APPLICATION OF

LONE STAR TRANSMISSION, LLC

TO AMEND ITS CERTIFICATE OF CONVENIENCE

AND NECESSITY FOR THE

BULLOCK STATION TO AQUILLA LAKE III WIND

345-KV TRANSMISSION LINE

IN HILL COUNTY

DOCKET NO. 57836

Submit seven (7) copies of the application and all attachments supporting the application. If the application is being filed pursuant to 16 Tex. Admin. Code § 25.101(b)(3)(D) (TAC) or 16 TAC § 25.174, include in the application all direct testimony. The application and other necessary documents shall be submitted to:

Public Utility Commission of Texas
Attn: Filing Clerk
1701 N. Congress Ave.
Austin, Texas 78711-3326

1. **Applicant (Utility) Name:** Lone Star Transmission, LLC

Certificate Number: 30196

Street Address: 5920 W. William Cannon Dr., Bldg. 2
Austin, TX 78749

Mailing Address: 5920 W. William Cannon Dr., Bldg. 2
Austin, TX 78749

2. **Please identify all entities that will hold an ownership interest or an investment interest in the proposed project but which are not subject to the Commission's jurisdiction.**

Not applicable. Lone Star Transmission, LLC (Lone Star) will construct and hold the sole ownership interest in the facilities associated with the proposed Bullock Station to Aquilla Lake III Wind 345-kilovolt (kV) Transmission Line in Hill County (the Project).

3. **Person to Contact:**

Primary Contact:	Robert Orr
Title/Position:	Director, Regulatory Affairs
Phone Number:	(512) 236-3135
Mailing Address:	5920 W. William Cannon Dr., Bldg. 2 Austin, TX 78749
Email Address:	robert.orr@lonestar-transmission.com
Alternate Contact:	Tracy Wieczorek
Title/Position:	Director, Land Strategy and Community Relations
Phone Number:	(512) 236-3151
Mailing Address:	5920 W. William Cannon Dr., Bldg. 2 Austin, TX 78749
Email Address:	tracy.wieczorek@lonestar-transmission.com
Legal Counsel:	Tracy Davis, Managing Attorney
Phone Number:	(512) 236-3141
Mailing Address:	5920 W. William Cannon Dr., Bldg. 2 Austin, TX 78749
Email Address:	tracy.davis@lonestar-transmission.com

4. **Project Description:**

Name or Designation of Project:

Bullock Station to Aquilla Lake III Wind 345-kV Transmission Line in Hill County (Project)

Provide a general description of the project, including the design voltage rating (kV), the operating voltage (kV), the CREZ Zone(s) (if any) where the project is located (all or in part), any substations and/or substation reactive compensation constructed as part of the project, and any series elements such as sectionalizing switching devices, series line compensation, etc. For HVDC transmission lines, the converter stations should be considered to be project components and should be addressed in the project description.

Design Voltage Rating (kV): 345-kV

Operating Voltage (kV): 345-kV

CREZ Zone(s): Not applicable

Substation(s) Included: None

Series Element(s) Included: None

Lone Star is proposing to design and construct the Project, which will consist of a new, approximately 3.64-mile, single-circuit 345-kV transmission line to interconnect a new, approximately 304.6-megawatt (MW) wind generation facility, the Aquilla Lake III Wind Project, being constructed by Hubbard Wind II, LLC (Hubbard Wind II), to Lone Star's new 345-kV Bullock Station, located in Hill County, Texas. Hubbard Wind II is an indirect, wholly owned subsidiary of NextEra Energy Resources, LLC.

Lone Star proposes to construct the Project as a single-circuit 345-kV transmission line that will begin at the new Bullock Station, which is located approximately 0.64 mile southwest of the intersection of County Road (CR) 3441 and Farm-to-Market (FM) 308. The Project will extend to the Aquilla Lake III Point of Interconnection (POI) located approximately 2.66 miles west-southwest of the intersection of FM 1946 and FM 308. The total length of the proposed Project will be approximately 3.64 miles in length and will require a 150- to 200-foot right of way (ROW).

Lone Star is proposing one route (Consensus Route) for the Project because all landowners directly affected by the Project have granted written consent to Lone Star for the construction of the new transmission line. In addition, the Consensus Route is a forward-progressing and relatively direct path from Lone Star's Bullock Station to the Aquilla Lake III Wind Collector Station and meets the applicable criteria of the Public Utility Regulatory Act (PURA)[1] and the Commission's rules. Therefore, this Application sets forth a single proposed route for the Project.

For a more detailed description of the proposed Project, please see the *Bullock Station to Aquilla Lake III Wind 345-kV Transmission Line Project Environmental Assessment and Route Analysis* (EA), prepared by Lone Star's routing consultant, POWER Engineers, Inc. (POWER Engineers), which is included as Attachment 1 to this Application and incorporated herein by reference.

If the project will be owned by more than one party, briefly explain the ownership arrangements between the parties and provide a description of the portion(s) that will be owned by each party. Provide a description of the responsibilities of each party for implementing the project (design, Right-of-Way acquisition, material procurement, construction, etc.).

Not applicable. Lone Star will own 100 percent of the Project described in this Application.

If applicable, identify and explain any deviation in transmission project components from the original transmission specifications as previously approved by the Commission or recommended by a PURA §39.151 organization.

Not applicable. The Commission has not previously approved, and ERCOT (a PURA § 39.151 organization) has not previously recommended, any transmission specifications applicable to this project. ERCOT Nodal Protocol Section 3.11 (relating to Transmission Planning) and the ERCOT RPG Charter and Procedures define a project that interconnects new generation as a "neutral project" that does not require ERCOT Regional Planning Group (RPG) review. Therefore, the proposed Project was not submitted for RPG review, and ERCOT did not provide any transmission specifications for the Project. Thus, there are no deviations from the original transmission specifications previously recommended by ERCOT.

[1] Public Utility Regulatory Act, Tex. Util. Code §§ 11.001–66.016 (PURA).

5. Conductor and Structures:

Conductor Size and Type

The conductor used for the Project will be a twin-bundled 795 ACSR Drake conductor with a single 0.571 Optical Ground Wire and 7#7 overhead shield wire.

Number of Conductors Per Phase

The Project will be constructed with two conductors per phase.

Continuous Summer Static Current Rating (A)

The nominal Continuous Summer Static Current Rating for the Project is 1983 Amps (A).

Continuous Summer Static Line Capacity at Operating Value (MVA)

The nominal Continuous Summer Static Line Capacity at Operating Voltage for the Project is approximately 320.63 Megavolt Amps (MVA).

Continuous Summer Static Line Capacity at Design Voltage (MVA)

The nominal Continuous Summer Static Line Capacity at Design Voltage for the Project is approximately 320.63 MVA.

Type and Composition of Structures

Lone Star proposes to construct the Project using self-supporting and guyed concrete monopole structures. Alternative structure types, such as guyed dead-end monopole structures or single self-supported monopoles, may be used due to engineering constraints, such as crossing obstructions, turning large angles, or other constraints.

Height of Typical Structures

The typical structure height for the Project will be approximately 90 to 140 feet. However, the height may vary depending on the clearance requirements at a particular location due to the terrain, span lengths, overhead obstructions, and various other constraints.

Estimated Maximum Height of Structures

The estimated maximum height of structures is expected to be approximately 140 feet above ground.

Explain why these structures were selected; include such factors as landowner preference, engineering considerations, and costs comparisons to alternate structures that were considered. Provide dimensional drawings of the typical structures to be used in the project.

Lone Star selected pre-stressed concrete monopoles as the typical structure type for the Project for a number of reasons. In Lone Star's experience, pre-stressed concrete monopoles have shorter fabrication lead times and will be manufactured at a facility located in Texas, which minimizes shipping times and costs. In addition, in Lone Star's experience, construction using concrete monopoles has been efficient and cost-effective. Also, Lone Star's spare inventory includes pre-stressed concrete monopoles.

Further, based on Lone Star's general experience, many landowners prefer monopoles because they have a reduced structure footprint, which generally results in fewer impacts to land and reduces interference with current land uses, *e.g.*, ranching and farming. Consent was obtained from landowners based upon a design primarily utilizing monopoles.

Dimensional drawings of the concrete monopole structures are included as Figures 1-2 and 1-3 of the EA included as Attachment 1 to this Application.

For joint applications, provide and separately identify the above-required information regarding structures for the portion(s) of the project owned by each applicant.

Not applicable. This is not a joint application.

6. Right-of-Way:

Miles of Right-of-Way

The total length of the ROW in miles for the Consensus Route is approximately 3.64 miles.

Miles of Circuit

The Project will be a single-circuit transmission line, and the number of circuit miles is approximately 3.64 miles.

Width of Right-of-Way

The typical ROW width for the Project will be 150 to 200 feet.

Percent of Right-of-Way Acquired

Lone Star has acquired consent agreements from all directly affected landowners or 100% of the Project and has formally acquired options for 54% of ROW at this time. Hubbard Wind II is in the process of acquiring all needed ROW easement options for the Project. Lone Star will formally acquire from Hubbard Wind II all ROW easement options following CCN approval and exercise the options. Copies of the consent agreements are provided in Attachment 2 to the Application.

For joint applications, provide and separately identify the above-required information for each route for the portion(s) of the project owned by each applicant.

Not applicable. This is not a joint application.

Provide a brief description of the area traversed by the transmission line. Include a description of the general land uses in the area and the type of terrain crossed by the line.

The traversed by the Project (the Study Area) is located within the Blackland Prairies Sub-province of the Gulf Coastal Plains Physiographic Province. Elevations within the Study Area range between approximately 450 to 1,000 feet above mean sea level (amsl) and generally increase northward and westward.

The Study Area is primarily rural with some residential development scattered throughout. The predominant land use within the study area is cropland, rangeland and pastureland.

Specific discussion regarding natural, human, and cultural resources in the Study Area is presented in Section 3 of the EA (Attachment 1 to this Application).

7. Substations or Switching Stations:

List the name of all existing HVDC converter stations, substations or switching stations that will be associated with the new transmission line. Provide documentation showing that the owner(s) of the existing HVDC converter stations, substations and/or switching stations have agreed to the installation of the required project facilities.

The proposed Project will connect to Lone Star's new Bullock Station.

List the name of all new HVDC converter stations, substations or switching stations that will be associated with the new transmission line. Provide documentation showing that the owner(s) of the new HVDC converter stations, substations and/or switching stations have agreed to the installation of the required project facilities.

The proposed transmission line will extend between Lone Star's Bullock Station and the new Aquilla Lake III Collector Station. The generator, Hubbard Wind II, will own the Aquilla Lake III Collector Station. The point of interconnection for the Project will be located at a new Lone Star-owned dead-end structure located outside of the Aquilla Lake III Collector Station.

8. Estimated Schedule:

Estimated Dates of:	**Start**	**Completion***
Right-of-way and Land Acquisition	November 2023	Following CCN Approval
Engineering and Design	March 2024	September 2025
Material and Equipment Procurement	October 2024	October 2025
Construction of Facilities	September 2025 or earlier, depending on date of PUCT approval	February 2026
Energize Facilities	February 2026	March 2026

*With the Consensus Route and necessary consents obtained for the Project, this estimated schedule is based upon administrative approval of this Application pursuant to 16 Texas Administrative Code (TAC) § 25.101(b)(3)(C).

9. Counties:

For each route, list all counties in which the route is to be constructed.

The Consensus Route for the Project is located within Hill County.

10. Municipalities:

For each route, list all municipalities in which the route is to be constructed.

The Consensus Route for the Project is not located within the incorporated boundaries of any municipality.

For each applicant, attach a copy of the franchise, permit or other evidence of the city's consent held by the utility, if necessary or applicable. If franchise, permit, or other evidence of the city's consent has been previously filed, provide only the docket number of the application in which the consent was filed. Each applicant should provide this information only for the portion(s) of the project which will be owned by the applicant.

Not applicable.

11. Affected Utilities:

Identify any other electric utility served by or connected to facilities in this application.

No other electric utility is served by or directly connected to this Project.

Describe how any other electric utility will be affected and the extent of the other utilities' involvement in the construction of this project. Include any other utilities whose existing facilities will be utilized for the project (vacant circuit positions, ROW, substation sites and/or equipment, etc.) and provide documentation showing that the owner(s) of the existing facilities have agreed to the installation of the required project facilities.

Not applicable.

12. Financing:

Describe the method of financing this project. For each applicant that is to be reimbursed for all or a portion of this project, identify the source and amount of the reimbursement (actual amount if known, estimated amount otherwise) and the portion(s) of the project for which the reimbursement will be made.

Funds for the Project will come from Lone Star's existing cash on hand, existing debt facility, and owner equity.

13. Estimated Costs:

Provide cost estimates for each route of the proposed project using the following table. Provide a breakdown of "Other" costs by major cost category and amount. Provide the information for each route in an attachment to this application.

The estimated costs for the Consensus Route for the transmission line facilities and for the termination costs at the Bullock Station associated with this Project are provided in the table below. Because Lone Star is proposing only one Consensus Route, Lone Star is providing the required cost information in a table in this CCN Application. Lone Star also is providing a native version of this estimated cost table electronically with this Application package.

Consensus Route Costs	**Transmission Facilities**	**Substation Facilities**
Right-of-way and Land Acquisition	$880,000	$420,000
Engineering and Design (Utility)	$0	$0
Engineering and Design (Contract)	$718,000	$3,087,400
Procurement of Material and Equipment (including stores)	$5,150,000	$7,622,500
Construction of Facilities (Utility)	$0	$0
Construction of Facilities (Contract)	$7,262,000	$14,220,100
Other (all costs not included in the above categories)	$1,153,692	$1,816,308
Estimated Total Cost	**$15,163,692**	**$27,166,308**

For joint applications, provide and separately identify the above-required information for the portion(s) of the project owned by each applicant.

Not applicable. This is not a joint application.

14. Need for the Proposed Project:

For a standard application, describe the need for the construction and state how the proposed project will address the need. Describe the existing transmission system and conditions addressed by this application. For projects that are planned to accommodate load growth, provide historical load data and load projections for at least five years. For projects to accommodate load growth or to address reliability issues, provide a description of the steady state load flow analysis that justifies the project. For interconnection projects, provide any documentation from a transmission service customer, generator, transmission service provider, or other entity to establish that the proposed facilities are needed. For projects related to a Competitive Renewable Energy Zone, the foregoing requirements are not necessary; the applicant need only provide a specific reference to the pertinent portion(s) of an appropriate commission order specifying that the facilities are needed. For all projects, provide any documentation of the review and recommendation of a PURA §39.151 organization.

The proposed Project is necessary to interconnect and provide transmission service to a new transmission service customer, Hubbard Wind II. Pursuant to 16 TAC §§ 25.191(d)(3) and 25.198(b), a TSP is required to provide service to a transmission service customer when certain conditions are met, including execution of an interconnection agreement. Hubbard Wind II requested interconnection to Lone Star's existing 345-kV transmission system in Hill County. As a power generation company, Hubbard Wind II will be a

transmission service customer under 16 TAC § 25.5(140). Lone Star and Hubbard Wind II executed the ERCOT Standard Generation Interconnection Agreement on January 24, 2024, as amended July 29, 2024 and January 7, 2025 (collectively, the Interconnection Agreement), with an agreed upon in-service date for the transmission facilities of March 14, 2026 and an agreed upon commercial operation date for the Aquilla Lake III Wind Project of March 1, 2027. The Interconnection Agreement was filed with the Commission in Project No. 35077 and is included in this Application as Attachment 3.

Additionally, 16 TAC § 25.195(c)(1) provides as follows: "When an eligible transmission service customer requests transmission service for a new generation source that is planned to be interconnected with a TSP's transmission network, the transmission service customer shall be responsible for the cost of installing step-up transformers to transform the output of the generator to a transmission voltage level and protective devices at the point of interconnection capable of electrically isolating the generation source owned by the transmission service customer. The TSP shall be responsible, pursuant to paragraph (2) of this subsection, for the cost of installing any other interconnection facilities that are designed to operate at a transmission voltage level and any other upgrades on its transmission system that may be necessary to accommodate the requested transmission service." The Interconnection Agreement provided as Attachment 3 specifies and assigns these responsibilities pursuant to 16 TAC § 25.195(c)(1).

The ERCOT Nodal Protocols and ERCOT RPG Charter and Procedures define a project that is directly associated with the interconnection of new generation as a "neutral project," which is not required to be submitted for RPG review. Therefore, the Project was not submitted for RPG review.

In accordance with the Nodal Protocols, ERCOT performed a Generation Interconnect Screening Study, which concluded that the proposed generation facility could be interconnected to Lone Star's system through the new Bullock Station. Additionally, Lone Star completed the Full Interconnection Study process required by ERCOT for all generation interconnection requests, which included a Facility Study. The Facility Study describes the transmission facilities and associated costs required to interconnect the new generation project. The Facility Study was available to ERCOT and other TSPs for review and comment for ten days, and Lone Star received no comments. In addition, because the expected interconnection costs for the Project exceed $25 million, ERCOT performed an independent economic analysis of the Project pursuant to ERCOT Nodal Protocol § 3.11.6 and determined an annual production cost savings and annual generator revenue reduction resulting from including the facilities in the economic study were approximately $20.8 million and $13.43 million respectively for the year 2028. ERCOT's economic analysis confirmed that the addition of the Aquilla Lake III Wind Project had no significant impact on congestion in the study. A copy of ERCOT's economic analysis is provided as Attachment 4.

15. Alternatives to Project:

For a standard application, describe alternatives to the construction of this project (not routing options). Include an analysis of distribution alternatives, upgrading voltage or bundling of conductors of existing facilities, adding transformers, and for utilities that have not unbundled, distributed generation as alternatives to the project. Explain how the project overcomes the insufficiencies of the other options that were considered.

Lone Star is proposing this Project in order to provide service to a transmission service customer, Hubbard Wind II, which has requested to interconnect its approximately 304.6-MW wind generating facility to Lone Star's 345-kV transmission system in Hill County. Other alternatives to the proposed Project would not provide a feasible or cost-effective solution to this identified project need.

First, using distribution facilities to transfer approximately 304.6 MW from the wind generation facility to the existing 345-kV transmission system is not practical from an engineering or cost perspective. ERCOT typically requires generators larger than 10 MW to interconnect at transmission-level voltages (*i.e.*, above 60 kV). Second, there is no need for Lone Star to upgrade the voltage on its transmission facilities or add transformers. Hubbard Wind II requested to interconnect at 345-kV, which is the voltage level of Lone

Star's existing transmission system in Hill County. Third, there are no existing transmission lines that could be bundled to interconnect the Aquilla Lake III Wind Project. Lone Star's transmission facilities already utilize bundled conductor. Finally, Lone Star is an unbundled, transmission-only utility, and therefore, distributed generation is not an alternative to the proposed Project.

16. Schematic or Diagram:

For a standard application, provide a schematic or diagram of the applicant's transmission system in the proximate area of the project. Show the location and voltage of existing transmission lines and substations, and the location of the construction. Locate any taps, ties, meter points, or other facilities involving other utilities on the system schematic.

A schematic of Lone Star's transmission system in the proximate area of the Project is included as Attachment 5 to this Application.

17. Routing Study:

Provide a brief summary of the routing study that includes a description of the process of selecting the study area, identifying routing constraints, selecting potential line segments, and the selection of the routes. Provide a copy of the complete routing study conducted by the utility or consultant. State which route the applicant believes best addresses the requirements of PURA and P.U.C. Substantive Rules.

Lone Star retained POWER Engineers to prepare the EA for the proposed Project. A copy of the EA is included as Attachment 1 to this Application. The EA presents the analysis that was conducted by POWER Engineers, as well as the land use and environmental data for the Consensus Route that was considered for this Project. The following summary is based on information provided in Section 2 of the EA.

The objective of the EA was to evaluate the proposed 345-kV transmission line location for compliance with PURA § 37.056(c)(4)(A)-(D), 16 TAC § 25.101(b)(3)(B), and 16 TAC § 22.52(a)(4), including the Commission's policy of prudent avoidance. POWER Engineers used a comprehensive transmission line evaluation methodology to evaluate the proposed route of the transmission line location. Methods used were governed by factors set forth in PURA § 37.056(c)(4) and 16 TAC § 25.101(b)(3).

Process of Selecting the Study Area: The first step in the assessment of the Project was to delineate a Study Area. The Study Area needed to encompass the endpoints for the proposed Project (the Bullock Station and the Aquilla Lake III POI) and include an area large enough to adequately evaluate the proposed transmission line Project in order to support Lone Star's Application. The purpose of delineating a Study Area for the Project was to establish boundaries and limits in which to identify environmental and land use constraints during the information gathering process to properly identify and map various items included within the Commission's CCN requirements and standard CCN application. The Study Area for the proposed Project was delineated as an irregularly shaped square, directionally oriented from northwest to southeast and measuring approximately seven miles east to west by approximately five miles north to south, encompassing a total area of approximately 17.92 square miles in Hill County.

Identification of Routing Constraints: Data used in the evaluation of the Project were drawn from a variety of sources, including published literature, information from local, state, and federal agencies, recent aerial photography, and ground reconnaissance of the Study Area. In identifying constraints, POWER Engineers considered numerous land use, ecological, and cultural resources within the Study Area.

To quantify potential impacts to sensitive environmental and land use features, a constraints mapping process was used in evaluating the Project. The geographic locations of environmentally sensitive and other restrictive areas within the Study Area were identified and considered during the evaluation process. These constraints were mapped onto an aerial base map (Appendix C, Figure 4-2 of the EA) created using 2024

Google Earth imagery. Section 2 of the EA describes POWER Engineers' process for identifying routing constraints in more detail.

Identification of the Consensus Route: The Consensus Route was developed by Hubbard Wind II in coordination with landowners crossed by the transmission line and Lone Star's land, engineering, and environmental teams. Lone Star has determined that the Consensus Route complies with the requirements of PURA and the Commission's Substantive Rules.

18. Public Meeting or Public Open House:

Provide the date and location for each public meeting or public open house that was held in accordance with 16 TAC § 22.52. Provide a summary of each public meeting or public open house including the approximate number of attendants, and a copy of any survey provided to attendants and a summary of the responses received. For each public meeting or public open house provide a description of the method of notice, a copy of any notices, and the number of notices that were mailed and/or published.

Not applicable. Pursuant to 16 TAC § 22.52(a)(4), because fewer than 25 persons are entitled to receive direct mail notice of the Application, no public meeting was held prior to filing of this Application. Lone Star has discussed the proposed Consensus Route with the ten directly affected landowners and answered questions regarding the location, transmission structure type, and ROW width. These landowners have agreed to the location of the Consensus Route on their property and, as applicable, in proximity to their habitable structure, as shown in the consent agreements provided in Attachment 2.

In addition, 16 TAC § 22.52(a)(4) requires a utility to notify the Department of Defense (DoD) Siting Clearinghouse of any public meeting to be held during the route evaluation process. Because a public meeting was not required for the proposed Project, on June 7, 2024, Lone Star provided notice to the DoD Siting Clearinghouse of the Project and that Lone Star was preparing an EA and CCN application. A copy of the written notice sent to the DoD Siting Clearinghouse notifying it of the Project is included in Appendix A of the EA (Attachment 1 to this Application). Lone Star will also provide notice of the filing of this Application to the DoD Siting Clearinghouse as required by 16 TAC § 22.52(a)(2).

19. Routing Maps:

Base maps should be a full scale (one inch = not more than one mile) highway map of the county or counties involved, or other maps of comparable scale denoting sufficient cultural and natural features to permit location of all routes in the field. Provide a map (or maps) showing the study area, routing constraints, and all routes or line segments that were considered prior to the selection of the routes. Identify the routes and any existing facilities to be interconnected or coordinated with the project. Identify any taps, ties, meter points, or other facilities involving other utilities on the routing map. Show all existing transmission facilities located in the study area. Include the locations of radio transmitters and other electronic installations, airstrips, irrigated pasture or cropland, parks and recreational areas, historical and archeological sites (subject to the instructions in Question 27), and any environmentally sensitive areas (subject to the instructions in Question 29).

Routing maps are provided in the EA (Attachment 1 to this Application). Appendix C, Figure 4-2 in the EA is an aerial-photograph-based map with a scale of 1 inch = 2,000 feet that shows the Study Area, the Consensus Route, existing transmission lines, and other environmental and land use features.

Provide aerial photographs of the study area displaying the date that the photographs were taken or maps that show (1) the location of each route with each route segment identified, (2) the locations of all major public roads including, as a minimum, all federal and state roadways, (3) the locations of all known habitable structures or groups of habitable structures (see Question 19 below) on properties directly affected by any route, and (4) the boundaries (approximate or estimated according to best available information if required) of all properties directly affected by any route.

An aerial-photograph-based property ownership map with a scale of 1 inch = 600 feet is included in this Application as Attachment 6. It shows the approximate boundaries of all properties that are directly affected by the proposed 345-kV transmission line (Consensus Route), according to the best information available from Hill County tax appraisal district records.

For each route, cross-reference each habitable structure (or group of habitable structures) and directly affected property identified on the maps or photographs with a list of corresponding landowner names and addresses and indicate which route segment affects each structure/group or property.

Landowner names, directly affected property identification, and map locations are included in a cross-reference table provided as Attachment 7 to this Application. As indicated in Section 4.2.1 and Table 4-1 of the EA (Attachment 1 to this Application), there is one habitable structure within 500 feet of the centerline of the proposed Consensus Route.

20. Permits:

List any and all permits and/or approvals required by other governmental agencies for the construction of the proposed project. Indicate whether each permit has been obtained.

Lone Star will coordinate with appropriate local, state, and federal agencies with jurisdiction regarding the construction of the transmission facilities associated with the Project. Lone Star and/or POWER Engineers have initiated contact with and provided information about the Project to various agencies. Input from these agencies has been incorporated in the Application and EA; however, requests for permits and/or approvals will not be submitted to the appropriate agencies until the alignment of the Consensus Route has been approved by the Commission. The following potential permits, approvals, requirements, easements, or clearances could be required, but have not been obtained at this time.

- The Federal Emergency Management Agency (FEMA) requested that Lone Star contact the community floodplain administrators for the review and possible permit requirements.
- Cultural resource clearance will be obtained from the Texas Historical Commission (THC) for the proposed Project ROW as necessary.
- Permits and approvals will be obtained from the Texas Department of Transportation (TxDOT) for any crossing of, or access from, a State-maintained roadway.
- A Storm Water Pollution Prevention Plan (SWPPP) may be required by the Texas Commission on Environmental Quality (TCEQ). Lone Star or its contractor will submit a Notice of Intent to the TCEQ at least 48 hours prior to the beginning of construction and will maintain the SWPPP on site at the initiation of clearing and construction activities.
- After alignments and structure locations/heights are adjusted and set, Lone Star will make a final determination of the need for Federal Aviation Administration (FAA) notification, based on structure locations and structure designs. In some areas, if necessary, Lone Star could use lower-than-typical structure heights or add marking and/or lighting to certain structures.
- Permits or other requirements associated with possible impacts to endangered/threatened species will be coordinated with the United States Fish and Wildlife Service (USFWS) as necessary.

- Coordination with Texas Parks & Wildlife Department (TPWD) may be necessary to determine the need for any surveys, and to avoid or minimize any potential adverse impacts to sensitive habitats, threatened or endangered species, and other fish and wildlife resources along the approved route.
- Permits or other requirements associated with possible impacts to waters of the U.S. under the jurisdiction of the U.S. Army Corps of Engineers (USACE) will be coordinated with the USACE as necessary.
- Lone Star will coordinate with Hill County and will obtain floodplain development permits and county road agreements as needed.

No permits for the Project have been obtained at this time. Further discussion of permits that may be required for the Project is included in Section 1.6 of the EA.

21. Habitable Structures:

For each route list all single-family and multi-family dwellings and related structures, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, churches, hospitals, nursing homes, schools, or other structures normally inhabited by humans or intended to be inhabited by humans on a daily or regular basis within 300 feet of the centerline if the proposed project will be constructed for operation at 230kV or less, or within 500 feet of the centerline if the proposed project will be constructed for operation at greater than 230kV. Provide a general description of each habitable structure and its distance from the centerline of the route. In cities, towns or rural subdivisions, houses can be identified in groups. Provide the number of habitable structures in each group and list the distance from the centerline of the route to the closest and the farthest habitable structure in the group. Locate all listed habitable structures or groups of structures on the routing map.

There is one habitable structure within 500 feet of the centerline of the proposed Consensus Route. *See* Section 4.2.1 and Table 4-1 of the EA. The location of the habitable structure within 500 feet of the centerline of the proposed Consensus Route is listed and described with the approximate distance in Table 4-2 of the EA and is shown on Figure 4-2 in Appendix C of the EA.

22. Electronic Installations:

For each route, list all commercial AM radio transmitters located within 10,000 feet of the center line of the route, and all FM radio transmitters, microwave relay stations, or other similar electronic installations located within 2,000 of the center line of the route. Provide a general description of each installation and its distance from the center line of the route. Locate all listed installations on a routing map.

As indicated in Table 4-1 of the EA, no AM radio transmitter was determined to be located within 10,000 feet of the Consensus Route. Also, no FM radio transmitter, microwave tower, or other electronic installations were determined to be located within 2,000 feet of the centerline of the Consensus Route.

23. Airstrips:

For each route, list all known private airstrips within 10,000 feet of the center line of the project. List all airports registered with the Federal Aviation Administration (FAA) with at least one runway more than 3,200 feet in length that are located within 20,000 feet of the center line of any route. For each such airport, indicate whether any transmission structures will exceed a 100:1 horizontal slope (one foot in height for each 100 feet in distance) from the closest point of the closest runway. List all listed airports registered with the FAA having no runway more than 3,200 feet in length that are located within 10,000 feet of the center line of any route. For each such airport, indicate whether any transmission structures will exceed a 50:1 horizontal slope from the closest point of the closest runway. List all heliports located within 5,000 feet of the center line of any route. For each such heliport, indicate whether any transmission structures will exceed a 25:1 horizontal slope from the

closest point of the closest landing and takeoff area of the heliport. Provide a general description of each listed private airstrip, registered airport, and heliport; and state the distance of each from the center line of each route. Locate and identify all listed airstrips, airports, and heliports on a routing map.

As indicated in Table 4-1 of the EA:

- No known private airstrips are located within 10,000 feet of the centerline of the Consensus Route;
- No airports registered with the FAA with at least one runway more than 3,200 feet in length are located within 20,000 feet of the centerline of the Consensus Route;
- No airports registered with the FAA having no runway more than 3,200 feet in length are located within 10,000 feet of the centerline of the Consensus Route; and
- No heliports are located within 5,000 feet of the centerline of the Consensus Route.

24. Irrigation Systems:

For each route identify any pasture or cropland irrigated by traveling irrigation systems (rolling or pivot type) that will be traversed by the route. Provide a description of the irrigated land and state how it will be affected by each route (number and type of structures, etc.). Locate any such irrigated pasture or cropland on a routing map.

No pasture or cropland irrigated by traveling irrigation systems (rolling or pivot type) will be traversed by the Consensus Route.

25. Notice:

Notice is to be provided in accordance with 16 TAC § 22.52.

A. Provide a copy of the written direct notice to owners of directly affected land. Attach a list of the names and addresses of the owners of directly affected land receiving notice.

Sample copies of the written direct notice and enclosures that were mailed to the owners of directly affected land are provided in Attachments 8A through 8F. The list of the names and addresses of the owners of directly affected land receiving notice is provided in Attachment 8G.

B. Provide a copy of the written notice to utilities that are located within five miles of the routes.

A sample copy of the written notice to utilities that are located within five miles of the proposed Project is provided in Attachment 9A. The list of the names and addresses of these utilities is provided in Attachment 9B.

C. Provide a copy of the written notice to county and municipal authorities, and the Department of Defense Siting Clearinghouse. Notice to the DoD Siting Clearinghouse should be provided at the email address found at http://www.acq.osd.mil/dodsc/.

A sample copy of the written notice sent to Hill County officials and to the DoD Siting Clearinghouse is included in Attachment 10A.

In addition to the notices above, 16 TAC § 22.52 requires Lone Star to provide notice of this Application to the Office of Public Utility Counsel. The sample notice included in Attachment 10A was also sent to the Office of Public Utility Counsel.

The names of public officials to whom notice was sent is included in Attachment 10B.

D. Provide a copy of the notice that is to be published in newspapers of general circulation in the counties in which the facilities are to be constructed. Attach a list of the newspapers that will publish the notice for this application. After the notice is published, provide the publisher's affidavits and tear sheets.

A sample copy of the notice to be published in the newspaper of general circulation in the county in which the proposed facilities are to be constructed is provided in Attachment 11A. The notice for this Application will be published in *The Hillsboro Reporter* in Hillsboro, Texas, which is a newspaper of general circulation in Hill County, as shown in Attachment 11B.

For a CREZ application, in addition to the requirements of 16 TAC § 22.52, the applicant shall, not less than twenty-one (21) days before the filing of the application, submit to the Commission staff a "generic" copy of each type of alternative published and written notice for review. Staff's comments, if any, regarding the alternative notices will be provided to the applicant not later than seven days after receipt by Staff of the alternative notices. Applicant may take into consideration any comments made by Commission staff before the notices are published or sent by mail.

Not applicable. This is not a CREZ application.

26. Parks and Recreation Areas:

For each route, list all parks and recreational areas owned by a governmental body or an organized group, club, or church and located within 1,000 feet of the center line of the route. Provide a general description of each area and its distance from the center line. Identify the owner of the park or recreational area (public agency, church, club, etc.). List the sources used to identify the parks and recreational areas. Locate the listed sites on a routing map.

POWER Engineers performed a review of federal and state databases, county, and local maps to identify parks and/or recreational areas within the Study Area. Reconnaissance surveys were also conducted to identify any additional park or recreational area located within the Study Area. No park or recreational area is crossed by the Consensus Route centerline. Additionally, no park or recreation area is located within 1,000 feet of the Consensus Route's centerline.

27. Historical and Archeological Sites:

For each route, list all historical and archeological sites known to be within 1,000 feet of the center line of the route. Include a description of each site and its distance from the center line. List the sources (national, state or local commission or societies) used to identify the sites. Locate all historical sites on a routing map. For the protection of the sites, archeological sites need not be shown on maps.

To identify the historical and archeological sites in the Study Area, POWER Engineers researched the available records and literature at the Texas Archeological Research Laboratory, J.J. Pickle Research Campus, at the University of Texas at Austin. In addition, the Texas Historical Commission's Archeological Sites Atlas files were used to identify listed and eligible National Register of Historical Places (NRHP) properties and sites, NRHP districts, cemeteries, Official Texas Historical Markers, State Archeological Landmarks, and any other potential cultural resources such as National Historic Landmarks, National Monuments, National Memorials, National Historic Sites, and National Historical Parks, to ensure the completeness of the study. To identify areas with a high probability for the occurrence of cultural resources, POWER Engineers used the Texas Department of Transportation's (TxDOT) Potential Archeological Liability Map (PALM) and aerial photography.

Table 4-1 of the EA indicates that no known cultural resource sites are crossed by the Consensus Route centerline. One previously recorded cultural resource site is located within 1,000 feet of the Consensus Route

centerline. No NRHP-listed or determined-eligible site is crossed by or within 1,000 feet of the Consensus Route centerline, and there is one cemetery located within 1,000 feet of the Consensus Route.

The length of right-of-way across high probability areas for potential archeological sites or other prehistoric cultural resources for the Consensus Route is 0.18 mile.

General descriptions of the historical and archeological resources identified within the study area are provided in Section 3.5 of the EA. The cultural resource site and cemetery are listed and described with the approximate distance from the centerline of the proposed Consensus Route in Table 4-2 of the EA. For the protection of the site, it is not shown on Figure 4-2 in Appendix C of the EA; however, the location of the cemetery is shown on Figure 4-2 in Appendix C of the EA. The description of the site and cemetery are included in Section 4.4.4 of the EA. The Project is not anticipated to have any significant impacts on the archeological site or cemetery identified within 1,000 feet.

28. Coastal Management Program:

For each route, indicate whether the route is located, either in whole or in part, within the coastal management program boundary as defined in 31 TAC §503.1. If any route is, either in whole or in part, within the coastal management program boundary, indicate whether any part of the route is seaward of the Coastal Facilities Designation Line as defined in 31 TAC §19.2(a)(21). Using the designations in 31 TAC §501.3(b), identify the type(s) of Coastal Natural Resource Area(s) impacted by any part of the route and/or facilities.

No part of the Consensus Route occurs within the coastal management program boundary as defined in 31 TAC § 503.1.

29. Environmental Impact:

Provide copies of any and all environmental impact studies and/or assessments of the project. If no formal study was conducted for this project, explain how the routing and construction of this project will impact the environment. List the sources used to identify the existence or absence of sensitive environmental areas. Locate any environmentally sensitive areas on a routing map. In some instances, the location of the environmentally sensitive areas or the location of protected or endangered species should not be included on maps to ensure preservation of the areas or species. Within seven days after filing the application for the project, provide a copy of each environmental impact study and/or assessment to the Texas Parks and Wildlife Department (TPWD) for its review at the address below. Include with this application a copy of the letter of transmittal with which the studies/assessments were or will be sent to the TPWD.

Wildlife Habitat Assessment Program
Wildlife Division
Texas Parks and Wildlife Department
4200 Smith School Road
Austin, Texas 78744

The EA is included with this Application as Attachment 1. Data used by POWER Engineers in the evaluation of the proposed Consensus Route were drawn from a variety of sources, including, published literature (*e.g.*, documents, reports, maps, and aerial photography) and information from local, state, and federal agencies. An extensive list of resources is provided in Section 6 of the EA. Ground reconnaissance of the Study Area and computer-based evaluation of digital aerial imagery were used for the evaluation of the proposed Consensus Route. Environmentally sensitive areas are shown in Appendix B and C, Figures 4-1 and 4-2 of the EA.

The applicant shall file an affidavit confirming that the letter of transmittal and studies/assessments were sent to TPWD.

A copy of the letter of transmittal providing a copy of the EA for this Project to the TPWD is included in this Application as Attachment 12. An affidavit verifying that the EA was sent to TPWD will be filed with the Commission.

30. Affidavit

Attach a sworn affidavit from a qualified individual authorized by the applicant to verify and affirm that, to the best of their knowledge, all information provided, statements made, and matters set forth in this application and attachments are true and correct.

The sworn affidavit of Robert Orr is included with this Application as Attachment 13.

Lone Star Transmission, LLC
CCN Application – List of Attachments

Attachment Number	Attachment Description
Attachment 1	Environmental Assessment of the Proposed Bullock Station to Aquilla Lake III Wind 345-kV Transmission Line in Hill County, prepared by POWER Engineers, Inc.
Attachment 2	Consent Agreements for Proposed Consensus Route
Attachment 3	Interconnection Agreement between Lone Star Transmission, LLC and Hubbard Wind II, LLC for the Aquilla Lake III Wind Project, dated January 24, 2024, First Amendment to Interconnection Agreement, dated July 29, 2024, and Second Amendment to Interconnection Agreement, dated January 7, 2025
Attachment 4	ERCOT Aquilla Lake III Wind Interconnection Project (22INR0499) – Economic Study, dated February 6, 2025
Attachment 5	Schematic of the Lone Star Transmission, LLC System in the Proximate Area of the Proposed Project
Attachment 6	Aerial Photograph-Based Property Ownership Map
Attachment 7	Table Providing Landowner Names, Property Identification, and Map Locations
Attachment 8	Landowner Notice Materials: Attachment 8A Sample Notice Letter to Landowners Attachment 8B Map of Consensus Route Attachment 8C Consensus Route Description Attachment 8D Landowner Brochure Attachment 8E Comment/Protest Form Attachment 8F Intervenor Form Attachment 8G List of Landowners Receiving Notice
Attachment 9	Utility Notice Materials: Attachment 9A Sample Notice Letter to Utilities[1] Attachment 9B List of Utilities Receiving Notice

[1] Excluding attachments provided in Attachment No. 8.

Attachment Number	Attachment Description
Attachment 10	Public Agency Materials: Attachment 10A Sample Notice Letter to Public Officials[1] Attachment 10B List of County Officials, the Department of Defense Siting Clearinghouse, and the Office of Public Utility Counsel Contacts Receiving Notice
Attachment 11	Newspaper Notice Materials: Attachment 11A Sample Newspaper Notice Attachment 11B List of Newspapers of General Circulation
Attachment 12	Letter of Transmittal to the Texas Parks & Wildlife Department
Attachment 13	Sworn Affidavit of Robert Orr

April 2025

LONE STAR TRANSMISSION, LLC

Bullock Station to Aquilla Lake III 345 kV Transmission Line Project
Environmental Assessment and Route Analysis
Hill County, Texas

PROJECT NUMBER:
0251218
PROJECT CONTACT:
Gary McClanahan
EMAIL:
gary.mcclanahan@powereng.com
PHONE:
512-735-1805

POWER ENGINEERS

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Bullock Station to Aquilla Lake III 345 kV Transmission Line Project

PREPARED FOR: *LONE STAR TRANSMISSION, LLC*

PREPARED BY: *POWER ENGINEERS, INC.*
AUSTIN, TEXAS

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APPENDICES:

FIGURES:

TABLES:

ACRONYMS AND ABBREVIATIONS

AM radio	Amplitude modulation radio
amsl	above mean sea level
ANSI	American National Standards Institute
BEG	Bureau of Economic Geology
BGEPA	Bald and Golden Eagle Protection Act
BMP(s)	Best Management Practice(s)
BP	Before Present
Bullock Station	Bullock LST 345 kV Station
ca.	circa
CCN	Certificate of Convenience and Necessity
CFR	Code of Federal Regulations
CLF	civilian labor force
CMP	Coastal Management Program
CR	County Road
CWA	Clean Water Act
DoD	Department of Defense
EA	Environmental Assessment and Route Analysis
ESA	Endangered Species Act
ESSS	Ecologically Significant Stream Segments
FAA	Federal Aviation Administration
FAQ	Frequently Asked Questions
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Agency
FM	Farm-to-Market Road
FM radio	Frequency modulation radio
GIS	Geographic Information Systems
GLO	General Land Office
HPA	high probability area
HTC	Historic Texas Cemetery
IPaC	Information for Planning and Consultation
kV	kilovolt
Lone Star	Lone Star Transmission, LLC
MBTA	Migratory Bird Treaty Act
MW	megawatt
NAIP	National Agricultural Imagery Program
NEPA	National Environmental Policy Act
NERC	North American Electric Reliability Corporation
NESC	National Electrical Safety Code
NHD	National Hydrology Dataset
NPS	National Park Service
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places

NWI	National Wetland Inventory
NWP	Nationwide Permit
OHGW	overhead ground wire
OPGW	optical ground wire
OTHM	Official Texas Historical Marker
PEM	palustrine emergent
PFO	palustrine forested
POI	Point of Interconnection
POWER	POWER Engineers, Inc.
Project	Bullock Station to Aquilla Lake III 345 kV Transmission Line Project
PSS	palustrine shrub/scrub
PUC	Public Utility Commission of Texas
PURA	Public Utility Regulatory Act
RTEST	Rare, Threatened, and Endangered Species of Texas
ROW	right-of-way
RRC	Railroad Commission of Texas
SAL	State Antiquities Landmark(s)
SCS	Soil Conservation Service
SH	State Highway
SHPO	State Historic Preservation Office
SWPPP	Stormwater Pollution Prevention Plan
TAC	Texas Administrative Code
TARL	Texas Archeological Research Laboratory
TASA	Texas Archeological Sites Atlas
TCEQ	Texas Commission on Environmental Quality
THC	Texas Historical Commission
THSA	Texas Historical Sites Atlas
TNRIS	Texas Natural Resources Information System
TPWC	Texas Parks and Wildlife Code
TPWD	Texas Parks and Wildlife Department
TWDB	Texas Water Development Board
TxDOT	Texas Department of Transportation
TXNDD	Texas Natural Diversity Database
TXR150000	Texas Pollution Discharge Elimination System General Construction Permit
TXSDC	Texas State Data Center
USACE	United States Army Corps of Engineers
U.S.C.	United States Code
USCB	United States Census Bureau
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
US Hwy	United States Highway
WOTUS	water(s) of the United States

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1.0 DESCRIPTION OF THE CONSENSUS ROUTE

1.1 Scope of the Project

Lone Star Transmission, LLC (Lone Star) is proposing to construct a new single-circuit 345 kilovolt (kV) transmission line in Hill County, Texas (Figure 1-1). The Bullock Station to Aquilla Lake III 345 kV Transmission Line (Project) will begin at the proposed Bullock LST 345 kV Station (Bullock Station), which is located approximately 0.2 mile south of County Road (CR) 3441 and approximately 0.1 mile west of Farm-to-Market (FM) 308. The new transmission line will extend to the Aquilla Lake III Point of Interconnection (POI) located approximately 1.8 miles south of FM 1946 and approximately 3.6 miles east of State Highway (SH) 171. The total length of the proposed Project will be approximately 3.64 miles in length.

Lone Star contracted POWER Engineers, Inc. (POWER) to prepare this Environmental Assessment and Route Analysis (EA). This EA will support Lone Star's application to amend its Certificate of Convenience and Necessity (CCN) to be submitted to the Public Utility Commission of Texas (PUC). This EA may also be used to support any additional federal, state, or local permitting activities that might be required prior to construction of the proposed Project.

This EA discusses the environmental and land use constraints identified within the Project study area as described in Section 2.1, documents routing methodologies, and provides an evaluation of the route from an environmental and land-use perspective.

To assist POWER in its evaluation of the proposed Project, Lone Star provided POWER with the Project endpoints, the proposed Consensus Route, information regarding the need for the Project, easement information, proposed construction practices, transmission line design, clearing methods, right-of-way (ROW) requirements, and maintenance procedures.

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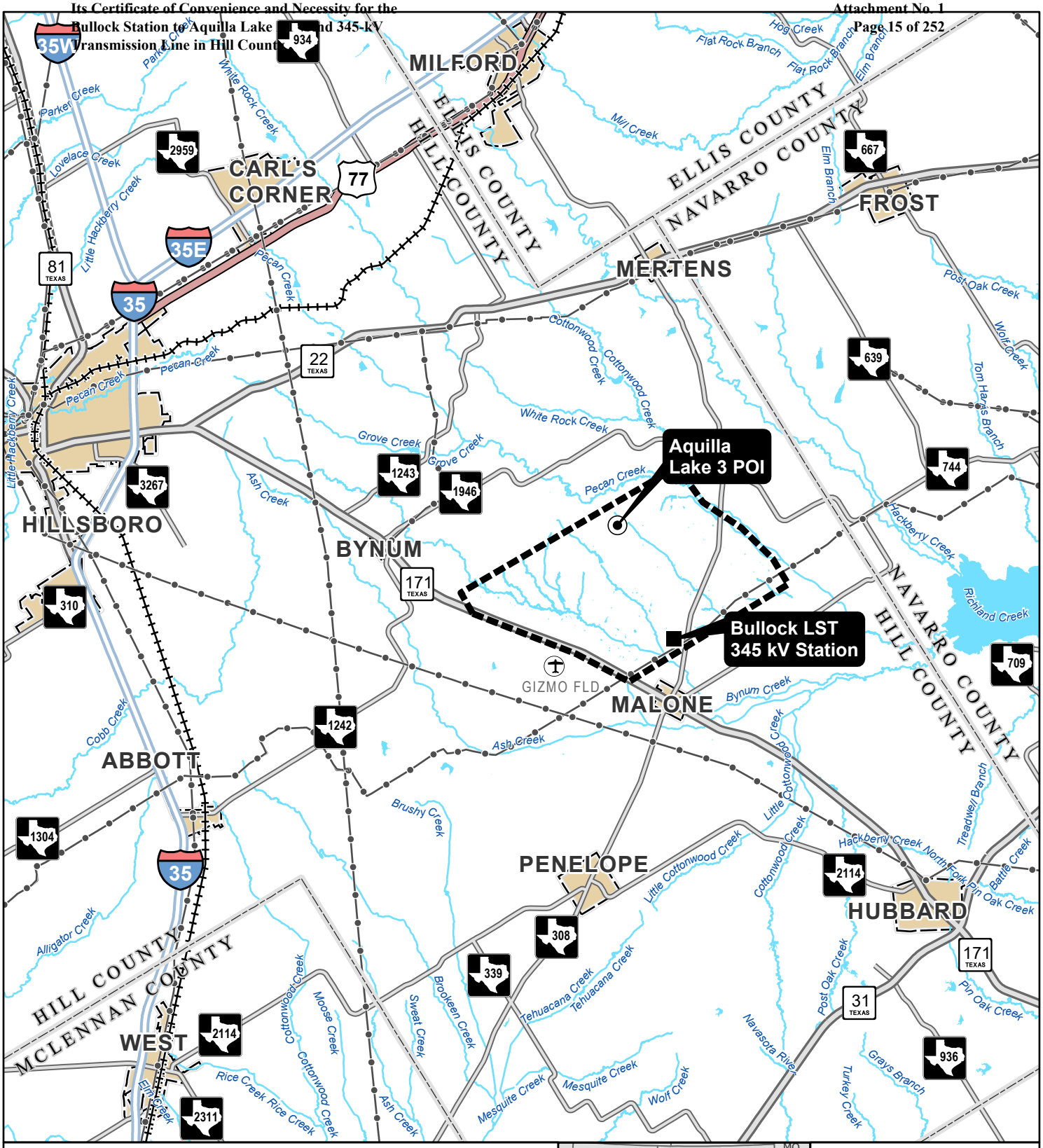
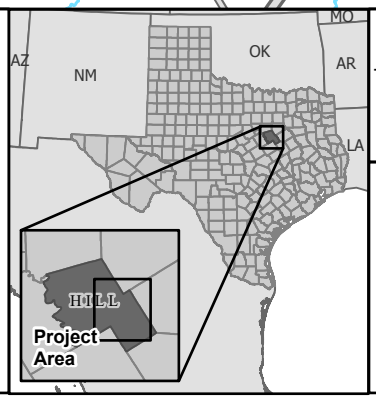


- Project Station
- Point of Interconnect
- Study Area Boundary
- Existing Transmission Line
- Interstate Highway
- US Highway
- State Highway
- Farm-to-Market Road
- Railroad
- Private Airstrip
- River / Stream
- Waterbody
- City Limit
- County Boundary



BULLOCK STATION TO
AQUILLA LAKE III
TRANSMISSION LINE PROJECT
FIGURE 1-1
PROJECT VICINITY

0 1 2 3
Miles

LONESTAR POWER ENGINEERS

Date: 11/14/2024

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1.2 Purpose and Need

This proposed Project is necessary to directly interconnect a new transmission service customer, Hubbard Wind II, LLC (Hubbard Wind II), into Lone Star's proposed Bullock Station. Hubbard Wind II has requested that Lone Star interconnect its proposed approximately 300 megawatt (MW) wind generation facility to Lone Star's Bullock Station. PUC Electric Substantive Rule 25.191(d) requires a transmission service provider to interconnect a transmission service customer once the other conditions are completed for transmission service as defined in 16 Texas Administrative Code (TAC) § 25.195(c).

1.3 Description of Proposed Design and Construction

1.3.1 Loading, Weather Data, and Design Criteria

Lone Star's proposed 345 kV single-circuit transmission line is located in the American National Standards Institute (ANSI) National Electrical Safety Code (NESC) Heavy Loading Zone and will be designed to meet or exceed NESC 2017 (ANSI C2-2017) and Lone Star's Transmission Line Design Criteria and Design Philosophy for Projects Requiring Compliance with the NESC loading criteria. Various combinations of unbalanced vertical, transverse (wind), and longitudinal loadings (with and without ice) will be analyzed during the design of the structures. The typical structure for this Project will be a concrete monopole design and will typically vary between 90 to 120 feet in height. The new 345 kV single-circuit transmission line will utilize a double bundled 1590 ACSR Falcon conductor with one optical ground wire (OPGW) and one overhead ground wire (OHGW).

1.3.2 Right-of-Way Requirements

Lone Star has obtained consent from all landowners directly affected by the proposed Project and its location. The proposed ROW width for this Project will range from approximately 150 to 200 feet in width to accommodate spans that typically range from approximately 700 to 1,500 feet. In some areas, span length could be more or less than the typical range depending on engineering considerations. Additional ROW may be required at turning structures to accommodate guy wires where utilized.

Access easements and/or temporary construction easements may be needed in some areas.

1.3.3 Structural and Geotechnical

All structure components, conductors, and overhead ground wires will be designed using the appropriate overload factors, strength reduction factors, and tension limits as given in NESC 2017 and the manufacturer's recommended strength ratings. In conjunction with the NESC 2017, Lone Star's

Transmission Line Design Criteria and Design Philosophy for Projects Requiring Compliance with the NESC standard will be used. The NESC Heavy Loading Zone design criteria, and extreme wind and ice loading conditions will be utilized to determine the sag and tension for all wires.

All structures will be designed to support conductors and shield wires as specified above. The configuration of the conductor and shield wires will provide appropriate lightning protection and clearances for operation of a 345 kV single-circuit transmission line. The geometry of a typical monopole single-circuit tangent structure and turning structure configuration are shown respectively on Figures 1-2 and 1-3. Geotechnical considerations will include soil borings and in-situ soils testing to provide the parameters for foundation design and/or the embedment depth as well as grounding analysis required for the new structures.

1.4 Construction Considerations

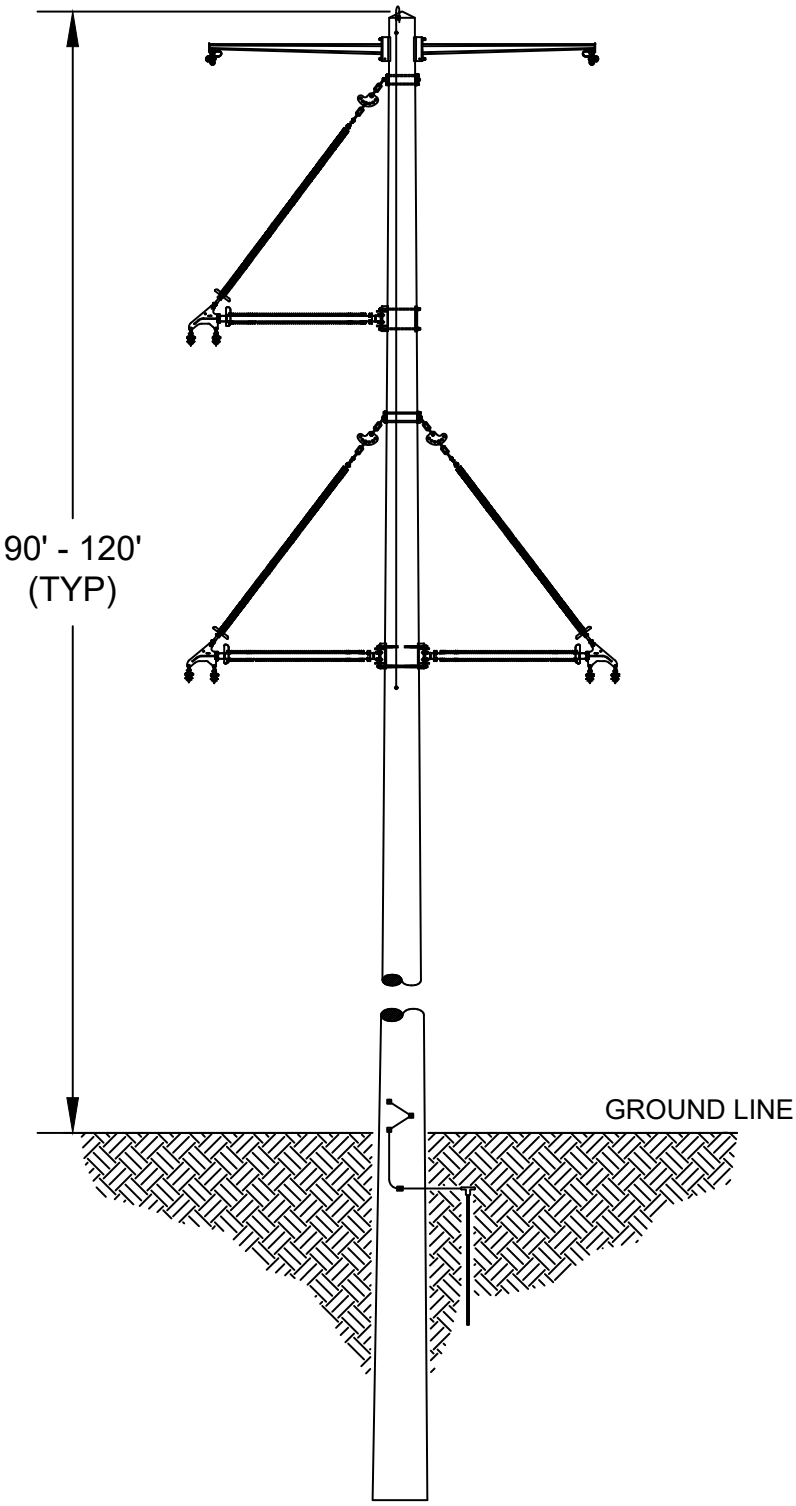
Projects of this type require surveying and ROW clearing, foundation installation, structure and insulator assembly, erection, conductor and shield wire installation, and overall site restoration when the Project is completed. The following information regarding these activities was provided to POWER by Lone Star.

1.4.1 Clearing

After regulatory approval and design of the transmission line are final, ROW will be fully acquired and clearing activities will begin. Any required clearing of the ROW will be performed by the construction contractor according to Lone Star clearing specifications under the direction of Lone Star. Trees and vegetation in the ROW will be cleared to permit safe construction and operation of the line. Available methods of disposal are mulching, brush piling, and salvaging. Stumps will be cut approximately to ground level and left in place. Clearing will be accomplished to comply with North American Electric Reliability Corporation (NERC) reliability standards. The ROW will be utilized for access during construction and operations. In some cases, ingress and egress through private property may be necessary to access the ROW. In these cases, existing private roads will be used where possible. Culverts may be installed to cross creeks and tributaries, where necessary.

Clearing plans, methods, and practices are extremely important for success in any program designed to minimize the impacts of electric transmission lines on the natural environment. The following factors thoughtfully implemented and applied to this Project will help meet this goal:

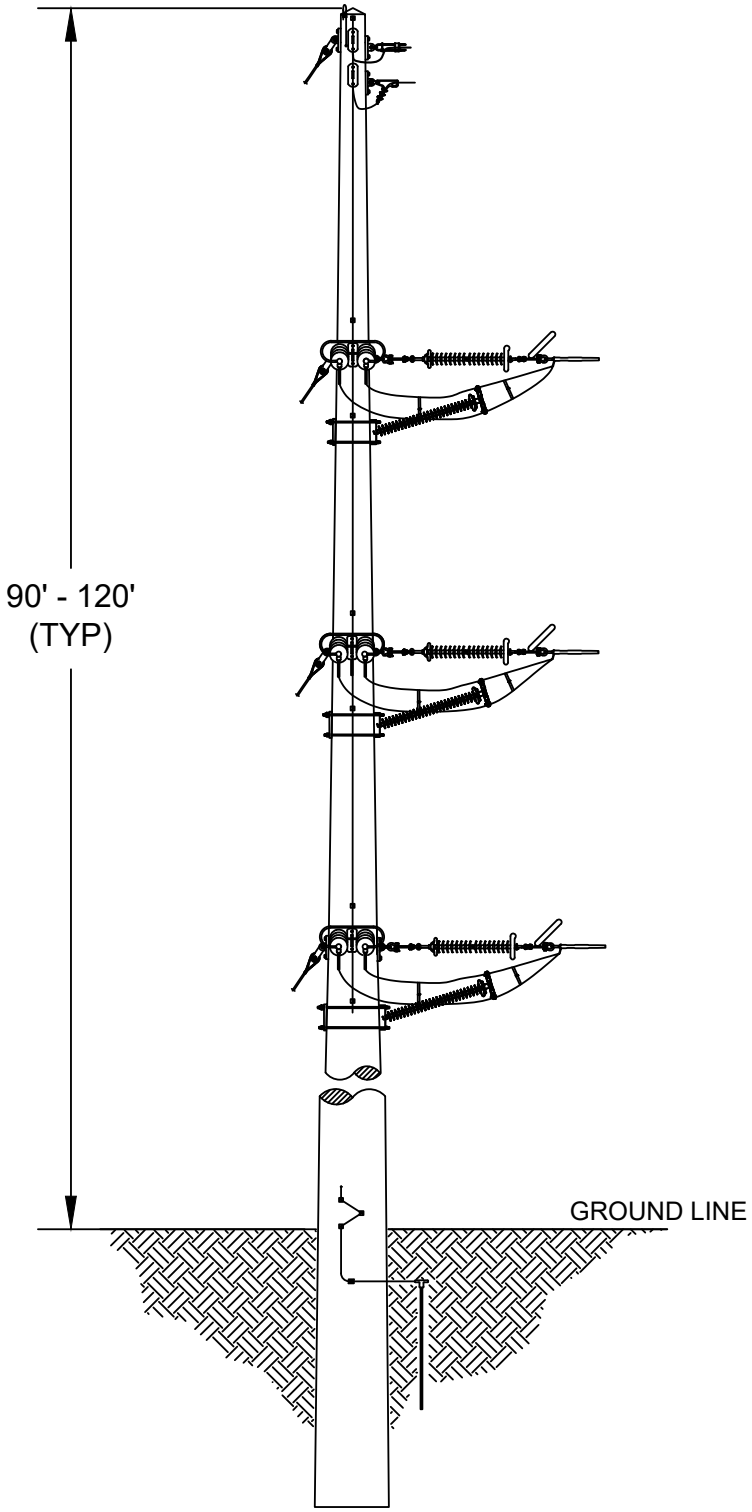
- The amount of flora and fauna disturbed during construction of the transmission line will be minimized, except to the extent necessary to establish appropriate ROW for clearance for the transmission line. In addition, re-vegetation will use native species and will consider landowner preferences and wildlife needs.
- To the maximum extent practicable, construction will avoid adverse environmental impact to sensitive plant and animal species and their habitats, as identified by the Texas Parks and Wildlife Department (TPWD) and the United States Fish and Wildlife Service (USFWS).
- Erosion control measures will be implemented as appropriate.
- The time and method of clearing ROW will take into account soil stability, the protection of natural vegetation and sensitive habitats, the protection of adjacent resources such as natural habitat for plants and wildlife, and the prevention or minimization of sedimentation in watercourses.
- Lone Star will exercise extreme care to avoid affecting non-targeted vegetation or animal life when using chemical herbicides to control vegetation within the ROW and will ensure that such herbicide use complies with rules and guidelines established in the Federal Insecticide, Fungicide and Rodenticide Act and with Texas Department of Agriculture regulations.



BULLOCK STATION TO AQUILLA LAKE III TRANSMISSION LINE PROJECT

Figure 1-2

Typical 345-kV Single Circuit
Tangent Structure



BULLOCK STATION TO AQUILLA LAKE III TRANSMISSION LINE PROJECT

Figure 1-3

Typical 345-kV Single Circuit
Dead-end Structure

1.4.2 Construction

The following is a description of typical construction methods for transmission line projects. After regulatory approval and design of the transmission line is finalized, ROW is surveyed and marked off, and then cleared of trees and other vegetation, according to Lone Star ROW clearing specifications. Structure locations are marked for construction. Structures and associated line construction hardware are transported to the site, usually to each structure location; some structure assembly occurs on the ground, insulators and hardware are attached, and structures are then lifted into place. Monopole structures can be either directly embedded or installed on foundations, depending on the soil conditions and design requirements. Once all of the structures have been erected, the process of conductor stringing begins. This is done by pulling the conductors through stringing blocks or pulleys, which are attached to the insulators on the structures. This process is repeated for all three conductor assemblies and ground wires (e.g., OPGW, OHGW). Once all of the wires have been pulled through, the wires are then tensioned based on wire sag design characteristics. The wires are then permanently "clipped" into hardware clamps located at the attachment end of the insulator or davit arm.

Construction operations will be conducted with attention to the preservation and the conservation of natural resources. The following criteria will be used to attain this goal. These criteria are subject to adjustment according to the rules and judgments of any public agencies whose lands might be crossed by the proposed line or that may have regulatory authority over the construction activities.

- Clearing and grading of construction areas such as storage areas, setup sites, and laydown yards will be minimal. These areas will be graded in a manner that will minimize erosion and conform as closely as possible to the natural topography.
- Lone Star will return each affected landowner's property to its original contours and grades unless otherwise agreed to by the landowner or the landowner's representative. In the event a different contour or grade is necessary to ensure the safety or stability of the structures or the safe operation and maintenance of the line, Lone Star will be unable to restore the original contours and grades. Erosion control devices will be constructed where necessary to reduce soil erosion in the ROW.
- Construction crews will take care to minimize damage to the ROW by reducing the number of pathways traveled.
- Roads will not be constructed on unstable slopes.
- Clearing and construction activities near streambeds will be performed in a manner to minimize damage to the natural condition of the area. Stream banks will be restored as necessary to their original contours to minimize erosion.

- Efforts will be made to prevent and remediate accidental oil spills and other types of incidental release, particularly while performing work near streams, lakes, and reservoirs.
- Precautions will be taken to prevent the possibility of accidentally starting forest/range fires.
- Precautions will be taken to protect natural features and cultural resources identified along the ROW.
- If endangered species habitat is present, guidance from the USFWS will be obtained prior to all clearing and construction activities.
- Soil disturbance during construction will be kept to a minimum, and restorative measures will be taken in a reasonable length of time.
- Lone Star will comply with any applicable permit or regulatory approval.

1.4.3 Reclamation

The reclamation operation involves the leveling of all temporary disturbed areas as close to existing contours as practical, the removal of all construction debris, and the restoration of, or compensation for, any items damaged by Project construction.

The following criteria provide for the cleanup of construction debris and the restoration of the Project area's natural setting. Further requirements might be imposed by public agencies that have regulatory authority over the cleanup activities and/or private property owners whose land the transmission line crosses.

- If site factors make it unusually difficult to reestablish a protective vegetative cover, other restoration procedures will be used, such as the use of gravel, rocks, and/or concrete to stabilize and restore areas disturbed during construction.
- Sears, cuts, fills, or other aesthetically degraded areas will be allowed to seed naturally or might be reseeded with native species to reduce erosion, restore a natural appearance, and to provide food and cover for wildlife.
- If access roads are removed after construction, the original contours will be restored as closely as practical.
- Construction equipment and supplies will be removed from the ROW when construction is complete.

- Clearing down to the mineral soil might be required for road access. In this case, water diversion berms, velocity dissipaters, or other erosion-control devices may be used to reduce erosion potential.
- Construction waste will be removed prior to completion of the Project and disposed of properly.
- Replacement of soil adjacent to water crossing for access roads will be at slopes less than the normal angle of repose for the soil type involved and will be stabilized/ revegetated to avoid erosion.
- Lone Star will comply with any applicable permit or regulatory approval.

1.5 Maintenance Considerations

The following information regarding maintenance of the facilities was provided to POWER by Lone Star. Maintenance of the facilities will include periodic inspection of the line and ROW limits, repair of damaged structures if required due to structural component failures, accidents, or natural phenomena such as wind or lightning. In areas where treatment of vegetation within the ROW is required, mowing, pruning, and/or application of United States Environmental Protection Agency (USEPA)-approved herbicides will be conducted as required. While maintenance patrols will vary, aerial patrols and foot patrols will be performed periodically. In cropland areas and properly managed grazing lands, little or no vegetation control will be required due to existing land-use practices. In areas where trees overhang the ROW, some trimming of these trees may be required periodically in order to provide safe and reliable operations.

1.6 Agency Actions

Numerous federal, state, and local regulatory agencies and organizations have developed rules and regulations regarding the routing and potential impacts associated with the construction of the Consensus Route. This section describes the major regulatory agencies and additional issues that are involved in Project planning and permitting of transmission lines in Texas. POWER solicited comments from various regulatory entities during the development of this document, and records of correspondence and additional discussions with these agencies and organizations are provided in Appendix A.

1.6.1 Public Utility Commission of Texas

The PUC regulates the routing of transmission lines in Texas under Section 37.056(c)(4)(A)-(D) of the Public Utility Regulatory Act (PURA). The PUC regulatory guidelines for routing transmission lines in Texas include:

- 16 TAC § 25.101(b)(3)(B)
- 16 TAC § 22.52(a)(4)
- Policy of prudent avoidance
- CCN application requirements

This EA has been prepared by POWER in support of Lone Star's CCN application for this Project to be filed at the PUC for its consideration.

1.6.2 United States Army Corps of Engineers

The United States Army Corps of Engineers (USACE) is directed by Congress under Section 10 of the Rivers and Harbors Act of 1899 (33 United States Code [U.S.C.] § 403) and Section 404 of the Clean Water Act (CWA) (33 U.S.C. § 1344) to implement these statutes. Under Section 10, the USACE regulates all work or structures in or affecting the course, condition, or capacity of navigable waters of the United States (WOTUS). The intent of this law is to protect the navigable capacity of waters important to interstate commerce. Under Section 404, the USACE regulates the discharge of dredged and fill material into all WOTUS, including associated wetlands. The intent of this law is to protect the WOTUS and aquatic ecosystems from the indiscriminate discharge of material capable of causing pollution and to restore and maintain their chemical, physical, and biological integrity. The proposed Consensus Route is located within the jurisdiction of the USACE – Fort Worth District.

Review of the United States Geological Survey National Hydrography Dataset (NHD) and USFWS National Wetlands Inventory (NWI) maps indicate surface waters and associated areas of potential wetlands are mapped within the study area. Upon PUC approval of the route, additional coordination, jurisdictional wetland verifications, and permitting with the USACE – Fort Worth District for a Section 404 Permit may be required. Based on the Project footprint and construction techniques proposed, if a permit is needed, the construction of the Project will likely meet the criteria for the Nationwide Permit (NWP) No. 57 – Electric Utility Line and Transmission Activities, which applies to activities required for the construction, maintenance, repair, and removal of electric utility lines and associated facilities. Navigable WOTUS are not anticipated to occur within the study area; therefore, Section 10 permit is not anticipated for this Project.

1.6.3 United States Fish and Wildlife Service

The USFWS is charged with the responsibility for enforcement of federal wildlife laws and providing comments on proposed construction projects with a federal nexus under the National Environmental

Policy Act (NEPA) and within the framework of several federal laws including the Endangered Species Act (ESA), Migratory Bird Treaty Act (MBTA), and Bald and Golden Eagle Protection Act (BGEPA). POWER requested a USFWS Information for Planning and Consultation (IPaC) review and official species list to identify potentially occurring federally protected species and designated critical habitats within the study area (Consultation Code: 2024-0114707). POWER also reviewed the TPWD Texas Natural Diversity Database (TXNDD) records of federal- and state-listed species occurrences and rare vegetation communities. POWER considered these during the route development process.

Upon PUC approval of a route and prior to construction, surveys will be completed as determined necessary to identify any potentially suitable habitat for federally and state-listed species. If suitable habitat is identified, then coordination with the USFWS Arlington Ecological Services Field Office will be completed to determine the need for any required species-specific surveys and/or permitting under Section 10 of the ESA.

1.6.4 Federal Aviation Administration

According to Federal Aviation Administration (FAA) regulations, Title 14 Code of Federal Regulations (CFR) Part 77.9, the construction of a transmission line requires FAA notification if a transmission tower structure height will exceed 200 feet or the height of an imaginary surface extending outward and upward at one of the following slopes:

- A 100:1 slope for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of each airport described in paragraph (d) of 14 CFR Part 77.9 having at least one runway longer than 3,200 feet; excluding heliports;
- A 50:1 slope for a horizontal distance of 10,000 feet from the nearest runway of a public or military airport described in paragraph (d) of 14 CFR Part 77.9 where its longest runway is no longer than 3,200 feet in length, excluding heliports; or
- A 25:1 slope for a horizontal distance of 5,000 feet for heliport described in paragraph (d) of 14 CFR Part 77.9.

Paragraph (d) of 14 CFR Part 77.9 includes public-use airports listed in the Airport/Facility Directory (currently the Chart Supplement), public-use or military airports under construction, airports operated by a federal agency or Department of Defense (DoD), or an airport or heliport with at least one FAA-approved instrument approach procedure.

Notification is not required for structures that will be shielded by existing structures of a permanent and substantial nature or by natural terrain or topographic features of equal or greater height and that will be located in a congested area of a city, town, or settlement where the shielded structure will not adversely affect safety in air navigation.

The PUC CCN application also requires listing private airports within 10,000 feet of any route centerline. Following PUC approval of a route for the proposed transmission line, Lone Star will make a final determination of the need for FAA notification, based on specific structure locations and design. If any of the FAA notification criteria are met for the approved route, a Notice of Proposed Construction or Alteration, FAA Form 7460-1, will be completed and submitted to the FAA Southwest Regional Office in Fort Worth, Texas, at least 45 days prior to construction. The result of this notification and any subsequent coordination with the FAA could include changes in line design and/or potential requirements to mark and/or light the structures. FAA notification is not anticipated to be necessary.

1.6.5 Military Aviation and Installation Assurance Siting Clearing House

The DoD Military Aviation and Installation Assurance Siting Clearinghouse works with industry to overcome risks to national security while promoting compatible domestic energy development. Energy production facilities and transmission projects involving tall structures, such as electrical transmission towers, may degrade military testing and training operations. The electromagnetic interference from transmission lines can impact critical DoD testing activities. Upon filing of the application, 16 TAC § 22.52 states that the DoD shall be notified and an affidavit attesting to the notification shall also be provided. The DoD shall also be provided written notice of the public meeting and if a public meeting is not held, the DoD shall be noticed of the planned filing of the application prior to the completion of the routing study. On June 7, 2024, the DoD was contacted about the proposed Project to provide notification and to solicit any input from the DoD about the Consensus Route. A notice of the filing of the CCN application will be sent to the DoD Military Aviation and Installation Assurance Siting Clearinghouse when the application is filed with the PUC.

1.6.6 Texas Parks and Wildlife Department

TPWD is the state agency with the primary responsibility for protecting the state's fish and wildlife resources in accordance with the Texas Parks and Wildlife Code (TPWC) Section 12.0011(b), 64.003, 68.015 and 1.011. POWER solicited comments from TPWD during the scoping phase of the Project, and a copy of this EA will be submitted to TPWD when the CCN application is filed with the PUC. POWER also reviewed the TXNDD records of state-listed species occurrences and sensitive vegetation

communities. POWER considered these during the route development process. Following the PUC route approval, a field survey may be necessary to identify potential suitable habitat for state-listed species. If suitable habitat is identified, additional coordination with TPWD may be necessary to determine avoidance or impact minimization measures to state-listed threatened or endangered species, and other state regulated fish and wildlife resources.

1.6.7 Floodplain Management

Floodplain maps published by the Federal Emergency Management Agency (FEMA) were reviewed within the study area. The 100-year floodplain represents a flood event that has a 1.0% chance of being equaled or exceeded for any given year. FEMA 100-year floodplain data are mapped along the Bynum Creek, Pecan Creek, White Rock Creek, and unnamed tributaries of Bynum Creek (FEMA 2024). The construction of the proposed transmission line is not anticipated to create any significant changes in the existing topographical grades and is not anticipated to significantly alter existing flow regimes within the floodplain. Coordination with the local floodplain administrator will be completed after the PUC route approval to determine if any permits are necessary.

1.6.8 Texas Commission on Environmental Quality

The Texas Commission on Environmental Quality (TCEQ) is the state agency with the primary responsibility for protecting the state's water quality. The construction of the Project will require a Texas Pollution Discharge Elimination System General Construction Permit (TXR150000) as implemented by the TCEQ under the provisions of Section 402 of the CWA and Chapter 26 of the Texas Water Code. Construction activities will be compliant with the TXR150000 permit conditions.

1.6.9 Texas Historical Commission

Cultural resources are protected by federal and state laws if they have some level of significance under the criteria of the National Register of Historic Places (NRHP) (36 C.F.R. 60) or under state guidance (13 TAC § 2.26 (7-8)). Chapter 26 of the TAC requires state agencies and political subdivisions of the state to notify the Texas Historical Commission (THC), the State Historic Preservation Office, of ground-disturbing activity on public land. POWER contacted the THC to identify known cultural resource sites within the study area boundary. POWER also reviewed Texas Archeological Research Laboratory (TARL) records for known locations of cultural resource sites and the THC's online, restricted-access Texas Archeological Sites Atlas (TASA) and Texas Historical Sites Atlas (THSA) for the locations of recorded cemeteries, NRHP properties, State Antiquities Landmarks (SALs), and Official Texas Historical Markers (OTHMs). Once the Consensus Route is approved by the PUC, depending on a state

or federal nexus, additional coordination with the THC might be required to determine the need for archeological surveys or additional permitting requirements. Lone Star proposes to implement an unanticipated discovery procedure during construction activities. If artifacts are discovered during construction, activities will cease near the discovery, and Lone Star will notify the THC for additional consultation.

1.6.10 Texas Department of Transportation

The Texas Department of Transportation (TxDOT) has been notified of the proposed Project. Permits and approvals will be obtained from the TxDOT for any crossing of, or access from, a State-maintained roadway. Further, the Project will be constructed in accordance with the rules, regulations, and policies of TxDOT. Best Management Practices (BMPs) will be used as required to minimize erosion and sedimentation resulting from construction. Revegetation will occur as required under the "Revegetation Special Provisions" contained in TxDOT Form 1023 (Rev. 9-93). Traffic control measures will comply with applicable portions of the Texas Manual of Uniform Traffic Control Devices.

1.6.11 Texas General Land Office

The Texas General Land Office (GLO) requires a miscellaneous easement for a ROW crossing within any state-owned riverbeds or navigable streams or tidally influenced waters. Lone Star has not identified any state-owned riverbeds or navigable streams crossed by the proposed Consensus Route. Following PUC approval of the route for the proposed transmission line, Lone Star will determine whether state-owned riverbeds or navigable streams are crossed by the approved routing and coordinate with the GLO as necessary.

The Texas Land Commissioner administers the Texas Coastal Management Program (CMP) under the GLO, which has the responsibility for implementing the Texas CMP. This program intends to help ensure the environmental and economic wellbeing of the Texas coast through proper management of coastal natural resource areas. The Texas CMP has federal and state project and permit action review processes to evaluate consistency with the program. The Consensus Route is not located within the Coastal Management Zone, and no permitting action will be required under this program.

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2.0 ROUTE STUDY METHODOLOGY

The objective of this EA was to evaluate the proposed Consensus Route for compliance with Section 37.056(c)(4)(A)-(D) of PURA, 16 TAC § 22.52 (a)(4), and 16 TAC § 25.101(b)(3)(B), including the PUC's policy of prudent avoidance. Upon receipt of the proposed transmission line route from Lone Star, POWER used a comprehensive evaluation method for this EA, which included study area delineation based on the Project endpoints; identification and characterization of existing land use and environmental constraints; and evaluation of the route and potential impacts in relation to the environmental constraints. POWER identified potentially affected resources and considered each during the route evaluation process. Regulatory agency and local officials' comments were also considered during the route development process. The route was analyzed using evaluation criteria to determine potential impacts to existing land use and environmental resources. In addition, Lone Star considered engineering and construction constraints, grid reliability and security issues, and estimated costs to evaluate the route as related to the requirements of PURA and PUC Substantive Rules. This route will be submitted to the PUC in the CCN application.

2.1 Study Area Boundary Delineation

The study area is approximately one mile north of the city of Malone in central Texas within Hill County. The study area boundaries for the data collection process needed to encompass the Project termination points and include a large enough area within which to adequately evaluate the proposed transmission line in support of Lone Star's application to amend its CCN. The extent of the Project endpoints and the study area are described below and illustrated in Figure 2-1.

