 and 41VN93 are lithic scatters located 405 and 379 feet, respectively, from Alternative Routes 1, 2, 3, 4, and 5. No recorded cultural resources are crossed by any of the alternative routes.

None of the alternative routes have been surveyed for cultural resources. Thus, the potential for undiscovered cultural resources does exist along all the alternative routes. To assess this potential, a review of geological, soil, and topographical maps was conducted by a professional archeologist to identify areas along the alternative routes where unrecorded prehistoric archeological resources have a higher probability to occur. These HPAs for prehistoric archeological sites were identified adjacent to stream crossings of the alternative routes. Historic age resources are also likely to be found near water sources; however, they will also be near primary and secondary roads which provided access to the sites. Buildings and cemeteries are more likely to be located within or near historic communities. To facilitate the data evaluation and alternative route comparison, each HPA was mapped using GIS and the length of each alternative route crossing these areas was tabulated.

All the alternative routes cross HPAs. Alternative Routes 6 and 9 cross the least amount of HPA, with 1.21 and 1.61 miles respectively. Alternative Routes 4 and 5 cross the most HPA, with 2.37 and 2.58 miles of HPA crossed, respectively. Table 4-1 shows the amount of HPA crossed by each route.

4.5 Impacts on Aesthetic Values

Aesthetic impacts, or impacts to visual resources, exist when the ROW, lines and/or structures of a transmission line system create an intrusion into, or substantially alter the character of the existing 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 and/or enjoyment of an area, in the case of valued community resources and recreational areas.

Construction of the proposed transmission project could have both temporary and permanent aesthetic impacts. Temporary impacts would include views of the actual assembly and erection of the tower structures. If wooded areas are cleared, the brush and wood debris could have an additional negative impact on the local visual environment. Permanent impacts would include the views of the cleared ROW, pole structures, and lines from public viewpoints including roadways, recreational areas and scenic overlooks.

Potential aesthetic impacts were evaluated by estimating the length of each alternative route that would fall within the foreground visual zones (one-half mile with unobstructed views) of major highways, FM roads, and parks or recreational areas. There are no interstate highways located within the study area.

None of the alternative routes have any length of ROW within the foreground visual zone of US Hwys or SHs.

All the alternative routes have lengths of their ROW located within the foreground visual zone FM roads. These lengths range approximately 1.07 miles for Alternative Routes 1, 2, and 3, to approximately 2.83 miles for Alternative Route 5.

None of the alternative routes has any portion of a route located within the foreground visual zone of parks or recreational areas.

Overall, the character of the rural landscape within the study area is dominated by pasture/rangeland and scattered residential development. The residential structures and associated infrastructure including some transmission and distribution facilities already in service and agricultural practices throughout the study area have already impacted the aesthetic quality within the region from public viewpoints. The construction of any of the alternative routes is not anticipated to significantly impact the aesthetic quality of the landscape.

4.6 Impacts on Environmental Integrity

4.6.1 Impacts on Physiography and Geology

Construction of the proposed transmission line is not anticipated to have any significant adverse effects on the physiographic or geologic features and resources of the area. Erection of the structures will require the excavation and/or minor disturbance of small quantities of near-surface materials but should have no measurable impacts on the geologic resources or features along any of the alternative routes. The Grand Saline Salt Dome is located greater than 1,500 feet northwest of the nearest alternative route and is not anticipated to impact the Project. Additionally, no geologic hazards are anticipated to be created by the Project.

4.6.2 Impacts on Soils

Activities associated with the construction, operation, and maintenance of electrical transmission lines typically do not adversely impact soils when appropriate mitigation measures are implemented during the construction phase. Potential impacts to soils include erosion and compaction.

The highest risk for soil erosion and compaction is primarily associated with the clearing and construction phases of the Project. In accordance with SWEPCO standard construction specifications, ROW clearing of woody vegetation including trees, brush, and undergrowth would be restricted to the ROW area. Areas with vegetation removed would have the highest potential for soil erosion and the movement of heavy equipment down the cleared ROW creates the greatest potential for soil

compaction. Prior to construction, SWEPCO would develop a SWPPP to minimize potential impacts associated with soil erosion, compaction, and off ROW sedimentation. Implementation of this plan would incorporate temporary and permanent BMPs to minimize soil erosion on the ROW during significant rainfall events. The SWPPP would also establish the criteria for mitigating soil compaction and re-vegetation to ensure adequate soil stabilization during the construction and post-construction phases. The native herbaceous layer of vegetation would be maintained, to the extent practical, during construction. Denuded areas will be seeded and/or implementation of permanent BMPs (i.e., soil berms or interceptor slopes) may be required to stabilize the ROW during the post-construction phase. The ROW would be inspected during and post-construction to ensure that potential high erosion areas were identified and appropriate BMPs were implemented and maintained.

Potential impacts to soils, primarily erosion and compaction, would be minimized with the development and implementation of a SWPPP. The magnitude of potential soil impacts is considered equivalent for all alternative routes.

4.6.3 Impacts on Water Resources

Impacts on Surface Water

All the alternative routes cross multiple surface waters. SWEPCO proposes to span all surface waters crossed by any of the alternative routes. Structure locations would be located outside of the ordinary high-water marks for any surface waters. Hand-cutting of woody vegetation within the ordinary high-water marks would be implemented and limited to the removal of woody vegetation as necessary to meet conductor to ground clearances. The shorter understory and herbaceous layers of vegetation would remain, where allowable, and BMPs would be implemented in accordance with the SWPPP to reduce the potential for sedimentation outside of the ROW. Since all surface waters will be spanned and a SWPPP plan will be implemented during construction, no significant impacts to surface waters are anticipated for any of the alternative routes. The number of stream crossings, route lengths parallel to streams, and route lengths crossing open water for each of the alternative routes is presented in Table 4-1.

The number of stream crossings for the alternative routes range from three for Alternative Routes 1, 2, 3, and 4, to nine stream crossings for Alternative Route 10. Four of the alternative routes parallel streams (within 100 feet) for a portion of their length. Alternative Route 6, 7, and 8 parallel streams for approximately 0.06 mile and Alternative Route 5 parallels streams for approximately 0.12 mile. None of the remaining alternative routes parallel streams. No rivers are crossed by any of the alternative routes. The length of each alternative route crossing open water (lakes, ponds) ranges from approximately 21.7 feet for Alternative Route 10, to approximately 554.1 feet for Alternative Route 5.

Impacts on Ground Water

The construction, operation, and maintenance of the proposed transmission line are not anticipated to adversely affect groundwater resources within the study area. During construction activities, another potential impact for both surface water and groundwater resources is related to fuel and/or other chemical spills. A SWPPP will be developed to identify avoidance measures of potential contamination of water resources. Standard operating procedures and spill response specifications relating to petroleum product storage, refueling, and maintenance activities of equipment are provided as a component of the SWPPP in order to avoid and minimize potential contamination to water resources. SWEPCO will take all necessary and available precautions to avoid and minimize the occurrence of such spills. Any accidental spills would be promptly addressed in accordance with state and federal regulations.

Impacts on Floodplains

The length of each alternative route across 100-year floodplains is presented in Table 4-1. Alternative Route 6 crosses the shortest length of floodplains with approximately 0.34 mile and Alternative Routes 8, 9, and 10 have the longest length with 0.59 mile. No construction activities are anticipated that would impede the flow of water within watersheds or floodplains. Engineering design should alleviate the potential for construction activities to adversely impact flood channels, and proper structure placement would minimize any flow impedance during a major flood event. Prior to construction, SWEPCO will coordinate with the appropriate floodplain administrators as necessary prior to construction to acquire any necessary work permits.

4.6.4 Impacts on Ecological Resources

Impacts on Vegetation Types

Potential impacts to vegetation would result from clearing the ROW of woody vegetation and/or mowing/clearing of herbaceous vegetation. These activities facilitate ROW access for transmission line construction and future maintenance activities. Impacts to vegetation would be limited to the ROW and any necessary roads or temporary easement areas. ROW clearing activities would be completed while minimizing the impacts to existing groundcover vegetation, when practical. Mowing and/or shredding of herbaceous vegetation might be required within pasturelands/rangelands. Future ROW maintenance activities may include periodic mowing and/or herbicide applications to maintain the herbaceous vegetation layer within the ROW.

Clearing trees and shrubs from woodland areas typically generates a degree of habitat fragmentation. The magnitude of habitat fragmentation is typically minimized by paralleling an existing linear feature such as a transmission line, roadway or railway. During the route development process, consideration was given to maximize the length of the routes parallel to existing linear corridor features. Clearing would occur only where necessary to provide access, conductor to-ground and to-side clearances, workspace, and future maintenance access to the ROW.

The length of ROW required within upland forest and bottomland/riparian forest was calculated for each alternative route and is provided in Table 4-1. The estimated route lengths through upland forest range from approximately 0.15 mile for Alternative Route 6, to approximately 1.69 miles for Alternative Route 8. The route length within bottomland/riparian forest ranges from zero (0) feet for Alternative Routes 4, 5, 6, and 7, to approximately 197.1 feet for Alternative Routes 8, 9, and 10.

Impacts on Wetlands

Wetlands serve as important habitat to numerous wildlife species and are often used as migration corridors for wildlife. Removal of woody vegetation in wetlands within the study area may generate a higher degree of habitat fragmentation. While permanent loss of wetlands would be limited to the structure locations, permanent conversion from forested to herbaceous wetlands would occur within the ROW in these areas. Impact minimization measures can be implemented during construction (e.g., timber matting) to reduce wetland impacts. The length of ROW required within wetlands was calculated for each alternative route based on NWI mapped wetland locations and is provided in Table 4-1. Alternative Route 5 does not cross any NWI mapped wetlands and Alternative Route 8 crosses the most with approximately 1989.5 feet.

SWEPCO will coordinate with the USCAE and complete construction activities in compliance with all Section 404 permit regulations.

Impacts on Wildlife and Fisheries

The primary impacts of construction activities on terrestrial wildlife species are typically associated with temporary disturbances during construction activities and with the removal of vegetation (habitat modification/fragmentation). Increased noise and equipment movement during construction might temporarily displace mobile wildlife species from the immediate and surrounding workspace area. These impacts are considered short-term and normal wildlife movements would be expected to resume after construction is completed. Potential long-term impacts include those resulting from habitat modifications and/or fragmentation. All the alternative routes cross areas of upland and bottomland/riparian forest, which can represent the highest degree of habitat fragmentation by conversion to an herbaceous habitat. During the routing process, POWER attempted to minimize potential forest habitat fragmentation by paralleling existing linear features and avoiding paralleling streams when feasible.

Construction activities might also impact small, immobile, or fossorial (living underground) animal species through incidental takes or from the alteration of local habitats. Incidental impacts of these species might occur due to equipment or vehicular movement on the ROW by direct impact or due to the compaction of the soil if the species is fossorial. Potential impacts of this type are not typically considered significant and are not likely to have an adverse effect on any species population dynamics.

If ROW clearing occurs during bird nesting seasons, potential impacts could occur within the ROW area related to potential takes of bird eggs and/or nestlings. Increases in noise and equipment activity levels during construction could also potentially disturb breeding or other nesting activities in areas immediately adjacent to the ROW. SWEPCO proposes to complete all ROW clearing and construction activities compliant with the MBTA to avoid or minimize these potential impacts to the extent practical.

There is a risk for electrocution and collisions of avian species with the transmission line infrastructure. Measures can be implemented to minimize this risk with transmission line engineering designs. The electrocution risk to birds should not be significant since the engineering design distance between conductors, from conductor to structure, and from conductor to ground wire for the proposed transmission line is greater than the wingspan of any bird potentially utilizing the area (i.e., distance is greater than eight feet). While the conductors are typically thick enough to be visible and avoided by birds in flight, the shield wires are thinner and can present a risk for avian collision. This risk can be minimized by installing bird flight diverters or other marking devices on the line within high bird use areas.

Potential impacts to aquatic systems would include effects of erosion, siltation, and sedimentation. Vegetation clearing of the ROW might result in increased suspended solids entering surface waters traversed by the transmission line. Increases in suspended solids might adversely affect aquatic organisms that require relatively clear water for foraging and/or reproduction. Physical aquatic habitat loss or alteration could result wherever riparian vegetation is removed and at temporary crossings required for access roads. Increased levels of siltation or sedimentation might also potentially impact downstream areas primarily affecting filter feeding benthic and other aquatic invertebrates. No significant adverse impacts are anticipated to any aquatic habitats crossed or located adjacent to the ROW for any of the alternative routes.