The study area is an irregular shaped area approximately seven miles east to west and five miles north to south and encompasses approximately 17.92 square miles in Hill County. The study area is oriented in a northwest-to-southeast direction, with the proposed Bullock Station site defining the southern portion of the study area and the proposed Aquilla Lake III POI site defining the northern portion of the study area. More specifically, the proposed Bullock Station is located approximately 0.2 mile south of CR 3441 and approximately 0.1 mile west of FM 308. The proposed Aquilla Lake III POI is located 1.8 miles south of FM 1946 and approximately 3.6 miles east of SH 171. The western and eastern study area boundaries are defined to provide adequate room for evaluation of the Consensus Route.

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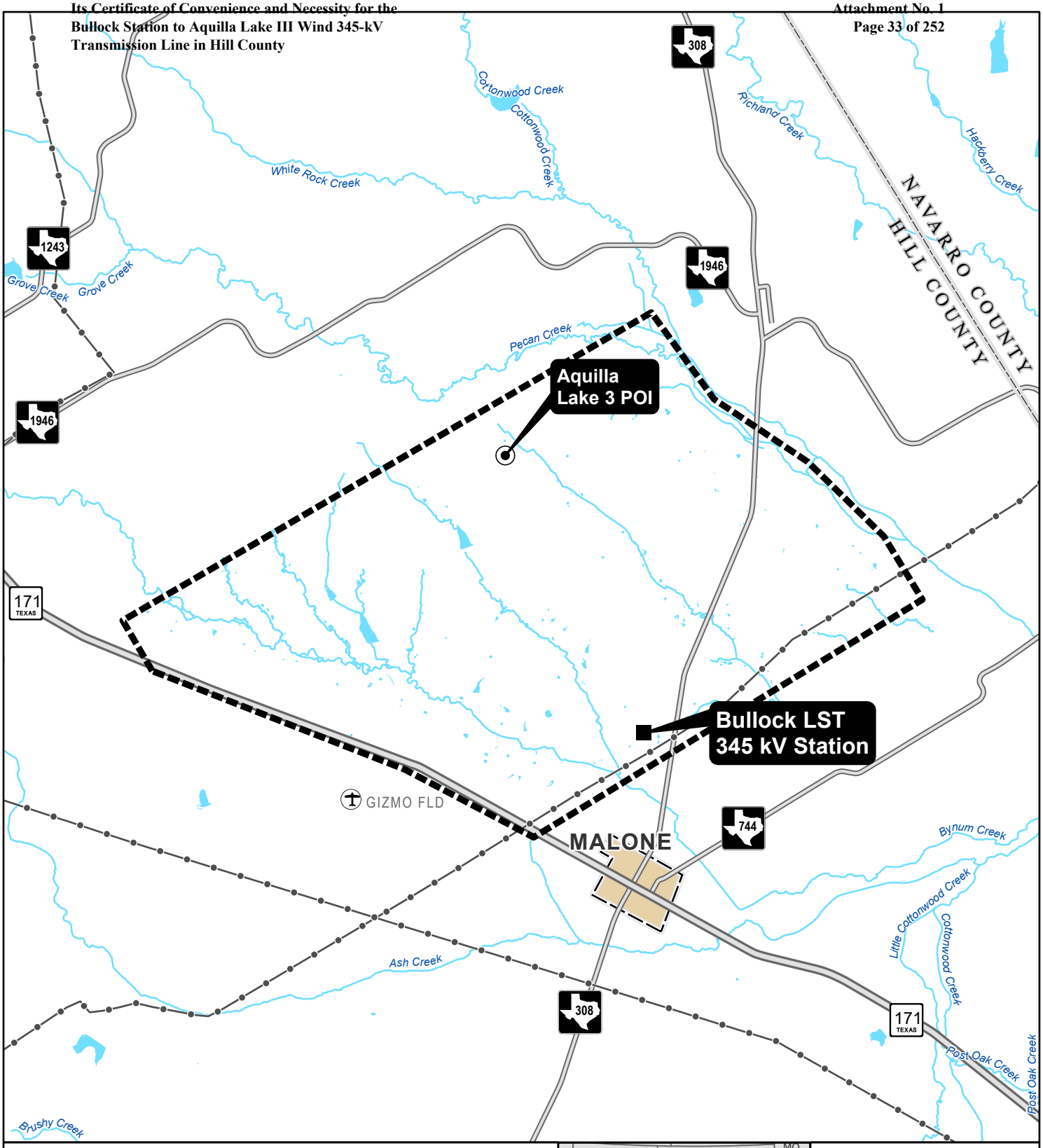
Aquilla
Lake 3 POI
Bullock LST
345 kV Station
MALONE
GIZMO FLD
NAVARRO COUNTY
HILL COUNTY
Cottonwood Creek
White Rock Creek
Richland Creek
Hackberry Creek
Grove Creek
Pecan Creek
Bynum Creek
Little Cottonwood Creek
Ash Creek
Post Oak Creek
Brushy Creek
308
1946
1243
171
744
Project Station
Point of Interconnect
Study Area Boundary
Existing Transmission Line
State Highway
Farm-to-Market Road
Private Airstrip
River / Stream
Waterbody
City Limit
County Boundary
AZ
NM
OK
MO
AR
LA
HILL
Project Area
BULLOCK STATION TO
AQUILLA LAKE III
TRANSMISSION LINE PROJECT
FIGURE 2-1
STUDY AREA
0
0.5
1
1.5
Miles
Date: 11/14/2024

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2.2 Base Map Development

After delineation of the study area, a Project base map, overlain on United States Geological Survey (USGS) 7.5-minute topographic maps and aerial photography (Google Earth 2024), was prepared and used to display resource data for the Project area. Resource data categories and factors that were determined appropriate for interpretation and analysis were selected and mapped. The base map provides a broad overview of various resource locations indicating obvious routing constraints and areas of potential routing opportunities.

Data typically displayed on the base map includes:

- Major land jurisdictions and uses.
- Major roads (including CRs, farm-to-market roads, US Highways [US Hwys], SHs, and Interstate Highways).
- Existing transmission line and pipeline corridors.
- Airports, private airstrips, and communication facilities.
- Parks and wildlife management areas.
- Major political subdivision boundaries.
- Lakes, reservoirs, rivers, and ponds.

2.3 Data Collection and Constraints Mapping

Several methodologies were utilized to collect and review environmental and land use data, including incorporation of readily available Geographic Information System (GIS) coverage with associated metadata; review of maps and published literature; review of files and records from numerous federal, state, and local regulatory agencies; and a reconnaissance survey of the study area. Data collected for each resource area were mapped within the study area utilizing GIS layers. The conditions of the existing environment are discussed throughout Section 3.0. Section 2.4 and Appendix A provide information regarding correspondence with agencies and officials.

Maps and data layers reviewed include USGS 7.5-minute topographic maps (USGS 2024a), NHD, NWI maps, Texas Natural Resources Information System (TNRIS), Railroad Commission of Texas ([RRC] 2024a), TXNDD, and TxDOT county highway maps. Appraisal district parcel boundary data were available for Hill County and were used to identify apparent property boundaries (Hill County 2024). USGS 7.5-minute topographic maps and aerial photography (Google Earth 2024) were used as the background for the environmental and land use constraints map.

2.4 Agency Consultation

A list of federal, state, and local regulatory agencies, elected officials, and organizations to receive a consultation letter regarding the proposed Project was developed. The purpose of the consultation letter was to inform the various agencies and officials of the proposed Project and give them an opportunity to provide information regarding resources and potential issues within the study area. POWER used the Hill County website and telephone confirmations to identify local officials. Consultation letters were sent on June 7, 2024. Copies of correspondence with the various regulatory agencies, elected officials, and organizations are included in Appendix A.

Federal, state, and local agencies/officials contacted include:

- Federal Aviation Administration (FAA)
- Federal Emergency Management Agency (FEMA)
- DoD Military Aviation and Installation Assurance Siting Clearinghouse
- National Park Service (NPS)
- Natural Resource Conservation Service (NRCS)
- United States Army Corps of Engineers (USACE)
- United States Environmental Protection Agency (USEPA)
- United States Fish and Wildlife Service (USFWS)
- Railroad Commission of Texas (RRC)
- Texas Commission on Environmental Quality (TCEQ)
- Texas Department of Transportation (TxDOT) – Aviation Division, Environmental Affairs Division, Transportation Planning and Programming, and District Engineer
- Texas General Land Office (GLO)
- Texas Historical Commission (THC)
- Texas Parks and Wildlife Department (TPWD)
- Texas Water Development Board (TWDB)
- Hill County Officials (County Judge and Commissioners Court)
- Hill County Farm Bureau
- Hill County-Blackland Soil and Water Conservation District
- Bynum Independent School District
- Malone Independent School District
- Hillsboro Service Center
- Heart of Texas Council of Governments

- Texas Agricultural Land Trust
- Texas Land Conservancy
- Texas Land Trust Council
- The Nature Conservancy

In addition to letters sent to the agencies listed, POWER also reviewed TXNDD Element Occurrence Records from TPWD (TXNDD 2024g). POWER reviewed previously recorded archeological site information from TARL and reviewed the THC's Texas Archeological Sites Atlas (THC 2024a) for additional cultural resource information. As of the date of this document, written responses to letters sent in relation to the study area that were received are listed and summarized below.

- The NRCS responded with an email dated July 9, 2024, stating that the proposed site does not involve United States Department of Agriculture (USDA)-NRCS easements, and they provided a Custom Soil Resources Report. They also recommended the use of erosion controls during construction.
- FEMA responded with an email dated June 28, 2024, requesting that the study area "community floodplain administrator be contacted for the review and possible permit requirements for the Project." Lone Star will coordinate with the appropriate floodplain administrator once the route is approved for construction.
- The USACE Fort Worth District Regulatory Division responded with an email dated June 11, 2024, stating that the Project had been assigned a project number and a regulatory project manager.
- The USACE Fort Worth District Regulatory Division also responded with an email dated June 12, 2024, requesting a Google Earth KMZ file with a polygon representing the Project boundary, or map overlaying an aerial image with coordinates. A KMZ file was provided on the same day. Lone Star will coordinate with USACE once the route is approved for construction.
- The USACE Fort Worth District Section 408 Coordinator responded with an email dated June 18, 2024, stating that the Project had been assigned a project number and a regulatory project manager. They also stated that there are no USACE federally authorized Civil Works projects crossed or altered by the Project.
- The THC responded with an email dated July 2, 2024, stating that "there are multiple historic cemeteries and recorded archeological sites in the Aquilla Lake III POI." Since the POI is at a discrete location, it is understood that the cemeteries and archeological sites referred to in the THC letter are in reference to the study area. Lone Star will coordinate with the THC once the route is approved for construction.

- The TPWD responded with a letter dated July 8, 2024, and provided a list of regulations pertaining to the Project and a number of standard recommendations for the Project to comply with these regulations. Lone Star will coordinate with TPWD once the route is approved for construction.

2.5 Public Involvement Program

Pursuant to 16 TAC § 22.52, since the Project will directly affect fewer than 25 landowners, a public meeting was not held.

2.6 Route Development and Evaluation Criteria

The Consensus Route was identified based upon discussions with the landowners between the Project endpoints. The Consensus Route was reviewed by Lone Star to determine engineering requirements, constructability, and long-term maintenance considerations. The POWER planning team reviewed the route using the environmental and land use constraints map while considering resource sensitivity. The Consensus Route was also reviewed in accordance with Section 37.056(c)(4)(A)-(D) of PURA, the PUC CCN application, and 16 TAC § 25.101, including the PUC's policy of prudent avoidance, and consistency with Lone Star's transmission line routing guidelines. The route was reviewed considering such factors as community values, parks and recreational areas, historical and aesthetic values, environmental integrity, route length utilizing and parallel to existing compatible corridors or parallel to apparent property boundaries, and prudent avoidance.

Lone Star and POWER reviewed and refined the Consensus Route as more information became available. In evaluating the Consensus Route, land use and environmental evaluation criteria were developed to reflect accepted practices for routing electric transmission lines in the state of Texas (see Table 2-1). Evaluation criteria were further refined based on data collection and reconnaissance surveys.

The proposed Consensus Route is shown in relation to environmental and other land use constraints on topographic base in Figure 4-1 and on aerial photographic base in Figure 4-2. For the purposes of this analysis, only one route is addressed in this report. The analysis of the route involved inventorying and tabulating the number or quantity of each environmental criterion located along the route (e.g., number of habitable structures within 500 feet). The number or amount of each factor was determined by POWER using GIS layers, maps, recent aerial photography, and field verification from publicly accessible areas where practical. Potential environmental impacts are addressed in Section 4.0 of this document.

TABLE 2-1 LAND USE AND ENVIRONMENTAL EVALUATION CRITERIA

EVALUATION CRITERIA
Land Use
Length of consensus route (miles)
Number of habitable structures[1] within 500 feet of ROW centerline
Length of ROW using existing transmission line ROW
Length of ROW parallel and adjacent to existing transmission line ROW
Length of ROW parallel and adjacent to other existing ROW (roadways, highways, utilities, etc.)
Length of ROW parallel and adjacent to apparent property lines[2] (or other natural or cultural resources, ect.)
Sum of evaluation criteria 3, 4, 5, and 6
Percent of evaluation criteria 3, 4, 5, and 6
Length of ROW across parks/recreational areas[3]
Number of additional parks/recreational areas[3] within 1,000 feet of ROW centerline
Length of ROW across cropland
Length of ROW across pasture/rangeland
Length of ROW across land irrigated by traveling systems (rolling or pivot type)
Length of ROW parallel and adjacent to existing pipeline ROW
Length of ROW parallel and adjacent to existing pipeline ROW <500 feet from ROW centerline
Number of pipeline crossings
Number of transmission line crossings
Number of highway (interstate, US and state) road crossings
Number of FM road crossings
Number of FAA registered airports[4] with at least one runway more than 3,200 feet in length located within 20,000 feet of ROW centerline
Number of FAA registered airports[4] having no runway more than 3,200 feet in length located within 10,000 feet of ROW centerline
Number of private airstrips within 10,000 feet of the ROW centerline
Number of heliports within 5,000 feet of the ROW centerline
Number of commercial AM radio transmitters within 10,000 feet of the ROW centerline
Number of FM radio transmitters, microwave towers, and other electronic installations within 2,000 feet of ROW centerline
Aesthetics
Estimated length of ROW within foreground visual zone[5] of interstate, US, and state highways
Estimated length of ROW within foreground visual zone[5] of FM roads
Estimated length of ROW within foreground visual zone[5][6] of parks/recreational areas[3]
Ecology
Length of ROW across upland woodlands/brushlands
Length of ROW across bottomland/riparian woodlands
Length of ROW across NWI mapped wetlands
Length of ROW across USFWS designated critical habitat of federally-listed endangered or threatened species
Length of ROW across open water (lakes, ponds)
Number of stream crossings
Length of ROW parallel (within 100 feet) to streams
Length of ROW across FEMA mapped 100-year floodplains
Cultural Resources
Number of cemeteries within 1,000 feet of the ROW centerline
Number of recorded cultural resource sites crossed by ROW

TABLE 2-1 LAND USE AND ENVIRONMENTAL EVALUATION CRITERIA

EVALUATION CRITERIA
Number of additional recorded cultural resource sites within 1,000 feet of ROW centerline
Number of National Register of Historic Places (NRHP) listed or determined eligible properties crossed by ROW
Number of additional NRHP listed or determined eligible properties within 1,000 feet of ROW centerline
Length of ROW across areas of high archeological site potential

[1]Single-family and multi-family dwellings, and related structures, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, churches, hospitals, nursing homes, schools, or other structures normally inhabited by humans or intended to be inhabited by humans on a daily or regular basis within 500 feet of the centerline of a transmission project of 230 kilovolts or greater.
[2]Apparent property boundaries created by existing roads, highways, or railroad ROWs are not "double-counted" in the length of ROW parallel to apparent property boundaries criteria.
[3]Defined as parks and recreational areas owned by a governmental body or an organized group, club, or church within 1,000 feet of the centerline of the project.
[4]As listed in the Chart Supplement South Central U.S. (FAA 2024b formerly known as the Airport/Facility Directory South Central U.S.) and FAA 2024a.
[5]One-half mile, unobstructed. Lengths of ROW within the foreground visual zone of Interstates, US and state highway criteria are not "double-counted" in the length of ROW within the foreground visual zone of FM roads criteria.
[6]One-half mile, unobstructed. Lengths of ROW within the foreground visual zone of parks/recreational areas may overlap with the total length of ROW within the foreground visual zone of interstates, US and state highway criteria and/or with the total length of ROW within the foreground visual zone of FM roads criteria.
All length measurements are shown in miles unless noted otherwise.

2.7 Reconnaissance Surveys

A reconnaissance survey of the study area, with a focus on the Consensus Route location, was conducted by POWER personnel on August 15, 2024, from publicly accessible areas to confirm the findings of the research and data collection activities, identify changes in land use occurring after the date of available aerial photography, and to identify potential unknown constraints that might not have been previously noted in the data.

3.0 DESCRIPTION OF THE STUDY AREA

3.1 Community Values

The term "community values" is included as a factor for the consideration of transmission line route approval under Section 37.056(c)(4)(A-D) of PURA. The PUC CCN application requires information concerning the following items related to community values:

- Public meeting, if applicable.
- Approvals or permits required from other governmental agencies.
- Brief description of the area traversed.
- Habitable structures within 500 feet of the centerline for a 345-kV single-circuit transmission line.
- Amplitude modulation (AM) radio and frequency modulation (FM) radio, microwave, and other electronic installations in the area.
- FAA-registered airstrips, private airstrips, and heliports located in the area.
- Irrigated pasture or croplands utilizing center-pivot or other traveling irrigation systems.
- Parks and recreation areas.
- Historical and archeological sites.

In addition, POWER also evaluated the Consensus Route for community values and resources that might not be specifically listed by the PUC, but that might be of importance to a particular community as a whole. The term "community values" is not formally defined in PUC rules. However, in several proceedings, the PUC and PUC Staff have used the following as a working definition: the term "community values" is defined as *a shared appreciation of an area or other natural resource by a national, regional, or local community*. Examples of a community resource would be a park or recreational area, historical or archeological site, or a scenic vista (aesthetics). POWER mailed consultation letters to various local elected and appointed officials to identify and collect information regarding community values and community resources.

3.2 Land Jurisdiction

Jurisdiction does not necessarily represent land ownership. Potential conflicts that could arise from crossing jurisdictional boundaries were evaluated in this study. The study area is located within the jurisdictional boundary of Hill County.

3.3 Land Use

Land uses within the study area were identified and placed into the following categories: urban/developed, planned land use, agriculture, oil and gas facilities, transportation/aviation/utility features, communication towers, and parks and recreation areas. The primary sources of land use information were obtained from interpretation of aerial imagery and vehicular reconnaissance surveys from accessible viewpoints. Planned land use features were limited to known features obtained from governmental entities and mobility authorities.

3.3.1 Urban/Developed

The urban/developed classification represents concentrations of surface disturbing land uses, which include habitable structures and other developed areas characterized with low, medium and high intensities. The various levels of development include a mix of institutional, commercial, and/or industrial land uses. Developed low, medium, and high intensity areas were identified using aerial photograph interpretation and reconnaissance surveys. These classifications are described below:

- **Developed Low Intensity** areas typically include rural settings with single-family housing units.
- **Developed Medium Intensity** areas typically include single-family housing units that are grouped in residential subdivisions and might include peripheral commercial structures.
- **Developed High Intensity** includes highly developed areas where people reside or work in high numbers. Examples include apartment complexes, row houses, and commercial/industrial parks. Areas with the highest concentration of development are typically located within or near the towns and communities in the study area.

The study area is in a rural setting. The entire area is predominantly rangeland/pastureland, so most of the habitable structures in these portions of the study area are associated with rural ranch properties which would be considered low intensity development. Habitable structures were identified using aerial imagery on Google Earth and reconnaissance surveys. The PUC definition of a habitable structure was used for this routing study. 16 TAC § 25.101(a)(3) defines habitable structures as “structures normally inhabited by humans or intended to be inhabited by humans on a daily or regular basis. Habitable structures include, but are not limited to, single-family and multi-family dwellings and related structures, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, churches, hospitals, nursing homes, and schools.”

Schools

The study area is located within the following two school districts: Bynum ISD and Malone ISD. However, no schools were identified within the study area (TEA 2024).

3.3.2. Planned Land Use

The planned land use component identifies objectives and/or policies regarding land use goals and plans, including conservation easements, managed lands, and proposed developments. Cities and counties typically prepare comprehensive land use plans to provide strategic direction by goals and objectives for the individual city or county. The Hill County website was reviewed, and correspondence was submitted to local and county officials to identify potential planned land use conflicts. Hill County does not have a comprehensive land use plan available on their website (Hill County 2024). Hill County is within the Heart of Texas State Planning Region and is a member of the Heart of Texas Council of Governments. No new projects or studies were identified within the study area (Heart of Texas Council of Governments 2024).

Conservation Easements

A conservation easement is a restriction that property owners voluntarily place on specified uses of their property to protect natural, productive or cultural features. The property owner retains legal title to the property and determines the types of uses to allow or restrict. The property can still be bought, sold and inherited, but the conservation easement is tied to the land and binds all present and future owners to its terms and restrictions. Conservation easement language will vary as to the individual property owner's allowances for additional developments on the land. The easement holder or grantee, which is typically a land trust, facilitates the conservation easement and ensures compliance with the specified terms and conditions.

A review of numerous non-governmental groups (*e.g.*, The Nature Conservancy, Texas Land Conservancy [TLC], and the National Conservation Easement Database [NCED]) that are land trusts and host databases for conservation easements in Texas indicated that there are no conservation easements within the study area (The Nature Conservancy 2024; TLC 2024; NCED 2024).

Mitigation Sites

A mitigation bank is a managed site where natural resources such as wetlands, streams, and habitats are restored, established, enhanced, and/or preserved for the purpose of providing compensatory mitigation.

A review of the USACE Regulatory In-lieu Fee and Bank Information Tracking System did not indicate any mitigation banks/sites located within the study area (USACE 2024).

3.3.3 Agriculture

Agriculture is a significant segment of the economy throughout Texas and the study area county has active agricultural sectors. According to the USDA National Agricultural Statistics Service's 2017 Census of Agriculture, the total market value for agricultural products sold for Hill County was $114,001,000, a five percent decrease from the 2012 total market value of $119,939,000. Crop sales accounted for a majority of agricultural sales in Hill County. The number of farms in Hill County increased from 1,884, in 2012 to 2,003 in 2017 (an increase of six percent) (USDA 2012 and 2017). Detailed agricultural information for the study area counties is provided in Table 3-1.

TABLE 3-1 AGRICULTURAL

COUNTY	TOTAL MARKET VALUE OF AGRICULTURAL PRODUCTS			DISTRIBUTION OF PRODUCTS (2017)		NUMBER OF FARMS		
	2012	2017	Change	Crop Sales	Livestock Sales	2012	2017	Change
Hill County	$119,939,000	$114,001,000	-5%	57%	43%	1,884	2,003	+6%

Source: USDA 2012 and 2017.

3.3.4 Oil and Gas Facilities

Data was obtained from the RRC (2024a) which provided a GIS layer for existing oil and gas pipelines. The 2024 RRC dataset along with aerial imagery interpretation were used to identify and map existing oil and gas related facilities.

No oil and gas wells were identified within the study area.

3.3.5 Transportation/Aviation/Utility Features

Transportation Features

State and local roadways were identified using TxDOT county transportation maps. The roadway transportation system within the study area includes the following major roadways: State Highway 171 and FM 308. Several county and local roads (paved and unpaved) were also identified in the study area counties (TxDOT 2024a).

TxDOT's "Project Tracker," which contains detailed information by county for every project which is or could be scheduled for construction, was reviewed to identify any state roadway projects planned within

the study area. The TxDOT Project Tracker indicated that the following projects are located within the study area (TxDOT 2024b):

Hill County

- There is one seal coat project on FM 308, where TxDOT notes "construction is underway or begins soon".
- There is one rehabilitation of road project on State Highway 171, where construction begins within four years.

No railroads were identified within the study area.

Aviation Features

POWER reviewed the Dallas-Fort Worth and San Antonio Sectional Aeronautical Charts (FAA 2024a and 2024b) and the Chart Supplement for the South-Central United States (formerly the Airport/Facility Directory) (FAA 2024c) to identify FAA-registered facilities within the study area subject to notification requirements listed in 14 C.F.R. 77.9. Facilities subject to notification requirements listed in 14 C.F.R. 77.9 include public-use airports listed in the Airport/Facility Directory (currently the Chart Supplement), public-use or military airports under construction, airports operated by a federal agency or DoD, or an airport or heliport with at least one FAA-approved instrument approach procedure.

The Chart Supplement for the South Central United States used in conjunction with the Dallas-Fort Worth and San Antonio Sectional Aeronautical Charts, contains all public-use airports, seaplane bases and public-use heliports, military facilities, and selected private-use facilities specifically requested by the DoD for which a DoD Instrument Approach Procedure has been published in the United States Terminal Procedures Publication.

No public-use or military FAA registered airports were identified within the study area (FAA 2024c).

No public-use heliports or other heliports with an instrument approach procedure are listed for the study area in the Chart Supplement for the South Central United States (FAA 2024c).

In addition, POWER also reviewed the FAA database (FAA 2024c), USGS topographic maps, recent aerial imagery to identify private-use airstrips and private-use heliports not subject to notification requirements listed in 14 C.F.R. 77.9. No private-use airstrips or heliports were identified within the study area.

Utility Features

Utility features reviewed include existing electrical transmission lines, distribution lines, pipelines, and water and gas/oil storage tanks. Data sources used to identify existing electrical transmission and distribution lines include utility company and regional system maps, aerial imagery, and USGS topographic maps (USGS 2024a). Transmission lines identified within the study area include the existing Sam Switch to Navarro transmission line which includes 345-kV. Distribution lines are prevalent throughout the developed portions of the study area; however, these features were not mapped.

Existing pipeline data was obtained from the RRC (2024a) which provided a GIS layer. Some oil and gas pipelines were identified within the study area. The highest concentration of pipelines is located in the central portion of the study area (Platts 2024; RRC 2024a). Pipeline locations were also reviewed as to status: active, abandoned, and planned.

No water wells were identified within the study area.

3.3.6 Communication Towers

No communication towers were identified within the study area. Data was obtained from the Federal Communications Commission ([FCC] 2024) and where required, corrections to the tower location data were implemented based on reconnaissance surveys and aerial photograph interpretation. Review of the FCC database indicated that no AM or FM radio transmitters/microwave towers/cellular towers/Antenna Structure Registration/other electronic installations are located within the study area (FCC 2024).

3.3.7 Parks and Recreation Areas

The PUC recognizes parks and recreational areas as those owned by a governmental body or an organized group, club, or place of worship. Federal and state database searches and county/local maps were reviewed to identify any parks and/or recreational areas within the study area. A reconnaissance survey was also conducted to identify any additional park or recreational areas.

National/State/County/Local Parks

No national, state, or county parks were identified within the study area (NPS 2024a; 2024b). There are also no public hunting areas or wildlife management areas identified within the study area (TPWD 2024a). Additional recreational activities such as hunting and fishing might occur on private properties throughout the study area, but are not considered to be open to the general public.

Wildlife Viewing Trails

Review of the TPWD Great Texas Wildlife Trails indicates that the study area is located within the *Prairies and Pineywoods West Wildlife Trail*. No viewing loops were identified within the study area and no sites of interest are located within the study area (TPWD 2024b).

3.4 Socioeconomics

The study area covers approximately 17.92 square miles in Hill County. This section presents a summary of economic and demographic characteristics for the county and describes the socioeconomic environment of the study area. Literature sources reviewed include publications of the United States Census Bureau (USCB) and the Texas State Data Center (TXSDC).

3.4.1 Population Trends

Hill County experienced a population increase between 2010 and 2020 of two percent. By comparison, population at the state level increased by nearly 16 percent between 2010 and 2020 (USCB 2010 and 2024). According to TXSDC projections, Hill County is projected to experience population growth between 2020 and 2050. The population increase in Hill County for 2020 to 2050 is projected to be five percent, three percent, and two percent, respectively. By comparison, the population of Texas is expected to experience population increases of 13 percent, 12 percent, and 10 percent over the next three decades, respectively (TXSDC 2022). Table 3-2 presents the past population trends and projections for Hill County and for the state of Texas.

TABLE 3-2 POPULATION TRENDS

	PAST		PROJECTED		
STATE/COUNTY	2010	2020	2030	2040	2050
Texas	25,145,561	29,145,505	32,912,882	36,807,213	40,645,784
Hill County	35,089	35,874	37,500	38,614	39,324

Sources: USCB 2010 and 2024; TXSDC 2022.

3.4.2 Employment

From 2010 to 2022, the civilian labor force (CLF) in Hill County experienced an increase of six percent (918 people). By comparison, the CLF at the state level grew by 23 percent (2,711,288 people) over the same time period (USCB 2024). Table 3-3 presents the CLF for Hill County and the state of Texas for the years 2010 and 2022.

Between 2010 and 2022, Hill County experienced a decrease in unemployment from a high of 6.7 percent to a low of 4.5 percent. By comparison, the state of Texas also experienced a decrease in the unemployment rate over the same period. The state's unemployment rate decreased from 7.0 percent in 2010, to 5.2 percent in 2022 (USCB 2024). Table 3-3 presents the employment and unemployment data for Hill County and the state of Texas for the years 2010 and 2022.

TABLE 3-3 CIVILIAN LABOR FORCE AND EMPLOYMENT

STATE/COUNTY	2010	2022
Texas		
Civilian Labor Force	11,962,847	14,674,135
Employment	11,125,616	13,908,128
Unemployment	837,231	766,007
Unemployment Rate	7.0%	5.2%
Hill County		
Civilian Labor Force	15,668	16,586
Employment	14,619	15,842
Unemployment	1,049	744
Unemployment Rate	6.7%	4.5%

Source: USCB 2010 and 2024.

3.4.3 Leading Economic Sectors

The major occupations in Hill County in 2022 are listed under the category of management, business, science, and arts occupations, followed by the category of sales and office occupations (USCB 2024). Table 3-4 presents the number of persons employed in each occupation category during 2022 in Hill County.

TABLE 3-4 OCCUPATIONS IN THE STUDY AREA COUNTY

OCCUPATION	HILL COUNTY
Management, business, science, and arts occupations	4,199
Service occupations	2,635
Sales and office occupations	3,354
Natural resources, construction, and maintenance occupations	2,419
Production, transportation, and material moving occupations	3,235

Source: USCB 2024.

In 2010 and 2022, the industry group employing the most people in Hill County was educational services, and health care and social assistance. Table 3-5 presents the number of persons employed in each of the industries in Hill County for the years 2010 and 2022 (USCB 2024).

TABLE 3-5 INDUSTRIES IN THE STUDY AREA COUNTY

INDUSTRY GROUP	HILL COUNTY	
	2010	2022
Agriculture, forestry, fishing and hunting, and mining	836	1010
Construction	1766	1860
Manufacturing	1666	2009
Wholesale trade	363	267
Retail trade	1819	1870
Transportation and warehousing, and utilities	1229	1320
Information	105	119
Finance and insurance, and real estate and rental and leasing	662	695
Professional, scientific and management, and administrative and waste management services	712	938
Educational services, and health care and social assistance	2930	3200
Arts, entertainment, and recreation, and accommodation and food services	1100	1204
Other services, except public administration	788	823
Public administration	643	527

Source: USCB 2010 and 2024.

3.5 Cultural Resources

Section 37.056(c)(4)(A-D) of PURA incorporates historical and aesthetic values as a consideration when evaluating proposed electric transmission facilities. The PUC standard application for a CCN further stipulates that known historical sites within 1,000 feet of an alternative route will be listed, mapped, and their distances from the centerline of the alternative route documented in the application filed for consideration. Archeological sites within 1,000 feet of a route will be listed and their distances from the centerline documented but shall not be shown on maps for the protection of the site. The sources consulted to identify known sites (national, state, or local commission) must also be listed.

The THC/State Historic Preservation Office is the state agency responsible for historic preservation. The THC, working in conjunction with TARL, maintains records of previously recorded cultural resources and records of previous field investigations in Texas. POWER reviewed cultural resource information from the THC's restricted-access online TASA (THC 2024a) and GIS shapefiles acquired from TARL

(dated June 4, 2024) to identify and map the locations of previously recorded cultural (archeological and historical) resources within the study area. Previously recorded cultural resource site data available online from the THSA (THC 2024b) were also reviewed to identify the locations of designated historical sites, cemeteries, and OTHMs within the study area. TxDOT's Historic Resources Aggregator database (TxDOT 2024c) was also reviewed for historic resources listed or determined eligible for listing on the NRHP. At the national level, NPS websites and data centers were reviewed to identify locations and boundaries for nationally designated trails, battlefield monuments and historic landmarks (NPS 2024b, 2024c and 2024d).

Together, archeological and historical sites are often referred to as cultural resources. Under the NPS' standardized definitions, cultural resources include districts, sites, buildings, structures, or objects important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. For this study, cultural resources have been divided into three major categories: archeological resources, historical resources, and cemeteries. These three categories correlate to the organization of cultural resource records maintained by the THC and TARL.

Archeological resources are locations on the ground surface or buried within the earth where human activity has measurably altered or left deposits of physical remains (e.g., burned rock middens, stone tools, petroglyphs, house foundations, bottles). Archeological resources can date to either prehistoric times or the historic era.

Historical Resources typically include standing buildings (e.g., houses, barns, outbuildings), but can also include structures (e.g., dams, canals, bridges, roads, silos) and districts that are non-archeological in nature.

Cemeteries are places of intentional human interment and might include large public burial grounds with multiple burials, small family plots with only a few burials, or individual grave sites. In some instances, cemeteries might be designated as Historic Texas Cemeteries by the THC and might be recognized with an OTHM. Other cemeteries might also be documented as part of the THC's Record, Investigate, and Protect program.

3.5.1 Cultural Background

The area is in the Eastern Planning Region as delineated by the THC (Kenmotsu and Perttula 1993) (Figure 3-1), more specifically within the North-central Texas archeological region described by Perttula (2004). Three major physiographic regions converge near the study area; the Grand Prairie, the Blackland Prairie and the eastern Edwards Plateau (BEG 1996), offering inhabitants access to varied resources from each province. Traditionally included in the Central Texas Archeological Region (Prewitt 1981, for instance), the region is now known to have been inhabited by groups over the last 2,000 years that interacted with central Texas and northeastern Texas groups including, after around *anno Domini* 900, the Caddos (Perttula 2004: 13). The basic chronological framework of the region is broken up into three broad prehistoric periods that generally coincide with broad climatic conditions and the Historic Period, which began with the arrival of Europeans. These periods are discussed below.

Prehistory

Archeologists have subdivided the prehistoric occupation in North-central Texas into three broad periods spanning at least the last 11,500 years: the Paleoindian Period (circa [ca.] 11,500 to 9,000 years before present (BP); the long-lasting Archaic Period (ca. 9000 to 1300 BP); and the Late Prehistoric Period (ca. 1300 to 400 years BP). These periods reflect changes observed in material culture in response to broad environmental changes. The historic period follows, after Europeans arrive in Texas.

0 30 60 120 180 240
Miles

Source: Mercado- Allinger et. al., 1996

Legend

Cultural Resource Planning Region Boundary

County Boundary

BULLOCK STATION TO AQUILLA LAKE III TRANSMISSION LINE PROJECT

FIGURE 3-1

LOCATION OF THE STUDY AREA IN RELATION TO THE CULTURAL RESOURCE PLANNING REGIONS OF TEXAS

LONEstar POWER ENGINEERS

Date: 11/14/2024

Paleoindian (ca. 11,500 to ca. 9,000 years BP)

The Paleoindian period is the least represented period in North-central Texas. Corresponding with the waning years of the Pleistocene era, this period was characterized by a comparatively cooler, wetter environment. Despite the popular misconception that these early populations were primarily hunters, evidence from the Gault Site in central Texas and the Aubrey Site north of Dallas-Fort Worth, suggest that their diet was more generalized (Ferring 2001; Collins 2002). Archeological evidence indicates that these early hunting and gathering populations were highly mobile and subsisted on a well-diversified resource base that included not only the last of the mammoth, but also smaller mammals, fish, and a variety of reptiles (Ferring and Yates 1997; Story 1990). Site types dating to this period include kill, quarry/stone-working, cache, camp, ritual, and burial sites. When the Pleistocene era came to an end around 10,900 years ago and the mammoth populations had all but disappeared, prehistoric populations began to focus their hunting efforts on bison, one of the hallmarks of the later Paleoindian period (Collins 2004). Clovis and Folsom projectile point types are typical of the Paleoindian period, though it has been suggested that Dalton and Plainview point types are the most common in the region (Prikryl 1990). Many of the artifacts were made from exotic stone suggesting groups moved in wide-ranging hunting and gathering territories. Ritualistic and intentional burial practices date to this period as seen in interments in Bosque and Hill Counties that contained both utilitarian and ornamental objects (Bousman et al. 2004).

Archaic Period (ca. 9000 to 1300 BP)

Archeologists have compartmentalized nearly two-thirds of the entire prehistoric era in North-central Texas into the Archaic period, which is subsequently subdivided into Early (9000 to 6000 BP), Middle (6000 to 4000 BP), and Late (4000 to 1300 BP) sub-periods.

Early Archaic (9000 to 6000 BP)

The transition from the late Paleoindian period to the early Archaic is subtle, but has generally been characterized as a time of broad-ranged hunting and gathering similar to the previous Paleoindian period. During the Early Archaic, artifact assemblages began to show greater diversity and lanceolate points typical of the Paleoindian period are replaced by early split-stemmed types (Prikryl 1990), such as Gower and Hoxie. Angostura points and other lanceolate forms continue into the Early Archaic, although projectile points from the Early and Middle Archaic are usually less carefully fashioned and are made from less exotic materials than those from the Paleoindian Period (Kenmotsu and Perttula 1993). Other small and widely distributed sites may indicate a subsistence strategy of highly mobile, generalized hunting and gathering within large, poorly defined territories (Prikryl 1990).

Middle Archaic (6000 to 4000 BP)

Like the earlier periods, the Middle Archaic in this region is also poorly understood. The bulk of Middle Archaic materials have been recorded on the ground surface in mixed contexts. Projectile point styles from the beginning of the Middle Archaic include Bell, Andice, and Calf Creek styles; thin, triangular forms that represent a shift in lithic technology from the Early Archaic point types (Jones 2009). Carrollton, Wells, and Bulverde points are also typical of the Middle Archaic (Prikryl 1990). Increasing temperatures and aridity characterized the Hypsithermal Interval from 8000 to 4000 BP, during which open grasslands came to characterize the central plains, and woodlands that had extended farther west than today retreated to the east (Delcourt and Delcourt 1981). Sparse deer remains and aquatic resources have been identified at Middle Archaic sites in the region. Instead, it appears small game made up the majority of the diet, indicating a drier environment that lacked the wooded habitats preferred by deer (Ferring and Yates 1997).

Late Archaic (4000 to 1250 BP)

Faunal remains suggest populations began to exploit deer as principal game species, but supplemented with other species of woodland and riparian habitats during the Late Archaic, as the climate cooled to resemble that of today. Diverse small game, turtles, fish, and mussels contributed to the continued strategy of generalized hunting and gathering, but with greater intensity. It can be deduced that sites were repeatedly occupied from the presence of rock-lined and unlined hearths, and that plant materials were processed in these features (Ferring and Yates 1997). Projectile point types indicative of this period include Marshall, Edgewood, Castroville, Dawson, Ellis, Trinity, Dallas, Palmillas, Yarbrough, Godley, Gary, and Elam (Jones 2009; Prikryl 1990). An increase in the number of sites and a greater distribution of sites over the landscape have led some to suggest that populations during this time increased in density and decreased in group mobility (Prikryl 1990).

Late Prehistoric Period (1250 to 150 BP)

The onset of the Late Prehistoric period has been arbitrarily set by some archeologists around 1,250 years ago, but may have started as recently as 800 years ago. Little changed in subsistence patterns during the early Late Prehistoric; the most notable shift from the Late Archaic to the Late Prehistoric was the introduction and subsequent prevalence of arrow points over dart and spear points in the archeological record and appearance of pottery in archeological assemblages.

Lynott (1981) suggests that the Late Prehistoric period may be divided into early and late phases. The early phase is characterized by sand- and grog-tempered ceramics, Scallorn and Alba arrow points, and a continuation of the foraging subsistence system of the Late Archaic period. The late phase reflects a Southern Plains influence with the appearance of shell-tempered Nocona Plain ceramics of the Henrietta Focus; Fresno, Harrell, Washita, and other unstemmed projectile points; and the Perdiz point.

There is debate as to whether maize agriculture was introduced to North-central Texas during this period. Domesticated plant remains at several sites in the region, and stable isotope analyses from a burial in Dallas County comparable to those of maize-consuming Caddo populations in Arkansas, suggest maize agriculture may have been introduced to North-central Texas during the latter half of the Late Prehistoric Period (Jones 2009; Cochran et al. 2012). However, it has been suggested that there has not been sufficient isotopic analysis to confirm a general adoption of maize horticulture or agriculture (Jones 2009). Ancestral Caddo and Caddo ceramic sherds at numerous sites in Hill County suggest interaction with the East Texas groups throughout the Late Prehistoric Period (Perttula 2018). Almost 15 percent of the known sites or collections in central Texas with Caddo ceramics are in Hill County (Perttula 2018).

Post-contact Period (ca. 400 to 50 BP)

The beginning of the Post-contact Period is marked by the first appearance of Europeans in Texas: the Spanish explorers, priests, and speculators who began moving into the state from colonies to the south and west in the sixteenth and seventeenth centuries. Documentary evidence from early European explorers in the region lists several groups, including the Tonkawa, Apache, Comanche, Wichita, Kitsai, Yojaunce, Caddo, Delaware, and Kickapoo (Kenmotsu and Perttula 1993).

Although the first explorers to reach the area arrived in the late 1700s, diseases spread by Europeans had already decimated the native populations and pressures from other native groups moved remaining native populations south and west. The Spanish government commissioned French explorer Pedro Vial to establish a route from San Antonio to Santa Fe in 1786 and he likely passed through or near modern-day Hill County, as he reported staying at Tawakoni villages on the east side of the Brazos River (Austin 2024). In 1801, the first Anglo-American camp was established in the region of Hill County by Philip Nolan. He and several well-armed men built a small fort and corrals in an attempt to wrangle mustangs, but they were soon attacked and killed by Spanish soldiers sent from Nacogdoches (Jackson 2024).

Intensive occupation of this region began in the 1820s under the Mexican government (Austin 2024). Sterling Clack Robertson, Stephen F. Austin, Haden Edwards, and Robert Leftwich were among the Americans who persuaded Mexican officials to grant them permission to colonize parts of Texas. In 1825, Robertson received the first land grant to include portions of modern-day Hill County. Contemporaneously, Comanche and Taovaya groups migrated into this region. Treaties between the white colonists and the Comanche and Taovaya groups were attempted but were largely unsuccessful due to disputed territory between Robertson and Austin (Austin 2024).

Settlement of the Hill County area was allowed throughout the 1830s and 1840s, likely because the area was used as a “council-spot” for discussions and treaties, and people were allowed to travel through the area safely (Austin

2024). Hasinai and Anadarko groups migrated from East Texas and, under Anadarko chief José María, settled in the Hill County area in 1844. Trading posts were established to serve the people of both the new Texas Republic and the aboriginal communities as an official peace policy from President Sam Houston's administration (Armbruster 2024). One such trading post was established amongst the newly settled Hasinai and Anadarko. A defensive line of outposts was built through the area for the protection of the inhabitants of this region, but some were abandoned in the 1850s (Austin 2024).

Hill County was officially formed in 1853 when Navarro County was divided. A petition began in 1852 to carve up Navarro County and encourage settlement of the region. Hill County was thus formed and named after Dr. George Washington Hill, secretary of war under President Sam Houston. Elections were held in 1853 to elect the county officials and, by 1854, the county courthouse and county seat were established in Hillsboro (Austin 2024).

Hill County entered a tumultuous period beginning in the 1860s. The inhabitants overwhelmingly supported secession before the outbreak of the Civil War and during Reconstruction there was extreme resentment toward Governor E. J. Davis (Austin 2024). In 1871, martial law was declared in Hill County (Johnson 2024). A riot ensued between residents and the police. Moreover, a married couple, who were formerly slaves, were murdered in Hill County. One of the suspects was a son of the county's most prominent landowner, and the family prevented the State Police from investigating the suspect by inciting a mob to convince county officials to detain the troopers in what is known as the Hill County Rebellion (Dobbs 2024). Simultaneously, Texas State Police were hindered by residents of the county during their efforts to track down bands of outlaws. State militia had to be dispatched to restore order in Hill County (Austin 2024).

Hill County relied predominantly on the cattle industry during the 1870s. The Chisholm Trail, a massive route for livestock leading from South Texas to Kansas (Worcester 2024), crossed the northwest corner of the county (Austin 2024). The ranching industry gradually gave way to greater investment in agriculture, and economic growth in Hill County was further stimulated by the introduction of the Missouri, Kansas, and Texas Railroad in 1881 (Austin 2021). In 1883, the St. Louis and Southwestern Railroad was constructed through the county (Austin 2024).

Hill County also underwent an economic revival in the decades after the railroads were constructed until the Great Depression in 1929. The population nearly doubled during the 1880s and again in the 1890s, until it peaked in 1910, numbering 46,760 (Austin 2024). The town of Birome, northwest of the study area, was founded in 1910 as one of the stations for the International and Great Northern Railway. The number of farms increased proportionally with the population, reaching a peak of 5,539 in 1910. Crops consisted of corn, wheat, and oats, though the dominant crop by far was cotton (Austin 2024). After 1910, these numbers began to decline due to the boll weevil infestation (Wagner 2024) and, after, the Great Depression (Austin 2024).

The residents of Hill County struggled to revive and stabilize the economy during and after the Great Depression by attempting to diversify the primary industries. The number of farms decreased as many were consolidated or land was repurposed for ranchland, and commodities expanded to include cattle, nursery crops, sorghum, dairies, wheat, hay, and turkey, in addition to the already well-established cotton industry (Austin 2024). Oil was also discovered in Hill County, but never in quantities great enough to revive the economy alone. Manufacturing also declined during the Great Depression and subsequent decades, and the economy continued to struggle through the 1950s. Plastic, copper, and furniture plants were established throughout Hill County in the 1950s and many people left farms to fill these industrial roles (Austin 2024).

3.5.2 Literature and Records Review

On June 4, 2024, GIS shapefiles were acquired from TARL to identify and map the locations of previously recorded archeological resources within the study area. Descriptive data pertaining to archeological sites and surveys were obtained from TASA in June 2024. The locations of, and information pertaining to, SALs, NRHP properties, Historic Texas Cemeteries (HTCs) and OTHMs within the study area were obtained from the TASA (THC 2024a) and the THSA (THC 2024b). The TASA, THSA, and USGS topographic maps were reviewed in order to identify cemeteries within the study area. TxDOT's Historic Resources Aggregator database was reviewed to identify historic properties listed or determined eligible for listing on the NRHP within the study area (TxDOT 2024c). At the national level, the NRHP database (NPS 2024d) and NPS websites for National Historic Landmarks (NPS 2024b) and National Historic Trails (NPS 2024b) were reviewed.

The review indicates that the study area has recorded two archeological sites, two OTHM, and three cemeteries, one of which is a designated HTC. A review of the NRHP database indicated that no NRHP properties are within the study area. In addition, no SALs, NRHP-listed or determined-eligible properties, or National Historic Trails are recorded within the study area. The results of the record search are summarized in Table 3-6.

TABLE 3-6 RECORDED CULTURAL RESOURCES WITHIN THE STUDY AREA

COUNTY	RECORDED ARCHEOLOGICAL SITES	NRHP-LISTED PROPERTIES	CEMETERIES	OFFICIAL TEXAS HISTORICAL MARKERS	HISTORIC TEXAS CEMETERIES
Hill	2	0	3	2	1

Source: THC 2024a and 2024b.

Of the two archeological sites recorded in the study area, one is pre-contact and one is post-contact (THC 2024b). Site 41HI69 is a pre-contact campsite with burned rock, a biface, and a flake that was determined ineligible for listing on the NRHP. The site was reported as destroyed in 2016. Site 41HI318 is a post-contact in age, but no descriptive data is available on the TASA and the site has not been formally evaluated for inclusion on the NRHP (THC 2024b).

Two OTHMs are mapped within the study area (THC 2024a). The Salem Lutheran Church marker (marker number 4497) commemorates the German immigrants who began moving into the area in the 1880s, with a group of families coming together in 1886 to form the church congregation. The George Washington Savage marker (maker number 16406) commemorates the contributions of Savage to the Hill County community. An early resident, Savage raised horses, was a Confederate Calvary soldier, supported German immigrants in the area, and donated land for two schools (THC 2024a).

Three cemeteries are recorded within the study area (THC 2024a). The Gehrels family cemetery (HI-C049) has three known graves, two of which have inscriptions and one of which that is fenced but has no marker. The Salem-Lutheran cemetery (HI-C050) is associated with the church of the same name and is commemorated as an OTHM. The Walling cemetery (HI-C051) is a designated HTC with over 300 graves that have been interred there from 1904 to the present (THC 2024a).

Nine professional cultural resource management investigations are mapped within the study area (Table 3-7) (THC 2024b; TxDOT 2024c). Beginning in 1959, there is little descriptive information for these previous investigations. Previous investigations in the study area have been sponsored by the NPS, Soil Conservation Service, and TxDOT and undertaken in advance of oil and gas projects (THC 2024b; TxDOT 2024).

TABLE 3-7 PREVIOUS INVESTIGATIONS WITHIN THE STUDY AREA

Atlas Number	AUTHOR(S)	YEAR	REPORT TITLE	INVESTIGATING FIRM / SPONSOR
8500005897	Information available on TASA	1959	Information available on TASA	National Park Service
8500005890	Information available on TASA	1974	Information available on TASA	Soil Conservation Service
8500005888	Information available on TASA	1978	Information available on TASA	Soil Conservation Service
8500005889	Information available on TASA	1982	Information available on TASA	Soil Conservation Service
8500005885	Information available on TASA	1984	Information available on TASA	Soil Conservation Service
8500005886/ 8500005887	Information available on TASA	1985	Information available on TASA	Soil Conservation Service
-	Reign Clark	2007	Bridge Replacement of CR 187 at Four Mile Creek	Texas Department of Transportation
-	Reign Clark	2008	Bridge Replacement of CR 203 at White Rock Creek	Texas Department of Transportation
8500023658	Jennifer Cochran, et al.	2013	Information available on TASA	Horizon Environmental Services

Source: THC 2024b; TxDOT 2024

3.5.3 High Probability Areas

Review of previously recorded cultural resource site data indicates that the study area has not been examined entirely during previous archeological and historical investigations. Consequently, the review of records does not include all possible cultural resource sites within the study area. To further assess and avoid potential impacts to cultural resources, high probability areas (HPAs) for pre-contact archeological sites were defined during the route analysis process. Within the study area, the pre-contact HPAs typically occur near streams and on terraces overlooking permanent sources of water, including Bynum Creek, White Rock Creek, their tributaries, and tributaries to Ash Creek.

Post-contact age resources are also likely to be found near water sources. However, they will also be located in proximity to primary and secondary roads, which provide access to the sites. Buildings and cemeteries are also more likely to be located within or near post-contact communities. Numerous structures are depicted in the study area on the topographic quadrangles of Malone, Texas (USGS 1957a) and Irene, Texas (USGS 1957b).

3.6 Aesthetic Values

Section 37.056(c)(4)(C) of PURA incorporates aesthetics as a consideration when evaluating proposed electric transmission facilities. There are currently no formal guidelines provided for managing visual resources on private, state, or county owned lands. For the purposes of this study, the term aesthetics is defined by POWER to accommodate the subjective perception of natural beauty in a landscape and measure an area's scenic qualities. The visual analysis was conducted by describing the regional setting and determining a viewer's sensitivity. Related literature, aerial photograph interpretation, and field reconnaissance surveys were used to describe the regional setting and to determine the landscape character types for the area.

Consideration of the visual environment includes a determination of aesthetic values (where the major potential effect of a project on the resource is considered visual) and recreational values (where the location of a transmission line could potentially affect the scenic enjoyment of the area) that would help define a viewer's sensitivity. POWER considered the following aesthetic criteria that combine to give an area its aesthetic identity:

- Topographical variation (e.g., hills, valleys),
- Prominence of water in the landscape (e.g., rivers, lakes),
- Vegetation variety (e.g., woodlands, meadows),
- Diversity of scenic elements,
- Degree of human development or alteration, and
- Overall uniqueness of the scenic environment compared with the larger region.

The study area is primarily rural with some residential development scattered throughout. The predominant land use within the study area is cropland, rangeland, and pastureland. The majority of the study area has been impacted by land improvements associated with agriculture, roadways, oil, and gas activities. Overall, the study area viewscape consists of rural rangeland with some residential development.

No known high-quality aesthetic resources, designated views, or designated scenic roads or highways were identified within the study area. The study area is located within the Texas Lakes Trail Region. There are no sites of interest within the study area (THC 2024c).

A review of the NPS website did not indicate any Wild and Scenic Rivers, National Monuments, National Memorials, National Historic Sites, or National Battlefields within the study area (NWSRS 2024; NPS 2024b, 2024c, and 2024d).

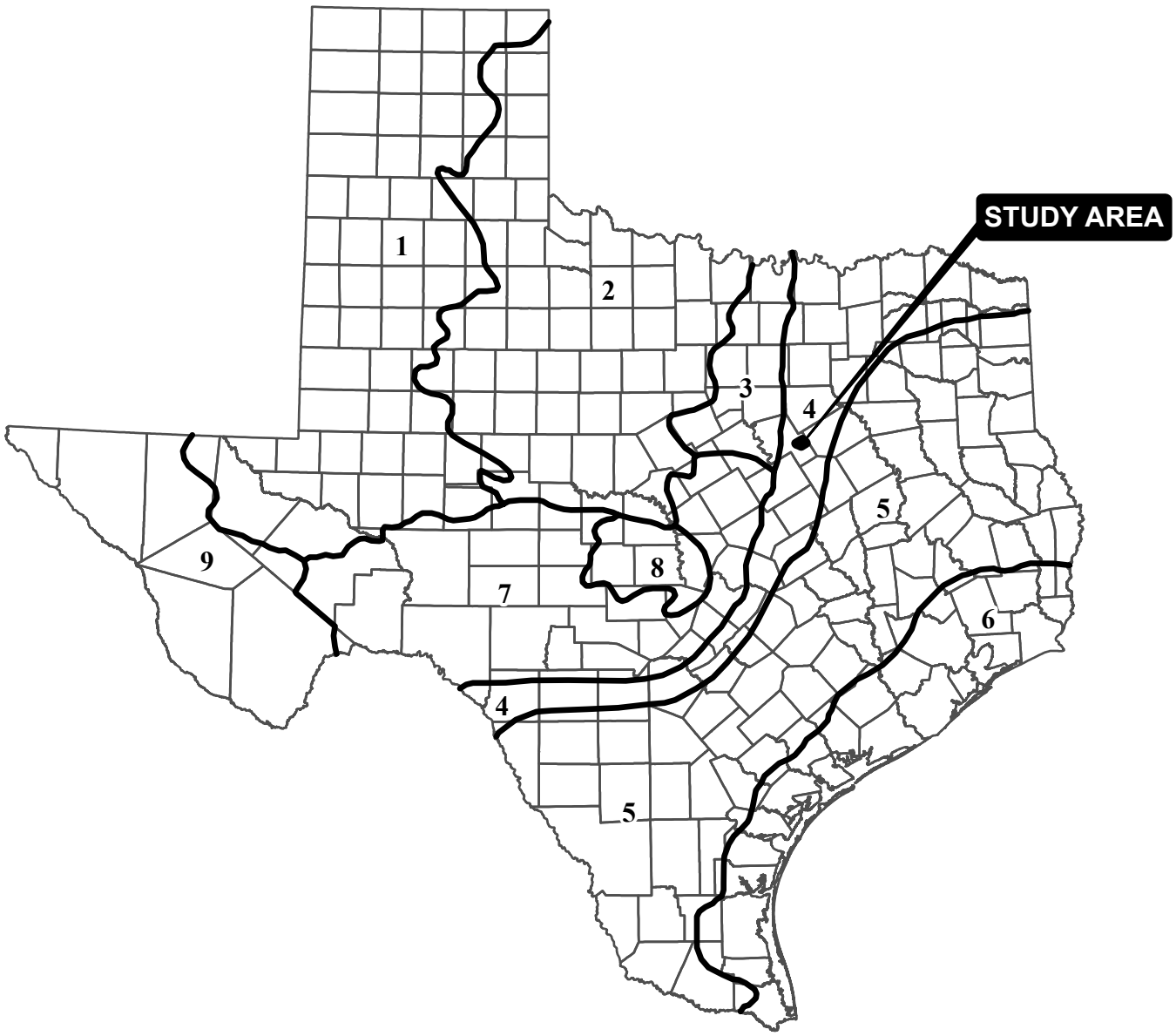
Based on these criteria, the study area exhibits a medium degree of aesthetic quality for the region. The majority of the study area maintains the feel of a rural community with residential development scattered throughout. Although some portions of the study area might be visually appealing, the aesthetic quality of the study area overall is not distinguishable from that of other adjacent areas within the region.

3.7 Environmental Integrity

3.7.1 Physiography and Geology

As shown in Figure 3-2, the study area is located within the Blackland Prairies Sub-province of the Gulf Coastal Plains Physiographic Province. The Blackland Prairies Sub-province contains bedrock composed of chalks and marls that have weathered to develop an undulating terrain with fertile, black clay soils. Elevation within this sub-province ranges from 450 to 1,000 feet above mean sea level (amsl) and generally increases northward and westward (BEG 1996). Elevations within the study area range between approximately 450 feet amsl within stream floodplains to approximately 575 feet amsl on gently sloping hills (USGS 2022a and 2022b).

Geologic formations occurring within in the study area include the Cretaceous-aged Ozan formation and Quaternary alluvium. The Ozan Formation underlies the entire study area and is composed primarily of clay with silt-sized quartz and calcite fragments near the surface. It ranges in thickness from 500 to 775 feet and grades upward. Quaternary alluvium is comprised of mud, silt, and sand and is mapped within floodplains along streams in the southern half of the study area (USGS 2024b).



0 30 60 120 180 240

Miles

Source: Texas Bureau of Economic Geology, 1996

Legend

Physiographic Region Boundary

1 High Plains
2 North-Central Plains
3 Grand Prairie
4 Blackland Prairies
5 Interior Coastal Plains
6 Gulf Coastal Prairies
7 Edwards Plateau
8 Central Texas Uplift
9 Trans-Pecos Basin and Range

County Boundary

BULLOCK STATION TO AQUILLA LAKE III TRANSMISSION LINE PROJECT

FIGURE 3-2

LOCATION OF THE STUDY AREA IN RELATION TO THE PHYSIOGRAPHIC REGIONS OF TEXAS

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Date: 11/14/2024

Geological Hazards

Several potential geologic hazards affecting the construction and operation of a transmission line were evaluated within the study area. Hazardous areas reviewed included normal faults, active or abandoned mining locations, aggregate operation locations, and potential subsurface contamination. Subsurface contamination (soils or groundwater) from previous commercial activities or dumps/landfills may require additional considerations during routing and/or may create a potential hazard during construction activities.

No normal faults (USGS 2024b), active or abandoned mining locations (RRC 2015, 2024b, 2024c, and 2024d), aggregate operation locations (TCEQ 2024a), state or federal superfund sites (USEPA 2024a; TCEQ 2024b), or municipal waste facilities (TCEQ 2024c) were identified within the study area.

3.7.2 Soils

Soil Associations

The NRCS Web Soil Survey (NRCS 2024) data was reviewed to identify and characterize the soil associations mapped within the study area. A soil association is a group of soils geographically associated in a characteristic repeating pattern and defined as a single unit. Mapped soil associations within the study area are listed in Table 3-8, which summarizes each soil association and indicates if any soil series within the mapped association are considered prime farmlands and/or hydric (NRCS 2024).

TABLE 3-8 MAPPED SOIL UNITS WITHIN THE STUDY AREA

MAP UNIT NAME	LANDFORM	HYDRIC STATUS	PRIME FARMLAND
Branyon clay, 0 to 1 percent slopes	Stream terraces	No	Yes
Burleson clay, 0 to 1 percent slopes	Stream terraces	No	Yes
Burleson clay, 1 to 3 percent slopes	Stream terraces	No	Yes
Eddy very gravelly clay loam, 1 to 3 percent slopes	Ridges	No	No
Ferris clay, 5 to 12 percent slopes	Ridges	No	No
Ferris clay, 8 to 20 percent slopes, severely eroded	Rides	No	No
Ferris-Heiden complex, 2 to 5 percent slopes	Ridges	No	Yes
Heiden clay, 1 to 3 percent slopes	Rides	No	Yes
Heiden clay, 5 to 8 percent slopes	Rides	No	No
Houston Black clay, 0 to 1 percent slopes	Plains	No	Yes
Houston Black clay, 1 to 3 percent slopes	Ridges	No	Yes
Tinn clay, 0 to 1 percent slopes, occasionally flooded	Floodplains	No	No
Tinn clay, 0 to 1 percent slopes, frequently flooded	Floodplains	No	No
Wilson clay loam, 0 to 1 percent slopes	Stream terraces	No	Farmland of statewide importance
Wilson clay loam, 1 to 3 percent slopes	Stream terraces	No	Farmland of statewide importance

Source: NRCS 2024.

Hydric Soils

The National Technical Committee for Hydric Soils defines hydric soils as soils that were formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper horizons. These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation (NRCS 2024).

Map units that are dominantly comprised of non-hydric soils might have small inclusions of hydric soils in higher positions on the landform. Map units dominantly comprised of hydric soils might have inclusions of non-hydric soils in lower positions on the landform. According to NRCS (2024) Web Soil Survey data for the study area, there are no hydric soils mapped within the study area.

Prime Farmland Soils

The United States Secretary of Agriculture, within U.S.C. §7-4201(c)(1)(A), defines prime farmland soils as those soils that have the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. They have the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops when treated and managed, including water management, according to acceptable farming methods. Soils designated as farmland of statewide importance are potential prime farmlands with soils that meet most of the requirements of prime farmland but fail due to the absence of sufficient natural moisture or water management facilities. The USDA would consider these soils as prime farmland if such practices were installed and these soils are incorporated in Table 3-8. According to NRCS Web Soil Survey data for the study area county (NRCS 2024), there are multiple soil associations designated as prime farmland soil and as farmland of statewide importance within the study area.

The NRCS responded to POWER's solicitation for information in a letter dated July 9, 2024 (Appendix A) that did not indicate concerns regarding prime farmland soils within the study area. Transmission line projects are typically not subject to the requirements of the Farmland Protection Policy Act unless they are associated with federal funding, which the proposed Project is not. Additionally, transmission line construction is not typically considered a conversion of prime farmlands as the site can still be used for farming after construction is complete.

3.7.3 Water Resources

Surface Water

The majority of the study area is located within the Trinity River Basin (TWDB 2014) and the Richland sub-basin (TPWD 2024c). Named surface water features within the study area include Bynum Creek, Pecan Creek, and

White Rock Creek. Several unnamed tributaries and small ponds occur interspersed throughout the study area (USGS 2024a). Surface waters generally flow in a south or southeasterly direction (USEPA 2024b).

Under 31 TAC § 357.43, the TPWD has designated Ecologically Significant Stream Segments (ESSS) based on habitat value, threatened and endangered species, species diversity, and aesthetic value criteria. Review of the TPWD information did not indicate the presence of a designated ESSS within the study area (TPWD 2024d).

In accordance with Section 303(d) and 305(b) of the CWA, the TCEQ identifies surface waters for which effluent limitations are not stringent enough to meet water quality standards and for which the associated pollutants are suitable for measurement by maximum daily load. Review of the TCEQ (2024d) Draft 2024 Texas Integrated Report of Surface Water Quality list did not indicate any surface waters within the study area that do not meet their water quality standards for designated uses.

Ground Water

The major ground water aquifer mapped within the study area is the Trinity Aquifer (TWDB 2024a). The Trinity Aquifer consists primarily of limestone, sand, clay, gravel, and conglomerates. The average freshwater saturated thickness is about 600 feet with total dissolved solids, sulfates, and chloride increasing with the depth of the aquifer (TWDB 2024b). The study area is also mapped within the Woodbine Aquifer. The Woodbine Aquifer is a minor aquifer that overlies the Trinity Aquifer and consists of sandstone interbedded with shale and clay that form three distinct water-earing zones. The Woodbine Aquifer reaches 600 feet in thickness in subsurface areas, and freshwater saturated thickness averages about 160 feet (TWDB 2024c). There are no private water wells mapped within the study area (TWDB 2024d). No natural springs were identified within the study area (TWDB 2024d).

Floodplains

The 100-year flood (one percent flood or base flood) represents a flood event that has a one percent chance of being equaled or exceeded for any given year. FEMA 100-year floodplain data are mapped in association with Bynum Creek, Pecan Creek, White Rock Creek, and unnamed tributaries of Bynum Creek (FEMA 2024).

Future Surface Water Developments

The study area is within Water Planning Region Brazos – G, and review of the regional water (TWDB 2021) and state water (TWDB 2022) plans do not indicate any proposed new surface water developments within the study area.

3.7.4 Ecological Resources

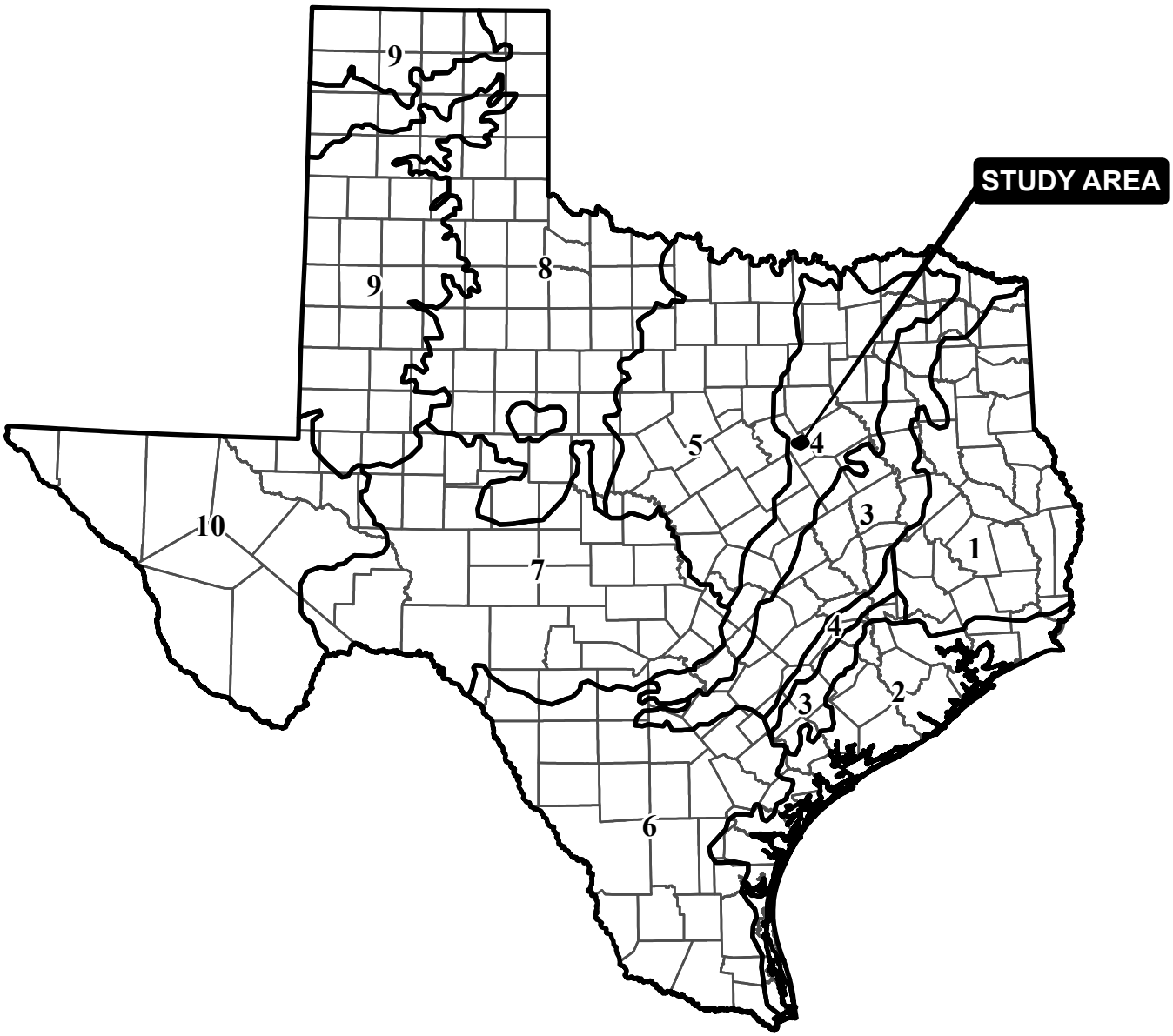
Data and information on ecological resources within the study area were obtained from a variety of sources, including aerial photograph interpretation, field reconnaissance surveys, correspondence with the USFWS, TPWD, and published literature and technical reports. All biological resource data for the study area were mapped utilizing GIS.

Ecological Region

The study area lies within the Texas Blackland Prairies Level III Ecoregion and Northern Blackland Prairie Level IV Ecoregion (Griffith et al. 2007). The Northern Blackland Prairie Ecoregion is characterized by tallgrass prairie vegetation on gently rolling plains with fertile dark clay soils. Dominant grass species included Indiangrass (*Sorghastrum nutans*), little bluestem (*Schizachyrium scoparium*), big bluestem (*Andropogon gerardii*), switchgrass (*Panicum virgatum*), eastern gamagrass (*Tripsacum dactyloides*), and sideoats grama (*Bouteloua curtipendula*) (Griffith et al. 2007). Along streams that intersect the landscape, woodland vegetation occurred and was dominated by bur oak (*Quercus macrocarpa*), Shumard oak (*Quercus shumardii*), sugar hackberry (*Celtis laevigata*), elms (*Ulmus* ssp.), ashes (*Fraxinus* spp.), eastern cottonwood (*Populus deltoides*), and pecan (*Carya illinoinensis*) (Griffith et al. 2007). Much of the native blackland prairie vegetation type within the study area has been converted to cropland and pastureland or is used as rangeland. Remnant blackland prairie vegetation may occur in areas of rangeland or on the fringes of pastureland and cropland.

Vegetation Types

The study area is mapped within the Blackland Prairie vegetational area of Texas (Gould et al. 1960) (see Figure 3-3). Review of the TPWD (2024e) Texas Ecosystem Analytical Mapper indicates that major vegetation types within the study area include Blackland Prairie Disturbance or Tame Grassland, Central Texas Floodplain Hardwood Forest, Central Texas Floodplain Herbaceous Vegetation, Native Invasive Mesquite Shrubland, and Row Crops.



0 30 60 120 180 240

Miles

Source: Gould, et. al., 1960.

Legend

Vegetational Areas Boundary

1 Pineywoods
2 Gulf Prairies and Marshes
3 Post Oak Savannah
4 Blackland Prairies
5 Cross Timbers and Prairies
6 South Texas Plains
7 Edwards Plateau
8 Rolling Plains
9 High Plains
10 Trans-Pecos

County Boundary

BULLOCK STATION TO AQUILLA LAKE III TRANSMISSION LINE PROJECT

FIGURE 3-3

LOCATION OF THE STUDY AREA IN RELATION TO THE VEGETATIONAL AREAS OF TEXAS

LONEstar

POWER ENGINEERS

Date: 11/13/2024

Blackland Prairie Disturbance or Tame Grassland

Blackland Prairie Disturbance or Tame Grassland is a prairie type characterized by a high level of disturbance and a mix of native and non-native vegetation. Typical non-native plant species present within this vegetation type may include western ragweed (*Ambrosia psilostachya*), common broomweed (*Amphiachyris dracunculoides*), King Ranch bluestem (*Bothriochloa ischaemum*), bermudagrass (*Cynodon dactylon*), kleingrass (*Panicum coloratum*), and Johnsongrass (*Sorghum halapense*). Typical native plant species present within this vegetation type may include threeawn species (*Aristida* spp.), silver bluestem (*Bothriochloa laguroides*), hairy grama (*Bouteloua hirsuta*), Texas wintergrass (*Nassella leucotricha*), little bluestem, and Indiangrass. Dense stands of shrubs such as huisache (*Acacia farnesiana*) and honey mesquite (*Prosopis glandulosa*) may also be present (TPWD 2024e).

Central Texas Floodplain Hardwood Forest

Central Texas Floodplain Hardwood Forest occurs in low topographic positions along large streams with alluvial soils. Tree composition is dominated by deciduous hardwood species and may include boxelder (*Acer negundo*), sugar hackberry, white ash (*Fraxinus americana*), green ash (*Fraxinus pennsylvanica*), common honeylocust (*Gleditsia triacanthos*), red mulberry (*Morus rubra*), American sycamore (*Platanus occidentalis*), plateau oak (*Quercus fusiformis*), water oak (*Quercus nigra*), coastal live oak (*Quercus virginiana*), black willow (*Salix nigra*), American elm (*Ulmus americana*), cedar elm (*Ulmus crassifolia*), bur oak, eastern cottonwood, and pecan (TPWD 2024e).

Central Texas Floodplain Herbaceous Vegetation

Central Texas Floodplain Herbaceous Vegetation includes a variety of generally tame or successional grasslands and forblands with bermudagrass, Johnsongrass, and bahiagrass (*Paspalum notatum*). Important native species include inland sea oats (*Chasmanthium latifolium*), vine mesquite (*Panicum obtusum*), eastern gamagrass, and switchgrass (TPWD 2024e).

Native Invasive Mesquite Shrubland

Native Invasive Mesquite Shrubland is a broadly defined vegetation community which occurs throughout the state. It is often mapped in disturbed areas on prairie or savanna soils and is dominated by honey mesquite. Codominant species vary by region and may include Ashe juniper (*Juniperus ashei*), granjeno (*Celtis ehrenbergiana*), brasil (*Condalia hookeri*), Texas persimmon (*Diospyros texana*), common persimmon (*D. virginiana*), agarito (*Mahonia trifoliata*), Lindheimaer pricklypear (*Opuntia engelmannii* var. *lindheimeri*), winged elm (*Ulmus alata*), lotebush (*Ziziphus obtusifolia*), cedar elm, huisache, and sugar hackberry (TPWD 2024e).

Row Crops

Row Crops includes all cropland where fields are fallow for some portion of the year (TPWD 2024e). Some fields may rotate into and out of cultivation frequently, and year-round cover crops and tame hay fields are generally mapped as grassland. The study area is primarily comprised of this vegetation type.

Wetlands

Mapped wetlands information was incorporated for the study area from the USFWS NWI database (USFWS 2024a). NWI maps are based on topography and interpretation of infrared satellite data and color aerial photographs and are classified under the Cowardin System (Cowardin et al. 1979). NWI mapped features may have changed since the date of mapping and actual site conditions may differ in size or classification. Wetland types identified within the study area include freshwater palustrine emergent (PEM) and palustrine forested (PFO) (USWFS 2024a). Unmapped wetlands may also occur in association with riparian areas near any surface drainage, pond, lake, or reservoir within the study area.

Palustrine Emergent Wetland

The mapped PEM wetlands occur along unnamed tributaries of Bynum Creek and Pecan Creek of the western boundary and central portion of the study area and along White Rock Creek of the eastern boundary of the study area. Within the study area, plant species potentially occurring in PEM wetlands may include sedges (*Carex* spp., *Cyperus* spp.), spikerushes (*Eleocharis* spp.), whorled pennywort (*Hydrocotyle verticillata*), purple marsh-camphor (*Pluchea odorata*), smartweeds (*Polygonum* spp.), bulrushes (*Schoenoplectus* spp.), southern cattail (*Typha domingensis*), and broadleaf cattail (*Typha latifolia*). Minor components of woody species such as common buttonbush (*Cephalanthus occidentalis*) and black willow may also occur (Cowardin et al. 1979).

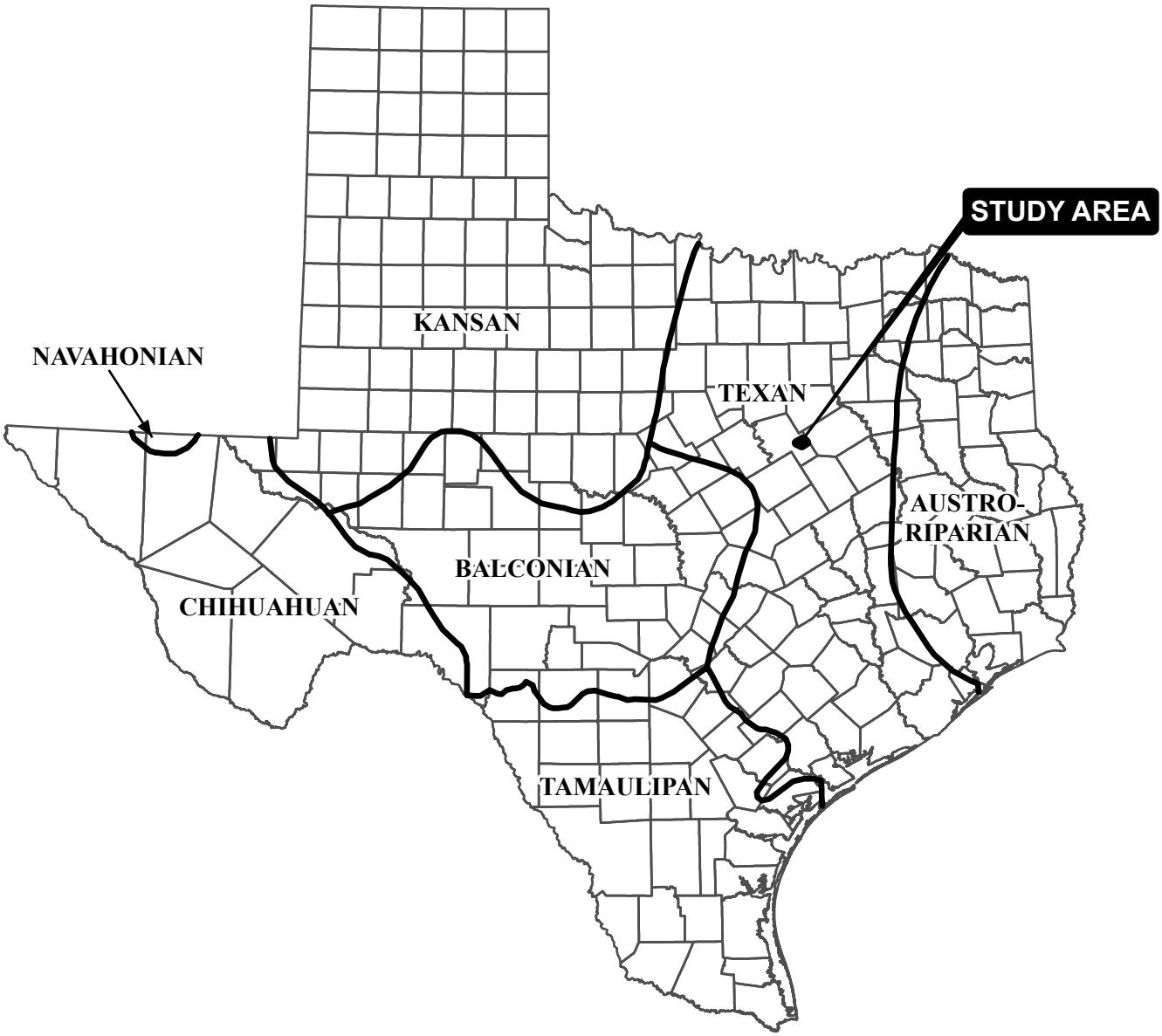
Palustrine Forested Wetland

PFO wetlands are mapped along the northeastern corner of the study area along White Rock Creek and in the central part of the study area in low-lying forested areas near small unnamed waterbodies. Within the study area, plant species potentially occurring in PFO wetlands may include broad-leaved deciduous (USFWS 2024a) species such as common buttonbush, swamp privet (*Forestiera acuminata*), possumhaw (*Ilex decidua*), American elm, black willow, bur oak, cedar elm, green ash, sugar hackberry, sweetgum, and water oak (Cowardin et al. 1979).