Construction of the proposed transmission line is not anticipated to have significant direct adverse impact to wildlife and fisheries within the study area. Direct impacts would be associated with the loss of forested habitat. While highly mobile animals might be temporarily displaced from habitats near the ROW during the construction phase, normal movement patterns should return after Project

construction is complete. Implementation of a SWPPP utilizing BMPs will minimize potential impacts to aquatic habitats.

Impacts to Threatened and Endangered Species

In order to determine potential impacts to threatened or endangered species, a review using available information was completed. Known occurrence data (TXNDD 2019) for the study area and scoping comments from TPWD and USFWS were reviewed.

Current USFWS and TPWD county listings for federal- and state-listed threatened and endangered species and USFWS designated critical habitat locations were included in the review. The TXNDD data provides a historical record of the species and other rare resources that could potentially occur in the study area. The absence of species within the TXNDD database is not a substitute for a species-specific field survey. The TXNDD data provides an indication that suitable habitat for the species was historically present within the area. None of the alternative routes cross known habitat of federally listed endangered or threatened species.

Threatened and Endangered Plant Species

No federal-listed plant species were identified for the study area county. Construction of any of the alternative routes is not anticipated to impact any threatened or endangered plant species.

Sensitive Vegetation Communities

Review of the TXNDD (2019) data does not indicate the presence of any sensitive vegetation communities within the study area. Construction of the proposed transmission line is not anticipated to have any significant adverse effects on sensitive vegetation communities in the area.

Threatened and Endangered Animal Species

Known element occurrence data for the study area was obtained from the TXNDD (2019). Current county listings for federally-and state-listed threatened and endangered species were obtained from USFWS (2019b) and TPWD (2019e). USFWS designated critical habitat locations were included in the review. Review of the TXNDD (2019) report did not indicate any historical occurrences of federally-listed species crossed by any of the alternative routes. The absence of TXNDD data does not preclude the need for additional habitat evaluations for potential suitable habitat or the need for any species-specific surveys for any listed species for the PUC approved route.

Federally-listed avian species for the study area include the interior least tern, piping plover, and red knot. The USFWS only requires consideration of impacts to these species for wind energy projects within their migratory route. Although these avian species may occur as migrants within the study area, no significant impacts to nesting or foraging habitat are anticipated from any alternative route.

State-listed avian species including the swallow-tailed kite, white-faced ibis, and wood stork may occur as possible migrants within the study area and potentially occupy habitats temporarily or seasonally only. The proposed Project is not anticipated to have adverse impacts to these species' breeding habitat.

The bald eagle may occur within the study area near large surface waters. Bald eagles and their nests are protected under the MBTA and Bald and Golden Eagle Protection Act. Nests are protected if they have been used within the previous five nesting seasons. If nests are identified or individuals are observed during any field surveys after a route is approved, SWEPCO will further coordinate with the TPWD and USFWS to determine avoidance or mitigation strategies.

State-listed aquatic species including the Louisiana pigtoe, Texas heelsplitter, and alligator snapping turtle may occur within the study area. SWEPCO proposes to implement BMPs as a component of the SWPPP to prevent off-ROW sedimentation and degradation of surface waters and wetlands. No significant adverse impacts are anticipated to any state-listed aquatic species. No impacts to the state-listed sandbank pocketbook, southern hickorynut, and Texas pigtoe are anticipated due to the lack of suitable habitat within the study area.

State-listed species such as the Texas horned lizard and northern scarlet snake may occur within the study area if suitable habitats are available. Additionally, the black bear may occur within the study area as a rare migrant only and is not anticipated to be adversely impacted by the proposed Project.

Some of these species' habitats may be spanned or avoided entirely. SWEPCO proposes to span all surface waters and implement BMPs within the SWPPP plan to minimize potential impacts to aquatic species. A field survey for potential suitable habitat will be completed after PUC alternative route approval.

This page left blank intentionally.

5.0 ROUTE EVALUATION

The purpose of this Routing Study was to delineate and evaluate alternative routes for SWEPCO's proposed 138 kV transmission line in Van Zandt County. POWER developed and completed an environmental analysis of 10 primary alternative routes, 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 from a strictly environmental, land use, and cultural resource viewpoint based upon the measurement of 42 environmental criteria (Tables 2-1 and 4-1). POWER used this information to evaluate and rank the alternative routes and to select an alternative route for recommendation to SWEPCO that provides the best balance between land use and aesthetic, ecological, and cultural resource impacts. SWEPCO considers POWER's recommendations in addition to engineering and constructability constraints, cost estimates, and comments from agencies and the public; and then selects one alternative route that SWEPCO believes best addresses the requirements of applicable portions of PURA and PUC Substantive Rules, as is required for the CCN application.

5.1 POWER's Environmental Evaluation

POWER used a consensus process to evaluate the potential environmental, land use, and cultural resource impacts of the alternative routes. POWER professionals with expertise in different environmental disciplines (land use, ecology, and cultural resources), as well as POWER's Project Manager, evaluated the alternative routes based on their potential impacts. Each POWER technical expert independently analyzed and then ranked the routes with respect to potential impacts within their respective discipline. The evaluators then met as a group and discussed their independent results. The group compared the relationship and relative sensitivity among the major land use, ecological, and cultural resource factors.

The evaluators agreed that all the alternative routes developed were viable and acceptable from an overall land use, ecology, and cultural resource perspective. The evaluators each ranked the alternative routes from **1st** to **10th** (with **1st** having the least potential impact and **10th** the greatest potential impact) from the perspective of their own technical disciplines. The results of this ranking are summarized in Table 5-1.

TABLE 5-1 POWER'S ENVIRONMENTAL RANKING OF THE ALTERNATIVE ROUTES

	RANKING				
Alternative Route	**Land Use Specialist**	**Ecology Specialist**	**Cultural Resources Specialist**	**Project Manager**	**Consensus**
1	2nd	4th	5th	2nd	2nd
2	1st	3rd	4th	1st	1st
3	6th	5th	6th	4th	4th
4	7th	6th	9th	8th	
5	8th	2nd	10th	7th	
6	5th	1st	1st	3rd	3rd
7	3rd	7th	3rd	5th	5th
8	4th	9th	7th	6th	
9	10th	8th	2nd	10th	
10	9th	10th	8th	9th	

The land use evaluation placed the greatest importance on overall length of the route, length paralleling existing transmission lines, length paralleling compatible ROWs and apparent property lines, and the number of habitable structures located within 300 feet of the proposed route centerline. The land use specialist ranked Alternative Route 2 as having the least impact, followed in ranking by Alternative Routes 1, 7, 8, and 6.

The ecological ranking of the alternative routes was based primarily on the total length of ROW across NWI mapped wetlands, upland forest, and bottomland/riparian forest. Secondary considerations were the number of stream crossings and the total length of the alternative route. The ecologist ranked Alternative Route 6 as having the least potential ecological impact, followed in ranking by Alternative Routes 5, 2, 1, and 3.

The cultural resources ranking of the alternative routes was based primarily on the amount of HPA crossed by the alternative routes. Alternative Route 6 was identified as having the least potential impact on cultural resources, followed in ranking by Alternative Routes 9, 7, 2, and 1.

The POWER Project Manager ranked the alternative routes, considering all the evaluation criteria and progression of the alternative routes across the study area. Key factors that were considered included: paralleling of existing compatible ROWs, apparent property lines, the overall length of the alternative route, and proximity to habitable structures. Potential impact avoidance and minimization measures typically employed during the construction of transmission lines were also considered. For example, natural features identified along the ROW such as streams and open water can be spanned to minimize potential impacts. Alternative Route 2 was selected by the POWER Project Manager as the best-balanced route considering all the evaluation criteria reviewed, followed in ranking by Alternative Routes 1, 6, 3, and 7.

Following the ranking by discipline, the group of POWER evaluators discussed the relative importance and sensitivity of the various criteria as they applied to all the alternative routes. Based on group discussion of the relative value and importance of each set of criteria (land use, ecology, and cultural resources), it was the consensus of the group that paralleling of existing compatible ROW and apparent property lines, and overall length of the route were the primary criteria in their decision. Secondary factors included proximity to habitable structures and HPAs for archeological resources.

All the alternative routes are considered viable, acceptable routes that provide geographic diversity. The routing team ranked Alternative Route 2 as the alternative route that best balances land use, ecology, cultural resources, and certain PUC routing criteria. The next top four ranked routes include Alternative Routes 1, 6, 3, and 7, in order of preference.

In summary, POWER's decision to recommend Alternative Route 2 as the route that best balances the PUC routing criteria related to land use, ecology, and cultural resource was based primarily on the following evaluation criteria. Alternative Route 2:

- is the shortest route, at 2.57 miles;
- has two habitable structures within 300 feet of the proposed route centerline;
- has the greatest percent parallel to existing compatible ROW, with 93 percent;
- crosses 42.8 feet of mapped NWI wetlands; and
- has the fourth shortest distance across areas of high archeological site potential, at 1.81 miles.

In addition, Alternative Route 2:

- crosses no parks/recreational areas;
- crosses no land irrigated by traveling systems (rolling or pivot type);

- crosses no electric transmission lines;
- crosses no US or state highways;
- crosses no cemeteries;
- has no FAA registered airports with at least one runway more than 3,200 feet in length located within 20,000 feet of the ROW;
- has no FAA registered airports having no runway more than 3,200 feet in length located within 10,000 feet of the ROW centerline;
- has no private airstrips within 10,000 feet of its ROW centerline; and
- has no heliports within 5,000 feet of its ROW centerline.

Therefore, based upon its evaluation of this Project and its experience and expertise in the field of transmission line routing, POWER recommends Alternative Route 2 from an overall land use and environmental perspective, and the remaining routes as alternatives. Considering all pertinent factors related to land use, environmental and cultural resources, it is POWER's opinion that Alternative Route 2 best addresses the applicable criteria in PURA § 37.056(c)(4) and the PUC Substantive Rules.

Tables 5-2 through 5-11 present detailed information on habitable structures and other land use features in the vicinity of the alternative routes. The items in Tables 5-2 through 5-11 and the alternative routes are illustrated in Appendix C on Figure 5-1.

TABLE 5-2 HABITABLE STRUCTURES AND OTHER LAND USE FEATURES IN THE VICINITY OF ROUTE 1

LINK COMBINATION: B-C-AG-AE-O			
Map Number	**Structure or Feature**	**Approximate Distance from Centerline [1] (feet)**	**Nearest Alternate Route Link [2]**
2	Single Family Residence	170	O
200	Other Electronic Installation	844	B
-	41VN92	405	-
-	41VN93	379	-

[1] Due to the potential horizontal inaccuracies of the aerial photography and data utilized, all habitable structures within 310 feet have been identified.
[2] Nearest Alternative Route Link to sensitive cultural resource sites is not provided for protection of the sites.

TABLE 5-3 HABITABLE STRUCTURES AND OTHER LAND USE FEATURES IN THE VICINITY OF ROUTE 2

LINK COMBINATION: B-C-W-AE-O			
Map Number	**Structure or Feature**	**Approximate Distance from Centerline [1] (feet)**	**Nearest Alternate Route Link [2]**
1	Single Family Residence	266	W
2	Single Family Residence	170	O
200	Other Electronic Installation	844	B
-	41VN92	405	-
-	41VN93	379	-

[1] Due to the potential horizontal inaccuracies of the aerial photography and data utilized, all habitable structures within 310 feet have been identified.
[2] Nearest Alternative Route Link to sensitive cultural resource sites is not provided for protection of the sites.

TABLE 5-4 HABITABLE STRUCTURES AND OTHER LAND USE FEATURES IN THE VICINITY OF ROUTE 3

LINK COMBINATION: B-C-W-AL-T-AM			
Map Number	**Structure or Feature**	**Approximate Distance from Centerline [1] (feet)**	**Nearest Alternate Route Link [2]**
1	Single Family Residence	266	W
12	Single Family Residence	146	T
13	Single Family Residence	88	T
14	Single Family Residence	257	T
15	Single Family Residence	101	T
16	Single Family Residence	127	T
17	Single Family Residence	239	T
200	Other Electronic Installation	844	B
-	41VN92	405	-
-	41VN93	379	-

[1] Due to the potential horizontal inaccuracies of the aerial photography and data utilized, all habitable structures within 310 feet have been identified.
[2] Nearest Alternative Route Link to sensitive cultural resource sites is not provided for protection of the sites.