Wildlife and Fisheries

Wildlife

The study area is located within the Texan Biotic Province (see Figure 3-4) as described by Blair (1950). The following sections list species that may occur in and characterize the faunal diversity of the study area today.



0 30 60 120 180 240
Miles

Source: Blair, 1950, modified

Legend

Biotic Province Boundary

County Boundary

BULLOCK STATION TO AQUILLA LAKE III TRANSMISSION LINE PROJECT

FIGURE 3-4

LOCATION OF THE STUDY AREA IN RELATION TO THE BIOTIC PROVINCES OF TEXAS

LONEstar POWER ENGINEERS

Date: 11/14/2024

Amphibians

A representative list of amphibian species (frogs, toads, salamanders) that may occur within the study area are listed in Table 3-9. The likelihood of occurrence of each species within the study area will depend upon suitable habitat. Frogs and toads may occur in all vegetation types, while salamanders are typically restricted to hydric habitats (Dixon 2013).

TABLE 3-9 AMPHIBIAN SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA

COMMON NAME	SCIENTIFIC NAME
Frogs/Toads	
American bullfrog	*Lithobates catesbeianus*
Blanchard's cricket frog	*Acris blanchardi*
Cope's gray treefrog	*Dryophytes chrysoscelis*
Couch's spadefoot	*Scaphiopus couchi*
Gray treefrog	*Hyla versicolor*
Gulf Coast toad	*Incilius nebulifer*
Northern cricket frog	*Acris crepitans*
Rio Grande leopard frog	*Lithobates berlandieri*
Red-spotted toad	*Anaxyrus punctatus*
Southern leopard frog	*Lithobates sphenocephalus*
Spotted chorus frog	*Pseudacris clarkii*
Strecker's chorus frog	*Pseudacris streckeri*
Texas toad	*Anaxyrus speciosus*
Western narrow-mouthed toad	*Gastrophryne olivacea*
Salamanders/Newts	
Small-mouthed salamander	*Ambystoma texanum*

Sources: Dixon 2013.
Nomenclature follows: Society for the Study of Amphibians and Reptiles (SSAR) (Crother 2017).

Reptiles

A representative list of reptiles (turtles, lizards, and snakes) that may typically occur in the study area are listed in Table 3-10. The likelihood of occurrence of each species within the study area will depend upon suitable habitat. These include those species that are more commonly observed near water (e.g., aquatic turtles) and those that are more common in terrestrial habitats (Dixon 2013).

TABLE 3-10 REPTILIAN SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA

COMMON NAME	SCIENTIFIC NAME
Lizards	
Common spotted whiptail	*Aspidoscelis gularis*

TABLE 3-10 REPTILIAN SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA

COMMON NAME	SCIENTIFIC NAME
Common five-lined skink	*Plestiodon fasciatus*
Eastern six-lined racerunner	*Cnemidophorus sexlineatus sexlineatus*
Green anole	*Anolis carolinensis*
Little brown skink	*Scincella lateralis*
Mediterranean gecko	*Hemidactylus turcicus*
Prairie lizard	*Sceloporus consobrinus*
Prairie skink	*Plestiodon septentrionalis*
Slender glass lizard	*Ophisaurus attenuatus*
Texas horned lizard	*Phrynosoma cornutum*
Texas spiny lizard	*Sceloporus olivaceus*
Snakes	
Broad-banded copperhead	*Agkistrodon laticinctus*
Bullsnake	*Pituophis catenifer sayi*
Checkered gartersnake	*Thamnophis marcianus*
Coachwhip	*Coluber flagellum*
Common gartersnake	*Thamnophis sirtalis*
DeKay's brownsnake	*Storeria dekayi*
Diamond-backed watersnake	*Nerodia rhombifer*
Eastern hog-nosed snake	*Heterodon platirhinos*
Eastern kingsnake	*Lampropeltis getula*
Eastern yellow-bellied racer	*Coluber constrictor flaviventris*
Flat-headed snake	*Tantilla gracilis*
Lined snake	*Tropidoclonion lineatum*
Plain-bellied watersnake	*Nerodia erythrogaster*
Plains threadsnake	*Rena dulcis*
Prairie kingsnake	*Lampropeltis calligaster*
Rough earthsnake	*Virginia striatula*
Rough greensnake	*Opheodrys aestivus*
Western diamond-backed rattlesnake	*Crotalus atrox*
Western ratsnake	*Pantherophis obsoletus*
Western ribbonsnake	*Thamnophis proximus*
Turtles	
Eastern box turtle	*Terrapene carolina*
Eastern mud turtle	*Kinosternon subrubrum*
Ornate box turtle	*Terrapene ornata*
Pallid spiny softshell turtle	*Apalone spinifera pallida*
Pond slider	*Trachemys scripta*
Snapping turtle	*Chelydra serpentina*
Spiny softshell	*Apalone spinifera*

TABLE 3-10 REPTILIAN SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA

COMMON NAME	SCIENTIFIC NAME
Texas cooter	*Pseudemys texana*
Yellow mud turtle	*Kinosternon flavescens*

Source: Dixon 2013.
Nomenclature follows: SSAR (Crother 2017).

Birds

A representative list of numerous avian species may occur within the study area as year-round residents, summer residents, and/or winter residents/migrants as shown in Table 3-11. Additional transient bird species may migrate within or through the study area in the spring and fall and/or use the area to nest (spring/summer) or overwinter. The likelihood for occurrence of each species will depend upon suitable habitat and season. Migratory bird species that are native to the United States or its territories are protected under the MBTA.

TABLE 3-11 AVIAN SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA

COMMON NAME	SCIENTIFIC NAME	RESIDENT	SUMMER	WINTER
ACCIPITRIFORMES: Accipitridae				
Broad-winged hawk	*Buteo platypterus*		X	
Cooper's hawk	*Accipiter cooperii*			X
Harris's hawk	*Parabuteo unicinctus*	X		
Mississippi kite	*Ictinia mississippiensis*		X	
Northern harrier	*Circus hudsonius*			X
Red-shouldered hawk	*Buteo lineatus*	X		
Red-tailed hawk	*Buteo jamaicensis*			X
Swainson's hawk	*Buteo swainsoni*		X	
White-tailed hawk	*Geranoaetus albicaudatus*	X		
White-tailed kite	*Elanus leucurus*	X		
ACCIPITRIFORMES: Cathartidae				
Black vulture	*Coragyps atratus*	X		
Turkey vulture	*Cathartes aura*	X		
ACCIPITRIFORMES: Pandionidae				
Osprey	*Pandion haliaetus*	X		
ANSERIFORMES: Anatidae				
American wigeon	*Anas americana*			X
Black-bellied whistling-duck	*Dendrocygna autumnalis*		X	
Blue-winged teal	*Anas discors*			X
Bufflehead	*Bucephala albeola*			X
Canada goose	*Branta canadensis*			X
Canvasback	*Aythya valisineria*			X
Gadwall	*Anas strepera*			X
Greater white-fronted goose	*Anser albifrons*			X

TABLE 3-11 AVIAN SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA

COMMON NAME	SCIENTIFIC NAME	RESIDENT	SUMMER	WINTER
Green-winged teal	*Anas crecca*			X
Lesser scaup	*Aythya affinis*			X
Mallard	*Anas platyrhynchos*	X		
Northern pintail	*Anas acuta*			X
Northern shoveler	*Anas clypeata*			X
Redhead	*Aythya americana*			X
Ring-necked duck	*Aythya collaris*			X
Ruddy duck	*Oxyura jamaicensis*			X
Snow goose	*Chen caerulescens*			X
Wood duck	*Aix sponsa*	X		X
APODIFORMES: Apodidae				
Chimney swift	*Chaetura pelagica*		X	
APODIFORMES: Trochilidae				
Black-chinned hummingbird	*Archilochus alexandri*		X	
Ruby-throated hummingbird	*Archilochus colubris*		X	
CAPRIMULGIFORMES: Caprimulgidae				
Common nighthawk	*Chordeiles minor*		X	
CHARADRIIFORMES: Charadriidae				
Killdeer	*Charadrius vociferus*	X		
Semipalmated plover	*Charadrius semipalmatus*		X	
CHARADRIIFORMES: Laridae				
Black tern	*Chlidonias niger*		X	
Bonaparte's gull	*Chroicocephalus philadelphia*			X
Forster's tern	*Sterna forsteri*			X
Ring-billed gull	*Larus delawarensis*			X
CHARADRIIFORMES: Recurvirostridae				
Black-necked stilt	*Himantopus mexicanus*		X	
CHARADRIIFORMES: Scolopacidae				
American woodcock	*Scolopax minor*			X
Baird's sandpiper	*Calidris bairdii*		X	
Greater yellowlegs	*Tringa melanoleuca*		X	
Least sandpiper	*Calidris minutilla*			X
Lesser yellowlegs	*Tringa flavipes*		X	
Long-billed curlew	*Numenius americanus*			X
Long-billed dowitcher	*Limnodromus scolopaceus*		X	
Pectoral sandpiper	*Calidris melanotos*		X	
Short-billed dowitcher	*Limnodromus griseus*		X	
Semipalmated sandpiper	*Calidris pusilla*		X	
Spotted sandpiper	*Actitis macularius*			X
Stilt sandpiper	*Calidris himantopus*		X	
Western sandpiper	*Calidris mauri*		X	
Willet	*Tringa semipalmata*		X	

TABLE 3-11 AVIAN SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA

COMMON NAME	SCIENTIFIC NAME	RESIDENT	SUMMER	WINTER
Wilson's phalarope	*Phalaropus tricolor*		X	
Wilson's snipe	*Gallinago delicata*			X
COLUMBIFORMES: Columbidae				
Eurasian collared-dove	*Streptopelia decaocto*	X		
Inca dove	*Columbina inca*	X		
Mourning dove	*Zenaida macroura*	X		
Rock pigeon	*Columba livia*	X		
White-winged dove	*Zenaida asiatica*	X		
CORACIIFORMES: Alcedinidae				
Belted kingfisher	*Megaceryle alcyon*	X		
CUCULIFORMES: Cuculidae				
Greater roadrunner	*Geococcyx californianus*	X		
Yellow-billed cuckoo	*Coccyzus americanus*		X	
FALCONIFORMES: Falconidae				
American kestrel	*Falco sparverius*			X
Crested caracara	*Caracara cheriway*	X		
Merlin	*Falco columbarius*			X
Prairie falcon	*Falco mexicanus*			X
GALLIFORMES: Odontophoridae				
Northern bobwhite	*Colinus virginianus*	X		
GALLIFORMES: Phasianidae				
Wild turkey	*Meleagris gallopavo*	X		
GAVIFORMES: Gaviidae				
Common loon	*Gavia immer*			X
GRUIFORMES: Gruidae				
Sandhill crane	*Grus canadensis*			X
GRUIFORMES: Rallidae				
American coot	*Fulica americana*	X		
Sora	*Porzana carolina*			X
Virginia rail	*Rallus limicola*			X
PASSERIFORMES: Alaudidae				
Horned lark	*Eremophila alpestris*			X
PASSERIFORMES: Bombycillidae				
Cedar waxwing	*Bombycilla cedrorum*			X
PASSERIFORMES: Calcariidae				
Chestnut-collared longspur	*Calcarius ornatus*			X
Lapland longspur	*Calcarius lapponicus*			X
McCown's longspur	*Rhynchophanes mccownii*			X
PASSERIFORMES: Cardinalidae				
Blue grosbeak	*Passerina caerulea*		X	
Dickcissel	*Spiza americana*		X	
Indigo bunting	*Passerina cyanea*		X	

TABLE 3-11 AVIAN SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA

COMMON NAME	SCIENTIFIC NAME	RESIDENT	SUMMER	WINTER
Northern cardinal	*Cardinalis cardinalis*	X		
Painted bunting	*Passerina ciris*		X	
Summer tanager	*Piranga rubra*		X	
PASSERIFORMES: Corvidae				
American crow	*Corvus brachyrhynchos*	X		
Blue jay	*Cyanocitta cristata*			
PASSERIFORMES: Passerellidae				
Cassin's sparrow	*Peucaea cassinii*		X	
Chipping sparrow	*Spizella passerina*			X
Clay-colored sparrow	*Spizella pallida*			X
Dark-eyed junco	*Junco hyemalis*			X
Eastern towhee	*Pipilo erythrophthalmus*			X
Field sparrow	*Spizella pusilla*			X
Fox sparrow	*Passerella iliaca*			X
Grasshopper sparrow	*Ammodramus savannarum*	X		
Harris's sparrow	*Zonotrichia querula*			X
Lark bunting	*Calamospiza melanocorys*			X
Lark sparrow	*Chondestes grammacus*	X		
LeConte's sparrow	*Ammodramus leconteii*			X
Lincoln's sparrow	*Melospiza lincolnii*			X
Savannah sparrow	*Passerculus sandwichensis*			X
Song sparrow	*Melospiza melodia*			X
Spotted towhee	*Pipilo maculatus*			X
Swamp sparrow	*Melospiza georgiana*			X
Vesper sparrow	*Pooecetes gramineus*			X
White-crowned sparrow	*Zonotrichia leucophrys*			X
White-throated sparrow	*Zonotrichia albicollis*			X
PASSERIFORMES: Fringillidae				
American goldfinch	*Spinus tristis*			X
House finch	*Haemorhous mexicanus*	X		
PASSERIFORMES: Hirundinidae				
Bank swallow	*Riparia riparia*		X	
Barn swallow	*Hirundo rustica*		X	
Cave swallow	*Petrochelidon fulva*		X	
Cliff swallow	*Petrochelidon pyrrhonota*		X	
Northern rough-winged swallow	*Stelgidopteryx serripennis*		X	
Purple martin	*Progne subis*		X	
Tree swallow	*Tachycineta bicolor*		X	
PASSERIFORMES: Icteridae				
Baltimore oriole	*Icterus galbula*		X	
Brewer's blackbird	*Euphagus cyanocephalus*			X
Brown-headed cowbird	*Molothrus ater*	X		X

TABLE 3-11 AVIAN SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA

COMMON NAME	SCIENTIFIC NAME	RESIDENT	SUMMER	WINTER
Common grackle	*Quiscalus quiscula*	X		
Eastern meadowlark	*Sturnella magna*	X		
Great-tailed grackle	*Quiscalus mexicanus*	X		
Orchard oriole	*Icterus spurius*		X	
Red-winged blackbird	*Agelaius phoeniceus*	X		X
Western meadowlark	*Sturnella neglecta*			X
PASSERIFORMES: Laniidae				
Loggerhead shrike	*Lanius ludovicianus*			X
PASSERIFORMES: Mimidae				
Brown thrasher	*Toxostoma rufum*			X
Gray catbird	*Dumetella carolinensis*		X	
Northern mockingbird	*Mimus polyglottos*	X		
PASSERIFORMES: Motacillidae				
American pipit	*Anthus rubescens*			X
PASSERIFORMES: Polioptilldae				
Blue-gray gnatcatcher	*Polioptila caerulea*		X	
PASSERIFORMES: Paridae				
Carolina chickadee	*Poecile carolinensis*	X		
Tufted titmouse	*Baeolophus bicolor*	X		
PASSERIFORMES: Parulidae				
American redstart	*Setophaga ruticilla*		X	
Black-and-white warbler	*Mniotilta varia*		X	
Common yellowthroat	*Geothlypis trichas*			X
Louisiana waterthrush	*Parkesia motacilla*		X	
Magnolia warbler	*Setophaga magnolia*		X	
Nashville warbler	*Oreothlypis ruficapilla*		X	
Northern parula	*Setophaga americana*		X	
Orange-crowned warbler	*Oreothlypis celata*			X
Pine warbler	*Septophaga pinus*	X		
Tennessee warbler	*Oreothlypis peregrina*		X	
Wilson's warbler	*Cardellina pusilla*			X
Yellow warbler	*Setophaga petechia*		X	
Yellow-breasted chat	*Icteria virens*		X	
Yellow-rumped warbler	*Setophaga coronata*			X
Yellow-throated warbler	*Setophaga dominica*		X	
PASSERIFORMES: Passeridae				
House sparrow	*Passer domesticus*	X		
PASSERIFORMES: Regulidae				
Golden-crowned kinglet	*Regulus satrapa*			X
Ruby-crowned kinglet	*Regulus calendula*			X

TABLE 3-11 AVIAN SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA

COMMON NAME	SCIENTIFIC NAME	RESIDENT	SUMMER	WINTER
PASSERIFORMES: Sturnidae				
European starling	*Sturnus vulgaris*	X		
PASSERIFORMES: Troglodytidae				
Bewick's wren	*Thryomanes bewickii*	X		
Carolina wren	*Thryothorus ludovicianus*	X		
House wren	*Troglodytes aedon*			X
Marsh wren	*Cistothorus palustris*	X		
Sedge wren	*Cistothorus platensis*			X
PASSERIFORMES: Turdidae				
American robin	*Turdus migratorius*			X
Eastern bluebird	*Sialia sialis*			X
Hermit thrush	*Catharus guttatus*			X
Wood thrush	*Hylocichla mustelina*		X	
PASSERIFORMES: Tyrannidae				
Acadian flycatcher	*Empidonax virescens*		X	
Alder flycatcher	*Empidonax alnorum*		X	
Eastern kingbird	*Tyrannus tyrannus*		X	
Eastern phoebe	*Sayornis phoebe*			X
Eastern wood-pewee	*Contopus virens*		X	
Great crested flycatcher	*Myiarchus crinitus*		X	
Least flycatcher	*Empidonax minimus*		X	
Scissor-tailed flycatcher	*Tyrannus forficatus*		X	
Western kingbird	*Tyrannus verticalis*		X	
Willow flycatcher	*Empidonax traillii*		X	
PASSERIFORMES: Vireonidae				
Blue-headed vireo	*Vireo solitarius*			X
Red-eyed vireo	*Vireo olivaceus*		X	
White-eyed vireo	*Vireo griseus*		X	
Yellow-throated vireo	*Vireo flavifrons*		X	
PELECANIFORMES: Ardeidae				
Black-crowned night-heron	*Nycticorax nycticorax*		X	
Cattle egret	*Bubulcus ibis*		X	
Great blue heron	*Ardea herodias*		X	
Great egret	*Ardea alba*	X		
Green heron	*Butorides virescens*		X	
Least bittern	*Ixobrychus exilis*		X	
Little blue heron	*Egretta caerulea*		X	
Snowy egret	*Egretta thula*		X	
Tricolored heron	*Egretta tricolor*	X		

TABLE 3-11 AVIAN SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA

COMMON NAME	SCIENTIFIC NAME	RESIDENT	SUMMER	WINTER
Yellow-crowned night-heron	*Nyctanassa violacea*		X	
PELECANIFORMES: Pelecanidae				
American white pelican	*Pelecanus erythrorhynchos*			X
White ibis	*Eudocimus albus*		X	
PICIFORMES: Picidae				
Downy woodpecker	*Dryobates pubescens*	X		
Ladder-backed woodpecker	*Picoides scalaris*	X		
Northern flicker	*Colaptes auratus*			X
Pileated woodpecker	*Dryocopus pileatus*	X		
Red-bellied woodpecker	*Melanerpes carolinus*	X		
PODICIPEDIFORMES: Podicipedidae				
Eared grebe	*Podiceps nigricollis*			X
Pied-billed grebe	*Podilymbus podiceps*			X
STRIGIFORMES: Strigidae				
Eastern screech-owl	*Megascops asio*	X		
Great horned owl	*Bubo virginianus*	X		
STRIGIFORMES: Tytonidae				
Barn owl	*Tyto alba*	X		
SULIFORMES: Anhingidae				
Anhinga	*Anhinga anhinga*	X		
SULIFORMES: Phalacrocoracidae				
Double-crested cormorant	*Phalacrocorax auritus*		X	
Neotropic cormorant	*Phalacrocorax brasilianus*			X

According to: Lockwood and Freeman (2014).
Nomenclature follows: Chesser et. al. (2024).

Mammals

A representative list of mammals that may potentially occur in the study area are listed in Table 3-12. The likelihood of occurrence of each species within the study area will depend upon suitable habitat.

TABLE 3-12 MAMMALIAN SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA

COMMON NAME	SCIENTIFIC NAME
ARTIODACTYLA: Cervidae	
White-tailed deer	*Odocoileus virginianus texana*
ARTIODACTYLA: Suidae	
Feral hog	*Sus scrofa*
CARNIVORA: Canidae	

TABLE 3-12 MAMMALIAN SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA

COMMON NAME	SCIENTIFIC NAME
Common gray fox	*Urocyon cinereoargenteus floridanus*
Coyote	*Canis latrans frustror*
Red fox	*Vulpes vulpes fulva*
CARNIVORA: Felidae	
Bobcat	*Lynx rufus texensis*
CARNIVORA: Mephitidae	
Eastern spotted skunk	*Spilogale putorius interrupta*
Striped skunk	*Mephitis mephitis mesomelus*
CARNIVORA: Mustelidae	
American badger	*Taxidea taxus*
American mink	*Vison vison mink*
Long-tailed weasel	*Mustela frenata arthuri*
CARNIVORA: Procyonidae	
Northern raccoon	*Procyon lotor fuscipes*
Ringtail	*Bassariscus astutus flavus*
CHIROPTERA: Molossidae	
Brazilian free-tailed bat	*Tadarida brasiliensis cynocephala*
CHIROPTERA: Vespertilionidae	
American perimyotis	*Perimyotis subflavus subflavus*
Eastern red bat	*Lasiurus borealis*
Evening bat	*Nycticeius humeralis humerlis*
Hoary bat	*Aeorestes cinereus cinereus*
CINGULATA: Dasypodidae	
Nine-banded armadillo	*Dasypus novemcinctus*
DIDELPHIMORPHIA: Didelphidae	
Virginia opossum	*Didelphis virginiana*
EULIPOTYPHLA: Soricidae	
Least shrew	*Cryptotis parva parva*
EULIPOTYPHLA: Talpidae	
Eastern mole	*Scalopus aquaticus*
LAGOMORPHA: Leporidae	
Black-tailed jackrabbit	*Lepus californicus*
Eastern cottontail	*Sylvilagus floridanus alacer*
Swamp rabbit	*Sylvilagus aquaticus*
RODENTIA: Castoridae	

TABLE 3-12 MAMMALIAN SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA

COMMON NAME	SCIENTIFIC NAME
American beaver	*Castor canadensis texensis*
RODENTIA: Cricetidae	
Eastern woodrat	*Neotoma floridana rubida*
Fulvous harvest mouse	*Reithrodontomys fulvescens aurantius*
Hispid cotton rat	*Sigmodon hispidus texianus*
North American deermouse	*Peromyscus maniculatus pallescens*
Northern pygmy mouse	*Baiomys taylori subater*
Plains harvest mouse	*Reithrodontomys montanus*
White-footed deermouse	*Peromyscus leucopus leucopus*
RODENTIA: Echimyidae	
Nutria	*Myocastor coypus*
RODENTIA: Heteromyidae	
Hispid pocket mouse	*Chaetodipus hispidus hispidus*
RODENTIA: Sciuridae	
Eastern fox squirrel	*Sciurus niger ludovicianus*
Thirteen-lined ground squirrel	*Ictidomys tridecemlineatus*

According to: Schmidly and Bradley (2016)
Nomenclature follows: Bradley et al. (2014)

Fisheries

In Texas, the divisions of the biotic provinces were separated based on terrestrial vertebrate distributions; however, the distribution of freshwater fishes generally corresponds with the terrestrial biotic province boundaries. Areas showing the greatest deviation from this general rule include northeast Texas and the coastal zone (Hubbs 1957). According to USGS topographic maps (2022a and 2022b), surface waters within the study area are intermittent and ephemeral streams and perennial ponds.

In general, intermittent flowing streams support aquatic species primarily adapted to ephemeral pool habitats. Aquatic species in this habitat type are typically adapted to rapid dispersal and life cycle completion in pool habitats typically having fine-grained substrates. Because intermittent streams consist of small headwater drainages, persistent flow is unlikely to be sufficient to support any substantial fishery assemblage. Perennial lakes and larger ponds provide consistent aquatic habitats for all trophic levels with fish being the most prominent. The relatively stable water levels of perennial lakes/ponds facilitate stable population growth. Species adapted for deeper waters will utilize lake and pond environments (Hubbs 1957).

In stream reaches dominated by scoured, sandy-clay bottoms, accumulations of woody debris and leaf pack provide the most important feeding and refuge areas for invertebrates and forage fish. Softer, muddy stream bottoms generally harbor substantial populations of burrowing invertebrates (e.g., larval diptera and oligochaetes) which can be an important food source for higher aquatic trophic levels (Thomas et al. 2007). Fish species potentially occur within the study area are listed in Table 3-13. The occurrence of each species within the study area is dependent upon available suitable habitat.

TABLE 3-13 FISH SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA

COMMON NAME	SCIENTIFIC NAME
ATHERINOPSIDAE: New World Silversides	
Brook silverside	*Labidesthes sicculus*
Inland silverside	*Menidia beryllina*
BELONIDAE: Needlefishes	
Atlantic needlefish	*Strongylura marina*
CATOSTOMIDAE: Suckers	
River carpsucker	*Ictiobus bubalus*
CENTRARCHIDAE: Sunfishes	
Bluegill	*Lepomis macrochirus*
Green sunfish	*Lepomis cyanellus*
Largemouth bass	*Micropterus salmoides*
Longear sunfish	*Lepomis megalotis*
Orangespotted sunfish	*Lepomis humilis*
Redear sunfish	*Lepomis microlophus*
Redbreast sunfish	*Lepomis auritus*
Smallmouth bass	*Micropterus dolomieu*
Spotted bass	*Micropterus punctulatus*
Warmouth	*Lepomis gulosus*
White crappie	*Pomoxis annularis*
CLUPEIDAE: Herrings	
Gizzard shad	*Dorosoma cepedianum*
Threadfin shad	*Dorosoma petenense*
CYPRINIDAE: Carps and Minnows	
Blacktail shiner	*Cyprinella venusta*
Bullhead minnow	*Pimephales vigilax*
Central stoneroller	*Campostoma anomalum*
Chub shiner	*Notropis potteri*
Common carp	*Cyprinus carpio*
Fathead minnow	*Pimephales promelas*
Golden shiner	*Notemigonus crysoleucas*
Red shiner	*Cyprinella lutrensis*
FUNDULIDAE: Topminnows	
Blackstripe topminnow	*Fundulus notatus*
Gulf killifish	*Fundulus grandis*

TABLE 3-13 FISH SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA

COMMON NAME	SCIENTIFIC NAME
Plains killifish	*Fundulus zebrinus*
ICTALURIDAE: North American Catfishes	
Black bullhead	*Ameiurus melas*
Channel catfish	*Ictalurus punctatus*
Flathead catfish	*Pylodictis olivaris*
Yellow bullhead	*Ameiurus natalis*
POECILIIDAE: Livebearers	
Western mosquitofish	*Gambusia affinis*
SCIAENIDAE: Drums and Croakers	
Freshwater drum	*Aplodinotus grunniens*

According to: Hendrickson and Cohen 2022.
Nomenclature follows: Hubbs et al. 2008.

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 vegetation communities within the study area were also reviewed. Special status species include those listed by the USFWS (2024b) IPaC report as threatened, endangered, candidate, or proposed for listing and species listed by the TPWD Rare, Threatened, and Endangered Species of Texas (RTEST) database (2024f) as threatened or endangered. POWER obtained a GIS data layer of documented observations for listed species and/or sensitive vegetation communities, identified as element occurrence records from the TXNDD for the study area (2024g). For this study, TXNDD information is not used as a substitute for a presence/absence survey, but as an indication of previous occurrences within suitable habitat for 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 July 11, 2024 (Project Code: 2024-0114707). This USFWS report identifies federally listed endangered, threatened, candidate, and proposed species and designated critical habitat potentially occurring within the study area (USFWS 2024b). By definition, an endangered species is 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. Candidate species are those that have sufficient information on their biological vulnerability and threats to support listing as threatened or endangered and are likely to be proposed for listing in the near future. 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 is no designated critical habitat within the study area (USFWS 2024b).

The TPWD also regulates plants and animals designated as endangered or threatened (Chapters 67 and 68 of the TPWC and § 65.171 - 65.176 of Title 31 of the TAC; and Chapter 88 of the TPWC 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.

Plant Species and Sensitive Vegetation Communities

No federal- or state-listed plant species are listed as potentially occurring within the study area (USFWS 2024b; TPWD 2024f). Review of TXNDD (TPWD 2024g) data did not identify element of occurrence records for plant species or sensitive vegetation communities within the study area.

Threatened and Endangered Animal Species

The USFWS (USFWS 2024b) IPaC official species list identifies federal listed animal species to consider for the study area. State-listed species in the TPWD RTEST database (TPWD 2024f) have also been included in Table 3-14. A brief description of each species' life history, habitat requirements, and any documented occurrences within the study area are summarized below. Only USFWS listed threatened or endangered species are afforded federal protection under the ESA. The IPaC report (USFWS 2024b) for the study area indicated that the piping plover (*Charadrius melodus*) and rufa red knot (*Calidris canutus rufa*) only need to be considered for wind energy projects. These species would not be considered in an effects analysis by the USFWS but have been included below for consistency. In addition, although the IPaC report did not identify the black rail (*Laterallus jamaicensis*), smalleye shiner (*Notropis buccula*), or the Texas fawnsfoot (*Truncilla macrodon*) to potentially occur within the study area, they are federally listed as stated by the TPWD RTEST report for Hill County (TPWD 2024f). The description of these species is discussed as state-listed species but have also been notated with the appropriate federal legal status in Table 3-14 for consistency.

Review of the TXNDD (TPWD 2024g) did not identify any mapped element occurrence records for federally or state-listed species within the study area.

The bald eagle (*Haliaeetus leucocephalus*), although federally delisted, is still afforded federal protection under the BGEPA and MBTA. The BGEPA prohibits knowingly, or with wanton disregard for the consequences of the action, taking bald and golden eagles, including live or dead individuals, nests, eggs, or any part of an individual, without a valid permit (16 U.S.C. 668(a); 50 CFR Part 22). Under the BGEPA, "take" is defined as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb" (16 U.S.C. § 668c; 50 CFR Part 22.3). Bald eagles nest and/or overwinter in Texas often near large bodies of water (Campbell 2003). Individuals and/or bald eagle nests may occur within the study area if potential suitable habitat is available.

TABLE 3-14 LISTED THREATENED AND ENDANGERED ANIMAL SPECIES FOR THE STUDY AREA COUNTY

SPECIES		LEGAL STATUS	
Common Name	**Scientific Name**	**USFWS[1]**	**TPWD[2]**
Birds			
Black rail	*Laterallus jamaicensis*	T	T
Golden-cheeked warbler	*Setophaga chrysoparia*	E	E
Interior least tern	*Sternula antillarum athalassos*	-	E
Piping plover	*Charadrius melodus*	T	T
Rufa red knot	*Calidris canutus rufa*	T	T
White-faced ibis	*Plegadis chihi*	-	T
Whooping crane	*Grus americana*	E	E
Fish			
Chub shiner	*Notropis potteri*	-	T
Smalleye shiner	*Notropis buccula*	E	E
Insects			
Monarch butterfly	*Danaus plexippus*	C	-
Mammals			
Tricolored bat	*Perimyotis subflavus*	PE	-
Mollusks			
Brazos heelsplitter	*Potamilus streckersoni*	-	T
Texas fawnsfoot	*Truncilla macrodon*	T	T
Reptiles			
Alligator snapping turtle	*Macrochelys temminckii*	PT	-
Texas horned lizard	*Phrynosoma cornutum*	-	T

Status abbreviations: C – Candidate for listing, E – Endangered, T – Threatened, PE – Proposed Endangered, PT – Proposed Threatened
Sources: [1]USFWS 2024b; [2]TPWD 2024f.

Federally Listed Species

BIRDS

Golden-cheeked Warbler

The golden-cheeked warbler is an understory species that nests in central Texas and overwinters in southern Mexico and northern Central America. This species' entire nesting range is confined to habitat in 39 counties located in central Texas. Nesting typically occurs from March to May in mature oak-juniper woodland vegetation

communities with a moderate to high density of mature Ashe juniper trees mixed with deciduous trees (e.g., oaks), creating a closed canopy (Pulich 1976; Campbell 2003). Suitable oak-juniper woodland habitat is typically located in moist areas along steep-sided slopes, drainages, and bottomlands; however, golden-cheeked warblers will also nest in upland oak-juniper woodlands on flat topography. Additionally, golden-cheeked warbler breeding pairs require contiguous foraging and nesting habitat of three to 20 acres (Pulich 1976). The study area occurs just outside the far eastern extent of the golden-cheeked warbler nesting range (USFWS 2024c). Within the study area, woodland vegetation occurs along Bynum Creek and unnamed tributaries of Bynum Creek, Pecan Creek, and White Rock Creek. However, the composition of the woodland vegetation within the study area is fragmented and does not create a continuous closed canopy necessary for foraging and nesting habitat. This species is not anticipated to occur within the study area due to lack of potential suitable habitat.

Piping Plover

The piping plover is an uncommon to locally common winter resident along the Texas coastline and rarely seen inland during migration. They occupy sandy beaches and lakeshores, bayside mudflats, and salt flats. Piping plovers feed on small marine insects and other small invertebrates (Elliot-Smith and Haig 2020). This species may occur as a rare non-breeding migrant (Lockwood and Freeman 2014), if potential suitable stopover habitat is available. However, the USFWS IPaC report (USFWS 2024b) states that impact considerations to piping plovers within the study area should only be taken into consideration for wind energy projects.

Rufa Red Knot

The rufa red knot is a long-distance migrant that may travel up to 5,000 miles during migration without stopping. Red knots nest in the arctic tundra and overwinter along the Texas coastline. A significant spring migratory stopover site is located in Delaware Bay where the species gorges on horseshoe crab eggs to prepare for their long flight (USFWS 2024d). Winter foraging habitats include coastal beaches, tidal sand flats, mudflats, marsh, shallow ponds, and sand bars (Baker et al. 2020). This species is a non-breeding winter migrant along the Texas coastline (Lockwood and Freeman 2014) and may occur temporarily within the study area as a rare migrant if potential suitable stopover habitat is available. However, the USFWS IPaC report (USFWS 2024b) states that impact considerations to rufa red knots within the study area should only be taken into consideration for wind energy projects.

Whooping Crane

The whooping crane breeds at Wood Buffalo National Park in Canada and overwinters primarily in marshes at Aransas National Wildlife Refuge on the Texas coast (USFWS 2009). Family groups of whooping cranes have

also been documented overwintering further inland in Central Texas, south-central Kansas, and central Nebraska, possibly in response to record warm temperatures and extreme drought conditions in the southern and central United States (Wright et al. 2014). Winter migration primarily occurs within a 200-mile-wide migratory corridor in which 95 percent of all whooping crane sightings occur. The study area occurs within the 80-mile portion of the migratory corridor, where 75 percent of whooping crane sightings have occurred during migration, and which has the greatest chance of stopovers (USFWS 2009). Migration stopover sites typically include small surface waters with emergent vegetation cover, harvested grainfields, pastures, or burned upland fields (Urbanek and Lewis 2020). This species may occur temporarily within the study area as a non-breeding migrant if potential stopover suitable habitat is available.

Federal Candidate Species

INSECTS

Monarch Butterfly

The monarch butterfly ranges from North and South America to the Caribbean, Australia, New Zealand, the Pacific islands, and Western Europe. The species has been proposed as a candidate species for protection under the ESA due to decreasing populations and habitat loss. Eastern and western monarch populations migrate both north and south on an annual basis. Populations usually overwinter in Mexico, Texas, Florida, and California and then spend the spring and summer months migrating back north. The entire migration cycle lasts for four generations of monarchs and no individual makes the round trip. Monarchs are heavily dependent on milkweed plants (*Asclepias* spp.) as larval hosts and to help produce poison. Preferred overwintering habitat includes appropriate roosting vegetation, dense tree cover, access to streams, and sufficiently warm temperatures to allow for flight (USFWS 2024e). This species may occur as a temporary migrant within the study area during specific times of the year if potential suitable habitat is available.

Federal Proposed Species

MAMMALS

Tricolored Bat

The tricolored bat has a large expansive range throughout eastern and central North America, occupying many different types of roost sites and locations. Individuals typically forage alongside trees and forest perimeters, in forested riparian corridors, and along waterways adjacent to forested areas (USFWS 2024f). While historically associated with forested areas, this species is an opportunistic generalist and will utilize a multitude of habitats and structures where potential roosting may be close to foraging habitat. Non-reproductive individuals have a propensity to select roost sites within mature stands of trees or near buffer zones near perennial streams.

Maternity and summer roost sites utilize dead trees and live tree foliage and may occur within man-made structures or tree cavities. Caves, mines, and rock crevices may also be utilized between foraging arrays. Winter hibernation sites occur within caves, mines, cave-like tunnels, or and sometimes within box culverts underneath highways adjacent to forested areas (USFWS 2024f). This species may occur within the study area if potential suitable habitat is available.

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 aquatic features in which they are found typically feed into the Gulf of Mexico. The species may also enter brackish waters near the coast and inhabit urban surface water environments (USFWS 2024g). This species may occur within the study area if potential suitable habitat is available.

State-Listed Species

BIRDS

Black Rail

The black rail has a large range throughout North, Central, and South America. Breeding habitat includes marshes with salt, brackish, and freshwater salinity; grass swamps; wet prairies; and pond borders. Preferred habitat is salty prairie and high salt marsh where grass stem counts of 10 to 20 centimeters or higher are present (TPWD 2015). Wintering habitat along the Gulf Coast has been identified as either tidally or non-tidally influenced persistent, herbaceous emergent wetlands occurring over the wetland-upland interface. This species is not anticipated to occur within the study area due to lack of potential suitable habitat.

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 large, 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.) (Thompson et al. 2020). This species is not anticipated to occur within the study area due to lack of potential suitable habitat.

White-faced Ibis

The white-faced ibis breeds and winters along the Texas Gulf Coast. Other breeding populations occurring in the northwestern United States 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 (Ryder and Manry 2020). This species may occur temporarily within the study area as a migrant (Lockwood and Freeman 2014) if potential suitable stopover habitat is available.

FISHES

Chub Shiner

The chub shiner is a small (up to 4.5 inches) species associated with sand and gravel substrates of large turbid perennial waters. Its current distribution in Texas includes the lower Brazos, Colorado, San Jacinto, and Trinity rivers and Galveston Bay (Perkin et al. 2009). It has also been collected from some smaller, less turbid tributaries of these surface waters (Hubbs and Bonham 1951). The chub shiner is highly susceptible to habitat fragmentation from the creation of impoundments and construction of dams that regulate water flow (Perkin et al. 2009). Warren et al. (2000) listed the Red River (from the mouth upstream to an including Kiamichi River), Galveston Bay (including minor coastal drainages west to mouth of Brazos River), Brazos River, and the Colorado River as the known distribution for this species. This species is not anticipated to occur within the study area due to the study area being outside of the known range of the species.

Smalleye Shiner

The smalleye shiner is a small, pale olive minnow native to the arid prairie streams of the Brazos River system. The Brazos River and its major tributaries, the Double Mountain and Salt Forks, provide shallow, flowing water with sandy substrates that comprise the general habitat for this species (USFWS 2024h). Historically, the smalleye shiner was found in most of the mainstream river; however, major impoundments have now restricted the shiner to the upper Brazos basin, upstream of Possum Kingdom Lake. This species is not anticipated to occur within the study area due to the study area being outside of the known range of the species.

MOLLUSKS

Brazos Heelsplitter

The Brazos heelsplitter is a freshwater mussel endemic to the Brazos River basin (Smith et al. 2019). It inhabits silt, sand, or mud substrates, in standing to slow flowing perennial surface waters, primarily on banks and backwater pools and occasionally in riffles. It has also been occasionally documented in lakes (Brazos River

Authority 2024a). This species is not anticipated to occur within the study area due to the intermittent flow regimes of the study area's surface waters and the study area being outside of the species' known historical range.

Texas Fawnsfoot

The Texas fawnsfoot is a freshwater mussel that inhabits silt, sand, and clay bottoms, in moderately flowing perennial channels and tributaries of the Colorado, Trinity, and Brazos rivers (Howells 2014). It has also been documented in flowing rice irrigation canals and is likely intolerant of impoundments (Brazos River Authority 2024b). Within the Trinity River basin, the Texas fawnsfoot is known to occur in the Trinity River and the East Fork of the Trinity River (USFWS 2024i). Habitat preference includes the edge of river runs and, occasionally, backwater, riffle, or point bar habitats (Brazos River Authority 2024b). This species may occur within the study area if flow regimes of the mapped surface waters create potential suitable habitat.

REPTILES

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 the spread of non-native fire ants (*Solenopsis invicta*) have caused population declines (Dixon 2013). According to mapped soil data (NRCS 2024), loam and gravelly soils occur on ridges and stream terrace landforms (Table 3-8) within the study area. This species may occur within the study area if potential suitable habitat is available.

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4.0 POTENTIAL IMPACTS OF THE CONSENSUS ROUTE

Potential impacts of the proposed Project that could occur from and are unique to the construction and operation of a transmission line are discussed in this section of the EA. POWER evaluated the potential impacts of the Consensus Route, identified in Section 2.0, by tabulating the data for each of the 42 environmental evaluation criteria in Table 2-1 (relating to community values, parks and recreation area, cultural resources, aesthetics, and environmental integrity). The results of the data tabulations are summarized in Table 4-1 for the Consensus Route.

TABLE 4-1 ENVIRONMENTAL DATA FOR CONSENSUS ROUTE

Evaluation Criteria		
Land Use		**Route**
1	Length of consensus route (miles)	3.64
2	Number of habitable structures[1] within 500 feet of ROW centerline	1
3	Length of ROW using existing transmission line ROW	0
4	Length of ROW parallel and adjacent to existing transmission line ROW	0
5	Length of ROW parallel and adjacent to other existing ROW (*e.g.*, roadways, highways, utilities)	0
6	Length of ROW parallel and adjacent to apparent property lines[2] (or other natural or cultural resources, ect.)	0
7	Sum of evaluation criteria 3, 4, 5, and 6	0
8	Percent of evaluation criteria 3, 4, 5, and 6	0%
9	Length of ROW across parks/recreational areas[3]	0
10	Number of additional parks/recreational areas[3] within 1,000 feet of ROW centerline	0
11	Length of ROW across cropland	3.53
12	Length of ROW across pasture/rangeland	0.11
13	Length of ROW across land irrigated by traveling systems (rolling or pivot type)	0
14	Length of ROW parallel and adjacent to existing pipeline ROW	0
15	Length of ROW parallel to existing pipeline ROW <500 feet from ROW centerline	0
16	Number of pipeline crossings	8
17	Number of transmission line crossings	0
18	Number of highway (interstate, US, and state) road crossings	0
19	Number of FM road crossings	0
20	Number of FAA registered airports[4] with at least one runway more than 3,200 feet in length located within 20,000 feet of ROW centerline	0
21	Number of FAA registered airports[4] having no runway more than 3,200 feet in length located within 10,000 feet of ROW centerline	0
22	Number of private airstrips within 10,000 feet of the ROW centerline	0
23	Number of heliports within 5,000 feet of the ROW centerline	0
24	Number of commercial AM radio transmitters within 10,000 feet of the ROW centerline	0
25	Number of FM radio transmitters, microwave towers, and other electronic installations within 2,000 feet of ROW centerline	0
Aesthetics		
26	Estimated length of ROW within foreground visual zone[5] of interstate, US and state highways	0
27	Estimated length of ROW within foreground visual zone[5] of FM roads	1.22
28	Estimated length of ROW within foreground visual zone[5][6] of parks/recreational areas[3]	0

TABLE 4-1 ENVIRONMENTAL DATA FOR CONSENSUS ROUTE

Evaluation Criteria		
Ecology		
29	Length of ROW across upland woodlands/brushlands	0
30	Length of ROW across bottomland/riparian woodlands	0
31	Length of ROW across NWI mapped wetlands	0
32	Length of ROW across USFWS designated critical habitat of federally listed endangered or threatened species	0
33	Length of ROW across open water (lakes, ponds)	0
34	Number of stream crossings	0
35	Length of ROW parallel (within 100 feet) to streams	0
36	Length of ROW across FEMA mapped 100-year floodplain	0
Cultural Resources		
37	Number of cemeteries within 1,000 feet of the ROW centerline	1
38	Number of recorded cultural resource sites crossed by ROW	0
39	Number of additional recorded cultural resource sites within 1,000 feet of ROW centerline	1
40	Number of NRHP listed properties crossed by ROW	0
41	Number of additional NRHP listed properties within 1,000 feet of ROW centerline	0
42	Length of ROW across areas of high archeological site potential (HPA)	0.18

[1]Single-family and multi-family dwellings, and related structures, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, churches, hospitals, nursing homes, schools, or other structures normally inhabited by humans or intended to be inhabited by humans on a daily or regular basis within 500 feet of the centerline of a transmission project of 230-kV or greater.
[2] Apparent property boundaries created by existing roads, highways, or railroads ROWs are not "double-counted" in the length of ROW parallel to apparent property boundaries criteria.
[3] Defined as parks and recreational areas owned by a governmental body or an organized group, club, or church within 1,000 feet of the centerline of the Project.
[4] As listed in the Chart Supplement South Central US (FAA 2024b formerly known as the Airport/Facility Directory South Central US) and FAA 2024a.
[5] One-half mile, unobstructed. Lengths of ROW within the foreground visual zone of interstates, US and state highway criteria are not “double-counted” in the length of ROW within the foreground visual zone of FM roads criteria.
[6] One-half mile, unobstructed. Lengths of ROW within the foreground visual zone of parks/recreational areas may overlap with the total length of ROW within the foreground visual zone of interstates, US and state highway criteria and/or with the total length of ROW within the foreground visual zone of FM roads criteria.
All length measurements are shown in miles unless noted otherwise.

4.1 Impacts on Community Values

Adverse effects upon community values are defined as aspects of the Consensus Route that would significantly and negatively alter the use, enjoyment, or intrinsic value attached to an important area or resource by a community. This definition assumes that community concerns are applicable to this specific Project’s location and characteristics, and do not include objections to electric transmission lines in general.

Potential impacts to community resources can be classified into direct and indirect effects. Direct effects are those that would occur if the location and construction of a transmission line and station result 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 Land Use

The magnitude of potential impacts to land use resulting from the construction of a transmission line is determined 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 local residents and businesses in the area immediately adjacent the ROW. Coordination between Lone Star, its contractors, and landowners regarding ROW access and construction scheduling should minimize these disruptions.

The evaluation criteria used to compare potential land use impacts include overall route length, route length parallel to existing linear features (including apparent property boundaries), route proximity to habitable structures, route proximity to park and recreational areas, and 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. An analysis of compatibility with adjacent land use types was completed for the Consensus Route. Land use categories identified within the study area include cropland, pastureland/rangeland, and oil and gas facilities.

Route Length

The length of a proposed route can be an indicator of the relative magnitude of land use impacts. Generally, all other things being equal, the shorter the route, the less land is crossed, which usually results in the least number of potential impacts. The total length of the Consensus Route is approximately 3.64 miles (see Table 4-1).

Compatible ROW

The PUC requires in 16 TAC § 25.101(b)(3)(B) that an applicant for a CCN, and ultimately the PUC, consider whether new transmission line routes are within existing compatible ROW and/or are parallel to existing compatible ROW, apparent property lines, or other natural or cultural features. Criteria were used to evaluate the use of existing transmission line ROW, length parallel and adjacent to existing transmission line ROW, length of route parallel to other existing linear ROW, and length of ROW paralleling apparent property lines. The Consensus Route does not utilize any an existing transmission line ROW. The Consensus Route is not parallel or adjacent to any existing transmission line ROW. The Consensus Route is not tabulated as parallel or adjacent to other existing ROW (e.g., roadways, highways, utilities). The Consensus Route is also not tabulated as parallel or adjacent to any apparent property lines or other natural or cultural resources (see Table 4-1). Although not tabulated as parallel and adjacent (abutting) to other compatible ROW, apparent property lines or other natural or cultural features, the Consensus Route was routed as close as reasonable to compatible ROW, apparent property lines and other natural or cultural features with respect to landowner consent to minimize impacts to agricultural and land use practices.

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 the 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 500 feet of the centerline of the Consensus Route. The distance from the centerline was determined through the use of GIS software, interpretation of aerial photography, and verification during reconnaissance surveys. The Consensus Route has one habitable structure located within 500 feet of its centerline (see Table 4-1). See *Section 2.5 Public Involvement* for discussion regarding consent from landowners having habitable structures within 500 feet of the centerline of the Consensus Route.

Table 4-2 presents detailed information on habitable structures located within 500 feet of the Consensus Route centerline. The distance to the habitable structure from the Consensus Route was measured using GIS software and aerial photograph interpretation. All known habitable structure locations are shown on Figure 4-2 (map pocket).

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 proposed use (pastureland/rangeland), followed by cultivated croplands, which have the highest degree of potential impact. Most existing agricultural land uses may be resumed within the ROW following construction. The Consensus Route crosses approximately 3.53 miles of cropland (see Table 4-1).

The Consensus Route crosses approximately 0.11 mile of pastureland/rangeland; however, because the ROW for this project will not be fenced or otherwise separated from adjacent lands, there will be no significant long-term displacement of farming or grazing activities. The Consensus Route does not cross any lands with known mobile irrigation systems (rolling or pivot type) (see Table 4-1).

4.2.3 Impacts on Lands with Conservation Easements

As discussed in Section 3.3.2, there are no properties within the study area with a known conservation easement. Therefore, the Consensus Route would have no direct impact on lands with conservation easements.

4.2.4 Impacts on Oil and Gas Facilities

Eight known pipelines are crossed by the Consensus Route (see Table 4-1). The Consensus Route does not parallel any known pipelines. Upon PUC approval of the proposed Project, the locations where the PUC-approved

route crosses the existing pipelines will be indicated on engineering drawings and flagged prior to construction. Lone Star will contact the pipeline operators to coordinate the crossing of the proposed transmission line to assure the safe and reliable operation of both facilities.

4.2.5 Impacts on Transportation, Aviation and Utility Features

Transportation Features

As mentioned in Section 3.3.5, two roadway projects, involving FM 308 and SH 171, were identified within the study area, but the Consensus Route does not cross either of these roadways or any other interstate, US Hwy, SH, or FM roadways (see Table 4-1). Potential impacts to transportation could include temporary disruption of traffic or conflicts with future proposed roadways and/or utility improvements. Traffic disruptions would include those associated with the movement of equipment and materials to the ROW, and slightly increased traffic flow and/or periodic congestion during the construction phase of the Consensus Route. In rural areas, these impacts are typically considered minor, temporary, and short-term. In urban areas, the temporary impacts to traffic flow can be significant during construction; however, the Consensus Route is not located in an area that is considered as urban. Lone Star will coordinate with the agencies in control of the affected roadways to address these traffic flow impacts.

Aviation Features

According to FAA regulations, Title 14 CFR Part 77, the construction of a transmission line requires FAA notification if tower structure heights exceed the height of an imaginary surface extending outward and upward at a slope of 100:1 for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of a public or military airport having at least one runway longer than 3,200 feet. The FAA also requires notification if tower structure heights exceed a 50:1 slope for a horizontal distance of 10,000 feet from the nearest runway of a public or military airport where no runway is longer than 3,200 feet in length, and if tower structure heights exceed a 25:1 slope for a horizontal distance of 5,000 feet for heliports.

No public FAA registered airports with at least one runway longer than 3,200 feet were identified within 20,000 feet of the Consensus Route. There were no FAA registered airports where a runway shorter than 3,200 feet were identified within 10,000 feet of the Consensus Route (see Table 4-1). There were no heliports identified within 5,000 feet of the Consensus Route (see Table 4-1). There are no known private airstrips identified within 10,000 feet of the Consensus Route (see Table 4-1). The Consensus Route is not anticipated to have significant effects on aviation operations within or outside of the study area.

Utility Features

The Consensus Route does not cross any existing electrical transmission lines (see Table 4-1). Distribution lines were identified throughout the study area and may be crossed by the Consensus Route; however, these features were not mapped or inventoried. Potential impacts to oil and gas facilities and pipelines were discussed previously in Section 4.2.4. If additional unidentified utility features are crossed by or are in close vicinity to the Consensus Route centerline approved by the PUC, Lone Star will coordinate with the appropriate entities to obtain necessary permits or permission, as required.

4.2.6 Impacts on Electronic Communication Facilities

The Consensus Route would not have a significant impact on electronic communication facilities or operations in the study area. No commercial AM radio towers were identified within 10,000 feet of the Consensus Route centerline. Additionally, no FM radio towers or other electronic communication facilities were identified within 2,000 feet of the Consensus Route centerline (see Table 4-1).

4.2.7 Impacts on Parks and Recreation Areas

Potential impacts to parks or recreation areas include the disruption or preemption of recreation activities. As previously mentioned in Section 3.3.7, no parks or recreational areas were identified within the study area. Therefore, no impacts to the use of the parks and recreation facilities located within the study area are anticipated to result from the location of the Consensus Route.

No adverse impacts are anticipated for any of the private fishing or hunting areas from the Consensus Route. The Consensus Route does not cross and is not located within 1,000 feet of any parks or recreation facilities (see Table 4-1).

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. For this Project, some short-term employment may be generated. Lone Star normally uses contract labor supervised by Lone Star employees (or employees of Lone Star affiliates) 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. Lone Star is also 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.

4.4.1 Direct Impacts

Typically, direct impacts could be caused by the actual construction of the line or through increased vehicular and pedestrian traffic during the construction phase. Absent BMPs, proper mitigation, and avoidance measures, historic buildings, structures, landscapes, and districts are among the types of resources that could be adversely impacted by the construction of a transmission line. Additionally, an increase in vehicular and/or pedestrian traffic might damage surficial or shallowly buried 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 affects 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. Absent BMPs, proper mitigation, and avoidance measures, historic buildings, structures, landscapes, and districts are among the types of resources that could be adversely impacted by the indirect impact of a transmission line.

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

A file review described in Section 3.5, indicated that no National Historic Landmarks, NRHP-listed properties, or State Antiquities Landmarks have been recorded within 1,000 feet of the Consensus Route. One archeological site and one cemetery are recorded within 1,000 feet of the Consensus Route; however, neither is crossed by the Consensus Route. The cultural resources recorded within 1,000 feet of the Consensus Route are discussed below.

Archeological site 41HI318 is a post-contact site for which no additional descriptive data is available on the TASA. The site has not been formally evaluated for inclusion on the NRHP and is approximately 881 feet from the Consensus Route.

The Salem-Lutheran Cemetery (HI-C050) is associated with the place of worship of the same name and is commemorated in an OTHM. The cemetery is approximately 358 feet from the Consensus Route; therefore, no impacts to the cemetery are anticipated (see Table 4-1). All known cemetery locations within the study area are shown on Figure 4-1 and Figure 4-2 (map pocket).

The Consensus Route has not been systematically surveyed for cultural resources. Thus, the potential for undiscovered cultural resources exists along the Consensus Route. To assess this potential, a review of geological, soils, and topographical maps was undertaken by a professional archeologist to identify areas along the Consensus Route where unrecorded pre-contact archeological resources have a high probability to occur. These HPAs for pre-contact archeological sites were identified near major streams and their tributaries and on terraces overlooking the streams. HPAs for post-contact resources were identified near previously recorded post-contact archeological sites and near structures identified on historic topographic maps that are not visible on modern aerials. To facilitate the data evaluation, each HPA was mapped using GIS and the length of the Consensus Route crossing these areas was tabulated. As shown in Table 4-1, the Consensus Route crosses approximately 0.18 mile of HPA for cultural resources.

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, if left on site, could have an additional negative temporary impact on the local visual environment. Permanent impacts from the Project would involve the views of the cleared ROW, tower structures, and lines from public viewpoints including roadways, recreational areas, and scenic overlooks.

Since no designated landscapes protected from most forms of development or legislation exist within the study area, potential visibility impacts were evaluated by estimating the length of the Consensus 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, US Hwys, or SH highways located within the study area. The Consensus Route lengths within the foreground visual zone of FM roads and parks or recreational areas were tabulated and are discussed below.

The Consensus Route has approximately 1.22 miles of length of its ROW located within the foreground visual zone of FM roads. The Consensus Route does not have any portion of its ROW length located within the foreground visual zone of parks or recreational areas (see Table 4-1).

Overall, the character of the rural landscape within the study area includes gently rolling pasturelands with trees bordering the fence lines or along the creek. The agricultural development within the study area has already impacted the aesthetic quality within the region from public viewpoints. The construction of the Consensus Route is not anticipated to significantly impact the aesthetic quality of the landscape further.

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 the Consensus Route. No geologic hazards were identified within the study area and no geologic hazards are anticipated to be created by the Consensus Route.

4.6.2 Impacts on Soils

Potential impacts to soils from the construction of electric transmission lines include erosion and compaction. Such impacts can be minimized with the implementation of appropriate mitigation measures during the construction phase. No conversion of prime farmland soils is anticipated for the Project.

The highest risk for soil erosion and compaction is associated with the clearing and construction phases of the Project. Clearing of woody vegetation would be conducted within the ROW boundary, as necessary, to achieve the conductor to ground clearances for the transmission line. Areas with vegetation removed would have the highest potential for soil erosion and the movement of heavy equipment along the ROW creates the greatest potential for soil compaction. Prior to construction, Lone Star will develop a Stormwater Pollution Prevention Plan (SWPPP) in accordance with Permit TXR1500000 to minimize potential impacts associated with soil erosion, compaction, and off ROW sedimentation. Implementation of this plan would incorporate temporary and/or permanent BMPs to minimize soil erosion on the ROW during rainfall events. The SWPPP will also establish the criteria for mitigating soil compaction and re-vegetation to maintain soil stabilization during the construction and post construction phases. The native herbaceous layer of vegetation will be maintained, to the extent practical, during construction. Denuded areas will be seeded and/or further stabilized with the implementation of permanent BMPs (i.e., soil berms or interceptor slopes), if necessary, to stabilize disturbed areas and minimize soil erosion potential. As per TXR1500000, the ROW will be inspected during and post construction to identify potential high erosion areas and that appropriate BMPs are implemented and maintained for construction activities.

4.6.3 Impacts on Water Resources

Impacts on Surface Water

According to the reviewed data, the Consensus Route does not cross any named or unnamed surface waters within the study area. If necessary, Lone Star proposes to span all surface waters. Structures will be constructed outside of the ordinary high water marks for any surface waters. Hand-clearing 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 into surface waters. Since all surface waters are anticipated to be spanned and a SWPPP plan will be implemented during construction, no significant impacts to surface waters are anticipated for the Consensus Route. The number of stream crossings, length of the Consensus Route crossing open water (e.g., lakes, ponds), and length parallel (within 100 feet) to streams is provided in Table 4-1.

The Consensus Route has zero stream crossings (there are no river crossings), does not cross open water (lakes, ponds), and does not parallel (within 100 feet) streams.

Impacts on Ground Water

The construction, operation, and maintenance of the proposed transmission line is not anticipated to adversely affect groundwater resources within the study area. During construction activities, a potential impact for groundwater resources is related to fuel and/or other chemical spills. Avoidance and minimization measures of potential contamination of water resources will be identified in the SWPPP. Lone Star will take necessary precautions to avoid the occurrence of these spills. If an unauthorized discharge occurs during construction, Lone Star will comply with TCEQ notification and remediation requirements.

Impacts on Floodplains

The construction of the Consensus Route is not anticipated to impact the overall function of the floodplains within the study area, or adversely affect adjacent or downstream properties. Engineering design should alleviate the potential of the transmission line to adversely impact flood channels and proper structure placement will minimize any flow impedance during a major flood event. Typically, the footprint of a structure does not significantly alter the flow of water within a floodplain.

The Consensus Route does not cross FEMA-mapped 100-year floodplains. Prior to construction, Lone Star will coordinate with the county floodplain administrator to acquire any required permits.

Impacts on Future Surface Water Developments

Review of the TWDB Water Planning Region Brazos – G water plan (TWDB 2021) and State Water Plan (TWDB 2022) did not indicate any planned future surface water development projects proposed within the study area. As a result, no impacts are anticipated to occur to future surface water development projects.

4.6.4 Impacts on Ecological Resources

Impacts on Vegetation Types

As indicated in Table 4-1, the Consensus Route does not cross upland woodlands/brushlands or bottomland/riparian woodlands. 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 transmission ROW, potential access roads (temporary and permanent), and additional workspaces required for construction activities. The clearing activities will be completed while minimizing the impacts to existing

groundcover vegetation when practical. Future ROW maintenance activities might include periodic mowing and/or herbicide applications to maintain an 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, railway, or pipeline. During the route development process, consideration was given to avoid wooded areas and/or to maximize the length of the routes parallel to existing linear features.

Impacts on Wetlands

As indicated in Table 4-1, the Consensus Route does not cross NWI-mapped wetlands. Wetland areas provide habitat to numerous wildlife species and are often used as migration corridors. Removal of vegetation in wetlands increases the potential for erosion and sedimentation, which can be detrimental to downstream plant communities and aquatic life.

The temporary and/or permanent placement of fill material within jurisdictional waterways and wetlands may require a permit from the USACE under Section 404 of the CWA. If necessary, Lone Star will perform a delineation of potential wetlands crossed by the Consensus Route and consult with the USACE – Fort Worth District to determine permit requirements.

Removal of woody vegetation within forested or scrub-shrub wetlands may be conducted using hand-clearing methods and temporary construction matting may be used within all wetland types to minimize disturbance of the soil profile. If hand-clearing of forested or scrub-shrub wetlands is unachievable, a pre-construction notification and compensatory mitigation may be required. Spanning wetland areas and implementing mitigation measures with BMPs as appropriate during construction activities will also avoid and minimize impacts to wetlands.

Lone Star proposes to implement BMPs as a component of their SWPPP to prevent off-ROW sedimentation and potential degradation of surface waters and associated wetland areas. If wetland areas are traversed by equipment during construction, equipment matting will be utilized to minimize soil disturbances.

Impacts on Wildlife and Fisheries

The primary impacts of construction activities on wildlife species are typically associated with temporary disturbances and with the removal of vegetation. Increased noise and equipment movement during construction might temporarily displace mobile wildlife species from the immediate workspace area. These impacts are typically 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.

The Consensus Route does not cross areas of upland woodlands/brushlands or bottomland/riparian woodlands. These areas can represent the highest degree of habitat fragmentation by converting the area within the ROW to an herbaceous habitat. During the routing process, POWER and Lone Star attempted to minimize potential woodland habitat fragmentation by paralleling existing linear features and avoiding paralleling streams to the extent feasible.

Construction activities might also impact small, immobile, or fossorial (living underground) animal species through incidental impacts or from the alteration of local habitats. Disturbances to 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 season, potential direct impacts could occur related to bird eggs and/or nestlings. Increases in noise and equipment activity levels during construction could also potentially indirectly impact breeding, nesting, and/or foraging activities in areas immediately adjacent to the ROW. If ROW clearing activities are necessary during the migratory bird nesting season (generally known to be March 15 to September 15), Lone Star will comply with state (TPWC Chapter 64) and federal (MBTA) regulations regarding avian species by having a qualified biologist conduct surveys for active nests prior to vegetation clearing.

Transmission lines can also present additional hazards to birds from electrocutions and collisions with the infrastructure. While the conductors are typically thick enough to be visible and avoided by birds in flight, shield wires are thinner, which reduces visibility, and can present a risk for avian collision. The electrocution risk to birds should not be significant since the engineering design distance between conductors, conductor to structure, and 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). The risk for avian collisions with the shield wire can be minimized by installing bird flight diverters or other marking devices on the line within determined high bird use areas.

Tree clearing activities may impact bat species, potential occupied hibernacula, and their potential roosting habitat. Lone Star should consult with TPWD and/or USFWS prior to clearing activities to determine if there are known hibernacula or roosting habitats within the study area. Compliance with the USFWS Final 4(d) Rule guidelines would help avoid accidental clearing of occupied hibernacula and roosting habitat. Impacts to listed bat species can also be minimized by conducting clearing activities during the species' wintering months.

Potential impacts to aquatic ecosystems include effects resulting from erosion, siltation, and sedimentation. Vegetation clearing of the ROW may result in a temporary increase of suspended solids in surface waters crossed by the transmission line. Increases in suspended solids might adversely affect aquatic organisms that require relatively clear water for foraging and/or reproduction. Increased levels of siltation or sedimentation might also potentially impact downstream areas primarily affecting filter feeding benthic and other aquatic invertebrates. Implementation of a SWPPP and BMPs will minimize these potential impacts. Aquatic habitats were not identified to be crossed by the Consensus Route and, therefore, no significant adverse impacts are anticipated.

Construction of the proposed transmission line is not anticipated to have significant impacts to wildlife and fisheries within the study area. Direct impacts would be associated with the loss of woodland habitat, which is not anticipated as a result of construction of the Consensus Route. While highly mobile wildlife might temporarily be displaced from habitats near the ROW during the construction phase, normal movement patterns typically 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 readily available information was completed. A USFWS (2024b) IPaC consultation, TPWD (2024f) county listings, and USFWS (2024b) designated critical habitat locations were included in the review. Known occurrence data from the TXNDD (2024g) for the study area and Project scoping comments from TPWD (see Appendix A) were also reviewed.

The TXNDD data provides past records of state-listed, rare, and federally threatened/endangered species and sensitive vegetation communities that have been documented within a given area. Review of the TXNDD did not indicate any element occurrence records of federally or state-listed species within the study area. The absence of listed species within the TXNDD database is not a substitute for a species-specific field survey and does not preclude the need for additional habitat evaluations for the Consensus Route. Prior to construction, a field survey of the Consensus Route is recommended to determine if suitable habitat for threatened and endangered species is present. Additional consultation with USFWS and TPWD might be required if suitable habitat is observed during field surveys.

Plant Species and Sensitive Vegetation Communities

No federal- or state-listed plant species were identified for the study area and construction of the Consensus Route is not anticipated to impact any threatened or endangered plant species. Review of TXNDD data did not identify element of occurrence records for plant species or sensitive vegetation communities within the study area.

Threatened and Endangered Animal Species

As indicated in Table 4-1, the Consensus Route does not cross any USFWS designated critical habitat of federally listed threatened or endangered species.

Federal-listed, Proposed, and Candidate Species

Potential federally listed avian species in the study area identified by the IPaC report include the golden-cheeked warbler, piping plover, rufa red knot, and whooping crane. The USFWS only requires consideration of impacts to the piping plover and rufa red knot for wind energy projects within their migratory route; however, for due diligence, they have been included in this impact evaluation. Although the piping plover and/or rufa red knot may occur as migrants within the study area, no significant impacts to nesting or foraging habitat for these species is anticipated from the Consensus Route.

Based on aerial imagery interpretation and field reconnaissance surveys, woodland vegetation within the study area is not anticipated to support the golden-cheeked warbler due to the lack of a major mature ashe juniper component. No impacts from the Consensus Route are anticipated to occur to this species.

The whooping crane may occur temporarily within the study area as non-breeding migrant if potential suitable stopover habitat is available. According to correspondence with the TPWD dated July 8, 2024 (Appendix A), "The study area occurs within the core migration corridor that represents 95% of the sightings during whooping crane migration (Pearse et al. 2018). Additionally, the study area occurs within a peripheral stopover polygon based on the *Characterization of whooping crane migration space use in the Central Flyway, 2010-2016* and the associated companion publication (Pearse et al. 2019 and 2020)." TPWD recommends avoiding Project development within areas that may provide stopover habitat for whooping cranes during migration and to proactively install bird flight diverters to reduce potential collision risk. This species may be susceptible to minor temporary disturbance during construction efforts; however, no impacts from the Consensus Route are anticipated to occur to this species' nesting or foraging habitat. Prior to construction, additional consultation with USFWS might be required to determine appropriate mitigation practices, if any.

The tricolored bat is a proposed endangered species that may occur within the study area if potential suitable habitat is available. According to the correspondence with the TPWD dated July 8, 2024 (Appendix A), it is recommended that tree clearing activities should be avoided during the pupping season from May 1 to July 15, during winter torpor from December 15 to February 15, and minimizing the Project's overall tree clearing footprint in anticipation of a listing decision by USFWS. This species may be susceptible to minor temporary disturbance during construction efforts; however, no impacts from the Consensus Route are anticipated to occur to this species' roosting or foraging habitat. If the tricolored bat becomes federally listed prior to construction,

additional consultation with USFWS and/or a voluntary environmental review process as detailed by the USFWS Consultation Guidance (USFWS 2024j) for the tricolored bat may be required to determine appropriate mitigation practices, if any.

The alligator snapping turtle is a proposed threatened species that may occur within the study area if potential suitable habitat is available. However, no impacts from the Consensus Route are anticipated to occur to this species because the Consensus Route does not cross potential suitable habitat for this species. If the alligator becomes federally listed prior to construction, additional consultation with USFWS might be required to determine appropriate mitigation practices, if any.

The monarch butterfly is a candidate species that may occur as a temporary migrant within the study area during specific times of the year if potential suitable habitat is available. According to the correspondence with the TPWD dated July 8, 2024 (Appendix A), it is recommended that development strategies be implemented during construction to avoid or minimize loss to migration habitat as a result of the construction of the Project. This species may be susceptible to minor temporary disturbance during construction efforts; however, no impacts from the Consensus Route are anticipated to occur to this species' migration habitat.

Other Federally Protected Species

Bald eagles may occur within the study area if suitable habitat is available. Bald eagles and their nests are protected under the MBTA and BGEPA. 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, Lone Star will further coordinate with the USFWS to determine avoidance or mitigation strategies.

State-listed Species

The black rail, interior least tern, chub shiner, smalleye shiner, and Brazos heelsplitter are not anticipated to occur within the study area due to lack of potential suitable habitat and/or the study area being outside of the species' known range. Therefore, no impacts from the Consensus Route are anticipated to occur to these species.

The white-faced ibis may occur as a possible migrant or transient species within the study area and potentially occupy habitats temporarily or seasonally. No impacts from the Consensus Route are anticipated to occur to this species' breeding or foraging habitat.

The Texas fawnsfoot may occur within the study area if flow regimes of the mapped surface waters create potential suitable habitat. However, no impacts from the Consensus Route are anticipated to occur to this species because the Consensus Route does not cross potential suitable habitat for this species. In addition, Lone Star

proposes to span all surface waters and implement a SWPPP to prevent off-ROW sedimentation and degradation of surface waters.

The Texas horned lizard may occur within the study area if potential suitable habitat is available. Due to limited mobility and hibernation behavior, the Texas horned lizard may be impacted by equipment/vehicular traffic and soil compaction. If this species is observed during a field survey of the Consensus Route, additional consultation with TPWD might be required to determine impact mitigation practices. If this species is observed during the construction phase, it will be allowed to safely leave the area on its own or be relocated by a TPWD-permitted biologist to suitable habitat in a safe area outside of the Project ROW and workspaces.

The Consensus Route is illustrated on Figures 4-1 (topographic based) and 4-2 (aerial based).

TABLE 4-2 HABITABLE STRUCTURES AND OTHER LAND USE FEATURES IN THE VICINITY OF THE CONSENSUS ROUTE

MAP NUMBER	STRUCTURE OR FEATURE	APPROXIMATE DISTANCE FROM ROUTE CENTERLINE[1] (FEET)
1	Single Family Residence	347
200	Salem Lutheran Cemetery	358
--	41HI314	--

[1] Due to the potential horizontal inaccuracies of the aerial photography and data utilized, all habitable structures within 510 feet have been identified.
[2] Distances to sensitive cultural resource sites are not provided for protection of the sites.

5.0 LIST OF PREPARERS

This EA and Route Analysis was prepared for Lone Star by POWER. A list of the POWER employees with primary responsibilities for the preparation of this document is presented below.

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Appendix A

Agency and Other Correspondence

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FEDERAL

Mr. Rob Lowe
Southwest Regional Administrator
Federal Aviation Administration
10101 Hillwood Parkway
Fort Worth, TX 76177

Mr. Tony Robinson
Region 6 Regional Administrator
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STATE

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Texas Commission on Environmental Quality
6801 Sanger Ave., Ste. 2500
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HILL COUNTY

The Honorable Justin W. Lewis
Hill County Judge
P. O. Box 457
Hillsboro, TX 76645

The Honorable Jim Holcomb
Hill County Commissioner
Precinct 1
P. O. Box 457
Hillsboro, TX 76645

The Honorable Larry Crumpton
Hill County Commissioner
Precinct 2
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The Honorable Scotty Hawkins
Hill County Commissioner
Precinct 3
P. O. Box 457
Hillsboro, TX 76645

The Honorable Martin Lake
Hill County Commissioner
Precinct 4
P. O. Box 457
Hillsboro, TX 76645

Ms. Windy Schwartz
Superintendent
Malone Independent School District
202 W Hackberry St.
Malone, TX 76660

Mr. Larry Mynarcik
Superintendent
Bynum Independent School District
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Bynum, TX 76631

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Hill County Farm Bureau
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Ms. Lori Olson
Texas Land Trust Council
Executive Director
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San Antonio, TX 78215

Mr. Russell Devorsky
Executive Director
Heart of Texas Council of Governments
1514 S. New Road
Waco, TX 76711

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June 7, 2024
(Via Mail)

«Name»
«Company_or_Title»
«Department»
«Address»
«City_State_Zip»

Re: Lone Star Transmission, LLC Aquilla Lake 3 Transmission Line Project
Hill County, Texas
POWER Engineers, Inc. Project No. 251218

Dear «Name»,

Lone Star Transmission, LLC (LST), is planning to file an application with the Public Utility Commission of Texas (PUC) to amend its Certificate of Convenience and Necessity (CCN) to construct a new single-circuit 345 kilovolt (kV) transmission line in Hill County, Texas.

The proposed 345 kV transmission line will begin at the proposed Bullock LST 345 kV Station, located north of Malone, Texas and west of Farm-to-Market (FM) 308. The proposed 345 kV transmission line will extend to the Aquilla Lake 3 Point of Interconnection (POI) located south of FM 1946 and east of State Highway 171. **There are no proposed routes for the project at this time.** The study area along with the proposed Bullock LST 345 kV Station, Aquilla Lake 3 POI, and existing transmission line facilities are shown on the enclosed study area map.

POWER Engineers, Inc. (POWER) is preparing a state-level Environmental Assessment and Alternative Route Analysis (EA) for the project to support LST'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 to develop an environmental and land use constraints map. POWER will also identify and evaluate alternative routes between the end points that consider identified constraints.

POWER is requesting that your agency/office provide information concerning environmental and land use constraints or other issues of interest you may have regarding the potential environmental effects from the construction of the transmission line within the designated study area. Your input will be an important consideration in the evaluation of the route and in the assessment of potential impacts of the route. 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 final selection and approval of a route by the PUC, LST will identify and obtain necessary permits from the appropriate regulatory entities. LST does not plan to receive any federal funding or assistance for this project.

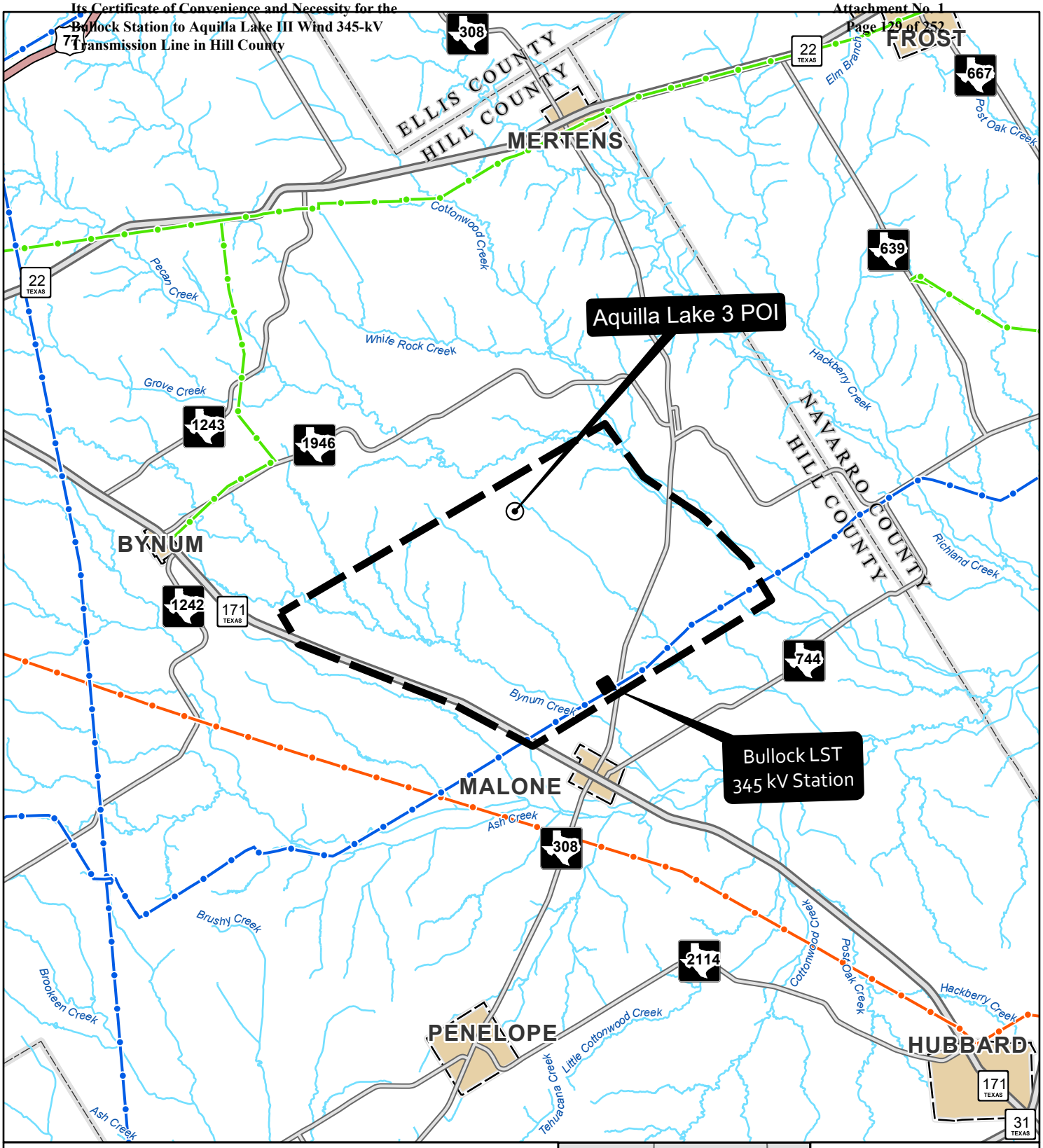
Thank you for your assistance with this proposed electric transmission line project. Please contact me by phone at 512-735-1805, or by e-mail at gary.mcclanahan@powereng.com if you have any questions or require additional information. Your earliest reply would be appreciated.

Sincerely,

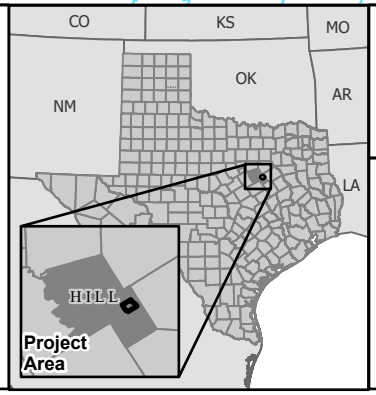
Gary McClanahan
Senior Project Manager
Department Manager

Enclosure(s):
Study Area Map

Sent via Mail
ProjectWise 251218



Proposed Point of Interconnection (POI)
Study Area Boundary
Proposed Station
69 kV Existing Transmission Line
138 kV Existing Transmission Line
345 kV Existing Transmission Line
US Highway
State Highway
Farm-to-Market Road
River / Stream
Town
County Boundary



AQUILLA LAKE 3 TRANSMISSION LINE PROJECT

STUDY AREA

0 2
Miles

LONEstar
POWER ENGINEERS
Date: 5/30/2024

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

FEMA

FEDERAL EMERGENCY MANAGEMENT AGENCY
REGION VI
MITIGATION DIVISION

RE: POWER Engineers, Inc. Project No. 251218 - Lone Star Transmission, LLC Aquilla Lake 3 Transmission Line Project Hill County, Texas

NOTICE REVIEW/ENVIRONMENTAL CONSULTATION

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

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

Malone City Contact:
Molly Hopson
City Secretary
(254) 533-2261
malonecity@outlook.com

Hill County Contact:
Tom Hemrick
Emergency Management Coordinator
(254) 266-0006
themrick@co.hill.tx.us

REVIEWER:

Dana Velazquez
Floodplain Management and Insurance Branch Admin
Mitigation Division
dana.velazquez@fema.dhs.gov
(202) 341-8673

DATE: June 28, 2024

From:	Holle, Chris - FPAC-NRCS, TX
To:	McClanahan, Gary
Cc:	Stahnke, Alan - FPAC-NRCS, TX; Anderson, Ashley - FPAC-NRCS, TX
Subject:	[EXTERNAL] EA -Lone Star Transmission, LLC Aquilla lake 3 Transmission Line Project, Hill County, Texas; Project No. 251218
Date:	Tuesday, July 9, 2024 10:18:08 AM
Attachments:	Lone Star Transmission,LLC Aquilla Lake 3 Transmission Line_Soil_Report.pdf Lone Star Transmission, LLC Aquilla Lake 3 Transmission Line Project_Letter.pdf

Gary,

Attached you will find the soil report and letter for the requested environmental assessment. This, updated, assessment is for the Proposed Lone Star Transmission, LLC Aquilla lake 3 Transmission Line Project, Hill County, Texas. Should you have any questions or need additional information, please let me know.

Thanks,

Chris Holle
USDA-NRCS
101 S. Main
Temple, Texas
(254) 742-9951

USDA United States Department of Agriculture

Farm Production and Conservation

Natural Resources Conservation Service

USDA NRCS
W.R. Poage Federal Building
101 South Main Street
Temple, TX 76501

July 9, 2024

Power Engineers, Inc.
7600B N Capital of Texas Hwy
Suite 320
Austin, TX 78731

Attention: Gary McClanahan, Senior Project Manager

Subject: Proposed Lone Star Transmission, LLC Aquilla Lake 3 Transmission Line Project in Hill County, TX; Project No. 251218

Thank you for the opportunity to provide input on the potential environmental effects of the Proposed Lone Star Transmission, LLC Aquilla Lake 3 Transmission Line Project in Hill County. The proposed site has been evaluated and does not involve any USDA-NRCS easements.

The soils in the proposed project area have been reviewed. There are a few soil limitations in the project area that should be taken into consideration while planning for the project. As with any project, soil erosion is a main concern and erosion prevention practices are recommended. There is a high potential for steel corrosion and low to moderate potential for concrete corrosion the area. There are no hydric soils, which can be indicators of wetlands. There is some flooding potential and soils with seasonal water tables.

Enclosed is a Web Soil Survey map and reports illustrating the location of the soils as well as the ratings for related interpretations that are described above. We encourage you to consider this information during the construction of the proposed transmission line and take measures to protect the soils and water quality.

If you have further questions, please contact me at (254) 742-9951 or by email at chris.holle@usda.gov.

Sincerely,

Chris Holle

CHRIS HOLLE
USDA/NRCS

Attachment: Lone Star Transmission, LLC Aquilla Lake 3 Transmission Line_Soil_Report

United States Department of Agriculture

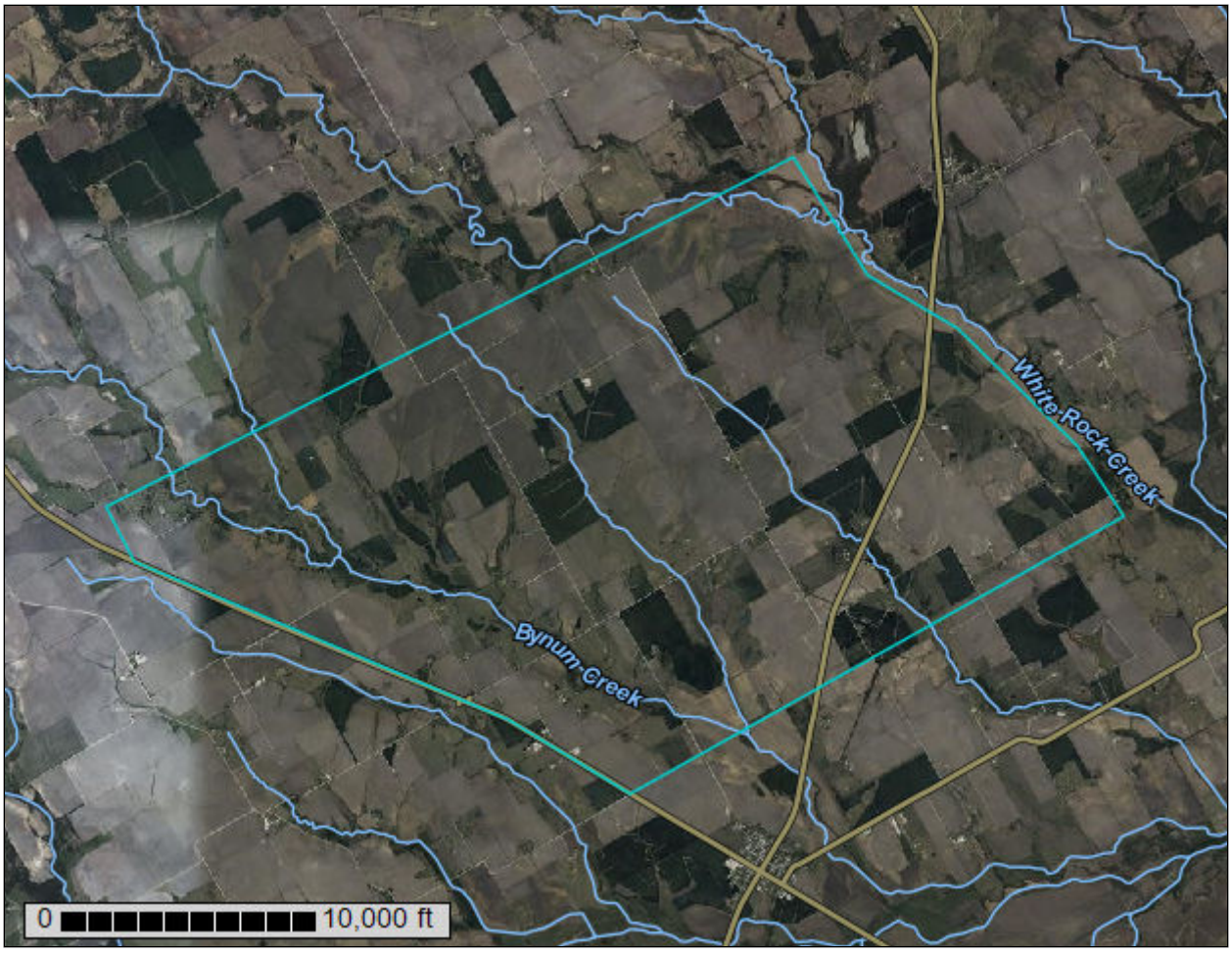
NRCS

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 Hill County, Texas

Lone Star Transmission, LLC Aquilla Lake 3 Transmission Line Project



July 5, 2024

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.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

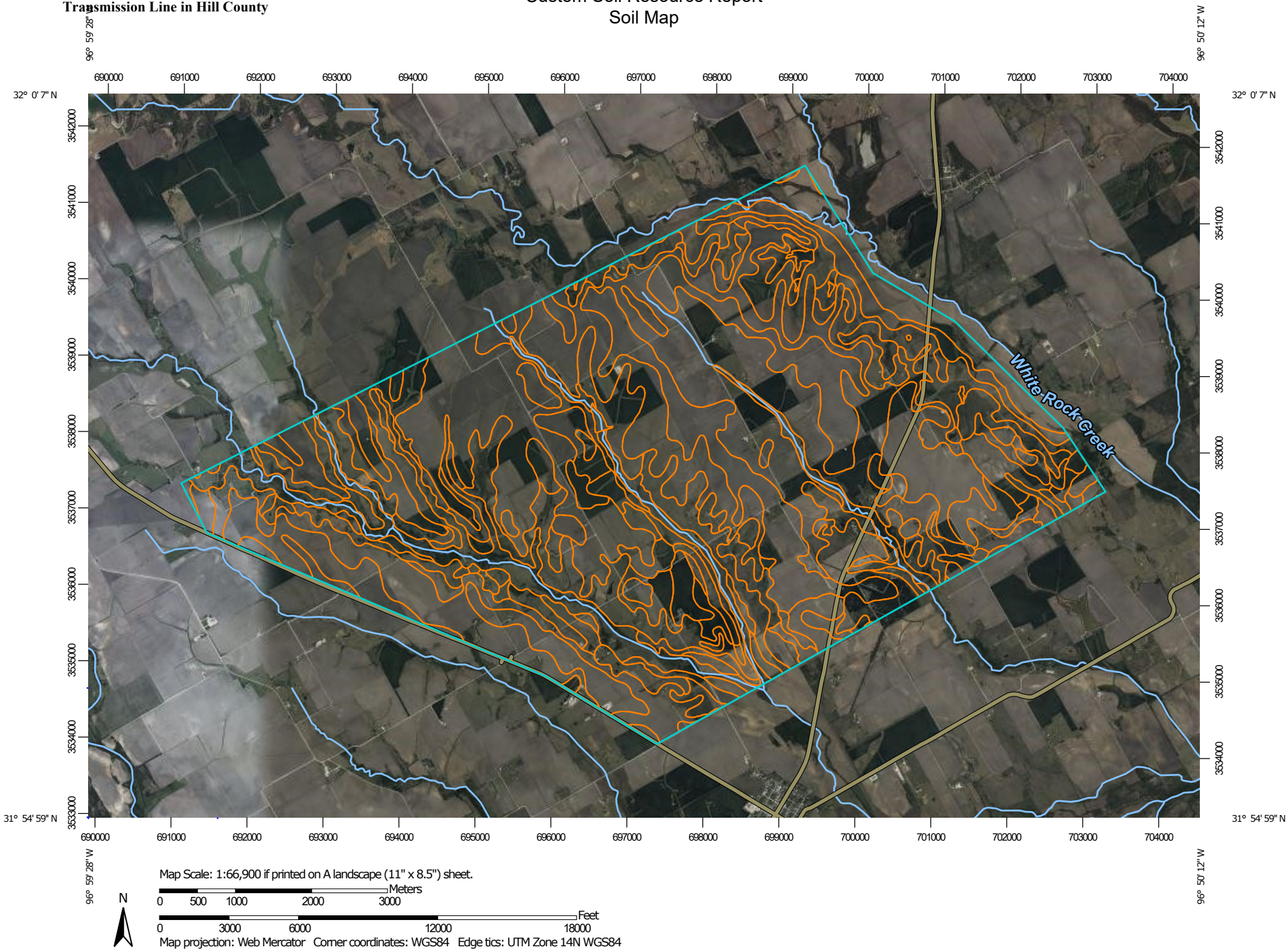
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Custom Soil Resource Report

MAP LEGEND

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

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

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 1:20,000.

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: Hill County, Texas
Survey Area Data: Version 21, Sep 5, 2023

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

Date(s) aerial images were photographed: Sep 29, 2020—Apr 8, 2022

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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
21	Branyon clay, 0 to 1 percent slopes	17.8	0.2%
22	Burleson clay, 0 to 1 percent slopes	212.3	1.8%
23	Burleson clay, 1 to 3 percent slopes	177.7	1.5%
34	Eddy very gravelly clay loam, 1 to 3 percent slopes	13.0	0.1%
37	Ferris clay, 5 to 12 percent slopes	606.5	5.2%
38	Ferris clay, 8 to 20 percent slopes, severely eroded	262.1	2.3%
39	Ferris-Heiden complex, 2 to 5 percent slopes	1,775.4	15.3%
43	Heiden clay, 1 to 3 percent slopes	845.7	7.3%
44	Heiden clay, 5 to 8 percent slopes	19.3	0.2%
48	Houston Black clay, 0 to 1 percent slopes	2,002.3	17.2%
49	Houston Black clay, 1 to 3 percent slopes	4,329.0	37.2%
73	Tinn clay, 0 to 1 percent slopes, occasionally flooded	38.4	0.3%
74	Tinn clay, 0 to 1 percent slopes, frequently flooded	1,144.6	9.8%
77	Venus loam, 1 to 3 percent slopes	4.5	0.0%
79	Wilson clay loam, 0 to 1 percent slopes	29.7	0.3%
80	Wilson clay loam, 1 to 3 percent slopes	129.0	1.1%
W	Water	29.9	0.3%
Totals for Area of Interest		**11,639.0**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named

according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Hill County, Texas

21—Branyon clay, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2shgv
Elevation: 290 to 1,050 feet
Mean annual precipitation: 31 to 38 inches
Mean annual air temperature: 65 to 70 degrees F
Frost-free period: 238 to 288 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Branyon and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Branyon

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Microfeatures of landform position: Circular gilgai
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Calcareous clayey alluvium derived from mudstone of pleistocene age

Typical profile

Ap - 0 to 12 inches: clay
Bkss - 12 to 72 inches: clay
BCkss - 72 to 80 inches: clay

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 7.0
Available water supply, 0 to 60 inches: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: D
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

Minor Components

Burleson

Percent of map unit: 5 percent
Landform: Stream terraces, stream terraces
Landform position (three-dimensional): Tread
Microfeatures of landform position: Circular gilgai, circular gilgai
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

Lewisville

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R086AY007TX - Southern Clay Loam
Hydric soil rating: No

Houston black

Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Microfeatures of landform position: Circular gilgai
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

22—Burleson clay, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2ssg6
Elevation: 300 to 800 feet
Mean annual precipitation: 32 to 45 inches
Mean annual air temperature: 63 to 70 degrees F
Frost-free period: 220 to 270 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Burleson and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Burleson

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Microfeatures of landform position: Circular gilgai
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Calcareous clayey alluvium of pleistocene age derived from mixed sources

Typical profile

A - 0 to 23 inches: clay
Bss - 23 to 38 inches: clay
Bkss - 38 to 69 inches: clay
2Ck - 69 to 90 inches: clay

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: D
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

Minor Components

Branyon

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Microfeatures of landform position: Circular gilgai
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

Wilson

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear

Across-slope shape: Concave
Ecological site: R086BY002TX - Claypan Prairie
Hydric soil rating: No

23—Burleson clay, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2tbtx
Elevation: 120 to 970 feet
Mean annual precipitation: 34 to 47 inches
Mean annual air temperature: 62 to 69 degrees F
Frost-free period: 228 to 239 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Burleson and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Burleson

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Microfeatures of landform position: Circular gilgai
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Calcareous clayey alluvium of pleistocene age derived from mudstone

Typical profile

Ap - 0 to 5 inches: clay
Bss - 5 to 20 inches: clay
Bkss - 20 to 43 inches: clay
2Ck - 43 to 60 inches: clay

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: Moderate (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: D
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

Minor Components

Wilson

Percent of map unit: 8 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R086AY004TX - Southern Claypan Prairie
Hydric soil rating: No

Branyon

Percent of map unit: 7 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Microfeatures of landform position: Circular gilgai
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

34—Eddy very gravelly clay loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: dbnt
Elevation: 400 to 1,000 feet
Mean annual precipitation: 31 to 39 inches
Mean annual air temperature: 64 to 70 degrees F
Frost-free period: 230 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition

Eddy and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Eddy

Setting

Landform: Ridges
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex

Parent material: Residuum weathered from austin chalk

Typical profile

H1 - 0 to 6 inches: very gravelly clay loam
H2 - 6 to 9 inches: very gravelly clay loam
H3 - 9 to 70 inches: bedrock

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: 3 to 15 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 80 percent
Available water supply, 0 to 60 inches: Very low (about 0.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: D
Ecological site: R086AY001TX - Northern Chalky Ridge
Hydric soil rating: No

37—Ferris clay, 5 to 12 percent slopes

Map Unit Setting

National map unit symbol: dbnx
Elevation: 400 to 1,000 feet
Mean annual precipitation: 28 to 42 inches
Mean annual air temperature: 64 to 70 degrees F
Frost-free period: 230 to 260 days
Farmland classification: Not prime farmland

Map Unit Composition

Ferris and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ferris

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Microfeatures of landform position: Linear gilgai
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Residuum weathered from calcareous shale in eagleford shale and taylor marl formations of cretaceous age

Typical profile

H1 - 0 to 9 inches: clay
H2 - 9 to 38 inches: clay
H3 - 38 to 60 inches: clay

Properties and qualities

Slope: 5 to 12 percent
Depth to restrictive feature: 38 to 60 inches to densic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 5.0
Available water supply, 0 to 60 inches: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Ecological site: R086AY008TX - Northern Eroded Blackland
Hydric soil rating: No

38—Ferris clay, 8 to 20 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: dbny
Elevation: 400 to 1,000 feet
Mean annual precipitation: 28 to 42 inches
Mean annual air temperature: 64 to 70 degrees F
Frost-free period: 230 to 260 days
Farmland classification: Not prime farmland

Map Unit Composition

Ferris, severely eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ferris, Severely Eroded

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Microfeatures of landform position: Linear gilgai
Down-slope shape: Linear
Across-slope shape: Convex

Parent material: Residuum weathered from calcareous shale in eagleford shale and taylor marl formations of cretaceous age

Typical profile

H1 - 0 to 9 inches: clay
H2 - 9 to 38 inches: clay
H3 - 38 to 60 inches: clay

Properties and qualities

Slope: 8 to 20 percent
Depth to restrictive feature: 38 to 60 inches to densic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 5.0
Available water supply, 0 to 60 inches: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Ecological site: R086AY008TX - Northern Eroded Blackland
Hydric soil rating: No

39—Ferris-Heiden complex, 2 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2v1v7
Elevation: 320 to 920 feet
Mean annual precipitation: 35 to 39 inches
Mean annual air temperature: 64 to 66 degrees F
Frost-free period: 233 to 257 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Ferris and similar soils: 50 percent
Heiden and similar soils: 40 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ferris

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope
Microfeatures of landform position: Linear gilgai
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Clayey residuum weathered from mudstone

Typical profile

Ap - 0 to 10 inches: clay
Bkss1 - 10 to 30 inches: clay
Bkss2 - 30 to 45 inches: clay
Cdk - 45 to 60 inches: clay

Properties and qualities

Slope: 3 to 5 percent
Depth to restrictive feature: 39 to 60 inches to densic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 12.0
Available water supply, 0 to 60 inches: Moderate (about 7.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: D
Ecological site: R086AY009TX - Southern Eroded Blackland
Hydric soil rating: No

Description of Heiden

Setting

Landform: Ridges
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Interfluve, side slope
Microfeatures of landform position: Linear gilgai
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Clayey residuum weathered from mudstone

Typical profile

Ap - 0 to 5 inches: clay
A - 5 to 15 inches: clay
Bkss1 - 15 to 38 inches: clay
Bkss2 - 38 to 64 inches: clay
CBdk - 64 to 80 inches: clay

Properties and qualities

Slope: 2 to 4 percent
Depth to restrictive feature: 48 to 65 inches to densic material
Drainage class: Well drained

Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 12.0
Available water supply, 0 to 60 inches: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: D
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

Minor Components

Ferris, moderately eroded

Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Microfeatures of landform position: Linear gilgai
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R086AY009TX - Southern Eroded Blackland
Hydric soil rating: No

Altoga

Percent of map unit: 5 percent
Landform: Stream terraces
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R086AY007TX - Southern Clay Loam
Hydric soil rating: No

43—Heiden clay, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2v1v9
Elevation: 290 to 1,020 feet
Mean annual precipitation: 33 to 45 inches
Mean annual air temperature: 63 to 68 degrees F
Frost-free period: 224 to 278 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Heiden and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Heiden

Setting

Landform: Ridges
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Microfeatures of landform position: Linear gilgai
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Clayey residuum weathered from mudstone

Typical profile

Ap - 0 to 6 inches: clay
A - 6 to 18 inches: clay
Bkss - 18 to 58 inches: clay
CBdk - 58 to 70 inches: clay

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: 40 to 65 inches to densic material
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 12.0
Available water supply, 0 to 60 inches: High (about 9.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: D
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

Minor Components

Houston black

Percent of map unit: 10 percent
Landform: Ridges
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Microfeatures of landform position: Circular gilgai
Down-slope shape: Convex
Across-slope shape: Linear

Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

Ferris

Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Microfeatures of landform position: Linear gilgai
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R086AY009TX - Southern Eroded Blackland
Hydric soil rating: No

44—Heiden clay, 5 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2sshq
Elevation: 250 to 720 feet
Mean annual precipitation: 36 to 45 inches
Mean annual air temperature: 63 to 66 degrees F
Frost-free period: 245 to 278 days
Farmland classification: Not prime farmland

Map Unit Composition

Heiden and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Heiden

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Microfeatures of landform position: Linear gilgai
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Clayey residuum weathered from mudstone

Typical profile

A1 - 0 to 8 inches: clay
A2 - 8 to 22 inches: clay
Bss - 22 to 44 inches: clay
CBd - 44 to 80 inches: clay

Properties and qualities

Slope: 5 to 8 percent
Depth to restrictive feature: 40 to 65 inches to densic material
Drainage class: Well drained
Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 12.0
Available water supply, 0 to 60 inches: Moderate (about 7.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: D
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

Minor Components

Ferris, moderately eroded

Percent of map unit: 10 percent
Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Microfeatures of landform position: Linear gilgai
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R086AY009TX - Southern Eroded Blackland
Hydric soil rating: No

Heiden, moderately eroded

Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Microfeatures of landform position: Linear gilgai
Down-slope shape: Convex
Across-slope shape: Concave
Ecological site: R086AY009TX - Southern Eroded Blackland
Hydric soil rating: No

48—Houston Black clay, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2shgy
Elevation: 300 to 870 feet
Mean annual precipitation: 31 to 39 inches
Mean annual air temperature: 65 to 70 degrees F
Frost-free period: 238 to 288 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Houston black and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Houston Black

Setting

Landform: Plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Microfeatures of landform position: Linear gilgai
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Clayey residuum weathered from calcareous mudstone of upper cretaceous age

Typical profile

Ap - 0 to 6 inches: clay
Bkss - 6 to 70 inches: clay
BCkss - 70 to 80 inches: clay

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: High (about 9.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: D
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

Minor Components

Wilson

Percent of map unit: 8 percent
Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R086AY004TX - Southern Claypan Prairie
Hydric soil rating: No

Heiden

Percent of map unit: 7 percent
Landform: Plains
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Microfeatures of landform position: Linear gilgai
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

49—Houston Black clay, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2ssh0
Elevation: 270 to 1,040 feet
Mean annual precipitation: 33 to 43 inches
Mean annual air temperature: 62 to 63 degrees F
Frost-free period: 217 to 244 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Houston black and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Houston Black

Setting

Landform: Ridges
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Microfeatures of landform position: Linear gilgai
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Clayey residuum weathered from calcareous mudstone of upper cretaceous age

Typical profile

Ap - 0 to 6 inches: clay
Bkss - 6 to 70 inches: clay
BCkss - 70 to 80 inches: clay

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: D
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

Minor Components

Heiden

Percent of map unit: 15 percent
Landform: Plains
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Microfeatures of landform position: Linear gilgai
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

Fairlie

Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

73—Tinn clay, 0 to 1 percent slopes, occasionally flooded

Map Unit Setting

National map unit symbol: 2sshf
Elevation: 260 to 1,310 feet
Mean annual precipitation: 27 to 47 inches
Mean annual air temperature: 63 to 71 degrees F
Frost-free period: 224 to 279 days
Farmland classification: Not prime farmland

Map Unit Composition

Tinn and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tinn

Setting

Landform: Flood plains
Landform position (three-dimensional): Tread
Microfeatures of landform position: Circular gilgai
Down-slope shape: Linear
Across-slope shape: Concave, linear
Parent material: Calcareous clayey alluvium

Typical profile

Ap - 0 to 28 inches: clay
Bss - 28 to 60 inches: clay
Bkssy - 60 to 80 inches: clay

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Gypsum, maximum content: 2 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: High (about 10.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: D
Ecological site: R086AY013TX - Clayey Bottomland
Hydric soil rating: No

Minor Components

Whitesboro

Percent of map unit: 10 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R086AY012TX - Loamy Bottomland
Hydric soil rating: No

Gladewater

Percent of map unit: 5 percent
Landform: Flood plains

Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R086AY013TX - Clayey Bottomland
Hydric soil rating: Yes

74—Tinn clay, 0 to 1 percent slopes, frequently flooded

Map Unit Setting

National map unit symbol: 2vtgr
Elevation: 330 to 750 feet
Mean annual precipitation: 35 to 47 inches
Mean annual air temperature: 63 to 68 degrees F
Frost-free period: 226 to 263 days
Farmland classification: Not prime farmland

Map Unit Composition

Tinn and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tinn

Setting

Landform: Flood plains
Landform position (three-dimensional): Tread
Microfeatures of landform position: Circular gilgai
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Calcareous clayey alluvium

Typical profile

A - 0 to 17 inches: clay
Bss - 17 to 57 inches: clay
Bkssy - 57 to 80 inches: clay

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Gypsum, maximum content: 2 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: Moderate (about 8.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: D
Ecological site: R086AY013TX - Clayey Bottomland
Hydric soil rating: No

Minor Components

Whitesboro

Percent of map unit: 10 percent
Landform: Flood plains
Microfeatures of landform position: Circular gilgai
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R086AY012TX - Loamy Bottomland
Hydric soil rating: No

Gladewater

Percent of map unit: 5 percent
Landform: Flood plains
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R086AY013TX - Clayey Bottomland
Hydric soil rating: Yes

77—Venus loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: dbqb
Elevation: 450 to 800 feet
Mean annual precipitation: 28 to 40 inches
Mean annual air temperature: 63 to 70 degrees F
Frost-free period: 220 to 250 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Venus and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Venus

Setting

Landform: Stream terraces
Landform position (three-dimensional): Riser
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy alluvium of quaternary age derived from mixed sources

Typical profile

H1 - 0 to 14 inches: loam
H2 - 14 to 57 inches: clay loam
H3 - 57 to 68 inches: sandy clay loam

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Available water supply, 0 to 60 inches: High (about 10.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: R086AY006TX - Northern Clay Loam
Hydric soil rating: No

79—Wilson clay loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2wst1
Elevation: 200 to 770 feet
Mean annual precipitation: 34 to 43 inches
Mean annual air temperature: 65 to 69 degrees F
Frost-free period: 240 to 278 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Wilson and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wilson

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Loamy and/or clayey alluvium derived from mudstone

Typical profile

Ap - 0 to 7 inches: clay loam
Btss - 7 to 31 inches: clay

Btkss - 31 to 36 inches: clay
Btkssyg - 36 to 42 inches: clay
Btkyg - 42 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 5 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 20 percent
Gypsum, maximum content: 15 percent
Maximum salinity: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water supply, 0 to 60 inches: Moderate (about 7.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: D
Ecological site: R086AY004TX - Southern Claypan Prairie
Hydric soil rating: No

Minor Components

Burleson

Percent of map unit: 10 percent
Landform: Stream terraces, stream terraces
Landform position (three-dimensional): Tread
Microfeatures of landform position: Circular gilgai, circular gilgai
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

Crockett

Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R086AY004TX - Southern Claypan Prairie
Hydric soil rating: No

80—Wilson clay loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2wg9f
Elevation: 200 to 770 feet
Mean annual precipitation: 34 to 48 inches
Mean annual air temperature: 64 to 67 degrees F
Frost-free period: 243 to 262 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Wilson and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wilson

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Loamy and/or clayey alluvium derived from mudstone

Typical profile

Ap - 0 to 7 inches: clay loam
Btss - 7 to 31 inches: clay
Btkss - 31 to 36 inches: clay
Btkssyg - 36 to 42 inches: clay
Btkyg - 42 to 80 inches: clay loam

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 20 percent
Gypsum, maximum content: 15 percent
Maximum salinity: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water supply, 0 to 60 inches: Moderate (about 7.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: C
Ecological site: R086AY004TX - Southern Claypan Prairie
Hydric soil rating: No

Minor Components

Burleson

Percent of map unit: 10 percent
Landform: Stream terraces, stream terraces
Landform position (three-dimensional): Tread
Microfeatures of landform position: Circular gilgai, circular gilgai
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R086AY011TX - Southern Blackland
Hydric soil rating: No

Crockett

Percent of map unit: 5 percent
Landform: Stream terraces, ridges
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve, tread
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R086AY004TX - Southern Claypan Prairie
Hydric soil rating: No

W—Water

Map Unit Setting

National map unit symbol: f3jt
Mean annual precipitation: 28 to 40 inches
Mean annual air temperature: 64 to 68 degrees F
Frost-free period: 210 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Water

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: No

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.

Building Site Development

Building site development interpretations are designed to be used as tools for evaluating soil suitability and identifying soil limitations for various construction purposes. As part of the interpretation process, the rating applies to each soil in its described condition and does not consider present land use. Example interpretations can include corrosion of concrete and steel, shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping.

Corrosion of Concrete

ENG

Engineering

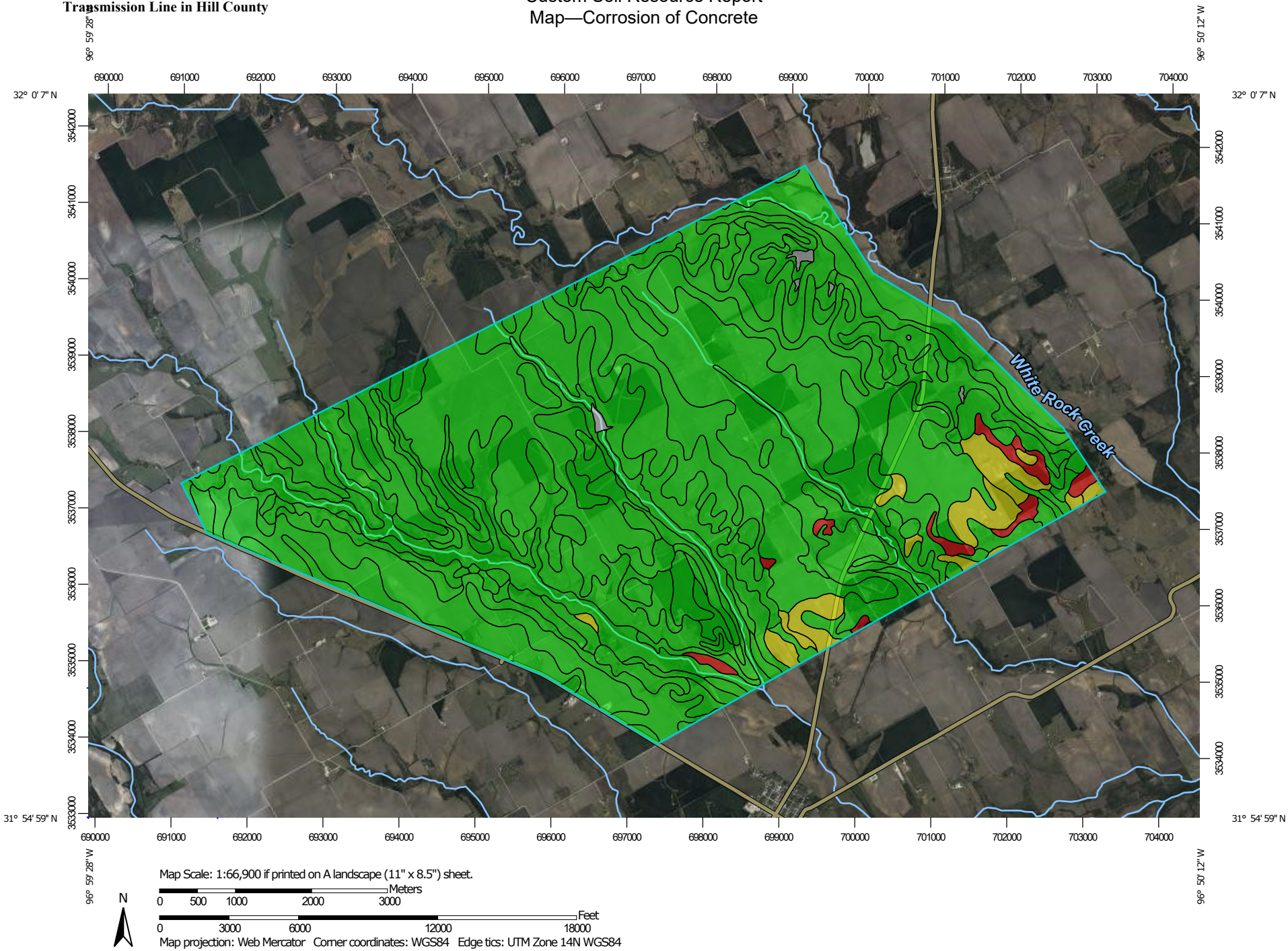
AGR

Agronomy

"Risk of corrosion" pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens concrete. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the concrete in installations that are entirely within one kind of soil or within one soil layer.

The risk of corrosion is expressed as "low," "moderate," or "high."

Custom Soil Resource Report
Map—Corrosion of Concrete



Custom Soil Resource Report

MAP LEGEND

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

Soils

Soil Rating Polygons
- High
- Moderate
- Low
- Not rated or not available

Soil Rating Lines
- High
- Moderate
- Low
- Not rated or not available

Soil Rating Points
- High
- Moderate
- Low
- 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 1:20,000.

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: Hill County, Texas
Survey Area Data: Version 21, Sep 5, 2023

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

Date(s) aerial images were photographed: Sep 29, 2020—Apr 8, 2022

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—Corrosion of Concrete

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
21	Branyon clay, 0 to 1 percent slopes	Moderate	17.8	0.2%
22	Burleson clay, 0 to 1 percent slopes	Moderate	212.3	1.8%
23	Burleson clay, 1 to 3 percent slopes	Moderate	177.7	1.5%
34	Eddy very gravelly clay loam, 1 to 3 percent slopes	Low	13.0	0.1%
37	Ferris clay, 5 to 12 percent slopes	Low	606.5	5.2%
38	Ferris clay, 8 to 20 percent slopes, severely eroded	Low	262.1	2.3%
39	Ferris-Heiden complex, 2 to 5 percent slopes	Low	1,775.4	15.3%
43	Heiden clay, 1 to 3 percent slopes	Low	845.7	7.3%
44	Heiden clay, 5 to 8 percent slopes	Low	19.3	0.2%
48	Houston Black clay, 0 to 1 percent slopes	Low	2,002.3	17.2%
49	Houston Black clay, 1 to 3 percent slopes	Low	4,329.0	37.2%
73	Tinn clay, 0 to 1 percent slopes, occasionally flooded	Low	38.4	0.3%
74	Tinn clay, 0 to 1 percent slopes, frequently flooded	Low	1,144.6	9.8%
77	Venus loam, 1 to 3 percent slopes	Low	4.5	0.0%
79	Wilson clay loam, 0 to 1 percent slopes	High	29.7	0.3%
80	Wilson clay loam, 1 to 3 percent slopes	High	129.0	1.1%
W	Water		29.9	0.3%
Totals for Area of Interest			**11,639.0**	**100.0%**

Rating Options—Corrosion of Concrete

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Corrosion of Steel

ENG

Engineering

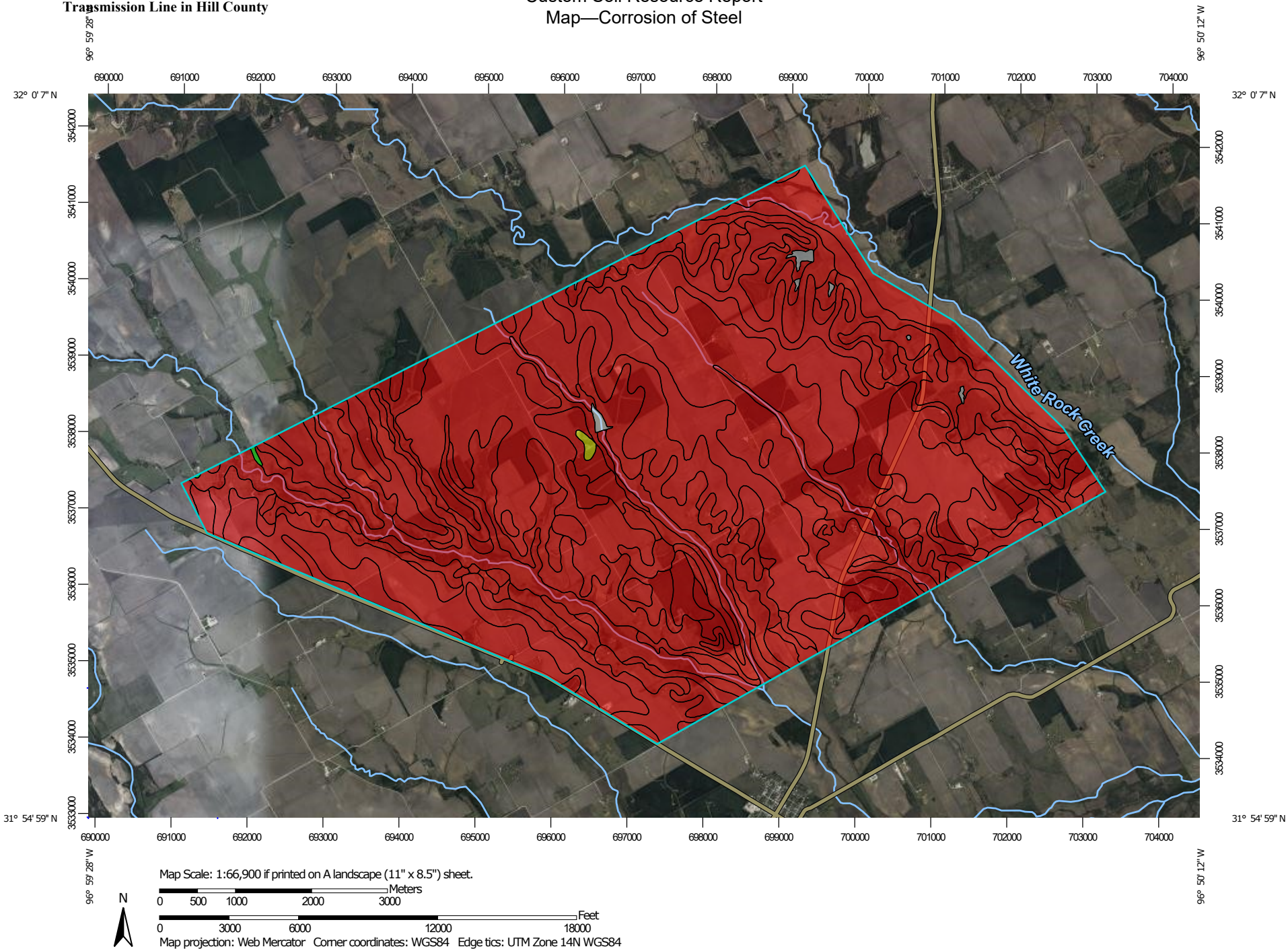
AGR

Agronomy

"Risk of corrosion" pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel in installations that are entirely within one kind of soil or within one soil layer.

The risk of corrosion is expressed as "low," "moderate," or "high."

Custom Soil Resource Report
Map—Corrosion of Steel



Custom Soil Resource Report

MAP LEGEND

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

Soils

Soil Rating Polygons
- High
- Moderate
- Low
- Not rated or not available

Soil Rating Lines
- High
- Moderate
- Low
- Not rated or not available

Soil Rating Points
- High
- Moderate
- Low
- 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

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Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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Table—Corrosion of Steel

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
21	Branyon clay, 0 to 1 percent slopes	High	17.8	0.2%
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80	Wilson clay loam, 1 to 3 percent slopes	High	129.0	1.1%
W	Water		29.9	0.3%
Totals for Area of Interest			**11,639.0**	**100.0%**

Rating Options—Corrosion of Steel

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

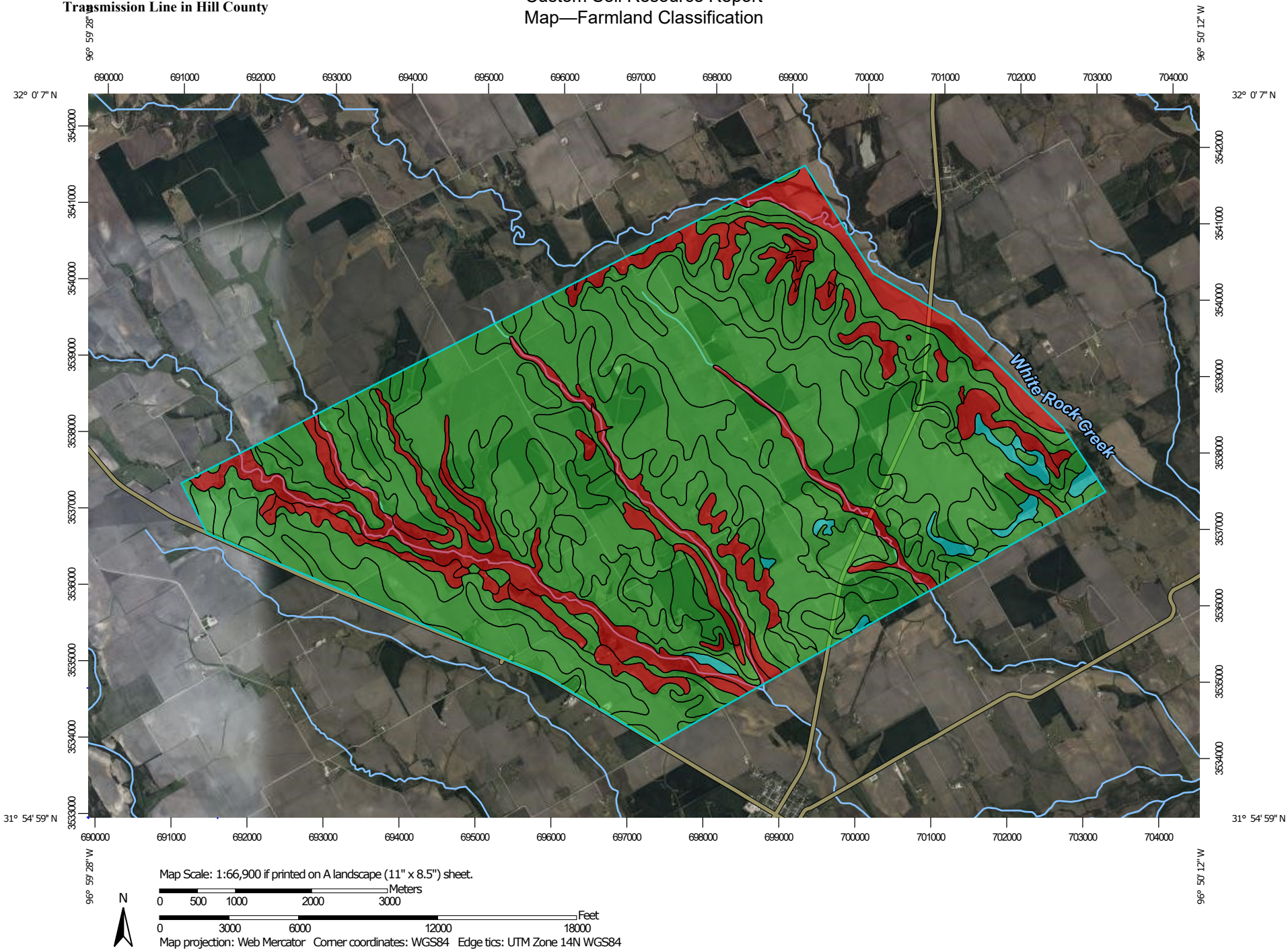
Land Classifications

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.

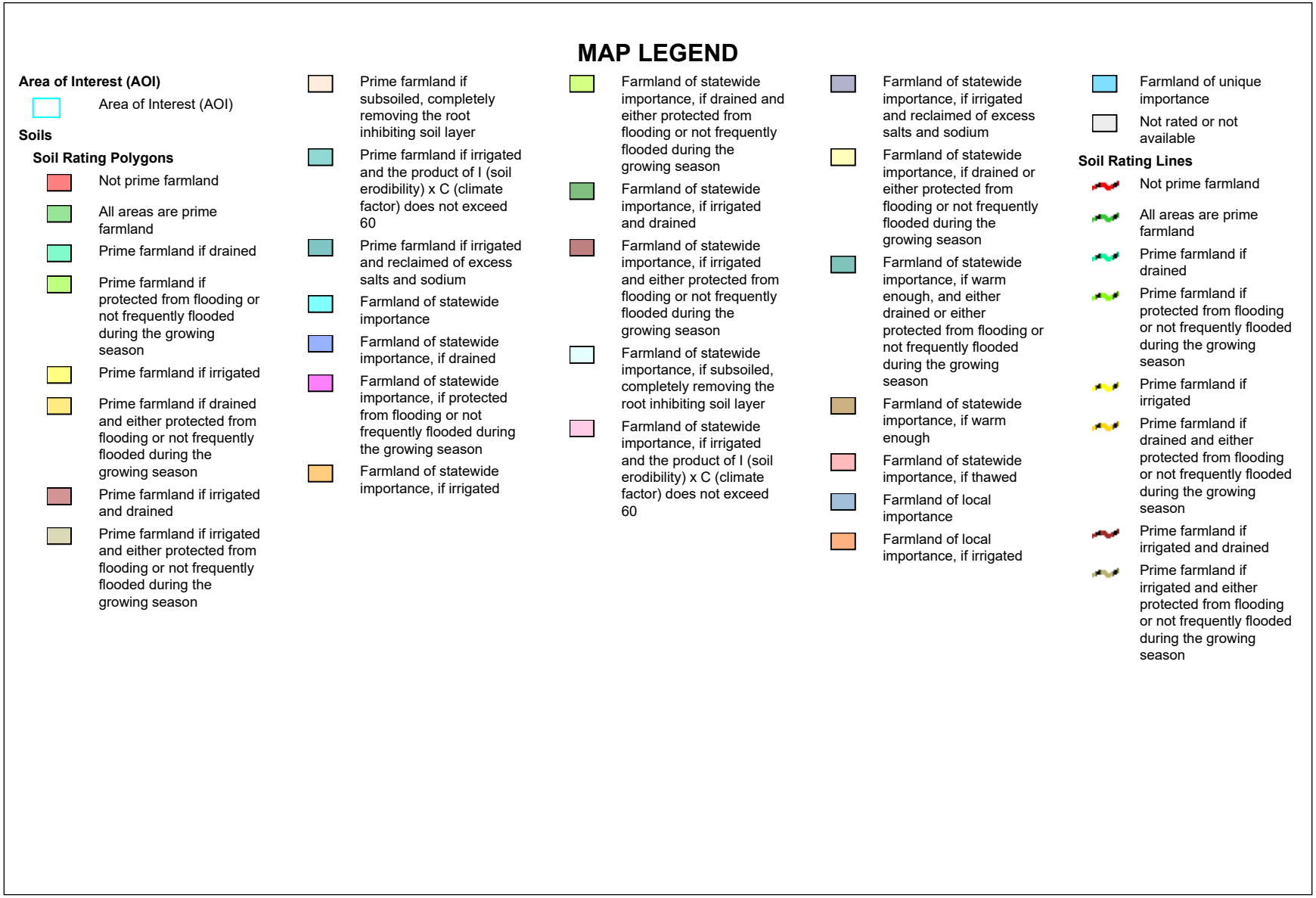
Farmland Classification

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Custom Soil Resource Report
Map—Farmland Classification



Custom Soil Resource Report



Custom Soil Resource Report

- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of statewide importance, if drained
- Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated
- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Soil Rating Points

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of statewide importance, if drained
- Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated

Custom Soil Resource Report

- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:20,000.

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

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Table—Farmland Classification

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
21	Branyon clay, 0 to 1 percent slopes	All areas are prime farmland	17.8	0.2%
22	Burleson clay, 0 to 1 percent slopes	All areas are prime farmland	212.3	1.8%
23	Burleson clay, 1 to 3 percent slopes	All areas are prime farmland	177.7	1.5%
34	Eddy very gravelly clay loam, 1 to 3 percent slopes	Not prime farmland	13.0	0.1%
37	Ferris clay, 5 to 12 percent slopes	Not prime farmland	606.5	5.2%
38	Ferris clay, 8 to 20 percent slopes, severely eroded	Not prime farmland	262.1	2.3%
39	Ferris-Heiden complex, 2 to 5 percent slopes	All areas are prime farmland	1,775.4	15.3%
43	Heiden clay, 1 to 3 percent slopes	All areas are prime farmland	845.7	7.3%
44	Heiden clay, 5 to 8 percent slopes	Not prime farmland	19.3	0.2%
48	Houston Black clay, 0 to 1 percent slopes	All areas are prime farmland	2,002.3	17.2%
49	Houston Black clay, 1 to 3 percent slopes	All areas are prime farmland	4,329.0	37.2%
73	Tinn clay, 0 to 1 percent slopes, occasionally flooded	Not prime farmland	38.4	0.3%
74	Tinn clay, 0 to 1 percent slopes, frequently flooded	Not prime farmland	1,144.6	9.8%
77	Venus loam, 1 to 3 percent slopes	All areas are prime farmland	4.5	0.0%
79	Wilson clay loam, 0 to 1 percent slopes	Farmland of statewide importance	29.7	0.3%
80	Wilson clay loam, 1 to 3 percent slopes	Farmland of statewide importance	129.0	1.1%
W	Water	Not prime farmland	29.9	0.3%
Totals for Area of Interest			**11,639.0**	**100.0%**

Rating Options—Farmland Classification

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

Hydric Rating by Map Unit

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.

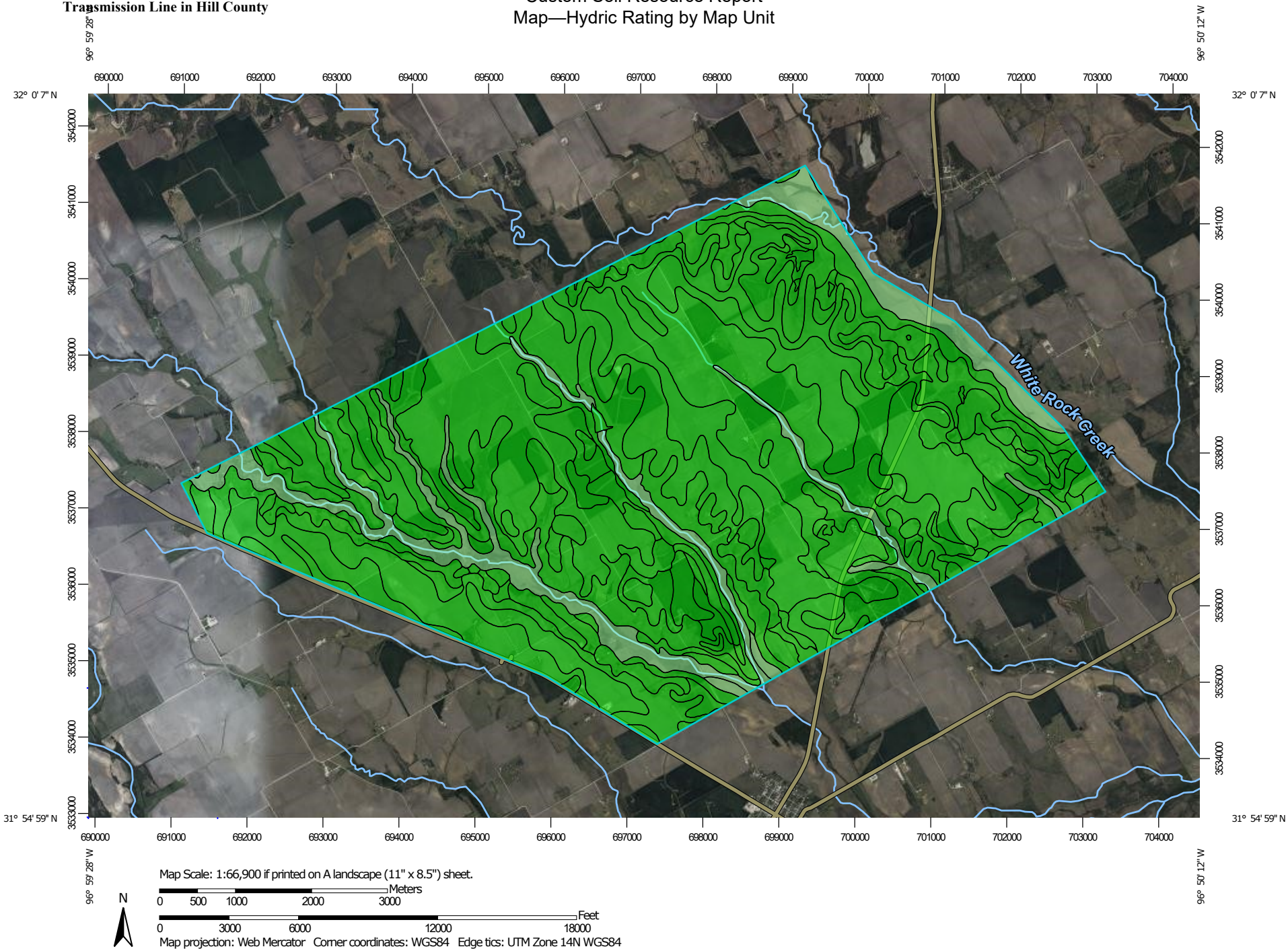
Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

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



Custom Soil Resource Report

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 1:20,000.

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Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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Table—Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
21	Branyon clay, 0 to 1 percent slopes	0	17.8	0.2%
22	Burleson clay, 0 to 1 percent slopes	0	212.3	1.8%
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34	Eddy very gravelly clay loam, 1 to 3 percent slopes	0	13.0	0.1%
37	Ferris clay, 5 to 12 percent slopes	0	606.5	5.2%
38	Ferris clay, 8 to 20 percent slopes, severely eroded	0	262.1	2.3%
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44	Heiden clay, 5 to 8 percent slopes	0	19.3	0.2%
48	Houston Black clay, 0 to 1 percent slopes	0	2,002.3	17.2%
49	Houston Black clay, 1 to 3 percent slopes	0	4,329.0	37.2%
73	Tinn clay, 0 to 1 percent slopes, occasionally flooded	5	38.4	0.3%
74	Tinn clay, 0 to 1 percent slopes, frequently flooded	5	1,144.6	9.8%
77	Venus loam, 1 to 3 percent slopes	0	4.5	0.0%
79	Wilson clay loam, 0 to 1 percent slopes	0	29.7	0.3%
80	Wilson clay loam, 1 to 3 percent slopes	0	129.0	1.1%
W	Water	0	29.9	0.3%
Totals for Area of Interest			**11,639.0**	**100.0%**

Rating Options—Hydric Rating by Map Unit

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Land Management

Land management interpretations are tools designed to guide the user in evaluating existing conditions in planning and predicting the soil response to various land management practices, for a variety of land uses, including cropland, forestland, hayland, pastureland, horticulture, and rangeland. Example interpretations include suitability for a variety of irrigation practices, log landings, haul roads and major skid trails, equipment operability, site preparation, suitability for hand and mechanical planting, potential erosion hazard associated with various practices, and ratings for fencing and waterline installation.

Water Erosion Potential (TX)

"Water Erosion Potential (TX)" is a qualitative interpretation that evaluates a soil's potential to erode through the action of water. The potential assumes that the area being affected is bare, smooth, and exposed to the water erosion processes. The interpretation provides the user with a qualitative rating of the vulnerability of the soil to the action of water; it is not a measure of actual soil loss from erosion.

The water erosion potential of the soil is based on those soil properties or a combination of soil properties and landscape characteristics that contribute to runoff and have low resistance to water erosion processes. Soil features that contribute to water erosivity are surface-layer particle size, saturated hydraulic conductivity, and high runoff landscapes. Conversely, soil features that resist the erosive effect of water are high organic matter content in the surface layer and low runoff landscapes. The water erosion potential is a function of the interaction between those soil features that make the soil susceptible to water erosion and those that resist the water erosion process.

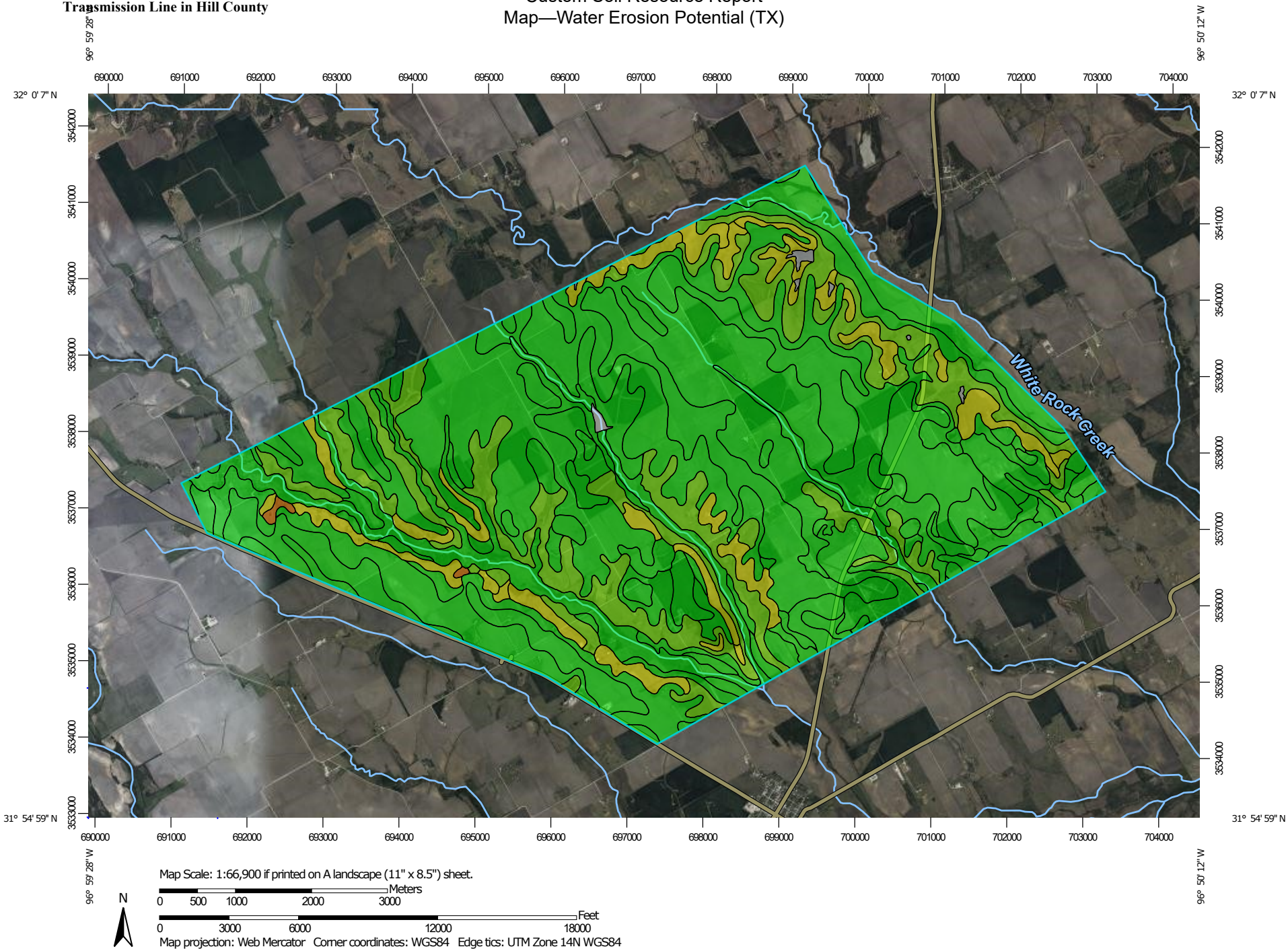
The ratings are both verbal and numerical. Numerical ratings indicate the soil's relative water erosion potential. They are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil has the greatest water erosion potential (1.00) and the point at which a soil has very low water erosion potential (0.00).

Verbal soil rating classes are based on the highest numerical rating for the most limiting soil feature(s) considered in the rating process. "Very high" (numerical values less than or equal to 1.0 to greater than 0.9) indicates that the soil has the greatest relative water erosion vulnerability. "High" (numerical value less than or equal to 0.9 to greater than 0.65) indicates that the soil has large relative water erosion vulnerability. "Moderate" (numerical value less than or equal to 0.65 to greater than 0.35) indicates that the soil has medium relative water erosion vulnerability. "Low" (numerical value less than or equal to 0.35 to greater than 0.1) indicates that the soil has small relative water erosion vulnerability. "Very low" (numerical value less than or equal to 0.10) indicates that the soil has little or no relative water erosion vulnerability.

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen, which is displayed on the report. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the Selected Soil Interpretations report with this interpretation included from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Custom Soil Resource Report
Map—Water Erosion Potential (TX)



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- Very high water erosion potential
- High water erosion potential
- Moderate water erosion potential
- Low water erosion potential
- Very low water erosion potential
- Not rated or not available

Soil Rating Lines

- Very high water erosion potential
- High water erosion potential
- Moderate water erosion potential
- Low water erosion potential
- Very low water erosion potential
- Not rated or not available

Soil Rating Points

- Very high water erosion potential
- High water erosion potential
- Moderate water erosion potential
- Low water erosion potential
- Very low water erosion potential
- 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

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Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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

Date(s) aerial images were photographed: Sep 29, 2020—Apr 8, 2022

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.

Tables—Water Erosion Potential (TX)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
21	Branyon clay, 0 to 1 percent slopes	Very low water erosion potential	Branyon (85%)	Percs slowly (1.00)	17.8	0.2%
				Organic matter (0.97)		
				Silt content (0.58)		
22	Burleson clay, 0 to 1 percent slopes	Very low water erosion potential	Burleson (90%)	Percs slowly (1.00)	212.3	1.8%
				Organic matter (0.97)		
				Silt content (0.30)		
23	Burleson clay, 1 to 3 percent slopes	Very low water erosion potential	Burleson (85%)	Percs slowly (1.00)	177.7	1.5%
				Organic matter (0.96)		
				Silt content (0.30)		
				LS factor (0.10)		
34	Eddy very gravelly clay loam, 1 to 3 percent slopes	Very low water erosion potential	Eddy (100%)	Percs slowly (0.95)	13.0	0.1%
				Organic matter (0.94)		
				Silt content (0.69)		
				LS factor (0.10)		
37	Ferris clay, 5 to 12 percent slopes	Moderate water erosion potential	Ferris (100%)	LS factor (1.00)	606.5	5.2%
				Percs slowly (1.00)		
				Organic matter (0.94)		
				Silt content (0.34)		
38	Ferris clay, 8 to 20 percent slopes, severely eroded	Moderate water erosion potential	Ferris, severely eroded (100%)	LS factor (1.00)	262.1	2.3%
				Percs slowly (1.00)		
				Organic matter (0.94)		
				Silt content (0.34)		
39	Ferris-Heiden complex, 2 to 5 percent slopes	Low water erosion potential	Ferris (50%)	Percs slowly (1.00)	1,775.4	15.3%
				Organic matter (0.94)		
				LS factor (0.70)		
				Silt content (0.31)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
			Heiden (40%)	Percs slowly (1.00)		
				Organic matter (0.96)		
				Silt content (0.49)		
				LS factor (0.35)		
43	Heiden clay, 1 to 3 percent slopes	Very low water erosion potential	Heiden (85%)	Percs slowly (1.00)	845.7	7.3%
				Organic matter (0.97)		
				Silt content (0.49)		
				LS factor (0.10)		
44	Heiden clay, 5 to 8 percent slopes	High water erosion potential	Heiden (85%)	LS factor (1.00)	19.3	0.2%
				Percs slowly (1.00)		
				Organic matter (0.97)		
				Silt content (0.49)		
48	Houston Black clay, 0 to 1 percent slopes	Very low water erosion potential	Houston Black (85%)	Percs slowly (1.00)	2,002.3	17.2%
				Organic matter (0.97)		
				Silt content (0.32)		
49	Houston Black clay, 1 to 3 percent slopes	Very low water erosion potential	Houston Black (80%)	Percs slowly (1.00)	4,329.0	37.2%
				Organic matter (0.97)		
				Silt content (0.32)		
				LS factor (0.10)		
73	Tinn clay, 0 to 1 percent slopes, occasionally flooded	Very low water erosion potential	Tinn (85%)	Percs slowly (1.00)	38.4	0.3%
				Organic matter (0.98)		
				Silt content (0.30)		
74	Tinn clay, 0 to 1 percent slopes, frequently flooded	Very low water erosion potential	Tinn (85%)	Percs slowly (1.00)	1,144.6	9.8%
				Organic matter (0.98)		
				Silt content (0.30)		
77	Venus loam, 1 to 3 percent slopes	Very low water erosion potential	Venus (100%)	Organic matter (0.95)	4.5	0.0%
				Percs slowly (0.92)		
				Silt content (0.74)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				LS factor (0.10)		
79	Wilson clay loam, 0 to 1 percent slopes	Very low water erosion potential	Wilson (85%)	Percs slowly (1.00)	29.7	0.3%
				Organic matter (0.94)		
				Silt content (0.84)		
80	Wilson clay loam, 1 to 3 percent slopes	Very low water erosion potential	Wilson (85%)	Percs slowly (1.00)	129.0	1.1%
				Organic matter (0.94)		
				Silt content (0.84)		
				LS factor (0.10)		
W	Water	Not rated	Water (100%)		29.9	0.3%
Totals for Area of Interest					**11,639.0**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Very low water erosion potential	8,944.2	76.8%
Low water erosion potential	1,775.4	15.3%
Moderate water erosion potential	868.5	7.5%
High water erosion potential	19.3	0.2%
Null or Not Rated	29.9	0.3%
Totals for Area of Interest	**11,639.0**	**100.0%**

Rating Options—Water Erosion Potential (TX)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Wind Erosion Potential (TX)

The higher the numerical rating the greater the vulnerability rating class. The "very high" potential class (numerical values less than or equal to 1.0 to greater than 0.9) indicates that the soil has the greatest relative wind erosion vulnerability. The "high" class (numerical value less than or equal to 0.9 to greater than 0.65) indicates that the soil has large relative wind erosion vulnerability. The "moderate" class (numerical value less than or equal to 0.65 to greater than 0.4) indicates that the soil has medium relative wind erosion vulnerability. The "low" class (numerical value less than or equal to 0.4 to greater than 0.2) indicates that the soil has small relative wind erosion vulnerability. The "very low" class (numerical value less than or equal to 0.20) indicates that the soil has little or no relative wind erosion vulnerability.

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen, which is displayed on the report. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the Selected Soil Interpretations report with this interpretation included from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site. The Wind Erosion Potential (TX) is a qualitative interpretation which evaluates a soil's potential to erode through the action of wind. The potential assumes that the area being affected is bare, smooth, and has a long distance exposed to the wind. The soil wind erosion potential provides the user with a qualitative rating of the vulnerability of the soil to the action of the wind and is not a measure of actual soil loss from erosion.

The wind erosion potential of the soil is based on those surface soil properties that by themselves or in combination with others contribute to the soil's potential wind erosivity. Those surface soil features that contribute to wind erosivity are particle size and carbonate content. Conversely, surface features that resist the erosive effect of wind are organic matter content and coarse fragments. The soil wind erosion potential is a function of the interaction between surface soil features that make the soil susceptible to wind erosion and those that resist the wind erosion process.

Numerical ratings or values indicate the soil's relative wind erosion potential. Ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil has the greatest wind erosion potential (1.00), and the point at which a soil has very low wind erosion potential (0.00).

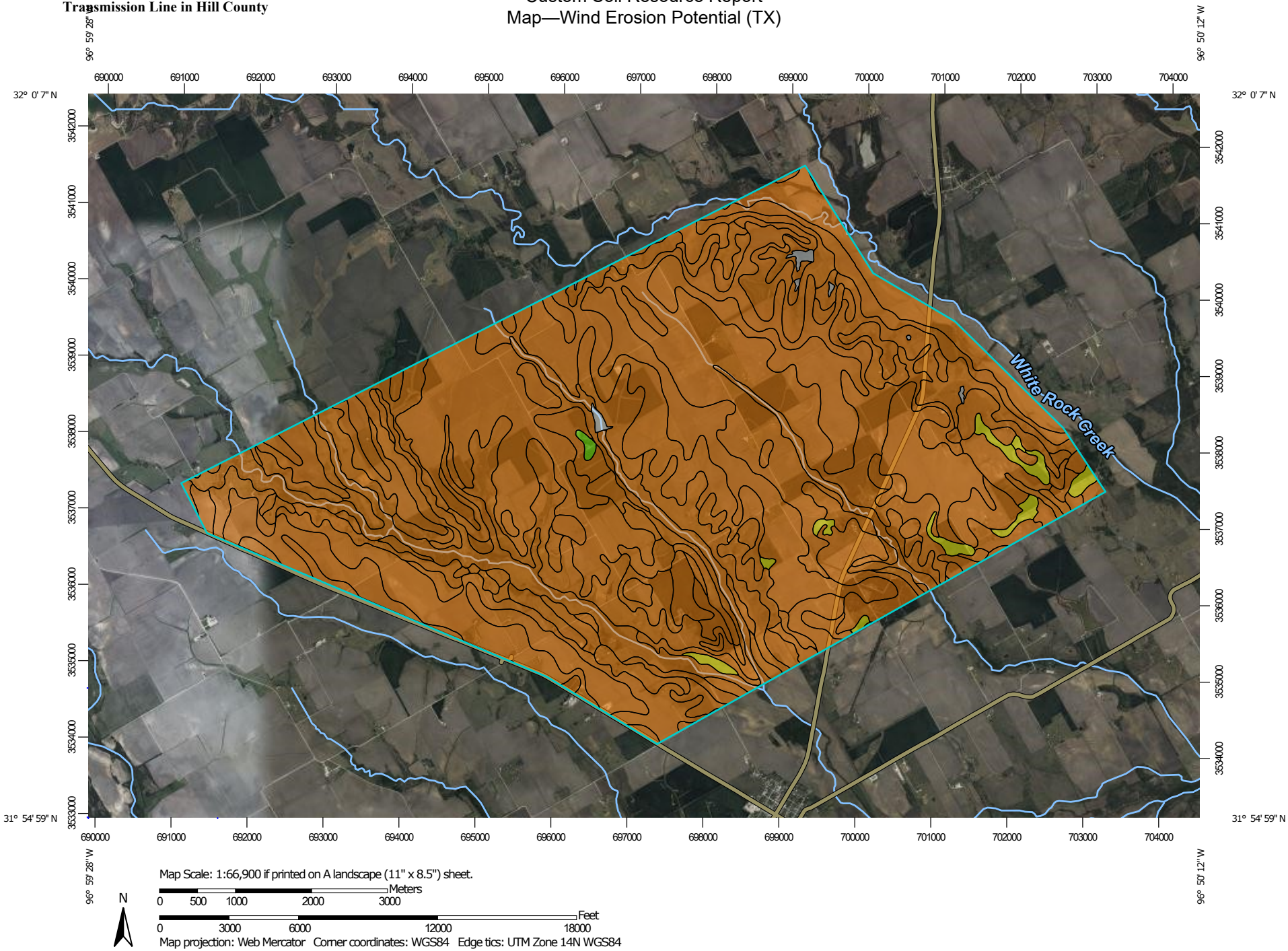
The ratings are both verbal and numerical. The potential degree to which a soil is susceptible to wind erosion will range from "very high" to "very low" (from 1.0 to 0.0). Soils that have favorable surface particle size, high organic matter content, or protective coarse fragments will have "very low" wind erosion potential. Soils that have "very high" wind erosion potential are those with a surface layer that has a sandy particle size, high carbonate content, low organic matter content, or no coarse fragment protection.

The higher the numerical rating the greater the vulnerability rating class. The "very high" potential class (numerical values less than or equal to 1.0 to greater than 0.9) indicates that the soil has the greatest relative wind erosion vulnerability. The "high" class (numerical value less than or equal to 0.9 to greater than 0.65) indicates that the soil has large relative wind erosion vulnerability. The "moderate" class (numerical value less than or equal to 0.65 to greater than 0.4) indicates that the soil has medium relative wind erosion vulnerability. The "low" class (numerical value less than or equal to 0.4 to greater than 0.2) indicates that the soil has small relative

wind erosion vulnerability. The "very low" class (numerical value less than or equal to 0.20) indicates that the soil has little or no relative wind erosion vulnerability.

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation

Custom Soil Resource Report
Map—Wind Erosion Potential (TX)



Custom Soil Resource Report

MAP LEGEND

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

Soils

Soil Rating Polygons
- Very high
- High
- Moderate
- Low
- Very low
- Not rated or not available

Soil Rating Lines
- Very high
- High
- Moderate
- Low
- Very low
- Not rated or not available

Soil Rating Points
- Very high
- High
- Moderate
- Low
- Very low
- 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 1:20,000.

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: Hill County, Texas
Survey Area Data: Version 21, Sep 5, 2023

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

Date(s) aerial images were photographed: Sep 29, 2020—Apr 8, 2022

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.

Tables—Wind Erosion Potential (TX)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
21	Branyon clay, 0 to 1 percent slopes	High wind erosion potential	Branyon (85%)	Clay content of surface (0.85)	17.8	0.2%
				Silt content of surface (0.06)		
				Rock fragment content of surface (0.02)		
22	Burleson clay, 0 to 1 percent slopes	High wind erosion potential	Burleson (90%)	Clay content of surface (0.85)	212.3	1.8%
				Silt content of surface (0.02)		
				Rock fragment content of surface (0.01)		
23	Burleson clay, 1 to 3 percent slopes	High wind erosion potential	Burleson (85%)	Clay content of surface (0.85)	177.7	1.5%
				Silt content of surface (0.02)		
				Rock fragment content of surface (0.01)		
34	Eddy very gravelly clay loam, 1 to 3 percent slopes	Low wind erosion potential	Eddy (100%)	Carbonate content of surface (0.86)	13.0	0.1%
				Clay content of surface (0.63)		
				Rock fragment content of surface (0.57)		
				Sand content of surface (0.22)		
				Silt content of surface (0.08)		
37	Ferris clay, 5 to 12 percent slopes	High wind erosion potential	Ferris (100%)	Clay content of surface (0.85)	606.5	5.2%
				Silt content of surface (0.02)		
				Rock fragment content of surface (0.01)		
38	Ferris clay, 8 to 20 percent slopes, severely eroded	High wind erosion potential	Ferris, severely eroded (100%)	Clay content of surface (0.85)	262.1	2.3%
				Silt content of surface (0.02)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Rock fragment content of surface (0.01)		
39	Ferris-Heiden complex, 2 to 5 percent slopes	High wind erosion potential	Ferris (50%)	Clay content of surface (0.85)	1,775.4	15.3%
				Silt content of surface (0.02)		
				Rock fragment content of surface (0.00)		
			Heiden (40%)	Clay content of surface (0.85)		
				Silt content of surface (0.02)		
				Organic matter content of surface (0.01)		
				Rock fragment content of surface (0.01)		
43	Heiden clay, 1 to 3 percent slopes	High wind erosion potential	Heiden (85%)	Clay content of surface (0.85)	845.7	7.3%
				Silt content of surface (0.02)		
				Organic matter content of surface (0.01)		
				Rock fragment content of surface (0.01)		
44	Heiden clay, 5 to 8 percent slopes	High wind erosion potential	Heiden (85%)	Clay content of surface (0.85)	19.3	0.2%
				Silt content of surface (0.02)		
				Organic matter content of surface (0.01)		
				Rock fragment content of surface (0.01)		
48	Houston Black clay, 0 to 1 percent slopes	High wind erosion potential	Houston Black (85%)	Carbonate content of surface (0.86)	2,002.3	17.2%
				Clay content of surface (0.85)		
				Organic matter content of surface (0.05)		
				Silt content of surface (0.01)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Rock fragment content of surface (0.01)		
49	Houston Black clay, 1 to 3 percent slopes	High wind erosion potential	Houston Black (80%)	Carbonate content of surface (0.86)	4,329.0	37.2%
				Clay content of surface (0.85)		
				Organic matter content of surface (0.05)		
				Silt content of surface (0.01)		
				Rock fragment content of surface (0.01)		
73	Tinn clay, 0 to 1 percent slopes, occasionally flooded	High wind erosion potential	Tinn (85%)	Clay content of surface (0.85)	38.4	0.3%
				Silt content of surface (0.02)		
				Carbonate content of surface (0.02)		
				Organic matter content of surface (0.01)		
				Rock fragment content of surface (0.00)		
74	Tinn clay, 0 to 1 percent slopes, frequently flooded	High wind erosion potential	Tinn (85%)	Clay content of surface (0.85)	1,144.6	9.8%
				Silt content of surface (0.02)		
				Carbonate content of surface (0.02)		
				Organic matter content of surface (0.01)		
				Rock fragment content of surface (0.00)		
77	Venus loam, 1 to 3 percent slopes	High wind erosion potential	Venus (100%)	Carbonate content of surface (0.86)	4.5	0.0%
				Sand content of surface (0.36)		
				Clay content of surface (0.31)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Silt content of surface (0.08)		
				Rock fragment content of surface (0.00)		
79	Wilson clay loam, 0 to 1 percent slopes	Moderate wind erosion potential	Wilson (85%)	Clay content of surface (0.67)	29.7	0.3%
				Sand content of surface (0.26)		
				Rock fragment content of surface (0.06)		
				Silt content of surface (0.05)		
80	Wilson clay loam, 1 to 3 percent slopes	Moderate wind erosion potential	Wilson (85%)	Clay content of surface (0.67)	129.0	1.1%
				Sand content of surface (0.26)		
				Rock fragment content of surface (0.06)		
				Silt content of surface (0.05)		
W	Water	Not rated	Water (100%)		29.9	0.3%
Totals for Area of Interest					**11,639.0**	**100.0%**

Rating	Acres in AOI	Percent of AOI
High wind erosion potential	11,435.7	98.3%
Moderate wind erosion potential	158.8	1.4%
Low wind erosion potential	13.0	0.1%
Null or Not Rated	29.9	0.3%
Totals for Area of Interest	**11,639.0**	**100.0%**

Rating Options—Wind Erosion Potential (TX)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

Soil Qualities and Features

This folder contains tabular reports that present various soil qualities and features. The reports (tables) include all selected map units and components for each map unit. Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Soil Features

This table gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage, or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. The table shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, saturated hydraulic conductivity (Ksat), content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly,

or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low*, *moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low*, *moderate*, or *high.* It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Soil Features–Hill County, Texas									
Map symbol and soil name	Restrictive Layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		Low-RV-High	*Range*		*Low-High*	*Low-High*			
		In	*In*		*In*	*In*			
21—Branyon clay, 0 to 1 percent slopes									
Branyon		—	—		0	0	None	High	Moderate
22—Burleson clay, 0 to 1 percent slopes									
Burleson		—	—		0	0	None	High	Moderate
23—Burleson clay, 1 to 3 percent slopes									
Burleson		—	—		0	0	None	High	Moderate
34—Eddy very gravelly clay loam, 1 to 3 percent slopes									
Eddy	Paralithic bedrock	3- 9-15	—	Weakly coherent	0	—	None	Moderate	Low
37—Ferris clay, 5 to 12 percent slopes									
Ferris	Densic bedrock	38-38-60	—	noncoherent	0	—	None	High	Low
38—Ferris clay, 8 to 20 percent slopes, severely eroded									
Ferris, severely eroded	Densic bedrock	38-38-60	—	noncoherent	0	—	None	High	Low

Soil Features–Hill County, Texas									
Map symbol and soil name	Restrictive Layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		Low-RV-High	*Range*		*Low-High*	*Low-High*			
39—Ferris-Heiden complex, 2 to 5 percent slopes									
Ferris	Densic bedrock	39-45-60	—	noncoherent	0	0	None	High	Low
Heiden	Densic material	48-64-65	10-32	noncoherent	0	0	None	High	Low
43—Heiden clay, 1 to 3 percent slopes									
Heiden	Densic material	40-58-65	10-40	noncoherent	0	0	None	High	Low
44—Heiden clay, 5 to 8 percent slopes									
Heiden	Densic material	40-44-65	10-40	noncoherent	0	0	None	High	Low
48—Houston Black clay, 0 to 1 percent slopes									
Houston black		—	—		0	0	None	High	Low
49—Houston Black clay, 1 to 3 percent slopes									
Houston black		—	—		0	0	None	High	Low
73—Tinn clay, 0 to 1 percent slopes, occasionally flooded									
Tinn		—	—		0	0	None	High	Low

Soil Features–Hill County, Texas									
Map symbol and soil name	Restrictive Layer				Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
		Low-RV-High	*Range*		*Low-High*	*Low-High*			
74—Tinn clay, 0 to 1 percent slopes, frequently flooded									
Tinn		—	—		0	0	None	High	Low
77—Venus loam, 1 to 3 percent slopes									
Venus		—	—		0	—	None	Low	Low
79—Wilson clay loam, 0 to 1 percent slopes									
Wilson		—	—		0	0	None	High	High
80—Wilson clay loam, 1 to 3 percent slopes									
Wilson		—	—		0	0	None	High	High
W—Water									
Water		—	—		—	—			

Water Features

This folder contains tabular reports that present soil hydrology information. The reports (tables) include all selected map units and components for each map unit. Water Features include ponding frequency, flooding frequency, and depth to water table.