TABLE 5-5 HABITABLE STRUCTURES AND OTHER LAND USE FEATURES IN THE VICINITY OF ROUTE 4

LINK COMBINATION: B-C-Y-AA-P-AM			
Map Number	**Structure or Feature**	**Approximate Distance from Centerline [1] (feet)**	**Nearest Alternate Route Link [2]**
8	Single Family Residence	127	Y
10	Single Family Residence	119	Y
11	Single Family Residence	86	Y
16	Single Family Residence	127	AM
18	Single Family Residence	117	P
200	Other Electronic Installation	844	B
-	41VN92	405	-
-	41VN93	379	-

[1] Due to the potential horizontal inaccuracies of the aerial photography and data utilized, all habitable structures within 310 feet have been identified.
[2] Nearest Alternative Route Link to sensitive cultural resource sites is not provided for protection of the sites.

TABLE 5-6 HABITABLE STRUCTURES AND OTHER LAND USE FEATURES IN THE VICINITY OF ROUTE 5

LINK COMBINATION: B-X-J-K-AA-P-AM			
Map Number	**Structure or Feature**	**Approximate Distance from Centerline [1] (feet)**	**Nearest Alternate Route Link [2]**
11	Single Family Residence	86	K
16	Single Family Residence	127	AM
18	Single Family Residence	117	P
200	Other Electronic Installation	844	B
-	41VN92	405	-
-	41VN93	379	-

[1] Due to the potential horizontal inaccuracies of the aerial photography and data utilized, all habitable structures within 310 feet have been identified.
[2] Nearest Alternative Route Link to sensitive cultural resource sites is not provided for protection of the sites.

TABLE 5-7 HABITABLE STRUCTURES AND OTHER LAND USE FEATURES IN THE VICINITY OF ROUTE 6

LINK COMBINATION: A-Z-I-H2-AK-P-AM			
Map Number	**Structure or Feature**	**Approximate Distance from Centerline [1] (feet)**	**Nearest Alternate Route Link [2]**
3	Single Family Residence	275	A
4	Single Family Residence	218	A
5	Single Family Residence	205	A
6	Single Family Residence	161	A
7	Single Family Residence	142	Z
16	Single Family Residence	127	AM
18	Single Family Residence	117	P
200	Other Electronic Installation	1,220	A

[1] Due to the potential horizontal inaccuracies of the aerial photography and data utilized, all habitable structures within 310 feet have been identified.
[2] Nearest Alternative Route Link to sensitive cultural resource sites is not provided for protection of the sites.

TABLE 5-8 HABITABLE STRUCTURES AND OTHER LAND USE FEATURES IN THE VICINITY OF ROUTE 7

LINK COMBINATION: AN-D-F2-AJ-H1-H2-J-AI			
Map Number	**Structure or Feature**	**Approximate Distance from Centerline [1] (feet)**	**Nearest Alternate Route Link [2]**
19	Single Family Residence	204	D
21	Single Family Residence	125	F2
22	Single Family Residence	257	F2

TABLE 5-8 HABITABLE STRUCTURES AND OTHER LAND USE FEATURES IN THE VICINITY OF ROUTE 7

LINK COMBINATION: AN-D-F2-AJ-H1-H2-U-AI			
Map Number	**Structure or Feature**	**Approximate Distance from Centerline [1] (feet)**	**Nearest Alternate Route Link [2]**
23	Single Family Residence	138	AJ
24	Single Family Residence	290	F2

[1] Due to the potential horizontal inaccuracies of the aerial photography and data utilized, all habitable structures within 310 feet have been identified.
[2] Nearest Alternative Route Link to sensitive cultural resource sites is not provided for protection of the sites.

TABLE 5-9 HABITABLE STRUCTURES AND OTHER LAND USE FEATURES IN THE VICINITY OF ROUTE 8

LINK COMBINATION: AN-E-AB-F1-F2-AJ-H1-H2-U-AI			
Map Number	**Structure or Feature**	**Approximate Distance from Centerline [1] (feet)**	**Nearest Alternate Route Link [2]**
19	Single Family Residence	309	F2
21	Single Family Residence	125	F2
22	Single Family Residence	257	F2
23	Single Family Residence	138	AJ
24	Single Family Residence	290	F2

[1] Due to the potential horizontal inaccuracies of the aerial photography and data utilized, all habitable structures within 310 feet have been identified.
[2] Nearest Alternative Route Link to sensitive cultural resource sites is not provided for protection of the sites.

TABLE 5-10 HABITABLE STRUCTURES AND OTHER LAND USE FEATURES IN THE VICINITY OF ROUTE 9

LINK COMBINATION: AN-E-AB-M-G-H1-H2-AK-P-AM			
Map Number	**Structure or Feature**	**Approximate Distance from Centerline [1] (feet)**	**Nearest Alternate Route Link [2]**
16	Single Family Residence	127	AM
18	Single Family Residence	117	P
23	Single Family Residence	152	G
25	Single Family Residence	158	G
26	Single Family Residence	216	G
27	Single Family Residence	146	G
28	Single Family Residence	141	G

[1] Due to the potential horizontal inaccuracies of the aerial photography and data utilized, all habitable structures within 310 feet have been identified.
[2] Nearest Alternative Route Link to sensitive cultural resource sites is not provided for protection of the sites.

TABLE 5-11 HABITABLE STRUCTURES AND OTHER LAND USE FEATURES IN THE VICINITY OF ROUTE 10

LINK COMBINATION: AN-E-AB-M-AC-AD-Q-AI			
Map Number	**Structure or Feature**	**Approximate Distance from Centerline [1] (feet)**	**Nearest Alternate Route Link [2]**
29	Single Family Residence	82	Q
30	Single Family Residence	267	Q
31	Single Family Residence	202	AC
32	Single Family Residence	98	Q
33	Single Family Residence	96	Q

[1] Due to the potential horizontal inaccuracies of the aerial photography and data utilized, all habitable structures within 310 feet have been identified.
[2] Nearest Alternative Route Link to sensitive cultural resource sites is not provided for protection of the sites.

This page left blank intentionally.

6.0 LIST OF PREPARERS

RESPONSIBILITY	NAME	TITLE
Project Director	Lisa Barko Meaux	Project Manager III
Project Manager	Anastacia Santos	Project Manager II
Assistant Project Manager	Denise Williams	Project Lead I
Natural Resources	Sairah Teta	Biologist I
Land Use/ Aesthetics	Emily Innes Denise Williams	Environmental Planner I Project Lead I
Cultural Resources	Darren Schubert Emily Duke	Cultural Resource Specialist II Field Representative III
Maps/Figures/Graphics	Evan Doss Gray Rackley	GIS Analyst II Senior GIS Analyst I

This page left blank intentionally.

7.0 REFERENCES

America's Scenic Byways. 2019. Information. Available on the internet: https://scenicbyways.info/ (accessed June 2019)

Beck, Abigail P. and Maynard B. Cliff. 2010. *Cultural Resources Survey of Two Segments of the Oncor Electric Delivery Iron Bridge to Duck Cove Rebuild, Hunt and Van Zandt Counties, Texas*. Dallas: PBS&J.

Beckman, J.D. and A.K. Williamson. 1990. Salt-dome locations in the Gulf Coastal Plain, south-Central United States. Water-Resources Investigations Report 90-4060. Dept. of Interior, U.S. Geological Survey, Austin, Texas. Available on the internet: https://doi.org/10.3133/wri904060 (accessed August 2019).

Benham, Priscilla Myers. 2019. "RUSK, THOMAS JEFFERSON," *Handbook of Texas Online.* Available on the internet at: https://tshaonline.org/handbook/online/articles/fru16 (accessed July 2019). Published by the Texas State Historical Association.

Benson, K. L. P., and K. A. Arnold. 2001. The Texas Breeding Bird Atlas. Texas A&M University System, College Station and Corpus Christi, TX. Available on the internet: https://txtbba.tamu.edu (accessed August 2019).

Blair, W.F. 1950. The biotic provinces of Texas. Texas Journal of Science 2:93-117.

Bruseth, James. 2019. "MOSCOSO EXPEDITION," *Handbook of Texas Online.* https://tshaonline.org/handbook/online/articles/upm02 (accessed July 2019). Published by the Texas State Historical Association.

Bureau of Economic Geology. 1975. Geologic Atlas of Texas, Tyler Sheet. John T. Lonsdale Memorial Edition. University of Texas at Austin. scale 1:250,000.

_____. 1996. Physiographic Map of Texas. Bureau of Economic Geology, University of Texas. Austin, Texas.

Campbell, Linda. 2003. The Endangered and Threatened Animals of Texas. Texas Parks and Wildlife Department. 129 pp.

Collins, Michael B. 2002. *The Gault Site, Texas and Clovis Research.* Athena Review 3(2):24-36.

Comer, C. E., I. Hung, G. Calkins, D. J. Kaminski, and N. Garner. 2013. Using GIS-Based, Regional Extent Habitat Suitability Modeling to Identify Conservation Priority Areas: A Case Study of the Louisiana Black Bear in East Texas. The Journal of Wildlife Management. 77(8):1639 – 1649.

Cowardin, L.M, V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service, Office of Biological Services, Washington, D.C.

Dixon, J.R. 2013. Amphibians and reptiles of Texas, 3rd ed. Texas A&M University Press, College Station, Texas. 447 pp.

Everett, Dianna. 2019. "CHIEF BOWL," *Handbook of Texas Online*. Available on the internet at: https://tshaonline.org/handbook/online/articles/fbo47 (accessed July 2019). Published by the Texas State Historical Association.

Federal Aviation Administration (FAA). 2019a. Chart Supplement South Central U.S. (Formerly known as the Airport/Facility Directory South Central U.S.). Available on the internet: http://www.faa.gov/air_traffic/flight_info/aeronav/digital_products/dafd/ (accessed May 2019).

_____. 2019b. National Aeronautical Charting Office. Dallas-Fort Worth Sectional Aeronautical Chart, 102nd Edition, Effective February 28, 2019.

_____. 2019c. Airport Data and Contact Information. Available on the internet: http://www.faa.gov/airports/airport_safety/airportdata_5010/ (accessed May 2019).

Federal Communication Commission (FCC). 2019. Geographic Information Systems – Licensing Database Extracts. Available on the internet: http://wireless.fcc.gov (accessed May 2019).

Federal Emergency Management Agency (FEMA). 2019. FEMA NHHL v2.4.kml. National Flood Hazard Layer Web Map Service (WMS) in Google Earth. FEMA, Washington D.C. Available Online: https://hazards.fema.gov/femaportal/wps/portal/NFHLWMS kmzdownload (accessed August 2019).

Federal Register. 2018. Vol. 83, No. 195. 12-Month Petition Finding and Threatened Species Status for Eastern Black Rail with a Section 4(d) Rule. Available on the internet: https://www.govinfo.gov/content/pkg/FR-2018-10-09/pdf/2018-21799.pdf (accessed August 2019).

Ferring, C.R. 1995. Middle Holocene Environments, Geology, and Archaeology in the Southern Plains. In *Archaeological Geology of the Archaic period in North America*, edited by E. A. Bettis, pp. 21 -35. Special Paper 297. Boulder: Geological Society of America

Fields, Ross C. 2004. The Archeology of the Post Oak Savanna of East-Central Texas. In *The Prehistory of Texas*, Perttula, T.K., ed., pp. 347-369. Texas University A&M Press, College Station, Texas.

Freeman, Brush. 2012. Birds of the Oaks and Prairies and Osage Plains of Texas: A Field Checklist. Texas Parks and Wildlife Department. Austin, Texas. Available on the internet: https://tpwd.texas.gov/publications/pwdpubs/media/pwd_bk_w7000_0869.pdf (accessed August 2019).

Google Earth Pro. 2019. Version 7.3. Aerial imagery: November 27, 2018 (accessed June 2019).

Gould, F.W., G.O. Hoffman, and C.A. Rechenthin. 1960. Vegetational areas of Texas. Texas Agricultural Extension Service. L-492.

Gray, Hampson and Randolph B. Campbell. 2019. "NECHES, BATTLE OF THE," *Handbook of Texas Online*. Available on the internet at: https://tshaonline.org/handbook/online/articles/qen02 (accessed July 2019). Published by the Texas State Historical Association.

Griffith, G., S. Bryce, J. Omernik, and A. Rogers. 2007. Ecoregions of Texas. Project Report to Texas Commission on Environmental Quality. Austin, Texas. 125 pp.

Handbook of Texas Online. 2019a. "CALAHORRA Y SAENZ, JOSE FRANCISCO," *Handbook of Texas Online*. Available on the internet at: https://tshaonline.org/handbook/online/articles/fca08 (accessed July 2019). Published by the Texas State Historical Association.

_____. 2019b. "CHEROKEE WAR," *Handbook of Texas Online*. Available on the internet at: https://tshaonline.org/handbook/online/articles/qdc0 (accessed July 2019). Published by the Texas State Historical Association.

Hendrickson, D. A., and A. E. Cohen. 2015. "Fishes of Texas Project Database (Version 2.0)" doi:10.17603/C3WC70. Available on the internet: http://www.fishesoftexas.org/checklists/huc/1281 (accessed August 2019).

Henke S.E. and W.S. Fair. 1998. Management of Texas Horned Lizards. Wildlife Management Bulletin of the Caesar Kleberg Wildlife Research Institute. Texas A&M University-Kingsville. No.2.

Herring, Rebecca J. 2019. "CORDOVA REBELLION," *Handbook of Texas Online*. Available on the internet at: https://tshaonline.org/handbook/online/articles/jcc03 (accessed July 2019). Published by the Texas State Historical Association.

Howells, R.G., R.W. Neck and H. Murray. 1996. Freshwater Mussels of Texas. University of Texas. Austin, Texas. 224pp.

Hubbs, C. 1957. Distributional patters of Texas freshwater fishes. Southwest Naturalist 2:89-104.

Kleiner, Diana J. 2019. "GRAND SALINE, TX," *Handbook of Texas Online*. https://tshaonline.org/handbook/online/articles/hgg04 (accessed July 2019). Published by the Texas State Historical Association.

Knapp, Virginia and Megan Biesele. 2019. "RUSK COUNTY," *Handbook of Texas Online*. Available on the internet at: https://tshaonline.org/handbook/online/articles/hcr12 (accessed July 2019). Published by the Texas State Historical Association.

Kozlowski, Gerald F. 2019. "VAN ZANDT COUNTY," *Handbook of Texas Online*. https://tshaonline.org/handbook/online/articles/hcv02 (accessed July 2019). Published by the Texas State Historical Association.

Lockwood, M.W. and B. Freeman. 2014. The TOS handbook of Texas birds, Second edition, Revised. Texas A&M University Press. College Station, Texas. 403pp.

McDonald, Archie P. 2019. "FREDONIAN REBELLION," *Handbook of Texas Online.* https://tshaonline.org/handbook/online/articles/jcf01 (accessed July 2019). Published by the Texas State Historical Association.

Mercado-Allinger, P.A., N.A. Kenmotsu, and T.K. Perttula. 1996. Archeology in the Central and Southern Planning Region, Texas: A Planning Document. Division of Antiquities Protection, Cultural Resource Management Report 7. Texas Historical Commission, Austin.

National Agriculture Imagery Program (NAIP). 2018. Van Zandt County, Texas. Available on the internet: http://gis.apfo.usda.gov/arcgis/services (accessed June 2019).

National Conservation Easement Database (NCED). 2019. NCED Easements. Available on the internet: https://www.conservationeasement.us/interactivemap/ (accessed June 2019).

National Park Service (NPS). 2019a. Texas. Available on the internet: http://www.nps.gov/state/tx/index.htm?program=all (accessed June 2019).

_____. 2019b. El Camino Real de los Tejas National Historic Trail Louisiana and Texas. *Travel-American Latino Heritage.* Available on the internet: https://www.nps.gov/nr/travel/american_latino_heritage/El_Camino_Real_de_los_Tejas_National_Historic_Trail.html (accessed July 2019).

_____. 2019c. National Register Database and Research. Available on the internet: https://www.nps.gov/subjects/nationalregister/database-research.htm (accessed July 2019).

_____. 2019d. National Historic Landmarks Program. Available on the internet: https://www.nps.gov/orgs/1582/index.htm (accessed July 2019).

_____. 2019e. National Historic Trails. Available on the internet at: https://www.nps.gov/subjects/nationaltrailssystem/national-historic-trails.htm (accessed July 2019).

_____. 2019f. National Historic Landmark Survey. Available on the internet: https://www.nps.gov/subjects/nationalhistoriclandmarks/list-of-nhls-by-state.htm (accessed May 2019).

_____. 2019g. National Trails System Map. Available on the internet: https://www.nps.gov/subjects/nationaltrailssystem/index.htm. (accessed May 2019) (last updated June 5, 2018).

Natural Resources Conservation Service (NRCS). 2019. NRCS Soil Web Survey. Available on the internet: http://websoilsurvey. nrcs.usda.gov/app/WebSoilSurvey.aspx (accessed August 2019).

National Wild and Scenic Rivers System. 2019. National Wild and Scenic Rivers System Wild and Scenic Rivers by State. Available on the internet: http://rivers.gov/map.php (accessed June 2019).

Nature Conservancy. 2019. Texas. Places We Protect. Available on the internet: http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/texas/placesweprotect/index.htm (accessed June 2019).

NatureServe. 2019. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available on the internet: http://explorer.natureserve.org (accessed August 2019).

North East Texas Regional Mobility Authority. 2019. NETRMA. Available on the internet: https://www.netrma.org/ (accessed June 2019).

Perttula, Timothy K. 2004. The Prehistoric and Caddoan Archeology of the Northeastern Texas Pineywoods. In *The Prehistory of Texas*, Perttula, T.K, ed. Texas A&M University Press, College Station, Texas.

Powers and Hopkins. 1922. "The Brooks, Steen and Grand Saline Salt Domes, Smith and Van Zandt Counties, Texas." In *Contributions to Economic Ecology*, edited by K.C. Heald. Department of the Interior, United States Geological Survey. Washington Government Printing Office, 1923; pp 179-239.

Railroad Commission of Texas (RRC). 2019a. Public GIS Map Viewer for Oil, Gas, and Pipeline Data. Available on the internet: http://www.rrc.state.tx.us/about-us/resource-center/research/gis-viewers/ (accessed August 2019).

_____. 2019b. Mining Regions/Fields and Sites. Available on the internet: https://www.rrc.state.tx.us/mining-exploration/historical-coal-mining/mining-regionsfields-and-sites/ (accessed August 2019).

_____. 2019c. Surface Coal Mine County Information. Available on the internet: https://www.rrc.state.tx.us/mining-exploration/permits/surface-coal-mine-county-information/ (accessed August 2019).

_____. 2019d. Lignite Surface Mine Permit Locations. Available on the internet: https://www.rrc.state.tx.us/media/47565/coal-mine-map-09-2018.pdf (accessed August 2019).

_____. 2019e. Texas Uranium Mining Exploration Permits. Available on the internet: https://www.rrc.state.tx.us/mining-exploration/programs/uranium-exploration-program/texas-uranium-exploration-permits/ (accessed August 2017).

Ricklis, Robert A. 2004. The Archaeology of the Native American Occupation of Southeast Texas. In *The Prehistory of Texas* Ed. Timothy Perttula. Texas A & M University Press. College Station.

Schmidly, D. J. and R.D. Bradley. 2016. The Mammals of Texas, seventh edition. University of Texas Press, Austin, Texas. 694pp.

Story, Dee Ann. 1990. Cultural History of the Native Americans. In *The Archeology and Bioarcheology of the Gulf Coastal Plain*, by Story, Dee Ann, Janice A. Guy, Barbara A. Burnett, Martha Doty Freeman, Jerome C. Rose, D. Gentry Steele, Ben W. Olive, and Karl J. Reinhard, 1:163-366. Research Series No. 38. Fayetteville, Arkansas Archeological Survey.

Texas Commission on Environmental Quality (TCEQ). 2016. Texas Integrated Report of Surface Water Quality. Available on the internet: https://www.tceq.texas.gov/waterquality/assessment/16twqi/16txir (accessed August 2019).

_____. 2019. Download TCEQ GIS Data. Available on the internet: https://www.tceq.texas.gov/gis/download-tceq-gis-data (accessed August 2019).

Texas Department of Transportation (TxDOT). 2019a. County Grid Map Search. Available on the internet: http://www.dot.state.tx.us/apps-cg/grid_search/county_grid_search.htm (accessed June 2019).

_____. 2019b. Project Tracker. Available on the internet: http://www.txdot.gov/project_information/project_tracker.htm (accessed June 2019).

Texas Education Agency. 2019. School District Locator. Available on the internet: http://tea.texas.gov/Texas_Schools/General_Information/School_District_Locator/School_District_Locator/ (accessed June 2019).

Texas Historical Commission (THC). 2019a. Texas Archeological Sites Atlas (TASA). Available on the internet (Restricted Access): http://nueces.thc.state.tx.us/ (accessed July 2019).

_____. 2019b. Texas Historic Sites Atlas. Available on the internet: http://atlas.thc.state.tx.us/ (accessed July 2019).

_____. 2019c. Texas Historical Commission. Texas Heritage Trails Program – Texas Lakes Trail Region. Available on the internet: https://texaslakestrail.com/ (accessed June 2019).

Texas Land Conservancy. 2019. Lands. Available on the internet: https://texaslandconservancy.org/protected-lands/ (accessed June 2019).

Texas Natural Diversity Database (TXNDD). 2019. Report Request. Texas Biological and Conservation Data System. Austin, Texas. (Report Received June 14, 2019).

Texas Parks and Wildlife Department (TPWD). 2014. Interior Least Tern (*Sterna antillarum athalassos*). Texas Parks and Wildlife Department. Available on the internet: http://www.tpwd.state.tx.us/huntwild/wild/species/leasttern/ (accesses August 2019).

_____. 2019a. Texas Parks and Wildlife - Find a Park. Available on the internet: https://tpwd.texas.gov/state-parks/ (accessed June 2019).

_____. 2019b. Texas Parks and Wildlife. Great Texas Wildlife Trails. Prairies and Pineywoods East. Available on the internet: https://tpwd.texas.gov/huntwild/wildlife/wildlife-trails/ppwe (accessed June 2019).

_____. 2019c. Ecologically Significant Stream Segments – Region D. Available on the internet: https://tpwd.texas.gov/landwater/water/conservation/water_resources/water_quantity/sigsegs/regiond.phtml (accessed August 2019).

_____. 2019d. Texas Ecosystem Analytical Mapper. Available on the internet: https://tpwd.texas.gov/gis/team/ (accessed August 2019).

_____. 2019e. TPWD Rare, Threatened, and Endangered Species of Texas Database. Available on the internet: http://tpwd.texas.gov/gis/rtest/ (accessed August 2019).

_____. 2019f. Bear Safety Co-existing with Black Bears in Texas. Available on the internet: https://tpwd.texas.gov/huntwild/hunt/resources/bear_safety/ (accessed August 2019).

Texas State Data Center (TxSDC). 2018. Data. Texas Population Projections Program. 2018 Population Projections Data Downloads. Available on the internet: http://osd.texas.gov/Data/TPEPP/Projections/ (accessed May 2019).

Texas Water Development Board (TWDB). 1975. Major and Historical Springs of Texas. Texas Water Development Board, Report 189. Austin, Texas.

_____. 2011. Aquifers of Texas. Report 380. Texas Water Development Board. Austin, Texas.

_____. 2016. Region D Water Plan Volume 1 and 2. Available on the internet: http://www.twdb.texas.gov/waterplanning/rwp/plans/2016/index.asp#region-d (accessed August 2019).

_____. 2017. 2017 State Water Plan. Austin, Texas. Available on the internet: http://www.twdb.texas.gov/waterplanning/swp/2017/ (accessed August 2019).

_____. 2019a. Maps & GIS data layers. Available on the internet: http://www.twdb.state.tx .us/mapping/gisdata.asp (accessed August 2019).

_____. 2019b. Water Data Interactive. Available on the internet: https://www2.twdb.texas.gov/apps/waterdatainteractive/groundwaterdataviewer (accessed August 2019).

Thomas, C., Bonner T. H., and B.G. Whiteside. 2007. Freshwater Fishes of Texas a field guide. Texas A&M University Press. College Station, Texas, 202pp.

United States Army Corps of Engineers (USACE). 2019. Regulatory In-lieu Fee and Bank Information Tracking System. Banks and ILF Sites. Mitigation Banks. Available on the internet: https://ribits.usace.army.mil/ribits_apex/f?p=107:158:10942549070950::NO (accessed May 2019).

_____. 2020. Navigable Waters of the United States in the Fort Worth, Albuquerque, and Tulsa Districts within the State of Texas. Available on the internet: https://www.swf.usace.army.mil/Portals/47/docs/regulatory/NavList2011.pdf (accessed January 2020).

United States Census Bureau (USCB). 2000. Census 2000 Gateway. State and County Quick Facts. Available on the internet: https://www.census.gov/quickfacts/fact/table/vanzandtcountytexas,TX/POP010210 (accessed June 2019).

_____. 2010. Census 2010. Available on the internet: https://www.census.gov/quickfacts/fact/table/vanzandtcountytexas,TX/POP010210 (accessed June 2019).