Water Features

This table gives estimates of various soil water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

Surface runoff refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based on slope, climate, and vegetative cover. The concept indicates relative runoff for very specific conditions. It is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal. The classes are negligible, very low, low, medium, high, and very high.

The *months* in the table indicate the portion of the year in which a water table, ponding, and/or flooding is most likely to be a concern.

Water table refers to a saturated zone in the soil. The water features table indicates, by month, depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on

observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table. The kind of water table, apparent or perched, is given if a seasonal high water table exists in the soil. A water table is perched if free water is restricted from moving downward in the soil by a restrictive feature, in most cases a hardpan; there is a dry layer of soil underneath a wet layer. A water table is apparent if free water is present in all horizons from its upper boundary to below 2 meters or to the depth of observation. The water table kind listed is for the first major component in the map unit.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. The table indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Map unit symbol and soil name	Hydrologic group	Surface runoff	Most likely months	Water table			Ponding			Flooding	
				Upper limit	Lower limit	Kind	Surface depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*		*Ft*				
21—Branyon clay, 0 to 1 percent slopes											
Branyon	D	High	Jan-Dec	—	—	—	—	—	None	—	None
22—Burleson clay, 0 to 1 percent slopes											
Burleson	D	High	Jan-Dec	—	—	—	—	—	None	—	None
23—Burleson clay, 1 to 3 percent slopes											
Burleson	D	Very high	Jan-Dec	—	—	—	—	—	None	—	None
34—Eddy very gravelly clay loam, 1 to 3 percent slopes											
Eddy	D	Low	Jan-Dec	—	—	—	—	—	None	—	None
37—Ferris clay, 5 to 12 percent slopes											
Ferris	D	Very high	Jan-Dec	—	—	—	—	—	None	—	None
38—Ferris clay, 8 to 20 percent slopes, severely eroded											
Ferris, severely eroded	D	Very high	Jan-Dec	—	—	—	—	—	None	—	None
39—Ferris-Heiden complex, 2 to 5 percent slopes											
Ferris	D	Very high	Jan-Dec	—	—	—	—	—	None	—	None
Heiden	D	Very high	Jan-Dec	—	—	—	—	—	None	—	None
43—Heiden clay, 1 to 3 percent slopes											
Heiden	D	Very high	Jan-Dec	—	—	—	—	—	None	—	None
44—Heiden clay, 5 to 8 percent slopes											
Heiden	D	Very high	Jan-Dec	—	—	—	—	—	None	—	None
48—Houston Black clay, 0 to 1 percent slopes											
Houston black	D	High	Jan-Dec	—	—	—	—	—	None	—	None
49—Houston Black clay, 1 to 3 percent slopes											
Houston black	D	Very high	Jan-Dec	—	—	—	—	—	None	—	None

Map unit symbol and soil name	Hydrologic group	Surface runoff	Most likely months	Water table			Ponding			Flooding	
				Upper limit	Lower limit	Kind	Surface depth	Duration	Frequency	Duration	Frequency
				Ft	*Ft*		*Ft*				
73—Tinn clay, 0 to 1 percent slopes, occasionally flooded											
Tinn	D	High	Jan	—	—	—	—	—	None	—	
			Feb-May	—	—	—	—	—	None	Brief (2 to 7 days)	Occasional
			Jun-Dec	—	—	—	—	—	None	—	
74—Tinn clay, 0 to 1 percent slopes, frequently flooded											
Tinn	D	High	Jan	—	—	—	—	—	None	—	
			Feb-May	—	—	—	—	—	None	Brief (2 to 7 days)	Frequent
			Jun-Dec	—	—	—	—	—	None	—	
77—Venus loam, 1 to 3 percent slopes											
Venus	B	Low	Jan-Dec	—	—	—	—	—	None	—	None
79—Wilson clay loam, 0 to 1 percent slopes											
Wilson	D	Medium	Jan-Mar	0.4-3.0	2.7-6.0	Apparent	—	—	None	—	None
			Apr-Oct	—	—	—	—	—	None	—	None
			Nov-Dec	0.4-3.0	2.7-6.0	Apparent	—	—	None	—	None
80—Wilson clay loam, 1 to 3 percent slopes											
Wilson	C	High	Jan-Dec	—	—	—	—	—	None	—	None
W—Water											
Water	D		Jan-Dec	—	—	—	—	—	—	—	

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Jordan, Katie

From: CESWF-Permits@usace.army.mil
Sent: Friday, June 7, 2024 4:20 PM
To: Jordan, Katie
Subject: [EXTERNAL] RE: Aquilla Lake 3 Transmission Line Project

Follow Up Flag: Follow up
Flag Status: Flagged

Katie,

Could you provide coordinates?

Natasha Gray
Legal Instruments Examiner
Regulatory Division
U.S. Army Corps of Engineers
819 Taylor Street, Rm 3A37
Fort Worth, Texas 76102
Phone: 817-886-1461
Email: natasha.a.gray@usace.army.mil

[rrs.usace.army.mil]

Please assist us in better serving you by completing the survey at the following website:
https://regulatory.ops.usace.army.mil/customer-service-survey/
[regulatory.ops.usace.army.mil]

From: katie.jordan@powereng.com <katie.jordan@powereng.com>
Sent: Friday, June 7, 2024 3:23 PM

To: CESWF-Permits@usace.army.mil
Cc: gary.mcclanahan@powereng.com; denise.williams@powereng.com; ashley.brewer@powereng.com
Subject: [Non-DoD Source] Aquilla Lake 3 Transmission Line Project

Dear Mr. Mobley,

On behalf of our client, Lone Star Transmission, LLC, attached please find a proposed project information letter.

Thank you for your assistance with this proposed electric transmission line project. Please contact the Project Manager, Gary McClanahan, by phone at 512-735-1805, or by e-mail at gary.mcclanahan@powereng.com, if you have any questions or require additional information.

Thank you,
Katie Jordan
Environmental Planner I
ENV South Central PM/Planning III Department

1-512-500-0947 (main office)
832-477-6152 (cell)

POWER Engineers, Inc.
www.powereng.com

From: McClanahan, Gary
To: Eckert, Annabelle N CIV USARMY CESWF (USA)
Cc: Williams, Denise
Subject: RE: SWF-2024-00299 (Aquilla Lake 3 Transmission Line)
Date: Wednesday, June 12, 2024 11:29:52 AM
Attachments: image001.png
Lone_Star_Aquilla_Lake_20240530.kmz

Ms. Eckert,

Please find the attached kmz file that includes the study area boundary, future substation , and Point of interconnection as depicted in the map provided with our letter.

As mentioned in our letter that was submitted to multiple federal, state and local agencies, we are currently in the process of gathering environmental, cultural, and land use constraints data within the study area. There are no proposed routes at this time. We are currently requesting information from various entities, such as yourself of any constraints you may be aware of within the study area that may have an effect on the routing of a transmission line. We will use this information to help identify and evaluate alternative routes as part of an application we will submit to the Public Utility Commission of Texas (PUC). The PUC will ultimately approve the final route. Afterwards, LST will conduct any necessary surveys, wetland delineations etc. along the approved route and will seek to obtain all necessary permits from regulatory entities at that time.

Thanks.

GARY MCCLANAHAN
SOUTH CENTRAL DEPARTMENT MANAGER
ENVIRONMENTAL DIVISION
7600 B North Capital of Texas Hwy, Suite 320
Austin, Tx 78731

Office: 512-735-1805
Cell: 361-648-1406

POWER Engineers, Inc.
www.powereng.com

From: Eckert, Annabelle N CIV USARMY CESWF (USA) <Annabelle.N.Eckert@usace.army.mil>
Sent: Wednesday, June 12, 2024 7:36 AM
To: McClanahan, Gary <gary.mcclanahan@powereng.com>
Subject: [EXTERNAL] RE: SWF-2024-00299 (Aquilla Lake 3 Transmission Line)

Good morning Mr. McClanahan,

Thank you for your submittal. Can you please provide either a Google Earth (kmz) file with a polygon

representing the project boundary, or a map with the polygon overlaying an aerial image? Please include coordinates.

Very Respectfully,

Annabelle Eckert
Regulatory Project Manager
US Army Corps of Engineers
817.886.1009
817.319.9859
Annabelle.N.Eckert@USACE.Army.Mil

Regulatory webpage: www.swf.usace.army.mil/Missions/Regulatory [swf.usace.army.mil]

Application forms: www.swf.usace.army.mil/Missions/Regulatory/Permitting/Application-Submittal-Forms [swf.usace.army.mil]

Application submittal process: www.swf.usace.army.mil/Missions/Regulatory/Electronic-Submittal-Instructions [swf.usace.army.mil] (email to CESWF-Permits@usace.army.mil)

Report an alleged violation: www.swf.usace.army.mil/Missions/Regulatory/Enforcement [swf.usace.army.mil] (email to CESWF-Compliance@usace.army.mil)

Customer service survey: https://regulatory.ops.usace.army.mil/ords/f?p=136:4 [regulatory.ops.usace.army.mil]

From: Gray, Natasha A CIV USARMY CESWF (USA) <Natasha.A.Gray@usace.army.mil>
Sent: Tuesday, June 11, 2024 4:05 PM
To: gary.mcclanahan@powereng.com
Cc: Eckert, Annabelle N CIV USARMY CESWF (USA) <Annabelle.N.Eckert@usace.army.mil>
Subject: SWF-2024-00299 (Aquilla Lake 3 Transmission Line)

Dear Mr. McClanahan:

Thank you for your letter received June 7, 2024, concerning a proposal for the construction of a 345 kV transmission line located in Hill County, Texas. The project has been assigned Project Number SWF-2024-00299, please include this number in all future correspondence concerning this project.

Ms. Annabelle Eckert 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 refer to the Fort Worth District Regulatory Division homepage at

http://www.swf.usace.army.mil/Missions/regulatory [swf.usace.army.mil] and particularly guidance on submittals at https://swf-apps.usace.army.mil/pubdata/environ/regulatory/introduction/submital.pdf [swf-apps.usace.army.mil] and mitigation at https://www.swf.usace.army.mil/Missions/Regulatory/Permitting/Mitigation [swf.usace.army.mil] 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 [swf.usace.army.mil] or contact Ms. Annabelle Eckert by telephone 817-886-1009, or by email annabelle.n.eckert@usace.army.mil, 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 [corpsmapu.usace.army.mil]

Brandon W. Mobley
Chief, Regulatory Division

[rrs.usace.army.mil]

Please assist us in better serving you by completing the survey at the following website: https://regulatory.ops.usace.army.mil/customer-service-survey/ [regulatory.ops.usace.army.mil]

From:	CESWF-408
To:	Jordan, Katie; CESWF-408
Cc:	McClanahan, Gary; Williams, Denise; Brewer, Ashley; Sissom, Mark A CIV USARMY CESWF (USA); Eckert, Annabelle N CIV USARMY CESWF (USA); Rodriguez, Sylvester I CIV USARMY CESWF (USA); Story, Jason E CIV USARMY CESWF (USA)
Subject:	[EXTERNAL] 408-SWF-2024-0051, Lone Star Transmission, LLC Aquilla Lake 3 Transmission, near Navarro Mills Lake, no 408
Date:	Tuesday, June 18, 2024 7:00:32 AM

Dear Mr. McClanahan:

The Fort Worth District of the U.S. Army Corps of Engineers has received your inquiry regarding the subject project (proposed Lone Star Transmission, LLC Aquilla Lake 3 electric transmission line project). This project has been assigned Section 408 Request Number 408-SWF-2024-0051. Please use this number in all future correspondence regarding this project. Based on your description of the proposed work, and other information available to us, we have determined there are no U.S. Army Corps of Engineers federally authorized Civil Works projects that are crossed or altered by the subject project. Therefore, authorization under Section 14 of the Rivers and Harbors Act of 1899, 33 USC 408 (Section 408) is not required. We have placed a copy of the information you submitted in our files. Thanks for coordinating with us on this matter. Please contact me at 817-239-8475, or email jason.e.story@usace.army.mil for any questions.

Authorization may still be required under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act of 1899, which are administered by the Regulatory Division. Information about the Regulatory Division can be found at https://www.swf.usace.army.mil/Missions/Regulatory/ [swf.usace.army.mil].

Note, the Regulatory Project Number is SWF-2024-00299, and Ms. Annabelle Eckert is the Regulatory Project Manager.

Sincerely,

Jason Story
Section 408 Coordinator
Fort Worth District
Biologist
RPEC
U.S. Army Corps of Engineers
817-239-8475
jason.e.story@usace.army.mil

For more information on Section 408, visit the Fort Worth District Section 408 webpage at https://www.swf.usace.army.mil/Missions/Section-408/ [swf.usace.army.mil]

From: katie.jordan@powereng.com <katie.jordan@powereng.com>
Sent: Friday, June 07, 2024 3:23 PM
To: CESWF-408 <CESWF-408@usace.army.mil>
Cc: gary.mcclanahan@powereng.com; denise.williams@powereng.com; ashley.brewer@powereng.com
Subject: [Non-DoD Source] Aquilla Lake 3 Transmission Line Project

Dear Mr. Story,

On behalf of our client, Lone Star Transmission, LLC, attached please find a proposed project information letter.

Thank you for your assistance with this proposed electric transmission line project. Please contact the Project Manager, Gary McClanahan, by phone at 512-735-1805, or by e-mail at gary.mcclanahan@powereng.com, if you have any questions or require additional information.

Thank you,
Katie Jordan
Environmental Planner I
ENV South Central PM/Planning III Department

1-512-500-0947 (main office)
832-477-6152 (cell)

POWER Engineers, Inc.
www.powereng.com

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arlington Ecological Services Field Office
17629 El Camino Real, Suite 211
Houston, TX 77058-3051
Phone: (817) 277-1100 Fax: (817) 277-1129
Email Address: arles@fws.gov

In Reply Refer To: 07/11/2024 15:13:52 UTC
Project Code: 2024-0114707
Project Name: Aquilla Lake

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, which may occur within the boundary of your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under section 7(a)(1) of the Act, Federal agencies are directed to utilize their authorities to carry out programs for the conservation of threatened and endangered species. Under and 7(a)(2) and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to determine whether their actions may affect threatened and endangered species and/or designated critical habitat. A Federal action is an activity or program authorized, funded, or carried out, in whole or in part, by a Federal agency (50 CFR 402.02).

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For Federal actions other than major construction activities, the Service suggests that a biological evaluation (similar to a Biological Assessment) be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

After evaluating the potential effects of a proposed action on federally listed species, one of the following determinations should be made by the Federal agency:

1. *No effect* - the appropriate determination when a project, as proposed, is anticipated to have no effects to listed species or critical habitat. A "no effect" determination does not require section 7 consultation and no coordination or contact with the Service is necessary. However, the action agency should maintain a complete record of their evaluation, including the steps leading to the determination of affect, the qualified personnel conducting the evaluation, habitat conditions, site photographs, and any other related information.
2. *May affect, but is not likely to adversely affect* - the appropriate determination when a proposed action's anticipated effects to listed species or critical habitat are insignificant, discountable, or completely beneficial. Insignificant effects relate to the size of the impact and should never reach the scale where "take" of a listed species occurs. Discountable effects are those extremely unlikely to occur. Based on best judgment, a person would not be able to meaningfully measure, detect, or evaluate insignificant effects, or expect discountable effects to occur. This determination requires written concurrence from the Service. A biological evaluation or other supporting information justifying this determination should be submitted with a request for written concurrence.
3. *May affect, is likely to adversely affect* - the appropriate determination if any adverse effect to listed species or critical habitat may occur as a consequence of the proposed action, and

the effect is not discountable or insignificant. This determination requires formal section 7 consultation.

The Service has performed up-front analysis for certain project types and species in your project area. These analyses have been compiled into *determination keys*, which allows an action agency, or its designated non-federal representative, to initiate a streamlined process for determining a proposed project's potential effects on federally listed species. The determination keys can be accessed through IPaC.

The Service recommends that candidate species, proposed species, and proposed critical habitat be addressed should consultation be necessary. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found at: https://www.fws.gov/service/section-7-consultations

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan (https://www.fws.gov/library/collections/bald-and-golden-eagle-management). Additionally, wind energy projects should follow the wind energy guidelines (https://www.fws.gov/media/land-based-wind-energy-guidelines) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: https://www.fws.gov/media/recommended-best-practices-communication-tower-design-siting-construction-operation. The Federal Aviation Administration (FAA) released specifications for and made mandatory flashing L-810 lights on new towers 150-350 feet AGL, and the elimination of L-810 steady-burning side lights on towers above 350 feet AGL. While the FAA made these changes to reduce the number of migratory bird collisions (by as much as 70%), extinguishing steady-burning side lights also reduces maintenance costs to tower owners. For additional information concerning migratory birds and eagle conservation plans, please contact the Service's Migratory Bird Office at 505-248-7882.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in

the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Arlington Ecological Services Field Office
17629 El Camino Real, Suite 211
Houston, TX 77058-3051
(817) 277-1100

PROJECT SUMMARY

Project Code: 2024-0114707
Project Name: Aquilla Lake
Project Type: Transmission Line - New Constr - Above Ground
Project Description: Above ground transmission.
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@31.95795235,-96.90848307499317,14z

Counties: Hill County, Texas

ENDANGERED SPECIES ACT SPECIES

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 2 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

BIRDS

NAME	STATUS
Golden-cheeked Warbler *Setophaga chrysoparia* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/33	Endangered
Piping Plover *Charadrius melodus* Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is **final** critical habitat for this species. Your location does not overlap the critical habitat. This species only needs to be considered under the following conditions: ▪ Wind Energy Projects Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Rufa Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. This species only needs to be considered under the following conditions: ▪ Wind Energy Projects Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened
Whooping Crane *Grus americana* Population: Wherever found, except where listed as an experimental population There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/758	Endangered

REPTILES

NAME	STATUS
Alligator Snapping Turtle *Macrochelys temminckii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4658	Proposed Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BALD & GOLDEN EAGLES

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

---

1. The Bald and Golden Eagle Protection Act of 1940.
2. The Migratory Birds Treaty Act of 1918.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

THERE ARE NO BALD AND GOLDEN EAGLES WITHIN THE VICINITY OF YOUR PROJECT AREA.

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

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1. The Migratory Birds Treaty Act of 1918.

2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Golden-plover *Pluvialis dominica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10561	Breeds elsewhere
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9406	Breeds Mar 15 to Aug 25
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Pectoral Sandpiper *Calidris melanotos* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9561	Breeds elsewhere
Prairie Loggerhead Shrike *Lanius ludovicianus excubitorides* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8833	Breeds Feb 1 to Jul 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

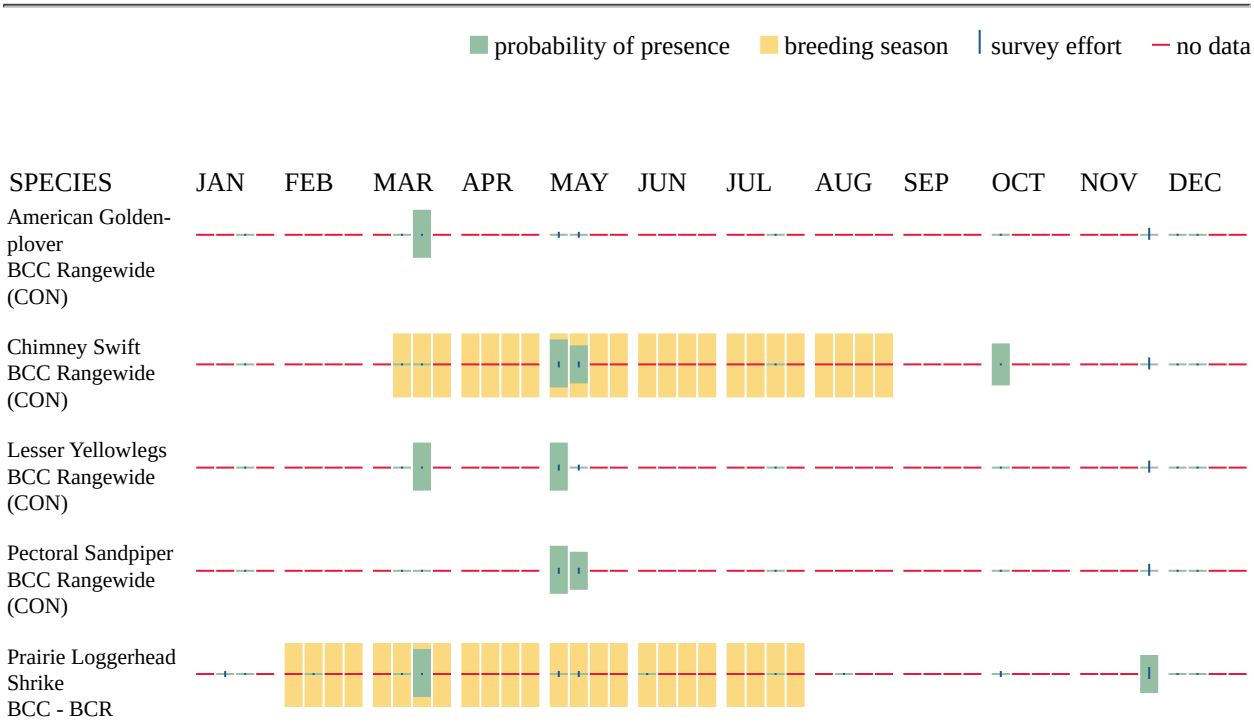
Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)

Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)
A week is marked as having no data if there were no survey events for that week.



Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

WETLANDS

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER FORESTED/SHRUB WETLAND

- PFO1C
- PFO1Ah

FRESHWATER EMERGENT WETLAND

- PEM1Ah
- PEM1C
- PEM1Ch
- PEM1Fh

RIVERINE

- R5UBH
- R4SBC
- R4SBCx

FRESHWATER POND

- PABFh
- PUBHh
- PUBHx
- PUB/ABHh
- PABHh

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Mikaela Egbert
Address: 16825 Northchase Dr
Address Line 2: Suite 1200
City: Houston
State: TX
Zip: 77060
Email mikaelaegbert1998@gmail.com
Phone: 3466043790

From: noreply@thc.state.tx.us
To: McClanahan, Gary; reviews@thc.state.tx.us
Subject: [EXTERNAL] Aquilla Lake 3 Transmission Line Project
Date: Tuesday, July 2, 2024 3:28:52 PM

Re: Project Review under the Antiquities Code of Texas
THC Tracking #202411390
Date: 07/02/2024
Aquilla Lake 3 Transmission Line Project
W. of FM 308
Malone,TX

Description: Application with PUC to amend its Certificate of Convenience and Necessity to construct a new single-circuit 345 kV transmission line.

Dear Gary McClanahan:
Thank you for your submittal regarding the above-referenced project. This response represents the comments of the Executive Director of the Texas Historical Commission (THC), pursuant to review under the Antiquities Code of Texas.

The review staff, led by Rebecca Shelton and Caitlin Brashear, has completed its review and has made the following determinations based on the information submitted for review:

We have the following comments: According to our maps, there are multiple historic cemeteries and recorded archeological sites in the Aquilla Lake 3 POI. We recommend that once a route is selected, that a detailed desktop evaluation by a professional archeologist be conducted to determine if cultural resources are within the project area.

We look forward to further consultation with your office and hope to maintain a partnership that will foster effective historic preservation. Thank you for your cooperation in this review process, and for your efforts to preserve the irreplaceable heritage of Texas. If the project changes, or if new historic properties are found, please contact the review staff. If you have any questions concerning our review or if we can be of further assistance, please email the following reviewers: rebecca.shelton@thc.texas.gov, caitlin.brashear@thc.texas.gov.

This response has been sent through the electronic THC review and compliance system (eTRAC). Submitting your project via eTRAC eliminates mailing delays and allows you to check the status of the review, receive an electronic response, and generate reports on your submissions. For more information, visit http://thc.texas.gov/etrac-system [thc.texas.gov].

Sincerely,

for Bradford Patterson
Chief Deputy State Historic Preservation Officer

Please do not respond to this email.

TEXAS PARKS & WILDLIFE

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July 8, 2024

Mr. Gary McClanahan
POWER
7600B N Capital of Texas Hwy, Suite 320
Austin, TX 78731

RE: Lone Star Transmission, LLC Proposed Aquilla Lake 3 Transmission Line Project, Hill County

Dear Mr. Gary McClanahan:

The Texas Parks and Wildlife Department (TPWD) received a project review request dated June 7, 2024, regarding the transmission project referenced above.

Under Texas Parks and Wildlife Code (PWC) Section 12.0011(b)(2) and (b)(3), TPWD has authority to provide recommendations and informational comments that will protect fish and wildlife resources to local, state, and federal agencies that approve, license, or construct developmental projects or make decisions affecting those resources. TPWD is providing input on this proposed project to facilitate the incorporation of beneficial management practices (BMP) during construction, operation, and maintenance that may assist the project proponent in minimizing impacts to the state's natural resources. Pursuant to PWC Section 12.0011(b)(2) and (b)(3), TPWD offers the following comments and recommendations concerning this project.

Project Description

Lone Star Transmission, LLC (LST) proposes to construct a new single-circuit 345-kilovolt (kV) transmission line initiating at the proposed Bullock LST 345-kV Station, to be located north of Malone, Texas, and west of Farm-to-Market (FM) 308, and terminating at the proposed Aquilla Lake 3 Point of Interconnection (POI), to located south of FM 1946 and east of State Highway 171.

On behalf of LST, POWER Engineers, Inc. (POWER) is preparing a state-level Environmental Assessment and Alternative Route Analysis (EA) to support an application for a Certificate of Convenience and Necessity from the Public Utility Commission of Texas for the proposed project. POWER is requesting environmental and land use constraints information or other issues of interest to TPWD within the study area for the project. POWER provided a map exhibiting the study area boundary, the proposed Bullock LST 345-kV Station, the proposed Aquilla Lake 3 POI, existing transmission lines, streams, roads, and city limits.

Recommendation: TPWD recommends using existing transmission facilities wherever possible and minimizing the transmission line length. Where new construction is the only feasible option, TPWD recommends routing new transmission lines along existing transmission lines, roads, railways, pipelines, or

other utility rights-of-way (ROW) to reduce habitat fragmentation and minimize loss of undisturbed habitats.

Federal Law

Federal Law: Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) prohibits taking, attempting to take, capturing, killing, selling, purchasing, possessing, transporting, and importing of migratory birds, their eggs, parts, or nests, except when specifically authorized by the Department of the Interior. This protection applies to most native bird species, including ground nesting species. The U.S. Fish and Wildlife Service (USFWS) Migratory Bird Office can be contacted at (505) 248-7882 for more information.

Measures should be taken to ensure that migratory bird species within and near the project area are not adversely impacted by construction, maintenance, and operation activities. Riparian corridors, rivers, creeks, wetlands, and lakes provide habitat for waterfowl, shorebirds, wading birds, raptors, and other birds. There is potential for collision of birds with transmission lines near water features.

Recommendation: TPWD recommends LST route transmission lines to avoid crossing streams, riparian areas, wetlands, and open water habitat, to the extent feasible. When crossing streams, TPWD recommends crossing in a perpendicular manner and avoiding placement of lines parallel to streams and their associated wooded and herbaceous floodplain and riparian corridors to minimize risk of collision. Where lines cross or are located near creeks, drainages, wetlands, and lakes, TPWD recommends LST proactively install line markers to reduce potential collisions of birds utilizing these habitats. TPWD recommends the use of raptor protection measures such as adequate conductor spacing, perch guards, and insulated jumper wires to prevent electrocution of perching raptors. Please refer to the guidelines published by USFWS and the Avian Power Lines Interaction Committee found in *Reducing Avian Collisions with Power Lines: State of the Art in 2012,* which identifies best practices and provides specific guidance to help electric utilities reduce bird collisions with power lines, and the 2006 companion document, *Suggested Practices for Avian Protection on Power Lines*.

Within the project area, potential impacts to migratory birds may occur during disturbance of existing vegetation and bare ground that may harbor active bird nests, including nests that may occur in grass, shrubs, and trees and on gravel pads and roads.

Recommendation: TPWD recommends excluding vegetation clearing activities during the general bird nesting season, March 15 through September 15, to avoid adverse impacts to breeding birds. If disturbing vegetation during the migratory bird nesting season is unavoidable, TPWD recommends surveying the area proposed for disturbance to ensure that no nests with eggs or young will be disturbed by construction. Nest surveys should be conducted not more than five days prior to clearing activities. TPWD generally recommends a 100-foot buffer of vegetation remain around active nests until the eggs have hatched and the young have fledged;

however, the size of the buffer zone depends on various factors and can be coordinated with the local or regional USFWS office.

Recommendation: TPWD recommends employing the USFWS Nationwide Standard Conservation Measures to reduce impacts to birds and their habitats.

Artificial light at night can have negative impacts on wildlife and ecosystems by disrupting natural diurnal and nocturnal behaviors such as migration, reproduction, nourishment, rest, and cover from predators. Careful selection of lighting technologies can reduce the project's contribution to skyglow and light pollution.

Recommendation: As bird protection measures, TPWD recommends avoiding the use of permanent outdoor nighttime lighting. If outdoor lighting is required for on-ground facilities, such as personnel parking areas, station and POI sites, and equipment cabinet areas, TPWD recommends minimizing the project's contribution to skyglow by focusing light downward with shields or cutoff luminaires and to use dark-sky friendly lighting that is illuminated only when needed, as bright as needed, and minimizes blue light emissions. Appropriate lighting technologies, beneficial management practices (BMP), and other dark sky resources can be found at the International Dark-Sky Association and McDonald Observatory websites.

Federal Law: Endangered Species Act

Federally listed animal species and their habitat are protected from take on any property by the Endangered Species Act (ESA). Take of a federally listed species can be allowed if it is incidental to an otherwise lawful activity and must be permitted in accordance with Section 7 or 10 of the ESA. Take of a federally listed species or its habitat without allowance from USFWS is a violation of the ESA. The USFWS rare species lists can be obtained at the USFWS Information Planning and Consultation (IPaC) website.

Recommendation: TPWD recommends that the EA identify the federally listed, candidate, and proposed species with potential to occur within the study area. TPWD recommends LST conduct site surveys of the route to identify suitable habitat for federally listed species, to assess potential impacts to federally listed species, and to determine route adjustments to avoid or minimize adverse impacts to federally listed, candidate, and proposed species. If impact to a federally listed species is anticipated, TPWD recommends that LST consult with USFWS Texas Coastal and Central Plains Ecological Services Fort Worth Sub-office at arles@fws.gov or (817) 277-1100 pursuant to the ESA. The USFWS should be contacted for additional species occurrence data, guidance, permitting, survey protocols, and mitigation for federally listed species.

TPWD review of aerial imagery and the TPWD Texas Ecosystem Analytical Mapper indicates the study area contains primarily row crops and disturbance and tame grasslands with riparian and floodplain vegetation along streams. The study area contains small amounts of open water, low intensity urban development, native invasive vegetation, oak/hardwood slope forest, barrens, and savanna grassland.

Based on publicly available data and habitats in the project area, TPWD anticipates that the project site contains 1) potential suitable migration stopover habitat for the federal endangered whooping crane (*Grus americana*), 2) potential suitable migration habitat for the federal candidate monarch butterfly (*Danaus Plexippu*s), and 3) potential suitable roosting habitat for the federal proposed endangered tricolored bat (*Perimyotis subflavus*).

Whooping crane: The whooping crane is listed endangered in the entire U.S. except where it is listed as an experimental, non-essential population. The Aransas Wood Buffalo Population is the only self-sustaining wild population and had a 2022-2023 estimated size of 536 birds (USFWS 2023). The Aransas Wood Buffalo Population migrates across and winters in Texas utilizing a variety of wetland and other habitats, including coastal marshes and estuaries, inland marshes, lakes, ponds, wet meadows, rivers, and agricultural fields. During migration, roosting occurs in shallow, seasonally and semi-permanently flooded palustrine wetlands. During migration, feeding occurs in wetlands and harvested grain fields for a diet of frogs, fish, crayfish, insects, and agricultural grains.

The study area occurs within the core migration corridor that represents 95% of the sightings during whooping crane migration (Pearse et al., 2018). Additionally, the study area occurs within a peripheral stopover polygon based on the *Characterization of whooping crane migration space use in the Central Flyway, 2010-2016* and the associated companion publication (Pearse et al., 2019 and 2020).

> **Recommendation:** To avoid potential collision risk when whooping cranes access stopover habitat, TPWD recommends avoiding project development within areas that may provide stopover habitat for whooping cranes during migration. If proposed transmission lines must occur within the vicinity of herbaceous floodplains, cropland, or the margins of open water sites, TPWD recommends proactively installing bird flight diverters to reduce potential whooping crane collision risk and consulting with the USFWS for additional guidance.

Monarch butterfly: The monarch butterfly is a candidate for listing under the ESA with an expected range of the entire continental United States, with migration through Texas between the principal breeding grounds in the north and the overwintering areas in Mexico. In the fall (September – November), monarchs in eastern and western North America migrate long distances to their overwintering area in Mexico. In early spring (February-March), surviving monarchs break diapause and mate at the overwintering sites before dispersing. The same individuals that undertook the initial long distance southward migration begin flying back through the breeding grounds seeking milkweeds on which to lay their eggs before dying. Their offspring start the cycle of generational migration, continuing to head north as multiple generations of monarchs are produced, with most adult butterflies living approximately two to five weeks. The primary drivers affecting health include the loss and degradation of habitat (from conversion of grasslands to agriculture, widespread use of herbicides, logging/thinning at overwintering sites in Mexico, senescence, and incompatible management of overwintering sites in California, urban development, and drought), continued exposure to insecticides, and effects of climate change. Habitat during migration includes open fields and meadows containing nectar plants and milkweed needed for survival.

Recommendation: Regarding the monarch butterfly, TPWD recommends development strategies that avoid or minimize loss to migration habitat for the monarch butterfly within the project area. To replace habitat that is lost due to construction of the proposed project, TPWD recommends monarch and other pollinator habitat conservation and management within transmission line ROW.

Tricolored bat: Woodland areas that would be cleared for construction may provide suitable maternity season habitat and year-round active season roosting habitat for tricolored bats. The tricolored bat is proposed endangered wherever found. This species is a small insectivorous bat that is wide ranging across the eastern and central United States and portions of southern Canada, Mexico, and Central America. During the winter, tricolored bats are found in subterranean features such as caves and abandoned mines, although in the southern portion of their range (including Hill County, Texas), where caves are sparse, tricolored bats also roost in trees, road-associated culverts, and bridges where they remain active and feed during winter. During the spring, summer, and fall, tricolored bats are active and found foraging and roosting in a wide variety of forested or wooded habitats. Active season roosting occurs in trees, primarily among clusters of leaves of live or recently dead deciduous hardwood trees, but may also be found in Spanish moss (*Tillandsia usneoides*), and clusters of dead pine needles. The sexes live separately during the summer, with males often solitary and females forming small maternity colonies primarily in foliage, but sometimes in buildings and rock crevices. The central latitudes of Texas are considered a year-round active range where pupping occurs May 1-July 15 and where tricolored bat are expected to go into winter torpor between December 15-February 15, during the coldest months when mean winter temperatures fall below 40 degrees Fahrenheit. During pupping, hibernation, and at temperatures below 40 degrees Fahrenheit, the bats are less able to escape from tree clearing and are susceptible to mortality. Protection of hibernacula, avoiding tree removal during pupping, avoiding tree removal during winter torpor in central Texas latitudes, and minimizing overall tree removal are conservation practices for the species.

Recommendation: Because the project occurs in central latitudes of Texas where tricolored bats are active year-round, TPWD recommends avoiding tree clearing during the pupping season May 1-July 15, avoiding tree clearing during winter torpor period from December 15 – February 15, and minimizing the tree clearing footprint. TPWD recommends utilizing these BMP in preparation for an anticipated listing decision. If tricolored bats become federally listed prior to construction, then the project will need to conduct additional coordination with the USFWS– Texas Coastal and Central Plains Ecological Services -Fort Worth Sub-Office at (817) 277-1100 for additional project guidance and to ensure compliance with the ESA.

Federal Law: Clean Water Act Section 404

Section 404 of the Clean Water Act (CWA) establishes a federal program to regulate the discharge of dredge and fill material into the waters of the U.S., including wetlands. The U.S. Army Corps of Engineers (USACE) and the Environmental Protection Agency (EPA) are responsible for regulating water resources under this act.

Recommendation: If the proposed project would impact waterways or associated wetlands, TPWD recommends consulting with the Regulatory Branch of the Fort Worth District of the USACE at (817) 886-1731 pursuant to the CWA, including jurisdictional determinations, delineations, and mitigation.

Waterways, floodplains, riparian corridors, lakes, and wetlands provide valuable habitat for aquatic species and other wildlife, and TPWD recommends protecting them to the maximum extent possible. Although isolated wetlands and ephemeral streams may not be applicable to the USACE permitting process, both jurisdictional and non-jurisdictional waters are essential in providing habitat for wildlife and helping to protect water quality.

Recommendation: TPWD recommends establishing disturbance-free buffers contiguous to wetlands or aquatic systems to preserve wildlife cover, food sources, and travel corridors and constructing the transmission line to avoid creeks or span all creeks that must be crossed. During construction, trucks and equipment should use existing bridges to cross creeks while avoiding unnecessary temporary or permanent access roads across creeks. If stream crossings are required, TPWD recommends avoiding disturbance to inert microhabitats in waterways such as snags, brush piles, fallen logs, creek banks, pools, and gravel stream bottoms, as these provide habitat for a variety of fish and wildlife species and their food sources. Placement of culverts in areas containing native mussels should be avoided. Erosion control measures should be installed prior to construction and maintained until disturbed areas are permanently revegetated.

State Law

State Law: Chapter 64, Birds

PWC section 64.002, regarding protection of nongame birds, provides that no person may catch, kill, injure, pursue, or possess a bird that is not a game bird. PWC section 64.003, regarding destroying nests or eggs, provides that, no person may destroy or take the nests, eggs, or young and any wild game bird, wild bird, or wild fowl.

Recommendation: Please review the *Migratory Bird Treaty Act* section above for recommendations because they are also applicable for compliance with PWC.

State Law: State Listed Species

PWC regulates state listed threatened and endangered animal species. The capture, trap, take, or killing of state listed threatened and endangered animal species is unlawful unless expressly authorized under a permit issued by USFWS or TPWD. The TPWD *Rare, Threatened, and Endangered Species of Texas by County* (RTEST) is an on-line resource that identifies threatened and endangered species and other species of greatest conservation need (SGCN) that have potential to occur within each county in Texas based on occurrence and range data. The on-line webpage can be found by searching TPWD RTEST in your search engine.

Recommendation: TPWD recommends the EA identify the state listed threatened and endangered species with potential to occur within the study area using the RTEST list for Hill County. TPWD recommends LST conduct site surveys of the route to identify suitable habitat for state listed species and to assess potential impacts to state listed species. TPWD recommends the EA identify impact avoidance and minimization measures that LST will implement to protect state listed species, natural vegetation communities, and other SGCN that may occur within the study area.

Recommendation: Please review the *Beneficial Management Practices* section below for recommendations to avoid or minimize potential impacts to state listed species. Please review the *Migratory Bird Treaty Act* section above for recommendations to avoid or minimize potential impacts to birds that are also state listed species.

State Law: Aquatic Resources

PWC section 1.011 grants TPWD authority to regulate and conserve aquatic animal life of public waters. Texas Administrative Code (TAC) section 57.157 regulates take of mussels, including mussels that are not state listed. TPWD regulates the introduction and stocking of fish, shellfish, and aquatic plants into public waters of the state under PWC 12.015, 12.019, and 66.015 and TAC 52.101-52.105, 52.202, and 57.251-57.259.

Dewatering activities can impact aquatic resources through stranding fish and mussels. Other harmful construction activities can trample, dredge or fill areas exhibiting stationary aquatic resources such as plants and mussels. Relocating aquatic life to an area of suitable habitat outside the project footprint avoids or reduces impacts to aquatic life. Relocation activities are done under the authority of a TPWD *Permit to Introduce Fish, Shellfish or Aquatic Plants into Public Waters* with an approved Aquatic Resource Relocation Plans (ARRP). The permit allows for movement (i.e., introduction, stocking, transplant, relocation) of aquatic species in waters of the state. ARRPs are used to plan resource handling activities and assist in the permitting process. If dewatering activities and other project related activities cause mortality to fish and wildlife species, then the responsible party would be subject to investigation by the TPWD Kills and Spills Team (KAST) and will be liable for the value of lost resources under the authority of PWC sections 12.0011 (b) (1) and 12.301.

Although surface waters are generally spanned by transmission lines, temporary and permanent stream crossings installed to accommodate machinery and vehicle access may require work within surface waters.

Recommendation: TPWD recommends that impact avoidance measures for aquatic organisms, including all native fish and freshwater mussel species, regardless of state listing status, be considered during project planning and construction activities.

Recommendation: If construction occurs in streams during times when water is present and dewatering, fill, or trampling activities are involved, then TPWD recommends relocating native aquatic resources, including fish and mussels, in

conjunction with a *Permit to Introduce Fish, Shellfish or Aquatic Plants into Public Waters* and an ARRP. The ARRP should approved by the department 30 days prior to activity within project waters or resource relocation and submitted with an application for a no-cost permit. ARRPs can be submitted to Travis Tidwell TPWD Region 1 KAST available at Travis.Tidwell@tpwd.texas.gov and 512-389-8612.

State Law: Invasive Species

Per TAC chapter 57, it is an offense for any person to possess, transport, or release into the water of this state any species, hybrid of a species, subspecies, eggs, seeds, or any part of any species defined as a harmful or potentially harmful exotic fish, shellfish, or aquatic plant. This rule applies not only to zebra mussels (*Dreissena polymorpha*) (live or dead) and their larvae but also to any species or fragments thereof designated as harmful or potentially harmful under this subchapter (e.g., giant salvinia, hydrilla, Eurasian watermilfoil). The full list of prohibited species can be found on the TPWD webpage regarding prohibited aquatic species.

Although surface waters are generally spanned by transmission lines, temporary and permanent stream crossings installed to accommodate machinery and vehicle access may require work within surface waters. Equipment coming in contact with surface waters could transport invasive species where mud, plant debris, or water accumulate.

Recommendation: If equipment will come in contact with inland streams or waterbodies, such as during construction or demolition of temporary and permanent stream crossings, TPWD recommends LST prepare and follow an aquatic invasive species (AIS) transfer prevention plan which outlines BMP for preventing inadvertent transfer of aquatic invasive plants and animals on project equipment and materials. To minimize the risk of transporting aquatic invasive species, TPWD recommends LST and its contractors review and adhere to the AIS BMP identified in the ARRP guidelines packet and the *TPWD Clean/Drain/Dry Procedures and Zebra Mussel Decontamination Procedures for Contractors Working in Inland Public Waters*.

Beneficial Management Practices

The 2023 State Wildlife Action Plan: Texas (SWAP: Texas) replaces the 2013 Texas Conservation Action Plan (TCAP). The SWAP: Texas identifies SGCN, important habitats, and threats affecting SGCN within the state. In addition to state and federally listed species, TPWD tracks other SGCN and natural plant communities and actively promotes their conservation. TPWD considers it important to evaluate and, if feasible, minimize impacts to SGCN and their habitat to reduce the likelihood of endangerment and preclude the need to list as threatened or endangered in the future. SGCN and their general habitat descriptions are included in the above-referenced RTEST application.

TPWD recommends implementing the following BMP to avoid or minimize impacts to wildlife and SGCN, including state listed SGCN, potentially occurring in Hill County:

1. TPWD recommends designing the project to minimize removal of vegetation and retain native habitats. TPWD recommends that precautions be taken to avoid impact

to SGCN flora and fauna, natural plant communities, and priority habitats such as riparian areas, native grasslands, and wetlands.

2. Disturbed areas are susceptible to infestation of invasive terrestrial plant species such as old-world privets (*Ligustrum* spp.), Johnson grass (*Sorghum halepense*), bermudgrass (*Cynodon dactylon*), King Ranch bluestem (*Bothriochloa ischaemum var. songarica*), and bastard cabbage (*Rapistrum rugosum*). Other species with potential to invade portions of the project ROW can be found on the *Eco Alerts By Region* of the Texas Invasives website. TPWD recommends protecting areas that exhibit a native grass and forbs component from disturbance and from introduction of non-native vegetation. For areas containing native vegetation prior to construction, TPWD recommends LST only revegetate with native species and prepare and follow a maintenance plan to monitor, treat, and control invasive species within the construction and operation ROWs.

3. TPWD recommends LST inform employees and contractors of the potential for SGCN to occur in the project area and to avoid impacts to all wildlife that are encountered. Wildlife in danger from project activities that will not readily leave the site, can be translocated to a nearby area with similar habitat that will not be disturbed by project activities. TPWD recommends that any translocations of reptiles be the minimum distance possible no greater than one mile, preferably within 100-200 yards from the initial encounter location. For purposes of relocation, surveys, monitoring, and research, terrestrial state listed species may only be handled by persons with the appropriate authorization obtained through the TPWD Wildlife Permits Program. For more information on obtaining this authorization, please contact the Wildlife Permits office at (512) 389-4647.

4. Small vertebrates including snakes, lizards, toads, and mice can fall into trenches or holes, become trapped, and would be susceptible to loss from backfilling activities, trench inundation, starvation, dehydration, predation, and exposure to elements. Where trenching or other excavation is involved in construction, TPWD recommends minimizing the number of trenches or excavation areas left open at any given time during construction. Excavation areas should be inspected for the presence of trapped wildlife prior to backfilling. If trenches and excavation areas cannot be backfilled the day of initial excavation or covered overnight, then escape ramps should be installed, if feasible, at least every 90 meters (approximately 295 feet). Escape ramps consist of short lateral trenches made of soil or wooden planks sloping to the surface at an angle less than 45 degrees (1:1).

5. For soil stabilization and revegetation of disturbed areas within the proposed project area, TPWD recommends erosion control and seed and mulch stabilization materials that avoid entanglement hazards to snakes and other wildlife species. Because the mesh found in many erosion control blankets or mats pose an entanglement hazard to wildlife, TPWD recommends the use of no-till drilling, hydromulching, or hydroseeding rather than erosion control blankets or mats due to a reduced risk to wildlife. If erosion control blankets or mats will be used, the product should contain no netting or contain loosely woven, natural fiber netting in which the mesh design allows the threads to move, therefore allowing expansion of the mesh openings. Plastic mesh matting and hydromulch containing microplastics should be avoided.

6. To aid in the scientific knowledge of a species' status and current range, TPWD encourages reporting encounters of SGCN to the Texas Natural Diversity Database according to the data submittal instructions found at the *TPWD Texas Natural Diversity Database: Submit Data* webpage. An additional method for reporting observations of species is the iNaturalist community app in which plant and animal observations are uploaded from a smartphone. The observer adds the observation to specific TPWD Texas Nature Tracker Projects appropriate for the taxa observed, including Herps of Texas, Birds of Texas, Texas Eagle Nests, Texas Whooper Watch, Mammals of Texas, Rare Plants of Texas, Bees & Wasps of Texas, Terrestrial Mollusks of Texas, Texas Freshwater Mussels, Fishes of Texas, and Texas Milkweeds for Monarchs.

TPWD appreciates the opportunity to provide input on potential impacts to the fish and wildlife resources of Texas. Please contact me at Karen.Hardin@tpwd.texas.gov or (903) 322-5001 if you have any questions.

Sincerely,

Karen B. Hardin
Ecological and Environmental Planning Program
Wildlife Division

KBH:52493

References

Pearse, A.T, Brandt, D.A., Bidwell, M.T., Metzger, K.L., Harner, M.J., Baasch, D.M., and Harrell, W., 2019, Characterization of whooping crane migration space use in the Central Flyway, 2010-2016: U.S. Geological Survey data release, https://doi.org/10.5066/P9NRAY6F.

Pearse, A.T., K.L. Metzger, D.A. Brandt, M.T. Bidwell, M.J. Harner, D.M. Baasch, and W. Harrell. 2020. Heterogeneity in migration strategies of whooping cranes. The Condor: Ornithological Applications 122:1-15. https://doi.org/10.1093/condor/duz056.

Pearse, A.T., Rabbe, Matt, Bidwell, M.T., Juliusson, L.M., Craig-Moore, Lea, Brandt, D.A., and Harrell, Wade, 2018, Map of whooping crane migration corridor: U.S. Geological Survey data release, https://doi.org/10.5066/F7FT8K74.

USFWS. 2023. Whooping Crane Update Winter 2022-2023. U.S. Fish and Wildlife Service Whooping Crane Website. Available at https://www.fws.gov/species/whooping-crane-grus-americana. Accessed: July 3, 2024.

Appendix B

Figure 4-1
Consensus Route with
Environmental and Land Use Constraints
(Topographic Base with Constraints)

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BULLOCK STATION TO AQUILLA LAKE III TRANSMISSION LINE PROJECT

FIGURE 4-1

CONSENSUS ROUTE WITH ENVIRONMENTAL AND LAND USE CONSTRAINTS

Project Features
- Project Station
- Point of Interconnect
- Consensus Route
- Study Area

Existing Utilities
- Existing 69kV Transmission Line
- Existing 138kV Transmission Line
- Existing 345kV Transmission Line

Existing Land Use Features
- Church
- Cemetery
- Oil/Gas Pipeline

Transportation Features
- State Highway
- FM Road
- County / Local Road

Hydrologic Features
- NHD River / Stream
- NHD Waterbody
- NWI Mapped Wetland
- FEMA Flood Hazard

Administrative Boundaries
- City Limit
- County Boundary

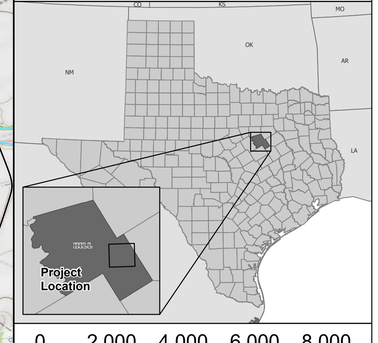
Topographic Map: Provided by US Geological Survey
Date: 2021

Accuracy for USGS Topo is approximately ±20 feet.

Some data layers including tract boundaries, roads, and oil/gas pipelines obtained from third-party sources may be inaccurate to varying degrees. These data have not been corrected in all locations and should be used as a general guide to feature locations only. Digitization of proposed transmission line segments was performed based on aerial interpretation of these features.

Some legend symbols are enlarged for easier identification.

Some features are exaggerated to better identify paralleling opportunities.



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Feet

LONEstar

POWER ENGINEERS

Date: 11/26/2024

Path: G:\Projects\251218_LST_Aquilla_Lake\Appsl\PRO\PRO.aprx

Appendix C

Figure 4-2
Habitable Structures and Other Land Use Features In the Vicinity of the Consensus Route (Aerial Base with CCN Inventory Items)

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BULLOCK STATION TO AQUILLA LAKE III TRANSMISSION LINE PROJECT

FIGURE 4-2

HABITABLE STRUCTURES AND OTHER LAND USE FEATURES IN THE VICINITY OF THE CONSENSUS ROUTE

Project Features
- Project Station
- Point of Interconnect
- Consensus Route
- Study Area

Existing Utilities
- Existing 69kV Transmission Line
- Existing 138kV Transmission Line
- Existing 345kV Transmission Line

Existing Land Use Features
- Habitable Structure
- Cemetery

Transportation Features
- State Highway
- FM Road
- County / Local Road

Hydrologic Features
- NHD River / Stream
- NHD Waterbody

Administrative Boundaries
- City Limit
- County Boundary

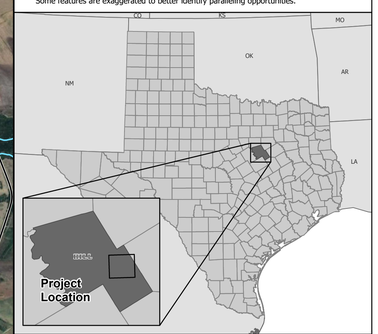
Aerial Photography: Provided by Google
Date: 2024

Accuracy for Google imagery is approximately ±20 feet.

Some data layers including tract boundaries, roads, and oil/gas pipelines obtained from third-party sources may be inaccurate to varying degrees. These data have not been corrected in all locations and should be used as a general guide to feature locations only. Digitization of proposed transmission line segments was performed based on aerial interpretation of these features.

Some legend symbols are enlarged for easier identification.

Some features are exaggerated to better identify paralleling opportunities.



0 2,000 4,000 6,000 8,000
Feet

LONEstar

POWER ENGINEERS
Date: 11/26/2024

Path: G:\Projects\251218_LST_Aquilla_Lake\Appsl\PROJ\PRO.aprx

LANDOWNER CONSENSUS ROUTE AGREEMENT

THE STATE OF TEXAS §
§
COUNTY OF HILL §

THIS LANDOWNER CONSENSUS ROUTE AGREEMENT ("**Agreement**") is made and entered into this 28th day of September, 2024 by James Allen Cox, as Independent Executor of the Estate of Joseph Lloyd Cox, pursuant to the probate of the Estate of Joseph Lloyd Cox, Deceased, in Cause No. 10606, County Court of Hale County, Texas, and with an address of 4134 Victoria, Irving, TX 75062; and Emma C. Annett, an unremarried widow, with an address of Post Office Box 737, Coppell, TX 75019 ("**Landowner**").

Landowner hereby acknowledges and confirms ownership of the following described property ("**Landowner's Property**"), pursuant to Partition Deed dated 4-15-1929 and recorded 9-19-1930 at Volume 253, Page 69, Official Public Records, Hill County, Texas; and pursuant to Deed dated 3-9-1917 and recorded 3-11-1918 at Volume 177, Page 381, Official Public Records, Hill County, Texas:

Parcel A

All that certain tract or parcel of land situated in the County of Hill State of Texas more particularly described as follows; to-wit;

Being a part of a survey of 2763 acres of Navarro County School Land, and being all of Block No. 2, of said survey, and containing 160 acres more or less, and also a part of Block No. 2 of said survey containing 10 acres of land more or less, more particularly described as follows;

BEGINNING at the S. E. corner of Block No. 10, a stake in hole;

THENCE -- N. 00 E. 950 varas to the N. E. corner of said Block No. 2;

THENCE -- S. 30 E. at 950 varas pass the S. E. corner of said Block No. 2, in all 1150.2 varas to the most southern N. E. corner of a certain 150 acre tract of land sold by Mrs. E. E. White et al to Enlver Cox by deed recorded in Volume 177, Page 381, of the Deed Records of Hill County;

THENCE -- S. 60 W. 389.5 varas to an ell corner of said 150 acre tract;

THENCE -- N. 30 W. 200.2 varas to the most northern N. E. corner of said 150 acre tract and the south line of said Block No. 2;

THENCE -- S. 60 W. with said South line of Block No. 2, 560.5 varas to the S. W. corner of said Block No. 2, and the N. W. corner of Block No. 3;

THENCE -- N. 30 W. with the west line of said Block No. 2, 950 varas to the palce of beginning, containing 170 acres of land more or less.

Parcel B

All that certain tract or parcel of land situated in Hill County, Texas, and being a part of the Navarro County School Land survey, meted and bounded as follows: Begin[ing] at the SE corner of the 320 acre tract of land out of same survey, owned by the J. L. White Estate;

Thence----- N.80 W.771.1 vrs.to a stake;
Thence----- S.80 W. 389.5 vrs. to a stake;
Thence----- N.30 W.200.2 vrs. to a stake;
Thence----- ..80 W.571.8 vrs. to a stake;
Thence----- S.30 E.972 vrs. to a stake;
Thence----- N.80 E. 980 vrs. to the place of beginning, containing One Hundred and Fifty acres of land.

Landowner acknowledges that Lone Star Transmission, LLC, a Delaware limited liability company, ("**Lone Star**") proposes to file an Application to Amend Its Certificate of Convenience and Necessity ("**Application**") with the Public Utility Commission of Texas ("**PUCT**") to construct and operate a 345 kilovolt transmission line that will connect Lone Star's proposed Bullock Station, located approximately 0.66 miles southwest of the intersection of Farm-to-Market (FM) 308 and Hill County Road (CR) 3441, to the proposed Aquilla Lake 3 collector substation, located north of Hill CR 3423 approximately 0.31 miles west of Hill CR 3424 ("**Transmission Line Facilities**"). Lone Star will propose the PUCT approve a route for the Transmission Line Facilities that is accepted by each property owner directly affected by the Transmission Line Facilities ("**Consensus Route**"). Lone Star will include this Agreement with its Application to demonstrate agreement on the Consensus Route by all directly affected landowners.

Landowner and Lone Star agree the PUCT should approve the Consensus Route that will be presented for PUCT consideration in Lone Star's Application. Landowner represents it is the legal and beneficial owner of fee simple title to the property as described above and has the right, without joinder of any other party, to enter into the Agreement. Landowner acknowledges that the new 345 kilovolt transmission line, if approved, will be installed on Landowner's Property as depicted on **Exhibit A**, attached hereto and made a part hereof ("**Facilities Location**"). Landowner and Lone Star further acknowledge this

Agreement does not convey the land rights needed by Lone Star to construct or operate the transmission line.

For good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, Landowner hereby accepts and provides consent for Lone Star's Application and Facilities Location.

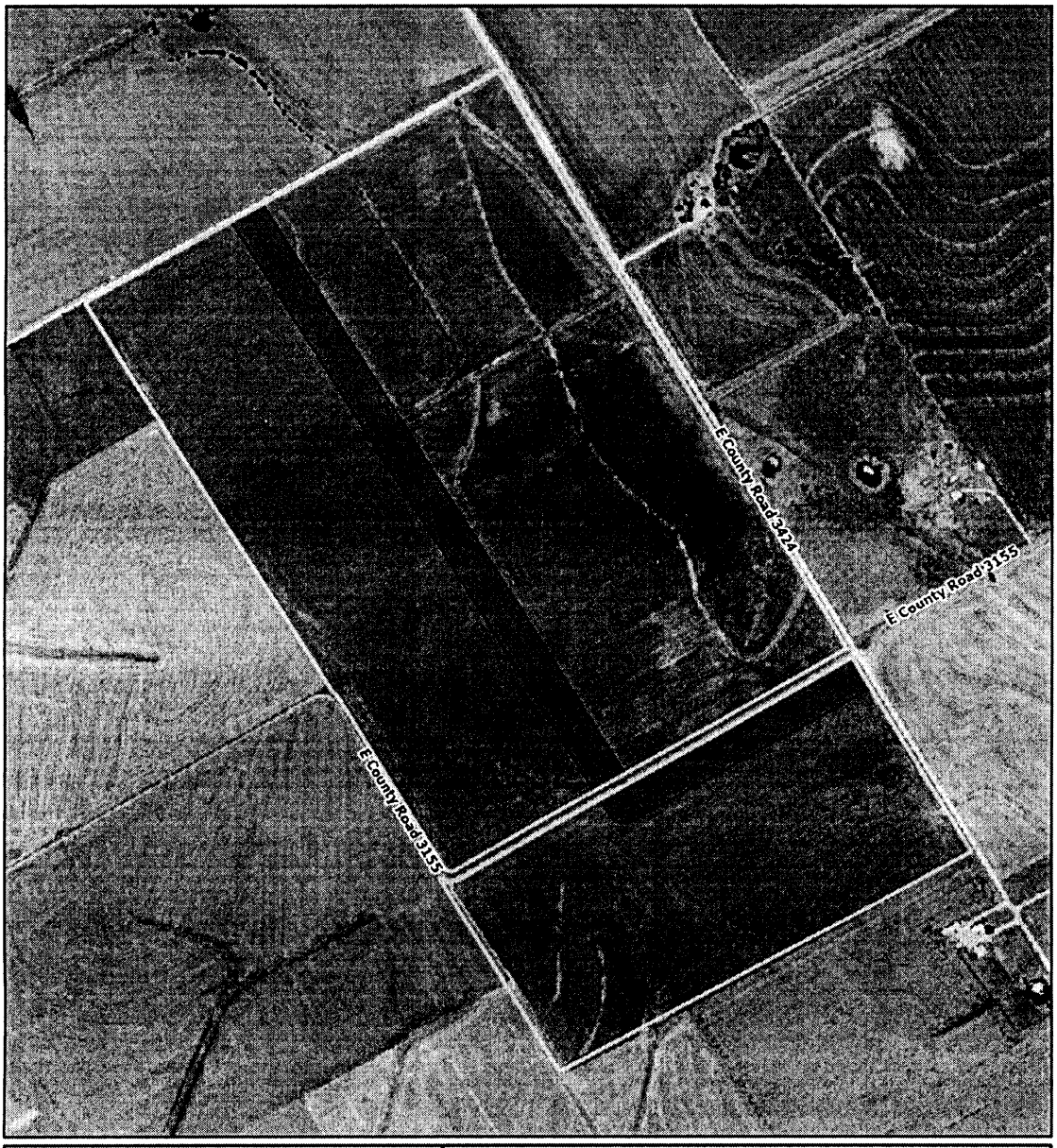
Estate of Joseph Lloyd Cox

By: _____
Allen Cox, Independent Executor

_____
Emma C. Annett

EXHIBIT A

Facilities Location



Parcel Boundary
Proposed Facility Location

LONEstar

August 29, 2024

Proposed Facilities Location
Bullock Station to Aquilla 3 Wind

Landowner: COX JOE L
County: HILL
Prop ID: 121434

0 500 1,000 2,000
Feet

N

LANDOWNER CONSENSUS ROUTE AGREEMENT

THE STATE OF TEXAS §
§
COUNTY OF HILL §

THIS LANDOWNER CONSENSUS ROUTE AGREEMENT ("**Agreement**") is made and entered into this 4 day of Sept., 2024 by David L. Neumann and Loretta Anne Neumann, husband and wife, with an address of 3450 FM 308, Malone, TX 76660 ("**Landowner**").

Landowner hereby acknowledges and confirms ownership of the following described property ("**Landowner's Property**"), pursuant to Warranty Deed With Vendor's Lien dated 1-1-1972 and recorded 1-4-1972 in Volume 512, Page 14, Official Public Records, Hill County, Texas:

All that certain lot, tract or parcel of land lying and situated in the Stephen Jennings (640 acre) Survey, Abstract 483, Hill County, Texas, containing 333.15 acres of land, more or less, being more particularly described by metes and bounds as follows:

BEGINNING at the Southwest corner of said Jennings Survey;
THENCE....North 31-30 West 850 varas to a point for corner in the West line of said survey at the Southwest corner of the W. T. Walling tract;
THENCE....North 61-07 East 2,362 varas with the South line of said R. T. Walling tract to its Southeast corner in the East line of the Jennings Survey;
THENCE....South 31-30 East 742.5 varas with the East line of said Jennings Survey to its Southeast corner;
THENCE....South 58-30 West 2,362 varas with the South line of said Jennings Survey to the PLACE OF BEGINNING, containing 333.15 acres of land as surveyed on the ground by J. R. Preston, Hill County Surveyor, and the hereinconveyed premises are a portion of those premises conveyed from A. D. Walling, a widower, to Opal K. Walling by deed dated May 31, 1919, recorded in Volume 185, Page 462, Hill County Deed Records.

SAID PREMISES are also the identical 333.15 acre tract conveyed from Opal Walling Bonner to George M. Bonner by deed dated January 11, 1944, recorded in Volume 316, Page 175, Hill County Deed Records.

Landowner acknowledges that Lone Star Transmission, LLC, a Delaware limited liability company, ("**Lone Star**") proposes to file an Application to Amend Its Certificate of Convenience and Necessity ("**Application**") with the Public Utility Commission of Texas ("**PUCT**") to construct and operate a 345 kilovolt transmission line that will connect Lone Star's proposed Bullock Station, located approximately 0.66 miles southwest of the intersection of Farm-to-Market (FM) 308 and Hill County Road

(CR) 3441, to the proposed Aquilla Lake 3 collector substation, located north of Hill CR 3423 approximately 0.31 miles west of Hill CR 3424 ("**Transmission Line Facilities**"). Lone Star will propose the PUCT approve a route for the Transmission Line Facilities that is accepted by each property owner directly affected by the Transmission Line Facilities ("**Consensus Route**"). Lone Star will include this Agreement with its Application to demonstrate agreement on the Consensus Route by all directly affected landowners.

Landowner and Lone Star agree the PUCT should approve the Consensus Route that will be presented for PUCT consideration in Lone Star's Application. Landowner represents it is the legal and beneficial owner of fee simple title to the property as described above and has the right, without joinder of any other party, to enter into the Agreement. Landowner acknowledges that the new 345 kilovolt transmission line, if approved, will be installed on Landower's Property as depicted on **Exhibit A**, attached hereto and made a part hereof ("**Facilities Location**"). Landowner and Lone Star further acknowledge this Agreement does not convey the land rights needed by Lone Star to construct or operate the transmission line.

For good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, Landowner hereby accepts and provides consent for Lone Star's Application and Facilities Location.

David L. Neumann

Loretta Anne Neumann

EXHIBIT A

Facilities Location

LANDOWNER CONSENSUS ROUTE AGREEMENT

THE STATE OF TEXAS §
§
COUNTY OF HILL §

THIS LANDOWNER CONSENSUS ROUTE AGREEMENT ("**Agreement**") is made and entered into this 26 day of February 2024 by Donald J. Schneider, an unremarried widow, with an address of 6384 State Highway 22, Hillsboro, TX 76645 ("**Landowner**").

Landowner hereby acknowledges and confirms ownership of the following described property ("**Landowner's Property**"), pursuant to Special Warranty Deed with Vendor's Lien dated 1-31-2025 and recorded 2-21-2025 at Instrument # 00163465, Official Public Records, Hill County, Texas:

Being 48 acres out of the Stephen Jennings Survey described by metes and bounds as follows:

BEGINNING at a point S 60 W 297 vrs. from the NE corner of said Jennings Survey, said point being the NW corner of a 2 ac. tract of land conveyed by W. H. Huse and wife, to trustees of the Salem Evangelical Church;

THENCE S 60 W with the N line of said Stephen Jennings Survey 110.89 vrs. to the NW corner of the W. H. Huse 50 ac. tract;

THENCE S 31 E with the W line of said 50 ac. tract 820 vrs. to SW corner of same;

THENCE N 60 E 407.14 vrs. to SE corner of said Huse original 50 ac tract;

THENCE N 31 W 583 vrs. with E line of said 50 ac. tract to its most eastern NE corner and SE corner of German Church lot;

THENCE S 60 W at 237 vrs. SW corner of said church lot and SE corner of said 2 ac. tract above mentioned continuing S 60 W in all 296 1/2 vrs. to SW corner of 2 ac. tract;

THENCE N 30 W 237.6 vrs. with W line of said church lot to the beginning containing 48 ac. of land, more or less, and being the same land conveyed by Pauline Gaertner and husband to M. J. Strauch by deed dated November 1, 1939 and recorded in Vol. 298, pg. 173 of the Deed Records of Hill County, Texas.

SAVE AND EXCEPT: A strip of land 20 feet wide adjoining and parallel to the entire southern most boundary of the 2 acre tract of land conveyed by W.H. Huse, et ux to the trustees of the Salem Evangelical Church and has as its entire northern-most boundary the entire southern-most boundary of that 2 acre tract which runs S 60 W for 296 1/2 vrs from the southeast corner of that 2 acre tract to the southwest corner of that 2 acre tract, conveyed to the trustees of Salem Lutheran Church in that certain Deed Without Warranty dated March 28, 2002 and recorded at Volume 1158, Page 383, Official Public Records, Hill County, Texas.

Landowner acknowledges that Lone Star Transmission, LLC, a Delaware limited liability company, ("**Lone Star**") proposes to file an Application to Amend Its Certificate of Convenience and Necessity ("**Application**") with the Public Utility Commission of Texas ("**PUCT**") to construct and operate a 345 kilovolt transmission line that will connect Lone Star's proposed Bullock Station, located approximately 0.66 miles southwest of the intersection of Farm-to-Market (FM) 308 and Hill County Road (CR) 3441, to the proposed Aquilla Lake 3 collector substation, located north of Hill CR 3423 approximately 0.31 miles west of Hill CR 3424 ("**Transmission Line Facilities**"). Lone Star will propose the PUCT approve a route for the Transmission Line Facilities that is accepted by each property owner directly affected by the Transmission Line Facilities ("**Consensus Route**"). Lone Star will include this Agreement with its Application to demonstrate agreement on the Consensus Route by all directly affected landowners.

Landowner and Lone Star agree the PUCT should approve the Consensus Route that will be presented for PUCT consideration in Lone Star's Application. Landowner represents it is the legal and beneficial owner of fee simple title to the property as described above and has the right, without joinder of any other party, to enter into the Agreement. Landowner acknowledges that the new 345 kilovolt transmission line, if approved, will be installed on Landowner's Property as depicted on **Exhibit A**, attached hereto and made a part hereof ("**Facilities Location**"). Landowner and Lone Star further acknowledge this Agreement does not convey the land rights needed by Lone Star to construct or operate the transmission line.

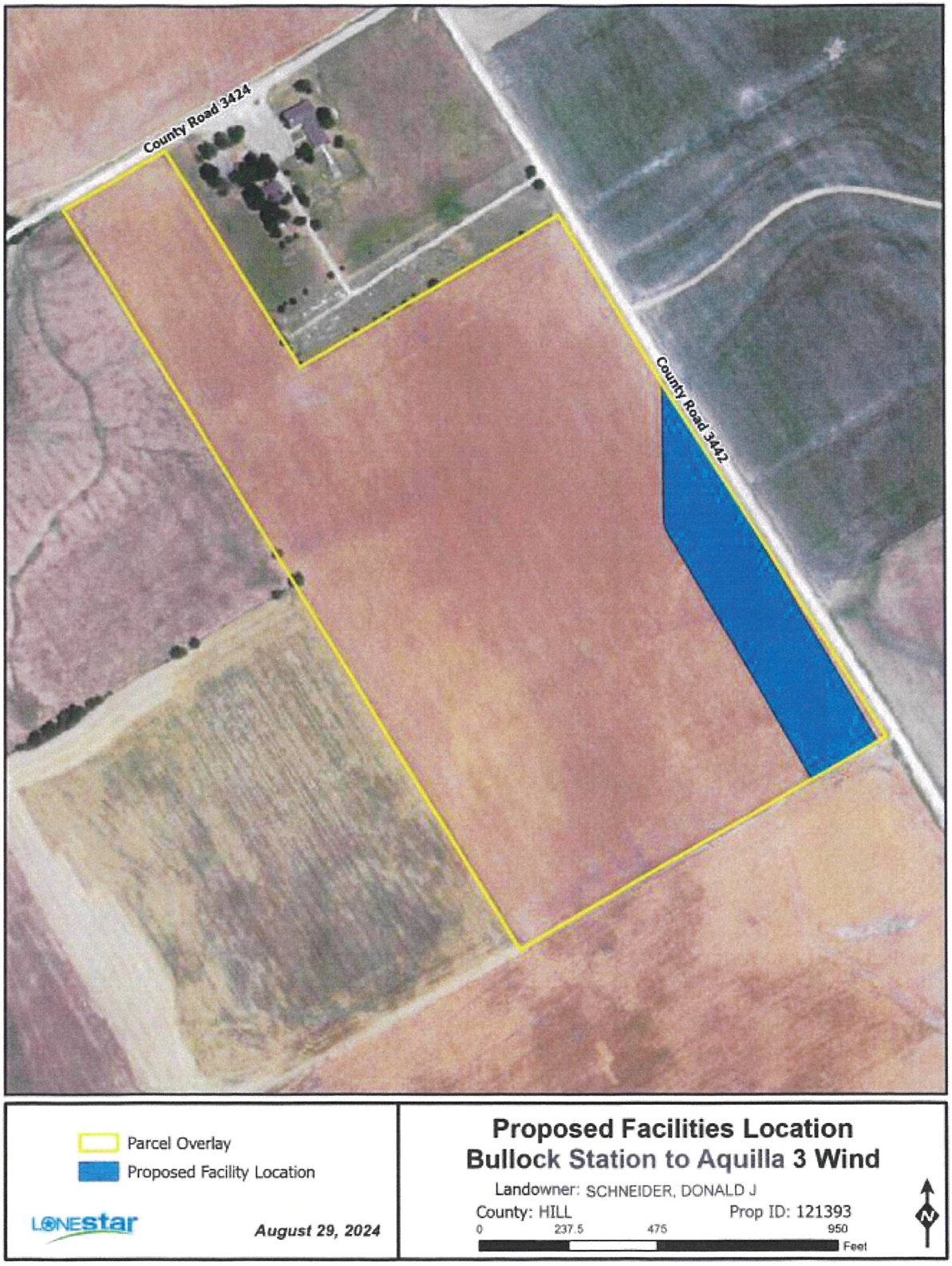
For good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, Landowner hereby accepts and provides consent for Lone Star's Application and Facilities Location.

Donald J. Schneider

Donald J. Schneider

EXHIBIT A

Facilities Location



LANDOWNER CONSENSUS ROUTE AGREEMENT

THE STATE OF TEXAS §
§
COUNTY OF HILL §

THIS LANDOWNER CONSENSUS ROUTE AGREEMENT ("**Agreement**") is made and entered into this 2nd day of December, 2024 by Jeremy Schneider, a married person dealing in his sole and separate property, joined by consenting spouse Cheryl Lynn Schneider, with an address of 24032 Wood Hollow Drive, Whitney, Texas 76692; Lyndsey Schneider Pederson, a married person dealing in her sole and separate property, joined by consenting spouse Mark Pederson, with an address of 858 FM 1946, Bynum, Texas 76631; and Bryan Scott Schneider, a married person dealing in his sole and separate property, joined by consenting spouse Lauren T. Schneider, with an address of 136 Hill County Road 4263, Hillsboro, Texas 76645 ("**Landowner**").

Landowner hereby acknowledges and confirms ownership of the following described property ("**Landowner's Property**"), pursuant to Executor's/Trustee's Deed dated 8-1-2011 and recorded 8-22-2011 at Volume 1685, Page 717, Official Public Records, Hill County, Texas; Trustee's Deed dated 9-1-2011 and recorded 9-15-2011 at Volume 1688, Page 197, Official Public Records, Hill County, Texas; and Trustee Distribution Deed dated 6-1-2022 and recorded 6-22-2022 at Volume 2197, Page 500, Official Public Records, Hill County, Texas:

All those certain lots, tracts or parcels of land containing 97.24 acres, more or less, located in the W. Stephens Survey, A-849, Hill County, Texas, and being more particularly described as "Third Tract" and "Fifth Tract" in Warranty Deed dated June 26, 1968, from Fred Sonnenburg to Milton Edward Sonnenburg and Jane Degner, recorded in Volume 486, Page 636 of the Deed Records of Hill County, Texas, and as 84.24 acres and 13.0 acres in Warranty Deed dated December 4, 1998, recorded in Volume 1000, Page 560 of the Official Public Records of Hill County, Texas.

Landowner acknowledges that Lone Star Transmission, LLC, a Delaware limited liability company, ("**Lone Star**") proposes to file an Application to Amend Its Certificate of Convenience and

Necessity ("**Application**") with the Public Utility Commission of Texas ("**PUCT**") to construct and operate a 345 kilovolt transmission line that will connect Lone Star's proposed Bullock Station, located approximately 0.66 miles southwest of the intersection of Farm-to-Market (FM) 308 and Hill County Road (CR) 3441, to the proposed Aquilla Lake 3 collector substation, located north of Hill CR 3423 approximately 0.31 miles west of Hill CR 3424 ("**Transmission Line Facilities**"). Lone Star will propose the PUCT approve a route for the Transmission Line Facilities that is accepted by each property owner directly affected by the Transmission Line Facilities ("**Consensus Route**"). Lone Star will include this Agreement with its Application to demonstrate agreement on the Consensus Route by all directly affected landowners.

Landowner and Lone Star agree the PUCT should approve the Consensus Route that will be presented for PUCT consideration in Lone Star's Application. Landowner represents it is the legal and beneficial owner of fee simple title to the property as described above and has the right, without joinder of any other party, to enter into the Agreement. Landowner acknowledges that the new 345 kilovolt transmission line, if approved, will be installed on Landowner's Property as depicted on **Exhibit A**, attached hereto and made a part hereof ("**Facilities Location**"). Landowner and Lone Star further acknowledge this Agreement does not convey the land rights needed by Lone Star to construct or operate the transmission line.

For good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, Landowner hereby accepts and provides consent for Lone Star's Application and Facilities Location.

Jeremy Schneider

Lyndsey Schneider Pederson

Mark Pederson

Cheryl Lynn Schneider

Bryan Scott Schneider

Lauren T. Schneider

EXHIBIT A

Facilities Location

LANDOWNER CONSENSUS ROUTE AGREEMENT

THE STATE OF TEXAS §
§
COUNTY OF HILL §

THIS LANDOWNER CONSENSUS ROUTE AGREEMENT ("**Agreement**") is made and entered into this 14 day of October, 2024 by Janice Marie Kaddatz Russell, a married person dealing in her sole and separate property, joined by consenting spouse David Allen Russell, with an address of 208 Garland Drive, Hillsboro, TX 76645 ("**Landowner**").

Landowner hereby acknowledges and confirms ownership of the following described property ("**Landowner's Property**"), pursuant to Warranty Deed dated 12-1-1975 and recorded 12-10-1975 at Book 547, Page 955, Official Public Records, Hill County, Texas; and Special Warranty Deed dated 6-11-2004 and recorded 6-22-2004 at Book 1288, Page 370, Official Public Records, Hill County, Texas:

TRACT I:
All that certain tract or parcel of land out of the John Deaton Survey Patent #392, Abstract #238, situated in Hill County, Texas, described by metes and bounds as follows:
BEGINNING at the NW corner of said survey at point of intersection of two roads;
THENCE N 60 E with the center of gravel road and with the N line of said survey 877½ varas to stake for corner;
THENCE S 29-3/4 E 583 varas to stake for corner;
THENCE S 60 W 883½ varas to point in the W line of said Deaton Survey and the center of a gravel road;
THENCE N 29-13 W with the said survey line and road 584 varas to the place of beginning containing 90.8 acres of land.

TRACT II:
All that certain tract or parcel of land situated in Hill County, Texas, and described as follows: Being 8½ acres out of the J. Deaton Survey, Abstract No. 238 and 76½ acres out of the Wm. Stephens survey, abstract 849, and being a strip off the N side of said Radke Land:
BEGINNING at the SE corner of the Navarro County School Land survey Abstract No. 673, a bois d'arc post in ground for corner;
THENCE N 29 W with center of public road 230½ varas for corner;
THENCE N 60 E with center of public road 1477 varas to iron stake for corner;
THENCE S 30 E with the E line of the Radke tract 316.96 varas to stake for corner;
THENCE S 60 W 1612 varas to iron stake in W line of road for corner;
THENCE N 30 W 86-3/10 varas to stake for corner, same being corner of Radke Tract;
THENCE N 60 E 135 varas to the place of beginning, containing 85 acres of land, as surveyed on the 8th and 10th days of September 1919 by Herman Eastland Jr., Surveyor.

Landowner acknowledges that Lone Star Transmission, LLC, a Delaware limited liability company, ("**Lone Star**") proposes to file an Application to Amend Its Certificate of Convenience and Necessity ("**Application**") with the Public Utility Commission of Texas ("**PUCT**") to construct and operate a 345 kilovolt transmission line that will connect Lone Star's proposed Bullock Station, located approximately 0.66 miles southwest of the intersection of Farm-to-Market (FM) 308 and Hill County Road (CR) 3441, to the proposed Aquilla Lake 3 collector substation, located north of Hill CR 3423 approximately 0.31 miles west of Hill CR 3424 ("**Transmission Line Facilities**"). Lone Star will propose the PUCT approve a route for the Transmission Line Facilities that is accepted by each property owner directly affected by the Transmission Line Facilities ("**Consensus Route**"). Lone Star will include this Agreement with its Application to demonstrate agreement on the Consensus Route by all directly affected landowners.

Landowner and Lone Star agree the PUCT should approve the Consensus Route that will be presented for PUCT consideration in Lone Star's Application. Landowner represents it is the legal and beneficial owner of fee simple title to the property as described above and has the right, without joinder of any other party, to enter into the Agreement. Landowner acknowledges that the new 345 kilovolt transmission line, if approved, will be installed on Landowner's Property as depicted on **Exhibit A**, attached hereto and made a part hereof ("**Facilities Location**"). Landowner and Lone Star further acknowledge this Agreement does not convey the land rights needed by Lone Star to construct or operate the transmission line.

For good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, Landowner hereby accepts and provides consent for Lone Star's Application and Facilities Location.

Janice Marie Kaddatz Russell

David Allen Russell

EXHIBIT A

Facilities Location

EXHIBIT A

Facilities Location (cont'd)

LANDOWNER CONSENSUS ROUTE AGREEMENT

THE STATE OF TEXAS §
§
COUNTY OF HILL §

THIS LANDOWNER CONSENSUS ROUTE AGREEMENT ("**Agreement**") is made and entered into this 3 day of Sept, 2024 by Jimmy D. Lehmann, a single person, with an address of 382 Hill County Road 4358, Hillsboro, TX 76645 ("**Landowner**").

Landowner hereby acknowledges and confirms ownership of the following described property ("**Landowner's Property**"), pursuant to Special Warranty Deed dated 12-30-2012 and recorded 6-15-2017 at Volume 1911, Page 620, Official Public Records, Hill County, Texas:

Being 144.76 acres of land, made up of 87 acres out of the Navarro County School Land Survey, Abstract No. 673, and 57.78 acres out of the J.A. Foreman Survey, Abstract No. 293, and more particularly described by metes and bounds as follows:

BEGINNING at a point in the East line of said Navarro County School Land Survey 416.2 varas North 28 degrees 55 minutes West from the Southeast corner of D. N. Gist 124.8 acre tract sold to Rudolph Piel, stake in East line of said Navarro County School Land Survey;

THENCE South 60 degrees West 881 1/2 varas the Southwest corner of this tract;
THENCE North 29.06 degrees West at 653 varas pass Navarro County School Land, North line and J. A. Foreman South line, continuing in same course in all 1188.8 varas to Pecan Creek;
THENCE on a base line of North 62 1/2 degrees East 822.3 varas, Northeast corner of this tract;
THENCE South 28 degrees 55 minutes East 611 varas to Southeast corner of said J. A. Foreman Survey;
THENCE North 60 degrees East 369 varas to Northeast corner of said School Land Survey;
THENCE South 28 degrees 55 minutes East 566.8 varas to the place of beginning, containing 144.76 acres of land, and being the same land conveyed by Rudolph Piel, et ux., Julia Piel, to Albert Piel, by deed dated June 23, 1923, and recorded in Volume 204, Page 613, Deed Records of Hill County, Texas; and also the same land described in deed from Albert Piel and wife, Martha Piel, to Henry Lehmann and wife, Ella Lehmann, dated March 3, 1952, and recorded in the Deed Records of Hill County, Texas.

Landowner acknowledges that Lone Star Transmission, LLC, a Delaware limited liability company, ("**Lone Star**") proposes to file an Application to Amend Its Certificate of Convenience and Necessity ("**Application**") with the Public Utility Commission of Texas ("**PUCT**") to construct and operate a 345 kilovolt transmission line that will connect Lone Star's proposed Bullock Station, located approximately 0.66 miles southwest of the intersection of Farm-to-Market (FM) 308 and Hill County Road (CR) 3441, to the proposed Aquilla Lake 3 collector substation, located north of Hill CR 3423

approximately 0.31 miles west of Hill CR 3424 ("**Transmission Line Facilities**"). Lone Star will propose the PUCT approve a route for the Transmission Line Facilities that is accepted by each property owner directly affected by the Transmission Line Facilities ("**Consensus Route**"). Lone Star will include this Agreement with its Application to demonstrate agreement on the Consensus Route by all directly affected landowners.

Landowner and Lone Star agree the PUCT should approve the Consensus Route that will be presented for PUCT consideration in Lone Star's Application. Landowner represents it is the legal and beneficial owner of fee simple title to the property as described above and has the right, without joinder of any other party, to enter into the Agreement. Landowner acknowledges that the new 345 kilovolt transmission line, if approved, will be installed on Landowner's Property as depicted on **Exhibit A**, attached hereto and made a part hereof ("**Facilities Location**"). Landowner and Lone Star further acknowledge this Agreement does not convey the land rights needed by Lone Star to construct or operate the transmission line.

For good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, Landowner hereby accepts and provides consent for Lone Star's Application and Facilities Location.

Jimmy D. Lehmann

EXHIBIT A

Facilities Location

LANDOWNER CONSENSUS ROUTE AGREEMENT

THE STATE OF TEXAS §
§
COUNTY OF HILL §

THIS LANDOWNER CONSENSUS ROUTE AGREEMENT ("**Agreement**") is made and entered into this 20th day of November, 2024 by JLB Farms, LLC, a Texas limited liability company, with an address of 24032 Wood Hollow Drive, Whitney, TX 76692 ("**Landowner**").

Landowner hereby acknowledges and confirms ownership of the following described property ("**Landowner's Property**"), pursuant to Warranty Deed With Vendor's Lien dated 8-18-2011 and recorded 8-19-2011 at Volume 1685, Page 525, Official Public Records, Hill County, Texas:

All that certain lot, tract or parcel of land lying and situated in the **J. H. Chism Survey, A-129,** Hill County, Texas, being the remaining portion of that certain tract of land described as Tract One and called 100 acres in Special Warranty Deed from Mary Frances Degner, Trustee to J. Diane Walters and Daren Boyd Degner (undivided 1/2 interest), executed February 14, 2008, recorded in Volume 1532, Page 849 of the Official Public Records of Hill County, Texas, and later described in Special Warranty Deed from Stella Degner to J. Diane Walters and Daren Boyd Degner, executed February 18, 2008, recorded in Volume 1533, Page 4 of the Official Public Records of Hill County, Texas, and being more particularly described as follows:

BEGINNING at a 1/2 inch iron rod set lying in County Road 3441, being the southerly line of that certain tract of land described as 333.15 acres in Warranty Deed with Vendor's Lien from George M. Bonner and wife, Wanda Bonner, to David L. Neumann and wife, Loretta Ann Neumann, executed January 1, 1972, recorded in Volume 512, Page 14 of the Deed Records of Hill County, Texas, the approximate southerly line of the Stephen Jennings Survey, A-483, being the northwest corner of said 100 acre tract and the approximate northwest corner of said Chism Survey, being the northeast corner of that certain tract of land described as 72 acres in deed from Herbert Piel and wife, Leona Piel, to Betty Laverne Penney and husband, Jimmy Penny, executed February 15, 1962, recorded in Volume 437, Page 104 of the Deed Records of Hill County, Texas, the approximate northeast corner of the Elizabeth Hall Survey, A-416;

THENCE N 58° 59' 21" E along the common line between said 100 acre tract and said 333.15 acre tract and generally along said county road, 2098.18 feet to a 1/2 inch iron rod set for the northeast corner of said 100 acre tract, being the northwest corner of that certain tract of land described as Tract 1 and called 45.5 acres in Warranty Deed from Mary Frances Degner, individually and as Independent Executrix of the Estate of Milton Boyd Degner to Mary Frances Degner, dated January 1, 1988, recorded in Volume 703, Page 211 of the Deed Records of Hill County, Texas;

THENCE S 29° 15' 39" E along the common line between said 100 acre tract and said 45.5 acre tract, 1336.04 feet to a 1/2 inch iron rod set lying on the northwesterly right-of-way line of Farm-To-Market Highway No. 308 (100 foot right-of-way) and being the northwest corner of that certain tract of land described as 2.051 acres in the Right-of-Way Deed from Fred Degner, et ux to the State of Texas, executed November 15, 1950, recorded in Volume 364, Page 292 of the Deed Records of Hill County, Texas;

THENCE S 10° 53' 00" W (directional control line) along the northwesterly right-of-way line of said highway, 1021.23 feet to a 1/2 inch iron rod set at a corner lying in the southerly line of said 100 acre tract, the northerly line of that certain tract of land described as Second Tract and called 87.27 acres in Special Warranty Deed from Donna Louise Huse to Allen Dean Huse, dated February 5, 2001, recorded in Volume 1117, Page 333 of the Official Public Records of Hill County, Texas, being the southwest corner of said 2.051 acre tract, the northeast corner of that certain tract of land described as 23.89 acres in Warranty Deed from Allen Dean Huse to Gay Lynn Levan, dated May 28, 2004, recorded in Volume 1287, Page 116 of the Official Public Records of Hill County, Texas, said corner bears N 10° 53' 00" E 1353.18 feet from a 1/2 inch orange capped iron rod found lying in the southerly line of said 87.27 acre tract, being the southeast corner of said 23.89 acre tract;

THENCE S 60° 44' 21" W along the common line between said 100 acre tract, said 87.27 acre tract and said 23.89 acre tract and partially along the remains of a fence line, 1439.89 feet to a 1/2 inch iron rod set at a corner lying in the easterly line of that certain tract of land described as Tract Three — Tract One and called 36.58 acres in Warranty Deed from Jane Degner to Erma Jane Degner Trust, dated August 26, 1996, recorded in Volume 904, Page 485 of the Official Public Records of Hill County, Texas, the approximate line between said Chism and said Hall Surveys, being the southwest corner of said 100 acre tract, the northwest corner of said 23.89 acre tract;

THENCE N 29° 13' 49" W along the westerly line of said 100 acre tract and generally along the remains of a fence line, at 118.65 feet passing a fence corner post found for the northeast corner of said 36.58 acre tract, the southeast corner of said 72 acre tract, continuing in all 2052.63 feet to the **Point of Beginning**, and containing 94.26 acres of land, as surveyed on the ground July 20, 2011, by Szurgot & Peede Land Surveyors, Ltd.

Landowner acknowledges that Lone Star Transmission, LLC, a Delaware limited liability company, ("**Lone Star**") proposes to file an Application to Amend Its Certificate of Convenience and Necessity ("**Application**") with the Public Utility Commission of Texas ("**PUCT**") to construct and operate a 345 kilovolt transmission line that will connect Lone Star's proposed Bullock Station, located approximately 0.66 miles southwest of the intersection of Farm-to-Market (FM) 308 and Hill County Road (CR) 3441, to the proposed Aquilla Lake 3 collector substation, located north of Hill CR 3423 approximately 0.31 miles west of Hill CR 3424 ("**Transmission Line Facilities**"). Lone Star will propose the PUCT approve a route for the Transmission Line Facilities that is accepted by each property owner directly affected by the Transmission Line Facilities ("**Consensus Route**"). Lone Star will include this Agreement with its Application to demonstrate agreement on the Consensus Route by all directly affected landowners.

Landowner and Lone Star agree the PUCT should approve the Consensus Route that will be presented for PUCT consideration in Lone Star's Application. Landowner represents it is the legal and beneficial owner of fee simple title to the property as described above and has the right, without joinder of

any other party, to enter into the Agreement. Landowner acknowledges that the new 345 kilovolt transmission line, if approved, will be installed on Landowner's Property as depicted on **Exhibit A**, attached hereto and made a part hereof ("**Facilities Location**"). Landowner and Lone Star further acknowledge this Agreement does not convey the land rights needed by Lone Star to construct or operate the transmission line.

For good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, Landowner hereby accepts and provides consent for Lone Star's Application and Facilities Location.

[THE REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK; SIGNATURE PAGE IMMEDIATELY FOLLOWS]

JLB Farms, LLC,
a Texas limited liability company

By: _____
Jeremy Schneider,
Manager

EXHIBIT A

Facilities Location

LANDOWNER CONSENSUS ROUTE AGREEMENT

THE STATE OF TEXAS §
§
COUNTY OF HILL §

THIS LANDOWNER CONSENSUS ROUTE AGREEMENT ("**Agreement**") is made and entered into this 12 day of February, 2025 by Susan Schulz, as Independent Administrator of the Estate of Randy Wayne Schulz, pursuant to the probate of the Estate of Randy Wayne Schulz, Deceased, in Cause No. 13205, County Court of Hill County, Texas; and as an unremarried widow, with an address of 901 Hill County Road 3424 E, Malone, TX 76660 ("**Landowner**").

Landowner hereby acknowledges and confirms ownership of the following described property ("**Landowner's Property**"), pursuant to Correction Warranty Deed With Vendor's Lien dated 3-19-1999 and recorded 4-22-1999 at Volume 1015, Page 660, Official Public Records, Hill County, Texas:

All that certain lot, tract or parcel of land being out of the John Deaton Survey Patent No 362, Volume 28, Abstract No 238 situated in Hill County, Texas, and more particularly described by metes and bounds as follows:

BEGINNING at the S W corner of said Deaton Survey the same being the intersection of two public roads;

THENCE N 60-49 E with a South line of said survey and center of public road 525 varas to stake for corner;

THENCE N 28 W 631 8 varas to an iron stake in South line of the Munroe Tract of land constituted of 155 5 acres as set apart in the division of the G G White estate;

THENCE S61 W with the S line of said Munroe Tract 525 varas to corner of the Munroe Tract;

THENCE S 28 E with center of public road 933 varas to the beginning, containing 86 52 acres of land as surveyed by Herman Eastland, Jr, Surveyor on the 26th day of November A D 1937

Landowner acknowledges that Lone Star Transmission, LLC, a Delaware limited liability company, ("**Lone Star**") proposes to file an Application to Amend Its Certificate of Convenience and Necessity ("**Application**") with the Public Utility Commission of Texas ("**PUCT**") to construct and operate

a 345 kilovolt transmission line that will connect Lone Star's proposed Bullock Station, located approximately 0.66 miles southwest of the intersection of Farm-to-Market (FM) 308 and Hill County Road (CR) 3441, to the proposed Aquilla Lake 3 collector substation, located north of Hill CR 3423 approximately 0.31 miles west of Hill CR 3424 ("**Transmission Line Facilities**"). Lone Star will propose the PUCT approve a route for the Transmission Line Facilities that is accepted by each property owner directly affected by the Transmission Line Facilities ("**Consensus Route**"). Lone Star will include this Agreement with its Application to demonstrate agreement on the Consensus Route by all directly affected landowners.

Landowner and Lone Star agree the PUCT should approve the Consensus Route that will be presented for PUCT consideration in Lone Star's Application. Landowner represents it is the legal and beneficial owner of fee simple title to the property as described above and has the right, without joinder of any other party, to enter into the Agreement. Landowner acknowledges that the new 345 kilovolt transmission line, if approved, will be installed on Landowner's Property as depicted on **Exhibit A**, attached hereto and made a part hereof ("**Facilities Location**"). Landowner and Lone Star further acknowledge this Agreement does not convey the land rights needed by Lone Star to construct or operate the transmission line.

For good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, Landowner hereby accepts and provides consent for Lone Star's Application and Facilities Location.

Susan Schulz

Susan Schulz

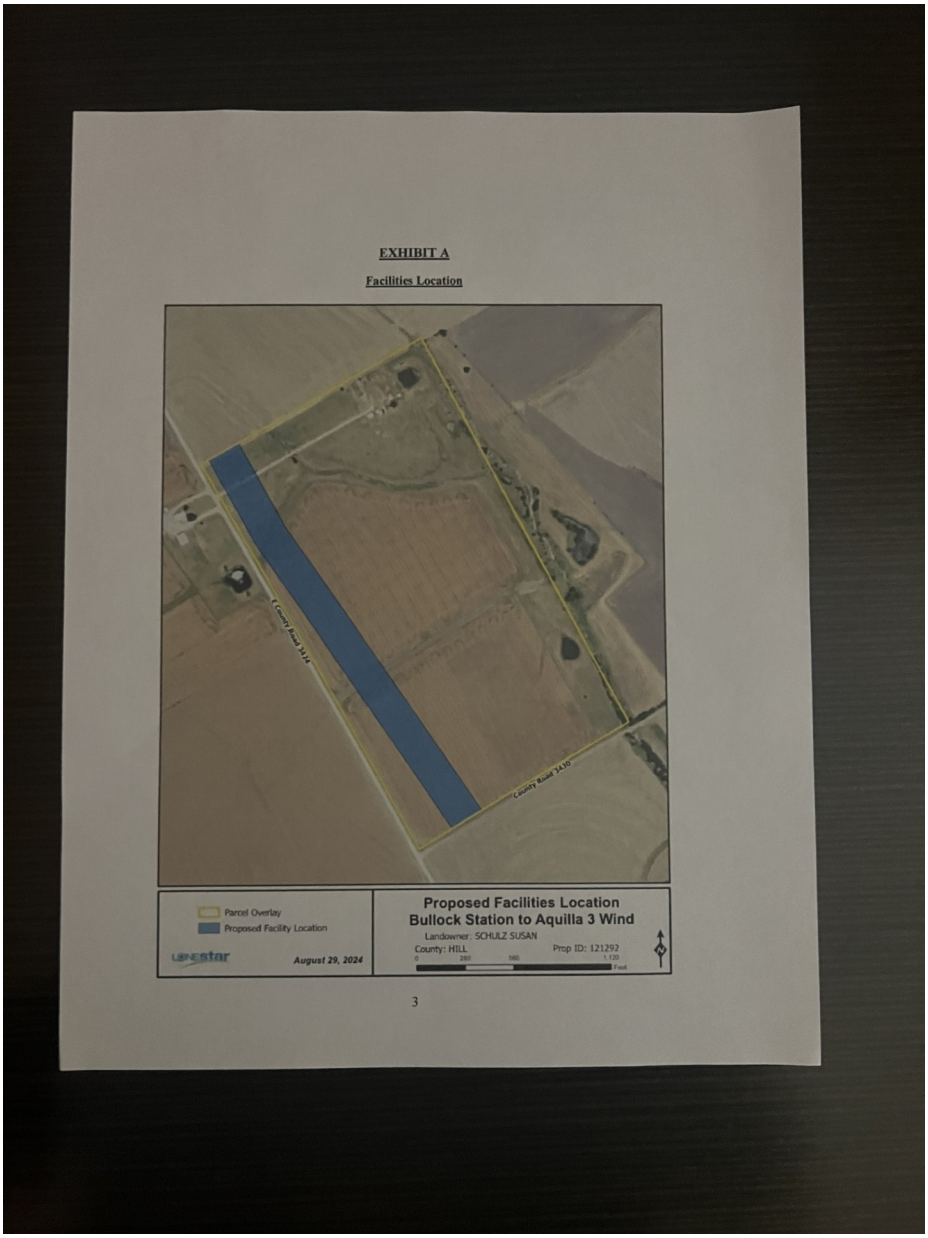


EXHIBIT A

Facilities Location

3

LANDOWNER CONSENSUS ROUTE AGREEMENT

THE STATE OF TEXAS §
§
COUNTY OF HILL §

THIS LANDOWNER CONSENSUS ROUTE AGREEMENT ("**Agreement**") is made and entered into this 12 day of February, 2025 by Susan Schulz and Justin Schulz, as Distributees of the Estate of Randy Wayne Schulz, pursuant to the probate of the Estate of Randy Wayne Schulz, Deceased, in Cause No. 13205, County Court of Hill County, Texas, both with an address of 901 Hill County Road 3424 E, Malone, TX 76660 ("**Landowner**").

Landowner hereby acknowledges and confirms ownership of the following described property ("**Landowner's Property**"), pursuant to Warranty Deed of Gift dated 3-19-1999 and recorded 3-19-1999 at Volume 1011, Page 340, Official Public Records, Hill County, Texas:

All that certain lot, tract or parcel of land being a tract 56.48 acres out of survey of 2,763 acres of the Navarro County School Land Survey, and being off the East End of North Half of Block 4 of said survey, described by metes and bounds as follows:

BEGINNING at the Northeast corner of an 80 acre tract of land described in a deed from Ed Radke, et ux to Fritz Geltmeier recorded in Volume 175, Page 150 of the Deed Records of Hill County, Texas,

THENCE South 60 West with the North line of said 80 acre tract of land, 670 varas to stake set for corner,

THENCE South 30 East 476 varas to point in the South line of said 80 acre tract of land and in the North line of the Old Bruton Farm, now owned by Milton Radke;

THENCE North 60 East 670 vrs to the southeast corner of said 80 acre tract and the northeast corner of the Radke tract of land,

THENCE North 30 West 476 varas to the beginning, containing 56.48 acres of land, being the same and identical premises conveyed by deed from Albert Schulz et ux to Marvin Schulz et ux dated January 25, 1951

Landowner acknowledges that Lone Star Transmission, LLC, a Delaware limited liability company, ("**Lone Star**") proposes to file an Application to Amend Its Certificate of Convenience and

Necessity ("**Application**") with the Public Utility Commission of Texas ("**PUCT**") to construct and operate a 345 kilovolt transmission line that will connect Lone Star's proposed Bullock Station, located approximately 0.66 miles southwest of the intersection of Farm-to-Market (FM) 308 and Hill County Road (CR) 3441, to the proposed Aquilla Lake 3 collector substation, located north of Hill CR 3423 approximately 0.31 miles west of Hill CR 3424 ("**Transmission Line Facilities**"). Lone Star will propose the PUCT approve a route for the Transmission Line Facilities that is accepted by each property owner directly affected by the Transmission Line Facilities ("**Consensus Route**"). Lone Star will include this Agreement with its Application to demonstrate agreement on the Consensus Route by all directly affected landowners.

Landowner and Lone Star agree the PUCT should approve the Consensus Route that will be presented for PUCT consideration in Lone Star's Application. Landowner represents it is the legal and beneficial owner of fee simple title to the property as described above and has the right, without joinder of any other party, to enter into the Agreement. Landowner acknowledges that the new 345 kilovolt transmission line, if approved, will be installed on a property within five hundred (500) feet* of the habitable structure on Landowner's Property as depicted on **Exhibit A**, attached hereto and made a part hereof ("**Facilities Location**").

For good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, Landowner hereby accepts and provides consent for Lone Star's Application and Facilities Location.

Susan Schulz

Susan Schulz

Justin Schulz

*Per 16 Texas Administrative Code § 25.101(b)(3)(B), certain factors must be considered in the selection of the utility's alternative routes unless a route is agreed to by the utility, landowners whose property is crossed by the proposed line, and owners of land that contains a habitable structure within 500 feet of the centerline of a transmission project greater than 230 kV.

EXHIBIT A

Facilities Location

3

ERCOT STANDARD GENERATION INTERCONNECTION AGREEMENT

Between

Hubbard Wind II, LLC
and

Lone Star Transmission, LLC

for

Aquilla Lake 3 Wind Project

Date: January 24, 2024

TABLE OF CONTENTS

ERCOT STANDARD GENERATION INTERCONNECTION AGREEMENT

This Standard Generation Interconnection Agreement is made and entered into this 24th day of January, 2024 ("Effective Date"), between **Lone Star Transmission, LLC** ("Transmission Service Provider") and **Hubbard Wind II, LLC** ("Generator"), hereinafter individually referred to as "Party," and collectively referred to as "Parties." In consideration of the mutual covenants and agreements herein contained, the Parties hereto agree as follows:

Transmission Service Provider is a public utility that owns and operates facilities for the transmission and distribution of electricity. Generator will own, operate, and maintain the Plant (as defined in Exhibit "A"). Pursuant to the terms and conditions of this Agreement, Transmission Service Provider shall interconnect Generator's Plant with Transmission Service Provider's System consistent with the Interconnection Study Agreement executed between the Parties on May 25, 2021 and pursuant to the ERCOT generation interconnection request #22INR0499.

This Agreement applies only to the Plant and the Parties' interconnection facilities as identified in Exhibit "C".

This Agreement shall become effective as of the Effective Date, subject to Governmental Authority approval, if required, and shall continue in full force and effect until terminated in accordance with Exhibit "A".

This Agreement will be subject to the following, all of which are incorporated herein:

A. The "Terms and Conditions of the ERCOT Standard Generation Interconnection Agreement" attached hereto as Exhibit "A";
B. The ERCOT Requirements (unless expressly stated herein, where the ERCOT Requirements are in conflict with this Agreement, the ERCOT Requirements shall prevail);
C. The PUCT Rules (where the PUCT Rules are in conflict with this Agreement, the PUCT Rules shall prevail);
D. The Time Schedule attached hereto as Exhibit "B";
E. The Interconnection Details attached hereto as Exhibit "C";
F. The notice requirements attached hereto as Exhibit "D"; and
G. The Security Arrangement Details attached hereto as Exhibit "E".

IN WITNESS WHEREOF, the Parties have executed this Agreement in duplicate originals, each of which shall constitute and be an original effective Agreement between the Parties.

Lone Star Transmission, LLC

By: Dan Madru Daniel Madru

Digitally signed by Daniel Madru
DN: cn=Daniel Madru, o=Lone Star Transmission, ou, email=daniel.madru@lonestar-transmission.com, c=US
Date: 2024.01.24 14:21:18 -06'00'

Title: President

Date: January 24, 2024

Hubbard Wind II,LLC

By: DocuSigned by: Petter Skantze 2F5BBE5FF6D34D9...

Title: VP Infrastructure Development

Date: January 12, 2024

Exhibit "A"
Terms and Conditions of the ERCOT Standard Generation Interconnection Agreement

ARTICLE 1. DEFINITIONS

Capitalized terms shall have the meanings as set forth below, except as otherwise specified in the Agreement:

1.1 "CCN" shall mean a Certificate of Convenience and Necessity issued by the PUCT.

1.2 "Commercial Operation" shall mean the date on which Generator declares that the construction of the Plant has been substantially completed, Trial Operation of the Plant has been completed, and the Plant is ready for dispatch.

1.3 "Control Area" shall have the meaning ascribed thereto in PUCT Rule 25.5 or its successor.

1.4 **"**ERCOT**"** shall mean the Electric Reliability Council of Texas, Inc.

1.5 "ERCOT Requirements" means the ERCOT Nodal Operating Guides, ERCOT Generation Interconnection Procedures, and ERCOT Nodal Protocols, as well as any other documents adopted by ERCOT relating to the interconnection and operation of generators and transmission systems in ERCOT as amended from time to time, and any successors thereto. Any requirement in the foregoing documents imposed upon generation entities or generation facilities shall become the responsibility of the Generator, and any requirements imposed on transmission providers or transmission facilities shall become the responsibility of the TSP.

1.6 "Facilities Study" shall have the meaning as described in PUCT Rule 25.198(d) or its successor.

1.7 "GIF" shall mean Generator's interconnection facilities as described in Exhibit "C."

1.8 "Good Utility Practice" shall have the meaning described in PUCT Rule 25.5 or its successor.

1.9 "Governmental Authority(ies)" shall mean any federal, state, local or municipal body having jurisdiction over a Party.

1.10 "In-Service Date" shall be the date, as reflected in Exhibit "B," that the TIF will be ready to connect to the GIF.

1.11 "Interconnection Study Agreement" shall mean an agreement executed by the Parties relating to the performance of interconnection studies.

1.12 "Plant" shall mean the electric generation facility owned and operated by the Generator, as specified in Exhibit "C."

1.13 "Point of Interconnection" shall mean the location(s) where the GIF connects to the TIF as negotiated and defined by the Parties and as shown on Exhibit "C" of this Agreement.

1.14 "PUCT**"** shall mean the Public Utility Commission of Texas.

1.15 "PUCT Rules" shall mean the Substantive Rules of the PUCT.

1.16 "Reasonable Efforts" shall mean the use of Good Utility Practice and the exercise of due diligence pursuant to PUCT Rule 25.198(e) or its successor.

1.17 "System Protection Equipment" shall mean those facilities located within the TIF and the GIF as described in Section 5.6 and Exhibit "C."

1.18 "System Security Study" shall have the meaning as described in PUCT Rule 25.198(c) or its successor.

1.19 "TCOS" shall mean the TSP's transmission cost of service as allowed by the applicable Governmental Authority.

1.20 "TIF" shall mean the TSP's interconnection facilities as described in Exhibit "C" to this Agreement.

1.21 "Trial Operation" shall mean the process by which the Generator is engaged in on-site test operations and commissioning of the Plant prior to Commercial Operation.

1.22 "TSP" shall mean the Transmission Service Provider.

1.23 "TSP System" shall mean the electric transmission facilities, including the TIF, and all associated equipment and facilities owned and/or operated by the TSP.

ARTICLE 2. TERMINATION

2.1 Termination Procedures. This Agreement may be terminated as follows:

A. the Generator may terminate this Agreement after giving the TSP thirty (30) days' advance written notice; or

B. the TSP may terminate this Agreement (subject to Governmental Authority approval, if required) on written notice to the Generator if the Generator's Plant has not achieved Commercial Operation within one (1) year after the scheduled Commercial Operation date reflected in Exhibit "B"; or

C. either Party may terminate this Agreement in accordance with Section 10.6.

2.2 Termination Costs. If a Party elects to terminate the Agreement pursuant to Section 2.1 above, then Generator shall promptly pay, or reimburse TSP for, all costs that are the responsibility of the Generator under this Agreement and incurred, or committed to be incurred, by TSP as of the date of the notice of termination. In the event of termination by a Party, each Party shall use Reasonable Efforts to mitigate the damages and charges that it may incur as a consequence of such termination.

2.3 Disconnection. Upon termination of this Agreement, the Parties will disconnect the GIF from the TIF. The provisions of Section 2.2 and Section 2.3 shall survive termination of the Agreement.

ARTICLE 3. REGULATORY FILINGS

3.1 Filing. The TSP shall file this executed Agreement with the PUCT. Each Party will cooperate reasonably with each other in connection with such filings. Any portion of this Agreement asserted by Generator to contain competitively sensitive commercial or financial information shall be filed by the TSP identified as "confidential" under seal stating, for the TSP's showing of good cause, that Generator asserts such information is confidential information and has requested such filing under seal. If requested by the TSP, Generator shall provide the TSP, in writing, with the Generator's basis for asserting that the information referred to in this Section 3.1 is competitively sensitive information, and the TSP may disclose such writing to the appropriate Governmental Authority.

3.2 Regulatory Approvals. Unless exempt, the TSP shall timely request from ERCOT and any other Governmental Authority all regulatory approvals necessary for it to carry out its responsibilities under this Agreement. Such approvals shall include any CCN required for the construction of the TIF.

ARTICLE 4. INTERCONNECTION FACILITIES ENGINEERING, PROCUREMENT, AND CONSTRUCTION

4.1 Options. The Generator shall select one of the following options (subsection A or subsection B) and include the selected option in Exhibit "B" for completion of the TIF:

A. The TSP shall design, procure, and construct the TIF, using Reasonable Efforts to complete the TIF by the In-Service Date reflected in Exhibit "B." The TSP will utilize its own resources and will contract for additional resources, as reasonably necessary, to meet the In-Service Date. Such resources shall include, as the TSP believes is reasonable, use of other contractors, other equipment suppliers, other material suppliers, additional contract personnel, additional payments to contractors for expedited work, and premiums paid to equipment and material suppliers for expedited delivery. The TSP shall not be required to undertake any initiative which is inconsistent with its standard safety practices, its material and equipment specifications, its design criteria and construction procedures, its labor agreements, applicable laws and regulations, and ERCOT Requirements. In the event the TSP reasonably expects that it will not be able to

complete the TIF by the In-Service Date, the TSP will promptly provide written notice to the Generator and will undertake Reasonable Efforts to meet the earliest date thereafter.

B. (i) The TSP shall design, procure, and construct the TIF by the In-Service Date reflected in Exhibit "B". The Parties acknowledge that the In-Service Date was either agreed upon through good faith negotiations or designated by the Generator upon failure of the Parties to agree. In the process of negotiating the In-Service Date, Generator will request a date upon which it reasonably expects it will be ready to begin use of the TIF and upon which it reasonably expects to begin doing so. Any date designated by the Generator shall in no event be less than fifteen months from the date that all conditions of Sections 4.2 and 4.3 have been satisfied. The designated In-Service Date will be extended day for day for each day that ERCOT refuses to grant clearances to install equipment. If the TSP fails to complete the TIF by the In-Service Date reflected in Exhibit "B", the TSP shall pay the Generator liquidated damages in accordance with this Section 4.1.B.

(ii) The Parties agree that actual damages to the Generator, in the event the TIF are not completed by the In-Service Date, may include Generator's fixed operation and maintenance costs and lost opportunity costs. Such actual damages are uncertain and impossible to determine at this time. The Parties agree that, because of such uncertainty, any liquidated damages paid by the TSP to the Generator shall be an amount equal to ½ of 1% of the actual cost of the TIF, per day. However, in no event shall the total liquidated damages exceed 20% of the actual cost of the TIF. The Parties agree that such liquidated damages are less than the Generator's actual damages. The Parties agree that the foregoing payments will be made by the TSP to the Generator as just compensation for the damages caused to the Generator, which actual damages are uncertain and impossible to determine at this time, and as reasonable liquidated damages, but not as a penalty or a method to secure performance of this Agreement.

(iii) The TSP shall apply to have the full costs of the TIF included in TCOS. If the PUCT issues a final, appealable order excluding from TCOS any portion of the TIF costs, including higher contractor and vendor costs due to liquidated damage provisions in those contracts and insurance costs to cover liquidated damages, which costs may have been reasonably incurred but which the PUCT finds should not be recovered through TCOS, the Generator shall reimburse the TSP for such costs in an amount not to exceed the difference between the TSP's estimate of the cost of the TIF under section 4.1.A and the TSP's estimate of the cost of the TIF under Section 4.1.B as reflected in Exhibit "C". Such costs shall be estimated using Good Utility Practice.

(iv) No liquidated damages shall be paid to Generator if the Generator is not ready to commence use of the TIF for the delivery of power to the Plant for Trial Operation or export of power from the Plant on the In-Service Date, unless the Generator would have been able to commence use of the TIF for the delivery of power to the Plant for Trial Operation or export of power from the Plant but for TSP's delay.

(v) If the In-Service Date has been designated by the Generator upon a failure of the Parties to agree on the In-Service Date, the TSP may, at its option, require the Generator to subcontract with the TSP for all or part of the design, procurement and

construction of the TIF in accordance with the TSP's standard subcontractor agreements. In such event, the TSP shall be subject to the payment of liquidated damages to the Generator only if the In-Service Date is not met solely due to the TSP's failure to complete the portion of the TIF for which the TSP has retained responsibility. It is the intent of this subsection to give the TSP full control of the contents and quality of the TIF. To the extent the Generator acts as a subcontractor to the TSP, the following will apply: 1) The Generator shall engineer, procure equipment, and construct the TIF (or portions thereof) using Good Utility Practice and using standards and specifications provided in advance by the TSP; 2) In its engineering, procurement and construction of the TIF, the Generator shall comply with all requirements of law to which the TSP would be subject in the engineering, procurement or construction of the TIF; 3) The TSP shall review and approve the engineering design, acceptance tests of equipment, and the construction of the TIF; 4) The TSP shall have the right to approve, and accept for operation, the TIF in accordance with the standards and specifications provided in advance by the TSP, such approval and acceptance shall not be unreasonably withheld, conditioned, or delayed; 5) Should any phase of the engineering, equipment procurement, or construction of the TIF, including selection of subcontractors, not meet the standards and specifications provided by the TSP, and therefore be deemed unacceptable, then the Generator shall be obligated to remedy that portion of the TIF or selection of subcontractors that is deemed unacceptable, the TSP's approval of the Generator's selection of subcontractors will not be unreasonably withheld, conditioned or delayed; and 6) Once the TIF is accepted for operation by the TSP, then the TSP shall reimburse the Generator for the reasonable and necessary costs incurred by the Generator to complete the TIF, not to exceed the amount specified in the subcontract. Such reimbursement shall be made within thirty (30) days after receipt of the invoice, unless otherwise agreed to by the Parties.

4.2 Equipment Procurement. If responsibility for construction of the TIF is borne by the TSP, then the TSP shall commence design of the TIF and procure necessary equipment within a reasonable time after all of the following conditions are satisfied:

A. The TSP has completed the Facilities Study pursuant to the Interconnection Study Agreement;

B. The TSP has received written authorization to proceed with design and procurement from the Generator by the date specified in Exhibit "B"; and

C. The Generator has provided security to the TSP in accordance with Section 8.3 by the dates specified in Exhibit "B".

4.3 Construction Commencement. The TSP shall commence construction of the TIF as soon as practicable after the following additional conditions are satisfied:

A. Approval of the appropriate Governmental Authority has been obtained for any facilities requiring regulatory approval;

B. Necessary real property rights, if any, have been obtained;

C. The TSP has received written authorization to proceed with construction from the Generator by the date specified in Exhibit "B"; and

D. The Generator has provided security to the TSP in accordance with Section 8.3 by the dates specified in Exhibit "B."

4.4 Work Progress. The Parties will keep each other advised periodically as to the progress of their respective design, procurement, and construction efforts. If, at any time, the Generator becomes aware that the completion of the TIF will not be required until after the specified In-Service Date, the Generator will promptly provide written notice to the TSP of a new, later In-Service Date.

4.5 Conditions Precedent Delay. To the extent this Agreement incorporates a specified In-Service Date and the Generator fails to satisfy conditions precedent under Sections 4.2 and 4.3, the Parties agree to negotiate in good faith to establish a new schedule for completion of the TIF, and the In-Service Date shall be extended accordingly.

ARTICLE 5. FACILITIES AND EQUIPMENT

5.1 Information Exchange. The Parties shall exchange information and mutually agree upon the design and compatibility of the Parties' interconnection facilities. The Parties shall work diligently and in good faith to make any necessary design changes to ensure compatibility of the GIF to the TSP System.

5.2 GIF Construction. Generator agrees to cause the GIF to be designed and constructed in accordance with Good Utility Practice, ERCOT Requirements, and the National Electrical Safety Code in effect at the time of construction. Within one-hundred and twenty (120) days after Commercial Operation, unless the Parties agree on another mutually acceptable deadline, the Generator shall deliver to the TSP the following "as-built" drawings, information, and documents for the GIF: a one-line diagram, a site plan showing the Plant and the GIF, plan and elevation drawings showing the layout of the GIF, a relay functional diagram, relaying AC and DC schematic wiring diagrams, and relay settings for all facilities associated with the Generator's main-power transformers, the facilities connecting the Generator to the main power transformers and the GIF, and the impedances (determined by factory tests) for the associated main power transformers and the generators and, if applicable, the impedance of any transmission voltage lines that are part of the GIF.

5.3 TIF Construction. The TSP agrees to cause the TIF to be designed and constructed in accordance with Good Utility Practice, ERCOT Requirements, and the National Electrical Safety Code in effect at the time of construction.

5.4 Equipment Changes. For facilities not described in Exhibit "C," if either Party makes equipment changes to the Plant, the GIF, the TIF, or the TSP System which it reasonably believes will affect the operation or performance of the other Party's interconnection facilities, such Party agrees to notify the other Party, in writing, of such

changes. Such changes shall be made in accordance with ERCOT Requirements and coordinated between the Parties.

5.5 Metering, Telemetry and Communications Requirements.

A. Metering and telemetry of data will be accomplished in accordance with ERCOT Requirements. The specific metering, telemetry and communications equipment to be installed and data to be telemetered are described in Exhibit "C."

B. At the Point of Interconnection, the metering and telemetry equipment shall be owned by the TSP. However, the TSP will provide the Generator with metering and/or telemetry values if available. C. A minimum set of inputs to the telemetry equipment are specified in Exhibit "C." Additional sets of inputs may be subsequently mutually agreed upon.

D. The TSP will notify the Generator at least five (5) business days in advance of any planned maintenance, inspection, testing, or calibration of the metering equipment, unless otherwise agreed to in writing. The Generator, or its designated representative, shall have the right to be present for these activities and to receive copies of any documents related to the procedures and results.

E. Prior to the connection of the GIF to the TIF, acceptance tests will be performed by the owning Party to ensure the proper functioning of all metering, telemetry, and communications equipment associated with the Point of Interconnection and both Parties' interconnection facilities, and to verify the accuracy of data being received by the TSP, ERCOT, and the Generator. All acceptance tests will be performed consistent with ERCOT Requirements.

F. The TSP shall, in accordance with Good Utility Practice and ERCOT Requirements, specify communications facilities, including those necessary to transmit data from the metering equipment to the TSP, that are necessary for the effective operation of the Plant and the GIF with the TSP System. Such communication facilities shall be included in Exhibit "C." The Generator shall make arrangements to procure and shall be responsible for the costs of such facilities.

G. Any changes to the meters, telemetry equipment, voltage transformers, current transformers, and associated panels, hardware, conduit, and cable, that will affect the data being received by a Party must be mutually agreed to by the Parties.

H. Each Party will promptly advise the other Party if it detects or is otherwise aware of any metering, telemetry, or communications equipment errors or malfunctions that require the attention and/or correction by the other Party. The Party owning such equipment shall correct such error or malfunction as soon as reasonably practical in accordance with ERCOT Requirements.

5.6 System Protection and Other Controls Requirements.

A. Each Party's facilities shall be designed to isolate any fault, or to correct or isolate any abnormality, that would negatively affect the other Party's system or other entities connected to the TSP System.

B. The Generator shall be responsible for protection of its facilities and the Plant consistent with ERCOT Requirements.

C. Each Party's protective relay design shall incorporate the necessary test switches to perform the tests required in Section 5.6.F. The required test switches will be placed such that they allow operation of lockout relays while preventing breaker failure schemes from operating and causing unnecessary breaker operations and tripping the Generator's units.

D. Recording equipment shall be installed to analyze all system disturbances in accordance with ERCOT Requirements.

E. Each Party will test, operate, and maintain System Protection Equipment in accordance with ERCOT Requirements. Each Party will provide reasonable notice to the other Party of any testing of its System Protection Equipment allowing such other Party the opportunity to have representatives present during testing of its System Protection Equipment.

F. Prior to the In-Service Date, and again prior to Commercial Operation, each Party or its agent shall perform a complete calibration test and functional trip test of the System Protection Equipment. At intervals suggested by Good Utility Practice or at intervals described in the ERCOT Requirements (if so defined therein), and following any apparent malfunction of the System Protection Equipment, each Party shall perform both calibration and functional trip tests of its System Protection Equipment. These tests do not require the tripping of any in-service generation unit. These tests do, however, require that all protective relays and lockout contacts be activated.

5.7 No Annexation. Any and all equipment placed on the premises of a Party shall be and remain the property of the Party providing such equipment regardless of the mode and manner of annexation or attachment to real property, unless otherwise mutually agreed by the Parties.

ARTICLE 6. OPERATION AND MAINTENANCE

6.1 Operation and Maintenance of Interconnection Facilities. The Parties agree to operate and maintain their systems in accordance with Good Utility Practice, National Electrical Safety Code, the ERCOT Requirements, PUCT Rules, and all applicable laws and regulations. In addition, Generator agrees to operate and maintain its system in accordance with the National Electrical Safety Code. Subject to any necessary ERCOT approval, each Party shall provide necessary equipment outages to allow the other Party to perform periodic maintenance, repair, or replacement of its facilities. Such outages shall be scheduled at mutually agreeable times, unless conditions exist which a Party believes, in accordance with Good Utility Practice, may endanger persons or property. No changes will be made in the normal operation of the Point of Interconnection without

the mutual agreement of the Parties, except as otherwise provided herein. All testing of the Plant that affects the operation of the Point of Interconnection shall be coordinated between the TSP, ERCOT, and the Generator and will be conducted in accordance with ERCOT Requirements.

6.2 Control Area. The Point of Interconnection shall be located within the ERCOT Control Area. The Control Area within ERCOT is a single Control Area, with ERCOT assuming authority as the Control Area operator in accordance with ERCOT Requirements.

6.3 Land Rights and Easements. Terms and conditions addressing the rights of the TSP and the Generator regarding any facilities located on the other Party's property shall be addressed in a separate, duly executed, and recorded easement agreement between the Parties. Prior to Commercial Operation, the Parties will mutually agree upon procedures to govern access to each other's property as necessary for the Parties to fulfill their obligations hereunder.

6.4 Service Interruption. The Parties recognize that the interruption of service provisions of the PUCT Rules give TSP the right to disconnect the TSP System from the Plant under the conditions specified therein. The Generator will promptly disconnect the Plant from the TSP System when required by and in accordance with the PUCT Rules and ERCOT Requirements.

6.5 Switching and Clearance.

A. Any switching or clearances needed on the TIF or the GIF will be done in accordance with ERCOT Requirements.

B. Any switching and clearance procedure necessary to comply with Good Utility Practice or ERCOT Requirements that may have specific application to the Plant shall be addressed in Exhibit "C."

6.6 Start-Up and Synchronization. Consistent with ERCOT Requirements and the Parties' mutually acceptable procedure, the Generator is responsible for the proper synchronization of the Plant to the TSP System.

6.7 Routine Operational Communications. On a timely basis, the Parties shall exchange all information necessary to comply with ERCOT Requirements.

6.8 Blackstart Operations. If the Plant is capable of blackstart operations, Generator will coordinate individual Plant start-up procedures consistent with ERCOT Requirements. Any blackstart operations shall be conducted in accordance with the blackstart criteria included in the ERCOT Requirements and the TSP blackstart plan on file with ERCOT. Notwithstanding this section, the Generator is not required to have blackstart capability by virtue of this Agreement. If the Generator will have blackstart capability, then Generator shall provide and maintain an emergency communication system that will interface with the TSP during a blackstart condition.

6.9 Power System Stabilizers. The Generator shall procure, install, maintain, and operate power system stabilizers if required to meet ERCOT Requirements and as described in Exhibit "C."

ARTICLE 7. DATA REQUIREMENTS

7.1 Data Acquisition. The acquisition of data to realistically simulate the electrical behavior of system components is a fundamental requirement for the development of a reliable interconnected transmission system. Therefore, the TSP and the Generator shall be required to submit specific information regarding the electrical characteristics of their respective facilities to each other as described below in accordance with ERCOT Requirements.

7.2 Initial Data Submission by TSP. The initial data submission by the TSP shall occur prior to Trial Operation and shall include transmission system data necessary to allow the Generator to select equipment and meet any system protection and stability requirements.

7.3 Initial Data Submission by Generator. The initial data submission by the Generator, including manufacturer data, shall occur no later than ninety (90) days prior to the Trial Operation and shall include a completed copy of the following forms contained in the ERCOT Generation Interconnection Procedure: (1) Plant Description/Data; and (2) Generation Stability Data. It shall also include any additional data provided to ERCOT for the System Security Study. Data in the initial submissions shall be the most current Plant design or expected performance data. Data submitted for stability models shall be compatible with ERCOT standard models. If there is no compatible model, the Generator will work with an ERCOT-designated consultant to develop and supply a standard model and associated data.

7.4 Data Supplementation. Prior to Commercial Operation, the Parties shall supplement their initial data submissions with any and all "as-built" Plant data or "as-tested" performance data which differs from the initial submissions or, alternatively, written confirmation that no such differences exist. Subsequent to Commercial Operation, the Generator shall provide the TSP any data changes due to equipment replacement, repair, or adjustment. The TSP shall provide the Generator any data changes due to equipment replacement, repair, or adjustment in the directly connected substation or any adjacent TSP-owned substation that may affect the GIF equipment ratings, protection or operating requirements. The Parties shall provide such data no later than thirty (30) days after the date of the actual change in equipment characteristics. Also, the Parties shall provide to each other a copy of any additional data later required by ERCOT concerning these facilities.

7.5 Data Exchange. Each Party shall furnish to the other Party real-time and forecasted data as required by ERCOT Requirements. The Parties will cooperate with one another in the analysis of disturbances to either the Plant or the TSP's System by gathering and providing access to any information relating to any disturbance, including

information from oscillography, protective relay targets, breaker operations, and sequence of events records**.**

ARTICLE 8. PERFORMANCE OBLIGATION

8.1 Generator's Cost Responsibility. The Generator will acquire, construct, operate, test, maintain, and own the Plant and the GIF at its sole expense. In addition, the Generator may be required to make a contribution in aid of construction in the amount set out in and for the facilities described in Exhibit "C," if any, in accordance with PUCT Rules.

8.2 TSP's Cost Responsibility. The TSP will acquire, own, operate, test, and maintain the TIF at its sole expense, subject to the provisions of Section 4.1.B and the contribution in aid of construction provisions of Section 8.1 of this Agreement.

8.3 Financial Security Arrangements. The TSP may require the Generator to pay a reasonable deposit or provide another means of security, to cover the costs of planning, licensing, procuring equipment and materials, and constructing the TIF. The required security arrangements are specified in Exhibit "E." Within five (5) business days after TSP has received notice from the Generator that the Plant has achieved Commercial Operation, and TSP has verified the same, the TSP shall return the deposit(s) or security to the Generator. However, the TSP may retain an amount to cover the incremental difference between the TSP's actual out of pocket costs associated with the choice of Section 4.1.B over Section 4.1.A, pending a final PUCT Order as contemplated in Section 4.1.B(iii). If the Plant has not achieved Commercial Operation within one (1) year after the scheduled Commercial Operation date identified in Exhibit "B" or if the Generator terminates this Agreement in accordance with Section 2.1 and the TIF are not required, the TSP may, subject to the provisions of Section 2.2, retain as much of the deposit or security as is required to cover the costs it incurred in planning, licensing, procuring equipment and materials, and constructing the TIF. If a cash deposit is made pursuant to Exhibit "E," any repayment of such cash deposit shall include interest at a rate applicable to customer deposits as established from time to time by the PUCT or other Governmental Authority.

ARTICLE 9. INSURANCE

9.1 Each Party shall, at its own expense, maintain in force throughout the period of this Agreement, and until released by the other Party the following minimum insurance coverages, with insurers authorized to do business in Texas:

A. Employers Liability and Worker's Compensation Insurance providing statutory benefits in accordance with the laws and regulations of the State of Texas. The minimum limits for the Employer's Liability insurance shall be One Million Dollars ($1,000,000) each accident bodily injury by accident, One Million Dollars ($1,000,000) each employee bodily injury by disease, and One Million Dollars ($1,000,000) policy limit bodily injury by disease.

B. Commercial General Liability Insurance including premises and operations, personal injury, broad form property damage, broad form blanket contractual liability coverage (including coverage for the contractual indemnification) products and completed operations coverage, coverage for explosion, collapse and underground hazards, independent contractors coverage, coverage for pollution to the extent normally available and punitive damages to the extent normally available and a cross liability endorsement, with minimum limits of One Million Dollars ($1,000,000) per occurrence/One Million Dollars ($1,000,000) aggregate combined single limit for personal injury, bodily injury, including death and property damage.

C. Comprehensive Automobile Liability Insurance for coverage of owned, non-owned, and hired vehicles, trailers, or semi-trailers designed for travel on public roads, with a minimum combined single limit of One Million Dollars ($1,000,000) per occurrence for bodily injury, including death, and property damage.

D. Excess Public Liability Insurance over and above the Employer's Liability, Commercial General Liability, and Comprehensive Automobile Liability Insurance coverage, with a minimum combined single limit of Twenty Million Dollars ($20,000,000) per occurrence/Twenty Million Dollars ($20,000,000) aggregate.

E. The Commercial General Liability Insurance, Comprehensive Automobile Liability Insurance, and Excess Public Liability Insurance polices shall name the other Party, its parent, associated and affiliated companies, and their respective directors, officers, agents, servants, and employees ("Other Party Group") as additional insured. All policies shall contain provisions whereby the insurers waive all rights of subrogation in accordance with the provisions of this Agreement against the Other Party Group. Each Party shall provide thirty (30) days' advance written notice to Other Party Group prior to cancellation or any material change in coverage or condition.

F. The Commercial General Liability Insurance, Comprehensive Automobile Liability Insurance, and Excess Public Liability Insurance policies shall contain provisions that specify that the policies are primary and shall apply to such extent without consideration for other policies separately carried and shall state that each insured is provided coverage as though a separate policy had been issued to each, except the insurer's liability shall not be increased beyond the amount for which the insurer would have been liable had only one insured been covered. Each Party shall be responsible for its respective deductibles or retentions.

G. The Commercial General Liability Insurance, Comprehensive Automobile Liability Insurance, and Excess Public Liability Insurance policies, if written on a Claims First Made basis, shall be maintained in full force and effect for two (2) years after termination of this Agreement, which coverage may be in the form of tail coverage or extended reporting period coverage if agreed by the Parties.

H. The requirements contained herein as to the types and limits of all insurance to be maintained by the Parties are not intended to and shall not in any manner,

limit or qualify the liabilities and obligations assumed by the Parties under this Agreement.

I. Within ten (10) days following execution of this Agreement, and as soon as practicable after the end of each fiscal year or at the renewal of the insurance policy and in any event within ninety (90) days thereafter, each Party shall provide certification of all insurance required in this Agreement, executed by each insurer or by an authorized representative of each insurer.

J. Notwithstanding the foregoing, each Party may self-insure to the extent it maintains a self-insurance program; provided that, such Party's senior secured debt is rated at investment grade, or better, by Standard & Poor's. For any period of time that a Party's senior secured debt is unrated by Standard & Poor's or is rated at less than investment grade by Standard & Poor's, such Party shall comply with the insurance requirements applicable to it under Sections 9.1.A through 9.1.I. In the event that a Party is permitted to self-insure pursuant to this Section 9.1.J, it shall not be required to comply with the insurance requirements applicable to it under Sections 9.1.A through 9.1.I.

K. The Parties agree to report to each other in writing as soon as practical all accidents or occurrences resulting in injuries to any person, including death, and any property damage arising out of this Agreement.

ARTICLE 10. MISCELLANEOUS

10.1 Governing Law and Applicable Tariffs.

A. This Agreement for all purposes shall be construed in accordance with and governed by the laws of the State of Texas, excluding conflicts of law principles that would refer to the laws of another jurisdiction. The Parties submit to the jurisdiction of the federal and state courts in the State of Texas.

B. This Agreement is subject to all valid, applicable rules, regulations and orders of, and tariffs approved by, duly constituted Governmental Authorities.

C. Each Party expressly reserves the right to seek changes in, appeal, or otherwise contest any laws, orders, rules, or regulations of a Governmental Authority.

D. Representations and Restrictions on Certain Foreign Ownership and Affiliation. Generator represents and warrants that during the Term (1) Generator shall comply with the prohibitions pursuant to, including the ownership, control, or headquarters criteria set forth in, the Lone Star Infrastructure Protection Act, Chapter 113 of the Texas Business & Commerce Code, as added by the Act of June 18, 2021, 87th Leg., R.S., Ch. 975 (S.B. 2116) (as may be amended from time to time, the "LSIPA"), and (2) by entering into this Agreement (and any other agreement by and between TSP and Generator related to the interconnection service that is the subject matter of this Agreement), TSP will not be in violation of the LSIPA as a result of ownership, control, or headquarter locations of Generator or any of its Affiliates. By entering into this Agreement, Generator acknowledges that TSP is relying on the foregoing representations

and warranties in order to ensure TSP's compliance with the LSIPA, Generator agrees to fully defend, indemnify, and hold harmless TSP from and against any and all demands, claims, actions, causes of action, proceedings, fines and penalties, costs and expenses (including reasonable attorney's fees and expenses) arising from or relating to any breach of the foregoing representations and warranties.

10.2 No Other Services. This Agreement is applicable only to the interconnection of the Plant to the TSP System at the Point of Interconnection and does not obligate either Party to provide, or entitle either Party to receive, any service not expressly provided for herein. Each Party is responsible for making the arrangements necessary for it to receive any other service that it may desire from the other Party or any third party. This Agreement does not address the sale or purchase of any electric energy, transmission service, or ancillary services by either Party, either before or after Commercial Operation.

10.3 Entire Agreement. This Agreement, including all Exhibits, Attachments, and Schedules attached hereto, constitutes the entire agreement between the Parties with reference to the subject matter hereof, and supersedes all prior and contemporaneous understandings or agreements, oral or written, between the Parties with respect to the subject matter of this Agreement. There are no other agreements, representations, warranties, or covenants which constitute any part of the consideration for, or any condition to, either Party's compliance with its obligations under this Agreement. Notwithstanding the other provisions of this Section, the Interconnection Study Agreement, if any, is unaffected by this Agreement.

10.4 Notices. Except as otherwise provided in Exhibit "D," any formal notice, demand or request provided for in this Agreement shall be in writing and shall be deemed properly served, given or made if delivered in person, or sent by either registered or certified mail, postage prepaid, overnight mail or fax to the address or number identified on Exhibit "D" attached to this Agreement. Either Party may change the notice information on Exhibit "D" by giving five (5) business days' written notice prior to the effective date of the change.

10.5 Force Majeure.

A. The term "Force Majeure" as used herein shall mean any cause beyond the reasonable control of the Party claiming Force Majeure, and without the fault or negligence of such Party, which materially prevents or impairs the performance of such Party's obligations hereunder, including but not limited to, storm, flood, lightning, earthquake, fire, explosion, failure or imminent threat of failure of facilities, civil disturbance, strike or other labor disturbance, sabotage, war, national emergency, or restraint by any Governmental Authority.

B. Neither Party shall be considered to be in Default (as hereinafter defined) with respect to any obligation hereunder (including obligations under Article 4), other than the obligation to pay money when due, if prevented from fulfilling such obligation by Force Majeure. A Party unable to fulfill any obligation hereunder (other than an obligation to pay money when due) by reason of Force Majeure shall give notice and the

full particulars of such Force Majeure to the other Party in writing or by telephone as soon as reasonably possible after the occurrence of the cause relied upon. Telephone notices given pursuant to this Section shall be confirmed in writing as soon as reasonably possible and shall specifically state full particulars of the Force Majeure, the time and date when the Force Majeure occurred, and when the Force Majeure is reasonably expected to cease. The Party affected shall exercise due diligence to remove such disability with reasonable dispatch, but shall not be required to accede or agree to any provision not satisfactory to it in order to settle and terminate a strike or other labor disturbance.

10.6 Default

A. The term "Default" shall mean the failure of either Party to perform any obligation in the time or manner provided in this Agreement. No Default shall exist where such failure to discharge an obligation (other than the payment of money) is the result of Force Majeure as defined in this Agreement or the result of an act or omission of the other Party. Upon a Default, the non-defaulting Party shall give written notice of such Default to the defaulting Party. Except as provided in Section 10.6.B, the defaulting Party shall have thirty (30) days from receipt of the Default notice within which to cure such Default; provided however, if such Default is not capable of cure within thirty (30) days, the defaulting Party shall commence such cure within thirty (30) days after notice and continuously and diligently complete such cure within ninety (90) days from receipt of the Default notice; and, if cured within such time, the Default specified in such notice shall cease to exist.

B. If a Default is not cured as provided in this Section, or if a Default is not capable of being cured within the period provided for herein, the non-defaulting Party shall have the right to terminate this Agreement by written notice at any time until cure occurs, and be relieved of any further obligation hereunder and, whether or not that Party terminates this Agreement, to recover from the defaulting Party all amounts due hereunder, plus all other damages and remedies to which it is entitled at law or in equity. The provisions of this Section will survive termination of this Agreement.

10.7 Intrastate Operation. The operation of the Plant by Generator shall not cause there to be a synchronous or an asynchronous interconnection between ERCOT and any other transmission facilities operated outside of ERCOT unless ordered by the Federal Energy Regulatory Commission under Section 210 of the Federal Power Act. The Parties recognize and agree that any such interconnection will constitute an adverse condition giving the TSP the right to immediately disconnect the TIF from the GIF, until such interconnection has been disconnected. The Generator will not be prohibited by this Section from interconnecting the Plant with facilities operated by the Comisión Federal de Electricidad of Mexico, unless such interconnection would cause ERCOT utilities that are not "public utilities" under the Federal Power Act to become subject to the plenary jurisdiction of the Federal Energy Regulatory Commission.

10.8 No Third Party Beneficiaries. This Agreement is not intended to and does not create rights, remedies, or benefits of any character whatsoever in favor of any persons,

corporations, associations, or entities other than the Parties, and the obligations herein assumed are solely for the use and benefit of the Parties, their successors in interest and, where permitted, their assigns.

10.9 No Waiver. The failure of a Party to this Agreement to insist, on any occasion, upon strict performance of any provision of this Agreement will not be considered a waiver of obligations, rights, or duties imposed upon the Parties. Termination or Default of this Agreement for any reason by the Generator shall not constitute a waiver of the Generator's legal rights to obtain an interconnection from the TSP under a new interconnection agreement.

10.10 Headings. The descriptive headings of the various articles and sections of this Agreement have been inserted for convenience of reference only and are of no significance in the interpretation or construction of this Agreement.

10.11 Multiple Counterparts. This Agreement may be executed in two or more counterparts, each of which is deemed an original but all constitute one and the same instrument.

10.12 Amendment. This Agreement may be amended only upon mutual agreement of the Parties, which amendment will not be effective until reduced to writing and executed by the Parties.

10.13 No Partnership. This Agreement shall not be interpreted or construed to create an association, joint venture, agency relationship, or partnership between the Parties or to impose any partnership obligation or liability upon either Party. Neither Party shall have any right, power, or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, the other Party.

10.14 Further Assurances. The Parties agree to (i) furnish upon request to each other such further information, (ii) execute and deliver to each other such other documents, and (iii) do such other acts and things, all as the other Party may reasonably request for the purpose of carrying out the intent of this Agreement and the documents referred to in this Agreement. Without limiting the generality of the foregoing, the TSP shall, at the Generator's expense, when reasonably requested to do so by the Generator at any time after the execution of this Agreement, prepare and provide such information in connection with this Agreement (including, if available, resolutions, certificates, opinions of counsel, or other documents relating to the TSP's corporate authorization to enter into this Agreement and to undertake the obligations set out herein) as may be reasonably required by any potential lender to the Generator under a proposed loan agreement. The TSP will use commercially reasonable efforts to obtain any opinion of counsel reasonably requested by Generator, but the TSP shall not be in Default of any obligation under this Agreement if the TSP is unable to provide an opinion of counsel that will satisfy any potential lender to the Generator. Specifically, upon the written request of one Party, the other Party shall provide the requesting Party with a letter stating whether or not, up to

the date of the letter, that Party is satisfied with the performance of the requesting Party under this Agreement.

10.15 Indemnification and Liability. The indemnification and liability provisions of the PUCT Rule 25.202(b)(2) or its successor shall govern this Agreement.

10.16 Consequential Damages. OTHER THAN THE LIQUIDATED DAMAGES HERETOFORE DESCRIBED, IN NO EVENT SHALL EITHER PARTY BE LIABLE UNDER ANY PROVISION OF THIS AGREEMENT FOR ANY LOSSES, DAMAGES, COSTS OR EXPENSES FOR ANY SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL, OR PUNITIVE DAMAGES, INCLUDING BUT NOT LIMITED TO LOSS OF PROFIT OR REVENUE, LOSS OF THE USE OF EQUIPMENT, COST OF CAPITAL, COST OF TEMPORARY EQUIPMENT OR SERVICES, WHETHER BASED IN WHOLE OR IN PART IN CONTRACT, IN TORT, INCLUDING NEGLIGENCE, STRICT LIABILITY, OR ANY OTHER THEORY OF LIABILITY; PROVIDED, HOWEVER, THAT DAMAGES FOR WHICH A PARTY MAY BE LIABLE TO THE OTHER PARTY UNDER ANOTHER AGREEMENT WILL NOT BE CONSIDERED TO BE SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES HEREUNDER.

10.17 Assignment. This Agreement may be assigned by either Party only with the written consent of the other; provided, that either Party may assign this Agreement without the consent of the other Party to any affiliate of the assigning Party with an equal or greater credit quality and with the legal authority and operational ability to satisfy the obligations of the assigning Party under this Agreement; and provided further that the Generator shall have the right to assign this Agreement, without the consent of the TSP, for collateral security purposes to aid in providing financing for the Plant; provided, that the Generator will require any secured party, trustee, or mortgagee to notify the TSP of any such assignment. Any financing arrangement entered into by the Generator pursuant to this Section will provide that prior to or upon the exercise of the secured party's, trustee's, or mortgagee's assignment rights pursuant to said arrangement, the secured creditor, the trustee, or mortgagee will notify the TSP of the date and particulars of any such exercise of assignment right(s). Any attempted assignment that violates this Section is void and ineffective. Any assignment under this Agreement shall not relieve a Party of its obligations, nor shall a Party's obligations be enlarged, in whole or in part, by reason thereof. Where required, consent to assignment will not be unreasonably withheld, conditioned, or delayed.

10.18 Severability. If any provision in this Agreement is finally determined to be invalid, void, or unenforceable by any court having jurisdiction, such determination shall not invalidate, void, or make unenforceable any other provision, agreement, or covenant of this Agreement; provided that if the Generator (or any third party, but only if such third party is not acting at the direction of the TSP) seeks and obtains such a final determination with respect to any provision of Section 4.1.B, then none of the provisions of Section 4.1.B. shall thereafter have any force or effect and the Parties' rights and obligations shall be governed solely by Section 4.1.A.

10.19 Comparability. The Parties will comply with all applicable comparability and code of conduct laws, rules, and regulations, as amended from time to time.

10.20 Invoicing and Payment. Unless the Parties otherwise agree (in a manner permitted by applicable PUCT Rules and as specified in writing in an Exhibit "E" attached hereto), invoicing and payment rights and obligations under this Agreement shall be governed by PUCT Rules or applicable Governmental Authority. Invoices shall be rendered to the paying Party at the address specified on, and payments shall be made in accordance with the requirements of, Exhibit "D."

10.21 Confidentiality.

A. Subject to the exception in Section 10.21.B, any information that a Party claims is competitively sensitive, commercial, or financial information under this Agreement ("Confidential Information") shall not be disclosed by the other Party to any person not employed or retained by the other Party, except to the extent disclosure is: (i) required by law; (ii) reasonably deemed by the disclosing Party to be required to be disclosed in connection with a dispute between or among the Parties, or the defense of litigation or dispute; (iii) otherwise permitted by consent of the other Party, such consent not to be unreasonably withheld; or (iv) necessary to fulfill its obligations under this Agreement or as a transmission service provider or a Control Area operator including disclosing the Confidential Information to ERCOT. The Party asserting confidentiality shall notify the other Party in writing of the information it claims is confidential. Prior to any disclosures of the other Party's Confidential Information under this subsection, or if any third party or Governmental Authority makes any request or demand for any of the information described in this subsection, the disclosing Party agrees to promptly notify the other Party in writing and agrees to assert confidentiality and cooperate with the other Party in seeking to protect the Confidential Information from public disclosure by confidentiality agreement, protective order or other reasonable measures.

B. This provision shall not apply to any information that was or is hereafter in the public domain (except as a result of a breach of this provision).

Exhibit "B"
Time Schedule

1) Interconnection Option chosen by Generator (check one): X Section 4.1.A. or ____ Section 4.1.B

   A. If Section 4.1.B is chosen by Generator, the In-Service Date(s) was determined by (check one): (1) ___ good faith negotiations, or (2) ___designated by Generator upon failure to agree.

2) January 31, 2024 is the date ("NTP Need Date") by which Generator must provide a written Notice to Proceed with design, procurement, and construction of the TIF and provide security on February 14, 2024, as specified in Exhibit "A", Section 4.2 and 4.3, so that TSP may maintain schedule to meet the In-Service Date identified below. The NTP date shall be the date Generator provides written Notice to Proceed to TSP:

   A. If Generator does not provide a written Notice to Proceed to TSP by the above NTP Need Date, the designated TIF In-Service Date, Scheduled Generation Trial Operation Date, and Scheduled Generation Commercial Operation Date, identified below, will each be extended day for each day after the NTP Need Date that the Notice to Proceed is delayed.

   B. If Generator does not provide a written Notice to Proceed and provide security in accordance with Exhibit "E" to TSP by eighteen (18) months after the NTP Need Date ("NTP Deadline"), such non-provision of the Notice to Proceed shall constitute a Default, in accordance with Section 10.6.A of Exhibit "A", by the Generator and written notice of Default shall be deemed to have been given by TSP to Generator on the NTP Deadline. If such Default is not cured in accordance with Section 10.6 of Exhibit "A", then TSP may terminate this Agreement in accordance with the provisions of Section 10.6.B of Exhibit "A".

      Generator Main Transformer Tap Position Communication to TSP Date: (If Generator Main Transformer(s) is equipped with a no-load tap changer) August 25, 2026

      TIF In-Service Date (Backfeed): The later of:
      a) November 25, 2026; or
      b) Thirty-six (36) months after the NTP Date.

      Scheduled Generation Trial Operation Date (Synchronization): The later of:
      a) December 9, 2026; or
      b) Two (2) weeks after the TIF In-Service Date.

      Scheduled Generation Commercial Operation Date (COD): The later of:
      a) April 9, 2027; or
      b) Two (2) months after the TIF In-Service Date.

Nothing in the definitions of the dates above shall preclude either Party from taking measures or actions that allow the actual Generation Trial Operation Date or the actual Generation Commercial Operation Date to be earlier than the scheduled dates above.

3) Due to the nature of the subject of this Agreement, the Parties may mutually agree to change the dates and times of this Exhibit B.

Exhibit "C"
Interconnection Details

1. Name: Aquilla Lake 3 Wind

2. Point of Interconnection (POI) Location: The POI between the GIF and TIF will be located at a new Transmission Service Provider (TSP) owned dead-end structure at the end of the TSP's new 6.3-mile 345 kV line connecting from the new TSP's Bullock station to the GIF Step Up Station (shown on Attachment "C-1" and "C-2"). The POI shall be the physical point where the TSP facilities are connected to the GIF. This point is more specifically defined as being located at the 4-hole pad terminals on the insulator hardware at the dead-end structure where the TSP's 345 kV line connects to Generator slack span connecting to the GIF.

3. Delivery Voltage: 345 kV

4. Number and Size of Generating Units: The total capacity of the plant (Aquilla Lake 3) is 225 MW, composed of GE 2.82MW Wind Turbines.

5. Type of Generating Unit: GE 2.82MW Turbines.
The Parties will amend this Exhibit "C" as necessary to reflect any changes Generator makes to the manufacturer, model, or type of generating units.

6. Metering and Telemetry Equipment: Metering (voltage, location, losses adjustment due to metering location and other), telemetry, and communications requirements shall be as follows:

   6.1 TSP shall, in accordance with ERCOT Requirements and Good Utility Practice, install, own, operate, inspect, test, calibrate, and maintain 345 kV metering accuracy potential and current transformer and associated metering and telemetry equipment (including communications and an RTU) located in the TIF. A one-line diagram showing TSP's ERCOT-polled settlement ("EPS") metering location is attached to this Exhibit "C" as **Attachment C-2**. If requested by Generator/QSE, and if available from the TSP RTU equipment and/or EPS metering system, TSP will make EPS metering data and telemetry available to Generator via a communication link at Generator's expense. If such metering or telemetry data are not available, they may be available by alternate means at Generator's expense. Such data, if provided to Generator/QSE, will be for informational purposes only. Generator shall not rely on such data, as the primary source, for the metering data addressed in Section 6.2 of this Exhibit "C" below, or for any other scheduling or operational purposes. TSP makes no guarantee of the quality or availability of such data. The provision of Section 5.5(G) of Exhibit "A" shall not apply to TSP's RTU.

6.2 Generator shall, in accordance with Good Utility Practice, install, own, operate, inspect, test, calibrate, and maintain the necessary metering potential and current transformers and associated metering and telemetry equipment in the GIF and/or Plant to satisfy the ERCOT Requirements for the provision of metering data by Generator's "Qualified Scheduling Entity".

6.3 Generator shall, in accordance with ERCOT Requirements and Good Utility Practice, install, own, operate, inspect, test, calibrate, and maintain the metering and telemetry equipment (including an RTU or other equipment acceptable to TSP) to supply all electrical parameters of the Plant and GIF, as specified in Section 11 to this Exhibit "C", to TSP at a location designated by TSP.

6.4 Prior to the In-Service Date, acceptance tests will be performed by TSP and Generator to ensure the proper functioning of all metering, telemetry, and communications equipment, and to verify the accuracy of data being received by TSP.

6.5 Following the Commercial Operation date, each Party shall test its metering, telemetry, and communications equipment in accordance with ERCOT Requirements and Good Utility Practice. Each Party shall give the other Party reasonable advance notice of such testing. Each Party shall have the right to observe testing performed by the other Party.

6.6 Any changes to Generator's metering, telemetry, and communication equipment, including meters, voltage transformers, current transformers, and associated RTU, panels, hardware, conduit and cable, that will affect the data being received by TSP hereunder must be mutually agreed to by the Parties.

6.7 Each Party will promptly advise the other Party if it detects or otherwise learns of any metering, telemetry, or communications equipment or related situation that requires attention and/or correction by the other Party.

7. Generator Interconnection Facilities:

Generator will be responsible for the construction and ownership of the below:

7.1 Generator will be responsible for the construction and ownership of a 345 kV station and all facilities within it. Specifically, Generator's interconnection station(s) including control building(s), 345 kV step-up transformer(s), transformer protection package(s), 345 kV circuit breaker(s), 345 kV line disconnect switch(es), and protective relaying panels for the Generator's 345 kV line(s) that will coordinate with the TSP's line panels at the TSP facility for the Generator line protection

7.2 345 kV line(s) with all necessary material to interconnect to TSP's point of interconnection located right adjacent to the GIF which is required to accommodate the Generator 345 kV line(s) in accordance to Exhibit "B" Section 8.1

7.3 Fiber optic cable (Suzhou Furukawa or equivalent 96 fiber, single-mode, fiber optic OPGW) from GIF's control building to TSP's OPGW cable splice box on the TSP's interconnecting structure(s) at the Point of Interconnection

7.4 Multi-ported RTU(s) and panels to provide breaker status, telemetry and energy data from the GIF to the Plant, the TSP, Generator and ERCOT

7.5 Associated structures, buswork, conductor, connectors, grounding, conduit, control cable, foundation work, perimeter fencing, grading/dirt work and any appurtenances necessary for construction and operation of GIF

The GIF also includes the communication facilities described in Section 9.1 below.

8. Transmission Service Provider Interconnection Facilities:

8.1 In order for TSP to provide an interconnect the Generator at the 345 kV Bullock Station, the following new equipment will be required to be in place prior to energization:

Station Physical:

- (3) – 345kV, 5000 A, 63kA GCB
- (14) – 345kV, motor operated GCB Isolation Switches
- (3) – 345kV, Motor Operated Line Isolation Switches
- (3) – 345 kV, Motor Operated Grounding Switches
- (2) – 345 kV, Line Trap with Tuner
- (9) – 345 kV, Surge Arresters
- (7) – 345 kV, Capacitive Coupling Voltage Transformers
- (2) – 345 kV, Capacitive Coupling Voltage Transformers with Carrier
- (3) – 345 kV, Extended Range Metering Current Transformers
- (3) – 345 kV, Metering Voltage Transformers
- (2) – 345kV, SSVT
- (1) – Backup Generator
- (1) – 24' x 72' Relay Control Enclosure
- (1 Lot) – Conduit and Grounding
- (1 Lot) – Aluminum Bus, Stranded Jumpers, and Connectors

Station Civil & Structural:

- (1 Lot) – Site Work/Water Diversion
- (1 Lot) – Ground Grid
- (1 Lot) – Security Fence
- (1 Lot) – Lot Final Surfacing (Crushed Limestone)
- (1 Lot) – Foundations
- (1 Lot) – Structural Steel
    - A-frames
    - Bus supports
    - Equipment supports
    - Static Masts

Relay & Control:
The study assumes that the Phantom Hill Station control house will have room to install the additional metering and relaying panels, and any other equipment as needed:

- (1) – ERCOT Polled Settlement Metering Panel
    - (1) – Primary ERCOT Polled Settlement Meter
    - (1) – Backup ERCOT Polled Settlement Meter
- (1 Lot) – Relay panels
- (1 Lot) – Control Cable Installation and Termination

Transmission Line:
The transmission line scope for this project involves the cut-in of the existing 345kV northern circuit (Line 1) along with a gen-tie line approximately 6.3 miles in length. The cut-in for Line 1 will require (5) new self-supporting dead-end structures on drilled pier foundations.

The new gen-tie line will route to a POI structure approximately 6.3 miles away from the new switchyard. LST will provide the POI structure. The generator will provide the installation of the last span into the new collection substation.

Line protection transfer trip requirements and control system requirements are as follows:

Line Protection Requirements at TSP's Bullock Station:

a) 345 kV Transmission Lines
    a. Compatible (SEL421) Line Distance protection
    b. Compatible (SEL311L) Line Current Differential protection
    c. Compatible Pulsar ULPC
    d. Compatible Multifunction Recorder (DFR – APP)
    e. Hardwire protection relays to Current Transformers and Power Transformers (CT's and PT's)

b) Customer 345 kV Generator Tie Lines
    a. Compatible (SEL 411L) Primary Line Current Differential Protection
    b. Compatible (SEL 311L) Backup Line Current Differential Protection
c) Compatible (SEL451) breaker failure protection with direct transfer trip via fiber optic communications to trip Customer 345 kV breaker
d) In the case where both line terminal breakers are open, an anti-islanding transfer trip via fiber optic communications to trip Customer breaker(s) or Generator Step Up 345 kV breaker (should open at the synchronizing breaker)
e) No automatic reclosing; use dead line, hot bus permissive controls for closing line breakers

Line Protection Requirements at Customer Facilities:

a) Customer 345 kV breaker failure protection to send direct transfer trip via fiber optic communications to trip TSP's Bullock Station 345 kV breakers

9. Communications Facilities:

9.1 Generator shall, in accordance with ERCOT Requirements and Good Utility Practice, provide communications facilities that are, or may in the future be, necessary for effective interconnected operation of the Generator's Plant with the transmission system.

9.2 TSP will bear the costs of its communications facilities at Bullock Station.

10. System Protection Equipment:

Protection of each Party's system shall meet the following TSP requirements in addition to ERCOT Requirements. If there is a conflict between the TSP requirements below and ERCOT Requirements, the ERCOT Requirements shall prevail.

10.1 Generator and TSP shall design, install, operate, maintain and test system protection equipment consistent with the applicable criteria as described in the ERCOT Requirements and any applicable requirements of Governmental Authorities, including NERC Reliability Standards. Generator shall, at its expense, provide modifications or additions to its control and protective equipment required to comply with changes in ERCOT Requirements or requirements of Governmental Authorities, including NERC Reliability Standards.

10.2 Generator, using Good Utility Practice, shall install sufficient digital fault recording equipment to thoroughly analyze all system disturbances occurring on the Plant and GIF to thoroughly analyze the Plant and GIF performance during system disturbances on the ERCOT system. This equipment shall monitor the voltages at major nodes, current at major branches, breaker and switch positions, and dc logic in the relay control scheme.

10.3 TSP assumes no responsibility for the protection of the Plant and GIF for any or all operating conditions. Generator is solely responsible for protecting its equipment in such a manner that faults, Sub-Synchronous Oscillations ("SSO"), or other disturbances on the TSP System or other interconnected system do no cause damage to the Plant and GIF.

10.4 It is the sole responsibility of the Generator to protect its Plant and GIF from excessive negative sequence currents.

10.5 The GIF shall be designed to isolate any fault, or to disconnect from or isolate any abnormality that would negatively affect the TSP's system. The Generator shall be responsible for protection of its facilities. TSP reserves the right to isolate the Plant and GIF consistent with ERCOT Requirements and NERC Reliability Standards for any of the following reasons:

i.) The Plant or GIF, upon TSP's determination, cause objectionable interference with other customers' service or with the secure operation of the TSP System.

ii.) The Plant output as determined by TSP exceeds the operating boundaries outlined above.

iii.) Generator's control and protective equipment causes or contributes to a hazardous condition. TSP reserves the right to verify all protective equipment including, but not limited to including relays, circuit breakers, at the inter-tie location. Verification by TSP may include the tripping of the tiebreaker by the protective relays.

iv.) In TSP's opinion, continued parallel operation is hazardous to Generator, the TSP System or to the general public.

v.) To provide TSP or TSP personnel the clearances for dead line or live line maintenance.

TSP shall notify Generator before disconnection, except for an emergency situation requiring immediate action. TSP will attempt to notify Generator before upon disconnection, but notification may not be possible in emergency situations that require immediate action.

10.6 Prior to In-Service Date, Generator shall specify whether automatic reclosing should be applied to the Generator's transmission facilities in the GIF. Automatic reclosing is normally applied to transmission circuits.

When TSP's source breakers trip and isolate the Plant and GIF, Generator shall insure the Plant and GIF are disconnected from the TSP circuit prior to automatic reclosure by TSP. Automatic reclosing out-of-phase with the Plant may cause damage to Generator's equipment. Generator is solely responsible for the protection of his equipment from automatic reclosing by TSP.

10.7 TSP shall specify system protection and control schemes for the Point of Interconnection. Generator shall have the right to review and comment on such schemes and TSP shall consider Generator's comments when determining such schemes. Generator will install and maintain System Protection Equipment that is compatible with TSP's System Protection Equipment. TSP will work with the Generator to coordinate the establishment of the relay settings for System Protection Equipment owned by both Generator and TSP associated with the Point of Interconnection.

10.8 Documentation of all protective device settings shall be provided to TSP. The setting documentation shall also include relay type, model/catalog number, and setting range. If automatic transfer schemes or unique or special protective schemes are used, a description of their operation should be included. TSP must review and approve the settings of all protective devices and automatic control equipment which: i) serve to protect the TSP System from hazardous currents and voltages originating from the Plant; or ii) must coordinate with System Protection Equipment or control equipment located on the TSP System.

11. Inputs to Telemetry Equipment:

11.1 Generator shall comply with ERCOT Requirements for telemetry and will coordinate with TSP for additional points if telemetry is deemed necessary by TSP.

12. Supplemental Terms and Conditions:

12.1 Additional Studies – If it is necessary for TSP to perform any additional generation interconnection studies associated with the Plant in accordance with ERCOT Requirements, the Parties will enter an agreement, in form and substance reasonably acceptable to the Parties, to perform those studies and Generator shall pay TSP for the studies pursuant to that agreement.

12.2 Switching Procedures – Each Party will adopt formal switching procedures that govern safety related issues concerning the operation of its switches connected to these Points of Interconnection and will provide a copy of those procedures to the other Party prior to In-Service Date. Each Party will agree to comply with the aforementioned switching procedures

of the other Party applicable to the Point of Interconnection and will notify the other Party in writing of any changes to its procedures relating to the Point of Interconnection.

12.3 Facility Connection Requirements – Generator will construct its facilities in accordance with the version of LST-FAC-001-PRO-Facility_Connection_Requirements that is in effect at the time the Generator gives its notice to proceed with design and procurement, as referenced in Exhibit "B".

12.4 Generator shall submit drawings of the GIF to TSP for review. TSP will review only those portions of the drawings that affect the TSP System. Any changes required by TSP shall be made prior to final issue of drawings and TSP shall be provided with final copies of the revised drawings. TSP will review only those portions of the drawings which apply to protection, metering and monitoring of the TSP System. To aid Generator, TSP may make suggestions on other areas. TSP's review of Generator's drawings shall not be construed as confirming or endorsing the design or as any warranty of safety, durability, or reliability of the facility or equipment. Generator shall provide copies of the following:

i.) one-line and three-line diagrams indicating the following:

1. equipment names and/or numerical designations for all circuit breakers, contactors, air switches, transformers, generators, etc., associated with the generation as required by TSP to facilitate switching
2. power transformers – nameplate or designation, nominal kVA, nominal primary, secondary, tertiary voltages, vector diagram showing winding connections, tap setting and transformer impedances (transformer test report showing the positive sequence, zero sequence, test voltages and MVA base for each winding)
3. station service transformers – phase(s) connected and estimated kVA load
4. instrument transformers – voltage and current, phase connections
5. surge arresters/gas tubes/metal oxide varistors/avalanche diode/spill gaps/surge capacitors, etc. – type and ratings
6. capacitor banks – kVAR rating and reactive (static and dynamic) device operation capability
7. reactive device capability (required for wind generation only) – kVAR rating and reactive device operation capability for static and dynamic devices for each generation collection feeder
8. disconnect switches – status if normally open (N.O.), manual or motor operated including switch voltage, continuous and interrupting ratings

9. circuit breakers and/or contactors – interrupting rating, continuous rating, operating times
10. generator(s) – nameplate, test report, type, connection, kVA, voltage, current, rpm, power factor, impedances, time constants, etc.
11. Point of Interconnection and phase identification
12. fuses – manufacturer, type, size, speed, and location
13. transmission structure geometry (phase-to-phase, phase-to-ground, and shield-to-phase), phase conductor data, shield wire data, transmission line ratings, positive and zero sequence impedances and mileage

ii.) potential and current elementary drawings associated with the protection and control schemes for the Plant and GIF and control elementary drawings of the Plant and interconnection circuit breaker indicating the following:

1. terminal designation of all devices – relay coils and contacts, switches, transducers, etc.
2. relay functional designation – per latest ANSI Standard where the same functional designation shall be used on all drawings showing the relay
3. complete relay type (such as CV-2, SEL321-1, REL-301, IJS51A, etc.)
4. switch contact as referenced to the switch development if development is shown on a separate drawing
5. switch developments and escutcheons where the majority of contacts are used. Where contacts of a switch are used on a separate drawing, that drawing should be referenced adjacent to the contacts in the switch development. Any contacts not used should be referenced as spare.
6. all switch contacts shown open with each labeled to indicate the positions in which the contact will be closed with explanatory notes defining switch coordination and adjustment where misadjustment could result in equipment failure or safety hazard
7. auxiliary relay contacts as referenced to the coil location drawing if coil is shown on a separate drawing where all contacts of auxiliary relays should be shown and the appropriate device auxiliary switches (circuit breakers, contactor) as referenced to the drawing where they are used.
8. any interlocks – electromechanical, key, etc., associated with the generation or interconnection Substation
9. ranges of all timers and setting if dictated by control logic
10. all target ratings; on dual ratings note the appropriate target tap setting

11. complete internal for electromechanical protective relays where microprocessor type relays may be shown as a "black box", with manufacturer's instruction book number referenced and terminal connections shown
12. isolation points (states links, PK-2 and FT-1 blocks), etc. including terminal identification
13. all circuit elements and components, with device designation, rating and setting where applicable and where coil voltage is shown only if different from nominal control voltage
14. size, type, rating and designation of all fuses
15. phase sequence designation as ABC or CBA
16. potential transformers – nameplate ratio, polarity marks, rating, primary and secondary connections
17. current transformers (including auxiliary CT's) – polarity marks, rating, tap ratio and connection

12.5 Generator may not commence parallel operation of the Plant until consent has been given by TSP. TSP reserves the right to inspect the GIF and witness testing of any equipment or devices associated with the Point of Interconnection.

12.6 The Plant and GIF shall not cause objectionable interference with the electric service provided to other customers of TSP nor jeopardize the security of the ERCOT power system. In order to minimize objectionable interference of the Plant and GIF, the Plant and GIF shall meet the following criteria as described in TSP's LST-FAC-001-PRO-Facility_Connection_Requirements for the below:

- Voltage,
- Flicker,
- Frequency,
- Harmonics, telephone interference, carrier interference,
- Fault and line clearing,
- Excitation system and Automatic Voltage Regulation, and
- Governor system.

12.7 The dynamic MVAR capability at the current MW generation amount shall be provided in real time. If this dynamic MVAR capability is not available in real time, a dynamic capability curve plotted as a function of MW output shall be provided. The shunt static reactive available, but not in service, shall be provided in sufficient detail to determine the amount of dynamic and static reactive reserve available.

12.8 Generator shall provide Voltage Support Service and Reactive Power Requirements as required by ERCOT Nodal Protocols Section 3.15.

12.9 Certain generators are susceptible to SSO when interconnected within electrical proximity of series capacitor banks on the transmission system. Prior to the In-Service Date, the Generator will provide complete and accurate studies which analyze the potential of SSO and will coordinate with TSP and ERCOT regarding the scope of such studies. Generator is responsible for mitigation to protect itself from SSO risks. TSP will work with Generator and their selected turbine-generator manufacturer on any system data required for such studies.

12.10 TSP considers the energy and power that the Plant and GIF may from time to time consume from the transmission grid through the Point of Interconnection to be a retail transaction and as such, TSP does not intend to be the provider of this retail service. Generator shall make necessary arrangements with the appropriate retail supplier for the energy and power that the Plant and GIF may consume from the transmission grid through the Point of Interconnection.

12.11 Generator shall notify TSP in writing as to which initial ERCOT Qualified Scheduling Entity the Plant will be scheduling through and any changes made thereafter.

12.12 Upon written request from TSP, Generator shall supply notification to TSP identifying their retail service provider.

12.13 Generator shall use commercially reasonable efforts to change the GIF as may be reasonably required by TSP to meet future changes in the TSP System. Generator shall be given reasonable notice by TSP prior to the date that any such required change in the GIF must be made.

12.14 Each Party will comply with NERC Reliability Standards applicable to its facilities identified in this Exhibit "C". Each Party shall provide to the other Party all information related to its interconnection facilities that may reasonably be required by the other Party to comply with NERC Reliability Standards applicable to its interconnection facilities, if any. "NERC Reliability Standards" means the mandatory electric reliability standards established and enforced by the North American Electric Reliability Corporation or its successor electric reliability organization.

12.15 Encroachment – Generator must submit a written request to TSP (using a form of request acceptable to TSP) and obtain prior written authorization from TSP prior to conducting any activities within any portion of TSP's transmission line right of way and/or substation property. Such Generator activities shall include, but are not limited to: i) constructing transmission lines, communication facilities, roads, water lines, sewer lines, gas pipelines, or any other facilities; ii) storing any equipment or materials; or iii) changing the grade, elevation, or contour of the land, for such encroachment prior to Generator installing such facilities or conducting

such activities. TSP RESERVES THE RIGHT TO DELAY THE ENERGIZATION FOR THE POINT OF INTERCONNECTION UNTIL GENERATOR OBTAINS ALL REQUIRED WRITTEN AUTHORIZATIONS FROM TSP FOR SUCH ENCROACHMENTS, IF ANY. The Generator will be responsible for the cost of all modifications necessary on property or facilities owned by TSP that are affected by such encroachment. The provision of overall site plans by Generator shall not relieve Generator from the obligation to submit all encroachment requests in accordance with this subsection.

13. Special Operating Conditions, if any, attached:

13.1 If Generator's main power transformer(s) is equipped with a no-load tap changer, in accordance with ERCOT Requirements, Generator will work with TSP to select the tap position on the no-load tap changer of the Generator's main power transformer(s). Generator will initiate contact with TSP to select such tap position no later than the date specified in Exhibit B. notwithstanding TSP's obligations in the remainder of this Agreement, TSP shall have no obligation to establish an electrical interconnection with the GIF until Generator and TSP have selected the tap position.

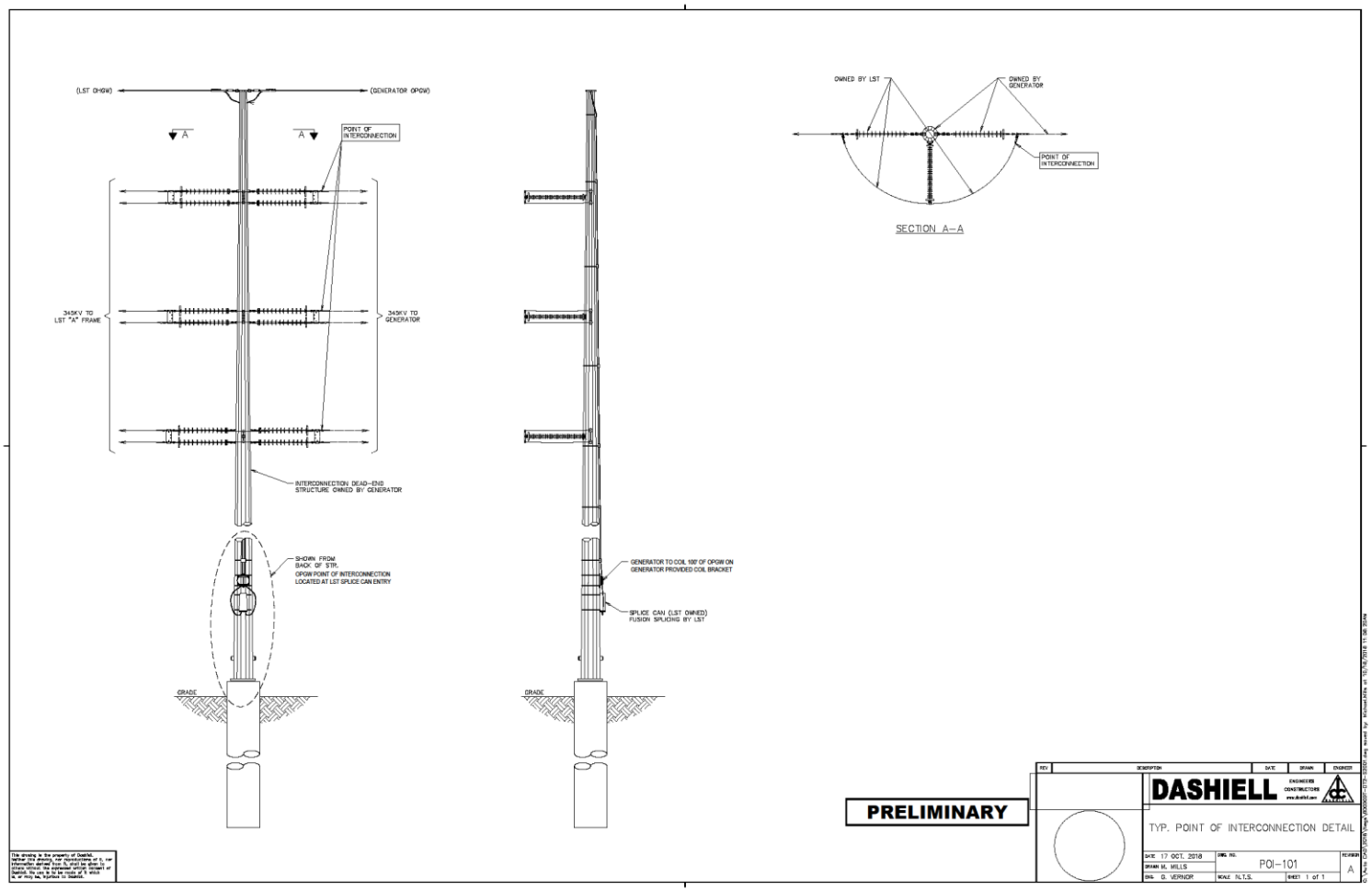
Generator shall design, construct, operate and maintain GIF with accordance with all applicable ERCOT Requirements and NERC Reliability Standards.

For thermal powered generation, Generator will provide TSP at least thirty (30) minutes' prior notice before coming on-line or off-line so TSP can adjust reactive resources.

14. The difference between the estimated cost of the TIF under 4.1.A (N/A) and the estimated cost of the TIF under 4.1.B (N/A) is: N/A, if applicable.

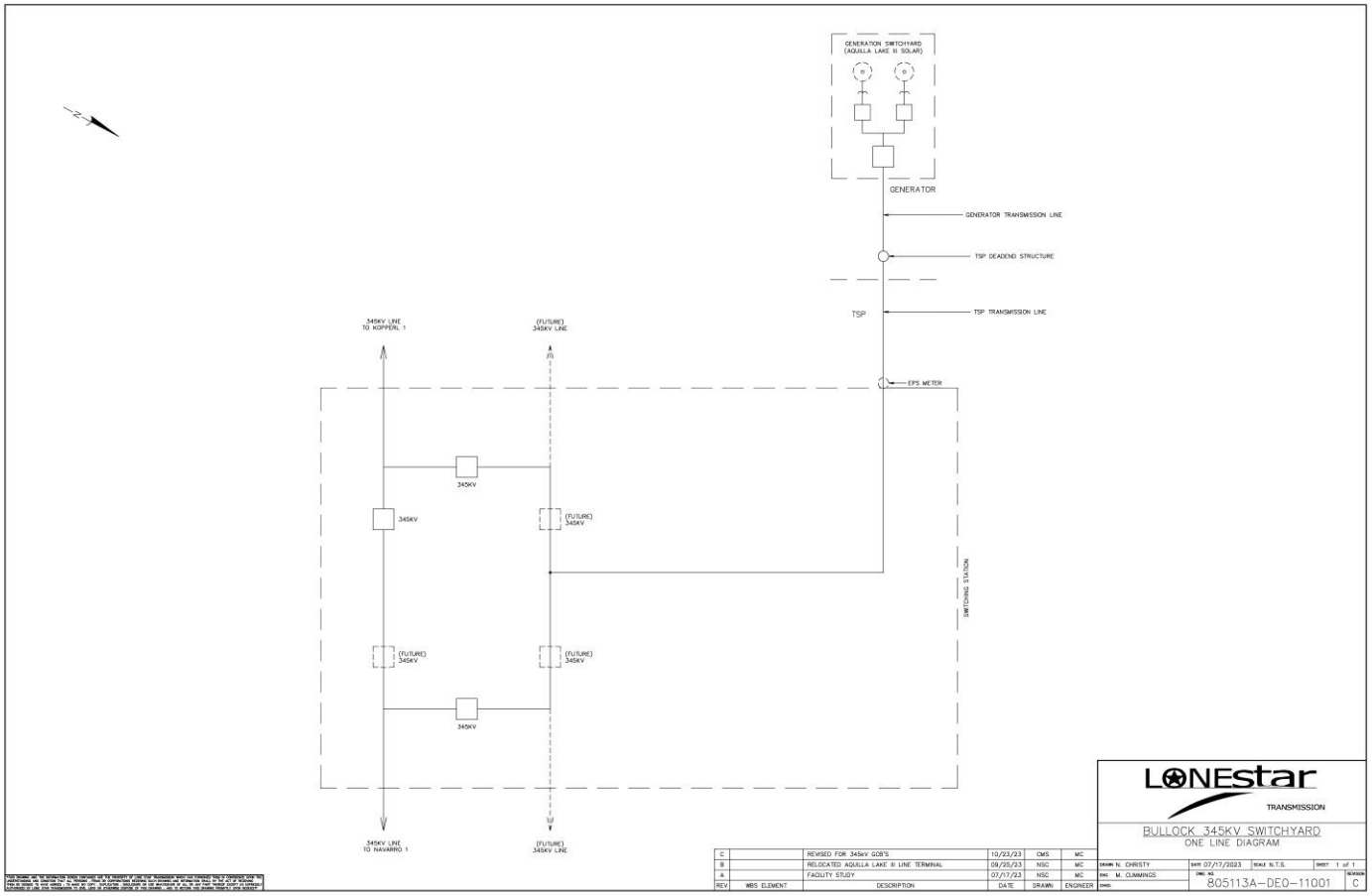
Attachment C-1

Point of Interconnection Detail



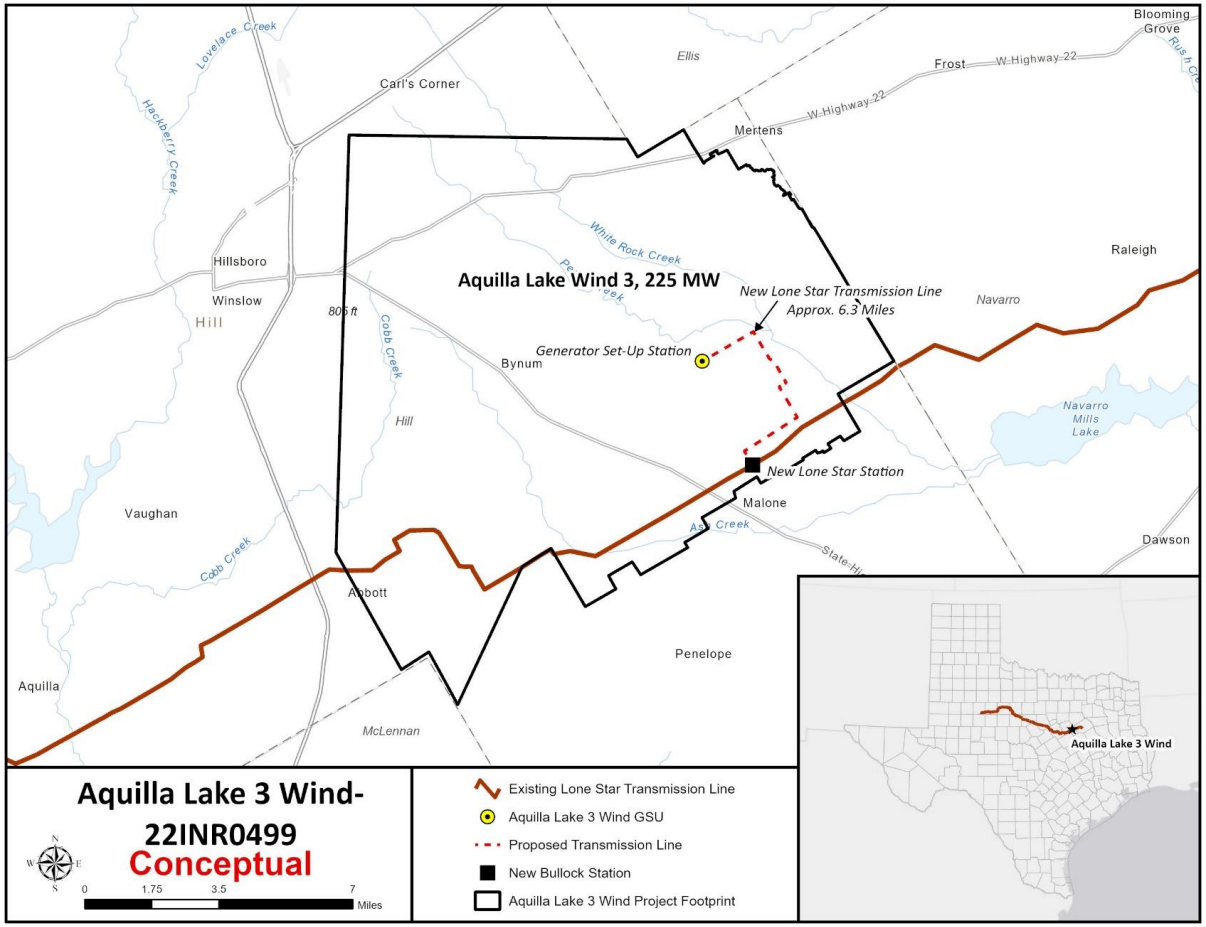
Attachment C-2

Conceptual One-Line Drawing of Point of Interconnection



Attachment C-3

Project Overview Map



DATE: 11 December 2023

Exhibit "D"

Notice and EFT Information of the ERCOT Standard Generation Interconnection Agreement

<table>
<tr><td colspan="2">(a) All notices of an operational nature shall be in writing and/or may be sent between the Parties via electronic means including facsimile as follows:</td></tr>
<tr><td>If to Generator:

Off Premise Exchange Number for Generator Control Center:
System Operations – 24hrs
Renewable Operation Control Center (ROCC)
Phone: 1-888-202-6337
Email: NEER-SYSTEM-OPERATIONS.SharedMailbox@nexteraenergy.com

Other Generator Control Center 24/7 Number:
Generator Dispatch – 24hrs
Renewable Operation Control Center (ROCC)
Tel: 561-694-3636
Toll Free: 866-375-3737
Email: ROCC.SharedMailbox@nexteraenergy.com</td><td>If to Transmission Service Provider:

Lone Star Transmission
Control Center 24 Hour Telephone: 512-949-2600
Email: DL-System-Operations@LONESTAR-TRANSMISSION.COM</td></tr>
<tr><td colspan="2">(b) Notices of an administrative nature:</td></tr>
<tr><td>If to Generator:

Hubbard Wind II, LLC
NextEra Energy Resources, LLC
Attn: Business Management, South
700 Universe Blvd
Juno Beach, FL, 33408
Email: dl-nextera-south-region@nexteraenergy.com</td><td>If to Transmission Service Provider:

Company Name: Lone Star Transmission, LLC
Attn: Maggie Loundy, Development Project Manager of Development
Address: 5920 W. William Cannon Dr., Bldg. 2, Austin, TX 78749
24 Hour Telephone:
Operational/Confirmation Fax: (512) 949-2626
Email: Maggie.loundy@nexteraenergy.com</td></tr>
<tr><td colspan="2">(c) Notice for statement and billing purposes:</td></tr>
</table>

If to Generator:	If to Transmission Service Provider:
Hubbard Wind II, LLC NextEra Energy Resources, LLC Attn: Business Management, South 700 Universe Blvd Juno Beach, FL, 33408 Phone: 561-304-5829 Email: dl-nextera-south-region@nexteraenergy.com Email: dl-dev-interconnect@nexteraenergy.com Email: development-finance-servicedesk-sharedmailbox@nexteraenergy.com	Company Name: Lone Star Transmission, LLC c/o NextEra Energy Transmission, LLC Address: 700 Universe Blvd. (UST/JB), Juno Beach, FL 33408 Email: customerservice@lonestar-transmission.com
(d) Information concerning electronic funds transfers:	
If to Generator:	If to Transmission Service Provider:
Bank of America Bank Address: 100 West 33rd Street New York, NY, 10001 ABA: 026-009-593 NextEra Energy Resources Development, LLC Account Number: 4451284387	ACH Instructions Bank Name: Bank of America Global Finance City, State: Dallas, TX ABA No: 111-000-012 Swift: BOFAUS3N For credit to: Lone Star Transmission, LLC Account No.: 4426849087 Wire Instructions Bank Name: Bank of America City, State: New York, NY ABA No.: 0260-0959-3 Swift: BOFAUS3N For credit to: Lone Star Transmission, LLC Account No.: 4426849087

Exhibit "E"
Security Arrangement Details

On or before the date that Generator issues the written Notice to Proceed, Generator shall cause to be established (the date of such establishment shall be the "Security Effective Date"), and shall at all times through the earlier of (i) five (5) business days after the date upon which TSP receives written notification from Generator that Commercial Operation has been achieved or (ii) ninety (90) days after the termination of the Agreement in accordance with its terms (the earlier of which shall be the "Final Expiration Date"), cause to be maintained in full force and effect an "Irrevocable Standby Letter of Credit" for the benefit of TSP in a commercially acceptable form consistent with this Exhibit E and otherwise acceptable to TSP and Generator, which acceptance shall not be unreasonably withheld, in the amount set forth below. "Irrevocable Standby Letter of Credit" shall mean an irrevocable, transferable letter of credit, issued by a Generator-selected and TSP-approved (which approval shall not be unreasonably withheld), major U.S. commercial bank, or a U.S. branch office of a major foreign commercial bank, with a credit rating of at least "A-" by Standard & Poor's or "A3" by Moody's Investor Services ("Bank"). The Irrevocable Standby Letter of Credit shall be transferable, more than one time, in whole but not in part, in favor of any party whom TSP certifies has succeeded to TSP's right, title, and interest in and to this Agreement. Should TSP transfer such Irrevocable Standby Letter of Credit as stated above, Generator shall reimburse TSP for any costs it incurs from the Bank associated with such transfers.

If, at any time during the Term of this Agreement, the Bank suffers a credit rating reduction to less than "A-" by Standard & Poor's or "A3" by Moody's Investor Service, Generator shall replace that Irrevocable Standby Letter of Credit with another Irrevocable Standby Letter of Credit of the same amount and with the same beneficiary from another TSP-approved bank of Generator's choice within fifteen (15) business days of the date of such event. In the event of a failure to provide a substitute Irrevocable Standby Letter of Credit within the time period specified above, TSP may draw upon the Irrevocable Standby Letter of Credit to secure a cash deposit as security under this Agreement.

The Irrevocable Standby Letter of Credit may consist of one or more consecutive terms (each, a "Term"), the first of which shall be effective on or before the Security Effective Date and the last of which shall expire no earlier than the Final Expiration Date; provided, that, the Irrevocable Standby Letter of Credit shall automatically renew from Term to Term without amendment such that there shall be no interruption of surety provided by the Irrevocable Standby Letter of Credit from the Security Effective Date through the Final Expiration Date.

To the extent that the Bank has the unilateral right not to renew the Irrevocable Standby Letter of Credit for a successive Term, the Bank shall give notice to TSP and Generator in writing by certified mail, return receipt requested, or via a courier service, of the exercise of its right not to renew the Irrevocable Standby Letter of Credit for a successive term (an "Expiring Term") not less than ninety (90) days prior to the expiration date of any Expiring Term. Generator hereby agrees that in the event that the Bank gives such notice and Generator does not provide TSP with a substitute Irrevocable Standby Letter of Credit in substantially the same form as the expiring Irrevocable Standby Letter of Credit at least forty-five (45) days prior to the expiration date of any Expiring Term, TSP shall have the right to retain as security the full

amount (as specified in the Irrevocable Standby Letter of Credit) of the expiring Irrevocable Standby Letter of Credit. The substitute Irrevocable Standby Letter of Credit shall meet the requirements of this Exhibit E and be otherwise acceptable to TSP and Generator, which acceptance shall not be unreasonably withheld. In the event of a failure to provide a substitute Irrevocable Standby Letter of Credit within the time period specified above, TSP may draw upon the Irrevocable Standby Letter of Credit to secure a cash deposit as security under this Agreement.

In the event that an Irrevocable Standby Letter of Credit is set to expire on a date prior to the Final Expiration Date and Generator has not provided to TSP a substitute Irrevocable Standby Letter of Credit at least forty-five (45) days in advance of such expiration, TSP shall have the right to retain as security the full amount (as specified in the Irrevocable Standby Letter of Credit) of the expiring Irrevocable Standby Letter of Credit. The substitute Irrevocable Standby Letter of Credit shall meet the requirements of this Exhibit E and be otherwise acceptable to TSP and Generator, which acceptance shall not be unreasonably withheld. In the event of a failure to provide a substitute Irrevocable Standby Letter of Credit within the time period specified above, TSP may draw upon the Irrevocable Standby Letter of Credit to secure a cash deposit as security under this Agreement.

Except to the extent that the Bank has the unilateral right not to renew the Irrevocable Standby Letter of Credit for a successive Term, the Irrevocable Standby Letter of Credit to be issued in connection herewith shall have no provision for termination by the Bank or Generator.

Within five (5) business days after the Final Expiration Date, TSP shall (i) mark the Irrevocable Standby Letter of Credit, if any, then held by TSP as "CANCELLED" and shall return the cancelled Irrevocable Standby Letter of Credit to the Bank with instructions to cancel the Irrevocable Standby Letter of Credit, and shall send to Generator a copy of such cancelled Irrevocable Standby Letter of Credit and instructions for cancellation, and (ii) return all cash deposit(s), if any, then held by TSP to Generator.

As of the Security Effective Date, Generator shall provide security to the TSP, in the form of an Parent Guaranty, in the amount of **$48,030,000**. Per Exhibit "A" Section 8.3, TSP shall release the portion of the letter of credit, and any renewed letters of credit thereafter, for the Bullock Station modifications within (5) business days after TSP has received the notice from the Generator that the Plant has achieved Commercial Operation, and TSP has verified the same.

FIRST AMENDMENT TO INTERCONNECTION AGREEMENT

This First Amendment is made and entered into this 29th day of July, 2024 between **Lone Star Transmission, LLC** ("Transmission Service Provider") and **Hubbard Wind II, LLC** ("Generator"), hereinafter individually referred to as "Party," and collectively referred to as "Parties."

WHEREAS, the Transmission Service Provider and the Generator entered into that certain ERCOT Standard Generation Interconnection Agreement executed on January 24, 2024 (the "Agreement"); and

WHEREAS, the Parties agree to make certain corrections to Exhibit "C";

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein contained, the Parties hereto agree as follows:

1. Existing Exhibit "C" is deleted in its entirety, and the new Exhibit "C" attached to this First Amendment is hereby added to the Agreement in lieu thereof.

2. Exhibit "C" attached to this First Amendment will become effective upon execution of this First Amendment by the Parties.

Except as otherwise expressly provided for herein, the Agreement will continue in full force and effect in accordance with its terms.

--signature page to follow--

IN WITNESS WHEREOF, the Parties have executed this First Amendment in duplicate originals, each of which shall constitute and be an original effective Agreement between the Parties.

Lone Star Transmission, LLC

By: Daniel Madru
Digitally signed by Daniel Madru
DN: cn=Daniel Madru, o=Lone Star Transmission, ou, email=daniel.madru@lonestar-transmission.com, c=US
Date: 2024.07.29 09:19:16 -05'00'

Daniel Madru

Title: President

Date: July 29, 2024

Hubbard Wind II, LLC

By: DocuSigned by: Petter Skantze 2F5BBE5FF8D34D9...

Petter Skantze

Title: Vice President

Date: July 26, 2024

Exhibit "C"
Interconnection Details

1. Name: Aquilla Lake 3 Wind

2. Point of Interconnection (POI) Location: The POI between the GIF and TIF will be located at a new Transmission Service Provider (TSP) owned dead-end structure at the end of the TSP's new 6.3-mile 345 kV line connecting from the new TSP's Bullock station to the GIF Step Up Station (shown on Attachment "C-1" and "C-2"). The POI shall be the physical point where the TSP facilities are connected to the GIF. This point is more specifically defined as being located at the 4-hole pad terminals on the insulator hardware at the dead-end structure where the TSP's 345 kV line connects to Generator slack span connecting to the GIF.

3. Delivery Voltage: 345 kV

4. Number and Size of Generating Units: The total capacity of the plant (Aquilla Lake 3) is 304.6 MW, composed of GE 2.82MW Wind Turbines.

5. Type of Generating Unit: GE 2.82MW Turbines.
The Parties will amend this Exhibit "C" as necessary to reflect any changes Generator makes to the manufacturer, model, or type of generating units.

6. Metering and Telemetry Equipment: Metering (voltage, location, losses adjustment due to metering location and other), telemetry, and communications requirements shall be as follows:

   6.1 TSP shall, in accordance with ERCOT Requirements and Good Utility Practice, install, own, operate, inspect, test, calibrate, and maintain 345 kV metering accuracy potential and current transformer and associated metering and telemetry equipment (including communications and an RTU) located in the TIF. A one-line diagram showing TSP's ERCOT-polled settlement ("EPS") metering location is attached to this Exhibit "C" as **Attachment C-2**. If requested by Generator/QSE, and if available from the TSP RTU equipment and/or EPS metering system, TSP will make EPS metering data and telemetry available to Generator via a communication link at Generator's expense. If such metering or telemetry data are not available, they may be available by alternate means at Generator's expense. Such data, if provided to Generator/QSE, will be for informational purposes only. Generator shall not rely on such data, as the primary source, for the metering data addressed in Section 6.2 of this Exhibit "C" below, or for any other scheduling or operational purposes. TSP makes no guarantee of the quality or availability of such data. The provision of Section 5.5(G) of Exhibit "A" shall not apply to TSP's RTU.

6.2 Generator shall, in accordance with Good Utility Practice, install, own, operate, inspect, test, calibrate, and maintain the necessary metering potential and current transformers and associated metering and telemetry equipment in the GIF and/or Plant to satisfy the ERCOT Requirements for the provision of metering data by Generator's "Qualified Scheduling Entity".

6.3 Generator shall, in accordance with ERCOT Requirements and Good Utility Practice, install, own, operate, inspect, test, calibrate, and maintain the metering and telemetry equipment (including an RTU or other equipment acceptable to TSP) to supply all electrical parameters of the Plant and GIF, as specified in Section 11 to this Exhibit "C", to TSP at a location designated by TSP.

6.4 Prior to the In-Service Date, acceptance tests will be performed by TSP and Generator to ensure the proper functioning of all metering, telemetry, and communications equipment, and to verify the accuracy of data being received by TSP.

6.5 Following the Commercial Operation date, each Party shall test its metering, telemetry, and communications equipment in accordance with ERCOT Requirements and Good Utility Practice. Each Party shall give the other Party reasonable advance notice of such testing. Each Party shall have the right to observe testing performed by the other Party.

6.6 Any changes to Generator's metering, telemetry, and communication equipment, including meters, voltage transformers, current transformers, and associated RTU, panels, hardware, conduit and cable, that will affect the data being received by TSP hereunder must be mutually agreed to by the Parties.

6.7 Each Party will promptly advise the other Party if it detects or otherwise learns of any metering, telemetry, or communications equipment or related situation that requires attention and/or correction by the other Party.

7. Generator Interconnection Facilities:

Generator will be responsible for the construction and ownership of the below:

7.1 Generator will be responsible for the construction and ownership of a 345 kV station and all facilities within it. Specifically, Generator's interconnection station(s) including control building(s), 345 kV step-up transformer(s), transformer protection package(s), 345 kV circuit breaker(s), 345 kV line disconnect switch(es), and protective relaying panels for the Generator's 345 kV line(s) that will coordinate with the TSP's line panels at the TSP facility for the Generator line protection

7.2 345 kV line(s) with all necessary material to interconnect to TSP's point of interconnection located right adjacent to the GIF which is required to accommodate the Generator 345 kV line(s) in accordance to Exhibit "B" Section 8.1

7.3 Fiber optic cable (Suzhou Furukawa or equivalent 96 fiber, single-mode, fiber optic OPGW) from GIF's control building to TSP's OPGW cable splice box on the TSP's interconnecting structure(s) at the Point of Interconnection

7.4 Multi-ported RTU(s) and panels to provide breaker status, telemetry and energy data from the GIF to the Plant, the TSP, Generator and ERCOT

7.5 Associated structures, buswork, conductor, connectors, grounding, conduit, control cable, foundation work, perimeter fencing, grading/dirt work and any appurtenances necessary for construction and operation of GIF

The GIF also includes the communication facilities described in Section 9.1 below.

8. Transmission Service Provider Interconnection Facilities:

8.1 In order for TSP to provide an interconnect the Generator at the 345 kV Bullock Station, the following new equipment will be required to be in place prior to energization:

Station Physical:

- (3) – 345kV, 5000 A, 63kA GCB
- (14) – 345kV, motor operated GCB Isolation Switches
- (3) – 345kV, Motor Operated Line Isolation Switches
- (3) – 345 kV, Motor Operated Grounding Switches
- (2) – 345 kV, Line Trap with Tuner
- (9) – 345 kV, Surge Arresters
- (7) – 345 kV, Capacitive Coupling Voltage Transformers
- (2) – 345 kV, Capacitive Coupling Voltage Transformers with Carrier
- (3) – 345 kV, Extended Range Metering Current Transformers
- (3) – 345 kV, Metering Voltage Transformers
- (2) – 345kV, SSVT
- (1) – Backup Generator
- (1) – 24' x 72' Relay Control Enclosure
- (1 Lot) – Conduit and Grounding
- (1 Lot) – Aluminum Bus, Stranded Jumpers, and Connectors

Station Civil & Structural:

- (1 Lot) – Site Work/Water Diversion
- (1 Lot) – Ground Grid
- (1 Lot) – Security Fence
- (1 Lot) – Lot Final Surfacing (Crushed Limestone)
- (1 Lot) – Foundations
- (1 Lot) – Structural Steel
    - A-frames
    - Bus supports
    - Equipment supports
    - Static Masts

Relay & Control:
The study assumes that the Phantom Hill Station control house will have room to install the additional metering and relaying panels, and any other equipment as needed:

- (1) – ERCOT Polled Settlement Metering Panel
    - (1) – Primary ERCOT Polled Settlement Meter
    - (1) – Backup ERCOT Polled Settlement Meter
- (1 Lot) – Relay panels
- (1 Lot) – Control Cable Installation and Termination

Transmission Line:
The transmission line scope for this project involves the cut-in of the existing 345kV northern circuit (Line 1) along with a gen-tie line approximately 6.3 miles in length. The cut-in for Line 1 will require (5) new self-supporting dead-end structures on drilled pier foundations.

The new gen-tie line will route to a POI structure approximately 6.3 miles away from the new switchyard. LST will provide the POI structure. The generator will provide the installation of the last span into the new collection substation.

Line protection transfer trip requirements and control system requirements are as follows:

Line Protection Requirements at TSP's Bullock Station:

a) 345 kV Transmission Lines
    a. Compatible (SEL421) Line Distance protection
    b. Compatible (SEL311L) Line Current Differential protection
    c. Compatible Pulsar ULPC
    d. Compatible Multifunction Recorder (DFR – APP)
    e. Hardwire protection relays to Current Transformers and Power Transformers (CT's and PT's)

b) Customer 345 kV Generator Tie Lines
   a. Compatible (SEL 411L) Primary Line Current Differential Protection
   b. Compatible (SEL 311L) Backup Line Current Differential Protection
c) Compatible (SEL451) breaker failure protection with direct transfer trip via fiber optic communications to trip Customer 345 kV breaker
d) In the case where both line terminal breakers are open, an anti-islanding transfer trip via fiber optic communications to trip Customer breaker(s) or Generator Step Up 345 kV breaker (should open at the synchronizing breaker)
e) No automatic reclosing; use dead line, hot bus permissive controls for closing line breakers

Line Protection Requirements at Customer Facilities:

a) Customer 345 kV breaker failure protection to send direct transfer trip via fiber optic communications to trip TSP's Bullock Station 345 kV breakers

9. Communications Facilities:

9.1 Generator shall, in accordance with ERCOT Requirements and Good Utility Practice, provide communications facilities that are, or may in the future be, necessary for effective interconnected operation of the Generator's Plant with the transmission system.

9.2 TSP will bear the costs of its communications facilities at Bullock Station.

10. System Protection Equipment:

Protection of each Party's system shall meet the following TSP requirements in addition to ERCOT Requirements. If there is a conflict between the TSP requirements below and ERCOT Requirements, the ERCOT Requirements shall prevail.

10.1 Generator and TSP shall design, install, operate, maintain and test system protection equipment consistent with the applicable criteria as described in the ERCOT Requirements and any applicable requirements of Governmental Authorities, including NERC Reliability Standards. Generator shall, at its expense, provide modifications or additions to its control and protective equipment required to comply with changes in ERCOT Requirements or requirements of Governmental Authorities, including NERC Reliability Standards.

10.2 Generator, using Good Utility Practice, shall install sufficient digital fault recording equipment to thoroughly analyze all system disturbances occurring on the Plant and GIF to thoroughly analyze the Plant and GIF performance during system disturbances on the ERCOT system. This equipment shall monitor the voltages at major nodes, current at major branches, breaker and switch positions, and dc logic in the relay control scheme.

10.3 TSP assumes no responsibility for the protection of the Plant and GIF for any or all operating conditions. Generator is solely responsible for protecting its equipment in such a manner that faults, Sub-Synchronous Oscillations ("SSO"), or other disturbances on the TSP System or other interconnected system do no cause damage to the Plant and GIF.

10.4 It is the sole responsibility of the Generator to protect its Plant and GIF from excessive negative sequence currents.

10.5 The GIF shall be designed to isolate any fault, or to disconnect from or isolate any abnormality that would negatively affect the TSP's system. The Generator shall be responsible for protection of its facilities. TSP reserves the right to isolate the Plant and GIF consistent with ERCOT Requirements and NERC Reliability Standards for any of the following reasons:

i.) The Plant or GIF, upon TSP's determination, cause objectionable interference with other customers' service or with the secure operation of the TSP System.

ii.) The Plant output as determined by TSP exceeds the operating boundaries outlined above.

iii.) Generator's control and protective equipment causes or contributes to a hazardous condition. TSP reserves the right to verify all protective equipment including, but not limited to including relays, circuit breakers, at the inter-tie location. Verification by TSP may include the tripping of the tiebreaker by the protective relays.

iv.) In TSP's opinion, continued parallel operation is hazardous to Generator, the TSP System or to the general public.

v.) To provide TSP or TSP personnel the clearances for dead line or live line maintenance.

TSP shall notify Generator before disconnection, except for an emergency situation requiring immediate action. TSP will attempt to notify Generator before upon disconnection, but notification may not be possible in emergency situations that require immediate action.

10.6 Prior to In-Service Date, Generator shall specify whether automatic reclosing should be applied to the Generator's transmission facilities in the GIF. Automatic reclosing is normally applied to transmission circuits.

When TSP's source breakers trip and isolate the Plant and GIF, Generator shall insure the Plant and GIF are disconnected from the TSP circuit prior to automatic reclosure by TSP. Automatic reclosing out-of-phase with the Plant may cause damage to Generator's equipment. Generator is solely responsible for the protection of his equipment from automatic reclosing by TSP.

10.7 TSP shall specify system protection and control schemes for the Point of Interconnection. Generator shall have the right to review and comment on such schemes and TSP shall consider Generator's comments when determining such schemes. Generator will install and maintain System Protection Equipment that is compatible with TSP's System Protection Equipment. TSP will work with the Generator to coordinate the establishment of the relay settings for System Protection Equipment owned by both Generator and TSP associated with the Point of Interconnection.

10.8 Documentation of all protective device settings shall be provided to TSP. The setting documentation shall also include relay type, model/catalog number, and setting range. If automatic transfer schemes or unique or special protective schemes are used, a description of their operation should be included. TSP must review and approve the settings of all protective devices and automatic control equipment which: i) serve to protect the TSP System from hazardous currents and voltages originating from the Plant; or ii) must coordinate with System Protection Equipment or control equipment located on the TSP System.

11. Inputs to Telemetry Equipment:

11.1 Generator shall comply with ERCOT Requirements for telemetry and will coordinate with TSP for additional points if telemetry is deemed necessary by TSP.

12. Supplemental Terms and Conditions:

12.1 Additional Studies – If it is necessary for TSP to perform any additional generation interconnection studies associated with the Plant in accordance with ERCOT Requirements, the Parties will enter an agreement, in form and substance reasonably acceptable to the Parties, to perform those studies and Generator shall pay TSP for the studies pursuant to that agreement.

12.2 Switching Procedures – Each Party will adopt formal switching procedures that govern safety related issues concerning the operation of its switches connected to these Points of Interconnection and will provide a copy of those procedures to the other Party prior to In-Service Date. Each Party will agree to comply with the aforementioned switching procedures

of the other Party applicable to the Point of Interconnection and will notify the other Party in writing of any changes to its procedures relating to the Point of Interconnection.

12.3 Facility Connection Requirements – Generator will construct its facilities in accordance with the version of LST-FAC-001-PRO-Facility_Connection_Requirements that is in effect at the time the Generator gives its notice to proceed with design and procurement, as referenced in Exhibit "B".

12.4 Generator shall submit drawings of the GIF to TSP for review. TSP will review only those portions of the drawings that affect the TSP System. Any changes required by TSP shall be made prior to final issue of drawings and TSP shall be provided with final copies of the revised drawings. TSP will review only those portions of the drawings which apply to protection, metering and monitoring of the TSP System. To aid Generator, TSP may make suggestions on other areas. TSP's review of Generator's drawings shall not be construed as confirming or endorsing the design or as any warranty of safety, durability, or reliability of the facility or equipment. Generator shall provide copies of the following:

i.) one-line and three-line diagrams indicating the following:

1. equipment names and/or numerical designations for all circuit breakers, contactors, air switches, transformers, generators, etc., associated with the generation as required by TSP to facilitate switching
2. power transformers – nameplate or designation, nominal kVA, nominal primary, secondary, tertiary voltages, vector diagram showing winding connections, tap setting and transformer impedances (transformer test report showing the positive sequence, zero sequence, test voltages and MVA base for each winding)
3. station service transformers – phase(s) connected and estimated kVA load
4. instrument transformers – voltage and current, phase connections
5. surge arresters/gas tubes/metal oxide varistors/avalanche diode/spill gaps/surge capacitors, etc. – type and ratings
6. capacitor banks – kVAR rating and reactive (static and dynamic) device operation capability
7. reactive device capability (required for wind generation only) – kVAR rating and reactive device operation capability for static and dynamic devices for each generation collection feeder
8. disconnect switches – status if normally open (N.O.), manual or motor operated including switch voltage, continuous and interrupting ratings

9. circuit breakers and/or contactors – interrupting rating, continuous rating, operating times
10. generator(s) – nameplate, test report, type, connection, kVA, voltage, current, rpm, power factor, impedances, time constants, etc.
11. Point of Interconnection and phase identification
12. fuses – manufacturer, type, size, speed, and location
13. transmission structure geometry (phase-to-phase, phase-to-ground, and shield-to-phase), phase conductor data, shield wire data, transmission line ratings, positive and zero sequence impedances and mileage

ii.) potential and current elementary drawings associated with the protection and control schemes for the Plant and GIF and control elementary drawings of the Plant and interconnection circuit breaker indicating the following:

1. terminal designation of all devices – relay coils and contacts, switches, transducers, etc.
2. relay functional designation – per latest ANSI Standard where the same functional designation shall be used on all drawings showing the relay
3. complete relay type (such as CV-2, SEL321-1, REL-301, IJS51A, etc.)
4. switch contact as referenced to the switch development if development is shown on a separate drawing
5. switch developments and escutcheons where the majority of contacts are used. Where contacts of a switch are used on a separate drawing, that drawing should be referenced adjacent to the contacts in the switch development. Any contacts not used should be referenced as spare.
6. all switch contacts shown open with each labeled to indicate the positions in which the contact will be closed with explanatory notes defining switch coordination and adjustment where misadjustment could result in equipment failure or safety hazard
7. auxiliary relay contacts as referenced to the coil location drawing if coil is shown on a separate drawing where all contacts of auxiliary relays should be shown and the appropriate device auxiliary switches (circuit breakers, contactor) as referenced to the drawing where they are used.
8. any interlocks – electromechanical, key, etc., associated with the generation or interconnection Substation
9. ranges of all timers and setting if dictated by control logic
10. all target ratings; on dual ratings note the appropriate target tap setting

11. complete internal for electromechanical protective relays where microprocessor type relays may be shown as a "black box", with manufacturer's instruction book number referenced and terminal connections shown
12. isolation points (states links, PK-2 and FT-1 blocks), etc. including terminal identification
13. all circuit elements and components, with device designation, rating and setting where applicable and where coil voltage is shown only if different from nominal control voltage
14. size, type, rating and designation of all fuses
15. phase sequence designation as ABC or CBA
16. potential transformers – nameplate ratio, polarity marks, rating, primary and secondary connections
17. current transformers (including auxiliary CT's) – polarity marks, rating, tap ratio and connection

12.5 Generator may not commence parallel operation of the Plant until consent has been given by TSP. TSP reserves the right to inspect the GIF and witness testing of any equipment or devices associated with the Point of Interconnection.

12.6 The Plant and GIF shall not cause objectionable interference with the electric service provided to other customers of TSP nor jeopardize the security of the ERCOT power system. In order to minimize objectionable interference of the Plant and GIF, the Plant and GIF shall meet the following criteria as described in TSP's LST-FAC-001-PRO-Facility_Connection_Requirements for the below:

- Voltage,
- Flicker,
- Frequency,
- Harmonics, telephone interference, carrier interference,
- Fault and line clearing,
- Excitation system and Automatic Voltage Regulation, and
- Governor system.

12.7 The dynamic MVAR capability at the current MW generation amount shall be provided in real time. If this dynamic MVAR capability is not available in real time, a dynamic capability curve plotted as a function of MW output shall be provided. The shunt static reactive available, but not in service, shall be provided in sufficient detail to determine the amount of dynamic and static reactive reserve available.

12.8 Generator shall provide Voltage Support Service and Reactive Power Requirements as required by ERCOT Nodal Protocols Section 3.15.

12.9 Certain generators are susceptible to SSO when interconnected within electrical proximity of series capacitor banks on the transmission system. Prior to the In-Service Date, the Generator will provide complete and accurate studies which analyze the potential of SSO and will coordinate with TSP and ERCOT regarding the scope of such studies. Generator is responsible for mitigation to protect itself from SSO risks. TSP will work with Generator and their selected turbine-generator manufacturer on any system data required for such studies.

12.10 TSP considers the energy and power that the Plant and GIF may from time to time consume from the transmission grid through the Point of Interconnection to be a retail transaction and as such, TSP does not intend to be the provider of this retail service. Generator shall make necessary arrangements with the appropriate retail supplier for the energy and power that the Plant and GIF may consume from the transmission grid through the Point of Interconnection.

12.11 Generator shall notify TSP in writing as to which initial ERCOT Qualified Scheduling Entity the Plant will be scheduling through and any changes made thereafter.

12.12 Upon written request from TSP, Generator shall supply notification to TSP identifying their retail service provider.

12.13 Generator shall use commercially reasonable efforts to change the GIF as may be reasonably required by TSP to meet future changes in the TSP System. Generator shall be given reasonable notice by TSP prior to the date that any such required change in the GIF must be made.

12.14 Each Party will comply with NERC Reliability Standards applicable to its facilities identified in this Exhibit "C". Each Party shall provide to the other Party all information related to its interconnection facilities that may reasonably be required by the other Party to comply with NERC Reliability Standards applicable to its interconnection facilities, if any. "NERC Reliability Standards" means the mandatory electric reliability standards established and enforced by the North American Electric Reliability Corporation or its successor electric reliability organization.

12.15 Encroachment – Generator must submit a written request to TSP (using a form of request acceptable to TSP) and obtain prior written authorization from TSP prior to conducting any activities within any portion of TSP's transmission line right of way and/or substation property. Such Generator activities shall include, but are not limited to: i) constructing transmission lines, communication facilities, roads, water lines, sewer lines, gas pipelines, or any other facilities; ii) storing any equipment or materials; or iii) changing the grade, elevation, or contour of the land, for such encroachment prior to Generator installing such facilities or conducting

such activities. TSP RESERVES THE RIGHT TO DELAY THE ENERGIZATION FOR THE POINT OF INTERCONNECTION UNTIL GENERATOR OBTAINS ALL REQUIRED WRITTEN AUTHORIZATIONS FROM TSP FOR SUCH ENCROACHMENTS, IF ANY. The Generator will be responsible for the cost of all modifications necessary on property or facilities owned by TSP that are affected by such encroachment. The provision of overall site plans by Generator shall not relieve Generator from the obligation to submit all encroachment requests in accordance with this subsection.

13. Special Operating Conditions, if any, attached:

13.1 If Generator's main power transformer(s) is equipped with a no-load tap changer, in accordance with ERCOT Requirements, Generator will work with TSP to select the tap position on the no-load tap changer of the Generator's main power transformer(s). Generator will initiate contact with TSP to select such tap position no later than the date specified in Exhibit B. notwithstanding TSP's obligations in the remainder of this Agreement, TSP shall have no obligation to establish an electrical interconnection with the GIF until Generator and TSP have selected the tap position.

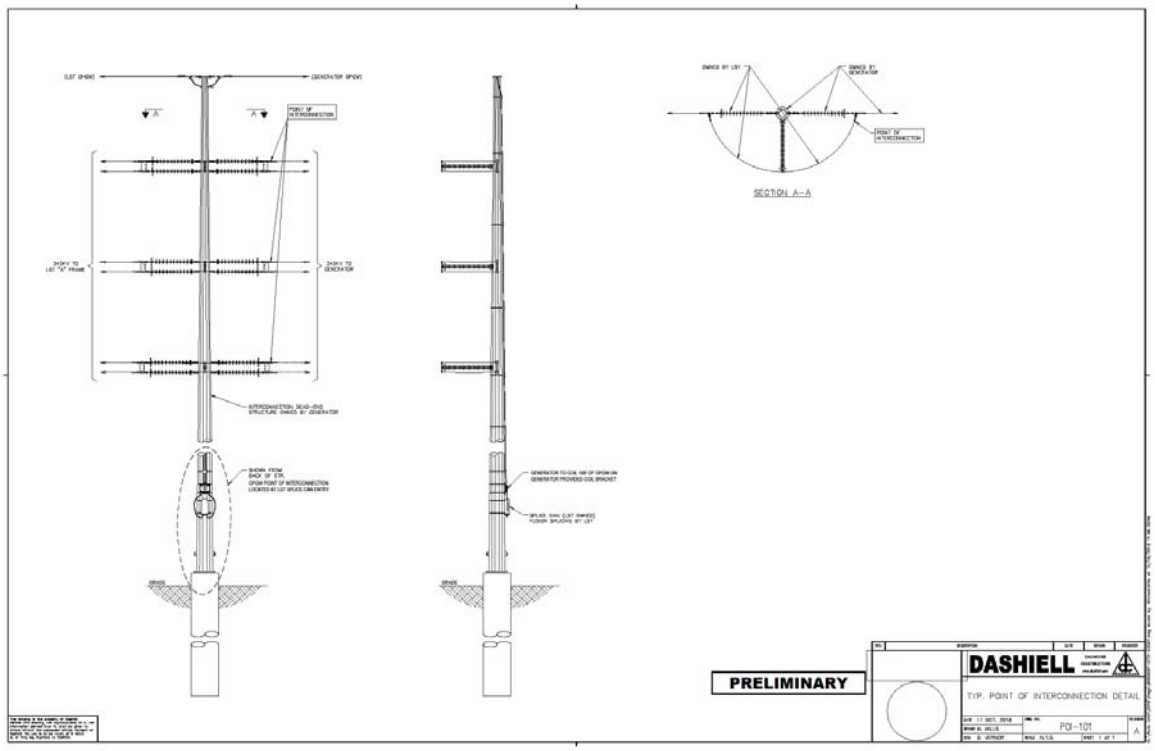
Generator shall design, construct, operate and maintain GIF with accordance with all applicable ERCOT Requirements and NERC Reliability Standards.

For thermal powered generation, Generator will provide TSP at least thirty (30) minutes' prior notice before coming on-line or off-line so TSP can adjust reactive resources.

14. The difference between the estimated cost of the TIF under 4.1.A (N/A) and the estimated cost of the TIF under 4.1.B (N/A) is: N/A, if applicable.

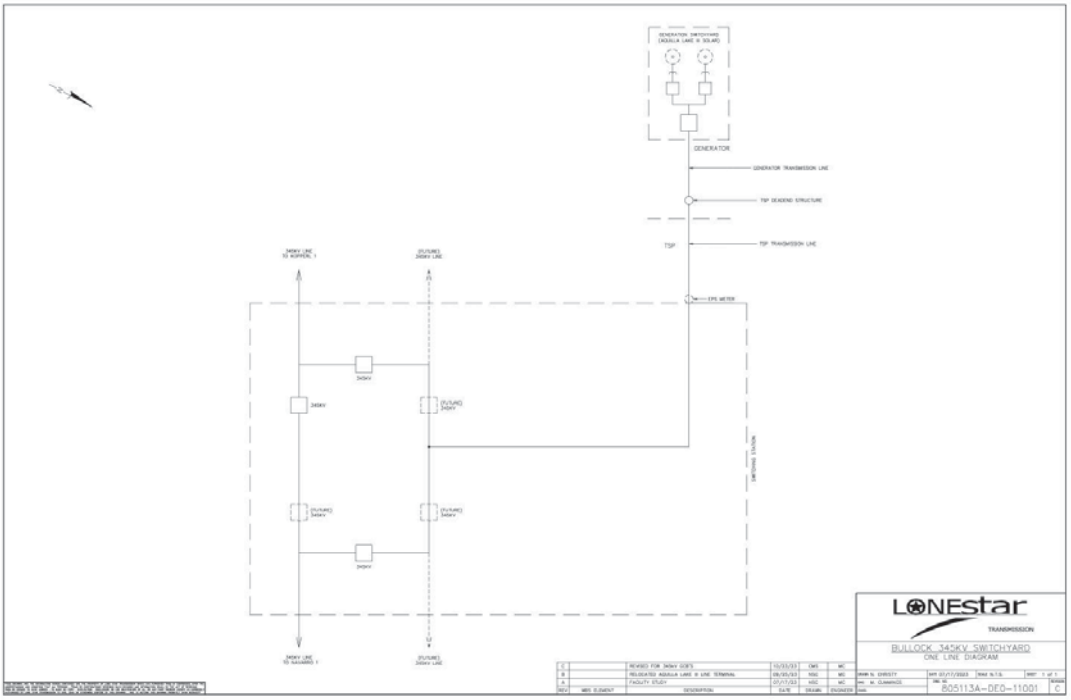
Attachment C-1

Point of Interconnection Detail



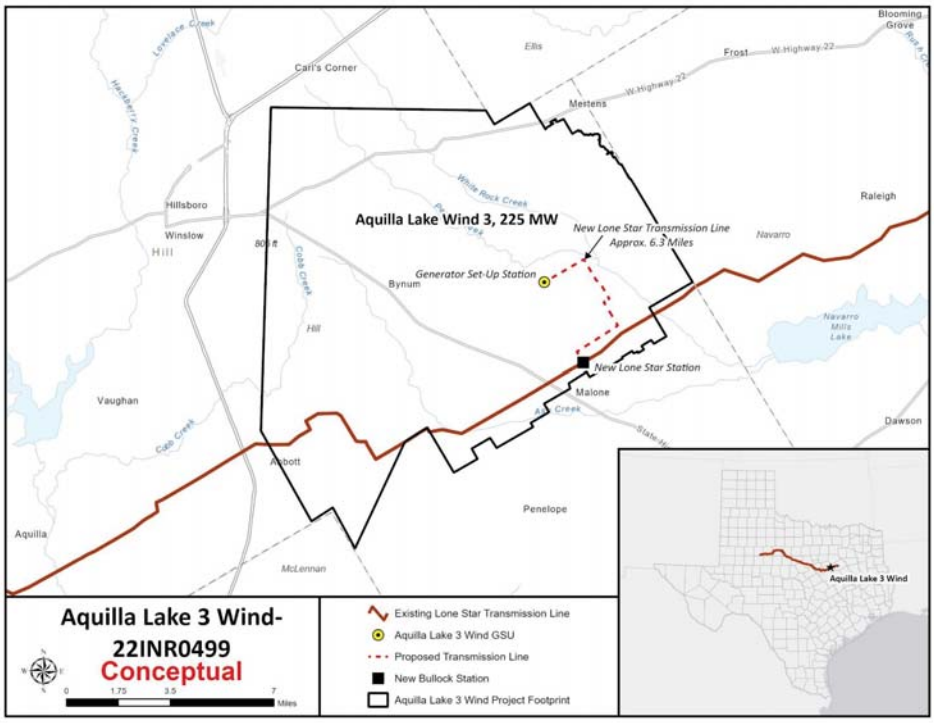
Attachment C-2

Conceptual One-Line Drawing of Point of Interconnection



Attachment C-3

Project Overview Map



SECOND AMENDMENT TO INTERCONNECTION AGREEMENT

This Second Amendment is made and entered into this 7th day of January, 2025 between **Lone Star Transmission, LLC** ("Transmission Service Provider") and **Hubbard Wind II, LLC** ("Generator"), hereinafter individually referred to as "Party," and collectively referred to as "Parties."

WHEREAS, the Transmission Service Provider and the Generator entered into that certain ERCOT Standard Generation Interconnection Agreement executed on January 24, 2024, as amended by the First Amendment to Interconnection Agreement executed on July 29, 2024 (collectively, the "Agreement"); and

WHEREAS, the Parties agree to make certain corrections to Exhibit "B" and Exhibit "C";

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein contained, the Parties hereto agree as follows:

1. Existing Exhibit "B" is deleted in its entirety, and the new Exhibit "B" attached to this Second Amendment is hereby added to the Agreement in lieu thereof.

2. Exhibit "B" attached to this Second Amendment will become effective upon execution of this First Amendment by the Parties.

3. Existing Exhibit "C" is deleted in its entirety, and the new Exhibit "C" attached to this Second Amendment is hereby added to the Agreement in lieu thereof.

4. Exhibit "C" attached to this Second Amendment will become effective upon execution of this First Amendment by the Parties.

Except as otherwise expressly provided for herein, the Agreement will continue in full force and effect in accordance with its terms.

--signature page to follow--

IN WITNESS WHEREOF, the Parties have executed this First Amendment in duplicate originals, each of which shall constitute and be an original effective Agreement between the Parties.

Lone Star Transmission, LLC

By: _____
Daniel Madru

Title: President

Date: January 7, 2024

Hubbard Wind II, LLC

By: DocuSigned by: _____
F5C968BD9C2148B...
Anthony Pedroni

Title: Vice President

Date: December 23, 2024

Initial
TD

Exhibit "B"
Time Schedule

1) Interconnection Option chosen by Generator (check one): X Section 4.1.A. or ____ Section 4.1.B

   A. If Section 4.1.B is chosen by Generator, the In-Service Date(s) was determined by (check one): (1) ___ good faith negotiations, or (2) ___designated by Generator upon failure to agree.

2) January 31, 2024 is the date ("NTP Need Date") by which Generator must provide a written Notice to Proceed with design, procurement, and construction of the TIF and provide security on February 14, 2024, as specified in Exhibit "A", Section 4.2 and 4.3, so that TSP may maintain schedule to meet the In-Service Date identified below. The NTP date shall be the date Generator provides written Notice to Proceed to TSP:

   A. If Generator does not provide a written Notice to Proceed to TSP by the above NTP Need Date, the designated TIF In-Service Date, Scheduled Generation Trial Operation Date, and Scheduled Generation Commercial Operation Date, identified below, will each be extended day for each day after the NTP Need Date that the Notice to Proceed is delayed.

   B. If Generator does not provide a written Notice to Proceed and provide security in accordance with Exhibit "E" to TSP by eighteen (18) months after the NTP Need Date ("NTP Deadline"), such non-provision of the Notice to Proceed shall constitute a Default, in accordance with Section 10.6.A of Exhibit "A", by the Generator and written notice of Default shall be deemed to have been given by TSP to Generator on the NTP Deadline. If such Default is not cured in accordance with Section 10.6 of Exhibit "A", then TSP may terminate this Agreement in accordance with the provisions of Section 10.6.B of Exhibit "A".

   Generator Main Transformer Tap Position Communication to TSP Date: (If Generator Main Transformer(s) is equipped with a no-load tap changer) August 25, 2026

   TIF In-Service Date (Backfeed): The later of:
   a) March 14, 2026; or
   b) Thirty-six (36) months after the NTP Date.

   Scheduled Generation Trial Operation Date (Synchronization): The later of:
   a) May 15, 2026; or
   b) Two (2) weeks after the TIF In-Service Date.

   Scheduled Generation Commercial Operation Date (COD): The later of:
   a) March 1, 2027; or
   b) Two (2) months after the TIF In-Service Date.

Nothing in the definitions of the dates above shall preclude either Party from taking measures or actions that allow the actual Generation Trial Operation Date or the actual Generation Commercial Operation Date to be earlier than the scheduled dates above.

3) Due to the nature of the subject of this Agreement, the Parties may mutually agree to change the dates and times of this Exhibit B.

Exhibit "C"
Interconnection Details

1. Name: Aquilla Lake 3 Wind

2. Point of Interconnection (POI) Location: The POI between the GIF and TIF will be located at a new Transmission Service Provider (TSP) owned dead-end structure at the end of the TSP's new 3.64-mile 345 kV line connecting from the new TSP's Bullock station to the GIF Step Up Station (shown on Attachment "C-1" and "C-2"). The POI shall be the physical point where the TSP facilities are connected to the GIF. This point is more specifically defined as being located at the 4-hole pad terminals on the insulator hardware at the dead-end structure where the TSP's 345 kV line connects to Generator slack span connecting to the GIF.

3. Delivery Voltage: 345 kV

4. Number and Size of Generating Units: The total capacity of the plant (Aquilla Lake 3) is 304.6 MW, composed of GE 2.82MW Wind Turbines.

5. Type of Generating Unit: GE 2.82MW Turbines.
The Parties will amend this Exhibit "C" as necessary to reflect any changes Generator makes to the manufacturer, model, or type of generating units.

6. Metering and Telemetry Equipment: Metering (voltage, location, losses adjustment due to metering location and other), telemetry, and communications requirements shall be as follows:

   6.1 TSP shall, in accordance with ERCOT Requirements and Good Utility Practice, install, own, operate, inspect, test, calibrate, and maintain 345 kV metering accuracy potential and current transformer and associated metering and telemetry equipment (including communications and an RTU) located in the TIF. A one-line diagram showing TSP's ERCOT-polled settlement ("EPS") metering location is attached to this Exhibit "C" as **Attachment C-2**. If requested by Generator/QSE, and if available from the TSP RTU equipment and/or EPS metering system, TSP will make EPS metering data and telemetry available to Generator via a communication link at Generator's expense. If such metering or telemetry data are not available, they may be available by alternate means at Generator's expense. Such data, if provided to Generator/QSE, will be for informational purposes only. Generator shall not rely on such data, as the primary source, for the metering data addressed in Section 6.2 of this Exhibit "C" below, or for any other scheduling or operational purposes. TSP makes no guarantee of the quality or availability of such data. The provision of Section 5.5(G) of Exhibit "A" shall not apply to TSP's RTU.

6.2 Generator shall, in accordance with Good Utility Practice, install, own, operate, inspect, test, calibrate, and maintain the necessary metering potential and current transformers and associated metering and telemetry equipment in the GIF and/or Plant to satisfy the ERCOT Requirements for the provision of metering data by Generator's "Qualified Scheduling Entity".

6.3 Generator shall, in accordance with ERCOT Requirements and Good Utility Practice, install, own, operate, inspect, test, calibrate, and maintain the metering and telemetry equipment (including an RTU or other equipment acceptable to TSP) to supply all electrical parameters of the Plant and GIF, as specified in Section 11 to this Exhibit "C", to TSP at a location designated by TSP.

6.4 Prior to the In-Service Date, acceptance tests will be performed by TSP and Generator to ensure the proper functioning of all metering, telemetry, and communications equipment, and to verify the accuracy of data being received by TSP.

6.5 Following the Commercial Operation date, each Party shall test its metering, telemetry, and communications equipment in accordance with ERCOT Requirements and Good Utility Practice. Each Party shall give the other Party reasonable advance notice of such testing. Each Party shall have the right to observe testing performed by the other Party.

6.6 Any changes to Generator's metering, telemetry, and communication equipment, including meters, voltage transformers, current transformers, and associated RTU, panels, hardware, conduit and cable, that will affect the data being received by TSP hereunder must be mutually agreed to by the Parties.

6.7 Each Party will promptly advise the other Party if it detects or otherwise learns of any metering, telemetry, or communications equipment or related situation that requires attention and/or correction by the other Party.

7. Generator Interconnection Facilities:

Generator will be responsible for the construction and ownership of the below:

7.1 Generator will be responsible for the construction and ownership of a 345 kV station and all facilities within it. Specifically, Generator's interconnection station(s) including control building(s), 345 kV step-up transformer(s), transformer protection package(s), 345 kV circuit breaker(s), 345 kV line disconnect switch(es), and protective relaying panels for the Generator's 345 kV line(s) that will coordinate with the TSP's line panels at the TSP facility for the Generator line protection

7.2 345 kV line(s) with all necessary material to interconnect to TSP's point of interconnection located right adjacent to the GIF which is required to accommodate the Generator 345 kV line(s) in accordance to Exhibit "B" Section 8.1

7.3 Fiber optic cable (Suzhou Furukawa or equivalent 96 fiber, single-mode, fiber optic OPGW) from GIF's control building to TSP's OPGW cable splice box on the TSP's interconnecting structure(s) at the Point of Interconnection

7.4 Multi-ported RTU(s) and panels to provide breaker status, telemetry and energy data from the GIF to the Plant, the TSP, Generator and ERCOT

7.5 Associated structures, buswork, conductor, connectors, grounding, conduit, control cable, foundation work, perimeter fencing, grading/dirt work and any appurtenances necessary for construction and operation of GIF

The GIF also includes the communication facilities described in Section 9.1 below.

8. Transmission Service Provider Interconnection Facilities:

8.1 In order for TSP to provide an interconnect the Generator at the 345 kV Bullock Station, the following new equipment will be required to be in place prior to energization:

Station Physical:

- (3) – 345kV, 5000 A, 63kA GCB
- (14) – 345kV, motor operated GCB Isolation Switches
- (3) – 345kV, Motor Operated Line Isolation Switches
- (3) – 345 kV, Motor Operated Grounding Switches
- (2) – 345 kV, Line Trap with Tuner
- (9) – 345 kV, Surge Arresters
- (7) – 345 kV, Capacitive Coupling Voltage Transformers
- (2) – 345 kV, Capacitive Coupling Voltage Transformers with Carrier
- (3) – 345 kV, Extended Range Metering Current Transformers
- (3) – 345 kV, Metering Voltage Transformers
- (2) – 345kV, SSVT
- (1) – Backup Generator
- (1) – 24' x 72' Relay Control Enclosure
- (1 Lot) – Conduit and Grounding
- (1 Lot) – Aluminum Bus, Stranded Jumpers, and Connectors

Station Civil & Structural:

- (1 Lot) – Site Work/Water Diversion
- (1 Lot) – Ground Grid
- (1 Lot) – Security Fence
- (1 Lot) – Lot Final Surfacing (Crushed Limestone)
- (1 Lot) – Foundations
- (1 Lot) – Structural Steel
    - A-frames
    - Bus supports
    - Equipment supports
    - Static Masts

Relay & Control:
The study assumes that the Phantom Hill Station control house will have room to install the additional metering and relaying panels, and any other equipment as needed:

- (1) – ERCOT Polled Settlement Metering Panel
    - (1) – Primary ERCOT Polled Settlement Meter
    - (1) – Backup ERCOT Polled Settlement Meter
- (1 Lot) – Relay panels
- (1 Lot) – Control Cable Installation and Termination

Transmission Line:
The transmission line scope for this project involves the cut-in of the existing 345kV northern circuit (Line 1) along with a gen-tie line approximately 6.3 miles in length. The cut-in for Line 1 will require (5) new self-supporting dead-end structures on drilled pier foundations.

The new gen-tie line will route to a POI structure approximately 6.3 miles away from the new switchyard. LST will provide the POI structure. The generator will provide the installation of the last span into the new collection substation.

Line protection transfer trip requirements and control system requirements are as follows:

Line Protection Requirements at TSP's Bullock Station:

a) 345 kV Transmission Lines
    a. Compatible (SEL421) Line Distance protection
    b. Compatible (SEL311L) Line Current Differential protection
    c. Compatible Pulsar ULPC
    d. Compatible Multifunction Recorder (DFR – APP)
    e. Hardwire protection relays to Current Transformers and Power Transformers (CT's and PT's)

b) Customer 345 kV Generator Tie Lines
    a. Compatible (SEL 411L) Primary Line Current Differential Protection
    b. Compatible (SEL 311L) Backup Line Current Differential Protection
c) Compatible (SEL451) breaker failure protection with direct transfer trip via fiber optic communications to trip Customer 345 kV breaker
d) In the case where both line terminal breakers are open, an anti-islanding transfer trip via fiber optic communications to trip Customer breaker(s) or Generator Step Up 345 kV breaker (should open at the synchronizing breaker)
e) No automatic reclosing; use dead line, hot bus permissive controls for closing line breakers

Line Protection Requirements at Customer Facilities:

a) Customer 345 kV breaker failure protection to send direct transfer trip via fiber optic communications to trip TSP's Bullock Station 345 kV breakers

9. Communications Facilities:

9.1 Generator shall, in accordance with ERCOT Requirements and Good Utility Practice, provide communications facilities that are, or may in the future be, necessary for effective interconnected operation of the Generator's Plant with the transmission system.

9.2 TSP will bear the costs of its communications facilities at Bullock Station.

10. System Protection Equipment:

Protection of each Party's system shall meet the following TSP requirements in addition to ERCOT Requirements. If there is a conflict between the TSP requirements below and ERCOT Requirements, the ERCOT Requirements shall prevail.

10.1 Generator and TSP shall design, install, operate, maintain and test system protection equipment consistent with the applicable criteria as described in the ERCOT Requirements and any applicable requirements of Governmental Authorities, including NERC Reliability Standards. Generator shall, at its expense, provide modifications or additions to its control and protective equipment required to comply with changes in ERCOT Requirements or requirements of Governmental Authorities, including NERC Reliability Standards.

10.2 Generator, using Good Utility Practice, shall install sufficient digital fault recording equipment to thoroughly analyze all system disturbances occurring on the Plant and GIF to thoroughly analyze the Plant and GIF performance during system disturbances on the ERCOT system. This equipment shall monitor the voltages at major nodes, current at major branches, breaker and switch positions, and dc logic in the relay control scheme.

10.3 TSP assumes no responsibility for the protection of the Plant and GIF for any or all operating conditions. Generator is solely responsible for protecting its equipment in such a manner that faults, Sub-Synchronous Oscillations ("SSO"), or other disturbances on the TSP System or other interconnected system do no cause damage to the Plant and GIF.

10.4 It is the sole responsibility of the Generator to protect its Plant and GIF from excessive negative sequence currents.

10.5 The GIF shall be designed to isolate any fault, or to disconnect from or isolate any abnormality that would negatively affect the TSP's system. The Generator shall be responsible for protection of its facilities. TSP reserves the right to isolate the Plant and GIF consistent with ERCOT Requirements and NERC Reliability Standards for any of the following reasons:

i.) The Plant or GIF, upon TSP's determination, cause objectionable interference with other customers' service or with the secure operation of the TSP System.

ii.) The Plant output as determined by TSP exceeds the operating boundaries outlined above.

iii.) Generator's control and protective equipment causes or contributes to a hazardous condition. TSP reserves the right to verify all protective equipment including, but not limited to including relays, circuit breakers, at the inter-tie location. Verification by TSP may include the tripping of the tiebreaker by the protective relays.

iv.) In TSP's opinion, continued parallel operation is hazardous to Generator, the TSP System or to the general public.

v.) To provide TSP or TSP personnel the clearances for dead line or live line maintenance.

TSP shall notify Generator before disconnection, except for an emergency situation requiring immediate action. TSP will attempt to notify Generator before upon disconnection, but notification may not be possible in emergency situations that require immediate action.

10.6 Prior to In-Service Date, Generator shall specify whether automatic reclosing should be applied to the Generator's transmission facilities in the GIF. Automatic reclosing is normally applied to transmission circuits.

When TSP's source breakers trip and isolate the Plant and GIF, Generator shall insure the Plant and GIF are disconnected from the TSP circuit prior to automatic reclosure by TSP. Automatic reclosing out-of-phase with the Plant may cause damage to Generator's equipment. Generator is solely responsible for the protection of his equipment from automatic reclosing by TSP.

10.7 TSP shall specify system protection and control schemes for the Point of Interconnection. Generator shall have the right to review and comment on such schemes and TSP shall consider Generator's comments when determining such schemes. Generator will install and maintain System Protection Equipment that is compatible with TSP's System Protection Equipment. TSP will work with the Generator to coordinate the establishment of the relay settings for System Protection Equipment owned by both Generator and TSP associated with the Point of Interconnection.

10.8 Documentation of all protective device settings shall be provided to TSP. The setting documentation shall also include relay type, model/catalog number, and setting range. If automatic transfer schemes or unique or special protective schemes are used, a description of their operation should be included. TSP must review and approve the settings of all protective devices and automatic control equipment which: i) serve to protect the TSP System from hazardous currents and voltages originating from the Plant; or ii) must coordinate with System Protection Equipment or control equipment located on the TSP System.

11. Inputs to Telemetry Equipment:

11.1 Generator shall comply with ERCOT Requirements for telemetry and will coordinate with TSP for additional points if telemetry is deemed necessary by TSP.

12. Supplemental Terms and Conditions:

12.1 Additional Studies – If it is necessary for TSP to perform any additional generation interconnection studies associated with the Plant in accordance with ERCOT Requirements, the Parties will enter an agreement, in form and substance reasonably acceptable to the Parties, to perform those studies and Generator shall pay TSP for the studies pursuant to that agreement.

12.2 Switching Procedures – Each Party will adopt formal switching procedures that govern safety related issues concerning the operation of its switches connected to these Points of Interconnection and will provide a copy of those procedures to the other Party prior to In-Service Date. Each Party will agree to comply with the aforementioned switching procedures

of the other Party applicable to the Point of Interconnection and will notify the other Party in writing of any changes to its procedures relating to the Point of Interconnection.

12.3 Facility Connection Requirements – Generator will construct its facilities in accordance with the version of LST-FAC-001-PRO-Facility_Connection_Requirements that is in effect at the time the Generator gives its notice to proceed with design and procurement, as referenced in Exhibit "B".

12.4 Generator shall submit drawings of the GIF to TSP for review. TSP will review only those portions of the drawings that affect the TSP System. Any changes required by TSP shall be made prior to final issue of drawings and TSP shall be provided with final copies of the revised drawings. TSP will review only those portions of the drawings which apply to protection, metering and monitoring of the TSP System. To aid Generator, TSP may make suggestions on other areas. TSP's review of Generator's drawings shall not be construed as confirming or endorsing the design or as any warranty of safety, durability, or reliability of the facility or equipment. Generator shall provide copies of the following:

i.) one-line and three-line diagrams indicating the following:

1. equipment names and/or numerical designations for all circuit breakers, contactors, air switches, transformers, generators, etc., associated with the generation as required by TSP to facilitate switching
2. power transformers – nameplate or designation, nominal kVA, nominal primary, secondary, tertiary voltages, vector diagram showing winding connections, tap setting and transformer impedances (transformer test report showing the positive sequence, zero sequence, test voltages and MVA base for each winding)
3. station service transformers – phase(s) connected and estimated kVA load
4. instrument transformers – voltage and current, phase connections
5. surge arresters/gas tubes/metal oxide varistors/avalanche diode/spill gaps/surge capacitors, etc. – type and ratings
6. capacitor banks – kVAR rating and reactive (static and dynamic) device operation capability
7. reactive device capability (required for wind generation only) – kVAR rating and reactive device operation capability for static and dynamic devices for each generation collection feeder
8. disconnect switches – status if normally open (N.O.), manual or motor operated including switch voltage, continuous and interrupting ratings

9. circuit breakers and/or contactors – interrupting rating, continuous rating, operating times
10. generator(s) – nameplate, test report, type, connection, kVA, voltage, current, rpm, power factor, impedances, time constants, etc.
11. Point of Interconnection and phase identification
12. fuses – manufacturer, type, size, speed, and location
13. transmission structure geometry (phase-to-phase, phase-to-ground, and shield-to-phase), phase conductor data, shield wire data, transmission line ratings, positive and zero sequence impedances and mileage

ii.) potential and current elementary drawings associated with the protection and control schemes for the Plant and GIF and control elementary drawings of the Plant and interconnection circuit breaker indicating the following:

1. terminal designation of all devices – relay coils and contacts, switches, transducers, etc.
2. relay functional designation – per latest ANSI Standard where the same functional designation shall be used on all drawings showing the relay
3. complete relay type (such as CV-2, SEL321-1, REL-301, IJS51A, etc.)
4. switch contact as referenced to the switch development if development is shown on a separate drawing
5. switch developments and escutcheons where the majority of contacts are used. Where contacts of a switch are used on a separate drawing, that drawing should be referenced adjacent to the contacts in the switch development. Any contacts not used should be referenced as spare.
6. all switch contacts shown open with each labeled to indicate the positions in which the contact will be closed with explanatory notes defining switch coordination and adjustment where misadjustment could result in equipment failure or safety hazard
7. auxiliary relay contacts as referenced to the coil location drawing if coil is shown on a separate drawing where all contacts of auxiliary relays should be shown and the appropriate device auxiliary switches (circuit breakers, contactor) as referenced to the drawing where they are used.
8. any interlocks – electromechanical, key, etc., associated with the generation or interconnection Substation
9. ranges of all timers and setting if dictated by control logic
10. all target ratings; on dual ratings note the appropriate target tap setting

11. complete internal for electromechanical protective relays where microprocessor type relays may be shown as a "black box", with manufacturer's instruction book number referenced and terminal connections shown
12. isolation points (states links, PK-2 and FT-1 blocks), etc. including terminal identification
13. all circuit elements and components, with device designation, rating and setting where applicable and where coil voltage is shown only if different from nominal control voltage
14. size, type, rating and designation of all fuses
15. phase sequence designation as ABC or CBA
16. potential transformers – nameplate ratio, polarity marks, rating, primary and secondary connections
17. current transformers (including auxiliary CT's) – polarity marks, rating, tap ratio and connection

12.5 Generator may not commence parallel operation of the Plant until consent has been given by TSP. TSP reserves the right to inspect the GIF and witness testing of any equipment or devices associated with the Point of Interconnection.

12.6 The Plant and GIF shall not cause objectionable interference with the electric service provided to other customers of TSP nor jeopardize the security of the ERCOT power system. In order to minimize objectionable interference of the Plant and GIF, the Plant and GIF shall meet the following criteria as described in TSP's LST-FAC-001-PRO-Facility_Connection_Requirements for the below:

- Voltage,
- Flicker,
- Frequency,
- Harmonics, telephone interference, carrier interference,
- Fault and line clearing,
- Excitation system and Automatic Voltage Regulation, and
- Governor system.

12.7 The dynamic MVAR capability at the current MW generation amount shall be provided in real time. If this dynamic MVAR capability is not available in real time, a dynamic capability curve plotted as a function of MW output shall be provided. The shunt static reactive available, but not in service, shall be provided in sufficient detail to determine the amount of dynamic and static reactive reserve available.

12.8 Generator shall provide Voltage Support Service and Reactive Power Requirements as required by ERCOT Nodal Protocols Section 3.15.

12.9 Certain generators are susceptible to SSO when interconnected within electrical proximity of series capacitor banks on the transmission system. Prior to the In-Service Date, the Generator will provide complete and accurate studies which analyze the potential of SSO and will coordinate with TSP and ERCOT regarding the scope of such studies. Generator is responsible for mitigation to protect itself from SSO risks. TSP will work with Generator and their selected turbine-generator manufacturer on any system data required for such studies.

12.10 TSP considers the energy and power that the Plant and GIF may from time to time consume from the transmission grid through the Point of Interconnection to be a retail transaction and as such, TSP does not intend to be the provider of this retail service. Generator shall make necessary arrangements with the appropriate retail supplier for the energy and power that the Plant and GIF may consume from the transmission grid through the Point of Interconnection.

12.11 Generator shall notify TSP in writing as to which initial ERCOT Qualified Scheduling Entity the Plant will be scheduling through and any changes made thereafter.

12.12 Upon written request from TSP, Generator shall supply notification to TSP identifying their retail service provider.

12.13 Generator shall use commercially reasonable efforts to change the GIF as may be reasonably required by TSP to meet future changes in the TSP System. Generator shall be given reasonable notice by TSP prior to the date that any such required change in the GIF must be made.

12.14 Each Party will comply with NERC Reliability Standards applicable to its facilities identified in this Exhibit "C". Each Party shall provide to the other Party all information related to its interconnection facilities that may reasonably be required by the other Party to comply with NERC Reliability Standards applicable to its interconnection facilities, if any. "NERC Reliability Standards" means the mandatory electric reliability standards established and enforced by the North American Electric Reliability Corporation or its successor electric reliability organization.

12.15 Encroachment – Generator must submit a written request to TSP (using a form of request acceptable to TSP) and obtain prior written authorization from TSP prior to conducting any activities within any portion of TSP's transmission line right of way and/or substation property. Such Generator activities shall include, but are not limited to: i) constructing transmission lines, communication facilities, roads, water lines, sewer lines, gas pipelines, or any other facilities; ii) storing any equipment or materials; or iii) changing the grade, elevation, or contour of the land, for such encroachment prior to Generator installing such facilities or conducting

such activities. TSP RESERVES THE RIGHT TO DELAY THE ENERGIZATION FOR THE POINT OF INTERCONNECTION UNTIL GENERATOR OBTAINS ALL REQUIRED WRITTEN AUTHORIZATIONS FROM TSP FOR SUCH ENCROACHMENTS, IF ANY. The Generator will be responsible for the cost of all modifications necessary on property or facilities owned by TSP that are affected by such encroachment. The provision of overall site plans by Generator shall not relieve Generator from the obligation to submit all encroachment requests in accordance with this subsection.

13. Special Operating Conditions, if any, attached:

13.1 If Generator's main power transformer(s) is equipped with a no-load tap changer, in accordance with ERCOT Requirements, Generator will work with TSP to select the tap position on the no-load tap changer of the Generator's main power transformer(s). Generator will initiate contact with TSP to select such tap position no later than the date specified in Exhibit B. notwithstanding TSP's obligations in the remainder of this Agreement, TSP shall have no obligation to establish an electrical interconnection with the GIF until Generator and TSP have selected the tap position.

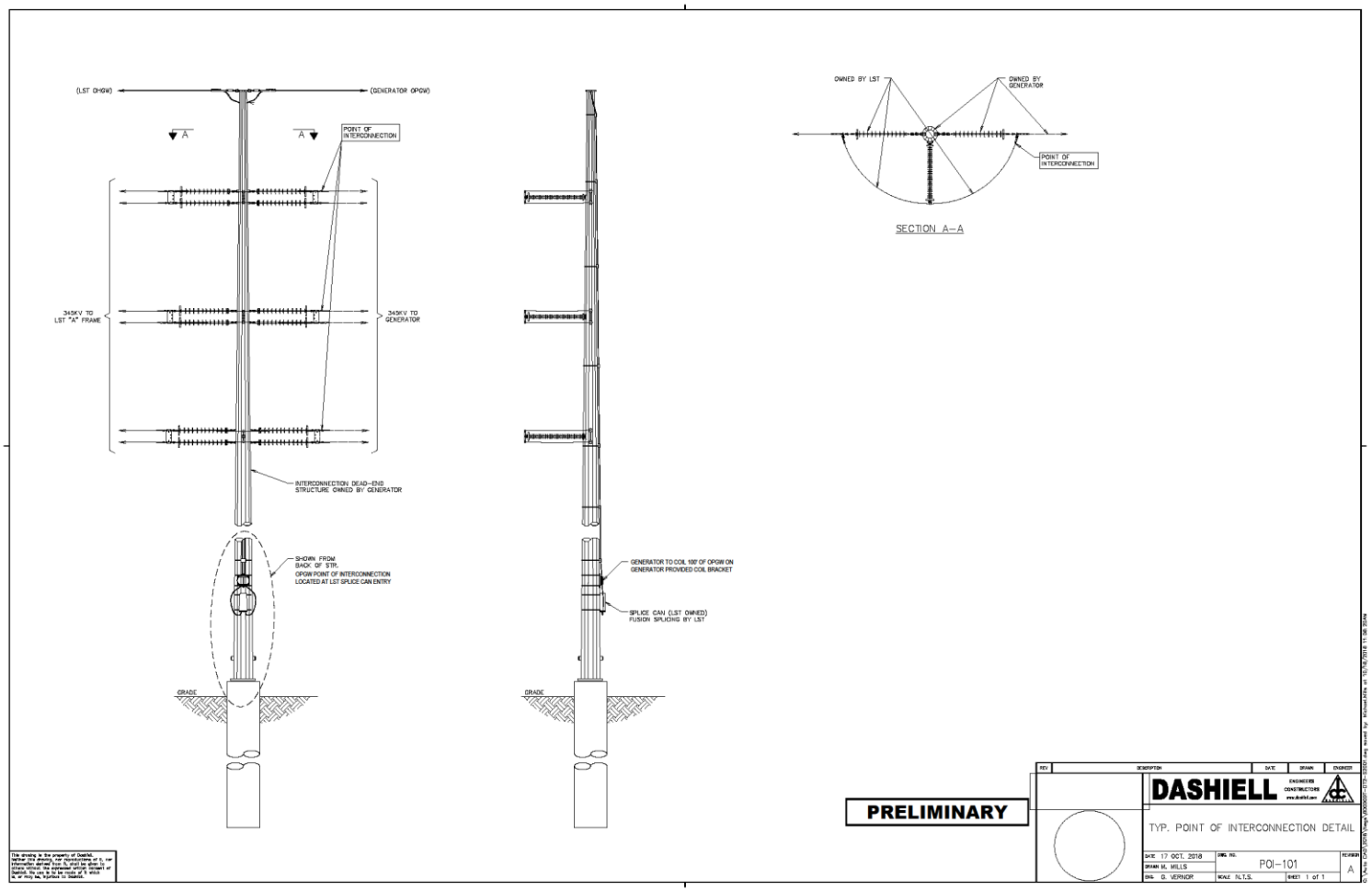
Generator shall design, construct, operate and maintain GIF with accordance with all applicable ERCOT Requirements and NERC Reliability Standards.

For thermal powered generation, Generator will provide TSP at least thirty (30) minutes' prior notice before coming on-line or off-line so TSP can adjust reactive resources.

14. The difference between the estimated cost of the TIF under 4.1.A (N/A) and the estimated cost of the TIF under 4.1.B (N/A) is: N/A, if applicable.

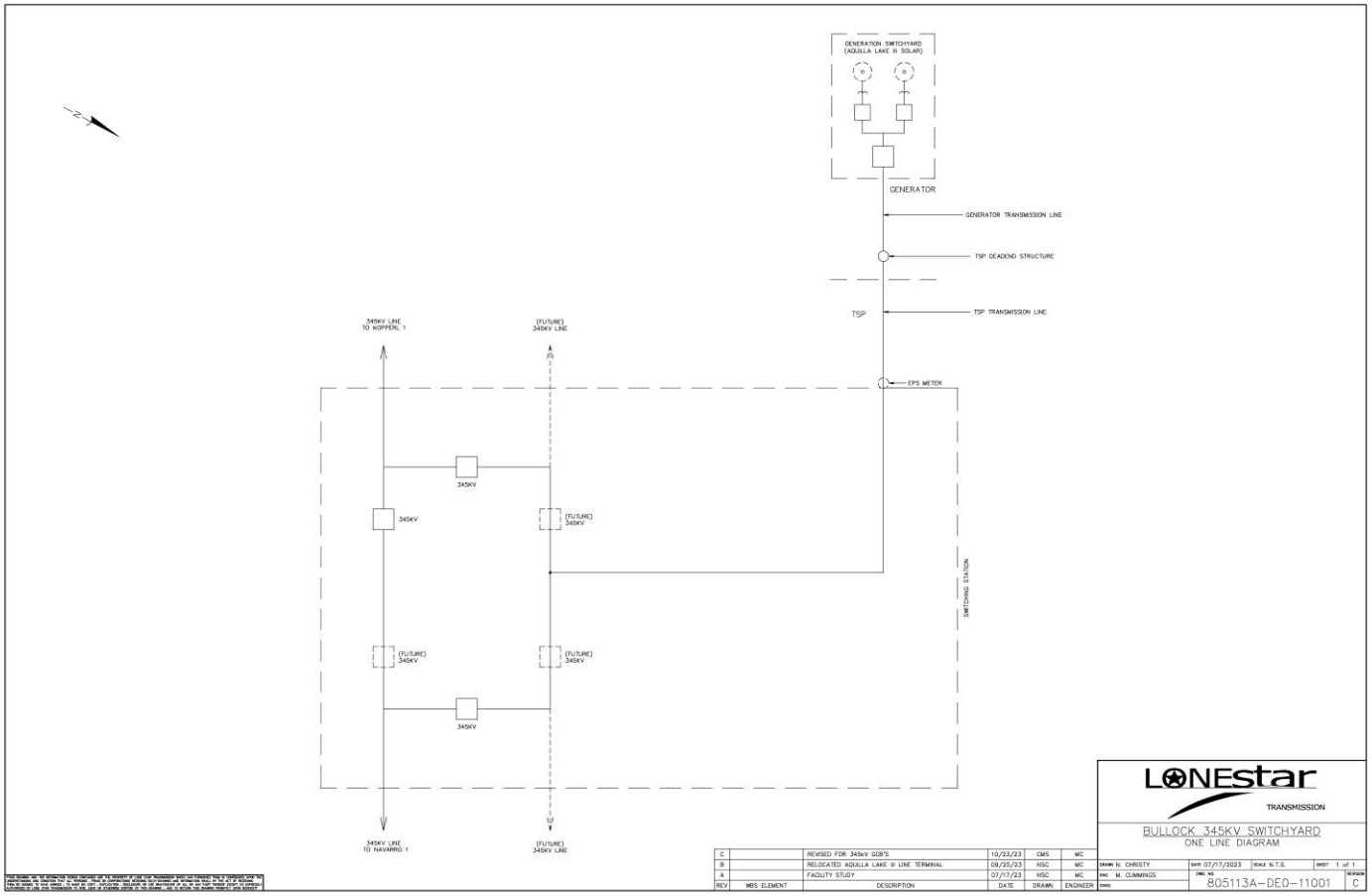
Attachment C-1

Point of Interconnection Detail



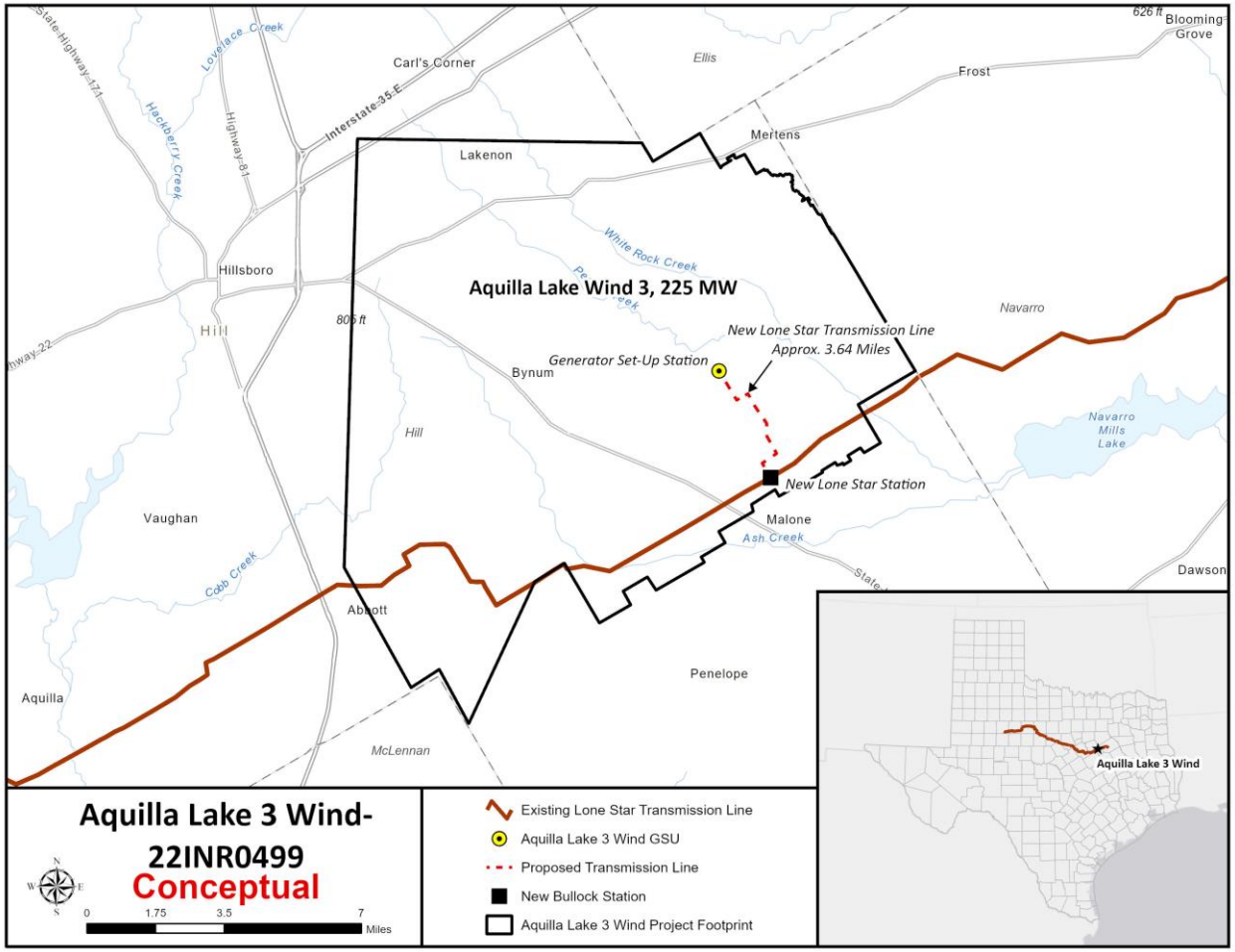
Attachment C-2

Conceptual One-Line Drawing of Point of Interconnection



Attachment C-3

Project Overview Map



Aquilla Lake 3 Wind Interconnection Project (22INR0499) – Economic Study

Document Revisions

Date	Version	Description	Author(s)
02/06/2025	1.0	Final	Travis Head
		Reviewed by	Robert Golen, Prabhu Gnanam

Table of Contents

1. Introduction

Lone Star Transmission LLC (LST) provided notice to ERCOT that the generation interconnection cost for the Aquilla Lake 3 Wind project (304.6 MW wind generating facility) studied under ERCOT Generation Interconnection or Change Request (GINR) 22INR0499, in Hill County, TX, is expected to exceed $25 million. The Aquilla Lake 3 Wind generation interconnection project was requested by Aquilla Lake 3 Wind to connect to a new 345-kV substation ("Bullock") to be cut in on the existing 345-kV line between Navarro and Kopperl as the permanent Point of Interconnection (POI). In accordance with ERCOT Protocol Section 3.11.6 Generation Interconnection Process, ERCOT performed an independent economic analysis of the transmission projects identified for interconnecting the Aquilla Lake 3 Wind project. This economic analysis is performed only for informational purposes; as such, no ERCOT endorsement is provided. The results of the economic analysis will be included in the interconnection study posting. The anticipated commercial operation date (COD) of this generation interconnection project is April 9, 2027. Figure 1 shows the approximate location of the Aquilla Lake 3 Wind project.

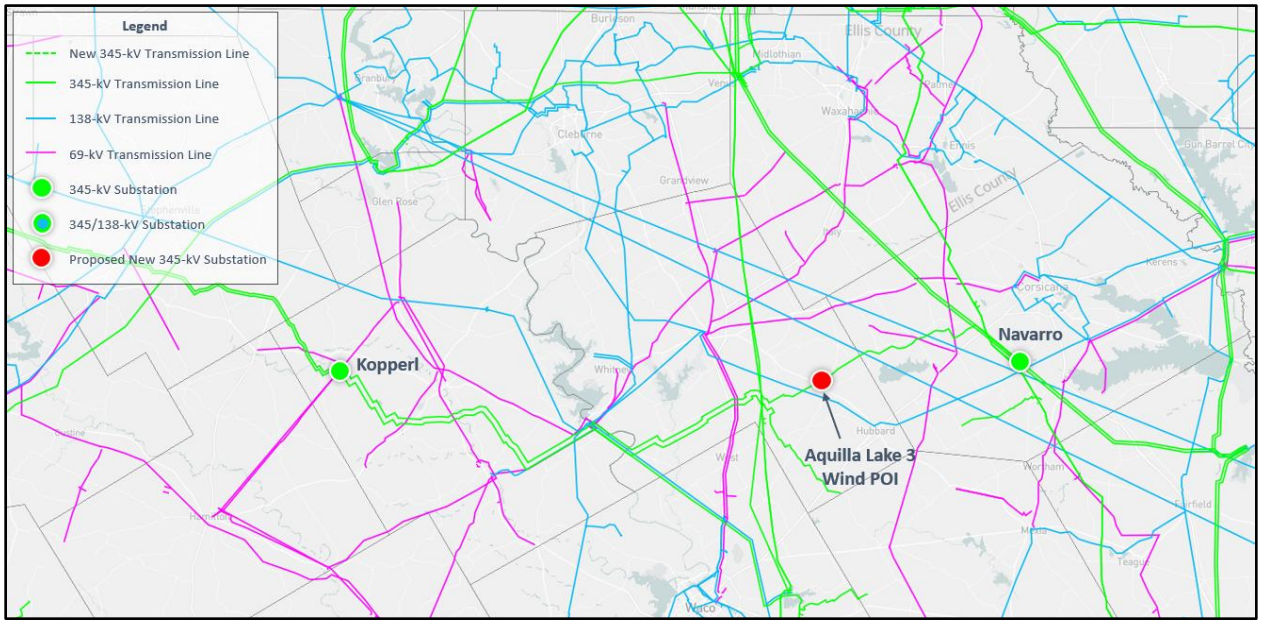


Figure 1: Approximate location of the Aquilla Lake 3 Wind project at Bullock substation

2. Methodology and Assumptions

The 2028 economic case built for the 2023 Regional Transmission Plan (RTP) was used to construct the base case. The following updates were made to the base case:

1. Loads in the 2028 study base case were maintained consistent with the 2023 RTP economic model.
2. Transmission projects that are expected to be in-service by the year 2028 have been added to the study base case. Transmission projects were identified close to the Aquilla Lake 3 Wind

project that are expected to be in-service by the year 2028. The ERCOT Transmission Project Information and Tracking (TPIT)[1] report posted in October 2024 was used as reference.

3. New generators that are expected to be in-service by the year 2028 have been added to the study base case. Generators were identified close to the Aquilla Lake 3 Wind project that met Planning Guide Section 6.9(1) conditions and are expected to be in-service by the year 2028. The ERCOT Generation Interconnection Status (GIS)[2] report published in October 2024 was used as a reference.
4. Resources retired or to be retired were updated based on the NSO Studies – Final Reliability Determination Analysis reports[3] found on MIS along with Capacity, Demand and Reserve (CDR) report[4] published in December 2023.

The base case was modified to create the study case by including the interconnection facilities of the 304.6 MW Aquilla Lake 3 Wind project. Based on the COD, the Aquilla Lake 3 Wind project was modeled for the entire year in the 2028 case.

Economic study was performed in UPLAN in a manner consistent with other economic planning analyses conducted by ERCOT. The production cost difference was compared between the study case and the base case (with and without the Aquilla Lake 3 Wind project). The time frame for this study was 8760 hours for the year 2028.

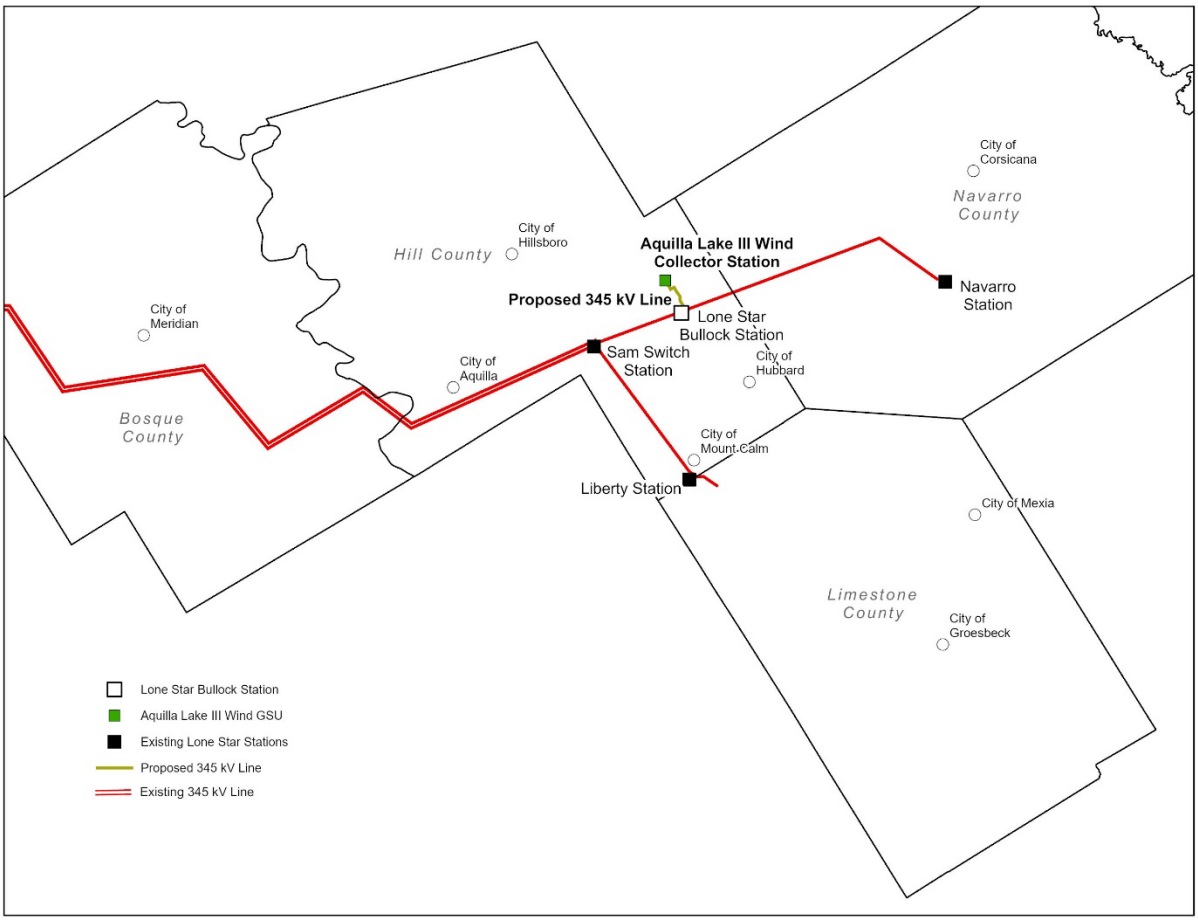
[1] Available at https://www.ercot.com/gridinfo/planning
[2] Available at https://www.ercot.com/mp/data-products/data-product-details?id=PG7-200-ER
[3] Available at https://mis.ercot.com/secure/data-products/grid/generation?id=NP3-511-M
[4] Available at https://www.ercot.com/gridinfo/resource/index.html

3. Study Results

The annual production cost saving and annual generator revenue reduction, resulting from including the subject facilities in the economic study (when compared with the base case), were approximately $20.08 million and 13.43 million respectively for the year 2028. This represents a decrease in the annual production cost and the annual generator revenue.

The addition of the Aquilla Lake 3 Wind project showed a significant impact on system congestion in this economic study.

Schematic of the Lone Star Transmission System in the Proximate Area of the Project



BULLOCK STATION TO AQUILLA LAKE III TRANSMISSION LINE PROJECT

DIRECTLY AFFECTED PROPERTY OWNER MAP

PUC DOCKET NO. 57836

Project Features
- Project Station
- Point of Interconnect
- Consensus Route

Existing Utilities
- Existing 138kV Transmission Line
- Existing 345kV Transmission Line

Existing Land Use Features
- Habitable Structure
- Cemetery

Transportation Features
- State Highway
- FM Road
- County / Local Road

Hydrologic Features
- NHD River / Stream
- NHD Waterbody

Administrative Boundaries
- Landowner Parcel Boundary

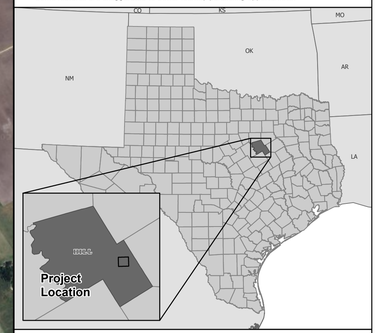
Aerial Photography: Provided by Google
Date: 2024

Accuracy for Google imagery is approximately ±20 feet.

Some data layers including tract boundaries, roads, and oil/gas pipelines obtained from third-party sources may be inaccurate to varying degrees. These data have not been corrected in all locations and should be used as a general guide to feature locations only. Digitization of proposed transmission line segments was performed based on aerial interpretation of these features.

Some legend symbols are enlarged for easier identification.

Some features are exaggerated to better identify paralleling opportunities.



0 800 1,600 2,400 3,200
Feet

LONEstar

POWER ENGINEERS

Date: 3/13/2025

Path: G:\Projects\251218_LST_Aquilla_Lake\Apps\PRO\PRO.aprx

Landowner Names, Property Identification, Map Locations, and Habitable Structure Location Cross-Reference Table

Map ID	Hab. Structure ID	Parcel ID(s)	Landowner Name	Address	City	State	Zip
1		454776	HUBBARD WIND II, LLC	700 Universe Blvd	Juno Beach	FL	33408
2		121392	DAVID L NEUMANN AND LORETTA ANNE NEUMANN	3450 FM 308	Malone	TX	76660
3		121393	DONALD J SCHNEIDER	6384 State Hwy 22	Hillsboro	TX	76645
4		390115	LYNDSEY PEDERSON	858 FM 1946	Bynum	TX	76631
4		390115	BRYAN SCHNEIDER	136 HCR 4263	Hillsboro	TX	76645
4		390115	JEREMY SCHNEIDER	24032 Wood Hollow Dr	Whitney	TX	76692
5		121520	JANICE MARIE KADDATZ RUSSELL	208 Garland Dr	Hillsboro	TX	76645
6		121292	SUSAN SCHULZ	901 HCR 3424 E	Malone	TX	76660
7	1	121461	SUSAN SCHULZ AND JUSTIN SCHULZ	901 HCR 3424 E	Malone	TX	76660
8		121290	JANICE MARIE KADDATZ RUSSELL	208 Garland Dr	Hillsboro	TX	76645
9		121434	JAMES ALLEN COX	839 E Bethel School Rd	Coppell	TX	75019
9		121434	EMMA C ANNETT	3404 SW 5th, Room 109	Plainview	TX	79072
10		121422	JIMMY D LEHMANN	PO Box 1058	Hillsboro	TX	76645

April 11, 2025

<Landowner Name>
<Address>
<City, State, Zip>

RE: PUC Docket No. 57836; *Application of Lone Star Transmission, LLC to Amend Its Certificate of Convenience and Necessity for the Bullock Station to Aquilla Lake III 345-kV Transmission Line in Hill County, Texas*

Dear [Landowner]:

Lone Star Transmission, LLC (Lone Star) gives notice of its intent to amend its Certificate of Convenience and Necessity (CCN) to construct a proposed single-circuit 345-kV transmission line in Hill County, Texas. Lone Star has filed its application to amend its CCN with the Public Utility Commission of Texas (Commission or PUC) in Docket No. 57836 – *Application of Lone Star Transmission, LLC to Amend Its Certificate of Convenience and Necessity for the Bullock Station to Aquilla Lake III 345-kV Transmission Line in Hill County, Texas*.

Lone Star is filing a single routing option (Consensus Route) for this project. The new transmission line will be constructed between Lone Star's new Bullock Station, located approximately 0.64 mile southwest of the intersection of County Road (CR) 3441 and Farm-to-Market (FM) 308, and the Aquilla Lake III Point of Interconnection (POI), located approximately 2.66 miles west-southwest of the intersection of FM 1946 and FM 308. The proposed Consensus Route is approximately 3.64 miles in length. The estimated cost of the transmission line is approximately $15.2 million, and the estimated cost of substation construction and improvements at the Bullock Station is approximately $25.0 million. The project will be constructed using primarily concrete and steel monopole structures.

Your land may be directly affected in this docket. If Lone Star's route is approved by the PUC, Lone Star will have the right to build a facility that may directly affect your land. The PUC docket will not determine the value of your land or the value of an easement if one is needed by the applicant to build the facility. If you have questions about the transmission line, you may contact Tracy Wieczorek at (512) 236-3151 (office) or (512) 517-8798 (mobile).

A map illustrating Lone Star's Consensus Route is enclosed for your review. Also enclosed is a written description of the Consensus Route that has been filed with the Commission in the Lone Star CCN application. A detailed routing map may be downloaded from Lone Star's website at https://www.lonestartransmission.com/regulatory/bullock-station-to-aquilla-lake.html.

All routes and route segments included in this notice are available for selection and approval by the Public Utility Commission of Texas. Additionally, the PUC may modify any proposed route or segment into different configurations than those proposed.

The enclosed brochure entitled "Guide for Landowners Affected by a New Electric Transmission Line Route" provides basic information about how you may participate in this docket, and how you may contact the PUC. Please read this brochure carefully. It can also be found at https://ftp.puc.texas.gov/public/puct-info/industry/electric/forms/ccn/Guide_for_Landowners_Affected_by_a_New_Electric_Transmission_Line_Route.pdf. The brochure includes sample forms for making comments and for making a request to intervene as a party in this docket. The PUC's brochure emphasizes: ***The only way to fully participate in the PUC's decision on where to locate the transmission line is to intervene in the docket. It is important for an affected person to intervene because Lone Star is not obligated to keep affected persons informed of the PUC's proceedings and cannot predict which route may or may not be approved by the PUC.***

In addition to the contacts listed in the brochure, you may call the PUC's Customer Assistance Hotline at (888) 782-8477. Hearing- and speech-impaired individuals with text telephones (TTY) may contact the PUC's Customer Assistance Hotline at (512) 936-7136 or toll free at (800) 735-2989. If you wish to participate in this proceeding by becoming an intervenor, the deadline for intervention in the proceeding is May 12, 2025, and the PUC should receive a letter from you requesting intervention by that date if you choose to intervene. The request to intervene form is included with your brochure.

The preferred method for you to file your request for intervention is electronically. If you decide to file a request for intervention, you will be required to serve the request on other parties by email. Therefore, please include your own email address on the intervention form. Instructions for electronic filing via the "PUC Filer" on the Commission's website can be found here: https://interchange.puc.texas.gov/filer. Instructions for using the PUC Filer are available at https://ftp.puc.texas.gov/public/puct-info/industry/filings/E-Filing_Instructions.pdf. For assistance with your electronic filing, please contact the Commission's Help Desk at (512) 936-7100 or helpdesk@puc.texas.gov. You can review materials filed in this docket on the PUC Interchange at: http://interchange.puc.texas.gov/.

While the preferred method for submitting a request for intervention is electronically, if you are unable to file your request for intervention electronically, you may file your request by mailing a hard copy to the PUC. The PUC should receive a letter from you requesting intervention by the intervention date (May 12, 2025). If you are not filing your request to intervene electronically, mail the request for intervention to:

Public Utility Commission of Texas
Central Records
Attn: Filing Clerk
1701 N. Congress Ave.
P.O. Box 13326
Austin, Texas 78711-3326

Persons who wish to intervene in the docket must also mail a copy of their request for intervention to all parties in the docket and all persons that have pending motions to intervene, at or before the time the request for intervention is mailed to the PUC.

In addition to the intervention deadline, other important deadlines may already exist that affect your participation in this docket. You should review the orders and other filings already made in the docket. The enclosed brochure explains how you can access these filings.

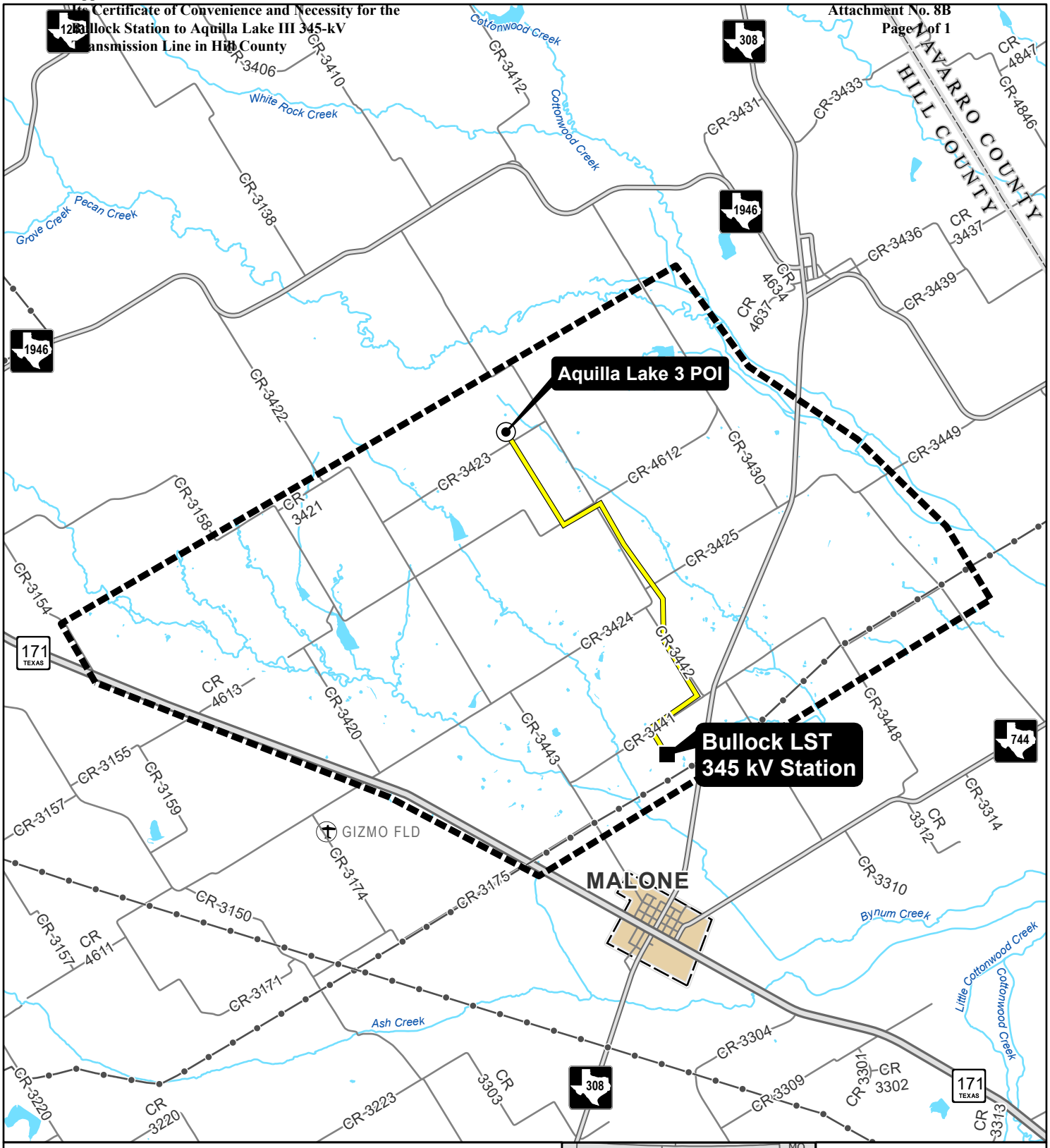
Sincerely,

Tracy Wieczorek

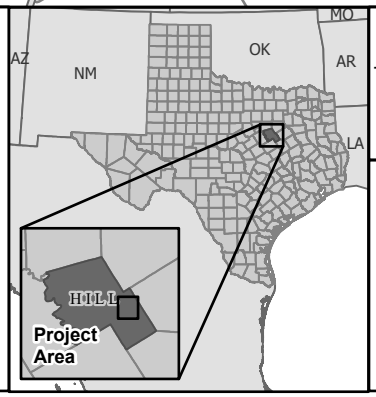
Tracy Wieczorek
Director, Land Strategy and Community Relations
Lone Star Transmission, LLC
Office: (512) 236-3151
Mobile: (512) 517-8798
Email: Tracy.Wieczorek@lonestar-transmission.com

Enclosures:

- Map of Consensus Route
- Consensus Route Description
- Landowner Brochure
- Comment/Protest Form
- Intervenor Form



Project Station
Point of Interconnect
Consensus Route
Study Area Boundary
Existing Transmission Line
State Highway
Farm-to-Market Road
County / Local Road
Private Airstrip
River / Stream
Waterbody
City Limit
County Boundary



BULLOCK STATION TO AQUILLA LAKE III TRANSMISSION LINE PROJECT

CONSENSUS ROUTE

0 0.5 1 1.5
Miles

LONESTAR POWER ENGINEERS

Date: 1/14/2025

Lone Star Transmission, LLC
Proposed Bullock Station to Aquilla Lake III Wind 345-kV Transmission Line in Hill County, Texas

Lone Star Transmission, LLC (Lone Star) has filed an application with the Public Utility Commission of Texas (PUC) to amend its Certificate of Convenience and Necessity (CCN) to construct the proposed single circuit 345-kV Aquilla Lake III transmission line. In its CCN application for this project, Lone Star has presented a single route composed of one segment (Consensus Route) for consideration by the PUC. The following narrative describes the proposed Consensus Route, along with the enclosed map that shows the proposed Consensus Route.

SEGMENT

The Consensus Route composed of one segment begins in the proposed Lone Star Bullock 345 kV Station, located approximately 0.64 mile southwest of the intersection of Hill County Road (CR) 3441 and Farm-to-Market 308 (FM). After exiting the northwest side of the Bullock LST 345 kV Station, the segment proceeds northwest for approximately 0.27 mile crossing Hill CR 3441. The segment then turns northeast for approximately 0.45 mile. The segment then turns northwest for approximately 0.50 mile. The segment then angles northeast for approximately 0.33 mile, crossing Hill CR 3442. The segment then angles northwest for approximately 0.53 mile, crossing Hill CR 3425, and then angles slightly north-northwest for approximately 0.37 mile. The segment then turns southwest for approximately 0.33 mile, crossing Hill CR 3424. The segment then turns northwest for approximately 0.86 mile, crossing Hill CR 3155 and Hill CR 3423. The segment terminates at the proposed Aquilla Lake III Point of Interconnection (POI) located approximately 2.66 miles west-southwest of the intersection of FM 1946 and FM 308. The total length of the proposed Consensus Route would be approximately 3.64 miles in length.

PUBLIC UTILITY COMMISSION OF TEXAS

Guide for Landowners Affected by a New Electric Transmission Line Route

Why am I receiving this notice?

You are receiving this notice because your property is near one of the possible routes for a proposed electric transmission line. You can find maps of the proposed routes on the website of the company that applied to build the line.

What does the Public Utility Commission of Texas (PUCT) do?

The PUCT is the Texas state agency that decides if a transmission line is needed and what route the line will follow. The PUCT does not build or operate electric transmission lines.

What are transmission lines and why do we need them?

Electric transmission lines carry electricity long distances across the state. They bring electricity from power plants to cities and neighborhoods where they link to smaller wires called distribution-level wires, that carry electricity to individual customers' homes and businesses. New electric transmission lines are needed where there is growth in electricity demand or where existing transmission lines are at full capacity.

Public Participation in the Transmission Line Siting Process

How can I participate?

Depending on the level of participation you choose, you can either be a protestor or an intervenor.

- **Protestors** – If you have concerns about the transmission line, you can send us written comments about the proposed routes. These comments are filed in the public record and are available to e anyone who is interested in the application. Comments help inform the PUCT Commissioners and staff of the public concerns.
- **Intervenors** – Intervening makes you an official participant in the legal case where the transmission line and the route are debated in front of a judge and the PUC Commissioners. You will be allowed to present evidence in the case and can cross-examine witnesses. You can testify in the case and may also be cross-examined by the other parties in the case. Intervenors must follow along with the process of the case, respond to requests from the Administrative Law Judge (ALJ) and other parties, and actively participate in the case. Otherwise, they may lose their status as an intervenor. Intervenors are not required to have an attorney.

Why should I participate?

If you have any concerns about the proposed routes, the PUCT encourages you to participate in the siting process. As a landowner, you have detailed knowledge of the impacted area that might not be reflected in the application. Sharing your knowledge with the PUCT allows us to make better-informed decisions about the route of the line.

How can I follow the process?

All the documents related to a case are filed in the PUCT public document interchange. You can search for the case by name or by the five-digit docket number. You can also sign up to receive a notification every time a new document is added related to the case. The interchange is at https://interchange.puc.texas.gov/

What is the process?

After the company applies to build a new transmission line to the PUCT, technical staff reviews the application. The PUCT sends the application to the State Office of Administrative Hearings (SOAH) when an intervenor or technical staff requests a hearing. A SOAH judge will schedule a prehearing conference to address procedural matters, including setting a procedural schedule for the case. The procedural schedule will set a hearing date, deadlines to request information from other participants and deadlines to file written testimony prior to the hearing. SOAH conferences and hearings can be held by video conference with a call-in option. All participants in the case must attend the hearing to have their written testimony entered into evidence. After the hearing, the SOAH judge will give the PUCT a recommendation about the route.

The PUCT Commissioners are not bound by this recommendation in selecting a route for the transmission line. The PUCT Commissioners will issue a final decision at a public meeting, which the people participating in the case can attend and request to make a statement. The PUCT Commissioners can and sometimes do make alterations to the route in response to statements from landowners. The company building the transmission line will then negotiate with landowners for the easements on their property. PUCT Commissioners meet in public meetings broadcast online.

During the time the case is going through the hearing process, participants in the case also negotiate to find a route that satisfies everyone. The PUCT Commissioners are not required to approve a negotiated route.

The entire process can take up to six months.

Where do I go for more information?

The company that has applied to build the line will have maps on their website. For more information about how to participate in the process please contact the PUCT Office of Public Engagement https://www.puc.texas.gov/agency/about/ope/ or 512-936-7374.

Comments in Docket No. 57836

If you want to be a PROTESTOR only, please complete this form. Although public comments are not treated as evidence, they help inform the PUC and its staff of the public concerns and identify issues to be explored. The PUC welcomes such participation in its proceedings.

For USPS, send one copy to:

Public Utility Commission of Texas
Central Records
P.O. Box 13326
Austin, TX 78711-3326

For all other delivery or courier services, send one copy to:

Public Utility Commission of Texas
Central Records
1701 N. Congress Ave.
Austin, TX 78701

First Name: _____ Last Name: _____

Phone Number: _____ Fax Number: _____

Address, City, State: _____

I am NOT requesting to intervene in this proceeding. As a PROTESTOR, I understand the following:

- I am NOT a party to this case;
- My comments are not considered evidence in this case; and
- I have no further obligation to participate in the proceeding.

Please check one of the following:

☐ I own property with a habitable structure located near one or more of the utility's proposed routes for a transmission line.

☐ One or more of the utility's proposed routes would cross my property.

☐ Other. Please describe and provide comments. You may attach a separate page, if necessary. _____

_____

_____

_____

_____

Signature of person submitting comments:

_____ Date: _____

Request to Intervene in PUC Docket No. 57836

The following information must be submitted by the person requesting to intervene in this proceeding. This completed form will be provided to all parties in this docket. **If you DO NOT want to be an intervenor, but still want to file comments, please complete the "Comments" page.**

For USPS, send one copy to:

Public Utility Commission of Texas
Central Records
P.O. Box 13326
Austin, TX 78711-3326

For all other delivery or courier services, send one copy to:

Public Utility Commission of Texas
Central Records
1701 N. Congress Ave.
Austin, TX 78701

First Name:_____ Last Name: _____

Phone Number:_____ Fax Number:_____

Address, City, State:_____

Email Address:_____

I am requesting to intervene in this proceeding. As an INTERVENOR, I understand the following:

- I am a party to the case;
- I am required to respond to all discovery requests from other parties in the case;
- If I file testimony, I may be cross-examined in the hearing;
- If I file any documents in the case, I will have to provide a copy of that document to every other party in the case; and
- I acknowledge that I am bound by the Procedural Rules of the Public Utility Commission of Texas (PUC) and the State Office of Administrative Hearings (SOAH).

Please check one of the following:

☐ I own property with a habitable structure located near one or more of the utility's proposed routes for a transmission line.

☐ One or more of the utility's proposed routes would cross my property.

☐ Other. Please describe and provide comments. You may attach a separate page, if necessary.

_____

_____

_____

Signature of person requesting intervention:

_____ Date: _____

Effective: April 8, 2020

List of Directly Affected Landowners Receiving Notice

Map ID(s)[1]	Landowner Name	Address	City	State	Zip
1	HUBBARD WIND II, LLC	700 Universe Blvd	Juno Beach	FL	33408
2	DAVID L NEUMANN AND LORETTA ANNE NEUMANN	3450 FM 308	Malone	TX	76660
3	DONALD J SCHNEIDER	6384 State Hwy 22	Hillsboro	TX	76645
4	JEREMY SCHNEIDR	24032 Wood Hollow Dr	Whitney	TX	76692
4	BRYAN SCHNEIDER	136 HCR 4263	Hillsboro	TX	76645
4	LYNDSEY PEDERSON	858 FM 1946	Bynum	TX	76631
5	JANICE MARIE KADDATZ RUSSELL	208 Garland Dr	Hillsboro	TX	76645
6	SUSAN SCHULZ	901 HCR 3424 E	Malone	TX	76660
7	SUSAN SCHULZ AND JUSTIN SCHULZ	901 HCR 3424 E	Malone	TX	76660
8	JANICE MARIE KADDATZ RUSSELL	208 Garland Dr	Hillsboro	TX	76645
9	JAMES ALLEN COX	839 E Bethel School Rd	Coppell	TX	75019
9	EMMA C ANNETT	3404 SW 5th, Room 109	Plainview	TX	79072
10	JIMMY D LEHMANN	PO Box 1058	Hillsboro	TX	76645

[1] Map IDs refer to the numbers identified on the map in Attachment No. 5.

April 11, 2025

<Name>
<Title>
<Utility Provider Name>
<Address>
<City, State, Zip Code>

RE: PUC Docket No. 57836; *Application of Lone Star Transmission, LLC to Amend Its Certificate of Convenience and Necessity for the Bullock Station to Aquilla Lake III Wind 345-kV Transmission Line in Hill County*

Dear [Contact Name],

Lone Star Transmission, LLC (Lone Star) gives notice of its intent to amend its Certificate of Convenience and Necessity (CCN) to construct a proposed 345-kilovolt (kV) single-circuit transmission line in Hill County. Lone Star has filed its application to amend its CCN with the Public Utility Commission of Texas (Commission or PUC) in Docket No. 57836 – *Application of Lone Star Transmission, LLC to Amend Its Certificate of Convenience and Necessity for the Bullock Station to Aquilla Lake III Wind 345-kV Transmission Line in Hill County*.

Lone Star is filing a single routing option (Consensus Route) for this project that is approximately 3.64 miles in length. The estimated cost of the transmission line is approximately $15.2 million with approximately $25.0 million in additional substation interconnection costs. The project will be constructed using primarily concrete monopole structures.

A map illustrating Lone Star's proposed Consensus Route is enclosed for your review. Also enclosed is a written description of the Consensus Route that has been filed with the Commission in the Lone Star CCN application.

If you have questions about this transmission line project or Lone Star's CCN application, you may contact Lone Star's representative, Tracy Wieczorek at (512) 236-3151 (office) or (512) 517-8798 (mobile).

Persons who wish to intervene in the proceeding or comment upon the action must submit a request to intervene to the PUC. The deadline for intervention in the proceeding is May 12, 2025, and a letter requesting intervention should be received by the PUC by that date.

The preferred method for you to file your request for intervention is electronically, and you will be required to serve the request on other parties by email. Therefore, please include your own email address on the intervention form. Instructions for electronic filing via the "PUC Filer" on

the Commission's website can be found here: https://interchange.puc.texas.gov/filer. Instructions for using the PUC Filer are available at https://ftp.puc.texas.gov/public/puct-info/industry/filings/E-Filing_Instructions.pdf. Once you obtain a tracking sheet associated with your filing from the PUC Filer, you may email the tracking sheet and the document you wish to file to: centralrecords@puc.texas.gov. For assistance with your electronic filing, please contact the Commission's Help Desk at (512) 936-7100 or helpdesk@puc.texas.gov. You can review materials filed in this docket on the PUC Interchange at: http://interchange.puc.texas.gov/.

If you are unable to file your request for intervention electronically, you may file your request for intervention by mailing a hard copy of your request to the PUC. The PUC should receive your request to intervene by the intervention date (May 12, 2025). Mail the request for intervention (along with 10 copies of the request) to the following address:

Public Utility Commission of Texas
Central Records
Attn: Filing Clerk
1701 N. Congress Ave.
P.O. Box 13326
Austin, Texas 78711-3326

All routes and routing links included in this notice are available for selection and approval by the Public Utility Commission of Texas.

The Commission has developed a brochure titled "Guide for Landowners Affected by a New Electric Transmission Line Route". Copies of the brochure are available from Lone Star by calling Tracy Wieczorek or may be downloaded from the PUC's website at https://ftp.puc.texas.gov/public/puct-info/industry/electric/forms/ccn/Guide_for_Landowners_Affected_by_a_New_Electric_Transmission_Line_Route.pdf. To obtain additional information about this case, contact the PUC at (512) 936-7120 or toll free at (888) 782-8477. Hearing- and speech-impaired individuals with text telephones (TTY) may contact the PUC at (512) 936-7136 or toll free at (800) 735-2989.

Sincerely,

Tracy Wieczorek

Tracy Wieczorek
Director, Land Strategy and Community Relations
Lone Star Transmission, LLC
Office: (512) 236-3151
Mobile: (512) 517-8798
Email: Tracy.Wieczorek@Lonestar-Transmission.com

Enclosures:

- Map of Consensus Route
- Consensus Route Description

List of Utilities Receiving Notice of Application

Hilco Electric Cooperative, Inc.

Debra Cole
General Manager/CEO
Hilco Electric Cooperative, Inc.
P.O. Box 127
Itasca, Texas 76055-0127

Navarro County Electric Cooperative, Inc.

Jill Sadberry
General Manager/CEO
Navarro County Electric Cooperative, Inc.
P.O. Box 616
Corsicana, Texas 75151-0616

Navasota Valley Electric Cooperative, Inc.

Delynn Barrett
Executive Administrative Assistant
Navasota Valley Electric Cooperative, Inc.
P.O. Box 848
Franklin, Texas 77856-0848

Oncor Electric Delivery Company

Matthew Troxle
VP Regulatory, Rates Regulatory Admin.
Oncor Electric Delivery Company
1616 Woodall Rogers Freeway
Dallas, TX 75202-1234

April 11, 2025

<Office Holder Name, County/City or DoD or OPUC>
<Address>
<City, State, Zip>

RE: PUC Docket No. 57836; *Application of Lone Star Transmission, LLC to Amend Its Certificate of Convenience and Necessity for the Bullock Station to Aquilla Lake III 345-kV Transmission Line in Hill County, Texas*

Dear Sir or Madam:

Lone Star Transmission, LLC (Lone Star) gives notice of its intent to amend its Certificate of Convenience and Necessity (CCN) to construct a proposed single-circuit 345-kV transmission line in Hill County, Texas. Lone Star has filed its application to amend its CCN with the Public Utility Commission of Texas (Commission or PUC) in Docket No. 57836 – *Application of Lone Star Transmission, LLC to Amend its Certificate of Convenience and Necessity for the Bullock Station to Aquilla Lake III 345-kV Transmission Line in Hill County, Texas.*

Lone Star is filing a single routing option (Consensus Route) for this project. The new transmission line will be constructed between Lone Star's new Bullock Station, located approximately 0.64 mile southwest of the intersection of County Road (CR) 3441 and Farm-to-Market (FM) 308, and the Aquilla Lake III Point of Interconnection (POI), located approximately 2.66 miles west-southwest of the intersection of FM 1946 and FM 308. The proposed Consensus Route is approximately 3.64 miles in length. The estimated cost of the transmission line is approximately $15.2 million, and the estimated cost of substation construction and improvements at the Bullock Station is approximately $25.0 million. The project will be constructed using primarily concrete and steel monopole structures.

A map illustrating Lone Star's proposed Consensus Route is enclosed for your review. Also enclosed is a written description of the Consensus Route that has been filed with the Commission in the Lone Star CCN application. A detailed routing map may be downloaded from Lone Star's website at https://www.lonestartransmission.com/regulatory/bullock-station-to-aquilla-lake.html.

If you have questions about this transmission line project or Lone Star's CCN application, you may contact Lone Star's representative, Tracy Wieczorek at (512) 236-3151 (office) or (512) 517-8798 (mobile).

If you decide to file a request for intervention, you will be required to serve the request on other parties by email. Therefore, please include your own email address on the intervention form. Instructions for electronic filing via the "PUC Filer" on the Commission's website can be found here: https://interchange.puc.texas.gov/filer. Instructions for using the PUC Filer are available at https://ftp.puc.texas.gov/public/puct-info/industry/filings/E-Filing_Instructions.pdf. For assistance with your electronic filing, please contact the Commission's Help Desk at (512) 936-7100 or helpdesk@puc.texas.gov. You can review materials filed in this docket on the PUC Interchange at: http://interchange.puc.texas.gov/. The deadline to intervene is May 12, 2025.

If you are unable to file your request for intervention electronically, you may file your request for intervention by mailing a hard copy of your request to the PUC. The PUC should receive your request to intervene by the intervention date of May 12, 2025. Mail the request for intervention to the following address:

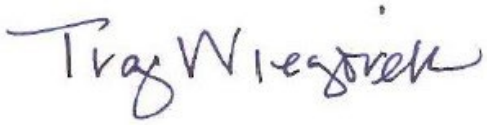
Public Utility Commission of Texas
Central Records
Attn: Filing Clerk
1701 N. Congress Avenue
P.O. Box 13326
Austin, Texas 78711-3326

All routes and route segments included in this notice are available for selection and approval by the Public Utility Commission of Texas.

The Commission has developed a brochure titled "Guide for Landowners Affected by a New Electric Transmission Line Route". Copies of the brochure are available from Lone Star by calling Tracy Wieczorek or may be downloaded from the PUC's website at https://ftp.puc.texas.gov/public/puct-info/industry/electric/forms/ccn/Guide_for_Landowners_Affected_by_a_New_Electric_Transmission_Line_Route.pdf. To obtain additional information about this case, contact the PUC at (512) 936-7120 or toll free at (888) 782-8477. Hearing- and speech-impaired individuals with text telephones (TTY) may contact the PUC's Customer Assistance Hotline at (512) 936-7136 or toll free at (800) 735-2989.

Addressee First Name Last Name
April 11, 2025
Page 3

Sincerely,



Tracy Wieczorek
Director, Land Strategy and Community Relations
Lone Star Transmission, LLC
Office: (512) 236-3151
Mobile: (512) 517-8798
Email: Tracy.Wieczorek@lonestar-transmission.com

Enclosures:

- Map of Consensus Route
- Consensus Route Description
- Comment/Protest Form
- Intervenor Form

List of Public Officials Receiving Notice of Application

Hill County

The Honorable Justin W. Lewis
Hill County Judge
P.O. Box 457
Hillsboro, Texas 76645

Jim Holcomb
Hill County Precinct 1 Commissioner
P.O. Box 457
Hillsboro, Texas 76645

Larry Crumpton
Hill County Precinct 2 Commissioner
P.O. Box 457
Hillsboro, Texas 76645

Scotty Hawkins
Hill County Precinct 3 Commissioner
P.O. Box 457
Hillsboro, Texas 76645

Martin Lake
Hill County Precinct 4 Commissioner
P.O. Box 457
Hillsboro, Texas 76645

Office of Public Utility Counsel

Benjamin Barkley
Chief Executive and Public Counsel
Office of Public Utility Counsel
P.O. Box 12397
Austin, Texas 78711-2397

Department of Defense Siting Clearinghouse

Department of Defense
Military Aviation and Installation Assurance
Siting Clearinghouse
3400 Defense Pentagon
Room 5C646
Washington, D.C. 20301-3400
osd.dod-siting-clearinghouse@mail.mil

PUBLIC NOTICE

Application of Lone Star Transmission, LLC to Amend its Certificate of Convenience and Necessity for the Bullock Station to Aquilla Lake III 345-kV Transmission Line in Hill County, Texas

PUBLIC UTILITY COMMISSION OF TEXAS (PUC) DOCKET NO. 57836

Lone Star Transmission, LLC (Lone Star) gives notice of its intent to amend its Certificate of Convenience and Necessity (CCN) to construct a proposed 345-kV single-circuit transmission line in Hill County, Texas. Lone Star has filed its application to amend its CCN with the Public Utility Commission of Texas (Commission or PUC) in Docket No. 57836 – *Application of Lone Star Transmission, LLC to Amend its Certificate of Convenience and Necessity for the Bullock Station to Aquilla Lake III 345-kV Transmission Line in Hill County, Texas*.

Lone Star is filing a single routing option (Consensus Route) for this project that is approximately 3.64 miles in length. The estimated cost of the transmission line is approximately $15.2 million, and the estimated cost of substation construction and improvements at the Bullock Station is approximately $25.0 million.

The new transmission line will be constructed between Lone Star's new Bullock Station, located approximately 0.64 mile southwest of the intersection of County Road (CR) 3441 and Farm-to-Market (FM) 308, and the Aquilla Lake III Point of Interconnection (POI), located approximately 2.66 miles west-southwest of the intersection of FM 1946 and FM 308. The project will be constructed using primarily concrete and steel monopole structures.

All routes and route segments included in this notice are available for selection and approval by the Public Utility Commission of Texas.

Persons who are affected by the transmission line and wish to intervene in the docket or comment on the applicant's application should submit a request for intervention or comments to the PUC. The preferred method for you to file your request for intervention or comments is electronically, and you will be required to serve the request on other parties by email. Therefore, please include your own email address on the intervention form. Instructions for electronic filing via the "PUC Filer" on the Commission's website can be found here: https://interchange.puc.texas.gov/filer. Instructions for using the PUC Filer are available at. https://ftp.puc.texas.gov/public/puct-info/industry/filings/E-Filing_Instructions.pdf. For assistance with your electronic filing, please contact the Commission's Help Desk at (512) 936-7100 or helpdesk@puc.texas.gov. You can review materials filed in this docket on the PUC Interchange at: http://interchange.puc.texas.gov/.

If you are unable to file your request for intervention electronically, you may file your request for intervention by mailing a hard copy of your request to the PUC. Mail the request for intervention to the following address:

Public Utility Commission of Texas
Central Records
Attn: Filing Clerk
1701 N. Congress Ave.
P.O. Box 13326
Austin, Texas 78711-3326

The deadline for intervention in the docket is **May 12, 2025**, and the PUC should receive a letter from anyone requesting intervention by that date.

Persons who wish to intervene in the docket must also mail a copy of their request for intervention to all parties in the docket and all persons that have pending motions to intervene, at or before the time the request for intervention is mailed to the PUC. In addition to the intervention deadline, other important deadlines may already exist that affect your participation in this docket. You should review the orders and other filings already made in the docket.

The only way to fully participate in the PUC's decision on where to locate the transmission line is to intervene in the docket. It is important for an affected person to intervene because the utility is not obligated to keep affected persons informed of the PUC's proceedings and cannot predict which route may or may not be approved by the PUC.

The PUC has developed a brochure titled "Guide for Landowners Affected by a New Electric Transmission Line Route". Copies of the brochure are available from Lone Star by calling Tracy Wieczorek or may be downloaded from the PUC's website at https://ftp.puc.texas.gov/public/puct-info/industry/electric/forms/ccn/Guide_for_Landowners_Affected_by_a_New_Electric_Transmission_Line_Route.pdf. The brochure includes sample forms for making comments and for making a request to intervene as a party in this docket. In addition to the contacts listed in the brochure, you may call the PUC at (512) 936-7120 or toll free at (888) 782-8477. Hearing- and speech-impaired individuals with text telephones (TTY) may contact the PUC at (512) 936-7136 or toll free at (800) 735-2989.

A detailed routing map may be downloaded from Lone Star's website at https://www.lonestartransmission.com/regulatory/bullock-station-to-aquilla-lake.html.

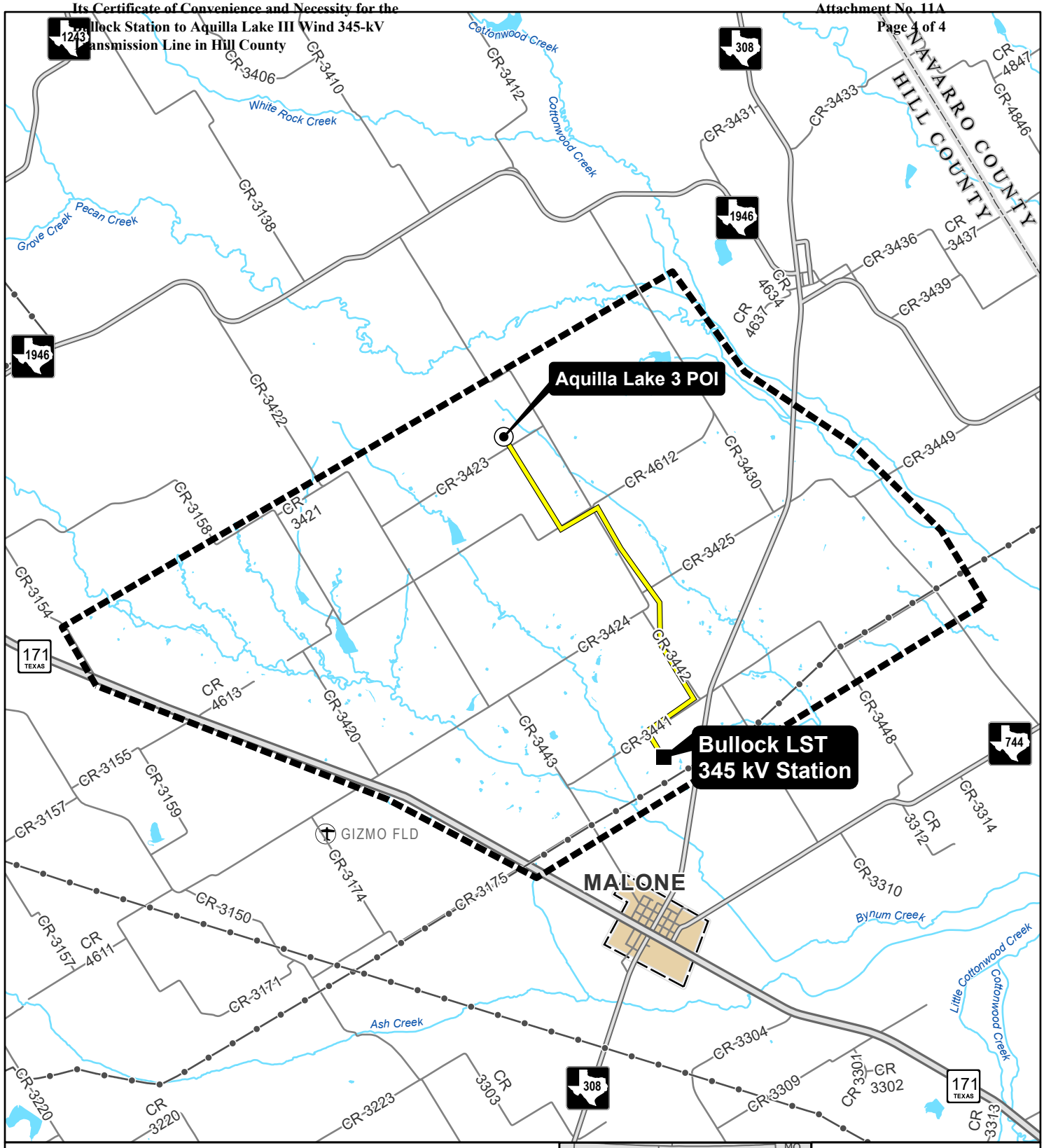
If you have questions about the transmission line, you may contact Lone Star representative Tracy Wieczorek at (512) 236-3151 (office) or (512) 517-8798 (mobile).

Consensus Route Description

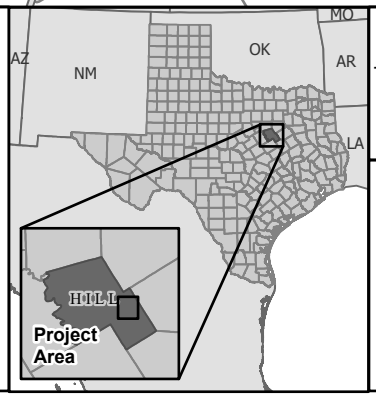
For this project, only a Consensus Route is filed in Lone Star's CCN. The following narrative, along with the map in this notice shows the route, provides a detailed description of the route.

The Consensus Route (Route) begins in the proposed Bullock LST 345 kV Station, located approximately 0.64 mile southwest of the intersection of Hill County Road (CR) 3441 and Farm-to-Market 308 (FM). After exiting the northwest side of the Bullock LST 345 kV Station, the

Route proceeds northwest for approximately 0.27 mile crossing Hill CR 3441. The Route then turns northeast for approximately 0.45 mile. The Route then turns northwest for approximately 0.50 mile. The Route then angles northeast for approximately 0.33 mile, crossing Hill CR 3442. The Route then angles northwest for approximately 0.53 mile, crossing Hill CR 3425, and then angles slightly north-northwest for approximately 0.37 mile. The Route then turns southwest for approximately 0.33 mile, crossing Hill CR 3424. The Route then turns northwest for approximately 0.86 mile, crossing Hill CR 3155 and Hill CR 3423. The Route terminates at the proposed Aquilla Lake III Point of Interconnection (POI) located approximately 2.66 miles west-southwest of the intersection of FM 1946 and FM 308.



- Project Station
- Point of Interconnect
- Consensus Route
- Study Area Boundary
- Existing Transmission Line
- State Highway
- Farm-to-Market Road
- County / Local Road
- Private Airstrip
- River / Stream
- Waterbody
- City Limit
- County Boundary



BULLOCK STATION TO AQUILLA LAKE III TRANSMISSION LINE PROJECT

CONSENSUS ROUTE

0 0.5 1 1.5 Miles

LONESTAR POWER ENGINEERS

Date: 1/14/2025

Newspaper Publication List

Notice of the CCN Application will be published in the following newspapers of general circulation in Hill County:

Hill County
The Hillsboro Reporter
335 Country Club Road
Hillsboro, Texas 76645-2318
(254) 582-3431
https://hillsbororeporter.com/

April 11, 2025

Mr. Alan Cain
Director of Wildlife
Wildlife Division
Texas Parks and Wildlife Department
4200 Smith School Road
Austin, Texas 78744

RE: PUC Docket No. 57836; *Application of Lone Star Transmission, LLC to Amend Its Certificate of Convenience and Necessity for the Bullock Station to Aquilla Lake III Wind 345-kV Transmission Line in Hill County*

Dear Mr. Silovsky:

Lone Star Transmission, LLC (Lone Star) gives notice that it has filed an application with the Public Utility Commission of Texas (PUC) to amend its Certificate of Convenience and Necessity (CCN) in the above-referenced docket. The new transmission line will be constructed between Lone Star's new Bullock Station, located approximately 0.64 mile southwest of the intersection of County Road (CR) 3441 and Farm-to-Market (FM) 308, and the Aquilla Lake III Point of Interconnection, located approximately 2.66 miles west-southwest of the intersection of FM 1946 and FM 308 in Hill County.

In accordance with the requirements of 16 Texas Administrative Code (TAC) § 22.52 and the PUC's CCN Application form, I have enclosed a copy of Lone Star's *Environmental Assessment for the Proposed Bullock Station to Aquilla Lake III Wind 345-kV Transmission Line Project*, which was prepared by POWER Engineers, Inc. and is Attachment 1 to Lone Star's CCN Application.

If you have questions about this project or Lone Star's CCN Application or Environmental Assessment, you may contact me at (512) 236-3151 (office) or (512) 517-8798 (mobile).

Sincerely,

Tracy Wieczorek

Tracy Wieczorek
Manager, Land Services
Lone Star Transmission, LLC
Office: (512) 236-3151
Mobile: (512) 517-8798
Email: tracy.wieczorek@lonestar-transmission.com

Enclosures:

- Lone Star's Environmental Assessment

AFFIDAVIT

STATE OF TEXAS

COUNTY OF TRAVIS

I, Robert Orr, being duly sworn, file this application as Director, Regulatory Affairs for Lone Star Transmission, LLC (Lone Star), that, in such capacity, I am qualified and authorized on behalf of Lone Star to file and verify such application, am personally familiar with the maps and attachments filed with this application, and have complied with all the requirements contained in the application; and that all statements made and matters set forth therein and all attachments thereto are true and correct. I further state that the application is made in good faith and that this application does not duplicate any filing presently before the Public Utility Commission of Texas.

Robert Orr
Director, Regulatory Affairs
Lone Star Transmission, LLC

SUBSCRIBED AND SWORN TO BEFORE ME,
a Notary Public in and for the State of Texas, this
the 1ST day of April, 2025.

Traci Denise Goldwire
Notary Public State of Texas
My Commission Expires: August 23, 2027

TRACI DENISE GOLDWIRE
Notary ID #132039710
My Commission Expires
August 23, 2027

Lone Star Transmission, LLC
Docket No. 57836
Question No. 13 - Estimated Cost Information

Consensus Route Costs	**Transmission Facilities**	**Substation Facilities**
Right-of-way and Land Acquisition	$880,000	$420,000
Engineering and Design (Utility)	$0	$0
Engineering and Design (Contract)	$718,000	$3,087,400
Procurement of Material and Equipment (including stores)	$5,150,000	$7,622,500
Construction of Facilities (Utility)	$0	$0
Construction of Facilities (Contract)	$7,262,000	$14,220,100
Other (all costs not included in the above categories)	$1,153,692	$1,816,308
Estimated Total Cost	**$15,163,692**	**$27,166,308**