_____. 2017. American Fact Finder. Available on the internet: http://factfinder2.census.gov/main.html (accessed June 2019).

United States Department of Agriculture (USDA). 2017. 2017 Census of Agriculture – Texas – State and County Profiles. Available on the internet: https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/County_Profiles/Texas/ (accessed June 2019).

_____. 2012. 2012 Census of Agriculture – Texas – State and County Profiles. Available on the internet: https://www.nass.usda.gov/Publications/AgCensus/2012/Online_Resources/County_Profiles/Texas/ (accessed June 2019).

_____. 1998. Soil Survey of Van Zandt County, Texas. Available on the internet: https://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/texas/TX467/0/Van%20Zandt.pdf (accessed August 2019).

United States Department of Transportation (USDOT). 2019. Federal Railroad Administration – Safety Map. Available on the internet: https://railroads.dot.gov/ (accessed June 2019)

United States Environmental Protection Agency (USEPA). 2013. Level III and IV Ecoregions of the Continental United States. Available online: https://www.epa.gov/eco-research/level-iii-and-iv-ecoregions-continental-united-states (accessed August 2019).

_____. 2019a. Superfund Sites Where You Live. Available on the internet: http://www.epa.gov/superfund/sites/ (accessed August 2019).

_____. 2019b. My Waters Mapper. Available online: https://watersgeo.epa.gov/mwm/ (accessed August 2019).

United States Fish and Wildlife Service (USFWS). 2007 Status of the Red Knot (*Calidris canutus rufa*) in the Western Hemisphere. USFWS Ecological Services, New Jersey Field Office. Available on the internet: http://www.fws.gov/northeast/PDF/RedKnotAssessmentMay2007.pdf (accessed August 2019).

_____. 2017. Louisiana Pigtoe (*Pleurobema riddellii*). Available on the internet: https://www.fws.gov/southwest/es/ArlingtonTexas/pdf/Louisiana%20pigtoe%20fact%20sheet%2020170301.pdf (accessed August 2019).

_____. 2019a. National Wetland Inventory (NWI) Mapper. Available on the internet: http://www.fws.gov/nwi (accessed August 2019).

_____. 2019b. Information for Planning and Conservation (IPaC) – Consultation Code: 02ETAR00-2019-SLI-1560. (Report Received June 12, 2019).

United States Geological Service (USGS). 2019a. U.S. Quaternary Faults. Interactive Fault Map. Available on the internet: https://usgs.maps.arcgis.com/apps/webappviewer/index.html?id=5a6038b3a1684561a9b0aadf88412fcf (accessed August 2019).

_____. 2019b. United States Geologic Survey - 7.5-minute quadrangle maps. Note: Most quads have different print dates, and these were not cited but referenced. The quadrangle maps were accessed through the National Map Download v1.0. Available on the internet: https://viewer.nationalmap.gov/basic/ (accessed August 2019).

_____. 1959a. Grand Saline Quadrangle. 7.5-Minute

_____. 1959b Van Quadrangle. 7.5-Minute

Van Zandt County. 2019a. Available on the internet: http://www.vanzandtcounty.org/ (accessed June 2019).

Van Zandt County. 2019b. Van Zandt County Appraisal District. Available on the internet: http://vzcad.org (accessed June 2019).

Weddle, Robert S. 2019. "La Salle Expedition," *Handbook of Texas Online.* http://www.tshaonline.org/handbook/online/articles/upl01 (accessed July 2019). Published by the Texas State Historical Association.

APPENDIX A AGENCY CORRESPONDENCE

This page left blank intentionally.

APPENDIX B PUBLIC OPEN HOUSE MEETING

This page left blank intentionally.

APPENDIX C OVERSIZED MAPS

This page left blank intentionally.

Figure 3-3 Primary Alternative Routing Links with Environmental and Land Use Constraints

This page left blank intentionally.

Figure 5-1 Habitable Structures and Other Land Use Features in the Vicinity of the Primary Alternative Routes

This page left blank intentionally.

SWEPCO E Burges 138-kV Transmission Line
Federal, State and Local Agencies/Officials Contact List

FEDERAL

Mr. Terry L. Biggio
Southwest Regional Administrator
Federal Aviation Administration
10101 Hillwood Parkway
Fort Worth, TX 76177

Mr. Tony Robinson
Region 6 Regional Administrator
Federal Emergency Management Agency
FRC 800 N. Loop 288
Denton, TX 76209-3698

Ms. Kate Hammond
Intermountain Regional Acting Director
National Parks Service
IMRextrev@nps.gov

Mr. Salvador Salinas
State Conservationist
NRCS Texas State Office
101 South Main Street
Temple, TX 76501

Colonel Kenneth N. Reed
USACE – Fort Worth District
Fort Worth District
819 Taylor Street
Fort Worth, TX 76102

Mr. Ron Tickle
Executive Director
U. S. Department of Defense Siting
Clearinghouse
3400 Defense Pentagon, Room 5C646
Washington, DC 20301-3400

Ms. Anne Idsal
Region 6 Administrator
U.S. Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, TX 75202

Mr. Adam Zerrenner
Field Supervisor
U.S. Fish & Wildlife Service
10711 Burnet Rd., Ste. 200
Austin, TX 78758-4455

Ms. Lisa M. Boyd
Executive Director - Federal Mine Safety and
Health Review
1331 Pennsylvania Avenue NW.
Suite 520N
Washington, DC 20004-1710

Ms. Roseann Gonzales-Schreiner
USGS Southwest Regional Director
Building 25, Mail Stop 911
Denver Federal Center
Denver, CO 80225
United States

STATE

Mr. Wei Wang
Executive Director
Railroad Commission of Texas
P.O. Box 12967
Austin, TX 78711-2967

Mr. Leroy Biggers
Tyler Regional Director
Texas Commission on Environmental Quality
2916 Teague Dr
Tyler, TX 75701-3734

Mr. David Fulton
Director, Department of Aviation
Texas Department of Transportation
125 E. 11th Street
Austin, TX 78701-2483

Mr. Carlos Swonke, P.E.
Director, Environmental Affairs Division
Texas Department of Transportation
125 E. 11th Street
Austin, TX 78701-2483

Mr. Peter Smith, P.E.
Director, Planning & Programming
Texas Department of Transportation
125 E. 11th Street
Austin, TX 78701-2483

SWEPCO E Burges 138-kV Transmission Line
Federal, State and Local Agencies/Officials Contact List

Mr. Glenn H. Green, P.E.
Tyler District Engineer
Texas Department of Transportation
2709 W. Front St.
Tyler, TX 75702

Mr. George P. Bush
Commissioner
Texas General Land Office
1700 N. Congress Ave., Suite 935
Austin, TX 78701-1495

Ms. Laura Zebehazy
Wildlife Habitat Assessment Program
Texas Parks and Wildlife Department
WHAB@tpwd.texas.gov

Mr. Jeff Walker
Executive Administrator
Texas Water Development Board
P.O. Box 13231
Austin, TX 78711-3231

Mr. Mark Wolfe
Executive Director
Texas Historical Commission
P.O. Box 12276
Austin, TX 78711

VAN ZANDT COUNTY

The Honorable Don Kirkpatrick
Van Zandt County Judge
121 E. Dallas St., Suite 206
Canton TX, 75103

The Honorable Bradon Brown
Van Zandt County Commissioner, Precinct 1
121 E. Dallas St.
Canton, Texas 75103

The Honorable Virgil Melton, Jr.
Van Zandt County Commissioner, Precinct 2
121 E. Dallas St.
Canton, Texas 75103

The Honorable Keith Pearson
Van Zandt County Commissioner, Precinct 3
121 E. Dallas St.
Canton, Texas 75103

The Honorable Tim West
Van Zandt County Commissioner, Precinct 4
121 E. Dallas St.
Canton, Texas 75103

Mrs. Maggie Moore
Van Zandt County Historical Commission
P.O. Box 251
Canton, Texas 75103

Mr. Micah Lewis
Superintendent
Grand Saline ISD
400 Stadium Drive
Grand Saline, TX 75140

NON-GOVERNMENTAL ORGANIZATION

Ms. Lori Olson
Texas Land Trust Council
Executive Director
P.O. Box 2677
Wimberley, TX 78676

Ms. Laura Huffman
State Director
The Nature Conservancy, Texas
318 Congress Avenue
Austin, TX 78701

Ms. Blair Calvert Fitzsimons
Chief Executive Officer
Texas Agricultural Land Trust
P.O. Box 6152
San Antonio, TX 78209

Mr. Mark Steinbach
Executive Director
Texas Land Conservancy
P. O. Box 162481
Austin, TX 78716

POWER ENGINEERS

POWER ENGINEERS, INC.
16825 NORTHCHASE DRIVE
SUITE 1200
HOUSTON, TX 77060 USA

PHONE 281-765-5500
FAX 281-765-5599

June 27, 2019
(Via Mail)

Mr. Terry L. Biggio
Southwest Regional Administrator
Federal Aviation Administration
10101 Hillwood Parkway
Fort Worth, TX 76177

Re: Proposed E. Burgess 138-kV Transmission Line
Van Zandt County, Texas
POWER Engineers, Inc. Project No. 158522

Dear Mr. Terry L. Biggio:

Southwestern Electric Power Company (SWEPCO) will be filing an application with the Public Utility Commission of Texas (PUC) to amend its Certificate of Convenience and Necessity (CCN) to construct a new 138-kV transmission line in Van Zandt County, Texas.

The proposed 138-kV line will extend approximately 3 miles from the existing SWEPCO Morton Substation located south of Grand Saline and east of State Highway 110, to the existing East Texas Electric Cooperative (ETEC) Wood County 138-kV transmission line located east to southeast of Grand Saline and south of U.S. Highway 80. The preliminary study area is shown on the enclosed map.

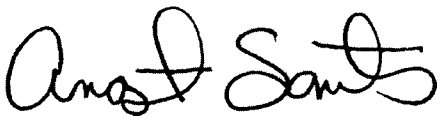
POWER Engineers, Inc. (POWER) is preparing an Environmental Assessment (EA) to support SWEPCO's CCN application with the PUC. POWER is gathering data on the existing environment and identifying environmental, cultural and land use constraints within the study area. POWER will identify potential alternative route links between the end points that consider these environmental, cultural and land use constraints and the need to serve electrical load in the area.

We are requesting that your agency/office provide information concerning environmental and land use constraints or other issues of interest to your agency/office within the study area. Your input will be an important consideration in the evaluation of alternative routes and in the assessment of potential impacts of those routes. In addition, we would appreciate receiving information about any permits, easements, or other approvals by your agency/office that you believe could affect this project, or if you are aware of any major proposed development or construction in the study area. Upon certification of a final route for the proposed project, SWEPCO will identify and obtain necessary permits, if required, from your agency/office.

June 27, 2019

Thank you for your assistance with this proposed electric transmission line project. Please contact me by phone at 512-735-1868, or by e-mail at anastacia.santos@powereng.com if you have any questions or require additional information. We would appreciate receiving your reply by July 26, 2019.

Sincerely,



Anastacia Santos
Project Manager

Enclosure(s):
Preliminary Study Area Map

Sent Via Mail
ProjectWise 158522

Study Area Map

THIS PAGE IS IN COLOR AND CAN BE VIEWED IN CENTRAL RECORDS OR THE PUC INTERCHANGE BY DOWNLOADING THE NATIVE FILE (ZIP) FOR THIS ITEM NUMBER IN DOCKET NO. 50669

From: Villarreal, Carlos - NRCS, Temple,TX
To: Santos, Anastacia
Subject: EA - Proposed E Burgess Transmission LIne Project
Date: Friday, July 05, 2019 8:55:02 AM
Attachments: image001.png
image002.png
image005.png
image006.png
EA_Proposed E Burgess 138kV Transmission Line Project_Van Zandt County TX.pdf
Custom Soil Resource Report for Van Zandt County Texas.pdf

Anastacia,

Please find attached EA for the proposed project located in Van Zandt County Texas.

If you have further questions or comments, please feel free to contact me.

Best Regards,

Carlos J. Villarreal
Soil Scientist
Natural Resources Conservation Service
United States Department of Agriculture
o. 254.742.9836
c. 254.316.1458

Stay Connected with USDA:

USDA
United States Department of Agriculture

Natural Resources
Conservation Service

State Office

101 S. Main Street
Temple, TX 76501
Voice 254.742.9800
Fax 254.742 9819

July 5, 2019

POWER Engineers
Anastacia.santos@powereng.com

Attention: Anastacia Santos, Project Manager, *via email*

Subject: LNU-Farmland Protection
Proposed E. Burgess 138-kV Transmission Line Project
Project No. 158522
Environmental Assessment of Natural Resources
Van Zandt County, Texas

We have reviewed the information provided in your correspondence dated June 27, 2019 concerning the proposed transmission line project located in Van Zandt County, Texas. This review should be considered as supporting documentation to the subject application with the Public Utilities Commission of Texas (PUCT). We have evaluated the proposed site and provided technical resources related to soil and land use limitations for consideration within an Environmental Assessment (EA).

The proposed site does not involve a USDA-NRCS Wetland Reserve Easement (WRE), a component of the Agricultural Conservation Easement Program (ACEP).

Please find the attached Custom Soil Resources Report. The soil physical and chemical properties are presented, along with additional restrictions or interpretations for the project area.

The major concerns within the study area involve potential wetlands and soil salinity restrictions. There are several soils with hydric soil inclusions, which would serve as a potential wetland. We recommend that the entities developing these areas continue coordination with the Texas Parks and Wildlife Department and the US Fish and Wildlife Service to avoid adverse impacts to wetland ecosystems and habitats. Additionally, soils within the northern extent of the study area involve electrical conductivity (EC) greater than 4, which is considered limiting for corrosivity of concrete and steel. Further consideration for building equipment should be evaluated in these areas to ensure quality and lifespan standards are met.

To reduce erosion during construction, we strongly recommend the use of approved erosion control methods, including the use of erosion control equipment near heavily disturbed soil and reducing the amount of bare ground.

If you have further questions, please contact me at 254.742.9836 or by email at Carlos.Villarreal@usda.gov (Preferred).

USDA
United States Department of Agriculture

Sincerely,

Carlos J. Villarreal
NRCS Soil Scientist

Attachment: **Custom Soil Resource Report for Van Zandt County, Texas**

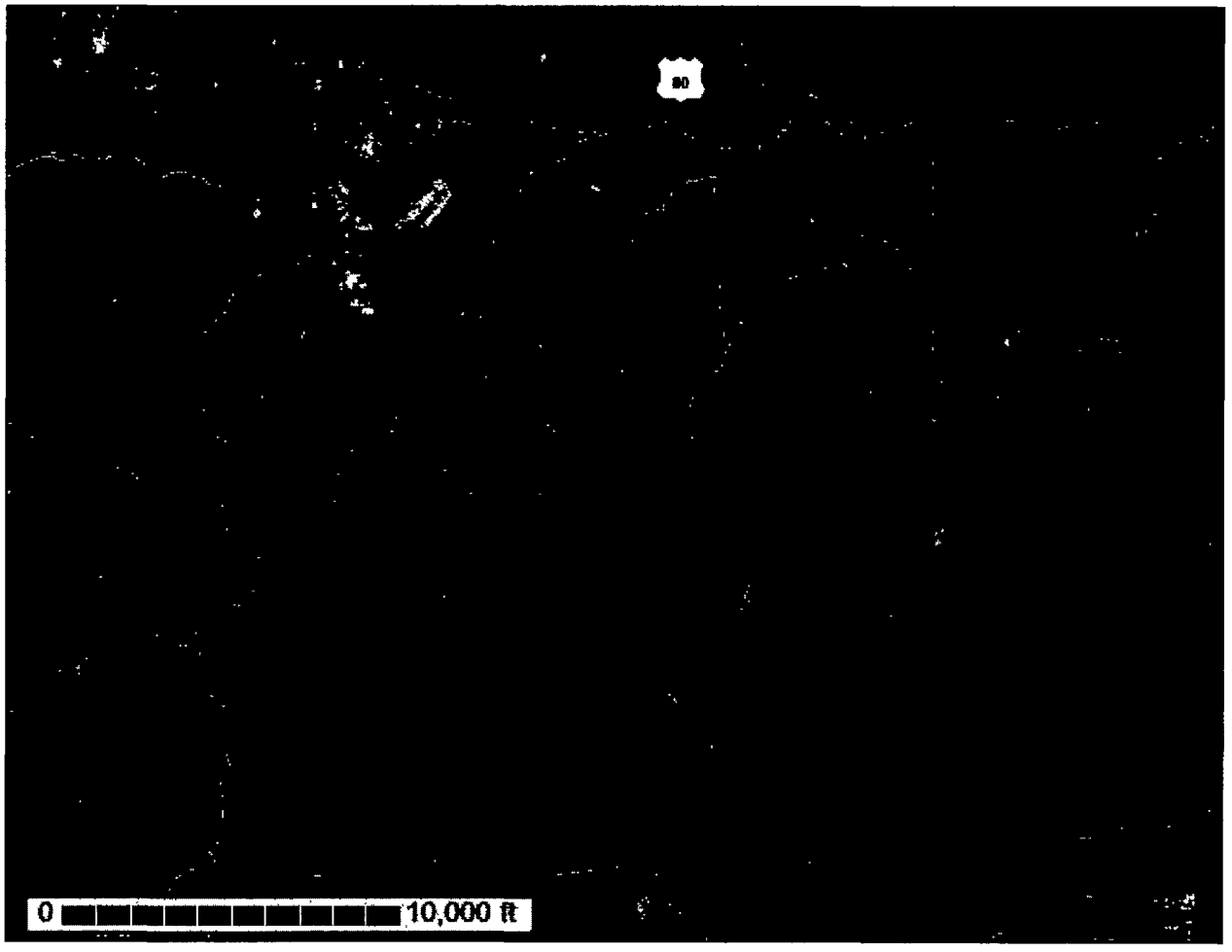
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Van Zandt County, Texas



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Land Classifications

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

Hydric Rating by Map Unit (E. Burgess Transmission Line Project)

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

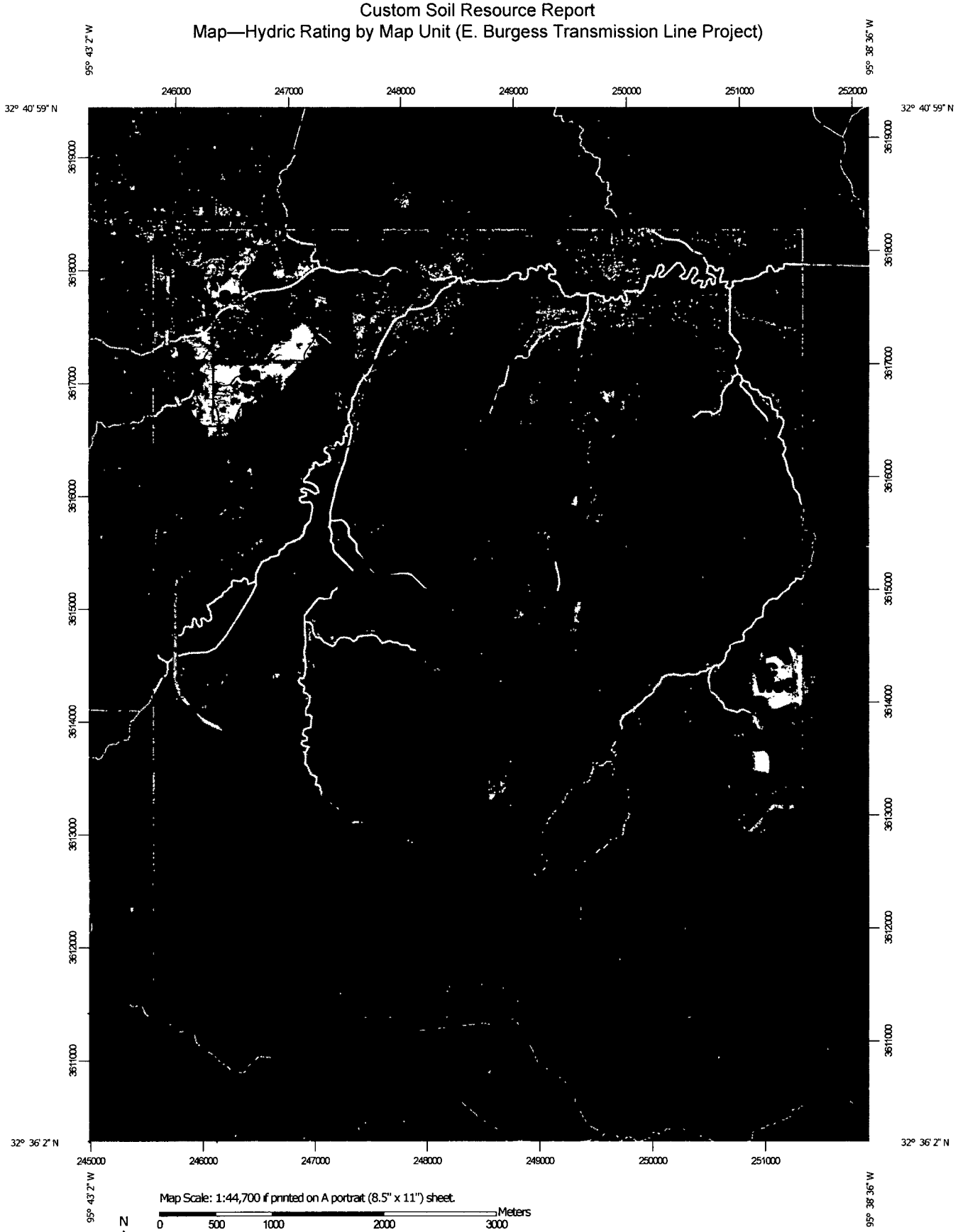
Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Custom Soil Resource Report
Map—Hydric Rating by Map Unit (E. Burgess Transmission Line Project)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL.
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Van Zandt County, Texas
Survey Area Data: Version 15, Sep 15, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 13, 2014—Nov 18, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydric Rating by Map Unit (E. Burgess Transmission Line Project)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BeB	Bernaldo fine sandy loam, 1 to 3 percent slopes	0	183.9	1.8%
DAM	Dams	0	0.4	0.0%
DrA	Derly, occasionally ponded-Raino complex, 0 to 1 percent slopes	50	143.3	1.4%
FrB	Freestone fine sandy loam, 1 to 3 percent slopes	0	2,344.9	23.5%
GaB	Gallime fine sandy loam, 1 to 3 percent slopes	0	40.2	0.4%
Na	Nahatche loam, frequently flooded	10	1,075.0	10.8%
Nh	Nahatche loam, saline, frequently flooded	1	1,316.3	13.2%
PkC	Pickton fine sand, 1 to 5 percent slopes	0	141.5	1.4%
PkE	Pickton fine sand, 5 to 15 percent slopes	0	41.5	0.4%
Pt	Pits	0	3.5	0.0%
Sa	Salt flats	2	157.0	1.6%
W	Water	0	255.1	2.6%
WoC	Wolfpen loamy fine sand, 1 to 5 percent slopes	7	642.4	6.4%
WtC	Woodtell loam, 2 to 5 percent slopes	0	851.0	8.5%
WtC2	Woodtell loam, 2 to 5 percent slopes, eroded	0	9.0	0.1%
WtD	Woodtell loam, 5 to 12 percent slopes	0	2,751.3	27.6%
WwC	Woodtell loam, 2 to 8 percent slopes, extremely bouldery	0	9.3	0.1%
Totals for Area of Interest			**9,965.5**	**100.0%**

Rating Options—Hydric Rating by Map Unit (E. Burgess Transmission Line Project)

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Chemical Properties

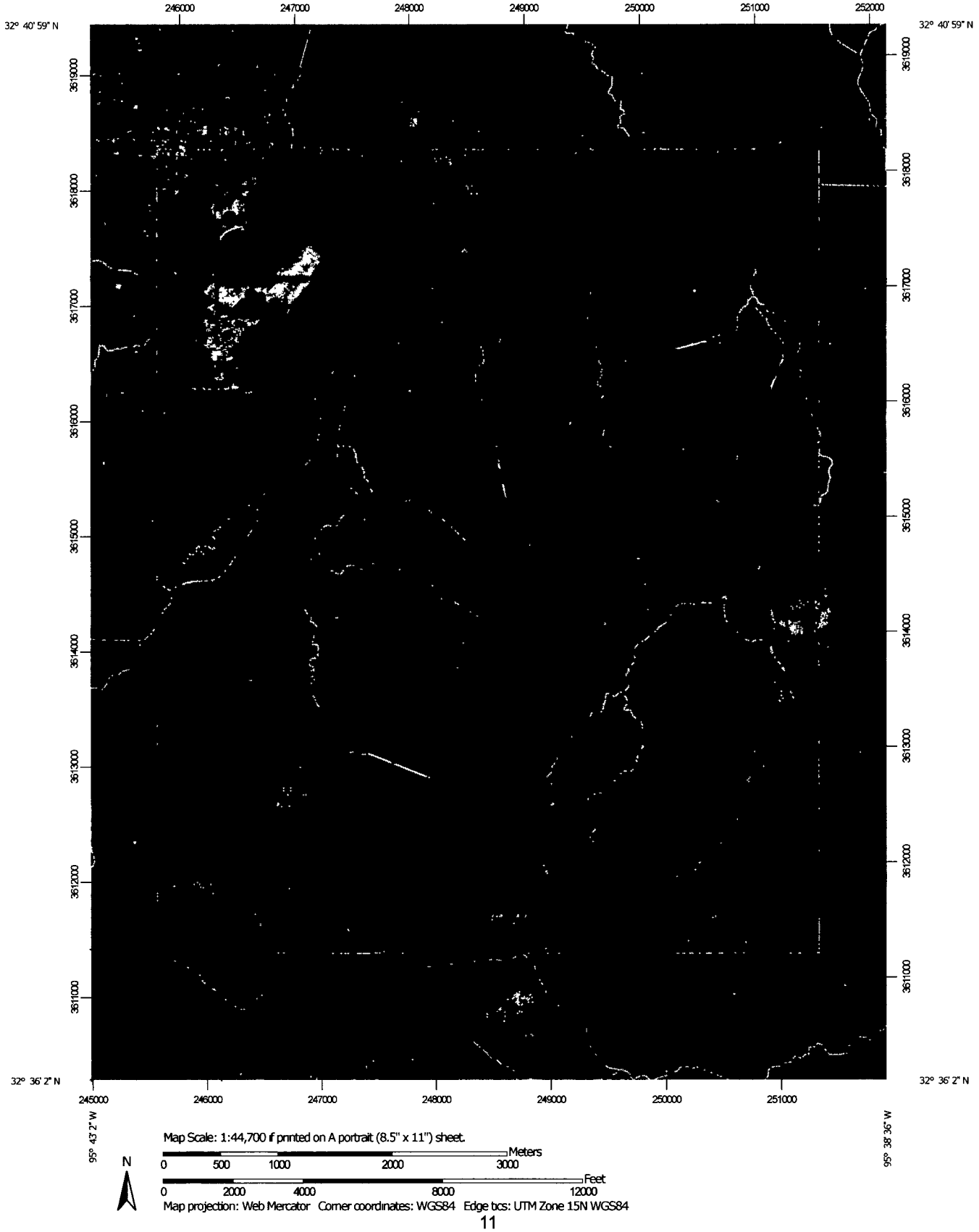
Soil Chemical Properties are measured or inferred from direct observations in the field or laboratory. Examples of soil chemical properties include pH, cation exchange capacity, calcium carbonate, gypsum, and electrical conductivity.

Electrical Conductivity (EC) (E. Burgess Transmission Line Project)

Electrical conductivity (EC) is the electrolytic conductivity of an extract from saturated soil paste, expressed as decisiemens per meter at 25 degrees C. Electrical conductivity is a measure of the concentration of water-soluble salts in soils. It is used to indicate saline soils. High concentrations of neutral salts, such as sodium chloride and sodium sulfate, may interfere with the absorption of water by plants because the osmotic pressure in the soil solution is nearly as high as or higher than that in the plant cells.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Custom Soil Resource Report
Map—Electrical Conductivity (EC) (E. Burgess Transmission Line Project)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- <= 0 3
- > 0 3 and <= 1 0
- > 1.0 and <= 1 8
- > 1 8 and <= 4.0
- > 4 0 and <= 12 0
- Not rated or not available

Soil Rating Lines
- <= 0 3
- > 0 3 and <= 1 0
- > 1.0 and <= 1 8
- > 1 8 and <= 4 0
- > 4 0 and <= 12 0
- Not rated or not available

Soil Rating Points
- <= 0.3
- > 0 3 and <= 1 0
- > 1 0 and <= 1 8
- > 1.8 and <= 4.0
- > 4 0 and <= 12 0
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Van Zandt County, Texas
Survey Area Data: Version 15, Sep 15, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 13, 2014—Nov 18, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Electrical Conductivity (EC) (E. Burgess Transmission Line Project)

Map unit symbol	Map unit name	Rating (decisiemens per meter)	Acres in AOI	Percent of AOI
BeB	Bernaldo fine sandy loam, 1 to 3 percent slopes	0.0	183.9	1.8%
DAM	Dams		0.4	0.0%
DrA	Derly, occasionally ponded-Raino complex, 0 to 1 percent slopes	1.8	143.3	1.4%
FrB	Freestone fine sandy loam, 1 to 3 percent slopes	0.9	2,344 9	23 5%
GaB	Gallime fine sandy loam, 1 to 3 percent slopes	0.0	40.2	0 4%
Na	Nahatche loam, frequently flooded	1 0	1,075.0	10.8%
Nh	Nahatche loam, saline, frequently flooded	12.0	1,316.3	13.2%
PkC	Pickton fine sand, 1 to 5 percent slopes	0.0	141.5	1.4%
PkE	Pickton fine sand, 5 to 15 percent slopes	0.0	41.5	0.4%
Pt	Pits	4.0	3.5	0.0%
Sa	Salt flats		157 0	1.6%
W	Water		255 1	2 6%
WoC	Wolfpen loamy fine sand, 1 to 5 percent slopes	0.5	642.4	6.4%
WtC	Woodtell loam, 2 to 5 percent slopes	0.5	851 0	8.5%
WtC2	Woodtell loam, 2 to 5 percent slopes, eroded	0.0	9.0	0.1%
WtD	Woodtell loam, 5 to 12 percent slopes	0.5	2,751.3	27 6%
WwC	Woodtell loam, 2 to 8 percent slopes, extremely bouldery	0.3	9.3	0.1%
Totals for Area of Interest			**9,965.5**	**100.0%**

Rating Options—Electrical Conductivity (EC) (E. Burgess Transmission Line Project)

Units of Measure: decisiemens per meter

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): Depth Range (Weighted Average)

Top Depth: 0

Bottom Depth: 203

Units of Measure: Centimeters

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http.//www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, FORT WORTH DISTRICT
P.O. BOX 17300
FORT WORTH, TX 76102-0300

July 3, 2019

Regulatory Division

SUBJECT: Project Number SWF-2019-00245, E. Burgess 138kV Transmission Line

Ms. Anastacia Santos
POWER Engineers, Inc.
7600B North Capital of Texas Highway, Suite 320
Austin, Texas 78731

Dear Ms. Santos:

Thank you for your letter received July 2, 2019, concerning a proposal by Southwestern Electric Power Company construct a new 138kV transmission line located in Van Zandt County, Texas. Ms. Katie Roeder has been assigned as the regulatory project manager. The project has been assigned Project Number SWF-2019-00245, please include this number in all future correspondence concerning this project.

Ms. Katie Roeder has been assigned as the regulatory project manager for your request and will be evaluating it as expeditiously as possible.

You may be contacted for additional information about your request. For your information, please reference the Fort Worth District Regulatory Division homepage at www.swf.usace.army.mil/Missions/Regulatory and particularly guidance on submittals at www.media.swf.usace.army.mil/pubdata/environ/regulatory/introduction/submital.pdf and mitigation at www.usace.army.mil/Missions/Regulatory/Permitting/Mitigation that may help you supplement your current request or prepare future requests.

If you have any questions about the evaluation of your submittal or would like to request a copy of one of the documents referenced above, please refer to our website at http://www.swf.usace.army.mil/Missions/Regulatory or contact Ms. Katie Roeder at the address above or telephone (817) 886-1740 and refer to your assigned project number. Please note that it is unlawful to start work without a Department of the Army permit if one is required.

Please help the regulatory program improve its service by completing the survey on the following website: http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey

Stephen L Brooks
Chief, Regulatory Division

POWER ENGINEERS

TELEPHONE RECORD

DATE:	July 19, 2019	TIME OF CALL:	10:15 am
TO:	Natasha Grey	PHONE NUMBER:	817-886-1461
FROM:	Denise Williams	C:	
TYPED BY:	Denise Williams	PROJECT NUMBER:	158522
CLIENT:	AEP		
PROJECT NAME:	E. Burgess		
SUBJECT:	USACE		

MESSAGE

I was returning Ms. Grey's original phone call to Anastacia Santos. Ms. Grey wanted to suggest that instead of addressing our scoping letters to Colonel Kenneth N. Reed that we address them to Regulatory Chef Stephen Brooks. This way the letters won't sit on Colonel Reed's desk for several days before reaching the Regulatory Branch. Ms. Grey also stated that the address would be the same with the exception of including Room 3A37 in the address.

From: Roeder, Katie O CIV (US) <Katie.O.Roeder@usace.army.mil>
Sent: Friday, July 26, 2019 10:59 AM
To: Santos, Anastacia
Subject: SWF-2019-00245_ E. Burgess 138kV Transmission Line (UNCLASSIFIED)
Attachments: submittal guidance linear project_.pdf; USACE_NWP_12_Application_Form_HJH (002).DOC; NWP12TX (002).pdf

CLASSIFICATION: UNCLASSIFIED

Dear Ms. Santos:

Thank you for your letter received July 2, 2019, concerning a proposal by Southwestern Electric Power Company construct a new 138kV transmission line located in Van Zandt County, Texas. The project has been assigned Project Number SWF-2019-00245, please include this number in all future correspondence concerning this project.

We have reviewed this project in accordance with Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899. Under Section 404, the U. S. Army Corps of Engineers (USACE) regulates the discharge of dredged and fill material into waters of the United States, including wetlands. Our responsibility under Section 10 is to regulate any work in, or affecting, navigable waters of the United States. Any such discharge or work requires Department of the Army authorization in the form of a permit. For more information on the USACE Regulatory Program, please reference the Fort Worth District Regulatory Branch homepage at https://urldefense.proofpoint.com/v2/url?u=http-3A__www.swf.usace.army.mil_regulatory&d=DwIFAw&c=H8S5wzIwo-7G_Ou9dg8E0MfTp0Xd5uFLOwdyvjB0JwY&r=tJbqI3NiAVC79Hadkfn6sYmaS-9ywHDlgWwa-DNlf4w&m=VOEh8F-xYUV72a5O8sUie_jeuq-nbdZlaz6F0ls5ekA&s=7Gk_1c6vViuI3n7MSUbygAaA9oeeizul5YOErfBSGvI&e= .

We are unable to determine from the information that you provided in your letter whether Department of the Army authorization will be required, and if so, in what form. The proposed construction activities may be authorized by general permit, such Nationwide permit 12 for Utility Line Activities. We have enclosed a copy of these general permits for your reference. If the project does not meet the terms and conditions of a general permit, an individual permit would be required for authorization.

So that we may continue our evaluation of your proposed project, we request that you provide the following information:

1. A detailed project description.

2. A map (or maps) showing the entire route of the project.

3. The proposed route of the project on 8 ½ by 11-inch copies of 7.5-minute United States Geological Survey (USGS) quadrangle maps, national wetland inventory maps, published soil survey maps, scaled aerial photographs, and/or other suitable maps. Identify all base maps, (e.g. "Fort Worth, Texas" 7.5-minute USGS quadrangle, Natural Resources Conservation Service Tarrant County Soil Survey sheet 10). Clearly mark (such as by circling) and number the location of each proposed utility line crossing of a water of the United States and any appurtenant structure(s) in waters of the United States on the map. Waters of the United States include streams and rivers and most lakes, ponds, mudflats, sandflats, wetlands, sloughs, wet meadows, abandoned sand and gravel mining and construction pits, and similar areas.

4. For each potential utility line crossing or appurtenant structure in a water of the United States, the following site specific information when applicable:

a. 7.5-minute USGS quadrangle map name, universal transverse mercator (UTM) coordinates, county or parish, waterway name;

b. a brief characterization of the crossing area (stream, forested wetland, non-forested wetland, etc.) including the National Wetland Inventory classification and soil series;

c. distance between ordinary high water marks;

d. proposed method of crossing (trench, bore, span, bridge, culvert etc.);

e. length of proposed crossing;

f. width of temporary and permanent rights-of-way;

g. type and amount of dredged or fill material proposed to be discharged;

h. acreage of proposed temporary and permanent adverse impacts to waters of the United States, including wetlands; and

i. a typical cross-section.

Please refer to the enclosed guidance for Department of the Army submittals for additional details about what you should submit for this and future linear projects. Additional information, including more detailed jurisdictional determination data, may be needed to complete our evaluation of your project in some cases. We encourage you to consult with a qualified specialist (biologist, ecologist or other specialist qualified in preliminary jurisdictional determinations) who is familiar with the Great Plains Regional Supplement to the 1987 Corps of Engineers Wetlands Delineation Manual and the USACE Regulatory Program (33 CFR Parts 320-331).

We encourage you to avoid and minimize adverse impacts to streams, wetlands, and other waters of the United States in planning this project. Please forward your response to us as soon as possible so that we may continue our evaluation of your request. If we do not receive the requested information within 30 days of the date of this letter, we will consider your application administratively withdrawn. If withdrawn, you may re-open your application at a later date by submitting the requested information.

Please note that it is unlawful to start work without a Department of the Army permit when one is required.

You may be contacted for additional information about your request. For your information, please refer to the Fort Worth District Regulatory Division homepage at https://urldefense.proofpoint.com/v2/url?u=http-3A__www.swf.usace.army.mil_Missions_regulatory&d=DwIFAw&c=H8S5wzIwo-7G_Ou9dg8E0MfTp0Xd5uFLOwdyvjB0JwY&r=tJbqI3NiAVC79Hadkfn6sYmaS-9ywHDlgWwa-DNlf4w&m=VOEh8F-xYUV72a5O8sUie_jeuq-nbdZlaz6F0ls5ekA&s=u3epS0U4VsCgHTJ48X_NGX3OdrkV0TmgOSknxitbuY4&e= and particularly guidance on submittals at https://urldefense.proofpoint.com/v2/url?u=http-3A__media.swf.usace.army.mil_pubdata_environ_Regulatory_introduction_submita

l.pdf&d=DwIFAw&c=H8S5wzIwo-7G_Ou9dg8E0MfTp0Xd5uFLOwdyvjB0JwY&r=tJbqI3NiAVC79Hadkfn6sYmaS-9ywHDlgWwa-DNlf4w&m=VOEh8F-xYUV72a5O8sUie_jeuq-nbdZlaz6F0ls5ekA&s=MWdYCZkLgRINDbsS5tKchd1W3YHo_8D_GzMeCzxEbn4&e= , and mitigation at https://urldefense.proofpoint.com/v2/url?u=http-3A__www.swf.usace.army.mil_Missions_Regulatory_Permitting_Mitigation&d=DwIFAw&c=H8S5wzIwo-7G_Ou9dg8E0MfTp0Xd5uFLOwdyvjB0JwY&r=tJbqI3NiAVC79Hadkfn6sYmaS-9ywHDlgWwa-DNlf4w&m=VOEh8F-xYUV72a5O8sUie_jeuq-nbdZlaz6F0ls5ekA&s=uCpnm9Ad5rXy02XgbHqv_nrnfunyKMXKYWkuKgJcMk8&e= that may help you supplement your current request or prepare future requests.

If you have any questions about the evaluation of your submittal or would like to request a copy of one of the documents referenced above, please contact Ms. Katie Roeder at the address above or telephone (817) 886-1740 and refer to your assigned project number.

**** ALSO, PLEASE PROVIDE THE APPLICATNS INFORMATION (NAME, ADDRESS, TELEPHONE NUMBER AND EMAIL) AS IT IS OFFICE POLICY THAT WE COORDINATE WITH THEM THROUGHOUT THIS PROCESS.

Thanks,

Katie
CLASSIFICATION: UNCLASSIFIED

NATIONWIDE PERMIT 12
Utility Line Activities
Effective Date: March 19, 2017
(NWP Final Notice, 82 FR 4)

12. Utility Line Activities. Activities required for the construction, maintenance, repair, and removal of utility lines and associated facilities in waters of the United States, provided the activity does not result in the loss of greater than 1/2-acre of waters of the United States for each single and complete project.

Utility lines: This NWP authorizes discharges of dredged or fill material into waters of the United States and structures or work in navigable waters for crossings of those waters associated with the construction, maintenance, or repair of utility lines, including outfall and intake structures. There must be no change in pre-construction contours of waters of the United States. A "utility line" is defined as any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, and telegraph messages, and internet, radio, and television communication. The term "utility line" does not include activities that drain a water of the United States, such as drainage tile or french drains, but it does apply to pipes conveying drainage from another area.

Material resulting from trench excavation may be temporarily sidecast into waters of the United States for no more than three months, provided the material is not placed in such a manner that it is dispersed by currents or other forces. The district engineer may extend the period of temporary side casting for no more than a total of 180 days, where appropriate. In wetlands, the top 6 to 12 inches of the trench should normally be backfilled with topsoil from the trench. The trench cannot be constructed or backfilled in such a manner as to drain waters of the United States (e.g., backfilling with extensive gravel layers, creating a french drain effect). Any exposed slopes and stream banks must be stabilized immediately upon completion of the utility line crossing of each waterbody.

Utility line substations: This NWP authorizes the construction, maintenance, or expansion of substation facilities associated with a power line or utility line in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not result in the loss of greater than 1/2-acre of waters of the United States. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters of the United States to construct, maintain, or expand substation facilities.

Foundations for overhead utility line towers, poles, and anchors: This NWP authorizes the construction or maintenance of foundations for overhead utility line towers, poles, and anchors in all waters of the United States, provided the foundations are the minimum size necessary and separate footings for each tower leg (rather than a larger single pad) are used where feasible.

Access roads: This NWP authorizes the construction of access roads for the construction and maintenance of utility lines, including overhead power lines and utility line substations, in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not cause the loss of greater than 1/2-acre of non-tidal waters of the United States. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters for access roads. Access roads must be the minimum width necessary (see Note 2, below). Access roads must be constructed so that the length of the road minimizes any adverse effects on waters of the United States and must be as near as possible to pre-construction

contours and elevations (e.g., at grade corduroy roads or geotextile/gravel roads). Access roads constructed above pre-construction contours and elevations in waters of the United States must be properly bridged or culverted to maintain surface flows.

This NWP may authorize utility lines in or affecting navigable waters of the United States even if there is no associated discharge of dredged or fill material (See 33 CFR part 322). Overhead utility lines constructed over section 10 waters and utility lines that are routed in or under section 10 waters without a discharge of dredged or fill material require a section 10 permit.

This NWP authorizes, to the extent that Department of the Army authorization is required, temporary structures, fills, and work necessary for the remediation of inadvertent returns of drilling fluids to waters of the United States through sub-soil fissures or fractures that might occur during horizontal directional drilling activities conducted for the purpose of installing or replacing utility lines. These remediation activities must be done as soon as practicable, to restore the affected waterbody. District engineers may add special conditions to this NWP to require a remediation plan for addressing inadvertent returns of drilling fluids to waters of the United States during horizontal directional drilling activities conducted for the purpose of installing or replacing utility lines.

This NWP also authorizes temporary structures, fills, and work, including the use of temporary mats, necessary to conduct the utility line activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. After construction, temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if any of the following criteria are met: (1) the activity involves mechanized land clearing in a forested wetland for the utility line right-of-way; (2) a section 10 permit is required; (3) the utility line in waters of the United States, excluding overhead lines, exceeds 500 feet; (4) the utility line is placed within a jurisdictional area (i.e., water of the United States), and it runs parallel to or along a stream bed that is within that jurisdictional area; (5) discharges that result in the loss of greater than 1/10-acre of waters of the United States; (6) permanent access roads are constructed above grade in waters of the United States for a distance of more than 500 feet; or (7) permanent access roads are constructed in waters of the United States with impervious materials. (See general condition 32.) (Authorities: Sections 10 and 404)

Note 1: Where the utility line is constructed or installed in navigable waters of the United States (i.e., section 10 waters) within the coastal United States, the Great Lakes, and United States territories, a copy of the NWP verification will be sent by the Corps to the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), for charting the utility line to protect navigation.

Note 2: For utility line activities crossing a single waterbody more than one time at separate and distant locations, or multiple waterbodies at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. Utility line activities must comply with 33 CFR 330.6(d).

Note 3: Utility lines consisting of aerial electric power transmission lines crossing navigable waters of the United States (which are defined at 33 CFR part 329) must comply with the applicable minimum clearances specified in 33 CFR 322.5(i).

Note 4: Access roads used for both construction and maintenance may be authorized, provided they meet the terms and conditions of this NWP. Access roads used solely for construction of the utility line must be removed upon completion of the work, in accordance with the requirements for temporary fills.

Note 5: Pipes or pipelines used to transport gaseous, liquid, liquescent, or slurry substances over navigable waters of the United States are considered to be bridges, not utility lines, and may require a permit from the U.S. Coast Guard pursuant to section 9 of the Rivers and Harbors Act of 1899. However, any discharges of dredged or fill material into waters of the United States associated with such pipelines will require a section 404 permit (see NWP 15).

Note 6: This NWP authorizes utility line maintenance and repair activities that do not qualify for the Clean Water Act section 404(f) exemption for maintenance of currently serviceable fills or fill structures.

Note 7: For overhead utility lines authorized by this NWP, a copy of the PCN and NWP verification will be provided to the Department of Defense Siting Clearinghouse, which will evaluate potential effects on military activities.

Note 8: For NWP 12 activities that require pre-construction notification, the PCN must include any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings that require Department of the Army authorization but do not require pre-construction notification (see paragraph (b) of general condition 32). The district engineer will evaluate the PCN in accordance with Section D, "District Engineer's Decision." The district engineer may require mitigation to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see general condition 23).

Nationwide Permit General Conditions

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP. Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR 330.1 through 330.6 apply to every NWP authorization. Note especially 33 CFR 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless culvert cannot be used, then the crossing should be designed and constructed to minimize adverse effects to aquatic life movements.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers. (a) No NWP activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status.

(b) If a proposed NWP activity will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the permittee must submit a pre-construction notification (see general condition 32). The district engineer will coordinate the PCN with the Federal agency with direct management responsibility for that river. The permittee shall not begin the NWP activity until notified by the district engineer that the Federal agency with direct management responsibility for that river has determined in writing that the proposed NWP activity will not adversely affect the Wild and Scenic River designation or study status.

(c) Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service). Information on these rivers is also available at: http://www.rivers.gov/.

17. Tribal Rights. No NWP activity may cause more than minimal adverse effects on tribal rights (including treaty rights), protected tribal resources, or tribal lands.

18. Endangered Species. (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act

(ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless ESA section 7 consultation addressing the effects of the proposed activity has been completed. Direct effects are the immediate effects on listed species and critical habitat caused by the NWP activity. Indirect effects are those effects on listed species and critical habitat that are caused by the NWP activity and are later in time, but still are reasonably certain to occur.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. If pre-construction notification is required for the proposed activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation has not been submitted, additional ESA section 7 consultation may be necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under section 7 of the ESA.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed activity or that utilize the designated critical habitat that might be affected by the proposed activity. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the activity, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification that the proposed activity will have "no effect" on listed species or critical habitat, or until ESA section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific permit conditions to the NWPs.

(e) Authorization of an activity by an NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the FWS or the NMFS, the Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) If the non-federal permittee has a valid ESA section 10(a)(1)(B) incidental take permit with an approved Habitat Conservation Plan for a project or a group of projects that includes the proposed NWP activity, the non-federal applicant should provide a copy of that ESA section 10(a)(1)(B) permit with the PCN required by paragraph (c) of this general condition. The district

engineer will coordinate with the agency that issued the ESA section 10(a)(1)(B) permit to determine whether the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation conducted for the ESA section 10(a)(1)(B) permit. If that coordination results in concurrence from the agency that the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation for the ESA section 10(a)(1)(B) permit, the district engineer does not need to conduct a separate ESA section 7 consultation for the proposed NWP activity. The district engineer will notify the non-federal applicant within 45 days of receipt of a complete pre-construction notification whether the ESA section 10(a)(1)(B) permit covers the proposed NWP activity or whether additional ESA section 7 consultation is required.

(g) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the FWS and NMFS or their world wide web pages at http://www.fws.gov/ or http://www.fws.gov/ipac and http://www.nmfs.noaa.gov/pr/species/esa/ respectively.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for ensuring their action complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting appropriate local office of the U.S. Fish and Wildlife Service to determine applicable measures to reduce impacts to migratory birds or eagles, including whether "incidental take" permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

20. Historic Properties. (a) In cases where the district engineer determines that the activity may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of section 106 of the National Historic Preservation Act. If pre-construction notification is required for the proposed NWP activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional consultation under section 106 may be necessary. The respective federal agency is responsible for fulfilling its obligation to comply with section 106.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the NWP activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties might have the potential to be affected by the proposed NWP activity or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of, or potential for, the presence of historic properties can be sought from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or designated tribal representative, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral