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Attachment No. 1

July 2020

LONE STAR TRANSMISSION, LLC

Sam Switch to Hubbard Wind 345 kV Transmission Line Project
Environmental Assessment and Route Analysis

Hill County, Texas

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Sam Switch to Hubbard Wind 345 kV Transmission Line Project

PREPARED FOR: *LONE STAR TRANSMISSION, LLC*

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HOUSTON, TEXAS

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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
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
POWER	POWER Engineers, Inc.
Project	Sam Switch to Hubbard Wind 345 kV Transmission Line Project
PSS	palustrine shrub/scrub
PUC	Public Utility Commission of Texas
PURA	Public Utility Regulatory Act
ROW	right-of-way
RRC	Railroad Commission of Texas
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
US	United States
USACE	United States Army Corps of Engineers
U.S.C.	United States Code
USCB	United States Census Bureau
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
US Hwy	United States Highway

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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 Sam Switch to Hubbard Wind 345 kV Transmission Line Project (Project) will begin at the existing Sam Switch 345 kV Station (Sam Switch Station), which is located approximately three miles east of Abbott, Texas at the corner of County Road (CR) 3160 and CR 3165. From the Sam Switch Station, the new 345 kV line will extend approximately 15.3 miles in length to the proposed Hubbard Wind Collector Station to serve the approximately 300 megawatt (MW) Hubbard Wind Energy Center, located southwest of the City of Mount Calm, Texas and southeast of State Highway (SH) 31.

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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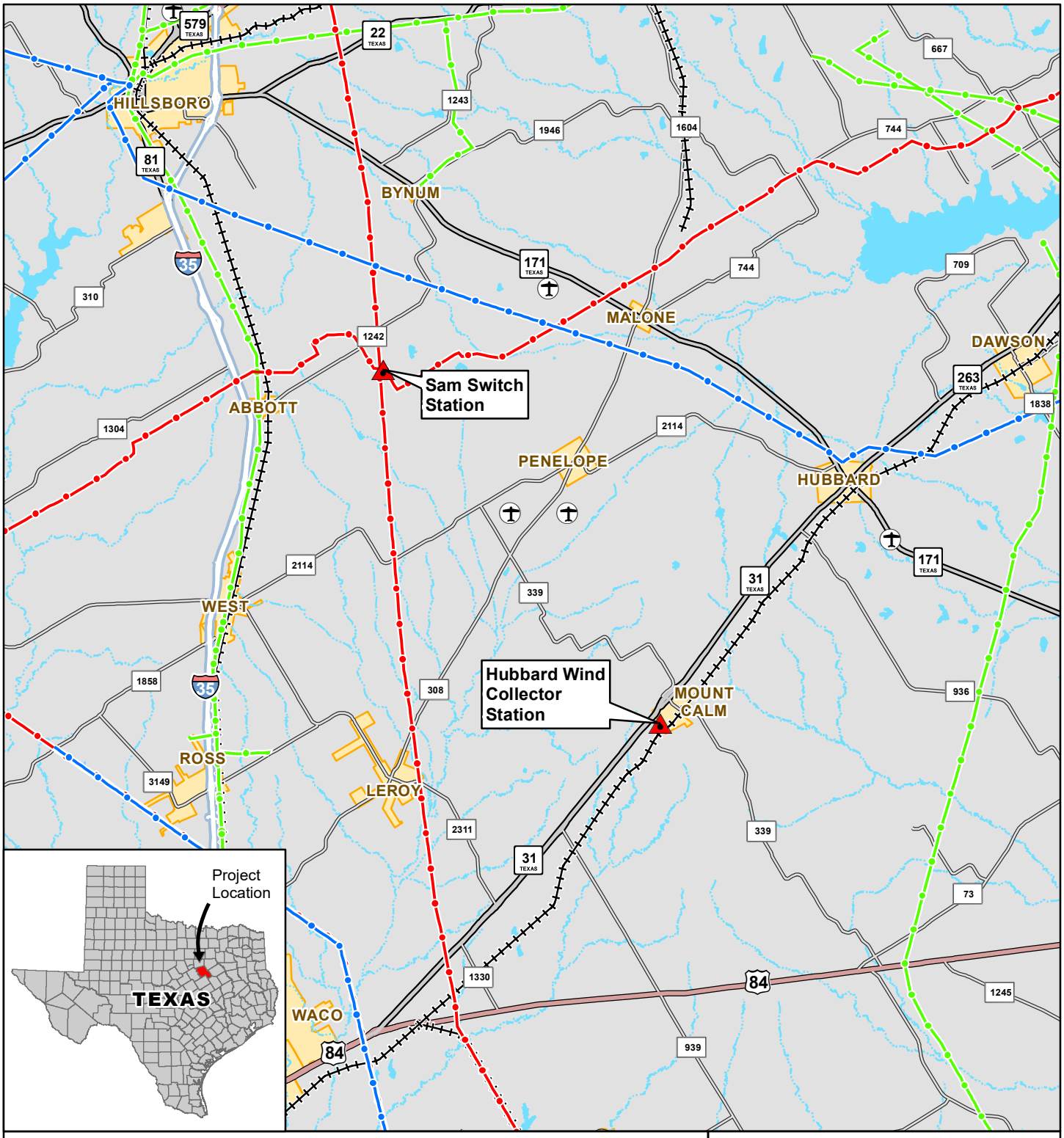

Project Features

- Project Station

Existing Utility Features

- 69 kV Existing Transmission Line
- 138 kV Existing Transmission Line
- 345 kV Existing Transmission Line

Transportation

- Interstate Highway
- US Highway
- State Highway
- FM Road
- Abandoned Railroad

Administrative Features

- City Boundary

Surface Waters

- River / Stream
- Waterbodies

SAM SWITCH TO HUBBARD WIND
345 kV TRANSMISSION
LINE PROJECT

Figure 1-1
Project Vicinity

0 1 2 3 4
Miles

LONEstar

POWER ENGINEERS

Date: 7/20/2020

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1.2 Purpose and Need

This proposed Project is necessary to directly interconnect a new transmission service customer, Hubbard Wind, LLC (aka Aquilla Lake Wind), into Lone Star's existing Sam Switch Station. Hubbard Wind has requested that Lone Star interconnect its proposed approximately 300 MW wind generation facility to Lone Star's Sam Switch 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 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 mono-pole 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

Easements along the entirety of the Consensus Route have been obtained by Hubbard Wind, with the exception of approximately 1.3 miles where the Project will utilize the open position on Lone Star's existing West Shackelford to Navarro 345 kV Transmission Line. The easements in this area are 100 to 130 feet wide. No additional easement width is needed to install the new circuit on the existing structures.

The new easements obtained by Hubbard Wind typically 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, easement width and span length could be more or less than the typical range depending on engineering considerations. If the Commission approves the Project, Hubbard Wind will assign the new easements to Lone Star.

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

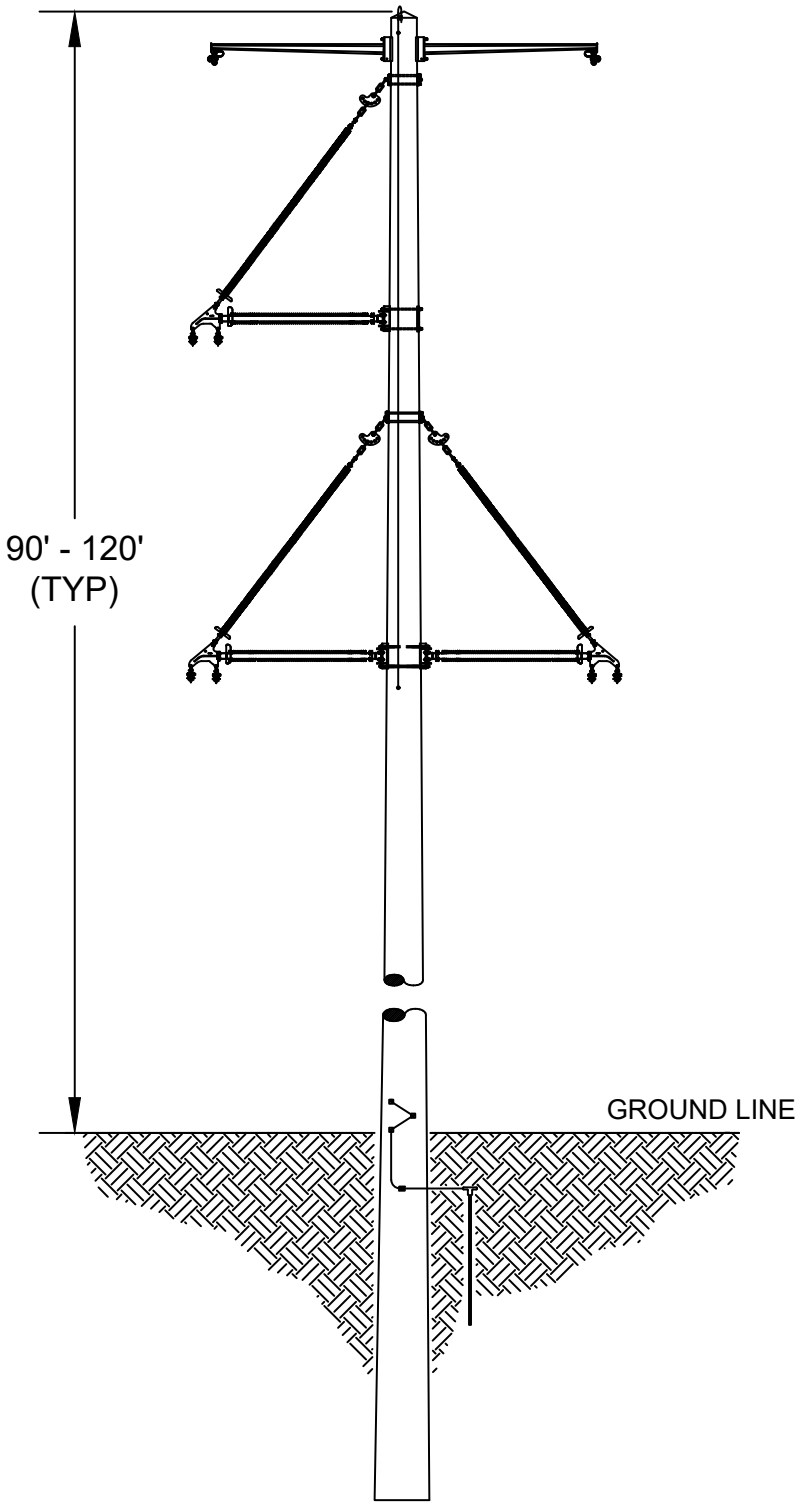
Projects of this type require surveying and ROW clearing, foundation installation, structure and insulator assembly, erection, conductor and shield wire installation, and overall site restoration when the Project is completed. The following information regarding these activities was provided to POWER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

1.4.1 Clearing

After regulatory approval and design of the transmission line are final, the easements will be transferred to Lone Star and ROW clearing activities will begin. Required clearing of the ROW will be performed by the construction contractor according to Lone Star clearing specifications under the direction of Lone Star. Available methods of disposal are mulching, brush piling, and salvaging. Trees in the ROW will be cleared to permit safe construction and operation of the line. Clearing will be accomplished to comply with North American Electric Reliability Corporation (NERC) reliability standards. Stumps will be cut approximately to ground level and left in place. 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. Temporary 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:

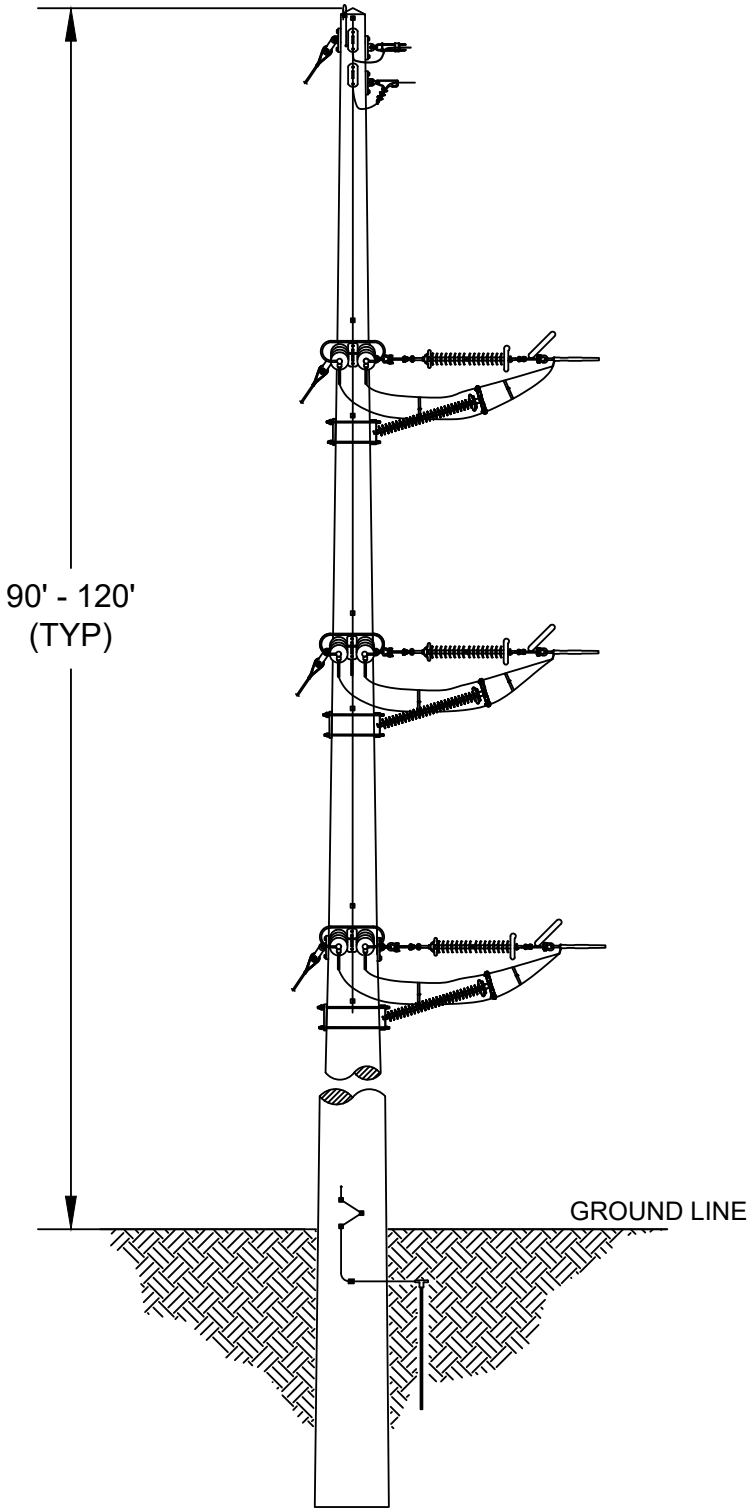
- The amount of flora and fauna disturbed during construction of the transmission line will be minimized, except to the extent necessary to establish appropriate right-of-way for clearance for the transmission line. In addition, re-vegetation will use native species and will consider landowner preferences 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 right-of-way, 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.



SAM SWITCH TO HUBBARD WIND 345 kV TRANSMISSION LINE PROJECT

Figure 1-2

Typical 345-kV Single Circuit
Tangent Structure



SAM SWITCH TO HUBBARD WIND 345 kV 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 direct 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 wire is then tensioned based on wire sag design characteristics. The wire is 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.
- Compliance 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 establish a protective vegetative cover, other restoration procedures will be used, such as the use of gravel, rocks, and/or concrete.
- 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 temporary roads are removed, 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 will 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.
- Compliance 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 a safe and reliable power line.

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 Texas Admin. Code (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 (US). 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 waters of the US, including associated wetlands. The intent of this law is to protect the "waters of the US" 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 numerous surface waters, including Briome Lake, Brookeen Creek, Brushy Creek, Mesquite Creek, Packwood Creek, Soil Conservation Service (SCS) Site 78 Reservoir, SCS Site 1 Reservoir, SCS Site 1a Reservoir, Tehuacana Creek, and Wolf Creek, and associated areas of potential wetlands 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, the construction of the Project will likely meet the

criteria for the Nationwide Permit (NWP) No. 12 - Utility Line Activities, which applies to activities associated with any cable, line, or wire for the transmission of electrical energy. A 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: 02ETAR00-2020-SLI-1850). 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 30 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 United States Department of Defense Siting Clearing House

The DoD 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. 16 TAC § 22.52 states that upon filing of the application, the DoD shall be notified and an affidavit attesting to the notification shall also be provided with the application. 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 May 5, 2020, the DoD was contacted about the proposed Project to provide notification and to solicit any input from the DoD about the Consensus Route. In addition, on May 29, 2020 and in accordance with 16 TAC § 22.52 (a)(4), public meeting notice was mailed to the DoD Siting Clearinghouse for the public meeting that was

held for the Consensus Route on June 11, 2020. The DoD Siting Clearinghouse responded to the invitation and requested project coordinates and transmission structure heights. On June 16, 2020, Lone Star sent the requested information to the DoD. A notice of the filing of the CCN application will be sent to the DoD 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). 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. Upon PUC approval of the route and prior to construction, surveys will be completed as necessary to identify any potentially suitable habitat for state-listed species. Additional coordination with TPWD may be necessary to determine the need for species-specific surveys and avoidance or mitigation measures to minimize potential impacts to sensitive habitats, 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 to identify the mapped 100-year floodplains within the study area. The study area is located within the mapped 100-year floodplain associated with Briome Lake, SCS Site 1 Reservoir, SCS Site 1a Reservoir, SCS Site 78 Reservoir, the mainstem and tributaries of Mesquite Creek, Wolf Creek, Brookeen Creek, Tehuacana Creek, and Brushy Creek, and unnamed tributaries of the Navasota River. The 100-year floodplain represents a flood event that has a one percent chance of being equaled or exceeded for any given year. The construction of the proposed transmission line is not anticipated to create any significant permanent changes in the existing topographical grades and will not significantly increase the stormwater runoff within the study area. Additional coordination with the Hill County floodplain administrator may be required after PUC route approval to determine if a permit is 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 specified by the TCEQ under the provisions of Section 402 of the CWA and Chapter 26 of the Texas Water Code. More than five acres of land disturbance is anticipated during construction of the Project for the Consensus Route; therefore, the construction will be considered a "Large Construction Project" under the

TXR150000 General Construction Permit. A Stormwater Pollution Prevention Plan (SWPPP) will be developed and implemented during construction activities, a site notice will be posted, and notification will be sent to the Municipal Separate Sewer System Operator (if applicable). The submittal of a Notice of Intent and Notice of Termination to the TCEQ is also required.

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 CFR Part 60) or under state guidance (TAC, Title 13, Part 2, Chapter 26.7-8). The Texas Historical Commission (THC) was contacted by POWER to identify known cultural resource sites within the study area. POWER also reviewed Texas Archeological Research Laboratory (TARL) records for known locations of cultural resource sites. Once the 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. Even if no additional surveys are required, 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 SHPO for additional consultation.

1.6.10 Texas Department of Transportation

The Texas Department of Transportation (TxDOT) has been notified of the proposed Project. Where the Consensus Route crosses TxDOT ROW, 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 ROW 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 well-being 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.

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 it relates 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 three miles east of the City of Abbott 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 oriented in a northwest to southeast direction with the existing Sam Switch Station located in the northwestern portion of the study area and the proposed Hubbard Wind Collector Station located in the southeastern portion of the study area. More specifically, the Sam Switch Station is located approximately three miles east of the City of Abbott at the corner of CR 3165 and CR 3160. The proposed Hubbard Wind Collector Station is to be constructed approximately 15.3 miles southeast of the Sam Switch Station, just east of Mount Calm near SH 31.

The northern boundary of the study area is defined by the location of the existing Sam Switch Station. The southern boundary of the study area is defined by the proposed location of the Hubbard Wind Collector Station. The western and eastern study area boundaries are defined to provide adequate room for evaluation of the Consensus Route.

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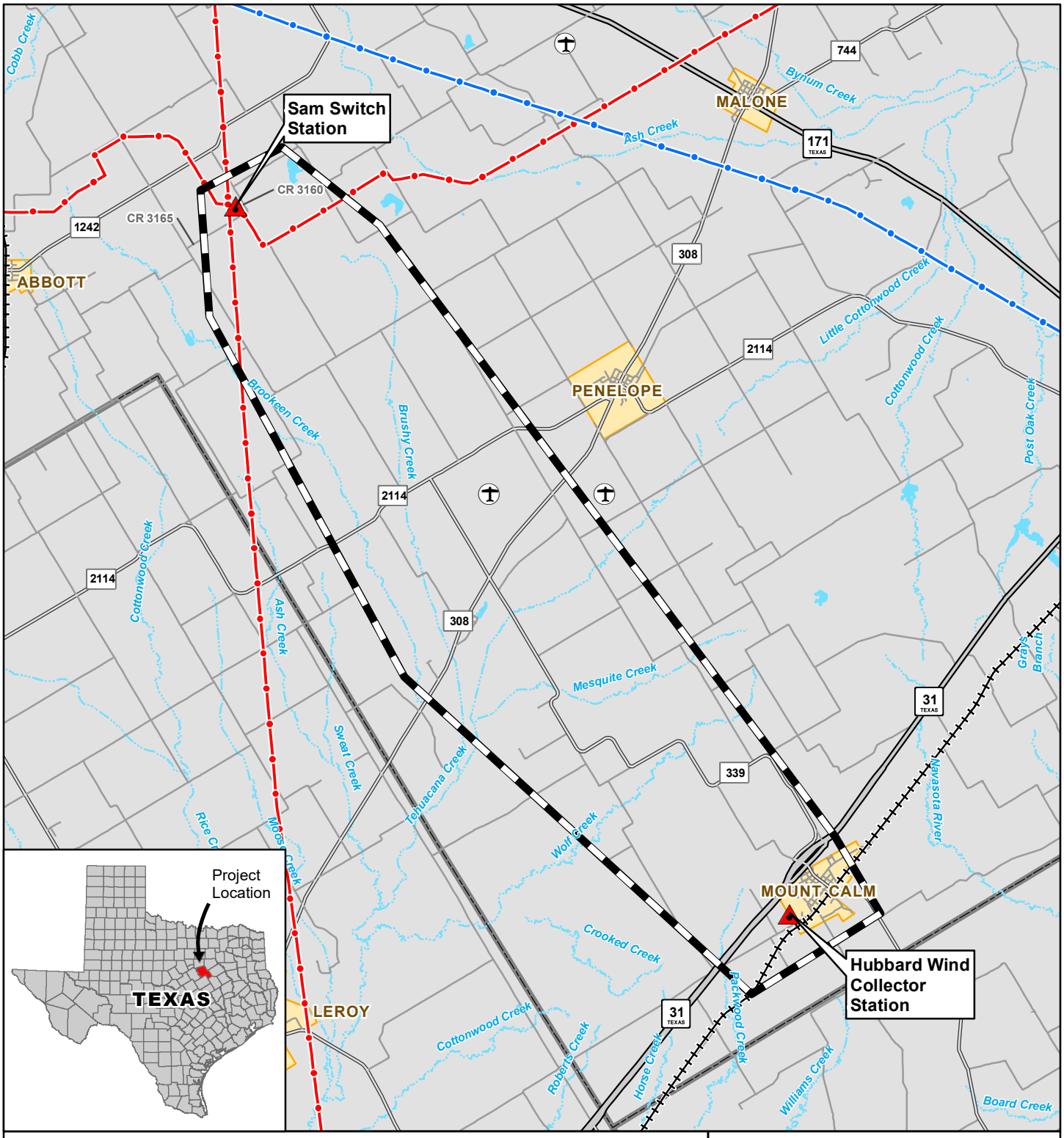

Project Features
- Project Station
- Study Area Boundary

Existing Utility Features
- 69 kV Existing Transmission Line
- 138 kV Existing Transmission Line
- 345 kV Existing Transmission Line

Transportation
- State Highway
- FM Road
- County Road
- Abandoned Railroad
- Airstrip

Administrative Features
- City Boundary
- County Boundary

Surface Waters
- River / Stream
- Waterbodies

SAM SWITCH TO HUBBARD WIND
345 kV TRANSMISSION
LINE PROJECT

Figure 2-1
Study Area

0 1 2 3 4
Miles

LONESTAR POWER ENGINEERS

Date: 7/20/2020

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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 (NAIP 2018), 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 County Roads [CRs], farm-to-market roads [FMs], US Highways [US Hwys], State Highways [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 2019), NHD, NWI maps, Texas Natural Resources Information System (TNRIS), Railroad Commission of Texas ([RRC] 2020a), 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 2020). USGS 7.5 minute topographic maps and aerial photography (NAIP 2018) 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 provide them with 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 May 5, 2020. 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:

- United States Army Corps of Engineers (USACE)
- United States Department of Defense Siting (DoD)
- United States Environmental Protection Agency (USEPA)
- United States Fish and Wildlife Service (USFWS)
- Federal Aviation Administration (FAA)
- Federal Emergency Management Agency (FEMA)
- Natural Resource Conservation Service (NRCS)
- 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 Historical Commission
- Hill County Officials (County Judge and Commissioners Court)
- Abbott Independent School District
- Bynum Independent School District
- Mount Calm Independent School District
- Penelope Independent School District
- 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 2020). POWER reviewed previously recorded archeological site information from TARL and reviewed the THC's Texas Archeological Sites Atlas (THC 2020a) for additional cultural resource information. Lone Star representatives also have been in communication with the City of Mount Calm. 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.

- FAA responded with a letter dated June 22, 2020, stating that if Lone Star is planning to sponsor any construction or alterations which may affect navigable airspace, a FAA Form 7460-1 must be filed electronically via a website. Lone Star will coordinate with the FAA as necessary once a route is approved for construction.
- The NRCS responded with a letter dated May 13, 2020, stating that the proposed site does not involve a United States Department of Agriculture-NRCS Wetland Reserve Easement and they provided a Custom Soil Resources Report. They also recommended the use of erosion controls during construction.
- FEMA responded with a letter dated June 1, 2020, requesting that the study area community floodplain administrator be contacted for the review of 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 responded with an email dated May 21, 2020, stating that the Project had been assigned a project number and a regulatory project manager.
- The USACE Fort Worth District also responded with an email dated June 1, 2020, stating that the Project had been reviewed under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899 regulating the discharge of dredged and fill material into waters of the US. They also stated that they were unable to determine whether a general permit, such as a Nationwide Permit 39, may be required.
- On June 2, 2020, POWER contacted Katie Roeder (Regulatory Specialist) with the USACE – Fort Worth District to seek clarification regarding a previous email message Ms. Roeder sent to POWER on June 1, 2020. In the June 1 message, Ms. Roeder stated that a Nationwide Permit No. 39 was anticipated for the Project. This message conflicted with information recently received by POWER from the USACE - Fort Worth District regarding recent changes to utilization of the Nationwide Permit No. 12. After POWER contacted Ms. Roeder, it was confirmed that the June 1 message contained an error and a Nationwide Permit No. 12 will be anticipated for the Consensus Route.

- The USFWS Arlington Ecological Services Field Office responded with a letter dated May 7, 2020, providing a list of the federally-listed threatened, endangered, and candidate species for the study area county. The USFWS also provided the definitions of the Section 7 impact determinations and referenced the BGEPA. The letter stated there was no critical habitat in the Study Area.
- The USFWS responded with a letter dated July 21, 2020, stating their concern for stream and wetland crossings, fragmentation of bottomland and forested uplands, avian collisions with powerlines, and the whooping crane migration corridor. They recommend that all construction activities be carefully designed to avoid and /or minimize impact fish and wildlife resources to the maximum extent practicable and the use of the IPaC planning tool.
- The Texas GLO responded with a letter dated May 28, 2020, stating that the Texas GLO does not appear to have any environmental or land use constraints associated with the Project. The Texas GLO also requested contact when a final route has been determined in order to determine if the Project crosses any Permanent School Fund land or streambeds that would require an easement.
- TxDOT's Waco District office responded with an email dated May 8, 2020, stating they would provide an EA for the SH 31 project in Hill County through a Dropbox Service site. The Dropbox link was provided in a second email dated May 11, 2020.
- The THC responded with an email dated June 1, 2020, stating that no further review of potential effects to above-ground historic resources is required under the Antiquities Code of Texas. They also requested a more detailed map and information regarding the ROW width and height of the transmission towers.
- The TPWD responded with a letter dated May 26, 2020 and provided a list of regulations pertaining to the Project and a number of standard recommendations for the Project to comply with these regulations. The TPWD requested that they be provided with a copy of the Project's EA prior to submittal to the PUC as part of the CCN application process. The regulatory process at the PUC requires such submission to TPWD.
- Penelope Independent School District responded with an email dated May 21, 2020, stating that they were not aware of any major construction project or environmental and/or land use constraints within the study area.

2.5 Public Involvement Program

Due to the health and safety precautions associated with the COVID-19 virus, and following discussion with PUC staff, Lone Star hosted a public meeting over the Internet and via telephone with the directly affected landowners and landowners having property within 500 feet of the centerline of the Consensus Route to solicit comments, concerns, and input from residents, landowners, and other interested parties. The meeting was held on June 11, 2020 at 7:00 p.m.

In addition to gathering public input, the purpose of the meeting was to:

- Promote a better understanding of the proposed Project, including the purpose and need for the Project, the benefits and potential impacts of the new transmission line, and the PUC regulatory approval process.
- Inform and educate the public about the routing procedure, schedule, and POWER and Lone Star's route selection process.
- Allow the decision-making process to adequately identify and consider the values and concerns of the landowners and other interested parties in the community.

A public meeting notice was mailed to landowners who own property located within 500 feet of the Consensus Route centerline. A total of 55 notices were mailed to landowners and entities making them aware of the public meeting. Each notice also included a map of the study area depicting the Consensus Route, directions on how to join the online public meeting, a list of Sam Switch to Hubbard Wind Project Frequently Asked Questions (FAQs), and a Project questionnaire. An example of the notice letter and copies of the attachments are provided in Appendix B.

The virtual public meeting started with an explanation of how the meeting would be facilitated and how attendees could participate and ask questions over the Internet or the telephone. Once the meeting format was explained a Lone Star representative provided an overview of the Project and then continued with an explanation of the route approval process and presented a bird's eye view map of the Consensus Route along with a verbal explanation that more detailed routing maps (19 individual maps at a scale of 1 inch = 300 feet) would be available to assist with the question and answer session at the end of the presentation. Pictures and descriptions of the proposed transmission structures and ROW were provided. A description of the options and easements status was described and Lone Star provided a potential list of activities that contractors might perform on their properties. An overview of Lone Star's typical construction activities and operations and maintenance procedures was also presented. The anticipated schedule was shown and explained and contact information for Lone Star personnel was provided for interested parties if they have additional questions or if they wish to obtain additional information. Subject matter experts with expertise in land and ROW easements, engineering design and construction, environmental issues, project management, legal and regulatory, and its environmental consultant (POWER) were available to answer questions.

Lone Star also developed a Project website where all materials presented at the online meeting were posted. The website (http://www.lonestartransmission.com/sam-switch-to-hubbard-wind.html) allowed those that could not attend the online event the opportunity to view Project information. An email address and phone number of a Lone Star representative was provided in the letter and on the website if a landowner had any questions.

Online Public Meeting

A total of 12 individuals attended the online public meeting. Two questions were asked during the meeting and two more questions were submitted as the meeting was ending. After the meeting concluded, no additional questions were submitted over the Q&A portal that was available for attendees to submit questions. Additionally, Lone Star followed up with meeting participants by sending them a letter to thank them for attending the public meeting and to encourage them to contact Lone Star if they had any questions. The letter also reminded attendees that the information presented at the public meeting was available for viewing as were detailed maps of the Consensus Route.

Post-Public Meeting

Following the online public meeting, Lone Star received several calls from landowners asking about the Project. Inquiries were relative to the location of the Consensus Route. Additionally, Lone Star made follow up calls to the Hill County Judge and to the Mayor of the City of Mount Calm to answer questions and provide additional information about the project. Lone Star did not receive any project questionnaires following the public meeting.

Additional Landowner Involvement

Prior to the online open public meeting, Hubbard Wind engaged with the directly affected landowners along the proposed Project and worked with the landowners to acquire easements for the Consensus Route. During this process, Hubbard Wind provided Lone Star engineers and environmental experts, as well as POWER, the landowners' input. This process enabled Lone Star to greatly refine the Consensus Route prior to submission to the PUC for review and approval.

Lone Star worked with several landowners who have habitable structures within 500 feet of the centerline of the Consensus Route to obtain their consent for the project. Of the six landowners having habitable structures located within 500 feet of the centerline, two have granted an easement for the transmission line on their property. Two landowners not crossed by the transmission line but having habitable structures within 500 feet provided written consent.

In addition, Lone Star has coordinated with two landowners whose land is currently crossed by Lone Star's Sam Switch to Navarro transmission line where the Hubbard Wind circuit will be installed on existing structures. These landowners' existing easements authorize the installation of the second circuit.

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]
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

TABLE 2-1 LAND USE AND ENVIRONMENTAL EVALUATION CRITERIA

EVALUATION CRITERIA
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
Number of additional recorded cultural resource sites within 1,000 feet of ROW centerline
Number of National Register of Historic Places (NRHP) listed properties crossed by ROW
Number of additional NRHP listed 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 2020b formerly known as the Airport/Facility Directory South Central U.S.) and FAA 2020a.
[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 May 1, 2020 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.

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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 and includes the City of Mount Calm and the unincorporated community of Birome.

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 photographs, USGS topographical maps, 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. Development in the study are is predominantly low intensity, associated with large parcels. No developed medium or high intensity areas are present within the study area. Habitable structures were identified using aerial photographs (Esri World Imagery 2017; NAIP 2018), Google Earth (2019), 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 four Independent School Districts: Mount Calm, Penelope, Abbott, and Bynum. One school, Mount Calm High School, was identified within the study area in the City of Mount Calm (TEA 2020).

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 county website was reviewed, and correspondence was submitted to local and county officials to identify potential planned land use conflicts. Neither the City of Mount Calm nor Hill County has a comprehensive land use plan. Hill County is within the Heart of Texas State Planning Region and is a member of the Heart of Texas Council of Governments (Heart of Texas Council of Governments 2020).

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 land trusts facilitate the conservation easement and ensure compliance with the specified terms and conditions.

A review of numerous non-governmental groups (*e.g.*, The Nature Conservancy, Texas Land Conservancy, and the National Conservation Easement Database) that are land trusts and databases for conservation easements in Texas indicated no conservation easements within the study area (The Nature Conservancy 2020; Texas Land Conservancy 2020; National Conservation Easement Database 2020).

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 2020).

3.3.3 Agriculture

Agriculture is a significant segment of the economy throughout Texas, and the study area counties have active agricultural sectors. According to the USDA's National Agricultural Statistics Service's 2017 Census of Agriculture, the total market value for agricultural products sold within Hill County was $114,001,000, a five percent decrease from the 2012 market value of $119,939,000. Crop sales accounted for the majority of agricultural sales in Hill County at 57 percent in 2017 with grains, oilseeds, drybeans, and dry peas accounting for

the majority of crop sales at $51,572,000. The number of farms in the Hill County increased from 1,884 in 2012 to 2,003 in 2017 (an increase of 6.0 percent) (USDA 2012 and 2017).

3.3.4 Oil and Gas Facilities

Data was obtained from the RRC (RRC 2020a) which provided a GIS layer for existing oil and gas wells, pipelines, and supporting facilities. Data point categories were reviewed and included the following types: permitted locations, oil, gas, injection/disposal, shut-in, water supply, cancelled, and sidetrack well surface locations. The 2020 RRC dataset along with aerial photograph interpretation and field reconnaissance were used to identify and map existing oil and gas related facilities.

Oil and gas wells are scattered throughout the study area, the highest concentration is along the SH 31 corridor. Additionally, one pipeline was identified within the study area traveling west to east through the northern portion of the study area (RRC 2020a; Platts 2020).

3.3.5 Transportation/Aviation/Utility Features

Transportation Features

Federal, state, and local roadways were identified using TxDOT county transportation maps and field reconnaissance surveys. The roadway transportation system within the study area includes SH 31, FM 308, FM 339, and FM 2114. Numerous county and local paved and unpaved roads are also present throughout the study area (TxDOT 2020a).

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 there are three roadway maintenance projects planned within the study area in the next 10 years: rehabilitation of existing roadway on FM 339; the addition of seal coat on SH 31; and preventative maintenance on FM 308. Additionally, FM 2114 is undergoing roadway widening (TxDOT 2020b).

One abandoned railroad was identified within the southern portion of the study area through Mount Calm (United States Department of Transportation 2020; Google Earth 2019).

Aviation Features

POWER reviewed the San Antonio Sectional Aeronautical Chart (FAA 2020a) and the Chart Supplement for the South Central US (formerly the Airport/Facility Directory) (FAA 2020b) to identify FAA registered facilities within the study area subject to notification requirements listed in 14 CFR Part 77.9. Facilities subject to notification requirements listed in 14 CFR Part 77.9 include public-use airports listed in the Airport/Facility

Directory (currently the Chart Supplement[1]), 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.

No public-use or military FAA registered airports were identified within the study area or within the FAA notification buffer (FAA 2020b). Also, no public-use heliports or heliports with an instrument approach procedure are listed for the study area in the Chart Supplement for the South Central US (FAA 2020b).

In addition, POWER also reviewed the FAA database (FAA 2020c), USGS topographic maps, recent aerial photography, and field reconnaissance from publicly accessible areas to identify private-use airstrips and private-use heliports not subject to notification requirements listed in 14 CFR Part 77.9. There were two private-use airstrips identified within the study area, The Landing (FAA 2020c) and an unknown private airstrip identified in aerial imagery (Google 2019).

Utility Features

Utility features reviewed include existing electrical transmission lines, distribution lines, water wells, and water storage tanks. Data sources used to identify existing electrical transmission and distribution lines include utility company and regional system maps, aerial imagery, USGS topographic maps, additional available planning documents, and field reconnaissance surveys. Two existing transmission lines were identified within the study area. Both existing 345 kV transmission lines are in the northern portion of the study area (Platts 2020). Distribution lines may be prevalent throughout developed portions of the study area; however, these features were not mapped or inventoried.

Four water wells were identified with in the study area, three of which are categorized as public supply water wells (TWDB 2020a).

3.3.6 Communication Towers

Review of the Federal Communication Commission (FCC) database indicated that there are no AM radio transmitters identified within the study area boundary or within 10,000 feet of the study area boundary. Two FM radio transmitters/microwave towers/other electronic installations were identified within the study area. No additional FM radio transmitters/microwave towers/other electronic installations were identified within 2,000 feet of the study area boundary (FCC 2018).

[1] The Chart Supplement for the South Central US used in conjunction with the San Antonio Sectional Aeronautical Chart, 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 US Terminal Procedures Publication.

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 church. 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 (National Parks Service [NPS] 2020a; TPWD 2020a).

One local park, Mount Calm City Park, was identified within the study area in the City of Mount Calm (Google Earth 2019).

No TPWD public hunting areas or wildlife management areas were identified within the study area (TPWD 2020b and 2020c). 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

A 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 2020d).

3.4 Socioeconomics

The study area covers approximately 40 square miles in Hill County. This section presents a summary of economic and demographic characteristics for this 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 2000 and 2010 of 8.6 percent. By comparison, population at the state level increased by 20.6 percent during the 2000s (USCB 2000 and 2010a). According to TXSDC projections, Hill County is projected to experience population increase between 2010 and 2020 and population decrease between 2020 and 2040. The population increase between 2010 and 2020 are projected to be 1.6 percent, between 2020 and 2030 the population is projected to decrease by 1.6 percent, and between 2030 and 2040 population is projected to decrease by 4.6 percent in Hill County. By comparison, the population of Texas is

expected to experience increases of population increases of 18 percent, 17.6 percent, and 16.9 percent over the same time periods, respectively (TXSDC 2018). Table 3-1 presents the past population trends and projections for Hill County and for the state of Texas.

TABLE 3-1 POPULATION TRENDS

	PAST		PROJECTED		
STATE/COUNTY	2000	2010	2020	2030	2040
Texas	20,851,820	25,145,561	29,677,772	34,894,429	40,686,490
Hill County	32,321	35,089	35,673	35,117	33,493

Sources: USCB 2000 and 2010a; TXSDC 2018.

3.4.2 Employment

From 2010 to 2018, the civilian labor force (CLF) in Hill County increased by 2.9 percent (456 people). By comparison, the CLF at the state level grew by 14.8 percent (1,765,783 people) over the same time period (USCB 2010b and 2018).

Between 2010 and 2018, Hill County experienced an increase in its unemployment rate from 6.7 percent in 2010, to 7.6 percent in 2018. By comparison, the state of Texas experienced a decrease in the unemployment rate over the same period. The state's unemployment rate decreased from 7.0 percent in 2010, to 5.4 percent in 2018 (USCB 2010b and 2018). Table 3-2 presents the CLF, employment, and unemployment data for Hill County and the state of Texas for the years 2010 and 2018.

TABLE 3-2 CIVILIAN LABOR FORCE AND EMPLOYMENT

STATE/COUNTY	2010	2018
Texas		
Civilian Labor Force	11,962,847	13,728,630
Employment	11,125,616	12,985,624
Unemployment	837,231	743,006
Unemployment Rate	7.0%	5.4%
Hill County		
Civilian Labor Force	15,668	16,124
Employment	14,619	14,899
Unemployment	1,049	1,225
Unemployment Rate	6.7%	7.6%

Source: USCB 2010b and 2018.

3.4.3 Leading Economic Sectors

The major occupations in Hill County in 2018 are listed under the category of management, business, science, and arts occupations, followed by sales and office occupations (USCB 2018). Table 3-3 presents the number of persons employed in each occupation category during 2018 in the county.

TABLE 3-3 OCCUPATIONS IN THE STUDY AREA COUNTY

OCCUPATION	HILL COUNTY
Management, business, science, and arts occupations	3,730
Service occupations	2,713
Sales and office occupations	3,222
Natural resources, construction, and maintenance occupations	2,150
Production, transportation, and material moving occupations	3,084

Source: USCB 2018.

In 2010 and 2018, the industry group employing the most people in Hill County was educational services, and health care and social assistance (USCB 2018). Table 3-4 presents the number of persons employed in each of the industries in the Hill County for the years 2010 and 2018.

TABLE 3-4 INDUSTRIES IN THE STUDY AREA COUNTY

INDUSTRY GROUP	HILL COUNTY	
	2010	2018
Agriculture, forestry, fishing and hunting, and mining	836	905
Construction	1,766	1,425
Manufacturing	1,666	1,698
Wholesale trade	363	186
Retail trade	1,819	2,048
Transportation and warehousing, and utilities	1,229	1,104
Information	105	135
Finance and insurance, and real estate and rental and leasing	662	665
Professional, scientific and management, and administrative and waste management services	712	993
Educational services, and health care and social assistance	2,930	3,060
Arts, entertainment, and recreation, and accommodation and food services	1,100	1,452
Other services, except public administration	788	590
Public administration	643	638

Source: USCB 2010b and 2018.

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 distance 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 distance from the centerline documented, but they need not be shown on maps for the protection of the site. Sources consulted to identify known sites (national, state, or local commission) shall also be listed.

The THC is the state agency 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 restricted-access cultural resource information from the THC's on-line Texas Archeological Sites Atlas (TASA) (THC 2020a and 2020b), to identify and map the locations of previously recorded cultural archeological resources within the study area. Previously recorded cultural resource site data available online from the Texas Historical Site Atlas (THSA) (THC 2020b) were also obtained to identify locations of designated historical sites, cemeteries, and Official Texas Historical Markers (OTHM) within the study area. TxDOT's historic bridges database was also reviewed for bridges that are listed or determined eligible for listing on the NRHP (TxDOT 2020c). At the national level, the NPS website and data centers were reviewed to identify locations and boundaries for nationally designated historic landmarks, trails and battlefield monuments (NPS 2020a, 2020b, and 2020c).

Together, archeological and historical sites are often referred to as cultural resources. Under the NPS's 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.

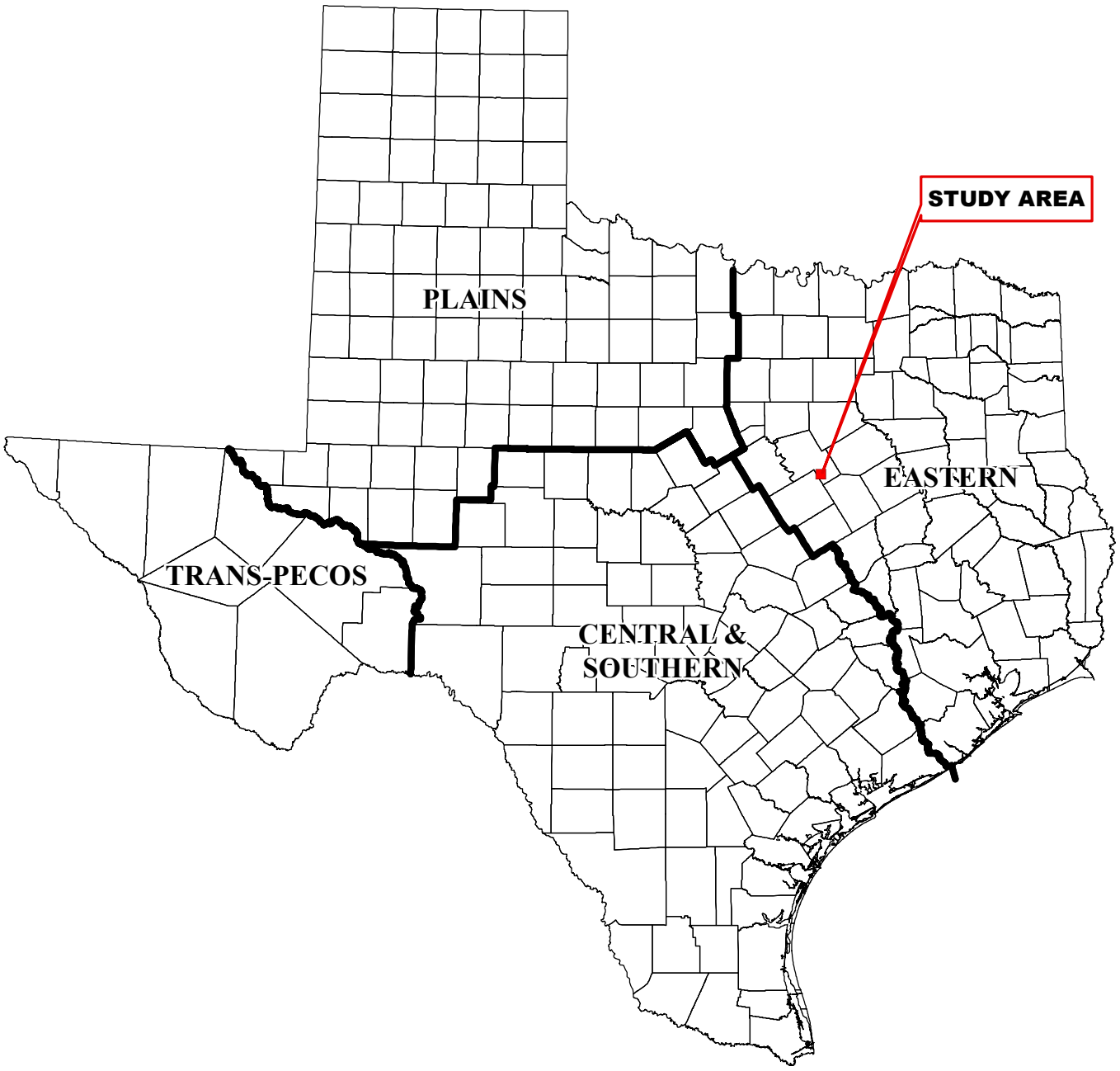
Cemeteries are places of intentional human interment and might include large public burial grounds with multiple burials, small family plots with only a few burials, or individual grave sites. In some instances, cemeteries might be designated as Historic Texas Cemeteries by the THC and might be recognized 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 study 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 Hill County; 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 A.D. 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, during 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 (11,500 to 9,000 years before present (BP); the long-lasting Archaic Period (9,000 to 1300 BP); and the Late Prehistoric Period (from 1300-400 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.



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Data Source: Mercado - Allinger et. al. 1996

Date: 7/7/2020

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Project Location

Cultural Resource Planning Region Boundary

County Boundary

SAM SWITCH TO HUBBARD WIND
345 kV TRANSMISSION
LINE PROJECT

Figure 3-1
Location of the Study Area In Relation to the Cultural Resources Planning Regions of Texas

Paleoindian (ca. 11,500 to ca. 9,000 years before present [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. 9,000 to 1,300 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 (9,000 to 6,000 BP), Middle (6,000 to 4,000 BP), and Late (4,000 to 1,300 BP) sub-periods.

Early Archaic (9,000 to 6,000 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 (6,000 to 4,000 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 8,000-4000 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 (4,000 to 1,250 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 (1,250 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 these similar ceramic traditions, including shell and grog tempering, were ubiquitous throughout the Southern Plains region (Ferring and Yates 1997), and 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 and 2018). Almost 15 percent of the known sites or collections in central Texas with Caddo ceramics are in Hill County (Perttula 2018).

Historic Period (ca. 400 to 50 BP)

The beginning of the Historic 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 Hill County arrived in the late 1800s, the native populations had already been decimated by diseases spread by Europeans, and pressures from other native groups moving south and west. French explorer Pedro Vial was commissioned by the Spanish government to establish a route from San Antonio to Santa Fe in 1786, and 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 2020). In 1801, the first Anglo-American camp was established in this region 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 2020).

Intensive occupation of this region began in the 1820s under the Mexican government. Both Stephen F. Austin and Sterling Clack Robertson were granted permission to colonize parts of Texas, and both men claimed the area that is now Hill County. Robertson ultimately received the first land grant to include the area in 1825. 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 the dispute between Robertson and Austin (Austin 2020).

Soon after Texas gained its independence from Mexico, Hasinai and Anadarko groups migrated from East Texas, and under Anadarko chief José María settled in the Hill County area (Austin 2020). 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 2020), and one such trading post was established amongst the newly settled Hasinai and Anadarko (Austin 2020). An outpost built in 1849 by the Texas Rangers was also established for the protection of the inhabitants of this region, and it was recorded that no Comanche raids took place in the region of Hill County despite hundreds of raids in the adjacent regions (Austin 2020).

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 2020).

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 2020). Martial law was established in the county in 1871 after a married couple, who were formerly slaves, were murdered. One of the suspects was a son of the county's most prominent landowner, and the family prevented Texas State Police, an agency created primarily to investigate racially based crimes in Texas, 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 2020). 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 the county (Austin 2020).

During the 1870s, Hill County relied predominantly on the cattle industry as the Chisholm Trail, a massive route for livestock leading from South Texas to Kansas (Worcester 2020), crossed the northwest corner of the county (Austin 2020). The ranching industry gradually gave way to a 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 2020). Later, in 1883, the St. Louis and Southwestern Railroad was constructed through the county. Within the study area, the community of Mount Calm was relocated to its current location on the railroad, and the Mount Calm Methodist Church erected a sanctuary now commemorated in an OTHM (THC 2020b). Nearby, the First Baptist Church of Mount Calm was relocated to Mount Calm in 1884, also commemorated in an OTHM (THC 2020b).

Hill County went through an economic revival in the decades after the railroads were constructed until the Great Depression. The population nearly doubled during the 1880s and again in the 1890s, until it reached a peak in 1910, numbering 46,760. The community of Birome, within 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 2020). After 1910, these numbers began to decline due to the boll weevil infestation, which were resistant to the anti-pest practices known at the time (Wagner 2020), and the imminent Great Depression (Austin 2020).

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. 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 (Austin 2020).

Plastic, copper, and furniture plants were established in the 1950s, and many people left farms to fill these industrial roles. The population continued to decline, however, until it reached its lowest in 1970. Despite losses in manufacturing jobs, especially those related to cotton by-products such as textiles, that were gradually replaced by synthetic options, cotton and cotton related industries continued to support the economy. Ultimately, the retail industry that grew with the slowly growing population dominated the economy, along with a burgeoning medical industry in the 1980s (Austin 2020).

3.5.2 Literature and Records Review

Historical and archeological data for the study area were reviewed online through the TASA (THC 2020a), THSA (THC 2020b), and TARL. GIS shapefiles identifying the locations of previously recorded archeological sites were obtained from TARL on March 28, 2019 and used to map archeological site locations within the study area. This location data was updated via the TASA on March 28, 2020 (THC 2020a). Previously recorded cultural resource site data available online from the THSA (THC 2020b) were obtained to identify locations of designated historical sites, State Antiquities Landmarks, cemeteries, Historic Texas Cemetery (HTCs), and OTHMs within the study area, as well as previously conducted cultural resource investigations (THC 2020a). The TxDOT historic bridges database was also reviewed for bridges that are listed or determined eligible for listing on the NRHP (TxDOT 2020c). The NPS databases and websites pertaining to NRHP, National Historic Trails, and

National Historic Landmark properties were also reviewed to locate and define boundaries for historic properties recorded at the national level (NPS 2020a and 2020c). The results of the review are summarized in Table 3-5.

TABLE 3-5 CULTURAL RESOURCES RECORDED WITHIN THE STUDY AREA

ARCHEOLOGICAL SITES	NRHP-LISTED RESOURCES	STATE ANTIQUITIES LANDMARKS	CEMETERIES	HTCs	OTHM
21	0	0	4	1	3

Source: THC 2020a and 2020b.

The review of the TASA (THC 2020a) and TARL data indicates that 21 archeological sites have been previously recorded in the study area (see Table 3-6). Of these, 15 are prehistoric in age, five are historic, and one contains historic and prehistoric components. One of the prehistoric sites, 41HI95, a Late Archaic campsite, has been determined ineligible for listing on the NRHP; the remaining sites have not been formally assessed for listing on the NRHP. Nine prehistoric campsites, three lithic scatters, one lithic procurement site, and one campsite/lithic procurement site comprise the remaining prehistoric sites. One of the prehistoric campsites, 41HI88, also has a historic scatter component. Four additional scatters of artifacts and one historic farmstead with collapsed structures are also recorded in the study area.

TABLE 3-6 ARCHEOLOGICAL SITES RECORDED WITHIN THE STUDY AREA

TRINOMIAL	DETERMINAITON	PERIOD	DESCRIPTION
41HI80	Undetermined	prehistoric	lithic scatter of debitage
41HI81	Undetermined	prehistoric	lithic procurement site with tested cobbles and debitage
41HI82	Undetermined	prehistoric	lithic procurement and campsite with tested cobbles, debitage, burned rock
41HI83	Undetermined	prehistoric	campsite with burned rock, bone, antlers, and debitage
41HI84	Undetermined	prehistoric	campsite with burned rock, bifaces, and debitage
41HI85	Undetermined	prehistoric	campsite with burned rock, a core, and debitage
41HI86	Undetermined	prehistoric	campsite with bifaces, scrapers, bones, antlers, and debitage
41HI87	Undetermined	prehistoric	campsite with burned rock and debitage
41HI88	Undetermined	prehistoric/historic	campsite with burned rock, projectile points, bifaces cores, and debitage/historic homestead with glass bottle and ceramics
41HI89	Undetermined	prehistoric	campsite with hearth, burned rock
41HI90	Undetermined	prehistoric	campsite with burned rock, a core, and debitage
41HI91	Undetermined	prehistoric	campsite with burned rock, mussel and snail shells, and debitage
41HI92	Undetermined	prehistoric	lithic scatter of projectile points, a core, and debitage

TABLE 3-6 ARCHEOLOGICAL SITES RECORDED WITHIN THE STUDY AREA

TRINOMIAL	DETERMINAITON	PERIOD	DESCRIPTION
41HI93	Undetermined	prehistoric	campsite with burned rock, groundstone, and debitage
41HI95	Ineligible	Late Archaic	campsite with burned rock, mussel shell, cores, tools, debitage, and Bulverde-like and Edgewood-like projectile points
41HI96	Undetermined	prehistoric	lithic scatter of one biface and debitage
41HI294	Undetermined	historic	eroding historic grave
41HI314	Undetermined	historic	artifact scatter of glass shards, ceramic sherds, and metal
41HI315	Undetermined	historic	artifact scatter of glass shards, ceramic sherds, and metal
41HI319	Undetermined	historic	artifact scatter of glass shards, ceramic sherds, and metal
41HI320	Undetermined	historic	farmstead site with two collapsed structures and scatter of red brick, glass shards, ceramic sherds, and metal

Source: THC 2020a.

Four cemeteries are recorded within the study area (see Table 3-7). One of the cemeteries, the Mesquite Cemetery, is designated an HTC. The Mesquite Cemetery, currently in use, has graves dating as far back as 1882 (THC 2020b). Although not designated an HTC, the Mount Hope Cemetery contains graves dating between 1886 and 1923. Although recorded as an archeological site, 41HI294 is also a cemetery, as Texas laws define a cemetery as a "place that is used or intended to be used for interment, and includes a graveyard, burial park, mausoleum, or any other area containing one or more graves."

TABLE 3-7 CEMETERIES RECORDED WITHIN THE STUDY AREA

CEMETERY NUMBER	NAME	DESGINATION	COUNTY
HI-C064	Tobola Cemetery	--	Hill
HI-C063	Mesquite Cemetery	HTC	Hill
HI-C062	Mount Hope Cemetery	--	Hill
HI-C061	Mount Calm Area Cemetery	--	Hill

Source: THC 2020b.

Three OTHMs are recorded in the study area (see Table 3-8). One commemorates the community of Birome and the importance of the railroads to the region and the towns that sprang up along them. The remaining two OTHMs commemorate churches in the Mount Calm area (THC 2020b). No Recorded Texas Historic Landmarks are recorded in the study area.

TABLE 3-8 OTHMS RECORDED WITHIN THE STUDY AREA

MARKER NO.	NAME	DESIGNATION	COUNTY
415	Birome	--	Hill
1658	First Baptist Church of Mt. Calm	--	Hill
3518	Mt. Calm Methodist Church	--	Hill

Source: THC 2020b

3.5.3 Previous Investigations

According to the TASA (THC 2020a), there have been at least seven previously conducted cultural resource investigations within the study area boundaries (see Table 3-9).

TABLE 3-9 PREVIOUS CULTURAL RESOURCE INVESTIGATIONS WITHIN THE STUDY AREA

INVESTIGATING AGENCY	SURVEY PROJECT/REPORT TITLE	SITE(S) RECORDED/VISITED IN STUDY AREA
Soil Conservation Service	No data	none
Texas A&M University	Richland Creek Watershed - Archeological Surveys of Floodwater Retarding Structure Site Nos. 70, 71A, 77A, 84, 85, 91A, 92B, 97, 130 and 136 (Shafer et al. 1975)	none
Soil Conservation Service	Archeological Surveys in the Tehuacana Creek Watershed, Hill and McLennan Counties, Texas (Mallouf and Baskin 1976)	41HI82, 41HI83, 41HI84, 41HI85, 41HI86, 41HI87, 41HI88, 41HI89, 41HI90, 41HI91, 41HI92, 41HI93
Soil Conservation Service	Cultural Resource Survey of a Proposed Critical Area Treatment Measure on the Altus Property, Tehuacana Creek Watershed, Hill County, Texas (Cole 1981)	41HI80, 41HI81
Texas Historic Commission	A Case Study of Plow Damage to Chert Artifacts, The Brookeen Creek Cache, Hill County, Texas (Mallouf and Baskin 1981)	41HI86
Horizon Environmental Services, Inc	Cultural Resources Investigations along the Proposed Lone Star Competitive Renewable Energy Zone (CREZ) 345-kV Transmission Line Right-of-Way in North-Central Texas Volumes I and II (Cochran et al. 2012)	41HI314, 41HI315, 41HI319, 41HI320

Source: THC 2020a

3.5.4 High Probability Areas

Review of the previously recorded cultural resource sites data indicates that the study area has not been entirely examined during previous archeological and historical investigations. Consequently, the records review results do not include all possible cultural resources sites within the study area. To further assess and avoid potential impacts to cultural resources, HPAs for prehistoric archeological sites were defined during the route analysis process. HPAs were designated based on a review of the site and survey data within the study area, as well as soils and

geologic data, and topographic variables. Within the study area, the prehistoric HPAs typically occur near and along streams, at the heads of major draws, near springs and at outcroppings of chert gravels suited to stone tool manufacture. Terraces and topographic high points that would provide flats for camping and expansive landscape views as well as access to fresh water sources are also considered to have a high probability for containing prehistoric archeological sites.

Historic age resources are likely to be found near water sources. However, they will also be located in proximity to primary and secondary transportation routes (*e.g.*, trails, roads, and railroads), which provided access to the sites. Buildings and cemeteries are also more likely to be located within or near historic communities.

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 rural with little development. The predominant land use within the study area is rangeland/pastureland and croplands. The majority of the study area has been impacted by land improvements associated with agriculture, oil and gas activities, roadways, and other linear corridors. Overall, the study area viewscape consists of open rangeland/pastureland and croplands.

No known high quality aesthetic resources, designated views, or designated scenic roads or highways were identified within the study area (America's Scenic Byways 2020; Federal Highway Administration 2020). The study area is located within both the 18-county Brazos Trail Region and the 31-county Lakes Trail Region; however, there were no sites of interest identified within the study area (THC 2020c and 2020d).

A review of the NPS website did not indicate any Wild and Scenic Rivers, National Parks, National Monuments, National Memorials, National Historic Sites, National Historic, Scenic, or Recreational Trails, or National Battlefields within the study area (National Wild and Scenic River System 2020; NPS 2020b, 2020c, and 2020d).

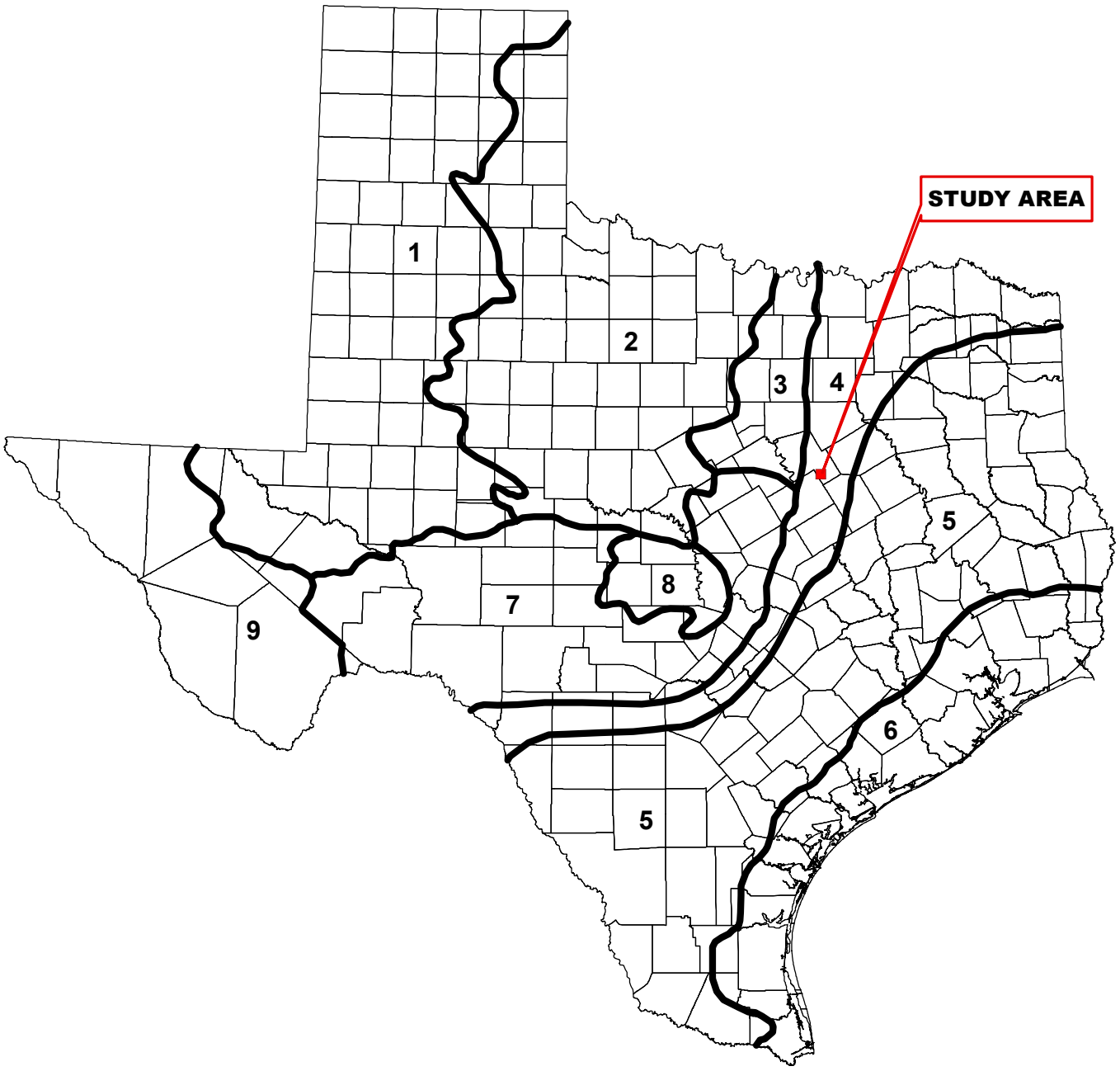
Based on these criteria, the study area exhibits a moderate degree of aesthetic quality for the region. The majority of the study area maintains the feel of a rural community. Although some portions of the study area might be visually appealing, the aesthetic quality of the study area overall is not 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 sands and marls that have weathered to develop an undulating terrain with fertile, black clay soils. Elevation within this sub-province ranges from 450 to 1000 feet amsl and generally increases northward and eastward (BEG 1996). Elevations within the study area range between approximately 500 feet above mean sea level (amsl) within stream floodplains to approximately 650 feet amsl on gently sloping hills (USGS 2019).

Geologic formations occurring within in the study area include the Cretaceous-aged Ozan, Wolfe City, and Austin Chalk formations 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 to the Wolfe City Formation. The Wolfe City Formation sits on top of the Ozan Formation in the southern portion of the study area near the City of Mount Calm. This formation has a thickness of up to 300 feet and is composed of marl, sand, sandstone, and clay. The Austin Chalk Formation occurs to a small degree along the north boundary of the study area, northeast of the Sam Switch Station. This formation ranges from 150 to 300 feet thick and is composed of chalk and marl. Quaternary alluvium is comprised of mud, silt, and sand and is mapped within floodplains along streams in the southern half of the study area (BEG 1979).



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Data Source:
Texas Bureau of Economic Geology, 1996

Date: 7/7/2020

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- Project Location
- County Boundary
- Physiographic Region Boundary

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

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Figure 3-2
Location of the Study Area In Relation to the Physiographic Regions of Texas

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 (BEG 1979), active or abandoned mining locations (RRC 2020b, 2020c, 2020d, and 2020e), aggregate operation locations (USGS 1956 and 2019), state or federal superfund sites (USEPA 2020a; TCEQ 2020a), or municipal waste facilities (TCEQ 2020b) were identified within the study area.

3.7.2 Soils

Soil Associations

The NRCS Web Soil Survey (NRCS 2020) 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 3-10, which summarizes each soil association and indicates if any soil series within the mapped association are considered prime farmlands and/or hydric (NRCS 2020).

TABLE 3-10 MAPPED SOIL UNITS WITHIN THE STUDY AREA

MAP UNIT NAME	LANDFORM	HYDRIC STATUS	PRIME FARMLAND
Altoga silty clay, 1 to 3 percent slopes	Stream terraces	No	Farmland of statewide importance
Altoga silty clay, 2 to 5 percent slopes, eroded	Stream terraces	No	No
Altoga clay loam, 5 to 8 percent slopes, eroded	Stream terraces	No	No
Austin silty clay, 2 to 5 percent slopes, moderately eroded	Ridges	No	No
Blum loam, 0 to 2 percent slopes	Ridges	No	Yes
Burleson clay, 0 to 1 percent slopes	Stream terraces	No	Yes
Burleson clay, 1 to 3 percent slopes	Stream terraces	No	Yes
Chatt clay, 1 to 3 percent slopes	Stream terraces	No	Yes
Crockett fine sandy loam, 1 to 3 percent slopes	Ridges	No	Farmland of statewide importance
Culp clay loam, 1 to 3 percent slopes	Stream terraces	No	Yes
Ferris clay, 5 to 12 percent slopes	Ridges	No	No
Ferris clay, 8 to 20 percent slopes, severely eroded	Ridges	No	No
Ferris-Heiden complex, 2 to 5 percent slopes	Ridges	No	Yes
Gowen clay loam, frequently flooded	Floodplains	Yes	No
Heiden clay, 1 to 3 percent slopes	Ridges	No	Yes
Houston Black clay, 0 to 1 percent slopes	Plains	No	Yes
Houston Black clay, 1 to 3 percent slopes	Ridges	No	Yes
Kemp loam, occasionally flooded	Floodplains	Yes	No

TABLE 3-10 MAPPED SOIL UNITS WITHIN THE STUDY AREA

MAP UNIT NAME	LANDFORM	HYDRIC STATUS	PRIME FARMLAND
Lamar clay loam, 1 to 5 percent slopes	Stream terraces	No	Yes
Lamar clay loam, 3 to 5 percent slopes, eroded	Stream terraces	No	No
Mabank fine sandy loam, 0 to 2 percent slopes	Stream terraces	No	Farmland of statewide importance
Normangee clay loam, 1 to 3 percent slopes	Ridges	No	No
Normangee clay loam, 3 to 5 percent slopes	Ridges	No	No
Tinn clay, 0 to 1 percent slopes, occasionally flooded	Floodplains	Yes	No
Tinn clay, 0 to 1 percent slopes, frequently flooded	Floodplains	Yes	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
Wilson-Burleson complex, 0 to 1 percent slopes	Remnant stream terraces	No	Farmland of statewide importance

Source: NRCS 2020.

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 2020).

Map units that are dominantly comprised of non-hydric soils might have small inclusions of hydric soils in higher positions on the landform, and map units dominantly comprised of hydric soils might have inclusions of non-hydric soils in lower positions on the landform. According to NRCS (2020) Web Soil Survey data for the study area, hydric soils are mapped within floodplains and include Gowan clay, Kemp, and Tinn clay loam.

Prime Farmland Soils

The US 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 3-10. According to NRCS Web Soil Survey data for the study area county (NRCS 2020), 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 May 13, 2020 (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 Brazos River Basin. The northeast corner of the study area, east of the Sam Switch Substation, occurs within the Trinity River Basin (TWDB 2020a). Sub-basins within the study area include the Middle Brazos-Lake Whitney, Navasota, and Richland (USEPA 2020b). Named surface water features within the study area include Birome Lake, Brookeen Creek, Brushy Creek, Mesquite Creek, Packwood Creek, SCS Site 78 Reservoir, SCS Site 1 Reservoir, SCS Site 1a Reservoir, Tehuacana Creek, and Wolf Creek. Multiple unnamed tributaries and small lakes, as well as numerous small ponds, occur interspersed throughout the study area (Google 2019). Surface waters generally flow in a south or west direction (USEPA 2020b).

Under 31 TAC § 357.8, 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 2020e).

In accordance with Section 303(d) and 304(a) 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 (2020c) Texas Integrated Report of Surface Water Quality, lists 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 is the Trinity Aquifer (TWDB 2020b). 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 2011). No minor aquifers are mapped within the study area. Three private water wells are mapped within the south portion of the study area near the City of Mount Calm (TWDB 2020b). No natural springs were identified within the study area (TWDB 1975 and 2020b).

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 Birome Lake, SCS Site 1 Reservoir, SCS Site 1a Reservoir, SCS Site 78 Reservoir, the mainstem and tributaries of Mesquite Creek, Wolf Creek, Brookeen Creek, Tehuacana Creek, and Brushy Creek, and unnamed tributaries of the Navasota River located in the southeast portion of the study area (FEMA 2020).

Future Surface Water Developments

No reservoir or other future surface water development projects were identified within the study area (TWDB 2017).

3.7.4 Ecological Resources

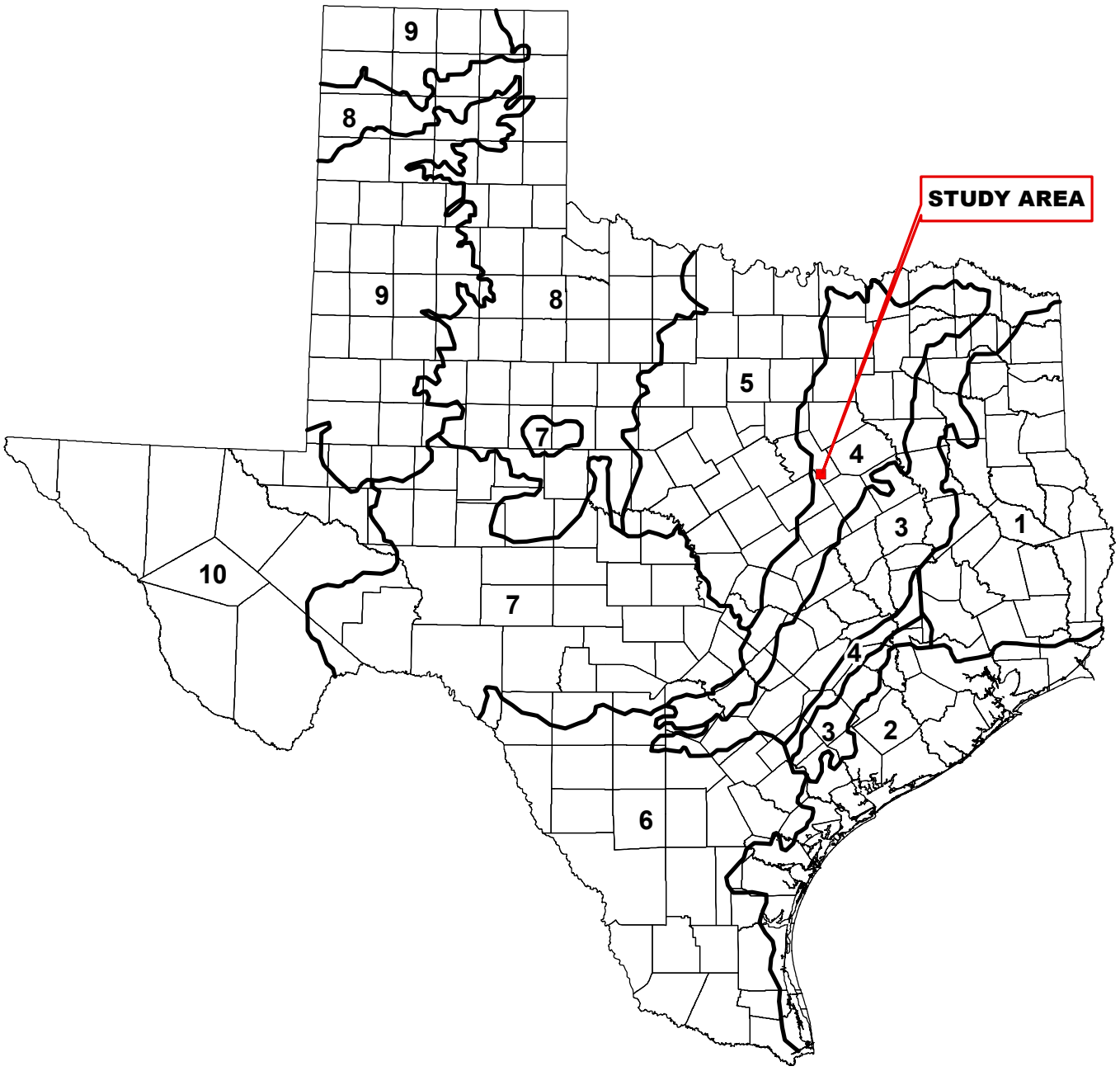
Data and information on ecological resources within the study area were obtained from a variety of sources, including aerial photograph interpretation, field reconnaissance surveys, correspondence with the USFWS, TPWD and published literature and technical reports. All biological resource data for the 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 (USEPA 2013). 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*) (TPWD 2020f). Along streams that intersect the landscape, woodland vegetation occurred and was dominated by bur oak (*Quercus macrocarpa*), Shumard oak (*Q. 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 (2020d) Texas Ecosystem Analytical Mapper indicates that major vegetation types within the study area include row crops, Blackland Prairie Disturbance or Tame Grassland, Central Texas Floodplain Hardwood Forest, Native Invasive Mesquite Shrubland, and Native Invasive Deciduous Woodland.



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Miles

Data Source:
Gould, F.W. et. al. 1960, modified.

Date: 7/7/2020

Project Location

County Boundary

Vegetational Areas Boundary

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

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Figure 3-3
Location of the Study Area In Relation to the Vegetational Areas of Texas

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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 2020g).

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 (*F. pennsylvanica*), common honeylocust (*Gleditsia triacanthos*), red mulberry (*Morus rubra*), American sycamore (*Platanus occidentalis*), plateau oak (*Quercus fusiformis*), water oak (*Q. nigra*), coastal live oak (*Q. virginiana*), black willow (*Salix nigra*), American elm (*Ulmus americana*), cedar elm (*U. crassifolia*), bur oak, eastern cottonwood, and pecan (TPWD 2020g).

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 2020g).

Native Invasive Deciduous Woodland

Native Invasive Deciduous Woodland is a broadly defined vegetation community often mapped in disturbed areas and fire suppressed areas on soils from the Blackland Prairie region westward. Common species may include netleaf hackberry (*Celtis reticulata*), yaupon (*Ilex vomitoria*), sweetgum (*Liquidambar styraciflua*), Ashe juniper, cedar elm, honey mesquite, huisache, sugar hackberry, water oak, and winged elm (TPWD 2020g).

Wetlands

Mapped wetlands information was incorporated for the study area from the USFWS NWI database (USFWS 2020a). 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 2020a). 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 Chiltipin Creek, which bisects the study area from west to east. 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 (*T. latifolia*). Minor components of woody species such as common buttonbush (*Cephalanthus occidentalis*) and black willow may also occur (TPWD 2020g).

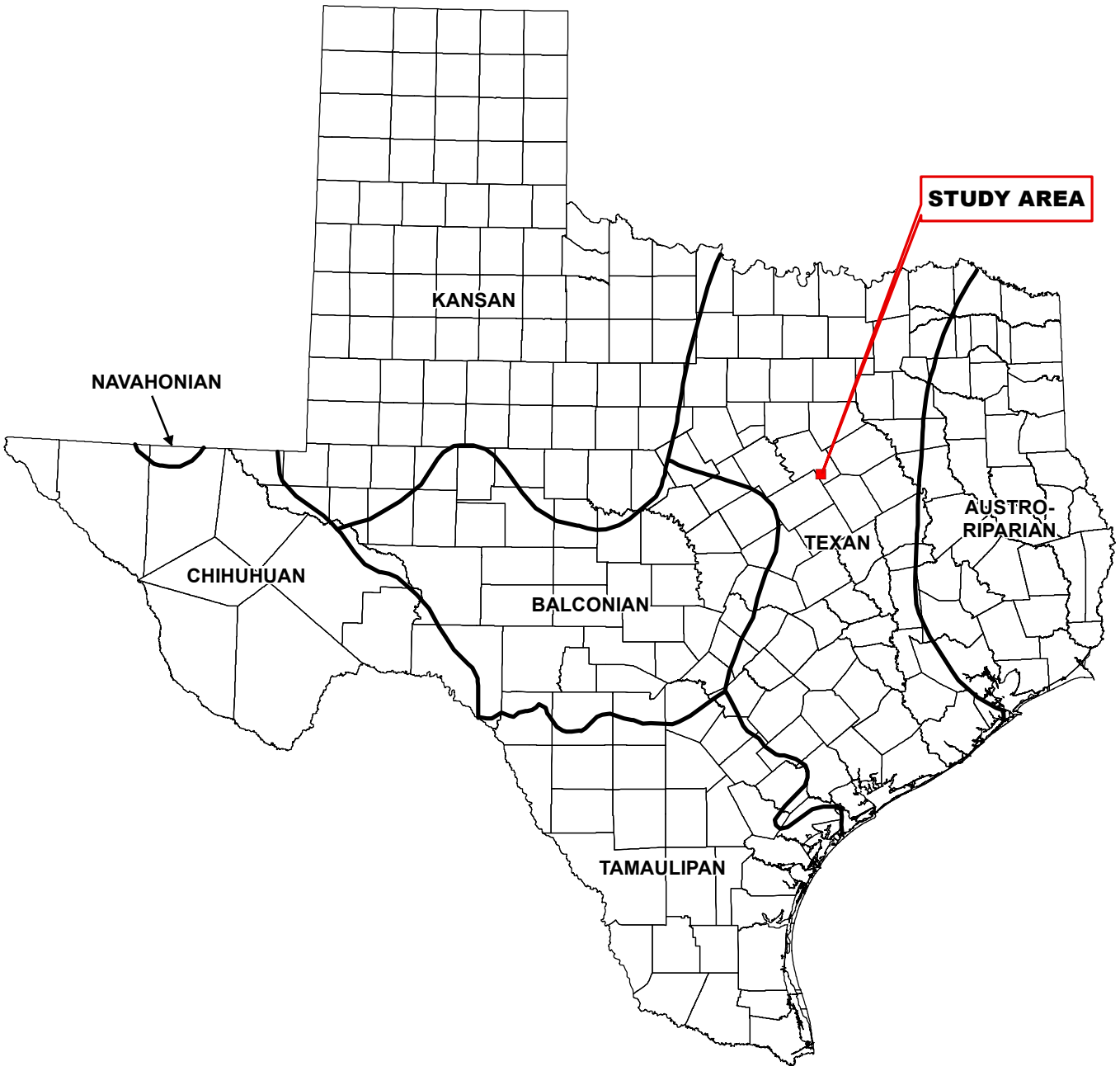
Palustrine Forested Wetland

PFO wetlands are mapped along the western and eastern extent of Wolf Creek, the western extent of Mesquite Creek, the eastern extent of Tehuacana Creek, and an unnamed tributary to SCS Site 78 Reservoir. Within the study area plant species potentially occurring in PFO wetlands may include broad-leaved deciduous (USFWS 2020a) 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 (TPWD 2020g).

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.



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Data Source: Blair, 1950, modified.

Project Location

Biotic Province Boundary

County Boundary

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Figure 3-4
Location of the Study Area In Relation to the Biotic Provinces of Texas

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Amphibians

Amphibian species (frogs, toads, salamanders) that may occur within the study area are listed in Table 3-11. Frogs and toads may occur in all vegetation types and salamanders are typically restricted to moist habitats (Dixon 2013).

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

COMMON NAME	SCIENTIFIC NAME
American bullfrog	*Lithobates catesbeiana*
Couch's spadefoot	*Scaphiopus couchi*
Cope's gray treefrog	*Dryophytes chrysoscelis*
Gray treefrog	*Dryophytes versicolor*
Great Plains narrow-mouthed toad	*Gastrophryne olivacea*
Gulf Coast toad	*Incilius nebulifer*
Northern cricket frog	*Acris crepitans*
Rio Grande leopard frog	*Lithobates berlandieri*
Red-spotted toad	*Anaxyrus punctatus*
Small-mouthed salamander	*Ambystoma texanum*
Southern leopard frog	*Lithobates sphenocephalus*
Spotted chorus frog	*Pseudacris clarkii*
Texas toad	*Anaxyrus speciosus*

Sources: Dixon 2013.

Reptiles

Reptiles (turtles, lizards, and snakes) that may typically occur in the study area are listed in Table 3-12. 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 3-12 REPTILIAN SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA

COMMON NAME	SCIENTIFIC NAME
Turtles	
Eastern box turtle	*Terrapene carolina*
Eastern mud turtle	*Kinosternon subrubrum*
Ornate box turtle	*Terrapene ornata*
Pond slider	*Trachemys scripta*
Snapping turtle	*Chelydra serpentina*
Spiny softshell	*Apalone spinifera*
Texas river cooter	*Pseudemys texana*
Yellow mud turtle	*Kinosternon flavescens*

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

COMMON NAME	SCIENTIFIC NAME
Lizards	
Common spotted whiptail	*Cnemidophorus gularis gularis*
Common five-lined skink	*Eumeces fasciatus*
Eastern six-lined racerunner	*Cnemidophorus sexlineatus*
Green anole	*Anolis carolinensis*
Little brown skink	*Scincella lateralis*
Mediterranean gecko	*Hemidactylus turcicus*
Prairie lizard	*Sceloporus consobrinus*
Prairie skink	*Eumeces septentrionalis obtusirostris*
Slender glass lizard	*Ophisaurus attenuatus*
Texas spiny lizard	*Sceloporus olivaceus*
Snakes	
Coachwhip	*Masticophis flagellum*
Copperhead	*Agkistrodon contortrix*
Checkered gartersnake	*Thamnophis marcianus*
Common kingsnake	*Lampropeltis getula*
DeKay's brownsnake	*Storeria dekayi*
Diamond-backed watersnake	*Nerodia rhombifer*
Eastern hog-nosed snake	*Heterodon platirhinos*
Eastern yellow-bellied racer	*Coluber constrictor flaviventris*
Eastern ratsnake	*Pantherophis obsoletus*
Flat-headed snake	*Tantilla gracilis*
Gophersnake	*Pituophis catenifer*
Lined snake	*Tropidoclonion lineatum*
Plain-bellied watersnake	*Nerodia erythrogaster*
Plains threadsnake	*Rena dulcis*
Prairie kingsnake	*Lampropeltis calligaster*
Rough earthsnake	*Haldea striatula*
Rough greensnake	*Opheodrys aestivus*
Western diamond-backed rattlesnake	*Crotalus atrox*
Western ribbonsnake	*Thamnophis proximus*

Source: Dixon 2013.

Birds

Numerous avian species may occur within the study area and include year-round residents, and summer and/or winter migrants as shown in Table 3-13. 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.

TABLE 3-13 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 cyaneus*			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
Green-winged teal	*Anas crecca*			X
Lesser scaup	*Aythya affinis*			X
Mallard	*Anas platyrhynchos*	X		
Mottled duck	*Anas fulvigula*	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	
Buff-bellied hummingbird	*Amazilia yucatanensis*		X	
Ruby-throated hummingbird	*Archilochus colubris*		X	

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

COMMON NAME	SCIENTIFIC NAME	RESIDENT	SUMMER	WINTER
CAPRIMULGIFORMES: Caprimulgidae				
Common nighthawk	*Chordeiles minor*		X	
Lesser nighthawk	*Chordeiles acutipennis*		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				
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		
Wilson's phalarope	*Phalaropus tricolor*		X	
COLUMBIFORMES: Columbidae				
Common ground-dove	*Columbina passerina*	X		
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		
Green kingfisher	*Chloroceryle americana*	X		
CUCULIFORMES: Cuculidae				
Greater roadrunner	*Geococcyx californianus*	X		
Yellow-billed cuckoo	*Coccyzus americanus*		X	
FALCONIFORMES: Falconidae				

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

COMMON NAME	SCIENTIFIC NAME	RESIDENT	SUMMER	WINTER
American kestrel	*Falco sparverius*			X
Crested caracara	*Caracara cheriway*	X		
GALLIFORMES: Odontophoridae				
Northern bobwhite	*Colinus virginianus*	X		
Scaled quail	*Callipepla squamata*	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				
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	
Northern cardinal	*Cardinalis cardinalis*	X		
Painted bunting	*Passerina ciris*		X	
Summer tanager	*Piranga rubra*		X	
PASSERIFORMES: Corvidae				
American crow	*Corvus brachyrhynchos*	X		
Fish crow	*Corvus ossifragus*	X		
Blue jay	*Cyanocitta cristata*			
PASSERIFORMES: Emberizidae				
Cassin's sparrow	*Peucaea cassinii*		X	
Chipping sparrow	*Spizella passerina*			X
Clay-colored sparrow	*Spizella pallida*			X
Field sparrow	*Spizella pusilla*			X
Grasshopper sparrow	*Ammodramus savannarum*	X		
Harris's sparrow	*Zonotrichia querula*			X
Lark bunting	*Calamospiza melanocorys*			X
Lark sparrow	*Chondestes grammacus*	X		

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

COMMON NAME	SCIENTIFIC NAME	RESIDENT	SUMMER	WINTER
Lincoln's sparrow	*Melospiza lincolnii*			X
Savannah sparrow	*Passerculus sandwichensis*			X
Song sparrow	*Melospiza melodia*			X
Spotted towhee	*Pipilo maculatus*			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
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	
Long-billed thrasher	*Toxostoma longirostre*	X		
Northern mockingbird	*Mimus polyglottos*	X		
PASSERIFORMES: Motacillidae				
American pipit	*Anthus rubescens*			X
PASSERIFORMES: Passerellidae				
Dark-eyed junco	*Junco hyemalis*			X
PASSERIFORMES: Polioptilldae				
Blue-gray gnatcatcher	*Polioptila caerulea*		X	
PASSERIFORMES: Paridae				

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

COMMON NAME	SCIENTIFIC NAME	RESIDENT	SUMMER	WINTER
Black-crested titmouse	*Baeolophus atricristatus*	X		
Carolina chickadee	*Poecile carolinensis*	X		
PASSERIFORMES: Parulidae				
American redstart	*Setophaga ruticilla*		X	
Black-and-white warbler	*Mniotilta varia*		X	
Common yellowthroat	*Geothlypis trichas*			X
Hooded warbler	*Setophaga citrina*		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		
Blue-gray gnatcatcher	*Polioptila caerulea*	X		
PASSERIFORMES: Regulidae				
Ruby-crowned kinglet	*Regulus calendula*			X
Verdin	*Auriparus flaviceps*	X		
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				

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

COMMON NAME	SCIENTIFIC NAME	RESIDENT	SUMMER	WINTER
Acadian flycatcher	*Empidonax virescens*		X	
Alder flycatcher	*Empidonax alnorum*		X	
Ash-throated flycatcher	*Myiarchus cinerascens*	X		
Brown-crested flycatcher	*Myiarchus tyrannulus*		X	
Couch's kingbird	*Tyrannus couchii*		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	
Say's phoebe	*Sayornis saya*			X
Scissor-tailed flycatcher	*Tyrannus forficatus*		X	
Vermilion flycatcher	*Pyrocephalus rubinus*			X
Western kingbird	*Tyrannus verticalis*		X	
Willow flycatcher	*Empidonax traillii*		X	
PASSERIFORMES: Vireonidae				
White-eyed vireo	*Vireo griseus*		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	
Little blue heron	*Egretta caerulea*		X	
Reddish egret	*Egretta rufescens*		X	
Snowy egret	*Egretta thula*		X	
Tricolored heron	*Egretta tricolor*	X		
Yellow-crowned night-heron	*Nyctanassa violacea*	X		
PELECANIFORMES: Threskiornithidae				
Roseate spoonbill	*Platalea ajaja*		X	
American white pelican	*Pelecanus erythrorhynchos*			X
PICIFORMES: Picidae				
Downy woodpecker	*Dryobates pubescens*	X		
Ladder-backed woodpecker	*Picoides scalaris*	X		
Northern flicker	*Colaptes auratus*			X
Red-bellied woodpecker	*Melanerpes carolinus*	X		
PODICIPEDIFORMES: Podicipedidae				
Pied-billed grebe	*Podilymbus podiceps*			X
STRIGIFORMES: Strigidae				

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

COMMON NAME	SCIENTIFIC NAME	RESIDENT	SUMMER	WINTER
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

Sources: Freeman 2012

Mammals

Mammals that may potentially occur in the study area are listed in Table 3-14. The occurrence of each species within the study area is dependent upon available suitable habitat.

TABLE 3-14 MAMMALIAN SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA

COMMON NAME	SCIENTIFIC NAME
American badger	*Taxidea taxus*
American beaver	*Castor canadensis*
American mink	*Vison vison*
American perimyotis	*Perimyotis subflavus*
Black-tailed jackrabbit	*Lepus californicus*
Bobcat	*Lynx rufus*
Brazilian free-tailed bat	*Tadarida brasiliensis*
Common gray fox	*Urocyon cinereoargenteus*
Common raccoon	*Procyon lotor*
Coyote	*Canis latrans*
Eastern cottontail	*Sylvilagus floridanus*
Eastern fox squirrel	*Sciurus niger*
Eastern mole	*Scalopus aquaticus*
Eastern red bat	*Lasiurus borealis*
Eastern woodrat	*Neotoma floridana*
Evening bat	*Nycticeius humeralis*
Feral pig	*Sus scrofa*
Fulvous harvest mouse	*Reithrodontomys fulvescens*
Hispid cotton rat	*Sigmodon hispidus*
Hispid pocket mouse	*Chaetodipus hispidus*
Hoary bat	*Lasiurus cinereus*

TABLE 3-14 MAMMALIAN SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA

COMMON NAME	SCIENTIFIC NAME
Least shrew	*Cryptotis parva*
Long-tailed weasel	*Mustela frenata*
North American deermouse	*Peromyscus maniculatus*
Northern pygmy mouse	*Baiomys taylori*
Nutria	*Myocastor coypus*
Plains harvest mouse	*Reithrodontomys montanus*
Red fox	*Vulpes vulpes*
Ringtail	*Bassariscus astutus*
Striped skunk	*Mephitis mephitis*
Swamp rabbit	*Sylvilagus aquaticus*
Thirteen-lined ground squirrel	*Ictidomys tridecemlineatus*
White-footed mouse	*Peromyscus leucopus*
White-tailed deer	*Odocoileus virginianus*

Source: Schmidly and Bradley 2016.

Fisheries

In Texas, the divisions of the biotic provinces were separated on the basis of 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 (2019 and 1956) surface waters within the study area are intermittent streams and perennial ponds and lakes.

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 habitat 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 3-15. The occurrence of each species within the study area is dependent upon available suitable habitat.

TABLE 3-15 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*
Plains killifish	*Fundulus zebrinus*
ICTALURIDAE: North American Catfishes	
Black bullhead	*Ameiurus melas*
Channel catfish	*Ictalurus punctatus*
Flathead catfish	*Pylodictis olivaris*
Yellow bullhead	*Ameiurus natalis*

TABLE 3-15 FISH SPECIES POTENTIALLY OCCURRING WITHIN THE STUDY AREA

COMMON NAME	SCIENTIFIC NAME
POECILIIDAE: Livebearers	
Western mosquitofish	*Gambusia affinis*
SCIAENIDAE: Drums and Croakers	
Freshwater drum	*Aplodinotus grunniens*

Source: Hendrickson and Cohen 2015.

Threatened and Endangered Species

For this routing study, emphasis was placed on obtaining documented occurrences of special status species and/or their designated critical habitat within the study area. Documented occurrences of unique vegetation communities within the study area were also reviewed. Special status species include those listed by the USFWS (2020b) as threatened, endangered, or proposed for listing; and those species listed by TPWD (2020h) 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 (2020). For the purpose of 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 May 7, 2020 (Consultation Code: 02ETAR00-2020-SLI-1850). This USFWS report identifies federal listed threatened, endangered, and proposed species and designated critical habitat potentially occurring within the study area (USFWS 2020b). 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. Proposed species are those that have been proposed in the Federal Register to be listed under the ESA. The ESA also provides for the conservation of "designated critical habitat," which is defined by the USFWS as the areas of land, water, and air space that an endangered species needs for survival. These areas include sites with food and water, breeding areas, cover or shelter sites, and sufficient habitat to provide for normal population growth and behavior for the species. The IPaC report states there are no designated critical habitats within the study area (USFWS 2020b).

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 2020b; TPWD 2020h). Review of TXNDD (2020) data identified one element occurrence record for a little bluestem-Indiangrass vegetation community mapped within the southern half of the study area. This vegetation community type may occur within the study area if suitable environmental conditions are present.

Threatened and Endangered Animal Species

The USFWS (2020b) IPaC official species list identifies federal listed animal species to consider for the study area. State-listed species in the TPWD (2020h) Annotated County Lists of Rare Species have also been included in Table 3-16. 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 species list (USFWS 2020b) indicates that for the study area the interior least tern and piping plover are only a concern for wind energy projects. These species would not be considered in an effect's analysis by the USFWS but have been included below for consistency. Review of the TXNDD (2020) 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 3-16 LISTED THREATENED AND ENDANGERED ANIMAL SPECIES WITHIN THE STUDY AREA

SPECIES		LEGAL STATUS	
Common Name	Scientific Name	USFWS[1]	TPWD[2]
Birds			
Golden-cheeked warbler	*Dendroica chrysoparia*	E	E
Interior least tern	*Sterna antillarum athalassos*	E	E
Piping plover	*Charadrius melodus*	T	T

TABLE 3-16 LISTED THREATENED AND ENDANGERED ANIMAL SPECIES WITHIN THE STUDY AREA

SPECIES		LEGAL STATUS	
Common Name	Scientific Name	USFWS[1]	TPWD[2]
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
Mollusks			
Brazos heelsplitter	*Potamilus streckersoni*	-	T
Texas fawnsfoot	*Truncilla macrodon*	C	T
Reptiles			
Texas horned lizard	*Phrynosoma cornutum*	-	T

Status abbreviations: E - Endangered, T – Threatened, C – Candidate for listing
Sources: [1]USFWS 2020b; [2]TPWD 2020h.

Federal-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 in the far eastern extent of the golden-cheeked warbler nesting range (USFWS 2020c). Within the southern portion of the study area, woodland vegetation occurs along Wolf Creek, unnamed tributaries of Tehuacana Creek, and unnamed streams immediately north and northwest of the City of Mount Calm. Based on aerial imagery interpretation (Google 2019) and field reconnaissance surveys, woodland vegetation within the study area is patchy, fragmented, and does not possess mature Ashe juniper as a major component. This species is not anticipated to occur within the study area due to the 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.

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.

Red Knot

The 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 (NatureServe 2020). 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.

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 2015). This species may occur within the study area if potential suitable habitat is available.

Candidate Species

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 et al. 1996). It has also been documented in flowing rice irrigation canals and is likely intolerant of impoundments (NatureServe 2020). Recent presence and absence surveys for the Texas fawnsfoot within the Brazos River Basin indicate that this species is present within Yegua Creek, Navasota, Little, Leon, San Gabriel, and Clear Fork Brazos rivers (Randklev et al. 2013; Tsakiris and Randklev 2016; Randklev et al. 2017). Habitat preference includes the edge of river runs, and occasionally backwater, riffle, or point bar habitats (Randklev et al. 2014a). The extent of Tehuacana Creek, a tributary of the Brazos River, within the study area is mapped as an intermittent stream and has been channelized and impounded (SCS Site 1 Reservoir and SCS Site 1a Reservoir). Tributaries of Tehuacana Creek, including Brookeen Creek, Brushy Creek, Mesquite Creek, and Wolf Creek, are also mapped as intermittent streams. Additionally, Mesquite Creek and Wolf Creek have been impounded in their western extent (USGS 1956 and 2019). This species is not anticipated to occur within the study area due to the intermittent flow regime and altered nature of mapped surface waters.

State-Listed Species

BIRDS

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 habitat 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). The

extent of Tehuacana Creek, a tributary of the Brazos River, within the study area is mapped as an intermittent stream and has been channelized and impounded (SCS Site 1 Reservoir and SCS Site 1a Reservoir). Tributaries of Tehuacana Creek, including Brookeen Creek, Brushy Creek, Mesquite Creek, and Wolf Creek, are also mapped as intermittent streams. Additionally, Mesquite Creek and Wolf Creek have been impounded in their western extent (USGS 1956 and 2019). This species is not anticipated to occur within the study area due to the intermittent flow regime and altered nature of mapped surface waters.

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 (Randklev et al. 2014b and 2014c; Tsakiris and Randklev 2016). This species may occur within the study area if potential suitable habitat is available.

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 2020) sandy loams occur on ridges and stream terraces (Table 3-5) 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 40 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)	15.3
2	Number of habitable structures[1] within 500 feet of ROW centerline	7
3	Length of ROW using existing transmission line ROW	1.3
4	Length of ROW parallel and adjacent to existing transmission line ROW	0.0
5	Length of ROW parallel and adjacent to other existing ROW (*e.g.*, roadways, highways, utilities)	1.2
6	Length of ROW parallel and adjacent to apparent property lines[2]	5.4
7	Length of ROW across parks/recreational areas[3]	0
8	Number of additional parks/recreational areas[3] within 1,000 feet of ROW centerline	0
9	Length of ROW across cropland	9.1
10	Length of ROW across pasture/rangeland	2.8
11	Length of ROW across land irrigated by traveling systems (rolling or pivot type)	0.0
12	Length of ROW parallel and adjacent to existing pipeline ROW	0.0
13	Length of ROW parallel to existing pipeline ROW <500 feet from ROW centerline	0.0
14	Number of pipeline crossings	1
15	Number of transmission line crossings	0
16	Number of highway (interstate, US, and state) road crossings	1
17	Number of FM road crossings	4
18	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
19	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
20	Number of private airstrips within 10,000 feet of the ROW centerline	1
21	Number of heliports within 5,000 feet of the ROW centerline	0
22	Number of commercial AM radio transmitters within 10,000 feet of the ROW centerline	0
23	Number of FM radio transmitters, microwave towers, and other electronic installations within 2,000 feet of ROW centerline	2
Aesthetics		
24	Estimated length of ROW within foreground visual zone[5] of interstate, US and state highways	0.9
25	Estimated length of ROW within foreground visual zone[5] of FM roads	7.2
26	Estimated length of ROW within foreground visual zone[5][6] of parks/recreational areas[3]	0.0
Ecology		
27	Length of ROW across upland woodlands/brushlands	1.6

TABLE 4-1 ENVIRONMENTAL DATA FOR CONSENSUS ROUTE

Evaluation Criteria		
28	Length of ROW across bottomland/riparian woodlands	1.2
29	Length of ROW across NWI mapped wetlands	0.1
30	Length of ROW across USFWS designated critical habitat of federally-listed endangered or threatened species	0.0
31	Length of ROW across open water (lakes, ponds)	0.1
32	Number of stream crossings	17
33	Length of ROW parallel (within 100 feet) to streams	0.4
34	Length of ROW across FEMA mapped 100-year floodplain	1.0
Cultural Resources		
35	Number of cemeteries within 1,000 feet of the ROW centerline	1
36	Number of recorded cultural resource sites crossed by ROW	2
37	Number of additional recorded cultural resource sites within 1,000 feet of ROW centerline	4
38	Number of NRHP listed properties crossed by ROW	0
39	Number of additional NRHP listed properties within 1,000 feet of ROW centerline	0
40	Length of ROW across areas of high archeological site potential	7.2

[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 2020b formerly known as the Airport/Facility Directory South Central US) and FAA 2020a.
[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 amount of potential impacts. The total length of the Consensus Route is approximately 15.3 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 uses vacant positions within an existing transmission line ROW for approximately 1.3 miles. The Consensus Route does not parallel any existing transmission line ROW. The Consensus Route is parallel and adjacent to other existing ROW (*e.g.*, roadways, highways, utilities) for approximately 1.2 miles, and is parallel and adjacent to apparent property lines for approximately 5.4 miles (see Table 4-1). Additionally, all of the landowners crossed by the Consensus Route have granted easements for the proposed Project.

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 seven habitable structures 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 9.1 miles of cropland (see Table 4-1).

The Consensus Route crosses approximately 2.8 miles 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

Oil and gas wells are scattered throughout the study area and were mapped and avoided to the extent feasible.

One known pipeline is 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 location where the PUC-approved route crosses the existing pipeline will be indicated on engineering drawings and flagged prior to construction. Lone Star has been in contact with the pipeline operator to coordinate the crossing of 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

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. As mentioned in Section 3.3.5, four roadway projects were identified within the study area. The Consensus Route crosses SH 31 one time. Additionally, the Consensus Route has four FM road crossings (see Table 4-1).

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 no runway longer than 3,200 feet was 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 is one known private airstrip identified within 10,000 feet of the Consensus Route (see Table 4-1). The Landing Airstrip (Map ID 201) is approximately 2,314 feet from the Consensus Route. The distance to the airstrip from the Consensus Route was measured using GIS software and aerial photograph interpretation. The Consensus Route is not anticipated to have significant effects on aviation operations within or outside of the study area.

Table 4-2 presents detailed information on private airstrips located within 10,000 feet of the Consensus Route centerline. All known airstrip locations are shown on Figure 4-1 and Figure 4-2 (map pocket).

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. Several water wells were identified within the study area and avoided. 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. Two FM radio towers or other electronic communication facilities were identified within 2,000 feet of the Consensus Route centerline (see Table 4-1). The Other Communication Tower (Map ID 101) is located approximately 1,575 feet from the Consensus Route centerline. The New Cingular Wireless PCS, LLC Communication Tower (Map ID 102) is located approximately 1,612 feet from the Consensus Route centerline. The distance to the electronic communication facility from the Consensus Route was measured using GIS software and aerial photograph interpretation.

Table 4-2 presents detailed information on the electronic commutation facilities. The electronic communication facilities' locations are shown on Figures 4-1 and 4-2 (map pockets).

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, parks or recreational areas were identified within the study area. No significant 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 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 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 review of the TARL, THSA and TASA (THC 2020a and 2020b) records, 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 Consensus Route. Six archeological sites have been recorded within 1,000 feet of the Consensus Route, two of which are crossed by the Consensus Route. One cemetery is recorded within 1,000 feet of the Consensus Route. The resources within 1,000 feet of the Consensus Route are discussed below.

Archeological sites 41HI314 and 41HI315 are crossed by the Consensus Route. Both sites are scatters of historic artifacts potentially dating to the late 1800s and early 1900s and located in plowed fields with no associated structures. The recorders of the sites interpreted them as trash scatters ineligible for listing on the NRHP (Cochran et al. 2014), although the sites have not been formally assessed for listing.

Prehistoric archeological Sites 41HI83, 41HI92, 41HI93, and 41HI96 are recorded 527, 287, 695, and 466 feet, respectively, from the Consensus Route. Sites 41HI92 and 41HI96 are lithic scatters and Sites 41HI83 and 41HI93 are campsites.

The Mount Hope Cemetery is recorded 983 feet from the Consensus Route; therefore, no impacts are anticipated. The cemetery contains graves dating between 1886 and 1923.

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 prehistoric archeological resources have a higher probability to occur. These high probability areas (HPAs) for prehistoric archeological sites were identified near major streams and their tributaries, and on terraces overlooking the streams. HPAs for historical resources were identified near previously recorded historic 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 7.2 miles 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 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 highways located within the study area. The Consensus Route lengths within the foreground visual zone of US Hwys and SHs, FM roads, and parks or recreational areas were tabulated and are discussed below.

The Consensus Route has approximately 0.9 mile of length of its ROW located within the foreground visual zone of US Hwys and SHs. The Consensus Route has approximately 7.2 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 of the transmission line. Areas with vegetation removed would have the highest potential for soil erosion and the movement of heavy equipment down the ROW creates the greatest potential for soil compaction. Prior to construction, Lone Star will develop a SWPPP in accordance with the TCEQ's stormwater Construction General Permit (TXR1500000) to minimize potential impacts associated with soil erosion, compaction, and off ROW sedimentation. Implementation of this plan would incorporate temporary and permanent BMPs to minimize soil erosion on the ROW during 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 the 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

The Consensus Route crosses multiple surface waters within the study area. 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 17 stream crossings (there are no river crossings), crosses 0.1 mile of open water (lakes, ponds), and parallels (within 100 feet) 0.4 mile of 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 crosses approximately 1.0 mile of 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 State Water Plan (TWDB 2017) 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 crosses approximately 1.6 miles of upland woodlands/brushlands and 1.2 miles of 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 temporary access roads, 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 crosses approximately 0.1 mile of 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 crosses areas of upland and bottomland/riparian woodlands which 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).

Potential impacts to aquatic ecosystems include effects resulting from erosion, siltation, and sedimentation. Vegetation clearing of the ROW may result in 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. No significant adverse impacts are anticipated to aquatic habitats crossed by the Consensus Route.

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. 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 (2020b) IPaC consultation, TPWD (2020h) county listings, and USFWS (2020b) designated critical habitat locations were included in the review. Known occurrence data from the TXNDD (2020) 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 will be completed of the Consensus Route 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 federally-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. The little bluestem-Indiangrass vegetation community type may occur along the Consensus Route. Potential direct impacts to this vegetation community type may occur from equipment/vehicle traffic crushing vegetation or compacting soil. These impacts will be minimized to the greatest extent practicable by implementing a SWPPP that will establish criteria for mitigating soil compaction during construction and re-vegetation post construction.

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 endangered or threatened species.

Federal-listed and Candidate Species

Potential federally-listed avian species in the study area include the golden-cheeked warbler, interior least tern, piping plover, red knot, and whooping crane. The USFWS only requires consideration of impacts to the interior least tern, piping plover, and red knot for wind energy projects within their migratory route; however, for due diligence, they have been included in this impact evaluation. Although these avian species may occur as migrants within the study area, no significant impacts to nesting or foraging habitat 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 fragmented state and 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 May 26, 2020, "The *Whooping Crane Stopover Site Use Intensity Within the Great Plains* report indicates that the northern half of the study area is categorized as low intensity indicating that the area has evidence of use by whooping cranes and low stopover site use intensity (Pearse et al. 2015). The southern half of the study area is categorized as unoccupied with zero stopover sites and lacks evidence of use by whooping cranes." 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 Texas fawnsfoot is not anticipated to occur within the study area due to the modified hydrology of surface waters and no impacts from the Consensus Route are anticipated to occur to this species. Lone Star proposes to span all surface waters and implement a SWPPP to prevent off-ROW sedimentation and degradation of surface waters.

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 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 chub shiner is not anticipated to occur within the study area. The Brazos heelsplitter may occur in streams within the study area if suitable habitat is available. Lone Star proposes to span all surface waters and implement a SWPPP to prevent off-ROW sedimentation and degradation of surface waters. No impacts from the Consensus Route are anticipated to occur to these species.

The Texas horned lizard may occur within the study area if 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	462
2	Single Family Residence	247
3	Single Family Residence	456
4	Single Family Residence	232
5	Single Family Residence	249
6	Single Family Residence	410
7	Single Family Residence	373
101	Other Communication Tower	1,575
102	New Cingular Wireless PCS, LLC	1,612
201	The Landing (private airstrip)	2,314
401	Mount Hope Cemetery	983
--	41HI314	--
--	41HI315	--
--	41HI83	--
--	41HI93	--
--	41HI92	--
--	41HI96	--

[1] Due to the potential horizontal inaccuracies of the aerial photography and data utilized, all habitable structures within 513 feet have been identified.
[2] Distances to sensitive cultural resource sites are not provided for protection of the sites.

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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 Correspondence

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

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

May 5, 2020
(Via Mail)

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

Re: Proposed Sam Switch to Aquilla Lake Wind Project
Hill County, Texas
POWER Engineers, Inc. Project No. 164366

Dear Mr. Lowe:

Lone Star Transmission, LLC (Lone Star) is evaluating the construction of a potential new 345-kV transmission line in Hill County, Texas that will interconnect a new wind generation project.

The proposed 345-kV line will begin at the existing Lone Star Sam Switch Substation, located approximately 3.10 miles east of Abbott, Texas on County Road 3160. From the existing Lone Star Sam Switch Substation, the new 345-kV line will extend approximately 13 miles in length to the proposed 300-megawatt Hubbard Wind Project located southwest of Mount Calm, Texas on State Highway 31. The preliminary study area is shown on the enclosed map.

If Lone Star moves forward with this project, it will file an application with the Public Utility Commission of Texas (PUC) to amend its Certificate of Convenience and Necessity (CCN) to add the new transmission line to its CCN. POWER Engineers, Inc. (POWER) is preparing an Environmental Assessment (EA) to support Lone Star's CCN application with the PUC. POWER is gathering data on the existing environment and identifying environmental, cultural, and land use constraints within the study area. POWER will evaluate the route between the end points that consider identified constraints and the need to serve the increasing electrical load in the area.

We are requesting that your agency/office provide information concerning environmental and land use constraints or other issues of interest to your agency/office within the study area. Your input will be an important consideration in the evaluation of 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 certification of a route for the proposed project, Lone Star will identify and obtain necessary permits, if required, from your agency/office.

May 5, 2020

Thank you for your assistance with this proposed electric transmission line project. Please contact me by phone at 281-765-5507, or by e-mail at lisa.barko@powereng.com if you have any questions or require additional information. We would appreciate receiving your reply by June 2, 2020.

Sincerely,

Lisa Barko Meaux

Lisa Barko Meaux
Project Manager

Enclosure(s):
Preliminary Study Area Map

Sent Via Mail
ProjectWise 164366

Sam Switch to Aquilla Lake Wind Project
Federal, State and Local Agencies/Officials Contact List

FEDERAL

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

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

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

Regulatory Chief Stephen Brooks
USACE – Fort Worth District
819 Taylor Street
Fort Worth, TX 76102

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

Mr. Ken McQueen
Region 6 Administrator
U.S. Environmental Protection Agency
1201 Elm Street, Suite 500
Dallas, TX 75270

Ms. Debra Bills
Field Supervisor
U.S. Fish and Wildlife Service
Arlington Ecological Services Field Office
2005 Northeast Green Oaks Boulevard
Suite 140
Arlington, Texas 76006

STATE

Mr. David Van Soest
Region 9 Director
Texas Commission on Environmental Quality
6801 Sanger Ave, Suite 2500
Waco, TX 76710-7826

Mr. Dan Harmon
Director, Aviation Division
Texas Department of Transportation
125 E. 11th Street
Austin, TX 78701-2483

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

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

Mr. Stanley Swiatek, P.E.
Waco District Engineer
Texas Department of Transportation
100 S. Loop Drive
Waco, TX 76704-2858

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

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

Sam Switch to Aquilla Lake Wind Project
Federal, State and Local Agencies/Officials Contact List

Ms. Laura Zebehazy
Program Leader
Wildlife Habitat Assessment Program
Texas Parks and Wildlife Department
4200 Smith School Road
Austin, TX 78744-3291

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

COUNTY

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

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

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

Mr. Bob McGregor
Chairperson
Hill County Historical Commission
412 E. Franklin Street
Hillsboro, TX 76645

Mr. Eric Pustejovsky
Superintendent
Abbot Independent School District
219 S. First Street
Abbott, TX 76621

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

Mr. James Wright II
Superintendent
Mount Calm Independent School District
P.O. Box 105
Mount Calm, TX 76673

Mr. David Timmons
Superintendent
Penelope Independent School District
309 Avenue D
Penelope, TX 76676

NON-GOVERNMENTAL ORGANIZATION

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

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

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

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

U.S. Department
of Transportation
**Federal Aviation
Administration**

Southwest Region

10101 Hillwood Parkway
Fort Worth, TX 76177

June 22, 2020

Lisa Barko Meaux
Power Engineers, Inc.
16825 Northchase Drive
Suite 1200
Houston, TX 77060

Dear Ms. Meaux:

This is in response to your May 5, 2020, correspondence concerning Lone Star Transmission's, LLC proposed 345-kV line in Hill County, Texas. You requested information regarding environmental and land use constraints or other issues of interest.

As set forth in Title 14 of the Code of Federal Regulations Part 77, Objects that Affect the Navigable Airspace, the prime concern of the Federal Aviation Administration is the effect of certain proposed construction on the safe and efficient use of the navigable airspace.

To accomplish this mission, aeronautical studies are conducted based on information provided by sponsors on FAA Form 7460-1, Notice of Proposed Construction or Alteration. If your organization is planning to sponsor any construction or alterations that may affect navigable airspace, you must file FAA Form 7460-1 electronically via https://oeaaa.faa.gov/oeaaa/external/portal.jsp.

For additional information and assistance, please feel free to contact the Obstruction Evaluation Group at 10101 Hillwood Parkway, Fort Worth, Texas 76177 or (817) 222-5954.

Sincerely,

Rob Lowe
Regional Administrator,
Southwest Region

CC: Obstruction Evaluation Group, AJV-15

Meaux, Lisa

From: Sciano, Colleen <colleen.a.sciano@fema.dhs.gov>
Sent: Monday, June 01, 2020 12:25 PM
To: Meaux, Lisa
Cc: Sciano, Colleen
Subject: Hill County, TX Environmental
Attachments: Hill County, Texas.pdf; Hill County, Texas Response.pdf

Good Afternoon,

The attached response is in regards to an environmental you sent to FEMA Region 6. The response is for Sam Switch to Aquilla Lake Wind Project, Hill County, TX.
Please let me know if you have any additional questions.

Thanks,

Colleen

Colleen Sciano
Program Support Assistant
Mitigation
DHS/FEMA-Region 6
W: (940) 383-7257
C: (202) 368-7663

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

FEMA

FEDERAL EMERGENCY MANAGEMENT AGENCY
REGION 6
MITIGATION DIVISION

RE: Proposed Sam Switch to Aquilla Lake Wind Project, Hill County, Texas, POWER Engineers, Inc. Project No. 164366

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.

Hill County
Tom Hemrick
Emergency Management Coordinator
200 East Franklin Street
Hillsboro, Texas 76645
themrick@co.hill.tx.us
(254) 582-2023

REVIEWER:

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

DATE: May 26, 2020

20·5·59938

Date Rec'd: 5/22/20		
Rec'd by: RR		
	Action	Info
RA		X
Deputy RA		X
XA		
Analyst		
RES		
REC		
MIT	X	
MSD		
NP		
Grants		
File		X
Suspense Date:		

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

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

May 5, 2020
(Via Mail)

Mr. Tony Robinson
Region 6 Regional Administrator
Federal Emergency Management Agency
Denton, TX 76209-3698

Re: Proposed Sam Switch to Aquilla Lake Wind Project
Hill County, Texas
POWER Engineers, Inc. Project No. 164366

Dear Mr. Robinson:

Lone Star Transmission, LLC (Lone Star) is evaluating the construction of a potential new 345-kV transmission line in Hill County, Texas that will interconnect a new wind generation project.

The proposed 345-kV line will begin at the existing Lone Star Sam Switch Substation, located approximately 3.10 miles east of Abbott, Texas on County Road 3160. From the existing Lone Star Sam Switch Substation, the new 345-kV line will extend approximately 13 miles in length to the proposed 300-megawatt Hubbard Wind Project located southwest of Mount Calm, Texas on State Highway 31. The preliminary study area is shown on the enclosed map.

If Lone Star moves forward with this project, it will file an application with the Public Utility Commission of Texas (PUC) to amend its Certificate of Convenience and Necessity (CCN) to add the new transmission line to its CCN. POWER Engineers, Inc. (POWER) is preparing an Environmental Assessment (EA) to support Lone Star's CCN application with the PUC. POWER is gathering data on the existing environment and identifying environmental, cultural, and land use constraints within the study area. POWER will evaluate the route between the end points that consider identified constraints and the need to serve the increasing electrical load in the area.

We are requesting that your agency/office provide information concerning environmental and land use constraints or other issues of interest to your agency/office within the study area. Your input will be an important consideration in the evaluation of 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 certification of a route for the proposed project, Lone Star will identify and obtain necessary permits, if required, from your agency/office.

May 5, 2020

Thank you for your assistance with this proposed electric transmission line project. Please contact me by phone at 281-765-5507, or by e-mail at lisa.barko@powereng.com if you have any questions or require additional information. We would appreciate receiving your reply by June 2, 2020.

Sincerely,

Lisa Barko Meaux

Lisa Barko Meaux
Project Manager

Enclosure(s):
Preliminary Study Area Map

Sent Via Mail
ProjectWise 164366

From:	Meaux, Lisa
To:	Villarreal, Carlos - NRCS, Temple,TX
Cc:	Williams, Denise; Teta, Sairah
Subject:	RE: Proposed Sam Switch to Aquilla Lake Wind Project
Date:	Wednesday, May 13, 2020 10:54:45 AM
Attachments:	image008.png image009.png image012.png image013.png

Mr. Villarreal,
Thank you for the information we will reach out if we have any questions.
Lisa

LISA BARKO MEAUX
PROJECT MANAGER
ENVIRONMENTAL DEPARTMENT MANAGER
16825 Northchase Drive, Suite 1200
Houston, Texas 77060

281-765-5507 direct
713-962-8476 cell
lisa.barko@powereng.com

POWER Engineers, Inc.
www.powereng.com

From: Villarreal, Carlos - NRCS, Temple,TX <carlos.villarreal@usda.gov>
Sent: Wednesday, May 13, 2020 10:00 AM
To: Meaux, Lisa <lisa.barko@powereng.com>
Subject: Proposed Sam Switch to Aquilla Lake Wind Project

Good morning, Lisa,

Please find the attached Environmental Assessment of Resources for the proposed project located in Hill County, Texas.

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

Best Regards,

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

Stay Connected with USDA:

United States Department of Agriculture

Natural Resources
Conservation Service

State Office

101 S. Main Street
Temple, TX 76501
Voice 254.742.9800
Fax 254.742.9819

May 13, 2020

POWER Engineers
Lisa.Barko@powereng.com

Attention: Lisa Barko Meaux, Project Manager, *via email*

Subject: LNU-Farmland Protection
Proposed Sam Switch to Aquilla Lake Wind Project
Project No. 164366
Environmental Assessment of Natural Resources
Hill County, Texas

We have reviewed the information provided in your correspondence dated May 5, 2020 concerning the proposed transmission line project located in Hill County, Texas. We have evaluated the proposed site and provided technical resources related to soil and land use limitations for consideration within an Environmental Assessment (EA).

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

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

The major concerns within the study area are particulate matter source hazard, clay content, and soil depth. Soil particles mixed with chemical liquids in the atmosphere pose a potential environmental risk. To reduce this risk during construction, limit the amount of traffic on access roads and reduce the amount of bare ground by covering the ground with erosion control blankets or plant permanent vegetation on traffic areas. Linear extensibility (LE) is a metric of clay amount and mineralogy. LE from 6.0 – 9.0 and greater than 9.0 and considered high and very high shrink-swell potential, respectively. These areas are prone to shifting and extra construction materials may be required to accommodate these areas. Additionally, the study area involves soils that are shallow and moderately deep to petrocalcic layers or mudstone/shale bedrock. Larger construction equipment may be required in these areas.

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

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

Sincerely,

Carlos J. Villarreal
NRCS Soil Scientist

Attachment: **Custom Soil Resource Report for Hill County, Texas**

United States Department of Agriculture

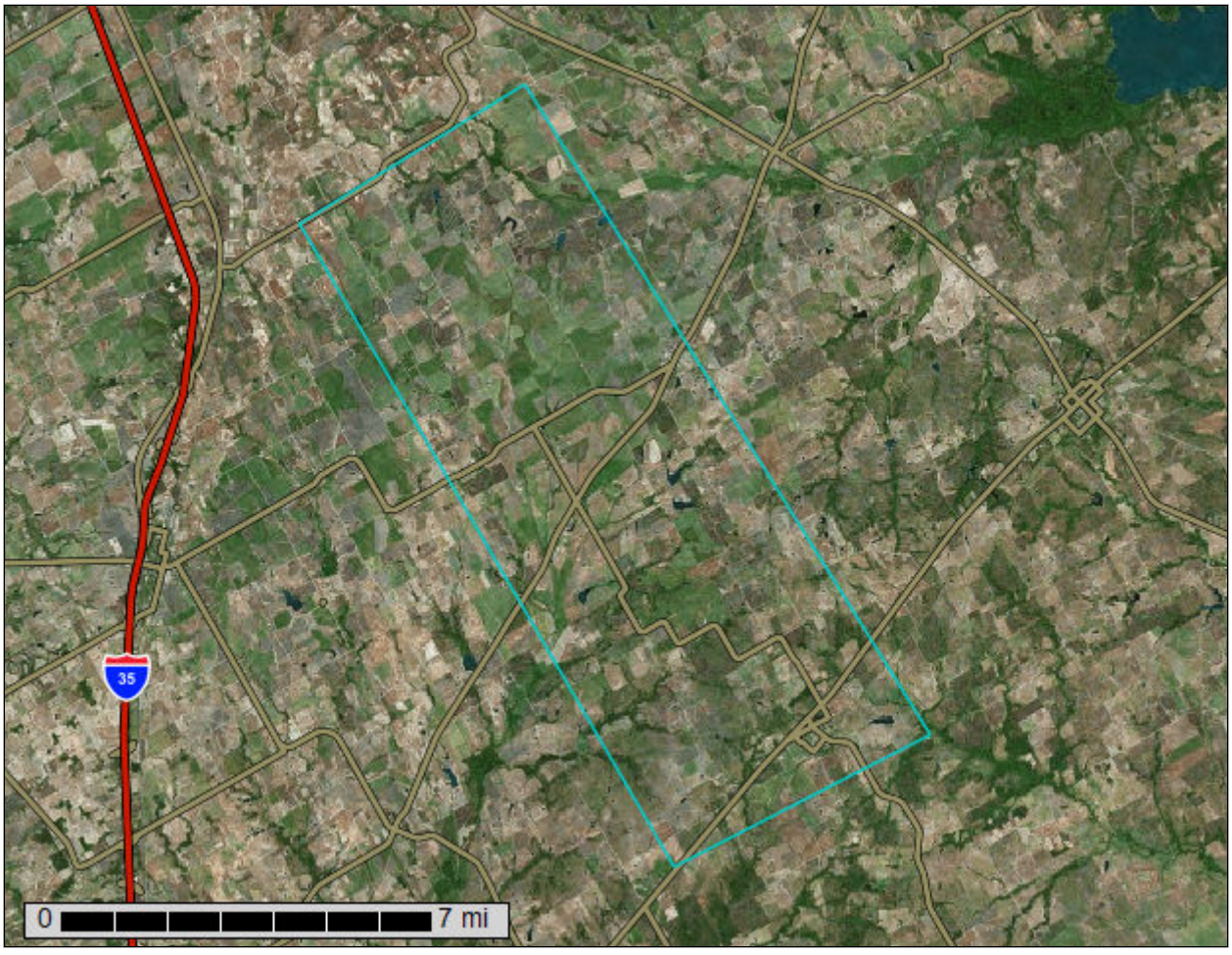
NRCS

Natural Resources Conservation Service

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

Custom Soil Resource Report for Hill County, Texas

Proposed Sam Switch to Aquilla Lake Wind Project Study Area



May 13, 2020

Preface

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

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

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

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

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

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

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

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Suitabilities and Limitations for Use.....5
Land Management.....5
Air Quality PM2_5 (TX) (Proposed Sam Switch to Aquilla Lake Wind Project Study Area).....5
Soil Properties and Qualities.....16
Soil Physical Properties.....16
Linear Extensibility (Proposed Sam Switch to Aquilla Lake Wind Project Study Area).....16
Soil Qualities and Features.....25
Depth to Any Soil Restrictive Layer (Proposed Sam Switch to Aquilla Lake Wind Project Study Area).....25

Soil Information for All Uses

Suitabilities and Limitations for Use

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

Land 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.

Air Quality PM2_5 (TX) (Proposed Sam Switch to Aquilla Lake Wind Project Study Area)

This interpretation provides a tool to assess soil as a source of airborne particulate matter particulates less than 2.5 mm in size (PM2.5). Air quality is a function of PM2.5 and smaller particles that are held in airborne suspension. Sources of these particles are smoke, exhaust and industrial emission, and dust from roads and agricultural activities. The interpretation assumes that the area being affected is dry, bare, smooth, and has a long distance that is exposed to the wind.

Soil properties that favor the release of PM2.5 from the soil surfac are particle size and carbonate content. Conversely, soil surface attributes that reduce PM2.5 are organic matter content and coarse fragments. The soil PM2.5 is the interaction of these soil surface features.

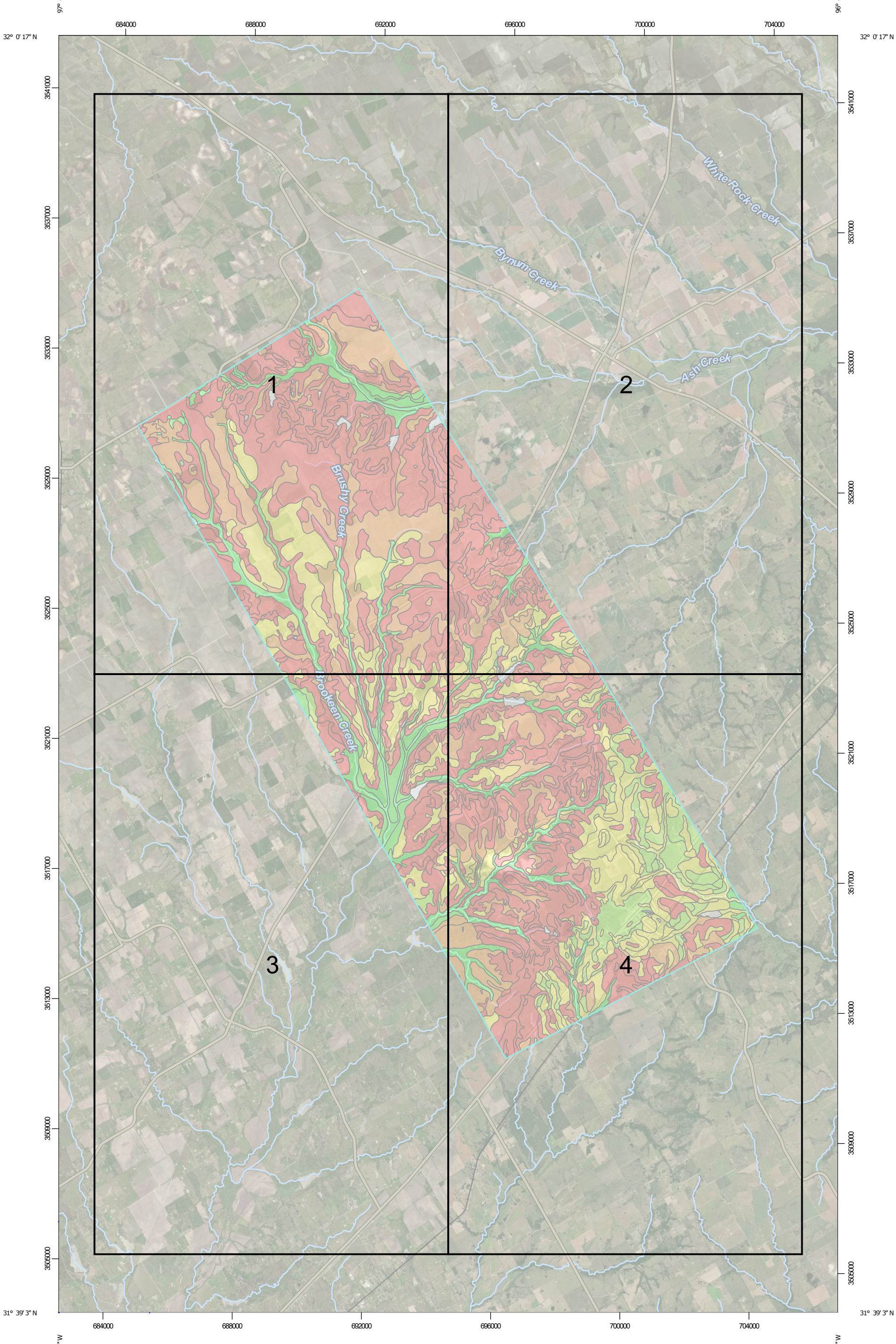
This interpretive model is NOT DESIGNED to quantify PM2.5 airborne particles from agricultural lands but to identify those areas that have could emit PM2.5

particles and to describe that possibility on a scale of 0 (no or very low risk) to 1.00 (highest risk). Rating classes are assigned to the index and are a verbal representation of the soil's PM2.5 risk. Classes range from very low to very high PM2.5.

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—Air Quality PM2_5 (TX) (Proposed Sam Switch to Aquilla Lake Wind Project Study Area)
Index Sheet



Map Scale: 1:110,000 if printed on B portrait (11" x 17") sheet.

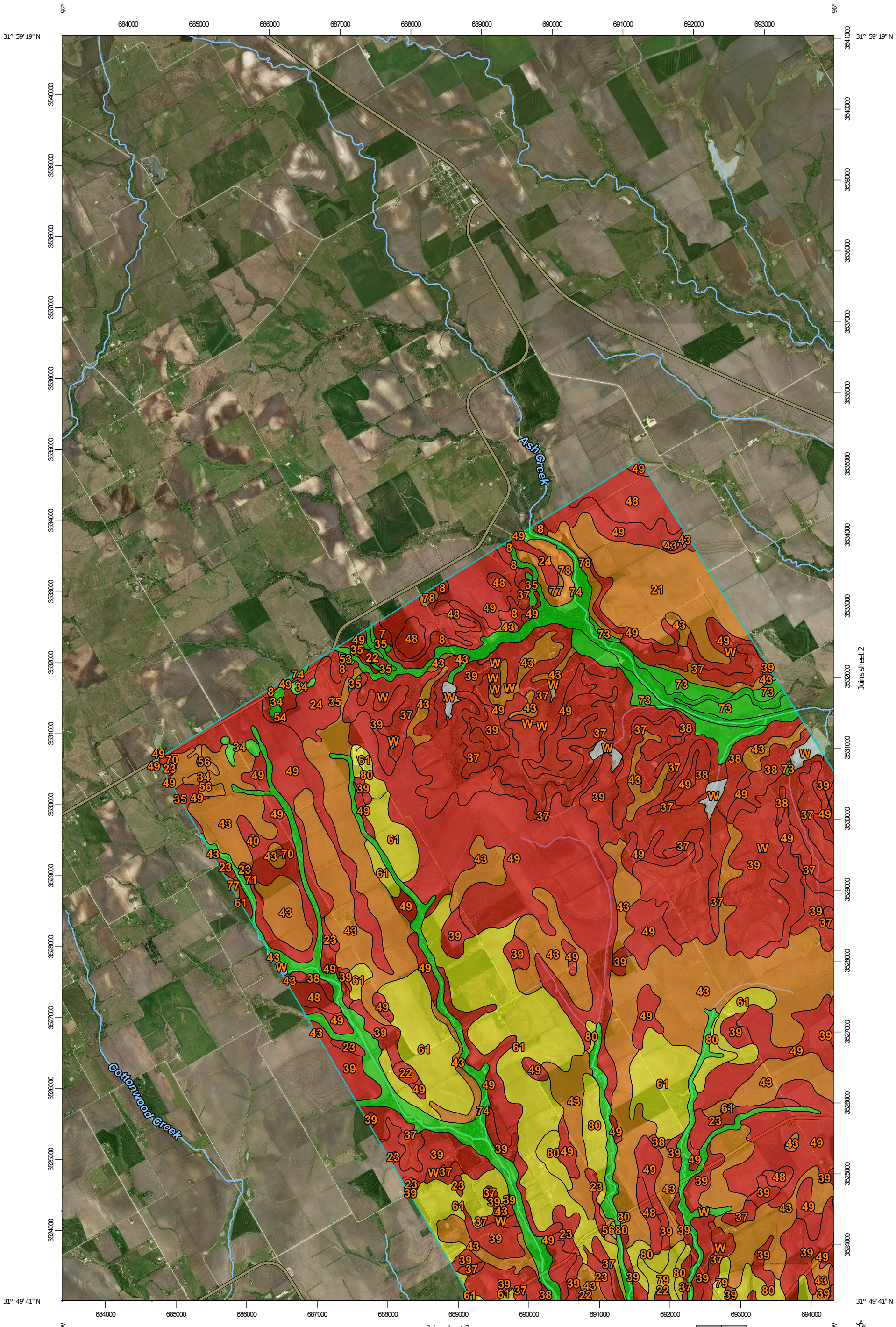
N

Meters
0 1500 3000 6000 9000

Feet
0 5000 10000 20000 30000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

Custom Soil Resource Report
Map—Air Quality PM2_5 (TX) (Proposed Sam Switch to Aquilla Lake Wind Project Study Area)
Map sheet 1 of 4



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Feet
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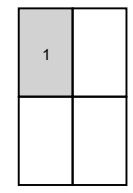
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84



Map Sheet Location

96° 56' 48" W
96° 49' 52" W
31° 59' 19" N
31° 49' 41" N
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3541000 3540000 3539000 3538000 3537000 3536000 3535000 3534000 3533000 3532000 3531000 3530000 3529000 3528000 3527000 3526000 3525000 3524000

White Rock Creek
Bynum Creek
Ash Creek

Joins sheet 1
Joins sheet 3
Joins sheet 4

Map Scale: 1:50,000 if printed on B portrait (11" x 17") sheet.
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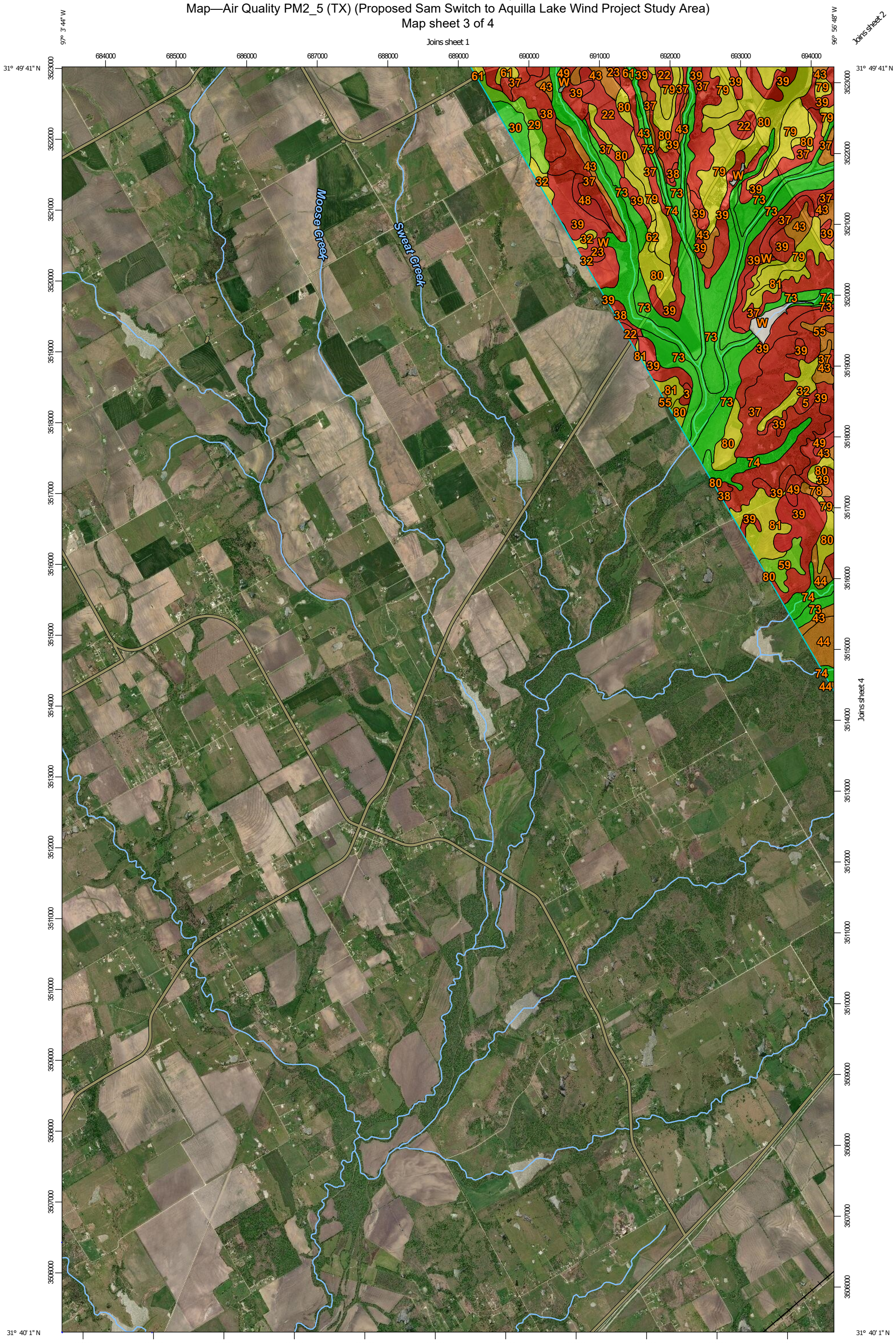
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

Map Sheet Location
2

Custom Soil Resource Report
Map—Air Quality PM2_5 (TX) (Proposed Sam Switch to Aquilla Lake Wind Project Study Area)
Map sheet 3 of 4



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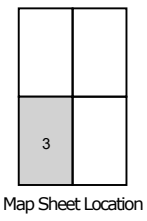
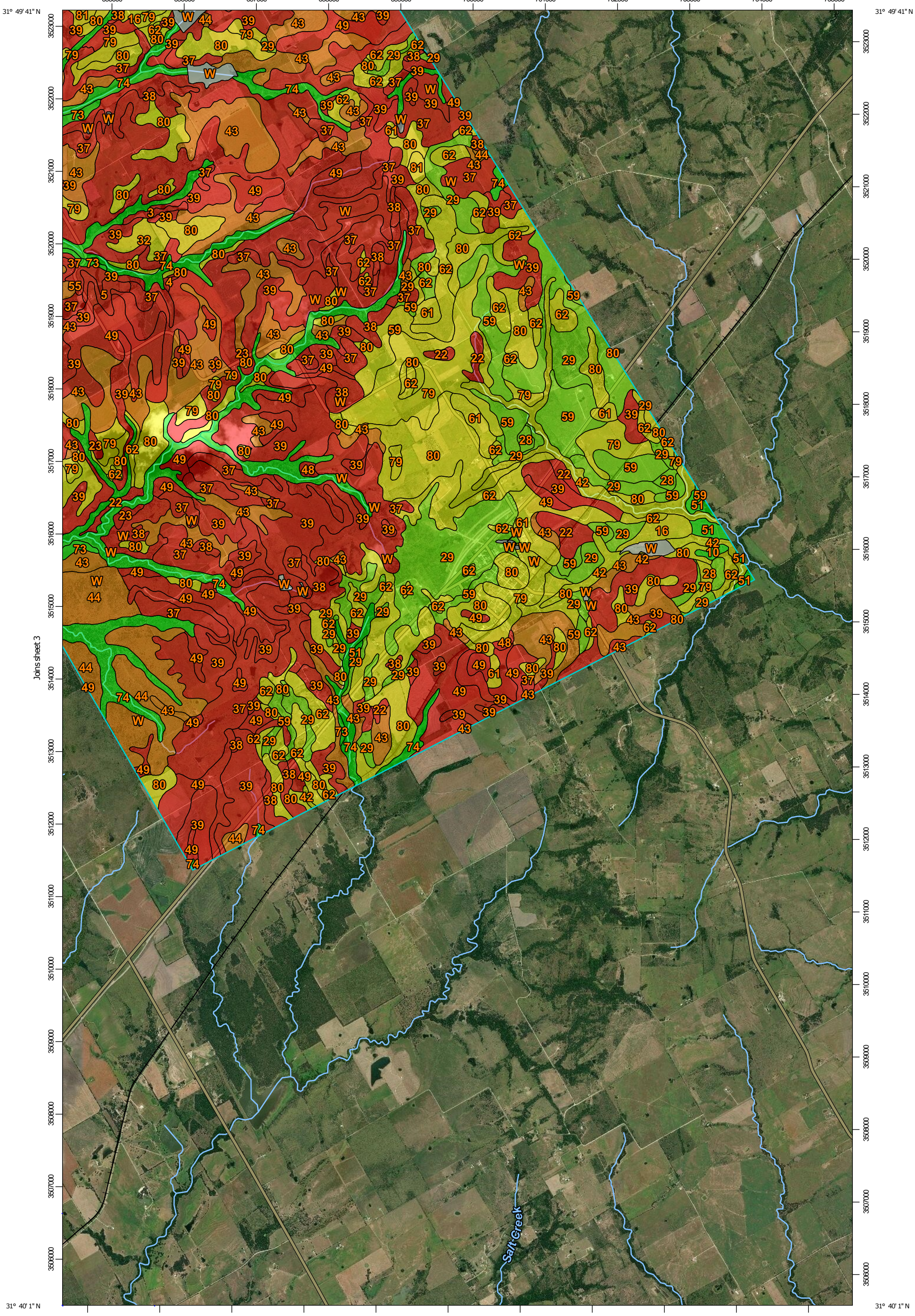


Map Sheet Location

Custom Soil Resource Report
Map—Air Quality PM2_5 (TX) (Proposed Sam Switch to Aquilla Lake Wind Project Study Area)
Map sheet 4 of 4



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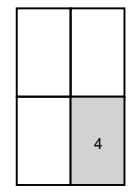
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84



Map Sheet Location

MAP LEGEND

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

Soils

Soil Rating Polygons
- Very high PM2.5
- High PM2.5
- Moderate PM2.5
- Low PM2.5
- Very low PM2.5
- Not rated or not available

Soil Rating Lines
- Very high PM2.5
- High PM2.5
- Moderate PM2.5
- Low PM2.5
- Very low PM2.5
- Not rated or not available

Soil Rating Points
- Very high PM2.5
- High PM2.5
- Moderate PM2.5
- Low PM2.5
- Very low PM2.5
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major 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 17, Sep 12, 2019

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

Date(s) aerial images were photographed: Apr 4, 2016—Nov 29, 2017

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

Tables—Air Quality PM2_5 (TX) (Proposed Sam Switch to Aquilla Lake Wind Project Study Area)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
3	Altoga silty clay, 1 to 3 percent slopes	Very high PM2.5	30.1	0.1%
4	Altoga silty clay, 2 to 5 percent slopes, eroded	Very high PM2.5	5.4	0.0%
5	Altoga clay loam, 5 to 8 percent slopes, eroded	Very high PM2.5	60.6	0.1%
7	Austin silty clay, 1 to 3 percent slopes	Very high PM2.5	12.9	0.0%
8	Austin silty clay, 2 to 5 percent slopes, moderately eroded	Very high PM2.5	170.1	0.4%
10	Axtell fine sandy loam, 1 to 3 percent slopes	Very low PM2.5	13.2	0.0%
16	Blum loam, 0 to 2 percent slopes	Moderate PM2.5	170.0	0.4%
21	Branyon clay, 0 to 1 percent slopes	High PM2.5	559.0	1.2%
22	Burleson clay, 0 to 1 percent slopes	Very high PM2.5	333.6	0.7%
23	Burleson clay, 1 to 3 percent slopes	Very high PM2.5	267.6	0.6%
24	Chatt clay, 1 to 3 percent slopes	Very high PM2.5	163.8	0.3%
28	Crockett fine sandy loam, 0 to 1 percent slopes	Low PM2.5	48.4	0.1%
29	Crockett fine sandy loam, 1 to 3 percent slopes	Low PM2.5	1,360.8	2.9%
30	Crockett-Wilson complex, 0 to 2 percent slopes	Very low PM2.5	49.9	0.1%
32	Culp clay loam, 1 to 3 percent slopes	Moderate PM2.5	148.3	0.3%
34	Eddy very gravelly clay loam, 1 to 3 percent slopes	Very low PM2.5	49.9	0.1%
35	Eddy very gravelly clay loam, 3 to 8 percent slopes	Very low PM2.5	39.0	0.1%
37	Ferris clay, 5 to 12 percent slopes	Very high PM2.5	4,425.0	9.3%
38	Ferris clay, 8 to 20 percent slopes, severely eroded	Very high PM2.5	939.8	2.0%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
39	Ferris-Heiden complex, 2 to 5 percent slopes	Very high PM2.5	10,105.4	21.3%
40	Gasil fine sandy loam, 1 to 3 percent slopes	Very low PM2.5	4.4	0.0%
42	Gowen clay loam, frequently flooded	Moderate PM2.5	306.1	0.6%
43	Heiden clay, 1 to 3 percent slopes	High PM2.5	6,486.0	13.7%
44	Heiden clay, 5 to 8 percent slopes	High PM2.5	665.5	1.4%
48	Houston Black clay, 0 to 1 percent slopes	Very high PM2.5	409.7	0.9%
49	Houston Black clay, 1 to 3 percent slopes	Very high PM2.5	6,496.3	13.7%
51	Kemp loam, occasionally flooded	Very low PM2.5	59.6	0.1%
53	Kopperl gravelly sandy loam, 1 to 3 percent slopes	Very low PM2.5	5.8	0.0%
54	Krum silty clay, 0 to 1 percent slopes	Very high PM2.5	27.1	0.1%
55	Lamar clay loam, 1 to 5 percent slopes	High PM2.5	36.0	0.1%
56	Lamar clay loam, 3 to 5 percent slopes, eroded	High PM2.5	48.6	0.1%
59	Mabank fine sandy loam, 0 to 2 percent slopes	Low PM2.5	637.7	1.3%
61	Normangee clay loam, 1 to 3 percent slopes	Moderate PM2.5	2,247.4	4.7%
62	Normangee clay loam, 3 to 5 percent slopes	Moderate PM2.5	1,278.7	2.7%
70	Stephen silty clay, 1 to 4 percent slopes	Very high PM2.5	7.2	0.0%
71	Stephen silty clay, 3 to 5 percent slopes	Very high PM2.5	4.2	0.0%
73	Tinn clay, 0 to 1 percent slopes, occasionally flooded	Very low PM2.5	1,141.4	2.4%
74	Tinn clay, 0 to 1 percent slopes, frequently flooded	Very low PM2.5	3,330.4	7.0%
77	Venus loam, 1 to 3 percent slopes	High PM2.5	34.2	0.1%
78	Venus loam, 3 to 5 percent slopes	High PM2.5	234.7	0.5%
79	Wilson clay loam, 0 to 1 percent slopes	Moderate PM2.5	1,422.9	3.0%
80	Wilson clay loam, 1 to 3 percent slopes	Moderate PM2.5	3,071.5	6.5%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
81	Wilson-Burleson complex, 0 to 1 percent slopes	Moderate PM2.5	248.9	0.5%
W	Water	Not rated	348.6	0.7%
Totals for Area of Interest			**47,505.4**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Very high PM2.5	23,458.7	49.4%
Moderate PM2.5	8,893.8	18.7%
High PM2.5	8,063.9	17.0%
Very low PM2.5	4,693.5	9.9%
Low PM2.5	2,046.9	4.3%
Null or Not Rated	348.6	0.7%
Totals for Area of Interest	**47,505.4**	**100.0%**

Rating Options—Air Quality PM2_5 (TX) (Proposed Sam Switch to Aquilla Lake Wind Project Study Area)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Soil Properties and Qualities

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

Soil Physical Properties

Soil Physical Properties are measured or inferred from direct observations in the field or laboratory. Examples of soil physical properties include percent clay, organic matter, saturated hydraulic conductivity, available water capacity, and bulk density.

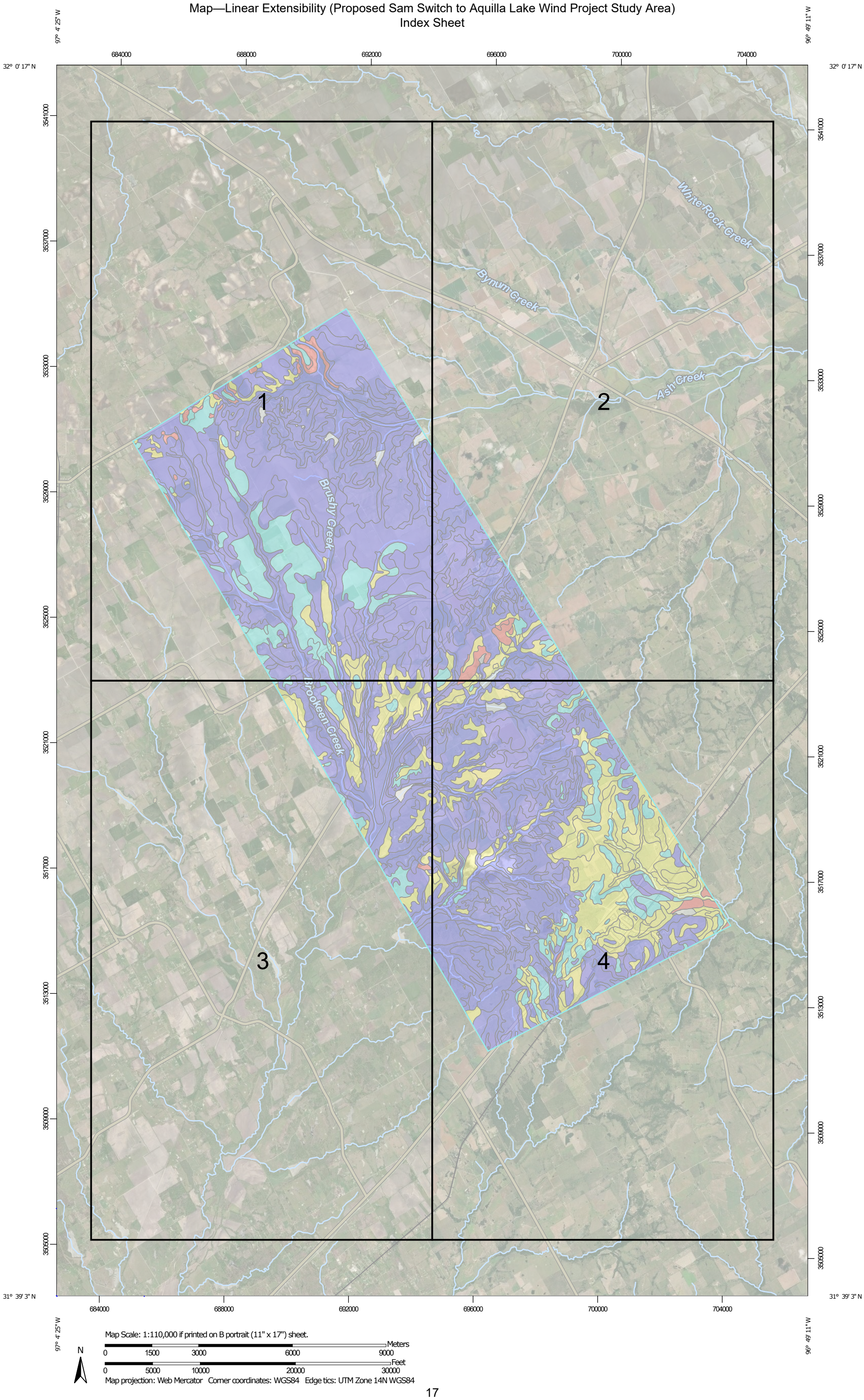
Linear Extensibility (Proposed Sam Switch to Aquilla Lake Wind Project Study Area)

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change.

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

Map—Linear Extensibility (Proposed Sam Switch to Aquilla Lake Wind Project Study Area)

Index Sheet



Map Scale: 1:110,000 if printed on B portrait (11" x 17") sheet.

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Feet: 0 5000 10000 20000 30000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

97° 3' 44" W
96° 56' 48" W
31° 59' 19" N
31° 49' 41" N
684000
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3527000
3526000
3525000
3524000

Ash Creek
Cottonwood Creek

Joins sheet 2
Joins sheet 3
Joins sheet 4

Map Scale: 1:50,000 if printed on B portrait (11" x 17") sheet.

N

Meters
0 500 1000 2000 3000

Feet
0 2000 4000 8000 12000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

Map Sheet Location
1

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96° 49' 52" W
31° 59' 19" N
31° 49' 41" N
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3541000 3540000 3539000 3538000 3537000 3536000 3535000 3534000 3533000 3532000 3531000 3530000 3529000 3528000 3527000 3526000 3525000 3524000

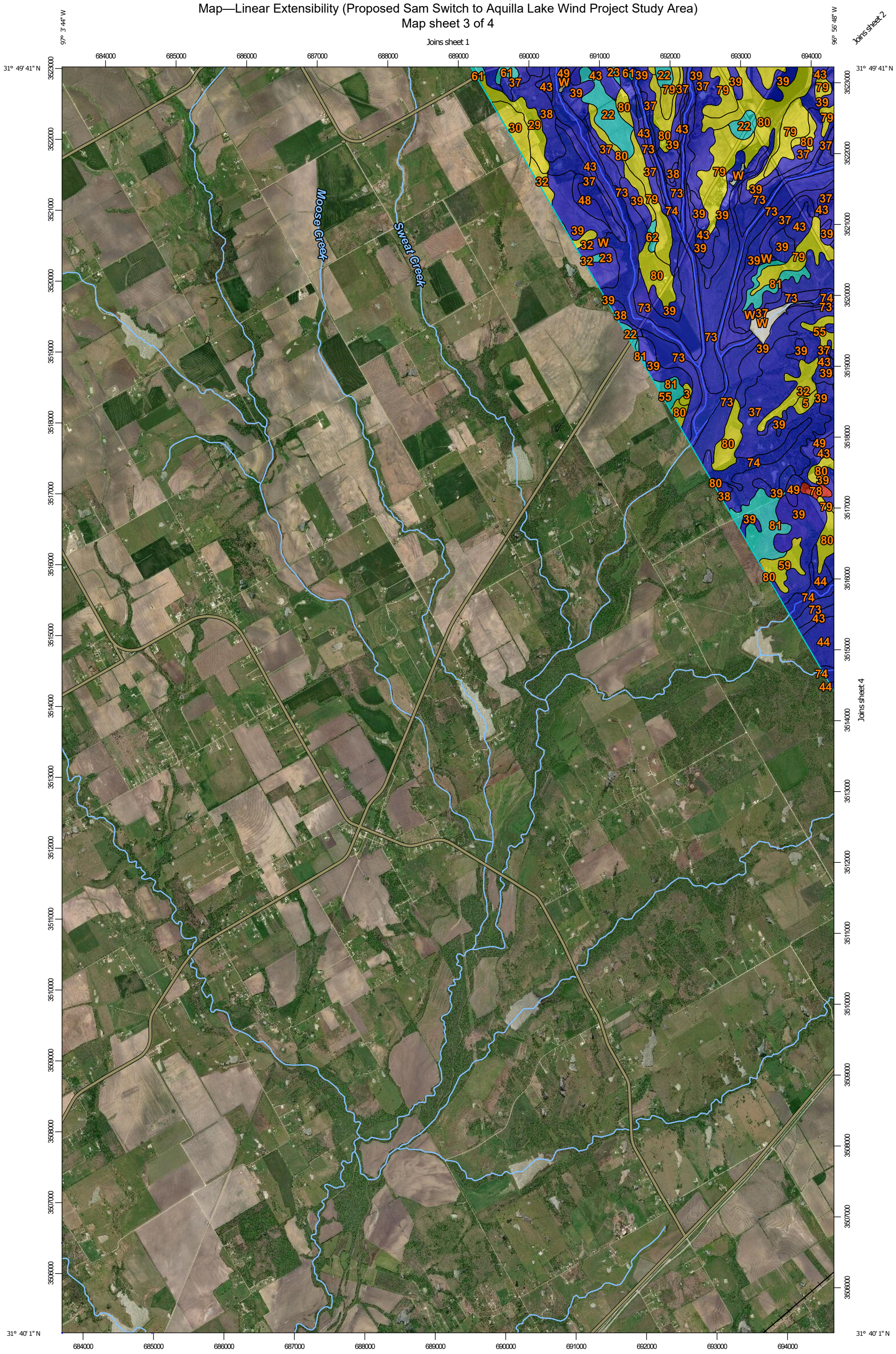
White Rock Creek
Bynum Creek
Ash Creek

Joins sheet 1
Joins sheet 3
Joins sheet 4

Map Scale: 1:50,000 if printed on B portrait (11" x 17") sheet.
Meters 0 500 1000 2000 3000
Feet 0 2000 4000 8000 12000
N
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

Map Sheet Location
2

Custom Soil Resource Report
Map—Linear Extensibility (Proposed Sam Switch to Aquilla Lake Wind Project Study Area)
Map sheet 3 of 4



Map Scale: 1:50,000 if printed on B portrait (11" x 17") sheet.

N

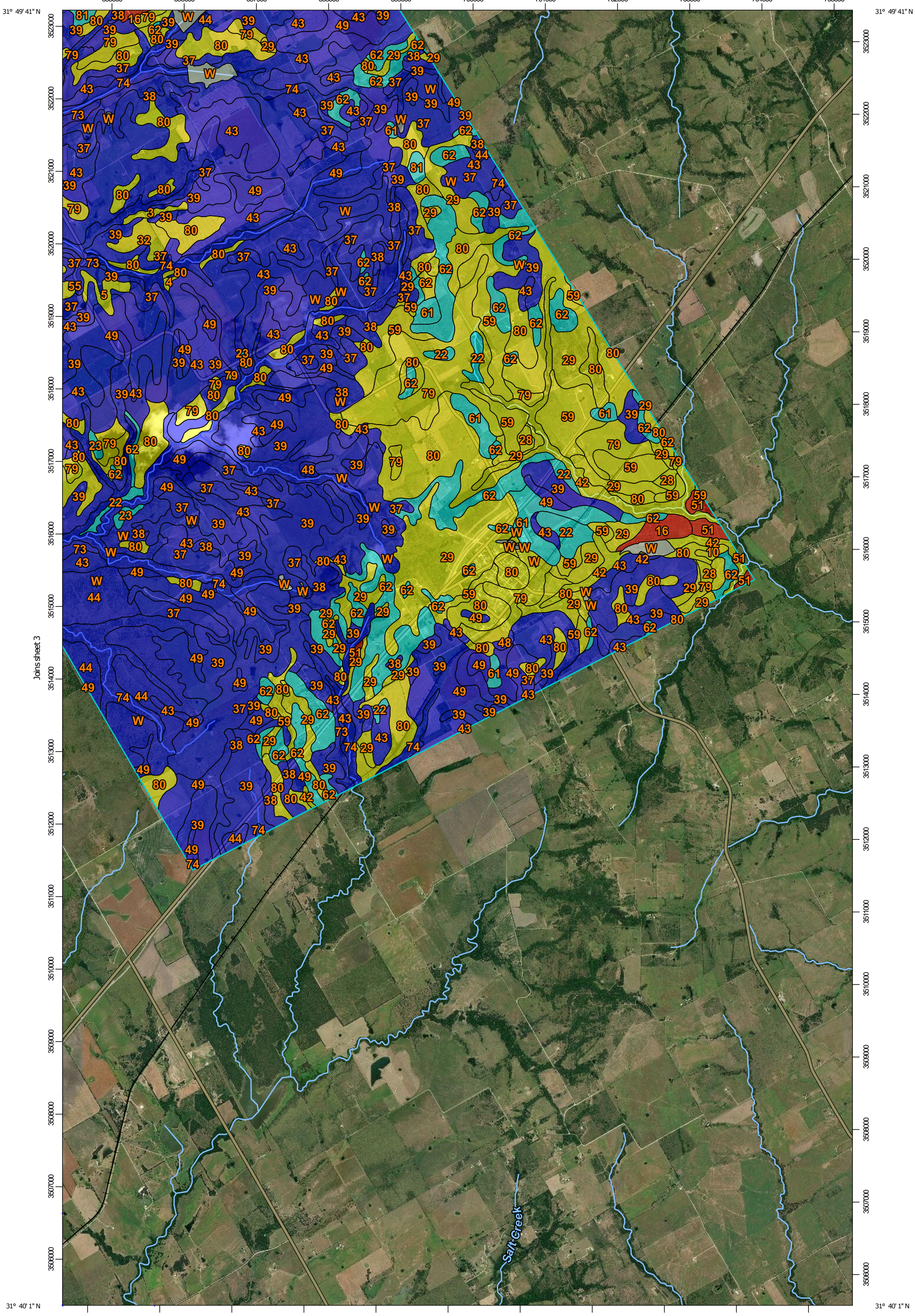
Meters
0 500 1000 2000 3000

Feet
0 2000 4000 8000 12000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

Map Sheet Location
3

Custom Soil Resource Report
Map—Linear Extensibility (Proposed Sam Switch to Aquilla Lake Wind Project Study Area)
Map sheet 4 of 4



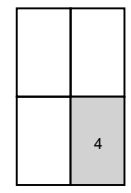
Map Scale: 1:50,000 if printed on B portrait (11" x 17") sheet.

N

Meters
0 500 1000 2000 3000

Feet
0 2000 4000 8000 12000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84



Map Sheet Location

MAP LEGEND

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

Soils

Soil Rating Polygons
- Low (0 - 3)
- Moderate (3 - 6)
- High (6 - 9)
- Very High (9 - 30)
- Not rated or not available

Soil Rating Lines
- Low (0 - 3)
- Moderate (3 - 6)
- High (6 - 9)
- Very High (9 - 30)
- Not rated or not available

Soil Rating Points
- Low (0 - 3)
- Moderate (3 - 6)
- High (6 - 9)
- Very High (9 - 30)
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major 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 17, Sep 12, 2019

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

Date(s) aerial images were photographed: Apr 4, 2016—Nov 29, 2017

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

Table—Linear Extensibility (Proposed Sam Switch to Aquilla Lake Wind Project Study Area)

Map unit symbol	Map unit name	Rating (percent)	Acres in AOI	Percent of AOI
3	Altoga silty clay, 1 to 3 percent slopes	5.3	30.1	0.1%
4	Altoga silty clay, 2 to 5 percent slopes, eroded	5.6	5.4	0.0%
5	Altoga clay loam, 5 to 8 percent slopes, eroded	4.5	60.6	0.1%
7	Austin silty clay, 1 to 3 percent slopes	5.0	12.9	0.0%
8	Austin silty clay, 2 to 5 percent slopes, moderately eroded	5.0	170.1	0.4%
10	Axtell fine sandy loam, 1 to 3 percent slopes	4.5	13.2	0.0%
16	Blum loam, 0 to 2 percent slopes	1.6	170.0	0.4%
21	Branyon clay, 0 to 1 percent slopes	11.1	559.0	1.2%
22	Burleson clay, 0 to 1 percent slopes	7.5	333.6	0.7%
23	Burleson clay, 1 to 3 percent slopes	7.9	267.6	0.6%
24	Chatt clay, 1 to 3 percent slopes	7.5	163.8	0.3%
28	Crockett fine sandy loam, 0 to 1 percent slopes	5.9	48.4	0.1%
29	Crockett fine sandy loam, 1 to 3 percent slopes	5.9	1,360.8	2.9%
30	Crockett-Wilson complex, 0 to 2 percent slopes	5.3	49.9	0.1%
32	Culp clay loam, 1 to 3 percent slopes	4.7	148.3	0.3%
34	Eddy very gravelly clay loam, 1 to 3 percent slopes	1.5	49.9	0.1%
35	Eddy very gravelly clay loam, 3 to 8 percent slopes	1.5	39.0	0.1%
37	Ferris clay, 5 to 12 percent slopes	17.0	4,425.0	9.3%
38	Ferris clay, 8 to 20 percent slopes, severely eroded	17.0	939.8	2.0%

Map unit symbol	Map unit name	Rating (percent)	Acres in AOI	Percent of AOI
39	Ferris-Heiden complex, 2 to 5 percent slopes	12.5	10,105.4	21.3%
40	Gasil fine sandy loam, 1 to 3 percent slopes	0.9	4.4	0.0%
42	Gowen clay loam, frequently flooded	4.5	306.1	0.6%
43	Heiden clay, 1 to 3 percent slopes	12.2	6,486.0	13.7%
44	Heiden clay, 5 to 8 percent slopes	12.2	665.5	1.4%
48	Houston Black clay, 0 to 1 percent slopes	12.0	409.7	0.9%
49	Houston Black clay, 1 to 3 percent slopes	12.0	6,496.3	13.7%
51	Kemp loam, occasionally flooded	1.5	59.6	0.1%
53	Kopperl gravelly sandy loam, 1 to 3 percent slopes	1.5	5.8	0.0%
54	Krum silty clay, 0 to 1 percent slopes	7.5	27.1	0.1%
55	Lamar clay loam, 1 to 5 percent slopes	4.5	36.0	0.1%
56	Lamar clay loam, 3 to 5 percent slopes, eroded	4.5	48.6	0.1%
59	Mabank fine sandy loam, 0 to 2 percent slopes	5.9	637.7	1.3%
61	Normangee clay loam, 1 to 3 percent slopes	6.4	2,247.4	4.7%
62	Normangee clay loam, 3 to 5 percent slopes	6.4	1,278.7	2.7%
70	Stephen silty clay, 1 to 4 percent slopes	3.2	7.2	0.0%
71	Stephen silty clay, 3 to 5 percent slopes	3.2	4.2	0.0%
73	Tinn clay, 0 to 1 percent slopes, occasionally flooded	11.0	1,141.4	2.4%
74	Tinn clay, 0 to 1 percent slopes, frequently flooded	9.9	3,330.4	7.0%
77	Venus loam, 1 to 3 percent slopes	1.5	34.2	0.1%
78	Venus loam, 3 to 5 percent slopes	1.5	234.7	0.5%
79	Wilson clay loam, 0 to 1 percent slopes	5.7	1,422.9	3.0%
80	Wilson clay loam, 1 to 3 percent slopes	5.7	3,071.5	6.5%

Map unit symbol	Map unit name	Rating (percent)	Acres in AOI	Percent of AOI
81	Wilson-Burleson complex, 0 to 1 percent slopes	6.7	248.9	0.5%
W	Water		348.6	0.7%
Totals for Area of Interest			**47,505.4**	**100.0%**

Rating Options—Linear Extensibility (Proposed Sam Switch to Aquilla Lake Wind Project Study Area)

Units of Measure: percent

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Interpret Nulls as Zero: No

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

Top Depth: 0

Bottom Depth: 50

Units of Measure: Centimeters

Soil Qualities and Features

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.

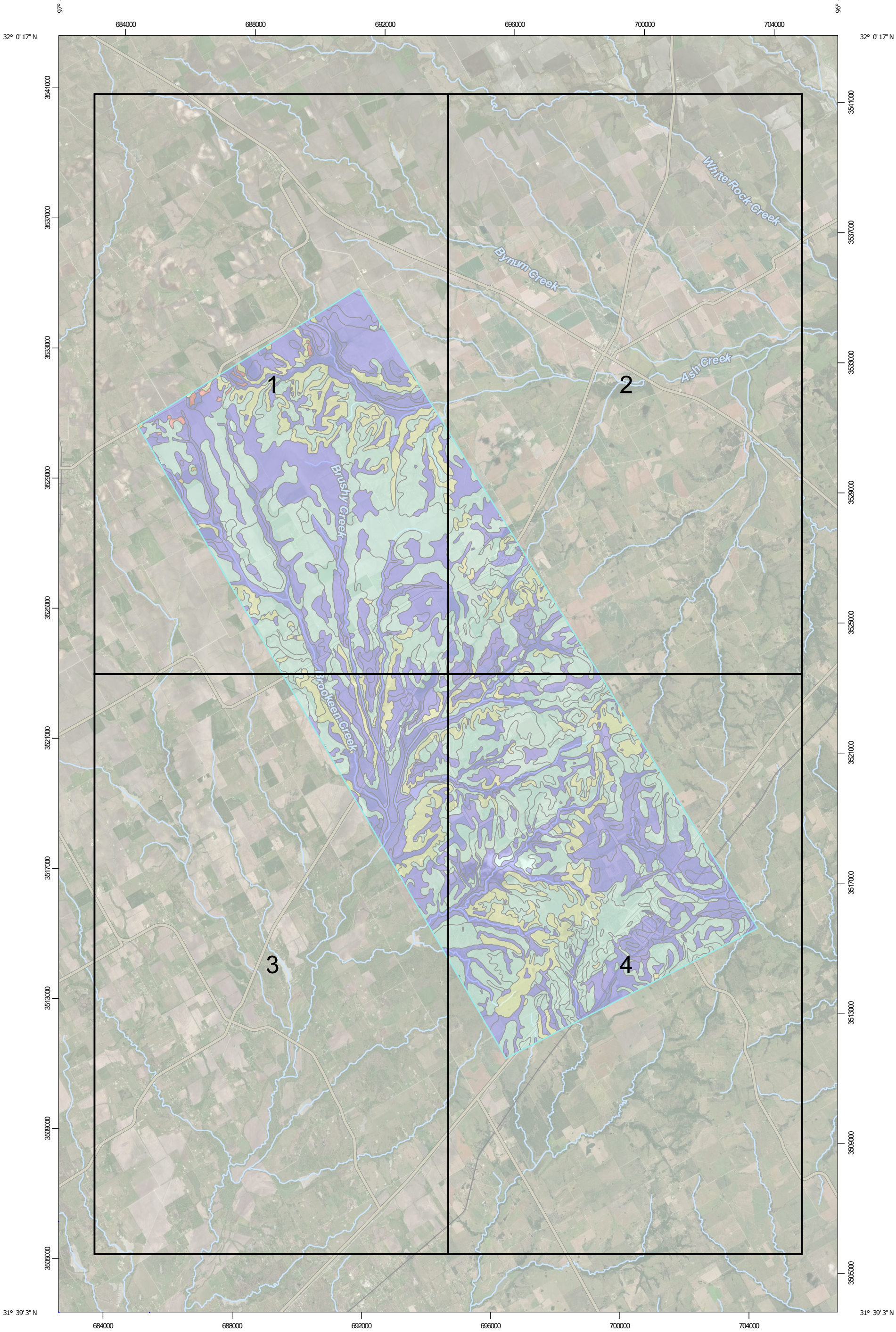
Depth to Any Soil Restrictive Layer (Proposed Sam Switch to Aquilla Lake Wind Project Study Area)

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.

This theme presents the depth to any type of restrictive layer that is described for each map unit. If more than one type of restrictive layer is described for an individual soil type, the depth to the shallowest one is presented. If no restrictive layer is described in a map unit, it is represented by the "> 200" depth class.

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

Custom Soil Resource Report
Map—Depth to Any Soil Restrictive Layer (Proposed Sam Switch to Aquilla Lake Wind Project Study Area)
Index Sheet



Map Scale: 1:110,000 if printed on B portrait (11" x 17") sheet.

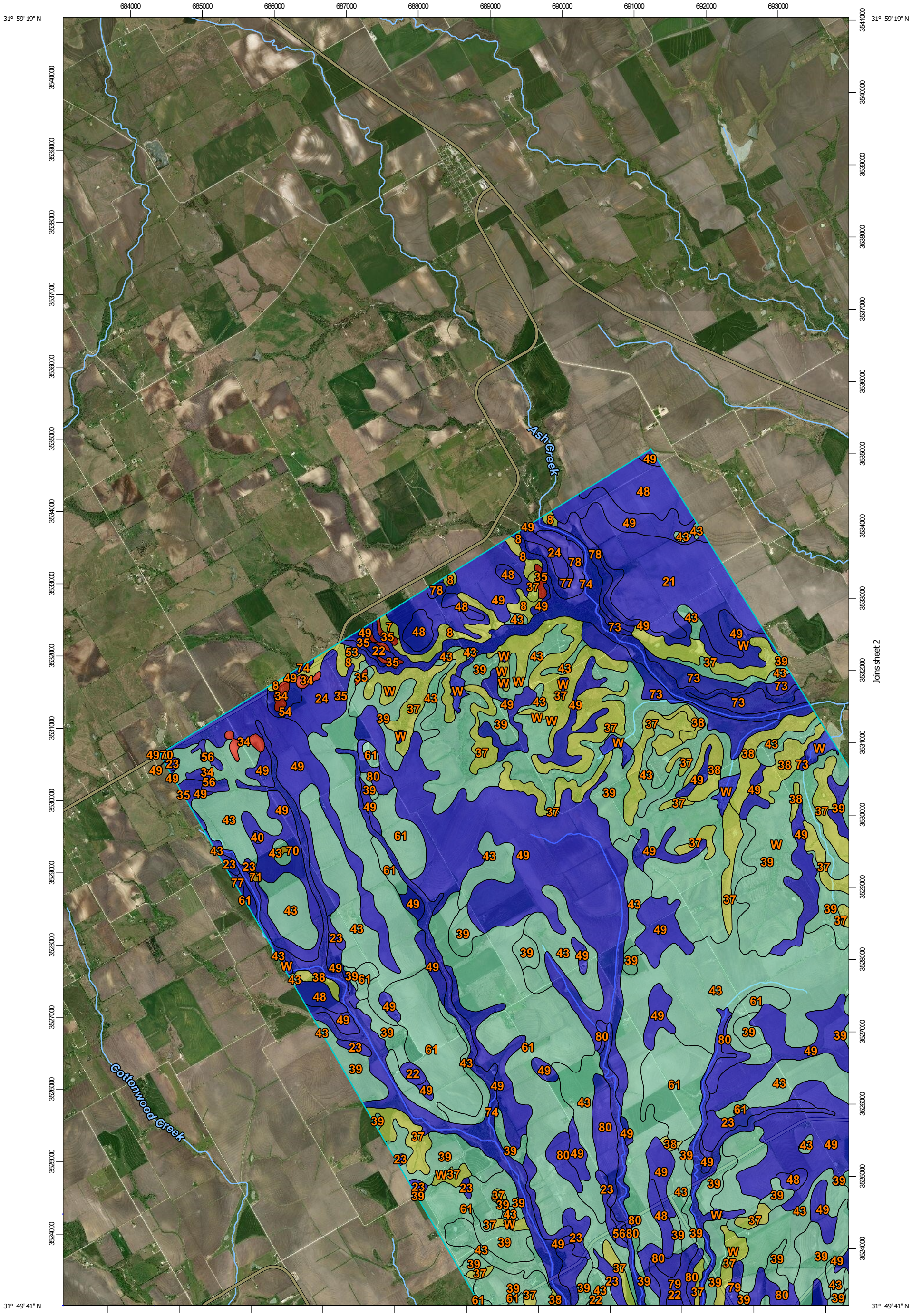
N

Meters
0 1500 3000 6000 9000

Feet
0 5000 10000 20000 30000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

Custom Soil Resource Report
Map—Depth to Any Soil Restrictive Layer (Proposed Sam Switch to Aquilla Lake Wind Project Study Area)
Map sheet 1 of 4



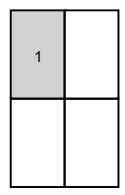
Map Scale: 1:50,000 if printed on B portrait (11" x 17") sheet.

Meters
0 500 1000 2000 3000

Feet
0 2000 4000 8000 12000

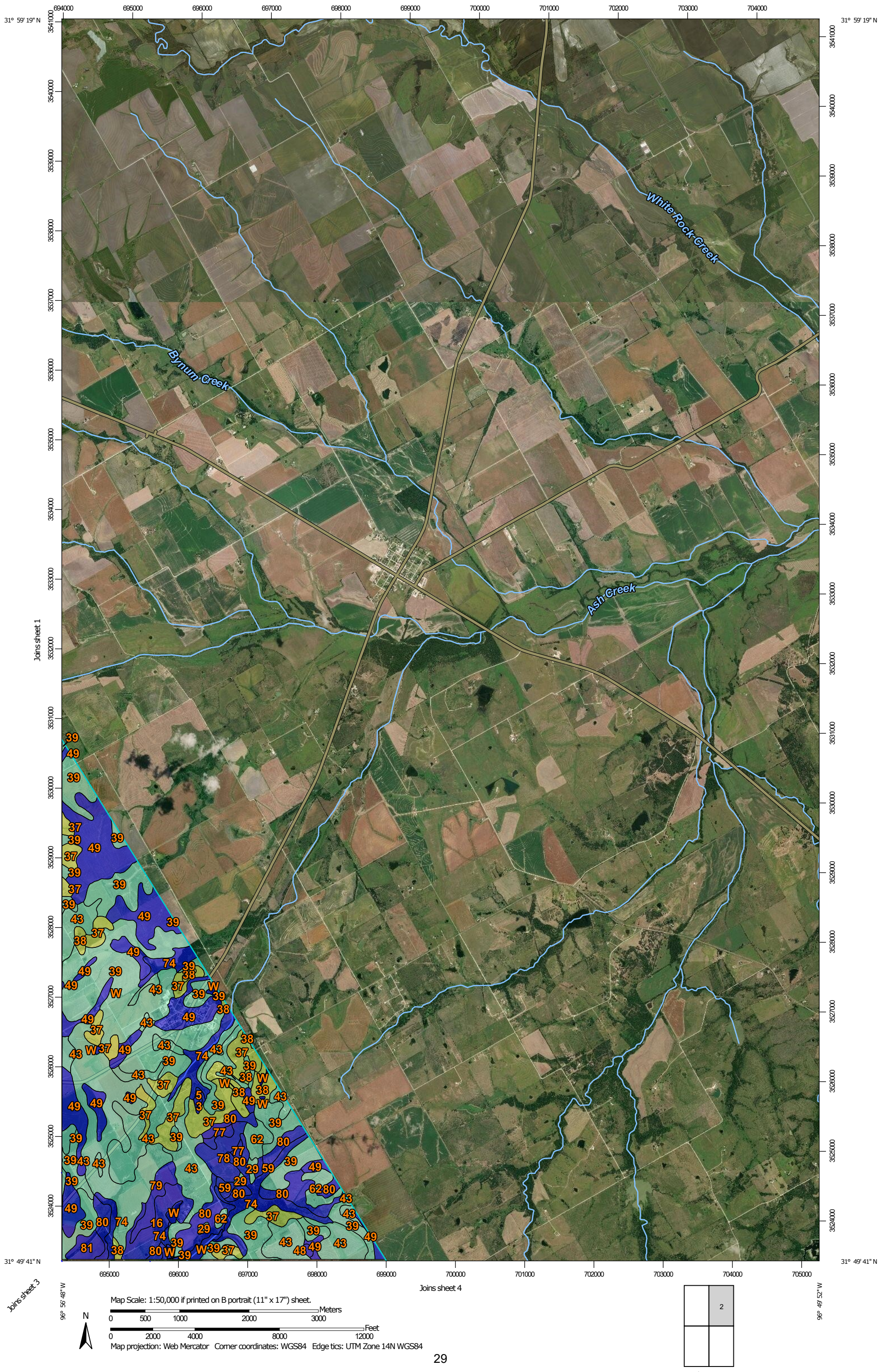
N

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84



Map Sheet Location

Custom Soil Resource Report
Map—Depth to Any Soil Restrictive Layer (Proposed Sam Switch to Aquilla Lake Wind Project Study Area)
Map sheet 2 of 4



Map Scale: 1:50,000 if printed on B portrait (11" x 17") sheet.

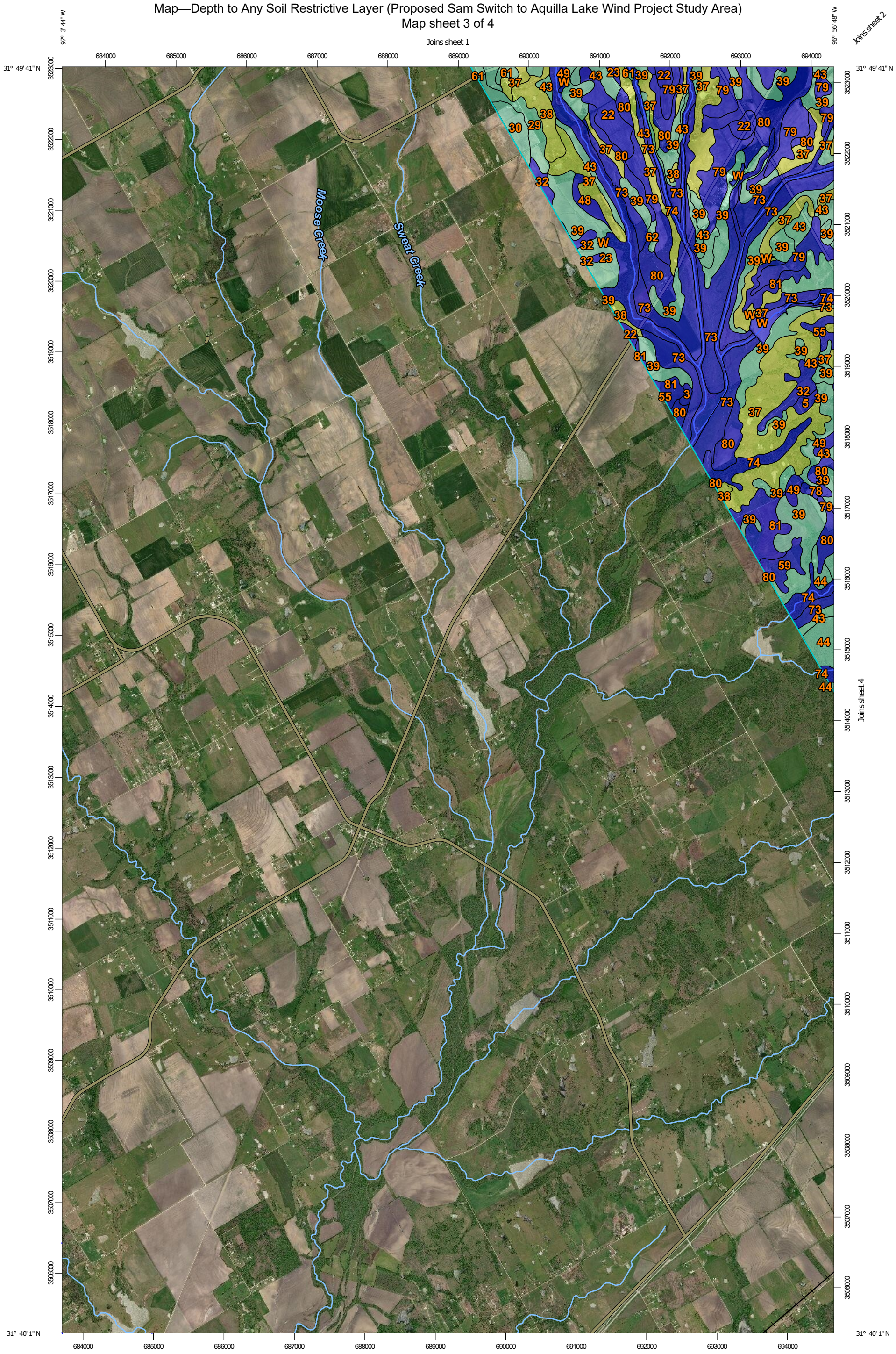
Meters: 0 500 1000 2000 3000

Feet: 0 2000 4000 8000 12000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

Map Sheet Location

Custom Soil Resource Report
Map—Depth to Any Soil Restrictive Layer (Proposed Sam Switch to Aquilla Lake Wind Project Study Area)
Map sheet 3 of 4



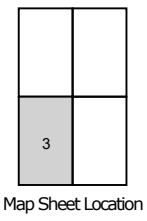
Map Scale: 1:50,000 if printed on B portrait (11" x 17") sheet.

N

Meters
0 500 1000 2000 3000

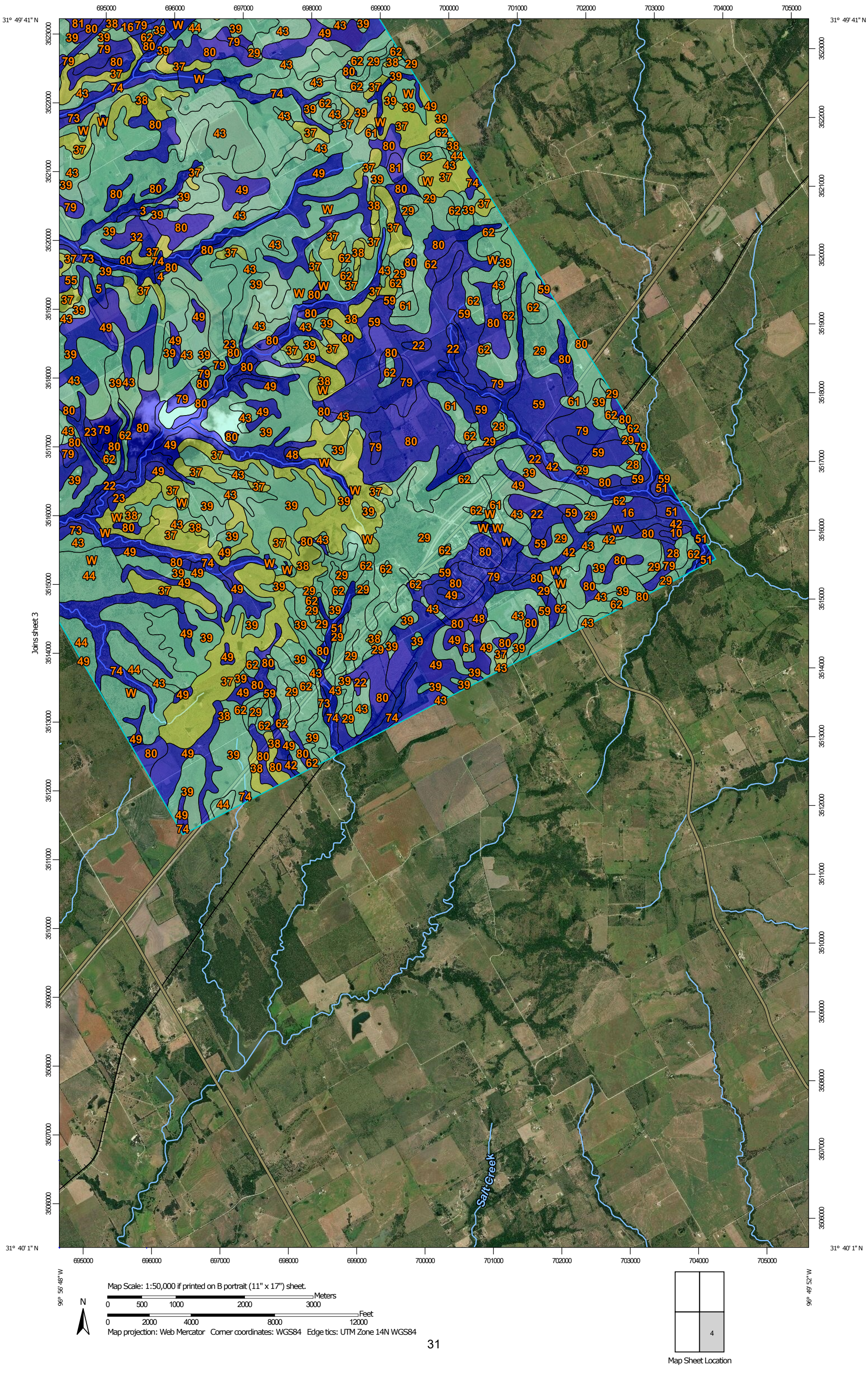
Feet
0 2000 4000 8000 12000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84



Map Sheet Location

Custom Soil Resource Report
Map—Depth to Any Soil Restrictive Layer (Proposed Sam Switch to Aquilla Lake Wind Project Study Area)
Map sheet 4 of 4



Map Scale: 1:50,000 if printed on B portrait (11" x 17") sheet.

N

Meters
0 500 1000 2000 3000

Feet
0 2000 4000 8000 12000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

Map Sheet Location

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

0 - 25

25 - 50

50 - 100

100 - 150

150 - 200

> 200

Not rated or not available

Soil Rating Lines

0 - 25

25 - 50

50 - 100

100 - 150

150 - 200

> 200

Not rated or not available

Soil Rating Points

0 - 25

25 - 50

50 - 100

100 - 150

150 - 200

> 200

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major 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)

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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 17, Sep 12, 2019

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

Date(s) aerial images were photographed: Apr 4, 2016—Nov 29, 2017

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

Table—Depth to Any Soil Restrictive Layer (Proposed Sam Switch to Aquilla Lake Wind Project Study Area)

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
3	Altoga silty clay, 1 to 3 percent slopes	>200	30.1	0.1%
4	Altoga silty clay, 2 to 5 percent slopes, eroded	>200	5.4	0.0%
5	Altoga clay loam, 5 to 8 percent slopes, eroded	>200	60.6	0.1%
7	Austin silty clay, 1 to 3 percent slopes	74	12.9	0.0%
8	Austin silty clay, 2 to 5 percent slopes, moderately eroded	74	170.1	0.4%
10	Axtell fine sandy loam, 1 to 3 percent slopes	>200	13.2	0.0%
16	Blum loam, 0 to 2 percent slopes	>200	170.0	0.4%
21	Branyon clay, 0 to 1 percent slopes	>200	559.0	1.2%
22	Burleson clay, 0 to 1 percent slopes	>200	333.6	0.7%
23	Burleson clay, 1 to 3 percent slopes	>200	267.6	0.6%
24	Chatt clay, 1 to 3 percent slopes	>200	163.8	0.3%
28	Crockett fine sandy loam, 0 to 1 percent slopes	135	48.4	0.1%
29	Crockett fine sandy loam, 1 to 3 percent slopes	135	1,360.8	2.9%
30	Crockett-Wilson complex, 0 to 2 percent slopes	149	49.9	0.1%
32	Culp clay loam, 1 to 3 percent slopes	>200	148.3	0.3%
34	Eddy very gravelly clay loam, 1 to 3 percent slopes	23	49.9	0.1%
35	Eddy very gravelly clay loam, 3 to 8 percent slopes	25	39.0	0.1%
37	Ferris clay, 5 to 12 percent slopes	97	4,425.0	9.3%
38	Ferris clay, 8 to 20 percent slopes, severely eroded	97	939.8	2.0%

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
39	Ferris-Heiden complex, 2 to 5 percent slopes	114	10,105.4	21.3%
40	Gasil fine sandy loam, 1 to 3 percent slopes	>200	4.4	0.0%
42	Gowen clay loam, frequently flooded	>200	306.1	0.6%
43	Heiden clay, 1 to 3 percent slopes	147	6,486.0	13.7%
44	Heiden clay, 5 to 8 percent slopes	112	665.5	1.4%
48	Houston Black clay, 0 to 1 percent slopes	>200	409.7	0.9%
49	Houston Black clay, 1 to 3 percent slopes	>200	6,496.3	13.7%
51	Kemp loam, occasionally flooded	>200	59.6	0.1%
53	Kopperl gravelly sandy loam, 1 to 3 percent slopes	137	5.8	0.0%
54	Krum silty clay, 0 to 1 percent slopes	>200	27.1	0.1%
55	Lamar clay loam, 1 to 5 percent slopes	>200	36.0	0.1%
56	Lamar clay loam, 3 to 5 percent slopes, eroded	>200	48.6	0.1%
59	Mabank fine sandy loam, 0 to 2 percent slopes	>200	637.7	1.3%
61	Normangee clay loam, 1 to 3 percent slopes	133	2,247.4	4.7%
62	Normangee clay loam, 3 to 5 percent slopes	133	1,278.7	2.7%
70	Stephen silty clay, 1 to 4 percent slopes	39	7.2	0.0%
71	Stephen silty clay, 3 to 5 percent slopes	39	4.2	0.0%
73	Tinn clay, 0 to 1 percent slopes, occasionally flooded	>200	1,141.4	2.4%
74	Tinn clay, 0 to 1 percent slopes, frequently flooded	>200	3,330.4	7.0%
77	Venus loam, 1 to 3 percent slopes	>200	34.2	0.1%
78	Venus loam, 3 to 5 percent slopes	>200	234.7	0.5%
79	Wilson clay loam, 0 to 1 percent slopes	>200	1,422.9	3.0%
80	Wilson clay loam, 1 to 3 percent slopes	>200	3,071.5	6.5%

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
81	Wilson-Burleson complex, 0 to 1 percent slopes	>200	248.9	0.5%
W	Water	>200	348.6	0.7%
Totals for Area of Interest			**47,505.4**	**100.0%**

Rating Options—Depth to Any Soil Restrictive Layer (Proposed Sam Switch to Aquilla Lake Wind Project Study Area)

Units of Measure: centimeters

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Interpret Nulls as Zero: No

Meaux, Lisa

From: Gray, Natasha A CIV USARMY CESWF (USA) <Natasha.A.Gray@usace.army.mil>
Sent: Thursday, May 21, 2020 1:00 PM
To: Meaux, Lisa
Cc: Roeder, Katie O CIV USARMY CESWF (USA)
Subject: [EXTERNAL] SWF-2020-00202, Sam Switch to Aquilla Lake Wind Project

Dear Ms. Barko Meaux:

Thank you for your letter received May 18, 2020, concerning a proposal by Lone Star Transmission, LLC to construct a new 345-kV transmission line that will interconnect new wind generation project located in Hill County, Texas. The project has been assigned Project Number SWF-2020-00202, please include this number in all future correspondence concerning this project.

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

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

If you have any questions about the evaluation of your submittal or would like to request a copy of one of the documents referenced above, please refer to our website at http://www.swf.usace.army.mil/Missions/Regulatory or contact Ms. Katie Roeder by telephone 817-886-1740, or by email Katie.O.Roeder@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

Brandon W. Mobley
Chief, Regulatory Division

Please do not mail hard copy documents to Regulatory staff or office, unless specifically requested. For further details on corresponding with us, please view our Electronic Application Submittals special public notice at: https://www.swf.usace.army.mil/Portals/47/docs/regulatory/publicnotices/2020/PublicNoticeElectronicApplications.pdf?ver=2019-11-21-123723-627

USACE Fort Worth District Regulatory Division Website http://www.swf.usace.army.mil/Missions/Regulatory.aspx

Please assist us in better serving you by completing the survey at the following website: http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey

Meaux, Lisa

From: Gray, Natasha A CIV USARMY CESWF (USA) <Natasha.A.Gray@usace.army.mil>
Sent: Friday, May 22, 2020 12:45 PM
To: Meaux, Lisa
Subject: [EXTERNAL] Electronic Submittal Process

CLASSIFICATION: UNCLASSIFIED

Ms. Barko Meaux,

This e-mail is in reference to the electronic submittal procedures for the Fort Worth Regulatory Office. This applies to requests for jurisdictional determinations, preconstruction notifications, nationwide and individual permit applications, no permit required requests, mitigation plans, and scoping requests.

You may submit requests via e-mail in PDF format to CESWF-Permits@usace.army.mil (up to ~30MB total).
If the file is very large, you can submit the request using SAFE DOD (https://safe.apps.mil/) by emailing CESWF-Permits@usace.army.mil and asking for a drop-off code.
Or you may send a CD to the Fort Worth District Regulatory Office at:
819 Taylor Street, Room 3A37,
P.O. Box 17300,
Fort Worth, TX 76102-0300.

NOTE: You are not permitted to submit new requests to individual project managers e-mail accounts. This is to ensure that a file number is assigned to the request. If the project has recently been given a file number, you are permitted to submit directly to the project manager.

The PDF must comply with the following requirements:

1. The first page of the PDF should be a complete "Preliminary Data Entry Sheet". If a project number is already associated with your project, this MUST be listed on the first page.
2. The request should follow the instructions that have been provided in the link below - Electronic Application Submittal Instructions.

https://www.swf.usace.army.mil/Missions/Regulatory/Electronic-Submittal-Instructions/

Failure to comply with these requirements could result in a delay in processing the request.

The Fort Worth e-mail is owned by the administrative staff in the Fort Worth District Regulatory Office. This inbox is not for general inquiries. The mailbox is checked daily and submissions are routed for assignment to a Project Manager as quickly as possible. You should receive an e-mail from the administrative staff in Fort Worth within 5 days of submitting the request. It will include the date received, project manager assignment, and a project number. If you don't hear from the administrative staff within 5 days, please contact the Fort Worth Regulatory office at (817) 886-1731. Submitters are welcome to request a delivery and/or read receipt notification with the email submission. The read receipt notification date will correspond to our clock start / "stamped in" date. In other words, should a requestor submit something via email after five o'clock p.m. on Friday or over the weekend and we open the email Monday morning, then our processing timeline starts Monday.

Please contact me via e-mail or at the number below if you have questions.

Sincerely,

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

Please do not mail hard copy documents to Regulatory staff or office, unless specifically requested. For further details on corresponding with us, please view our Electronic Application Submittals special public notice at: https://www.swf.usace.army.mil/Portals/47/docs/regulatory/publicnotices/2020/PublicNoticeElectronicApplications.pdf?ver=2019-11-21-123723-627

USACE Fort Worth District Regulatory Division Website http://www.swf.usace.army.mil/Missions/Regulatory.aspx

Please assist us in better serving you by completing the survey at the following website: http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey

Meaux, Lisa

From: Roeder, Katie O CIV USARMY CESWF (USA) <Katie.O.Roeder@usace.army.mil>
Sent: Monday, June 01, 2020 12:05 PM
To: Meaux, Lisa
Cc: Roeder, Katie O CIV USARMY CESWF (USA)
Subject: [EXTERNAL] SWF-2020-00202
Attachments: submittal guidance linear project_.pdf

Dear Ms. Barko:

This letter is in regard to information received concerning a proposal by Lone Star Transmission, LLC. to construct a potential new 345-kV transmission line in Hill County, Texas. This project has been assigned Project Number SWF-2020-00202. Please include this number in all future correspondence concerning this project.

We have reviewed this project in accordance with Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899. Under Section 404, the U. S. Army Corps of Engineers (USACE) regulates the discharge of dredged and fill material into waters of the United States, including wetlands. Our responsibility under Section 10 is to regulate any work in, or affecting, navigable waters of the United States. Any such discharge or work requires Department of the Army authorization in the form of a permit. For more information on the USACE Regulatory Program, please reference the Fort Worth District Regulatory Branch homepage at https://urldefense.proofpoint.com/v2/url?u=http-3A__www.swf.usace.army.mil_regulatory&d=DwIFAg&c=H8S5wzIwo-7G_Ou9dg8E0MfTp0Xd5uFLOwdyvjB0JwY&r=dDz39i6BHZmttaPRVy4KQSu70QaLUOyoEGHXJDO4HlU&m=kL_cZnKLu8MROHcHMezCbzIjIRTh3XPTJuT0-Henshs&s=bGMSEHsWLnzXHyJE0vmzNpgeFOOk4S9Bh87p43X88DU&e= .

We are unable to determine from the information that you provided in your letter whether Department of the Army authorization will be required, and if so, in what form. The proposed construction activities may be authorized by general permit, such as Nationwide Permit 39 for Commercial and Institutional developments.

I have included a document that helps with what we need in the submittal for linear projects.

Thank you,

Katie Roeder
Regulatory Specialist, Evaluation Branch Regulatory Division U.S. Army Corps of Engineers Ft. Worth District
819 Taylor Street
Fort Worth, Texas 76102-00300
Phone: 817-886-1740

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Meaux, Lisa

From: Roeder, Katie O CIV USARMY CESWF (USA) <Katie.O.Roeder@usace.army.mil>
Sent: Wednesday, June 03, 2020 9:33 AM
To: Meaux, Lisa
Subject: FW: SWF-2020-00202
Attachments: submittal guidance linear project_.pdf; USACE_NWP_12_Application_Form_HJH (002).doc; NWP12TX (002).pdf

Ms. Barko,

There is a correction to this email. Please be advised that you ARE able to use NWP 12 for this project. I have attached the permit along with the application form that you would need to submit.

Thank you,

Katie Roeder
Regulatory Specialist, Evaluation Branch Regulatory Division U.S. Army Corps of Engineers Ft. Worth District
819 Taylor Street
Fort Worth, Texas 76102-00300
Phone: 817-886-1740

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-----Original Message-----
From: Roeder, Katie O CIV USARMY CESWF (USA)
Sent: Monday, June 1, 2020 12:05 PM
To: lisa.barko@powereng.com

Cc: Roeder, Katie O CIV USARMY CESWF (USA) <Katie.O.Roeder@usace.army.mil>
Subject: SWF-2020-00202

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US Army Corps of Engineers
Fort Worth District

General Recommendations for Department of the Army Permit Submittals for Linear Projects

July 28, 2003

1. A detailed project description.

2. A large-scale map showing the entire route of the project.

3. The proposed route of the project on 8½ by 11-inch copies of 7.5-minute United States Geological Survey (USGS) quadrangle maps, national wetland inventory maps, published soil survey maps, scaled aerial photographs, and/or other suitable maps. Identify all base maps, (e.g. "Fort Worth, Texas" 7.5-minute USGS quadrangle, Natural Resources Conservation Service Tarrant County Soil Survey, sheet 10). Clearly mark (such as by circling) and number the location of each proposed linear project crossing of a water of the United States and any appurtenant structure(s) in waters of the United States on the map. Waters of the United States include streams and rivers; most lakes, ponds, mudflats, sandflats, wetlands, sloughs, and wet meadows; abandoned sand, gravel, and construction pits, and similar areas.

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

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

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

    c. distance between ordinary high water marks;

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

    e. length of proposed crossing;

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

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

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

    i. a typical cross-section.

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

U.S. Army Corps of Engineers (USACE)
Fort Worth District

Nationwide Permit (NWP) Pre-Construction Notification (PCN) Form

This form integrates requirements of the Nationwide Permit Program within the Fort Worth District, including General and Regional Conditions. Please consult instructions included at the end prior to completing this form.

Contents

- **Description of NWP 12**
- **Part I:** NWP Conditions and Requirements Checklist
  - General Conditions Checklist
  - NWP 12-Specific Requirements Checklist
  - Regional Conditions Checklist
- **Part II:** Project Information Form
- **Part III:** Project Impacts and Mitigation Form
- **Part IV:** Attachments Form
- **Instructions**

DESCRIPTION OF NWP 12 – UTILITY LINE ACTIVITIES

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

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

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

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

Foundations for overhead utility line towers, poles, and anchors: This NWP authorizes the construction or maintenance of foundations for overhead utility line towers, poles, and

anchors in all waters of the U.S., provided the foundations are the minimum size necessary and separate footings for each tower leg (rather than a larger single pad) are used where feasible.

Access roads: This NWP authorizes the construction of access roads for the construction and maintenance of utility lines, including overhead power lines and utility line substations, in non-tidal waters of the U.S., provided the activity, in combination with all other activities included in one single and complete project, does not cause the loss of greater than 1/2-acre of non-tidal waters of the U.S. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters for access roads. Access roads must be the minimum width necessary. Access roads must be constructed so that the length of the road minimizes any adverse effects on waters of the U.S. and must be as near as possible to pre-construction contours and elevations (e.g., at grade corduroy roads or geotextile/gravel roads). Access roads constructed above pre-construction contours and elevations in waters of the U.S. must be properly bridged or culverted to maintain surface flows.

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

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

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

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

Part I: NWP Conditions and Requirements Checklist

To ensure compliance with the General Conditions (GC), in order for an authorization by a NWP to be valid, please answer the following questions:

1. Navigation (Applies to Section 10 waters [i.e. navigable waters of the U.S.], see instruction 4 for link to list):

a. Does the project cause more than a minimal adverse effect on navigation?
☐ Yes ☐ No ☐ N/A

b. Does the project require the installation and maintenance of any safety lights and signals prescribed by the U.S. Coast Guard on authorized facilities in navigable waters of the U.S.?
☐ Yes ☐ No ☐ N/A

c. Does the Applicant understand and agree that if future operations by the U.S. require the removal, relocation, or other alteration of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the Applicant will be required, upon due notice from the USACE, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the U.S.; and no claim shall be made against the U.S. on account of any such removal or alteration?
☐ Yes ☐ No ☐ N/A

If you answered yes to question a. or b. above, or if you answered no to question c. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

2. Aquatic Life Movements:

a. Does the project substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area? ☐ Yes ☐ No

b. Is the project's primary purpose to impound water? ☐ Yes ☐ No

c. Will culverts placed in streams be installed to maintain low flow conditions to sustain the movement of those aquatic species? ☐ Yes ☐ No ☐ N/A

If you answered yes to question a. or b. above, or if you answered no to question c. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

3. Spawning Areas:

a. Does the project avoid spawning areas during the spawning season to the maximum extent practicable? ☐ Yes ☐ No ☐ N/A

b. Does the project result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area?
☐ Yes ☐ No ☐ N/A

If you answered no to question a. above, or if you answered yes to question b. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

4. Migratory Bird Breeding Areas:

a. Does the project avoid waters of the U.S. that serve as breeding areas for migratory birds to the maximum extent practicable? ☐ Yes ☐ No ☐ N/A

If you answered no to question a. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

5. Shellfish Beds:

a. Does the project occur in areas of concentrated shellfish populations? ☐ Yes ☐ No

If you answered yes to question a. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

6. Suitable Material:

a. Does the project use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.)? ☐ Yes ☐ No

b. Is the material used for construction or discharged in a water of the U.S. free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act)? ☐ Yes ☐ No

If you answered yes to question a. above, or if you answered no to question b. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

7. Water Supply Intakes:

a. Does the project occur in the proximity of a public water supply intake? ☐ Yes ☐ No

If you answered yes to question a. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

8. Adverse Effects From Impoundments:

a. Does the project create an impoundment of water? ☐ Yes ☐ No

b. If you answered yes to question a. above, are the adverse effects (to the aquatic system due to accelerating the passage of water, and/or restricting its flow) minimized to the maximum extent practicable? ☐ Yes ☐ No ☐ N/A

If you answered no to question b. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

9. Management of Water Flows:

a. Does the project maintain the pre-construction course, condition, capacity, and location of open waters to the maximum extent practicable, for each activity, including stream channelization and storm water management activities? ☐ Yes ☐ No

b. Will the project be constructed to withstand expected high flows? ☐ Yes ☐ No

c. Will the project restrict or impede the passage of normal or high flows? ☐ Yes ☐ No

If you answered no to question a. or b. above, or if you answered yes to question c. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

10. Fills Within 100-Year Floodplains:

a. Does the project comply with applicable FEMA-approved state or local floodplain management requirements? ☐ Yes ☐ No ☐ N/A

If you answered no to question a. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

11. Equipment:

a. Will heavy equipment working in wetlands or mudflats be placed on mats, or other measures be taken to minimize soil disturbance? ☐ Yes ☐ No ☐ N/A

If you answered no to question a. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

12. Soil Erosion and Sediment Controls:

a. Will the project use appropriate soil erosion and sediment controls and maintain them in effective operating condition throughout construction? ☐ Yes ☐ No

b. Will all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, be permanently stabilized at the earliest practicable date? ☐ Yes ☐ No

c. Be aware that if work will be conducted within waters of the U.S., Applicants are encouraged to perform that work during periods of low-flow or no-flow.

If you answered no to question a. or b. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

13. Removal of Temporary Fills:

a. Will temporary fills be removed in their entirety and the affected areas returned to pre-construction elevations? ☐ Yes ☐ No ☐ N/A

b. Will the affected areas be revegetated, as appropriate? ☐ Yes ☐ No ☐ N/A

If you answered no to question a. or b. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

14. Proper Maintenance:

a. Will any authorized structure or fill be properly maintained, including maintenance to ensure public safety? ☐ Yes ☐ No

If you answered no to question a. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

15. Single and Complete Project:

a. Does the Applicant certify that the project is a "single and complete project" as defined below? ☐ Yes ☐ No

Single and complete project:

Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term "single and complete project" is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Single and complete non-linear project: For non-linear projects, the term "single and complete project" is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-linear project must have independent utility (see definition of "independent utility"). Single and complete non-linear projects may not be "piecemealed" to avoid the limits in an NWP authorization.

Independent utility: Defined as a test to determine what constitutes a single and complete non-linear project in the Corps regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

16. Wild and Scenic River:

There are no Wild and Scenic Rivers within the geographic boundaries of the Fort Worth District. Therefore, this GC does not apply.

17. Tribal Rights:

a. Will the project or its operation impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights? ☐ Yes ☐ No ☐ N/A

If you answered yes to question a. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

18. Endangered Species (see also Box 8 in Part III):

a. Is the project likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or will the project directly or indirectly destroy or adversely modify the critical habitat of such species? ☐ Yes ☐ No

b. Might the project affect any listed species or designated critical habitat? ☐ Yes ☐ No

c. Is any listed species or designated critical habitat in the vicinity of the project? ☐ Yes ☐ No

d. If the project "may affect" a listed species or critical habitat, has Section 7 consultation addressing the effects of the proposed activity been completed? ☐ Yes ☐ No ☐ N/A

If you answered yes to question a. or b. or c. above, or if you answered no to question d. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

19. Migratory Birds and Bald and Golden Eagles:

a. Does the project have the potential to impact nests, nesting sites, or rookeries of migratory birds, bald or golden eagles? ☐ Yes ☐ No ☐ N/A

If you answered yes to question a. above, you are responsible for contacting the appropriate local office of the U.S. Fish and Wildlife Service to obtain any "take" permits required under the U.S. Fish and Wildlife Service's regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act.

20. Historic Properties (see also Box 9 in Part III):

a. Does the project have the potential to cause effects to any historic properties listed, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties? ☐ Yes ☐ No ☐ N/A

If you answered yes to question a. above, please explain how the project would be in compliance with this GC or be aware that the project would require an individual permit application:

21. Discovery of Previously Unknown Remains and Artifacts:

If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, *you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed*. The district engineer will initiate the Federal, Tribal and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters:

a. Will the project impact critical resource waters, which include NOAA-designated marine sanctuaries, National Estuarine Research Reserves, state natural heritage sites, and outstanding national resource waters or other waters officially designated by a state as having particular environmental or ecological significance and identified by the district engineer after notice and opportunity for public comment? ☐ Yes ☐ No

If you answered yes to question a. above, be aware that discharges of dredged or fill material into waters of the U.S. are not authorized by NWP 12 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

23. Mitigation (see also Box 10 in Part III):

a. Will the project include appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal? ☐ Yes ☐ No

If you answered no to question a. above, please include an explanation in Box 10 of why no mitigation would be necessary in order to be in compliance with this GC or be aware that the project would require an individual permit application.

24. Safety of Impoundment Structures:

a. Has the impoundment structure been safely designed to comply with established state dam safety criteria or has it been designed by qualified persons? ☐ Yes ☐ No ☐ N/A

If you answered yes to question a. above, non-federal applicants may be required to provide documentation that the design has been independently reviewed by similarly qualified persons with appropriate modifications to ensure safety. If you answered no, please include an explanation in Box 10 of why the structure is exempt from state dam safety criteria or be aware that the project may require an individual permit application.

25. Water Quality (see also Box 11 in Part III):

a. If in Texas, does the project comply with the conditions of the TCEQ water quality certification for NWP 12? ☐ Yes ☐ No ☐ N/A

b. If in "Indian Country," does the project comply with the conditions of the EPA water quality certification for NWPs? ☐ Yes ☐ No ☐ N/A

c. If in Louisiana, does the project comply with the conditions of the LADEQ water quality certification for NWP 12? ☐ Yes ☐ No ☐ N/A

If you answered no to question a. or b. above, please be aware that the project would require an individual permit application.

26. Coastal Zone Management:

The Fort Worth District does not cover any Coastal Zone; therefore, this GC does not apply.

27. Regional and Case-By-Case Conditions:
See the Regional Conditions checklist to ensure compliance with this GC.

28. Use of Multiple Nationwide Permits:

a. Does the project use more than one NWP for a single and complete project? ☐ Yes ☐ No

b. If you answered yes to question a. above, be aware that unless the project's acreage loss of waters of the U.S. authorized by the NWPs is below the acreage limit of the NWP with the highest specified acreage limit, no NWP can be issued and the project would require an individual permit application.

If you answered yes to question a. above, please explain how the project would be in compliance with this GC and what additional NWP number you intend to use:

29. Transfer of Nationwide Permit Verifications:

a. Does the Applicant agree that if he or she sells the property associated with the nationwide permit verification, the Applicant may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate USACE district office to validate the transfer?
☐ Yes ☐ No

30. Compliance Certification:

a. Does the Applicant agree that if he or she receives the NWP verification from the USACE, they must submit a signed certification regarding the completed work and any required mitigation (the certification form will be sent by the USACE with the NWP verification letter)?
☐ Yes ☐ No

31. Activities Affecting Structure or Works Built by the United States

a. Does the project temporarily or permanently alter and/or occupy a USACE federally authorized Civil Works project? ☐ Yes ☐ No

If you answered yes to question a. above, notification is required in accordance with general condition 32, for any activity that requires permission from the Corps. The district engineer may authorize activities under these NWPs only after a statement confirming that the project proponent has submitted a written request for section 408 permission from the Corps office having jurisdiction over that USACE project.

32. Pre-Construction Notification:

a. Reason for notification:

- ☐ Mechanized land clearing in a forested wetland.
- ☐ Require a Section 10 permit.
- ☐ Utility line exceeds 500 feet in waters of the U.S., excluding overhead lines.
- ☐ Utility line is within a jurisdictional area (i.e., water of the U.S.), and the utility line runs parallel to or along a stream bed that is within that jurisdictional area.
- ☐ The loss of waters of the U.S. exceeds 1/10 acre.
- ☐ Permanent access roads are constructed above grade in waters of the U.S. for a distance of more than 500 feet.
- ☐ Permanent access roads are constructed in waters of the U.S. with impervious materials.
- ☐ Potential endangered species.
- ☐ Potential historic properties.
- ☐ Discharge into pitcher plant bog or bald cypress-tupelo swamp.
- ☐ Discharge into the area of Caddo Lake within Texas that is designated as a "Wetland of International Importance" under the Ramsar Convention.

☐ Work that would result in the modification or alteration of any completed Corps of Engineers projects that are either locally or federally maintained or if work would occur within the conservation pool or flowage easement of any Corps of Engineers lake project.
☐ Required by Louisiana Regional Conditions.
☐ Other:

b. Does the Applicant agree that he or she will not begin the project until either:
1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or
2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 20 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) has been completed. ☐ Yes ☐ No

c. Does the Applicant agree that if the district or division engineer notifies the Applicant in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the Applicant cannot begin the activity until an individual permit has been obtained?
☐ Yes ☐ No

To ensure compliance with the NWP 12-specific requirements please answer the first question regarding all utility line activities and then answer the other questions as they apply to your project.

All utility line activities:

1. Does the project cause the loss of greater than 1/2-acre non-tidal waters of the U.S. at any crossing considered a single and complete project? ☐ Yes ☐ No

If you answered yes to question 1. above, be aware that the project would not be authorized by a NWP 12 and would require an individual permit application or the use of regional general permit CESWF-05-RGP-2 (see USACE Fort Worth District website for information on conditions and requirements).

2. Does each activity/crossing considered a single and complete project have independent utility? ☐ Yes ☐ No ☐ N/A

If you answered no to question 2. above, be aware that the project may require an individual permit application.

3. **a.** Will any temporary structures, fills, and work necessary to construct the project meet the criteria for maintaining flows, minimizing flooding, and withstanding high flows? ☐ Yes ☐ No ☐ N/A

b. Will temporary structures and fills be removed in their entirety and the affected areas be returned to pre-construction elevations and revegetated, as appropriate? ☐ Yes ☐ No ☐ N/A

If you answered no to question a. or b. above, be aware that the project would not be authorized by a NWP 12 and would require an individual permit application.

Utility lines:

4. Does the project involve a change in pre-construction contours? ☐ Yes ☐ No

If you answered yes to question 4. above, be aware that the project would not be authorized by a NWP 12 and may require an individual permit application.

5. Does the project include activities that drain a water of the U.S., such as drainage tile or french drains? ☐ Yes ☐ No

If you answered yes to question 5. above, be aware that the project is not considered a "utility line" and would not be authorized by a NWP 12 and may require an individual permit application. Note: Pipes that convey drainage from another area are considered a "utility line."

6. **a.** Does the project involve leaving sidecasts from trench excavation in waters of the U.S. for more than three months? ☐ Yes ☐ No

b. Does the project involve placing sidecasts from trench excavation in waters of the U.S. in such a manner that the sidecasts are dispersed by current or other forces? ☐ Yes ☐ No

If you answered yes to question a. above, be aware that the district engineer may extend the period of temporary side casting for no more than a total of 180 days, where appropriate, and otherwise an individual permit application may be required. If you answered yes to question b. above, be aware that the project would not be authorized by a NWP 12 and may require an individual permit application.

7. In wetlands, does the project involve backfilling the top 6 to 12 inches of the trench with topsoil from the trench? ☐ Yes ☐ No ☐ N/A

If you answered no to question 7. above, please explain how the project would be in compliance with this requirement and be aware that the project may not be authorized by a NWP 12 and may require an individual permit application:

8. Does the project involve constructing or backfilling a trench in such a manner as to drain waters of the U.S. (e.g., backfilling with extensive gravel layers, creating a french drain effect?
☐ Yes ☐ No

If you answered yes to question 8. above, be aware that the project would not be authorized by a NWP 12 and may require an individual permit application.

9. Will the project, upon completion of the utility line crossing of each waterbody, immediately stabilize exposed slopes and stream banks? ☐ Yes ☐ No ☐ N/A

If you answered no to question 9. above, be aware that the project would not be authorized by a NWP 12 and may require an individual permit application.

10. Does the project involve pipes or pipelines that will be used to transport gaseous, liquid, liquescent, or slurry substances over navigable waters of the U.S.? ☐ Yes ☐ No ☐ N/A

If you answered yes to question 10. above, be aware that these pipes or pipelines are considered to be bridges, not utility lines, and may require a permit from the U.S. Coast Guard pursuant to Section 9 of the Rivers and Harbors Act of 1899. However, any discharges of dredged or fill material into waters of the U.S. associated with such pipes or pipelines will require a Section 404 permit (see NWP 15).

Utility line substations:

11. Does the project involve discharges into non-tidal wetlands adjacent to tidal waters of the U.S.?
☐ Yes ☐ No

If you answered yes to question 11. above, be aware that the project would not be authorized by a NWP 12 and may require an individual permit application.

Foundations for overhead utility line towers, poles, and anchors:

12. If the project includes construction or maintenance of foundations for overhead utility line towers, poles, and/or anchors in waters of the U.S., are these the minimum size necessary and are separate footings for each tower leg (rather than a larger single pad) used where feasible?
☐ Yes ☐ No ☐ N/A

If you answered no to question 12. above, be aware that the project would not be authorized by a NWP 12 and may require an individual permit application.

Access Road(s):

13. Will the access road(s) be used for the construction and maintenance of utility lines, including overhead power lines and utility line substations, and, for a single and complete project, cause the loss of no greater than 1/2-acre of non-tidal waters of the U.S.? ☐ Yes ☐ No ☐ N/A
If you answered no to question 13. above, be aware that the project would not be authorized by a NWP 12 and may require an individual permit application.

14. Does the project involve discharges into non-tidal wetlands adjacent to tidal waters of the U.S.?
☐ Yes ☐ No

If you answered yes to question 14. above, be aware that the project would not be authorized by a NWP 12 and may require an individual permit application.

15. **a.** Will the access road(s) in waters of the U.S. be the minimum width necessary? ☐ Yes ☐ No
b. Will the access road be constructed so that the length of the road minimizes any adverse effects on waters of the U.S.? ☐ Yes ☐ No

If you answered no to question a. or b. above, be aware that the project would not be authorized by a NWP 12 and may require an individual permit application.

16. **a.** Will the access road(s) be as near as possible to pre-construction contours and elevations (e.g., at grade corduroy road or geotextile/gravel road) so as to minimize any adverse effects on waters of the U.S.? ☐ Yes ☐ No
b. Will access roads constructed above pre-construction contours and elevations in waters of the U.S. be properly bridged or culverted to maintain surface flows? ☐ Yes ☐ No

If you answered no to question a. or b. above, be aware that the project may not be authorized by a NWP 12 and may require an individual permit application.

17. Will access roads used solely for construction of the utility line be removed upon completion of the work, in accordance with the requirement for temporary fills? ☐ Yes ☐ No

If you answered no to question 17. above, be aware that the project may not be authorized by a NWP 12 and may require an individual permit application.

REGIONAL CONDITIONS CHECKLIST

To ensure compliance with the Regional Conditions within the Fort Worth District, in the State of Texas, in order for an authorization by a NWP to be valid, please answer the following questions (for projects in Texas only):

1. Does the project involve a discharge into habitat types that are wetlands (typically referred to as pitcher plant bogs) that are characterized by an organic surface soil layer and include vegetation such as pitcher plants (*Sarracenia* sp.), sundews (*Drosera* sp.), and sphagnum moss (*Sphagnum* sp.) or wetlands (typically referred to as bald cypress-tupelo swamps) comprised predominantly of bald cypress trees (*Taxodium distichum*), and/or water tupelo (*Nyssa aquatica*)? ☐ Yes ☐ No

If you answered yes to question 1. above, notification of the District Engineer is required in accordance with NWP GC 32, and the USACE will coordinate with other resource agencies as specified in NWP GC 32(d).

2. Will the project include required compensatory mitigation at a minimum one-for-one ratio for all special aquatic sites that exceed 1/10 acre and require pre-construction notification, and for all losses to streams that exceed 300 linear feet and require pre-construction notification (unless the appropriate District Engineer determines in writing that some other form of mitigation would be more environmentally appropriate and provides a project-specific waiver of this requirement)? ☐ Yes ☐ No ☐ N/A

If you answered no to question 2. above, be aware that the project would not be authorized by a NWP and would require an individual permit application.

3. Is the project in the area of Caddo Lake within Texas that is designated as a "Wetland of International Importance" under the Ramsar Convention? ☐ Yes ☐ No

If you answered yes to question 3. above, notification of the District Engineer is required in accordance with NWP GC 32(d).

4. Would the proposed work involve a discharge of fill material associated with mechanized land clearing of wetlands dominated by native woody shrubs? ☐ Yes ☐ No

If you answered yes to question 4. above, notification of the District Engineer is required in accordance with NWP GC 32(d).

Note: For the purpose of this regional condition, a shrub dominated wetland is characterized by woody vegetation less than 3.0 inches in diameter at breast height but greater than 3.2 feet in height, which covers 20% or more of the area. Woody vines are not included.

5. Would the proposed work result in the modification or alteration of any completed Corps of Engineers projects that are either locally or federally maintained or if work would occur within the conservation pool or flowage easement of any Corps of Engineers lake project? ☐ Yes ☐ No

If you answered yes to question 5. above, the applicant shall notify the Fort Worth District Engineer in accordance with NWP GC 32. PCNs are not deemed complete until such a time as the Corps has made a determination relative to 33 USC Section 408, 33 CFR Part 208, Section 208.10, 33 CFR Part 320, Section 320.4.

6. Is there is the risk of transferring invasive plants to or from your project site? ☐ Yes ☐ No

If you answered yes to question 6. above, information concerning state specific lists of invasive species and threats can be found at: http://www.invasivespeciesinfo.gov/unitedstates/tx.shtml. Best management practices can be found at Information concerning state specific lists and

threats can be found at: http://www.invasivespeciesinfo.gov/unitedstates/tx.shtml. Known zebra mussel waters within can be found at: http://nas.er.usgs.gov/queries/zmbyst.asp.

7. Will the proposed activity involve a temporary discharge of fill material into 1/2 acre or more of emergent wetland OR 1/10 acre or more of scrub0shrub/forested wetland? ☐ Yes ☐ No

If you answered yes to question 7. above, notification of the District Engineer is required in accordance with NWP GC 32(d).

8. Would your project meet the scope of work and conditions of NWPs 51 or 52? ☐ Yes ☐ No

If you answered yes to question 8. above, the Corps will provide the PCN to the US Fish and Wildlife Service as specified in NWP General Condition 32(d)(2) for its review and comments.

To ensure compliance with the Regional Conditions within the Fort Worth District, in the State of Louisiana, in order for an authorization by a NWP to be valid, please answer the following questions (for projects in Louisiana only):

1. Does the activity cause the permanent loss of greater than 1/2 acre of seasonally inundated cypress swamp and/or cypress-tupelo swamp? ☐ Yes ☐ No

If you answered yes to question 1. above, be aware that the project would not be authorized by a NWP 12 and would require an individual permit application.

2. Does the activity cause the permanent loss of greater than 1/2 acre of pine savanna, pine flatwoods, and/or pitcher plant bogs? ☐ Yes ☐ No

If you answered yes to question 2. above, be aware that the project would not be authorized by a NWP 12 and would require an individual permit application.

3. Has the activity been determined to have an adverse impact upon a federal or state designated rookery and/or bird sanctuary? ☐ Yes ☐ No

If you answered yes to question 3. above, be aware that the project would not be authorized by a NWP 12 and would require an individual permit application.

4. While Endangered Species Act Section 7 consultation is no longer required for the Louisiana black bear (which has been delisted due to recovery), permittees are advised that the Louisiana black bear is still protected under State of Louisiana law, and the Louisiana Department of Wildlife and Fisheries (LDWF) will continue to actively manage this subspecies. To learn more about State law requirements for Louisiana black bear protection and habitat conservation, permittees shall contact Maria Davidson (Louisiana Department of Wildlife and Fisheries - Large Carnivore Program Manager) at (337) 948-0255.

5. Does the project involve instream activities in the following waterways: Abita River and tributaries; Amite River (LA Highway 37 at Grangeville to Port Vincent); Bayou Bartholomew in Morehouse Parish; Bayou Boeuf and Bayou Rapides Tributaries in Rapides Parish: (Bayou Clear, Brown Creek, Burney Branch, Castor Creek, Clear Creek, Haikey's Creek, Little Bayou Clear, Little Brushy Creek, Loving Creek, Little Loving Creek, Long Branch, Mack Branch, Patterson Branch, Valentine Creek, and Williamson Branch), Bayou Rigolette tributaries in Grant Parish (Beaver Creek, Black Creek, Chandler Creek, Clear Branch, Coleman Branch, Cress Creek, Cypress Creek, Glady Hollow, Gray Creek, Hudson Creek, James Branch, Jordon Creek, Moccasin Branch, and Swafford Creek); Bogue Falaya River and Tributaries, Bogue Chitto River and Tributaries, Lake Borgne, Lake Pontchartrain and its tributaries, Lake Saint Catherine, Little Lake, Tchefuncta River, Little Tchefuncta River, the Rigolets and West Pearl River? ☐ Yes ☐ No

If you answered yes to question 5. above, notification of the District Engineer is required in accordance with NWP GC 32 due to the occurrence of threatened or endangered species.

6. To the best of the applicant's knowledge, is any excavated and/or fill material to be placed within wetlands free of contaminants? ☐ Yes ☐ No ☐ N/A

If you answered no to question 6. above, be aware that the project would not be authorized by a NWP 12 and would require an individual permit application.

7. Regional Condition 7 applies to work within the Louisiana Coastal Zone and/or the Outer Continental Shelf off Louisiana, and therefore does not apply in the USACE Fort Worth District. Work in these areas may require coordination with the USACE Galveston or New Orleans districts.

8. Does the activity adversely affect greater than 1/10 acre of wetlands, and/or adversely impact a designated Natural and Scenic River, a state or federal wildlife management area, and/or refuge? ☐ Yes ☐ No

If you answered yes to question 8. above, notification of the District Engineer is required in accordance with NWP GC 32.

9. For activities involving the installation of a culvert, is twenty percent (20%) of the culvert diameter (20 percent of the height of elliptical culverts) installed below the natural grade of the stream. ☐ Yes ☐ No

If you answered no to question 9. above, be aware that the project would not be authorized by a NWP 13and would require an individual permit application.

10. Pre-Construction Notification, as defined under nationwide general condition 32, is required for regulated utility line activities regardless of impact acreage for all projects located In Louisiana. The U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency and, if applicable, National Marine Fisheries Service will be forwarded a copy of the Pre-Construction Notification for all NWP #12 activities.

11. A 50-foot gap shall be required for every 500 linear feet of sidecast material resulting from trench excavation activities associated with utility line construction. Under certain circumstances the gap intervals may be modified. Additionally, no fill shall be placed in a manner which would impede natural watercourses.

12. This NWP, via disavowal of Coastal Zone certification by the Louisiana Department of Natural Resources, is considered denied without prejudice within the Louisiana Coastal Zone. Individual requests for approval under this NWP will be conditioned to require the applicant to obtain a Louisiana Department of Natural Resources determination/certification before the NWP is valid.

Note: This specific regional condition for NWP 12 applies to work within the Louisiana Coastal Zone and/or the Outer Continental Shelf off Louisiana, and therefore does not apply in the USACE Fort Worth District. Work in these areas may require coordination with the USACE Galveston or New Orleans districts.

Additional Discussion:

Part II: Project Information (*Project No. SWF-*)

Box 1 Project Name:		**Applicant Name**	
Applicant Title		**Applicant Company, Agency, etc.**	
Mailing Address		Applicant's internal tracking number (if any)	
Work Phone with area code	Home Phone with area code	Fax #	E-mail Address
Relationship of applicant to property: ☐ Owner ☐ Purchaser ☐ Lessee ☐ Other:			
Application is hereby made for verification that subject regulated activities associated with subject project qualify for authorization under a USACE nationwide permit or permits as described herein. I certify that I am familiar with the information contained in this application, and that to the best of my knowledge and belief, such information is true, complete, and accurate. I further certify that I possess the authority to undertake the proposed activities. I hereby grant to the agency to which this application is made the right to enter the above-described location to inspect the proposed, in-progress, or completed work. I agree to start work only after all necessary permits have been received.			
Signature of applicant			Date (mm/dd/yyyy)

Box 2 Authorized Agent/Operator Name and Signature: ***(If an agent is acting for the applicant during the permit process)***			
Agent/Operator Title		**Agent/Operator Company, Agency, etc.**	
Mailing Address			
E-mail Address			
Work Phone with area code	Home Phone with area code	Fax #	Cell Phone #
I hereby authorize the above-named agent to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application. I understand that I am bound by the actions of my agent, and I understand that if a federal or state permit is issued, I, or my agent, must sign the permit.			
Signature of applicant			Date (mm/dd/yyyy)
I certify that I am familiar with the information contained in this application, and that to the best of my knowledge and belief, such information is true, complete, and accurate.			
Signature of authorized agent			Date (mm/dd/yyyy)

Box 3 Name of property owner, if other than applicant: ☐ Multiple Current Owners ***(If multiple current property owners, check here and include a list as an attachment)***	
Owner Title	**Owner Company, Agency, etc.**
Mailing Address	

Work Phone with area code	Home Phone with area code

Box 4 Project location, including street address, city, county, state, and zip code where proposed activity will occur:
Nature of Activity (Description of project; include all features; see instructions)**:**
Project Purpose (Description of the reason or purpose of the project; see instructions)**:**
Has a delineation of waters of the U.S., including wetlands, been completed? (see instructions) ☐ Yes, Attached ☐ No If a delineation has been completed, has it been verified in writing by the USACE? ☐ Yes, Date of approved or preliminary jurisdictional determination (mm/dd/yyyy): USACE project: ☐ No
Are color photographs of the existing conditions available? ☐ Yes, Attached ☐ No Are aerial photographs available? ☐ Yes, Attached ☐ No
☐ **Multiple Single and Complete Crossings** ***(If multiple single and complete crossings, check here and complete the table in Attachment D)***
Waterbody(ies) (if known; otherwise enter "an unnamed tributary to")**:** Tributary(ies) to what known, downstream waterbody(ies):
Latitude & longitude (Decimal Degrees):
USGS Quad map name(s):
Watershed(s) and other location descriptions, if known:
Directions to the project location:

Part III: Project Impacts and Mitigation

Box 5 Reason(s) for Discharge into waters of the U.S.:
Type(s) of material being discharged and the amount of each type in cubic yards:
Total surface area (in acres) of wetlands or other waters of the U.S. to be filled:

Indicate the proposed impacts to **waters of the U.S.** in ACRES (for wetlands and impoundments) and LINEAR FEET (for rivers and streams), and identify the impact(s) as permanent and/or temporary for each waterbody type listed below. For projects with multiple single and complete crossings, the table below should indicate the cumulative totals of those single and complete crossings that require notification as outlined in Part I, GC question 32, and would not determine the threshold for whether a project qualifies for a NWP. The table below is intended as a tool to summarize impacts by resource type for planning compensatory mitigation and does not replace the summary table of single and complete crossings in Attachment D for those projects with multiple single and complete crossings.

	Permanent		Temporary	
Waterbody Type	**Acres**	**Linear feet**	**Acres**	**Linear feet**
Non-forested wetland				
Forested wetland				
Perennial stream				
Intermittent stream				
Ephemeral stream				
Impoundment				
Other:				
Total:				

Potential indirect and/or cumulative impacts of proposed discharge (if any):

Required drawings (see instructions):
Vicinity map: ☐ Attached
To-scale plan view drawing(s): ☐ Attached
To-scale elevation and/or cross section drawing(s): ☐ Attached

Is any portion of the work already complete? ☐ Yes ☐ No
If yes, describe the work:

Box 6 Authority: (see instructions)
Is Section 10 of the Rivers and Harbors Act for projects affecting navigable waters applicable?
☐ Yes ☐ No ***(see Fort Worth District Navigable Waters list)***

Is Section 404 of the Clean Water Act applicable? ☐ Yes ☐ No

Box 7 Larger Plan of Development:
Is the discharge of fill or dredged material for which Section 10/404 authorization is sought intended for a utility line project which is part of a larger plan of development?
☐ Yes ☐ No ***(If yes, please provide the information in the remainder of Box 7)***

Does the utility line project have independent utility in addition to the larger plan of development (e.g., major transmission line, main water line, etc.)? ☐ Yes ☐ No
If yes, explain:

If discharge of fill or dredged material is part of development, name and proposed schedule for that larger development (start-up, duration, and completion dates):

Location of larger development (If discharge of fill or dredged material is part of a plan of development, a map of suitable quality and detail for the entire project site should be included):

Total area in acres of entire project area (including larger plan of development, where applicable):

Box 8 Federally Threatened or Endangered Species (see instructions)

Please list any federally-listed (or proposed) threatened or endangered species or critical habitat potentially affected by the project (use scientific names (i.e., genus species), if known):

Have surveys, using U.S. Fish and Wildlife Service (USFWS) protocols, been conducted?
☐ Yes, Report attached ☐ No (explain):

If a federally-listed species would potentially be affected, please provide a description and a biological evaluation.
☐ Yes, Report attached ☐ Not attached

Has Section 7 consultation been initiated by another federal agency?
☐ Yes, Initiation letter attached ☐ No

Has Section 10 consultation been initiated for the proposed project?
☐ Yes, Initiation letter attached ☐ No

Has the USFWS issued a Biological Opinion?
☐ Yes, Report attached ☐ No
If yes, list date Opinion was issued (mm/dd/yyyy):

Box 9 Historic properties and cultural resources

Please list any historic properties listed (or eligible to be listed) on the National Register of Historic Places which the project has the potential to affect:

Has an archaeological records search been conducted?
☐ Yes, Report attached ☐ No (explain):

Are any cultural resources of any type known to exist on-site?
☐ Yes ☐ No

Has an archaeological pedestrian survey been conducted for the site?
☐ Yes, Report attached ☐ No (explain):

Has Section 106 or SHPO consultation been initiated by another federal or state agency?
☐ Yes, Initiation letter attached ☐ No

Has a Section 106 MOA been signed by another federal agency and the SHPO?
☐ Yes, Attached ☐ No
If yes, list date MOA was signed (mm/dd/yyyy):

Box 10 Proposed Conceptual Mitigation Plan Summary (see instructions)

Measures taken to avoid and minimize impacts to waters of the U.S. (if any):

Applicant proposes combination of one or more of the following mitigation types:
☐ Mitigation Bank ☐ On-site ☐ Off-site (Number of sites:) ☐ None

Applicant proposes to purchase mitigation bank credits: ☐ Yes ☐ No
Mitigation Bank Name:
Number of Credits:

Indicate in ACRES (for wetlands and impoundments) and LINEAR FEET (for rivers and streams) the total quantity of waters of the U.S. proposed to be created, restored, enhanced, and/or preserved for purposes of providing compensatory mitigation. Indicate mitigation site type (on- or off-site) and number. Indicate waterbody type (non-forested wetland, forested wetland, perennial stream, intermittent stream, ephemeral stream, impoundment, other) or non-jurisdictional (uplands[1]).

Mitigation Site Type and Number	Waterbody Type	Created	Restored	Enhanced	Preserved
e.g., On-site 1	*Non-forested wetland*	*0.5 acre*			
e.g., Off-site 1	*Intermittent stream*		*500 LF*	*1000 LF*	
	Totals:				

[1] For uplands, please indicate if designed as an upland buffer.

Summary of Mitigation Work Plan (Describe the mitigation activities listed in the table above):

If no mitigation is proposed, provide a detailed explanation of why no mitigation would be necessary to ensure that adverse effects on the aquatic environment are minimal:

Has a conceptual mitigation plan been prepared in accordance with the USACE regulations and guidelines?
☐ Yes, Attached ☐ No (explain):

Mitigation site(s) latitude & longitude (Decimal Degrees):	USGS Quad map name(s):

Other location descriptions, if known:

Directions to the mitigation location(s):

Box 11 Water Quality Certification (see instructions)**:**

<u>For Texas:</u>

Does the project meet the conditions of the Texas Commission on Environmental Quality (TCEQ) Clean Water Act Section 401 certification for NWP 12? ☐ Yes ☐ No

Does the project include soil erosion control and sediment control Best Management Practices (BMPs)? ☐ Yes ☐ No

Does the project include BMPs for post-construction total suspended solids control?
☐ Yes ☐ No

<u>For Louisiana:</u>

LDEQ has issued water quality certification for NWP 12 without conditions.

For Tribal Lands ("Indian Country"):
Does the project meet the conditions of the EPA water quality certification for NWPs?
☐ Yes ☐ No

Box 12 List of other certifications or approvals/denials received from other federal, state, or local agencies for work described in this application:

Agency	Approval Type[2]	Identification No.	Date Applied	Date Approved	Date Denied

[2] Would include but is not restricted to zoning, building, and floodplain permits

Part IV: Attachments

	Included
A. Delineation of Waters of the U.S., Including Wetlands	☐
B. Color Photographs	☐
C. Summary Table of Single and Complete Crossings	☐
D. Required Drawings/Figures	☐
E. Threatened or Endangered Species Reports and/or Letters	☐
F. Historic Properties and Cultural Resources Reports and/or Letters	☐
G. Conceptual Mitigation Plan	☐
H. Other:	☐

End of Form

Attachment D: Summary Table of Single and Complete Crossings

Waterbody ID[1]	Latitude and Longitude (Decimal Degrees)	Resource Type[2]	Linear Feet in Project Area	Acres in Project Area	Impact Type[3]	Linear Feet of Impact	Average Width and Length of Impact	Acres of Impact	Cubic Yards of Material to be Discharged	PCN Required	Reason[4]
e.g. W-1	*32.755°N, -97.755°W*	*NFW*	*-*	*0.25*	*D-P*	*-*	*-*	*0.15*	*1210*	*Y*	*E*

[1] Waterbody ID may be the name of a feature or an assigned label such as "W-1" for a wetland.

[2] Resource Types: NFW – Non-forested wetland, FW – Forested wetland, PS – Perennial Stream, IS – Intermittent Stream, ES – Ephemeral Stream, I – Impoundment

[3] Impact Types: D/P – Direct* and Permanent, D/T – Direct and Temporary, I/P – Indirect** and Permanent, I/T – Indirect and Temporary

* Direct impacts are here defined as those adverse affects caused by the proposed activity, such as discharge or excavation.

** Indirect impacts are here defined as those adverse affects caused subsequent to the proposed activity, such as flooding or effects of drainage on adjacent waters of the U.S.

[4] Reasons for PCN requirement:

A – Mechanized land clearing in a forested wetland
B – Require a Section 10 permit
C – Utility line exceeds 500 feet in waters of the U.S., excluding overhead lines
D – Utility line is within a jurisdictional area (i.e., water of the U.S.), and the utility line runs parallel to a stream bed that is within that jurisdictional area
E – The loss of waters of the U.S. exceeds 1/10 acre
F – Permanent access roads are constructed above grade in waters of the U.S. for a distance of more than 500 feet
G – Permanent access roads are constructed in waters of the U.S. with impervious materials
H – Potential endangered species
I – Potential historic properties
J – Discharge into pitcher plant bog or bald cypress-tupelo swamp
K– Discharge into the area of Caddo Lake within Texas that is designated as a "Wetland of International Importance" under the Ramsar Convention
L – Required by Regional Conditions
M – Other

Instructions: [please do not include these pages when submitting form]

1) **Complete Part I of the form first to determine if the project meets the conditions and requirements of NWP 12, including the General and Regional Conditions as well as the notification requirements. Additional information on the general conditions is available at the following website:**

   http://www.swf.usace.army.mil/Missions/Regulatory/Permitting/GeneralPermits.aspx

2) **Boxes 1 to 3:** Provide contact information for the Applicant, Agent, Owner, etc.

3) **Box 4:**
   a. **Nature of Activity:** Describe the overall activity or project. Give appropriate dimensions of structures such as wingwalls, dikes (identify the materials to be used in construction, as well as the methods by which the work is to be done), or excavations (length, width, and height). Indicate whether discharge of dredged or fill material is involved. Also, identify any structure to be constructed on a fill, piles, or float-supported platforms. The written descriptions and illustrations are an important part of the application. Please describe, in detail, what you wish to do. If more space is needed, attach a separate sheet marked "Box 4 Nature of Activity."

   b. **Proposed Project Purpose:** Describe the purpose and need for the proposed project. What will it be used for and why? Also include a brief description of any related activities to be developed as the result of the proposed project.

   c. **Delineation of waters of the U.S.:**
   Waters of the U.S. are defined under 33 CFR part 328.3 (a) as:
   (1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
   (2) All interstate waters including interstate wetlands;
   (3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
      (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
      (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
      (iii) Which are used or could be used for industrial purposes by industries in interstate commerce;
   (4) All impoundments of waters otherwise defined as waters of the U.S. under the definition;
   (5) Tributaries of waters identified in paragraphs (a) (1) through (4) of this section;
   (6) The territorial seas;
   (7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1) through (6) of this section.

   In addition, 33 CFR part 328.3 (b) states: The term wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

   Under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act, the ordinary high water mark, as well as any adjacent wetlands, demarcate the limits of non-tidal waters of the U.S. Wetlands are identified and delineated using the methods and criteria

established in the USACE *Wetlands Delineation Manual* (1987 Manual) (i.e., occurrence of hydrophytic vegetation, hydric soils, and wetland hydrology) as well as any applicable interim regional supplements.

Applicants should follow the USACE Fort Worth District procedures for jurisdictional determinations found at the following website:

http://media.swf.usace.army.mil/pubdata/environ/regulatory/jurisdiction/jurisdictionaldeterminationprocedures.pdf

d. **Multiple Waters of the U.S.**: If the project impacts multiple waters of the U.S., include information for each water in the table in Attachment D.

4) Box 5:

Required drawings (see examples in separate file): Submit one legible copy of all drawings (8 1/2 x 11-inch or 11 x 17-inch) with a 1-inch margin around the entire sheet. The title box shall contain the title of the proposed project, date, and sheet number.

i. **Vicinity map:** Cover an area large enough so the project can be easily located; include arrow marking the project area, identifiable landmarks (e.g., named waterbody, county, city), name or number of roads, north arrow, and scale.

ii. **Plan view:** Include features such as existing bank lines, ordinary high water mark line(s), average water depth around the activity, dimensions of the proposed project, dimensions of any structures immediately adjacent to the proposed activity, north arrow, and scale.

iii. **Elevation and/or cross-section views:** Include features such as water elevation as shown on plan view drawing, existing and proposed ground level, dimensions of the proposed project, dimensions of any structures immediately adjacent to the proposed activity, and scale.

5) Box 6: A list of navigable waters in the Fort Worth District can be found at the following website:

http://media.swf.usace.army.mil/pubdata/environ/regulatory/introduction/navlist.pdf

Under Section 404 of the Clean Water Act, the USACE regulates the discharge of dredged or fill material into waters of the U.S. More information on regulated activities can be found at the following website:

http://www.swf.usace.army.mil/Missions/Regulatory/RegulatedActivities.aspx

6) Box 8: Information on federally threatened or endangered species may be found on the U.S. Fish and Wildlife Service website and the Texas Parks and Wildlife Department website. Include an attachment if additional space is required for listing species or critical habitat potentially affected by the project.

http://www.fws.gov/southwest/es/ES_ListSpecies.cfm

http://www.tpwd.state.tx.us/huntwild/wild/species/endang/index.phtml

http://www.tpwd.state.tx.us/landwater/land/maps/gis/ris/endangered_species/index.phtml

7) Box 10: When completing this box, be aware that the USACE will consider if the project has been designed to avoid and minimize adverse effects, both temporary and permanent, to waters of the U.S. to the maximum extent practicable at the project site when determining appropriate and practicable mitigation necessary to ensure that adverse effects to the aquatic environment are minimal. The USACE may also require compensatory mitigation at a minimum one-for-one ratio for losses of wetlands, streams, and open waters to ensure that the project results in

minimal adverse effects on the aquatic environment. See the USACE Fort Worth District Regulatory Branch website for a mitigation plan template and requirements.

http://www.swf.usace.army.mil/Missions/Regulatory/Permitting/Mitigation.aspx

8) **Box 11:** Projects in Texas should meet the conditions of the Texas Commission on Environmental Quality (TCEQ) Clean Water Act Section 401 certification for NWP 3. The TCEQ conditions of Section 401 certification for NWP 3 as well as a description of Best Management Practices can be found at the following website:

http://www.swf.usace.army.mil/Portals/47/Users/053/21/821/NWP%202017%20Texas%20401cert.pdf

Projects in Louisiana require water quality certification from the Louisiana Department of Environmental Quality (LDEQ). LDEQ has issued water quality certification for NWP 3 without conditions. Information about water quality certification from LDEQ can be found at the following website:

http://www.swf.usace.army.mil/Portals/47/Users/053/21/821/NWP2017Louisiana401cert.pdf?ver=2017-03-24-115120-290

9) **Attachments:** Check the boxes in Part IV for those attachments that are included, and place a cover sheet or tab with each attachment behind the last page of the form. If Attachment D is not needed, discard this page, but if more room is necessary, include an additional table.

NATIONWIDE PERMIT 12

Utility Line Activities

Effective Date: March 19, 2017

(NWP Final Notice, 82 FR 4)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Nationwide Permit General Conditions

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

history interviews, sample field investigation, and field survey. Based on the information submitted in the PCN and these identification efforts, the district engineer shall determine whether the proposed NWP activity has the potential to cause effects on the historic properties. Section 106 consultation is not required when the district engineer determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). Section 106 consultation is required when the district engineer determines that the activity has the potential to cause effects on historic properties. The district engineer will conduct consultation with consulting parties identified under 36 CFR 800.2(c) when he or she makes any of the following effect determinations for the purposes of section 106 of the NHPA: no historic properties affected, no adverse effect, or adverse effect. Where the non-Federal applicant has identified historic properties on which the activity might have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects to historic properties or that NHPA section 106 consultation has been completed.

(d) For non-federal permittees, the district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA section 106 consultation is required. If NHPA section 106 consultation is required, the district engineer will notify the non-Federal applicant that he or she cannot begin the activity until section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (54 U.S.C. 306113) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, 38, and 54, notification is required in accordance with general condition 32, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation to ensure that the activity results in no more than minimal adverse environmental effects. Compensatory mitigation for losses of streams should be provided, if practicable, through stream rehabilitation, enhancement, or preservation, since streams are difficult-to-replace resources (see 33 CFR 332.3(e)(3)).

(e) Compensatory mitigation plans for NWP activities in or near streams or other open waters will normally include a requirement for the restoration or enhancement, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, the restoration or maintenance/protection of riparian areas may be the only compensatory mitigation required. Restored riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to restore or maintain/protect a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or maintaining/protecting a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic

environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of minimization or compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(f) Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in no more than minimal adverse environmental effects. For the NWPs, the preferred mechanism for providing compensatory mitigation is mitigation bank credits or in-lieu fee program credits (see 33 CFR 332.3(b)(2) and (3)). However, if an appropriate number and type of mitigation bank or in-lieu credits are not available at the time the PCN is submitted to the district engineer, the district engineer may approve the use of permittee-responsible mitigation.

(2) The amount of compensatory mitigation required by the district engineer must be sufficient to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see 33 CFR 330.1(e)(3)). (See also 33 CFR 332.3(f)).

(3) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, aquatic resource restoration should be the first compensatory mitigation option considered for permittee-responsible mitigation.

(4) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) through (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)).

(5) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided.

(6) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan (see 33 CFR 332.4(c)(1)(ii)).

(g) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any NWP activity resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that an NWP activity already meeting the established acreage limits also satisfies the no more than minimal impact requirement for the NWPs.

(h) Permittees may propose the use of mitigation banks, in-lieu fee programs, or permittee-responsible mitigation. When developing a compensatory mitigation proposal, the permittee must

consider appropriate and practicable options consistent with the framework at 33 CFR 332.3(b). For activities resulting in the loss of marine or estuarine resources, permittee-responsible mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(i) Where certain functions and services of waters of the United States are permanently adversely affected by a regulated activity, such as discharges of dredged or fill material into waters of the United States that will convert a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse environmental effects of the activity to the no more than minimal level.

24. Safety of Impoundment Structures. To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

29. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

"When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

_____

(Transferee)

_____

(Date)

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized activity was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the activity and mitigation.

The completed certification document must be submitted to the district engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later.

31. Activities Affecting Structures or Works Built by the United States. If an NWP activity also requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers (USACE) federally authorized Civil Works project (a "USACE project"), the prospective permittee must submit a pre-construction notification. See paragraph (b)(10) of general condition 32. An activity that requires section 408 permission is not authorized by NWP until the appropriate Corps office issues the section 408 permission to alter, occupy, or use the USACE project, and the district engineer issues a written NWP verification.

32. Pre-Construction Notification. (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the

prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or are in the vicinity of the activity, or to notify the Corps pursuant to general condition 20 that the activity might have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed activity;

(3) Identify the specific NWP or NWP(s) the prospective permittee wants to use to authorize the proposed activity;

(4) A description of the proposed activity; the activity's purpose; direct and indirect adverse environmental effects the activity would cause, including the anticipated amount of loss of wetlands, other special aquatic sites, and other waters expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; a description of any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed activity; and any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings for linear projects that require Department of the Army authorization but do not require pre-construction notification. The description of the proposed activity and any proposed mitigation measures should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no more than minimal and to determine the

need for compensatory mitigation or other mitigation measures. For single and complete linear projects, the PCN must include the quantity of anticipated losses of wetlands, other special aquatic sites, and other waters for each single and complete crossing of those wetlands, other special aquatic sites, and other waters. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the activity and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

(5) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many wetlands, other special aquatic sites, and other waters. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(6) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(7) For non-Federal permittees, if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed activity or utilize the designated critical habitat that might be affected by the proposed activity. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with the Endangered Species Act;

(8) For non-Federal permittees, if the NWP activity might have the potential to cause effects to a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, the PCN must state which historic property might have the potential to be affected by the proposed activity or include a vicinity map indicating the location of the historic property. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with section 106 of the National Historic Preservation Act;

(9) For an activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible inclusion in the system while the river is in an official study status, the PCN must identify the Wild and Scenic River or the “study river” (see general condition 16); and

(10) For an activity that requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, the pre-construction notification must include a statement confirming that the project proponent has submitted a written request for section 408 permission from the Corps office having jurisdiction over that USACE project.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is an NWP PCN and must include all of the applicable information required in paragraphs (b)(1) through (10) of this general condition. A letter containing the required information may also be used. Applicants may provide electronic files of PCNs and supporting materials if the district engineer has established tools and procedures for electronic submittals.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the activity's adverse environmental effects so that they are no more than minimal.

(2) Agency coordination is required for: (i) all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States; (ii) NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of stream bed; (iii) NWP 13 activities in excess of 500 linear feet, fills greater than one cubic yard per running foot, or involve discharges of dredged or fill material into special aquatic sites; and (iv) NWP 54 activities in excess of 500 linear feet, or that extend into the waterbody more than 30 feet from the mean low water line in tidal waters or the ordinary high water mark in the Great Lakes.

(3) When agency coordination is required, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (FWS, state natural resource or water quality agency, EPA, and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to notify the district engineer via telephone, facsimile transmission, or e-mail that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse environmental effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects of the proposed activity are no more than minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(4) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(5) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

D. District Engineer's Decision

1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If a project proponent requests authorization by a specific NWP, the district engineer should issue the NWP verification for that activity if it meets the terms and conditions of that NWP, unless he or she determines, after considering mitigation, that the proposed activity will result in more than minimal individual and cumulative adverse effects on the aquatic environment and other aspects of the public interest and exercises discretionary authority to require an individual permit for the proposed activity. For a linear project, this determination will include an evaluation of the individual crossings of waters of the United States to determine whether they individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings authorized by NWP. If an applicant requests a waiver of the 300 linear foot limit on impacts to streams or of an otherwise applicable limit, as provided for in NWPs 13, 21, 29, 36, 39, 40, 42, 43, 44, 50, 51, 52, or 54, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in only minimal individual and cumulative adverse environmental effects. For those NWPs that have a waivable 300 linear foot limit for losses of intermittent and ephemeral stream bed and a 1/2-acre limit (i.e., NWPs 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52), the loss of intermittent and ephemeral stream bed, plus any other losses of jurisdictional waters and wetlands, cannot exceed 1/2-acre.

2. When making minimal adverse environmental effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. He or she will also consider the cumulative adverse environmental effects caused by activities authorized by NWP and whether those cumulative adverse environmental effects are no more than minimal. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the NWP activity, the type of resource that will be affected by the NWP activity, the functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the adverse effects (temporary or permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional or condition assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse environmental effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns.

3. If the proposed activity requires a PCN and will result in a loss of greater than 1/10-acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for NWP activities with smaller impacts, or for impacts to other types of waters (e.g., streams). The district engineer will consider any proposed compensatory mitigation or other mitigation measures the applicant has included in the proposal in determining whether the net adverse environmental effects of the proposed activity are no more than minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse environmental effects are no more than minimal, after considering mitigation, the district engineer will notify the permittee and include any activity-specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan before the permittee commences work in waters of

the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure the NWP activity results in no more than minimal adverse environmental effects. If the net adverse environmental effects of the NWP activity (after consideration of the mitigation proposal) are determined by the district engineer to be no more than minimal, the district engineer will provide a timely written response to the applicant. The response will state that the NWP activity can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer.

4. If the district engineer determines that the adverse environmental effects of the proposed activity are more than minimal, then the district engineer will notify the applicant either: (a) that the activity does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) that the activity is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal; or (c) that the activity is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse environmental effects, the activity will be authorized within the 45-day PCN period (unless additional time is required to comply with general conditions 18, 20, and/or 31, or to evaluate PCNs for activities authorized by NWPs 21, 49, and 50), with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation plan or a requirement that the applicant submit a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal. When compensatory mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

E. Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.

2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.

3. NWPs do not grant any property rights or exclusive privileges.

4. NWPs do not authorize any injury to the property or rights of others.

5. NWPs do not authorize interference with any existing or proposed Federal project (see general condition 31).

F. Definitions

Best management practices (BMPs): Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

Compensatory mitigation: The restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Direct effects: Effects that are caused by the activity and occur at the same time and place.

Discharge: The term "discharge" means any discharge of dredged or fill material into waters of the United States.

Ecological reference: A model used to plan and design an aquatic habitat and riparian area restoration, enhancement, or establishment activity under NWP 27. An ecological reference may be based on the structure, functions, and dynamics of an aquatic habitat type or a riparian area type that currently exists in the region where the proposed NWP 27 activity is located. Alternatively, an ecological reference may be based on a conceptual model for the aquatic habitat type or riparian area type to be restored, enhanced, or established as a result of the proposed NWP 27 activity. An ecological reference takes into account the range of variation of the aquatic habitat type or riparian area type in the region.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Ephemeral stream: An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

High Tide Line: The line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of

traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete non-linear project in the Corps Regulatory Program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Indirect effects: Effects that are caused by the activity and are later in time or farther removed in distance, but are still reasonably foreseeable.

Intermittent stream: An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

Loss of waters of the United States: Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to jurisdictional waters for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. The loss of stream bed includes the acres or linear feet of stream bed that are filled or excavated as a result of the regulated activity. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities that do not require Department of the Army authorization, such as activities eligible for exemptions under section 404(f) of the Clean Water Act, are not considered when calculating the loss of waters of the United States.

Navigable waters: Waters subject to section 10 of the Rivers and Harbors Act of 1899. These waters are defined at 33 CFR part 329.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the NWPs, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of flowing or standing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of “open waters” include rivers, streams, lakes, and ponds.

Ordinary High Water Mark: An ordinary high water mark is a line on the shore established by the fluctuations of water and indicated by physical characteristics, or by other appropriate means that consider the characteristics of the surrounding areas.

Perennial stream: A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Protected tribal resources: Those natural resources and properties of traditional or customary religious or cultural importance, either on or off Indian lands, retained by, or reserved by or for, Indian tribes through treaties, statutes, judicial decisions, or executive orders, including tribal trust resources.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a course substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands next to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects riverine, lacustrine, estuarine, and marine waters with their adjacent wetlands, non-wetland waters, or uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 23.)

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term "single and complete project" is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Single and complete non-linear project: For non-linear projects, the term "single and complete project" is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-linear project must have independent utility (see definition of "independent utility"). Single and complete non-linear projects may not be "piecemealed" to avoid the limits in an NWP authorization.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream's course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Tidal wetland: A tidal wetland is a jurisdictional wetland that is inundated by tidal waters. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line.

Tribal lands: Any lands title to which is either: 1) held in trust by the United States for the benefit of any Indian tribe or individual; or 2) held by any Indian tribe or individual subject to restrictions by the United States against alienation.

Tribal rights: Those rights legally accruing to a tribe or tribes by virtue of inherent sovereign authority, unextinguished aboriginal title, treaty, statute, judicial decisions, executive order or agreement, and that give rise to legally enforceable remedies.

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the NWPs, a waterbody is a jurisdictional water of the United States. If a wetland is adjacent to a waterbody determined to be a water of the United States, that waterbody and any adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)). Examples of "waterbodies" include streams, rivers, lakes, ponds, and wetlands.

ADDITIONAL INFORMATION

This nationwide permit is effective March 19, 2017, and expires on March 18, 2022.

Information about the U.S. Army Corps of Engineers regulatory program, including nationwide permits, may also be found at http://www.swf.usace.army.mil/Missions/Regulatory.aspx and http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits.aspx

2017 NATIONWIDE PERMIT (NWP) REGIONAL CONDITIONS

FOR THE STATE OF TEXAS

The following regional conditions apply within the entire State of Texas:

1. For all discharges proposed for authorization under Nationwide Permits (NWP) 3, 6, 7, 12, 14, 18, 19, 21, 23, 25, 27, 29, 39, 40, 41, 42, 43, 44, 49, 51, and 52, into the following habitat types or specific areas, the applicant shall notify the appropriate District Engineer in accordance with the NWP General Condition 32, Pre-Construction Notification (PCN). The Corps of Engineers (Corps) will coordinate with the resource agencies as specified in NWP General Condition 32(d) (PCN). The habitat types or areas are:

    a. Pitcher Plant Bogs: Wetlands typically characterized by an organic surface soil layer and include vegetation such as pitcher plants (*Sarracenia* spp.) and/or sundews (*Drosera* spp.).

    b. Bald Cypress-Tupelo Swamps: Wetlands dominated by bald cypress (*Taxodium distichum*) and/or water tupelo (*Nyssa aquatic*).

2. For all activities proposed for authorization under any Nationwide Permit (NWP) at sites approved as compensatory mitigation sites (either permittee-responsible, mitigation bank and/or in-lieu fee) under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act of 1899, the applicant shall notify the appropriate District Engineer in accordance with the NWP General Condition 32 - Pre-Construction Notification prior to commencing the activity.

3. For all activities proposed for authorization under NWP 16, the applicant shall notify the appropriate District Engineer in accordance with the NWP General Condition 32 (Pre-Construction Notification) and must obtain an individual water quality certification (WQC) from the TCEQ. Work cannot begin under NWP 16 until the applicant has received written approval from the Corps and WQC.

NOTE: For all activities proposing to use equipment that has operated or been stored in a water body on the Texas list of zebra mussel (*Dreissena polymorpha*) infected water bodies, equipment should be decontaminated prior to relocation in accordance with Texas Administrative Code, Title 31, Part 2, Chapter 57, Subchapter A. The following decontamination Best Management Practices (BMPs), as a minimum, are indicated:

    a. Clean: Clean both the inside and outside of equipment and gear, by removing all plants, animals, and mud and thoroughly washing the equipment using a high pressure spray nozzle.

    b. Drain: Drain all water from receptacles before leaving the area, including livewells, bilges, ballast, and engine cooling water on boats.

    c. Dry: Allow time for your equipment to dry completely before relocating in other waters. Equipment should be dried prior to relocation. High temperature pressure washing (greater than or equal to 140F) or professional cleaning may be substituted for drying time.

The following regional condition only applies within the Albuquerque, Fort Worth, and Galveston Districts:

4. For all activities proposed for authorization under Nationwide Permit (NWP) 12 that involve a discharge of fill material associated with mechanized land clearing of wetlands dominated by native woody shrubs, the applicant shall notify the appropriate District Engineer in accordance with the NWP General Condition 32 – Pre-Construction Notification prior to commencing the activity. For the purpose of this regional condition, a shrub dominated wetland is characterized by woody vegetation less than 3.0 inches in diameter at breast height but greater than 3.2 feet in height, which covers 20% or more of the area. Woody vines are not included.

The following regional conditions apply within the Albuquerque District.

5. Nationwide Permit (NWP) 23 – Approved Categorical Exclusions. A pre-construction notification (PCN) to the District Engineer in accordance with General Condition 32 - PCN is required for all proposed activities under NWP 23.

6. Nationwide Permit (NWP) 27 – Aquatic Habitat Restoration, Establishment, and Enhancement Activities. For all proposed activities under NWP 27 that require pre-construction notification, a monitoring plan commensurate with the scale of the proposed restoration project and the potential for risk to the aquatic environment must be submitted to the Corps. (See “NWP 27 Guidelines” at http://www.spa.usace.army.mil/Missions/RegulatoryProgramandPermits/NWP.aspx).

7. Channelization. Nationwide Permit (NWP) General Condition 9 for Management of Water Flows is amended to add the following: Projects that would result in permanent channelization to previously un-channelized streams require pre-construction notification to the Albuquerque District Engineer in accordance with NWP General Condition 32 – Pre-Construction Notification.

8. Dredge and Fill Activities in Intermittent and Perennial Streams, and Special Aquatic Sites: For all activities subject to regulation under the Clean Water Act Section 404 in intermittent and perennial streams, and special aquatic sites (including wetlands, riffle and pool complexes, and sanctuaries and refuges), pre-construction notification (PCN) to the Albuquerque District Engineer is required in accordance with Nationwide Permit General Condition 32 - PCN.

9. Springs. For all discharges of dredged or fill material within 100 feet of the point of groundwater discharge of natural springs located in an aquatic resource, a pre-construction notification (PCN) is required to the Albuquerque District Engineer in accordance with Nationwide Permit General Condition 32 - PCN. A natural spring is defined as any location where ground water emanates from a point in the ground and has a defined surface water connection to another waters of the United States. For purposes of this regional condition, springs do not include seeps or other groundwater discharges which lack a defined surface water connection.

10. Suitable Fill. Use of broken concrete as fill or bank stabilization material is prohibited unless the applicant demonstrates that its use is the only practicable material (with respect to cost, existing technology, and logistics). Any applicant who wishes to use broken concrete as bank stabilization must provide notification to the Albuquerque District Engineer in accordance with Nationwide Permit General Condition 32 - Pre-Construction Notification along with justification for such use. Use of broken concrete with rebar or used tires (loose or formed into bales) is prohibited in all waters of the United States.

The following regional conditions apply only within the Fort Worth District.

11. For all discharges proposed for authorization under all Nationwide Permits (NWP) into the area of Caddo Lake within Texas that is designated as a "Wetland of International Importance" under the Ramsar Convention, the applicant shall notify the Fort Worth District Engineer in accordance with the NWP General Condition 32 – Pre-Construction Notification (PCN). The Fort Worth District will coordinate with the resource agencies as specified in NWP General Condition 32(d) - PCN.

12. Compensatory mitigation is generally required for losses of waters of the United States that exceed 1/10 acre and/or for all losses to streams that exceed 300 linear feet. Loss is defined in Section F of the Nationwide Permits (NWP). Mitigation thresholds are cumulative irrespective of aquatic resource type at each single and complete crossing. Compensatory mitigation requirements will be determined in accordance with the appropriate district standard operating procedures and processes. The applicant shall notify the Fort Worth District Engineer in accordance with the NWP General Condition 32 - Pre-Construction Notification prior to commencing the activity.

13. For all activities proposed for authorization under Nationwide Permits (NWP) 12, 14 and/or 33 that involve a temporary discharge of fill material into 1/2 acre or more of emergent wetland OR 1/10 acre of scrub-shrub/forested wetland, the applicant shall notify the Fort Worth District Engineer in accordance with the NWP General Condition 32 - Pre-Construction Notification prior to commencing the activity.

14. For all discharges proposed for authorization under Nationwide Permits (NWP) 51 and 52, the Fort Worth District will provide the pre-construction notification (PCN) to the U.S. Fish and Wildlife Service as specified in NWP General Condition 32(d)(2) - PCN for its review and comments.

The following regional conditions apply only within the Galveston District.

15. No Nationwide Permits (NWP), except NWP 3, shall be used to authorize discharges into the habitat types or specific areas listed in paragraphs a through c, below. The applicant shall notify the Galveston District Engineer in accordance with the NWP General Condition 32 - Pre-Construction Notification prior to commencing the activity under NWP 3.

a. Mangrove Marshes. For the purpose of this regional condition, Mangrove marshes are those waters of the United States that are dominated by mangroves (*Avicennia* spp., *Laguncuaria* spp., *Conocarpus* spp., and *Rhizophora* spp.).
b. Coastal Dune Swales. For the purpose of this regional condition, coastal dune swales are wetlands and/or other waters of the United States located within the backshore and dune areas in the coastal zone of Texas. They are formed as depressions within and among multiple beach ridge barriers, dune complexes, or dune areas adjacent to beaches fronting tidal waters of the United States.
c. Columbia Bottomlands. For the purpose of this regional condition, Columbia bottomlands are defined as waters of the United States that are dominated by bottomland hardwoods in the Lower Brazos and San Bernard River basins identified in the 1997 Memorandum of Agreement between the U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, Natural Resource Conservation Service, and Texas Parks and Wildlife Department for bottomland hardwoods in Brazoria County. (For further information, see http://www.swg.usace.army.mil/Business-With-Us/Regulatory/Permits/Nationwide-General-Permits/)

16. A Compensatory Mitigation Plan is required for all special aquatic site losses, as defined in Section F of the Nationwide Permits (NWP), that exceed 1/10 acre and/or for all losses to streams that exceed 200 linear feet. Compensatory mitigation requirements will be determined in accordance with the appropriate district standard operating procedures and processes. The applicant shall notify the Galveston District Engineer in accordance with the NWP General Condition 32 - Pre-Construction Notification prior to commencing the activity.

17. For all seismic testing activities proposed for authorization under Nationwide Permit (NWP) 6, the applicant shall notify the Galveston District Engineer in accordance with the NWP General Condition 32 - Pre-Construction Notification (PCN). The PCN must state the time period for which the temporary fill is proposed, and must include a restoration plan for the special aquatic sites. For seismic testing under NWP 6 within the Cowardin Marine System, Subtidal Subsystem; as defined by the U.S. Fish and Wildlife Service, Classification of Wetlands and Deepwater Habitats of the United States, December 1979/Reprinted 1992, the Corps will coordinate with the resource agencies in accordance with NWP General Condition 32(d) - PCN.

18. For all activities proposed under Nationwide Permits (NWP) 10 and 11 located in vegetated shallows and coral reefs; as defined by 40 CFR 230.43 and 230.44 respectively, the applicant shall notify the Galveston District Engineer in accordance with the NWP General Condition 32 - Pre-Construction Notification. Examples include, but are not limited to: seagrass beds, oyster reefs, and coral reefs.

19. Nationwide Permit 12 shall not be used to authorize discharges within 500 feet of vegetated shallows and coral reefs; as defined by 40 CFR 230.43 and 230.44 respectively. Examples include, but are not limited to: seagrass beds, oyster reefs, and coral reefs.

20. For all activities proposed for authorization under Nationwide Permit 12 that involve underground placement below a non-navigable river bed and/or perennial stream bed there shall a minimum cover of 48 inches (1,219 millimeters) of soil below the river and/or perennial stream thalweg.

21. For all discharges and work proposed below the high tide line under Nationwide Permits (NWP) 14 and 18, the applicant shall notify the Galveston District Engineer in accordance with the NWP General Condition 32 - Pre-Construction Notification (PCN). The Galveston District will coordinate with the resource agencies in accordance with NWP General Condition 32(d) - PCN.

22. For all activities proposed for authorization under Nationwide Permit (NWP) 33 the applicant shall notify the Galveston District Engineer in accordance with the NWP General Condition 32 – Pre-Construction Notification (PCN). The PCN must include a restoration plan showing how all temporary fills and structures will be removed and the area restored to pre-project conditions. Activities causing the temporary loss, as defined in Section F of the NWPs, of more than 0.5 acres of tidal waters and/or 200 linear feet of stream will be coordinated with the agencies in accordance with NWP General Condition 32(d) - PCN.

23. No Nationwide Permits (NWP), except NWPs 3, 16, 20, 22, 37, shall be used to authorize discharges, structures, and/or fill within the standard setback and high hazard zones of the Sabine-Neches Waterway as defined in the Standard Operating Procedure - Permit Setbacks along the Sabine-Neches Waterway. The applicant shall notify the Galveston District Engineer in accordance with NWP General Condition 32 - Pre-Construction Notification for all discharge, structures and/or work in medium hazard zones and all NWP 3 applications within the standard setback and high hazard zones of the Sabine-Neches Waterway.

24. No Nationwide Permits (NWP), except 20, 22, and 37, shall be used to authorize discharges, structures, and/or fill within the standard setback exemptions of the Gulf Intracoastal Waterway as defined in the Standard Operating Procedure- Department of the Army Permit Evaluation Setbacks along the Gulf Intracoastal Waterway. The applicant shall notify the Galveston District Engineer in accordance with NWP General Condition 32 (Pre-Construction Notification) for all discharges, structures and/or work within the standard setback, shoreward of the standard setback, and/or standard setback exemption zones.

25. The use of Nationwide Permits in the San Jacinto River Waste Pits Area of Concern are revoked. (For further information, see http://www.swg.usace.army.mil/Business-With-Us/Regulatory/Permits/Nationwide-General-Permits/)

26. The use of Nationwide Permits 51 and 52 are revoked within the Galveston District boundaries.

27. Nationwide Permit (NWP) 53 pre-construction notifications will be coordinated with resource agencies as specified in NWP General Condition 32(d) – Pre-construction Notification.

28. For all activities proposed under Nationwide Permits (NWP) 21, 29, 39, 40, 42, 43, 44, and 50 that result in greater than 300 feet of loss in intermittent and/or ephemeral streams, as defined in Section F of the NWPs, require evaluation under an Individual Permit.

The following regional conditions apply only within the Tulsa District.

29. Upland Disposal: Except where authorized by Nationwide Permit 16, material disposed of in uplands shall be placed in a location and manner that prevents discharge of the material and/or return water into waters or wetlands unless otherwise authorized by the Tulsa District Engineer.

30. Major Rivers: The prospective permittee shall notify the Tulsa District Engineer for all Nationwide Permit 14 verifications which cross major rivers within Tulsa District. For the purposes of this condition, major rivers include the following: Canadian River, Prairie Dog Town Fork of the Red River, and Red River.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Arlington Ecological Services Field Office
2005 Ne Green Oaks Blvd
Suite 140
Arlington, TX 76006-6247
Phone: (817) 277-1100 Fax: (817) 277-1129
http://www.fws.gov/southwest/es/arlingtontexas/
http://www.fws.gov/southwest/es/EndangeredSpecies/lists/

In Reply Refer To: May 07, 2020
Consultation Code: 02ETAR00-2020-SLI-1850
Event Code: 02ETAR00-2020-E-03852
Project Name: Sam Switch to Aquilla Lake

Subject: List of threatened and endangered species that may occur in your proposed project location, and/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 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 direct or indirect result of the proposed action, and the effect is not discountable or insignificant. This determination requires formal section 7 consultation.

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 in the "Endangered Species Consultation Handbook" at: http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

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 ECOS-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 ECOS-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 (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy

guidelines (http://www.fws.gov/windenergy/) 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: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

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

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
2005 Ne Green Oaks Blvd
Suite 140
Arlington, TX 76006-6247
(817) 277-1100

Project Summary

Consultation Code: 02ETAR00-2020-SLI-1850

Event Code: 02ETAR00-2020-E-03852

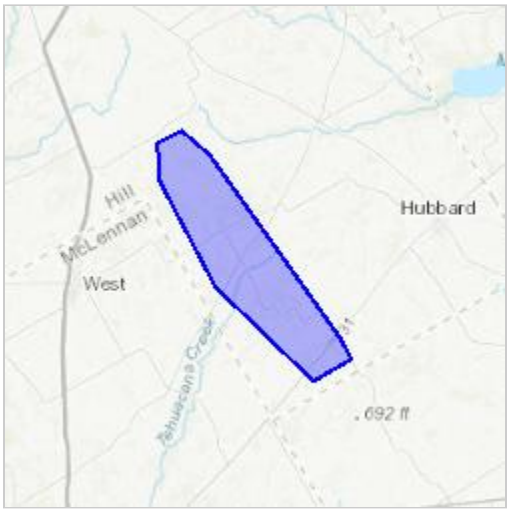
Project Name: Sam Switch to Aquilla Lake

Project Type: TRANSMISSION LINE

Project Description: Transmission line siting and routing study.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/31.8223305290709N96.95860205983075W



Counties: Hill, TX

Endangered Species Act Species

There is a total of 6 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 3 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.

Birds

NAME	STATUS
Golden-cheeked Warbler (=wood) *Dendroica chrysoparia*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/33

Least Tern *Sterna antillarum*	Endangered

Population: interior pop.
No critical habitat has been designated 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/8505

Piping Plover *Charadrius melodus*	Threatened

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 is outside 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

Red Knot *Calidris canutus rufa*	Threatened

No critical habitat has been designated 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

Whooping Crane *Grus americana*	Endangered

Population: Wherever found, except where listed as an experimental population
There is **final** critical habitat for this species. Your location is outside the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/758

Clams

NAME	STATUS
Texas Fawnsfoot *Truncilla macrodon*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/8965

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Meaux, Lisa

From: Edwards, Sean <sean_edwards@fws.gov>
Sent: Tuesday, July 21, 2020 3:06 PM
To: Meaux, Lisa
Subject: [EXTERNAL] Proposed Sam Switch to Aquilla Lake Wind Project

Ms. Barko Meaux,

Thank you for your May 5, 2020 letter and invitation to coordinate on Lone Star Transmission, LLC's proposed construction of a new 345-kV transmission line to be constructed in Hill County, Texas between the Sam Switch Substation and the proposed Hubbard Wind Project.

An analysis of the study area specific to possible transmission line routes indicates the potential to cross numerous streams and potential wetland sites. Wetlands and riparian corridors are high priority fish and wildlife habitat and a resource of national concern. They serve as important sources of food, cover, and habitat for numerous species of resident and migratory fish and wildlife. Waterfowl and other migratory birds use wetlands and riparian corridors as stopover, feeding, and nesting areas. For these reasons, we strongly recommend that all construction activities near such areas be carefully designed to avoid and/or minimize impacts to fish and wildlife resources to the maximum extent practicable and that powerline construction in wetland areas be avoided. However, lines that must cross floodplains, wetlands, and/or waterways should be designed to span them, if possible, and in such a manner as to avoid erosion and/or sedimentation. Lines that can not span floodplains or wetlands should be constructed during dry weather and designed to minimize construction activities in the floodplain/wetland areas. If vegetation clearing is needed in riparian areas, these areas should be revegetated with native wetland and riparian vegetation to prevent erosion, reduce sedimentation, and restore impacted habitat. Revegetation efforts should be monitored to ensure disturbed stream banks are adequately stabilized.

The Service is concerned with the construction of new powerline rights of way (ROWs) that extend for miles creating large acreage of linear corridors. These ROWs frequently fragment valuable bottomland and forested upland habitats which may have adverse effects on migratory birds and resident wildlife species. For this reason, it is important to consider all possible route alignments in the planning phase of new powerline ROWs. In addition to considering cost, feasibility, regulations, and aesthetics in the planning of ROWs, other factors such as land use, topography, habitat type, and method of ROW clearing should be explored if all impacts to fish and wildlife resources are to be avoided and/or minimized to the maximum extent possible.

Management techniques have been developed for the construction of powerlines that mitigate the potential environmental impacts commonly associated with these projects. These techniques involve the alignment of powerlines with regard to the terrain, vegetation, and wildlife species present within the general study area and are designed to lessen the fragmenting of forested areas by maintaining natural migratory corridors across ROWs. We recommend the most current and innovative methods of minimizing environmental impacts from ROW clearing be investigated and implemented where practical to reduce the permanent loss of wildlife habitat associated with the proposed actions.

The Service is also concerned with the documented problem of bird mortality resulting from collisions with powerlines. Avian collisions may be significant depending on the species involved and the placement of the powerlines. Therefore, we recommend the potential for avian collisions with the proposed powerlines be considered in the planning process and those route alternatives with a high potential for avian mortality be designed with effective measures to reduce the probability of avian mortality. This would include locating powerline routes a reasonable distance from wetlands or other large water bodies to avoid bird strikes, and installing visual markers on overhead ground wires on sections where collisions are likely to be significant.

Hill County lies within a 200-mile wide corridor in which 94% of whooping crane sightings have occurred during their annual migration. Although whooping crane migration flights are generally at altitudes of between 1,000 and 6,000 feet, they fly at lower altitudes when seeking stop-over habitats such as those potentially occurring within the study area. They will often make low flights up to two miles from a stop-over site to forage late in the day or in early morning. They may also interrupt migration flights to drink and/or forage in agricultural fields or wetlands for brief periods and may be at low altitudes during mid-day. For these reasons, the Service is concerned with the possibility of collisions by whooping cranes with transmission lines. Transmission line collisions are known to be the highest cause of mortality of fledged whooping cranes; therefore, the Service recommends that the forthcoming Environmental Assessment include an evaluation of potential impacts to whooping cranes.

Thank you for the opportunity to coordinate on Lone Star Transmission's proposed transmission line project. Please contact me with any additional needs or questions.

Kind Regards,

Sean Edwards
Fish & Wildlife Biologist
U.S. Fish & Wildlife Service
2005 NE Green Oaks Blvd. Ste. 140
Arlington, Texas 76006

Meaux, Lisa

From: Edwards, Sean <sean_edwards@fws.gov>
Sent: Tuesday, July 21, 2020 3:16 PM
To: Meaux, Lisa
Subject: [EXTERNAL] Re: Proposed Sam Switch to Aquilla Lake Wind Project

Ms. Barko Meaux,

The Service also recommends the use of our IPaC planning tool for projects such as this found at: https://ecos.fws.gov/ipac/

Kind Regards,

Sean Edwards
Fish & Wildlife Biologist
U.S. Fish & Wildlife Service
2005 NE Green Oaks Blvd. Ste. 140
Arlington, Texas 76006

From: Edwards, Sean
Sent: Tuesday, July 21, 2020 3:05 PM
To: lisa.barko@powereng.com <lisa.barko@powereng.com>
Subject: Proposed Sam Switch to Aquilla Lake Wind Project

Ms. Barko Meaux,

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Kind Regards,

Sean Edwards
Fish & Wildlife Biologist
U.S. Fish & Wildlife Service

2005 NE Green Oaks Blvd. Ste. 140
Arlington, Texas 76006

From:	Meaux, Lisa
To:	Michael Rhodes
Cc:	Williams, Denise
Subject:	RE: Proposed Sam Switch to Aquilla Lake Wind Project - POWER Engineers, Inc. Project No. 164366
Date:	Friday, May 08, 2020 3:46:05 PM
Attachments:	Sam Switch_Agency_Letter_2nd page.pdf

Good afternoon,
It appers you are missing the second page of the letter so I have attached it for your reference. I am the correct person to send the letter to via email and or to our physical address in the top right hand corner of the letter. Please call if you have any questions.
Thank you,
Lisa

LISA BARKO MEAUX
PROJECT MANAGER
ENVIRONMENTAL DEPARTMENT MANAGER
16825 Northchase Drive, Suite 1200
Houston, Texas 77060

281-765-5507 direct
713-962-8476 cell
lisa.barko@powereng.com

POWER Engineers, Inc.
www.powereng.com

From: Michael Rhodes <Michael.Rhodes@txdot.gov>
Sent: Friday, May 08, 2020 3:37 PM
To: Meaux, Lisa <lisa.barko@powereng.com>
Cc: Victor Goebel <Victor.Goebel@txdot.gov>
Subject: [EXTERNAL] Proposed Sam Switch to Aquilla Lake Wind Project - POWER Engineers, Inc. Project No. 164366

Ms. Meaux,
I called your corporate office and they gave me your contact information.

Please see the attached letter. My supervisor asked me to respond on his behalf, but the letter did not identify a point of contact for your company. Can you please direct me to the appropriate person?

Thanks,

Michael A. Rhodes
Texas Department of Transportation
Environmental Coordinator
Waco District
100 S. Loop Drive
Waco, TX 76704 - 2858
(254) 867-2739 (phone)
michael.rhodes@txdot.gov

From:	Michael Rhodes
To:	Meaux, Lisa
Cc:	Williams, Denise; Victor Goebel
Subject:	[This message is not from DropBox] RE: Proposed Sam Switch to Aquilla Lake Wind Project - POWER Engineers, Inc. Project No. 164366
Date:	Friday, May 08, 2020 3:54:54 PM

Excellent Lisa.

The best information I can share with you in response to your letter would come from our Environmental Assessment for the SH 31 project in Hill County. Do you mind if I send the EA to you? The file is large, so I can use Dropbox. You'll receive an email from Dropbox notifying you that a download is available.

Michael A. Rhodes
Texas Department of Transportation
Environmental Coordinator
Waco District
100 S. Loop Drive
Waco, TX 76704 - 2858
(254) 867-2739 (phone)
michael.rhodes@txdot.gov

From: lisa.barko@powereng.com [mailto:lisa.barko@powereng.com]
Sent: Friday, May 08, 2020 3:46 PM
To: Michael Rhodes <Michael.Rhodes@txdot.gov>
Cc: denise.williams@powereng.com
Subject: RE: Proposed Sam Switch to Aquilla Lake Wind Project - POWER Engineers, Inc. Project No. 164366

Good afternoon,
It appers you are missing the second page of the letter so I have attached it for your reference. I am the correct person to send the letter to via email and or to our physical address in the top right hand corner of the letter. Please call if you have any questions.
Thank you,
Lisa

LISA BARKO MEAUX
PROJECT MANAGER
ENVIRONMENTAL DEPARTMENT MANAGER
16825 Northchase Drive, Suite 1200

Houston, Texas 77060

281-765-5507 direct
713-962-8476 cell
lisa.barko@powereng.com

POWER Engineers, Inc.
www.powereng.com

From: Michael Rhodes <Michael.Rhodes@txdot.gov>
Sent: Friday, May 08, 2020 3:37 PM
To: Meaux, Lisa <lisa.barko@powereng.com>
Cc: Victor Goebel <Victor.Goebel@txdot.gov>
Subject: [EXTERNAL] Proposed Sam Switch to Aquilla Lake Wind Project - POWER Engineers, Inc. Project No. 164366

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I called your corporate office and they gave me your contact information.

Please see the attached letter. My supervisor asked me to respond on his behalf, but the letter did not identify a point of contact for your company. Can you please direct me to the appropriate person?

Thanks,

Michael A. Rhodes
Texas Department of Transportation
Environmental Coordinator
Waco District
100 S. Loop Drive
Waco, TX 76704 - 2858
(254) 867-2739 (phone)
michael.rhodes@txdot.gov

From:	Michael Rhodes
To:	Meaux, Lisa
Cc:	Williams, Denise; Stan Swiatek; Victor Goebel; Andy Haferkamp
Subject:	[This message is not from DropBox] Proposed Sam Switch to Aquilla Lake Wind Project - POWER Engineers, Inc. Project No. 164366
Date:	Monday, May 11, 2020 2:45:52 PM
Attachments:	Aquilla Lake Wind Project.pdf

Lisa,
As we discussed last week, I sent the SH 31 Environmental Assessment to you via Dropbox. This document will provide you with the information you requested in the letter attached to this email.

Please let me know if you need any additional information.

Michael A. Rhodes
Texas Department of Transportation
Environmental Coordinator
Waco District
100 S. Loop Drive
Waco, TX 76704 - 2858
(254) 867-2739 (phone)
michael.rhodes@txdot.gov

From: TxDOT Dropbox
To: Williams, Denise
Subject: [This message is not from DropBox] [EXTERNAL] [Dropbox Service] Michael Rhodes has dropped-off 2 files for you!
Date: Monday, May 11, 2020 2:31:09 PM

This is an automated message sent to you by the Dropbox Service.

Michael Rhodes (michael.rhodes@txdot.gov) has dropped-off 2 files for you.

You can retrieve the drop-off by clicking the following link (or copying and pasting it into your web browser) within 21 days:

"https://urldefense.proofpoint.com/v2/url?u=https-3A__ftp.txdot.gov_dropbox_pickup.php-3FclaimID-3D2GoK24WPnk4neZuk-26claimPasscode-3DyKQLdHx5qJ2PgZjv-26emailAddr-3Ddenise.williams-2540powereng.com&d=DwIBAg&c=H8S5wzIwo-7G_Ou9dg8E0MfTp0Xd5uFLOwdyvjB0JwY&r=Uk2f7JU3sc9c4yYG2YjQV4t7PhIZD2moPzKDroCDGtI&m=1j10ovt6oyhsikR4ET9VvLZhd-UkFq3GHdA26xVXY3c&s=XH1gK7asWu1wDOcIbQ7KwV9tcLl-HrS05uNBrK_LZ-0&e= "

Full information for the drop-off:

Claim ID: 2GoK24WPnk4neZuk
Claim Passcode: yKQLdHx5qJ2PgZjv
Date of Drop-Off: 2020-05-11 14:31:03-0500

-- Sender --
Name: Michael Rhodes
Organization: TxDOT
Email Address: michael.rhodes@txdot.gov
IP Address:

-- Uploaded Files --

Name: 0162-02-031 & 032 EA.pdf
Content Type: application/pdf
Size: 22.4 MB
Description:

Name: SH_31_Re-Evaluation.pdf
Content Type: application/pdf
Size: 2.0 MB
Description:

TEXAS GENERAL LAND OFFICE
GEORGE P. BUSH, COMMISSIONER

May 28, 2020

Lisa Barko Meaux
Power Engineers, Inc.
16825 Northchase Drive, Suite 1200
Houston, TX 77060-6012

Re: Proposed Sam Switch to Aquilla Lake Wind Project
Hill County, Texas
POWER Engineers, Inc. Project No. 164366

Dear Ms. Meaux:

On behalf of Commissioner Bush, I would like to thank you for your letter concerning the above-referenced project.

Using your map depicting the project's study area, it does not appear that the General Land Office will have any environmental issues or land use constraints at this time.

When a final route for this proposed project has been determined, please contact me and we can assess the route to determine if the project will cross any streambeds or Permanent School Fund (PSF) land that would require an easement from our agency.

In the interim, if you would like to speak to me further on this project, I can be reached by email at glenn.rosenbaum@glo.texas.gov or by phone at (512) 463-8180.

Again, thank you for your inquiry.

Sincerely,

Glenn Rosenbaum
Manager, Right-of-Way Department
Leasing Operations

From: Meaux, Lisa
To: Schubert, Darren; Williams, Denise
Subject: FW: [EXTERNAL] Project Review: 202012797
Date: Monday, June 01, 2020 10:16:13 AM

From THC

LISA BARKO MEAUX
PROJECT MANAGER
ENVIRONMENTAL DEPARTMENT MANAGER
16825 Northchase Drive, Suite 1200
Houston, Texas 77060

281-765-5507 direct
713-962-8476 cell
lisa.barko@powereng.com

POWER Engineers, Inc.
www.powereng.com

From: noreply@thc.state.tx.us <noreply@thc.state.tx.us>
Sent: Monday, June 01, 2020 10:03 AM
To: Meaux, Lisa <lisa.barko@powereng.com>; reviews@thc.state.tx.us
Subject: [EXTERNAL] Project Review: 202012797

Re: Project Review under Section 106 of the National Historic Preservation Act and/or the Antiquities Code of Texas
THC Tracking #202012797
Lone Star Transmission (Sam Switch Substation)

Dear Client:
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:

Above-Ground Resources

- No further review of potential effects to above-ground historic resources is required under the Antiquities Code of Texas. However, should this project ultimately include any federal involvement, additional consultation with THC/SHPO under Section 106 of the National Historic Preservation Act will be required.

Archeology Comments

- THC/SHPO unable to complete review at this time based on insufficient documentation. A supplemental review must be submitted, and the 30-day review period will begin upon receipt of adequate documentation.

We have the following comments: In order for us to complete our review, please provide a more detailed map with the proposed route and any planned alternatives. In addition, please provide the width of the construction right-of-way and the maximum height of the trans mission towers.

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 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.

Sincerely,

For Mark Wolfe, State Historic Preservation Officer
Executive Director, Texas Historical Commission

Please do not respond to this email.

Meaux, Lisa

From: Meaux, Lisa
Sent: Tuesday, May 26, 2020 12:40 PM
To: Karen Hardin
Cc: Kelly wells; Tracy C. Davis (TracyC.Davis@nexteraenergy.com)
Subject: RE: Lone Star Transmission Sam Switch to X Wind Power Project; 164366
Attachments: SS-Aquilla Study Area Map 2020.05.04.pdf

Hello Karen,
Yes, the project name has been evolving. We apologize for the confusion.
The current and correct project name is "Sam Switch to Hubbard Wind Collector Station."
The Project is known as the Aquilla Lake Wind Project at ERCOT and it will serve the Hubbard Wind Project but the EA is only for the transmission line project which will connect to the existing Sam Switch Station to the Hubbard Wind Collector Station.
Thank you for reaching out and please let me know if you have any further questions.
Regards,
Lisa

LISA BARKO MEAUX
PROJECT MANAGER
ENVIRONMENTAL DEPARTMENT MANAGER
16825 Northchase Drive, Suite 1200
Houston, Texas 77060

281-765-5507 direct
713-962-8476 cell
lisa.barko@powereng.com

POWER Engineers, Inc.
www.powereng.com

From: Karen Hardin <Karen.Hardin@tpwd.texas.gov>
Sent: Tuesday, May 26, 2020 9:16 AM
To: Meaux, Lisa <lisa.barko@powereng.com>
Subject: [EXTERNAL] Lone Star Transmission Sam Switch to X Wind Power Project; 164366

Hi Lisa,

I need clarification regarding this project. The subject line of your May 5 letter indicates that the project is Sam Switch to Aquilla Lake Wind Project, but the body of your letter mentions the endpoint is the Hubbard Wind Project. The study area map refers to Aquilla Lake Wind Project.

Please clarify the correct name of the proposed project. Sam Switch to Hubbard Wind Project or Aquilla Lake Wind Project?

Thanks,

Karen Hardin
Natural Resource Specialist
Wildlife Habitat Assessment Program
Texas Parks and Wildlife Department
4200 Smith School Road
Austin, TX 78744
(903) 322-5001

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Carter P. Smith
Executive Director

May 26, 2020

Ms. Lisa Barko Meaux
POWER Engineers, Inc.
16825 Northchase Drive, Suite 1200
Houston, TX 77060

RE: Lone Star Transmission, LLC Proposed 345-kilovolt (kV) Transmission Line: Sam Switch to Hubbard Wind Collection Station in Hill County

Dear Ms. Lisa Barko Meaux:

The Texas Parks and Wildlife Department (TPWD) received the project review request dated May 5, 2020, regarding the Lone Star Transmission, LLC (Lone Star) proposed construction of an approximately 13-mile long new 345-kV transmission line in Hill County from the existing Lone Star Sam Switch Substation, located approximately 3.10 miles east of Abbot, Texas, on County Road 3160, to the proposed Hubbard Wind Collection Station located southwest of Mount Calm, Texas, on State Highway 31 to support the 300-megawatt Hubbard Wind Project. The Electric Reliability Council of Texas (ERCOT) refers to the project as the Aquilla Lake Wind Project. In preparation of an environmental assessment (EA) to support Lone Star's application for a Certificate of Convenience and Necessity from the Public Utility Commission (PUC), POWER Engineers, Inc. (POWER) has requested input regarding environmental or land use constraints within the project study area. The review request included a map of the study area identifying the existing Sam Switch Substation, the proposed Hubbard Wind Substation, existing transmission lines, existing roads, and creeks.

As the state agency with primary responsibility for protecting the state's fish and wildlife resources and in accordance with the authority granted by Texas Parks and Wildlife (TPW) Code §12.0011, TPWD provides the following recommendations and informational comments to minimize adverse impacts to the state's fish and wildlife resources in the routing, construction, and operation of the proposed project.

> **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, pipelines, or other utility rights-of-way (ROW) to reduce habitat fragmentation and minimize loss of undisturbed habitats.

Federal Regulations

Federal Regulations: Migratory Bird Treaty Act (MBTA)

The MBTA prohibits direct and affirmative purposeful actions that reduce migratory birds, their eggs, or their nests, by killing or capturing, to human control, except when specifically authorized by the Department of the Interior. This protection applies to

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AUSTIN, TEXAS 78744-3291
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www.tpwd.texas.gov

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 on potential impacts to migratory birds.

Birds typically establish flight corridors along river and creek drainages. Riparian corridors, creeks, wetlands, and lakes provide habitat for a host of wildlife species including wading birds, waterfowl, and predator species. There is potential for collision of birds with electrical wires near water features. 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.

The study area contains primarily cropland and tame pastures with floodplain and riparian herbaceous vegetation, shrubland, and forest along creeks. There are small amounts of live oak mottes and woodlands, barrens, swamp, native invasive woodlands and shrublands, high and low intensity developed urban areas, and open water. Prominent drainages include Brookeen Creek, Brushy Creek, Tehuacana Creek, Mesquite Creek, Wolf Creek, Packwood Creek, and their unnamed tributaries.

> **Recommendation:** TPWD recommends Lone Star route transmission lines to avoid crossing riparian areas, wetlands and open water habitat, to the extent feasible. TPWD recommends crossing streams in a perpendicular manner and avoiding placement of lines parallel to streams and their associated wooded and herbaceous floodplain and riparian corridors. Where lines cross or are located near creeks, drainages, wetlands, and lakes, TPWD recommends Lone Star 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. For additional information, please refer to the guidelines published by USFWS and the Avian Power Lines Interaction Committee (APLIC) 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 site preparation and grading activities through the 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 bare ground including 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 clearing 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. If active nests are observed during surveys, TPWD recommends retaining a 150-foot buffer of vegetation around active nests until the eggs have hatched and the young have fledged.

Sky glow as a result of light pollution can have negative impacts on wildlife and ecosystems by disrupting natural day and night cycles inherent in managing behaviors such as migration, reproduction, nourishment, sleep, and protection from predators.

Recommendation: As bird protection measures for migrant and resident birds, TPWD recommends Lone Star construct substations and retrofit existing substations to utilize the minimum amount of permanent night-time lighting needed for safety and security. TPWD recommends minimizing the project's contribution toward skyglow by focusing light downward, with full cutoff luminaries to avoid light emitting above the horizontal, and to use dark-sky friendly lighting that is on only when needed, down-shielded, as bright as needed, and minimizes blue light emissions. Appropriate lighting technologies and beneficial management practices (BMPs) can be found at the International Dark-Sky Association website.

Federal Regulations: 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 United States Army Corps of Engineers (USACE) and the Environmental Protection Agency (EPA) are responsible for regulating water resources under this act. Although isolated wetlands may not be applicable to the USACE permitting process, both isolated and jurisdictional wetlands are essential in providing habitat for wildlife and helping to protect water quality.

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.

Recommendation: Waterways, floodplains, riparian corridors, lakes, and wetlands provide valuable wildlife habitat, and TPWD recommends protecting them to the maximum extent possible. TPWD recommends allowing natural buffers contiguous to wetlands or aquatic systems to remain undisturbed to preserve wildlife cover, food sources, and travel corridors and constructing the transmission line to span all creeks. During construction, trucks and equipment should use existing bridges to cross creeks. 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. Erosion control measures should be installed prior to construction and maintained until disturbed areas are permanently revegetated using site-specific native vegetation.

Federal Regulations: Endangered Species Act (ESA)

Federally listed animal species and their habitat are protected from take on any property by the 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 Lone Star 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 Lone Star consult with USFWS – Arlington Ecological Services at (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.

Creeks within the study area may provide suitable habitat for the federal and state listed endangered smalleye shiner (*Notropis buccula*) and sharpnose shiner (*Notropis oxyrhynchus*), and the federal candidate and state-listed threatened Texas fawnsfoot (*Truncilla macrodon*).

> **Recommendation:** Please review the *Clean Water Act Section 404* section above for recommended BMPs because they are also applicable for protecting the federally-listed endangered and candidate aquatic species potentially occurring in study area creeks.

The whooping crane (*Grus americana*) is listed endangered in the entire U.S. except where it is listed as an experimental, non-essential population. The Aransas-Wood Buffalo National Park population is the only self-sustaining wild population and had a 2018-2019 estimated size of 504 birds (Butler and Harrell 2019). The Aransas-Wood Buffalo National Park 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). The *Whooping Crane Stopover Site Use Intensity Within the Great Plains* report indicates that the northern half of the study area is categorized as low intensity indicating that the area has evidence of use by whooping cranes and low stopover site use intensity (Pearse et al., 2015). The southern half of the study area is categorized as unoccupied with zero stopover sites and lacks evidence of use by whooping cranes. The croplands within the study area serve as potential stopover habitat for the whooping crane, and safe access to these potential stopover sites is essential for the migration of the whooping crane.

Recommendation: 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 cropland, TPWD recommends proactively installing bird flight diverters to reduce potential whooping crane collision risk.

Recommendation: Because the project site is categorized with low intensity stopover habitat and contains agricultural cropland, TPWD recommends contacting Dr. Wade Harrell, the USFWS Whooping Crane Recovery Coordinator, at (361) 286-3559, to obtain species occurrence data and to determine if there are additional surveys or beneficial practices needed with regard to whooping cranes at the project site. Additional coordination would be prudent with the USFWS – Arlington Ecological Services pursuant to the ESA regarding occurrence data, guidance, survey protocols, permitting or mitigation for the whooping crane, beyond accessing the IPaC environmental review tool.

State Regulations

State Regulations – Chapter 64, Birds

TPW Code 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. TPW Code 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. TPW Code Chapter 64 does not allow for incidental take and therefore is more restrictive than the MBTA.

Recommendation: Please review the *Migratory Bird Treaty Act* section above for recommendations because they are also applicable for compliance with TPW Code.

State Regulations: State-listed Species

TPW Code 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 online application identifying rare, threatened, and endangered species by county (RTEST) provides information regarding state-listed threatened and endangered species with potential to occur within each county in Texas, as well as other rare species considered Species of Greatest Conservation Need (SGCN). Please note that RTEST has undergone a significant update to reflect changes to the state-listed threatened and endangered species lists, effective March 30, 2020, as published in the Texas Register (45 TexReg 2188).

TPWD also maintains location-specific records of known occurrences for SGCN, threatened, and endangered species within the Texas Natural Diversity Database (TXNDD), and these data are available by request. The TXNDD indicates no known occurrences of state-listed threatened or endangered species within the project site,

however, state-listed species could occur if suitable habitat is present at or near the project site. Please note that bird migration observations are not included in the TXNDD, unless observations occur at a significant migration site.

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 Lone Star conduct site surveys of the route to identify suitable habitat for state-listed species, to assess potential impacts to state-listed species, and to determine beneficial practices to avoid or minimize adverse impacts to state-listed species. TPWD recommends the EA identify impact avoidance and minimization measures that Lone Star will implement to protect state-listed species and other sensitive resources that may occur within the study area.

Terrestrial State-listed Threatened Species: Of the terrestrial state-listed threatened species potentially occurring in Hill County, other than birds or federally-listed species addressed above, the state-listed threatened Texas horned lizard (*Phrynosoma cornutum*) is at risk for being impacted by construction activities due to limited mobility and potentially suitable habitat in the study area, such as native pasture. The Texas horned lizard, which hibernates only a few inches underground, would be susceptible to earth moving equipment and compaction. Additionally, the Texas horned lizard, as well as other small vertebrates including snakes, lizards, toads, and mice fall into trenches, become trapped, and are susceptible to loss from backfilling activities, water runoff inundation, starvation, dehydration, predation, and exposure to elements.

Recommendation: TPWD recommends Lone Star inform employees and contractors of the potential for state-listed threatened and endangered species to occur in the study area. Contractors should be advised to avoid impacts to all wildlife that are encountered.

Recommendation: If the project is found to contain unavoidable habitat of a state-listed species, then TPWD recommends a biological monitor be present during clearing and construction activities to assist in detecting state-listed species in the ROW. If the presence of a biological monitor during construction is not feasible, state-listed threatened species observed during construction should be allowed to safely leave the site or be translocated by a permitted individual to a nearby area with similar habitat that would not be disturbed during construction. 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 authorized through the TPWD Wildlife Permits Office.

Recommendation: If trenching is involved, TPWD recommends minimizing the length of trenches left open at any given time during construction. Trenches left open for more than two daylight hours should be inspected for the presence of trapped wildlife prior to backfilling. If trenches cannot be backfilled the day of

initial trenching, then escape ramps, in the form of short lateral trenches or wooden planks sloping to the surface at an angle of less than 45 degrees, should be installed at least every 90 meters.

Recommendation: For soil stabilization and revegetation of disturbed areas within the proposed project area, TPWD recommends erosion and seed/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 and/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 fixed intersection netting should be avoided.

Recommendation: To aid in the scientific knowledge of a species' status and current range, TPWD encourages reporting encounters of SGCN, threatened, and endangered species to the TXNDD according to the data submittal instructions found on the TXNDD website. An alternative method for reporting observations of species is the iNaturalist citizen science app in which plant and animal observations are uploaded from a smartphone. The observer then selects to add 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 All Texas Nature.

Aquatic State-listed Threatened Species: The study area includes creeks that may provide suitable habitat for aquatic state-listed threatened species including the chub shiner (*Notropis potteri*), Brazos heelsplitter (*Potamilus streckersoni*), and the species also federally listed or federal candidates and addressed above. Project activities involving work within streams, temporary or permanent haul roads within streams, and dewatering activities may impact state-listed aquatic resources if occurring within the project area.

Recommendation: TPWD recommends that Lone Star protect state-listed threatened and endangered aquatic resources during construction activities. TPWD recommends utilizing construction methodologies and BMPs to avoid or minimize adverse impacts to state-listed aquatic species, such as avoiding unnecessary temporary or permanent access roads across creeks, avoiding the placement of tower structures in creeks, retaining riparian and stream bank vegetation, and employing sediment controls.

Recommendation: If the project would require work within streams, the project may need to be coordinated with the TPWD Kills and Spills Team (KAST) for

appropriate authorization and to ensure protection of native aquatic wildlife, see *Aquatic Resources* section below for more information.

State Regulations: Aquatic Resources

TPW Code Section 1.011 grants TPWD authority to regulate and conserve aquatic animal life of public waters. Title 31, Chapter 57, Subchapter B, Section 57.157 of Texas Administrative Code (TAC) regulates take of mussels, including mussels that are not state-listed. Under TPW Code Section 12.015, 12.019, 66.015 and TAC 52.101-52.105, 52.202, and 57.251-57.259, TPWD regulates the introduction and stocking of fish, shellfish, and aquatic plants into public waters of the state.

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 KAST and will be liable for the value of lost resources under the authority of TPW Code Sections 12.0011 (b) (1) and 12.301.

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: TPWD recommends avoiding placement of temporary fills, culverts, or structures into waters serving as suitable habitat for freshwater mussels. If construction occurs 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 Bregan Brown TPWD Region 2 KAST available at Kirian.Brown@tpwd.texas.gov and 903-566-2518.

State Regulations: Invasive Species

Per TAC Title 31, Part 2, Chapter 57, Subchapter A, 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 website 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 crossings, TPWD recommends Lone Star prepare and follow an aquatic invasive species (AIS) transfer prevention plan which outlines BMPs 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 Lone Star and its contractors review and adhere to the AIS BMPs 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*.

Disturbed areas are especially 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*), other old-world bluestems, and bastard cabbage (*Rapistrum rugosum*). Other species with potential to invade portions of the project ROW can be identified at the Texas Invasives website.

> **Recommendation:** TPWD recommends Lone Star prepare and follow a revegetation and maintenance plan to monitor, treat, and control invasive species within the construction and operation ROWs.

State Regulations: Parks, Public Recreation Areas, Scientific Areas, Wildlife Refuges, or Historic Sites

Chapter 26 of the Parks and Wildlife Code requires that before a state agency can approve any project that will result in the use or taking of public land designated and used as a park, public recreation area, scientific area, wildlife refuge, or historic site, that state agency must provide certain notices to the public, conduct a hearing, and render a finding that there is no feasible and prudent alternative and that the project includes all reasonable planning to minimize harm to the property. Additionally, per Section 6(f) of the U.S. Land and Water Conservation Fund Act (LWCF), no public outdoor recreation areas acquired or developed with LWCF assistance can be converted to non-recreational uses without Department of Interior approval. The conversion must be in accordance with the statewide outdoor recreation plan and replaced with other recreation land of reasonable equivalent usefulness and location.

A review of the TPWD Land and Water Resources Conservation and Recreation Plan (LWRCRP) 2012 statewide inventory of conservation and recreation lands in Texas did not reveal any TPWD owned or managed properties or other public parks and recreation areas in the study area. Please note that other parks and recreation areas not on the LWRCP inventory may occur in the study area.

Recommendation: TPWD recommends avoiding lands owned or managed for conservation or recreation by city, county, state, and federal entities. Such entities should be contacted early in the planning process to determine if the proposed transmission line may impact their property.

Conservation Easements

A conservation easement is a legal agreement between a landowner and a land trust or governmental agency that limits uses of the land, including future fragmentation, to protect and conserve the land's natural values such as wetlands, fertile soils, mature trees, and wildlife habitat. Lands with conservation easements protect existing wildlife habitat from future fragmentation and therefore have greater environmental integrity than comparable lands without conservation easements. Fragmentation of wildlife habitat from transmission line construction on properties where conservation agreements serve to protect the state's natural resources now and in the future is of concern to TPWD. A review of the TPWD LWRCRP inventory, the United State Geological Survey Protected Areas Data Portal, and the National Conservation Easement Database did not reveal a conservation easement within the study area. Please note that these data sources may be incomplete, and county records may provide a greater accounting of conservation easements in the study area.

Recommendation: TPWD recommends properties protected by conservation easements be identified in the constraints analysis and avoided during development of routes. If a property protected by a conservation easement is unavoidable and would be crossed by a route, TPWD recommends the length of route through the property be included in any accounting of route impacts presented in the EA. TPWD also recommends avoiding impacts to existing mitigation banks if they occur within the study area. If impacts to conservation easements or mitigation banks cannot be avoided, TPWD recommends mitigation for the impacts.

State Fish and Wildlife Resources

The Texas Conservation Action Plan (TCAP) contains handbooks for each ecoregion of the state for use by all entities for guidance regarding SGCN and important habitats. The TCAP identifies threats affecting native species and habitats such as loss due to development. In addition to state- and federally-listed species, TPWD tracks 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 are included in the above-referenced RTEST application.

The RTEST list for Hill County identifies the following SGCN flora and fauna with potential to occur in the study area and potential to be impacted by habitat disturbance associated with construction, operation, and maintenance activities. Habitats descriptions for these species are included on the RTEST list for Hill County:

Taxon	SName	CName	GRank	SRank
Amphibians	Anaxyrus woodhousii	Woodhouse's toad	G5	SU
Amphibians	Pseudacris streckeri	Strecker's chorus frog	G5	S3
Birds	Haliaeetus leucocephalus	bald eagle	G5	S3B,S3N
Birds	Charadrius montanus	mountain plover	G3	S2
Birds	Leucophaeus pipixcan	Franklin's gull	G5	S2N
Birds	Athene cunicularia hypugaea	western burrowing owl	G4T4	S2
Birds	Vireo atricapilla	black-capped vireo	G3	S3B
Fish	Anguilla rostrata	american eel	G4	S4
Fish	Notropis shumardi	silverband shiner	G5	S4
Fish	Micropterus treculii	Guadalupe bass	G3	S3
Mammals	Myotis velifer	cave myotis bat	G4G5	S4
Mammals	Perimyotis subflavus	tricolored bat	G2G3	S3S4
Mammals	Eptesicus fuscus	big brown bat	G5	S5
Mammals	Lasiurus borealis	eastern red bat	G3G4	S4
Mammals	Lasiurus cinereus	hoary bat	G3G4	S4
Mammals	Tadarida brasiliensis	Mexican free-tailed bat	G5	S5
Mammals	Sylvilagus aquaticus	swamp rabbit	G5	S5
Mammals	Ictidomys tridecemlineatus	thirteen-lined ground squirrel	G5	S5
Mammals	Microtus pinetorum	woodland vole	G5	S3
Mammals	Mustela frenata	long-tailed weasel	G5	S5
Mammals	Neovison vison	mink	G5	S4
Mammals	Taxidea taxus	American badger	G5	S5
Mammals	Spilogale putorius	eastern spotted skunk	G4	S1S3
Mammals	Spilogale putorius interrupta	plains spotted skunk	G4T4	S1S3
Mammals	Conepatus leuconotus	western hog-nosed skunk	G4	S4
Mammals	Puma concolor	mountain lion	G5	S2S3
Reptiles	Terrapene carolina	eastern box turtle	G5	S3
Reptiles	Terrapene ornata	western box turtle	G5	S3
Reptiles	Apalone mutica	smooth softshell	G5	S3
Reptiles	Ophisaurus attenuatus	slender glass lizard	G5	S3

Reptiles	Heterodon nasicus	western hognose snake	G5	S4
Reptiles	Thamnophis sirtalis	common garter snake	G5	S2
Reptiles	Thamnophis sirtalis annectens	Texas garter snake	G5T4	S1
Reptiles	Crotalus horridus	timber (canebrake) rattlesnake	G4	S4
Mollusks	Quadrula houstonensis	smooth pimpleback	G2	S1S2
Plants	Astragalus reflexus	Texas milk vetch	G3	S3

The project study area is located within EPA Level III Texas Blackland Prairies Ecoregion. Within the Texas Blackland Prairies ecoregion, priority habitats identified in the TCAP for conservation of SGCN for the study area include barrens, tallgrass prairie communities, Edwards Plateau limestone shrubland, riparian and bottomland woodlands, freshwater wetlands, seeps, springs, and savannahs and woodlands.

The TPWD Landscape Ecology Program's Ecological Mapping Systems (EMS) data are available for download or available for use in the TPWD online interactive mapping tool, the Texas Ecosystem Analytical Mapper. The EMS provides ecological systems, mapping subsystems, and vegetative types for Texas and can assist in planning projects to avoid impacts to important habitats or SCGN in an ecoregion. TPWD encourages landowners and land agents to conserve priority habitats of the ecoregion and discourages fragmentation and loss to such habitats.

Recommendation: TPWD recommends the EA utilize the TCAP and EMS data to assist in identifying and avoiding areas of priority habitats. TPWD recommends using the EMS in conjunction with other resources such as stream, wetland, floodplain, and soils datasets as well as on-the-ground assessments.

Within the Texas prairie regions, native grasslands have become lost due to agricultural practices, development, and woody encroachment. With the loss of native grasslands, wildlife associated with grassland habitats have declined including the loss of pollinators due to declining floral resources. TPWD encourages landowners and land agents to conserve pockets of remaining native grassland habitats that are typically found along older ROW, forest edges, and areas less accessible to cattle and plow. A review of the TXNDD revealed a Little Bluestem – Indiangrass (*Schizachyrium scoparium – Sorghastrum nutans*) Series GG22 Community within the study area. This occurrence indicates that a prairie remnant has been found in the project area and that other areas not currently accessible to researchers or the public may also exhibit native prairie remnants.

Recommendation: TPWD recommends that precautions be taken to avoid impact to SGCN flora and fauna, natural plant communities, and priority habitat types of the ecoregion (barrens, tallgrass prairie communities, Edwards Plateau limestone shrubland, riparian and bottomland woodlands, freshwater wetlands, seeps, springs, and savannahs and woodlands) when developing the route alternatives, while working in Hill County, or if encountered during project construction, operation, and maintenance activities.

Recommendation: TPWD recommends assessing the route alternatives for native vegetative species and considering disturbance minimization practices to avoid or minimize loss of native vegetation if occurring in the project area. TPWD recommends micro-siting the disturbance footprint to areas of non-native habitat. Areas exhibiting a native grass and forbs component should be protected from disturbance and from introduction of non-native vegetation during construction, maintenance, and operation activities. TPWD recommends practicing prairie conservation measures in areas of the ROW that exhibit native species diversity such as special precautions regarding revegetation, mowing, herbicide use, and invasive species prevention. TPWD encourages clearly marking individual rare plants or areas found to contain rare plants as work zone avoidance areas prior to construction, maintenance and operation activities.

Recommendation: If native prairie remnants or rare plants cannot be avoided by the proposed project activities, please make a detailed record of the occurrence and contact TPWD to determine if additional conservation practices are available.

Significant declines in the population of migrating monarch butterflies (*Danaus plexippus*) have led to widespread concern about this species and other native insect pollinator species due to reductions in native floral resources. To support pollinators and migrating monarchs, TPWD encourages the establishment of native wildflower habitats on private and public lands across the state. Please refer to publications that found on TPWD's Native Pollinator website and TPWD's Monarch Butterfly website.

Recommendation: To accrue benefits for pollinators, TPWD recommends Lone Star revegetate areas disturbed by project activities with site-specific native species to mitigate for unavoidable loss of native vegetation, with attention to providing habitat for pollinator species. TPWD recommends that Lone Star incorporate native grass and floral species into the permanent revegetation plan for the project as funding and seed availability allow. TPWD recommends incorporating pollinator conservation into maintenance plans for the ROW, to promote and sustain the availability of flowering species throughout the growing season, such as scheduling ROW maintenance to occur once the seed from pollinator plants has been released.

Please note that the TXNDD is intended to assist users in avoiding harm to rare species or significant ecological features. Given the small proportion of public versus private land in Texas, the TXNDD does not include a representative inventory of rare resources in the state. Please note that absence of information in the database does not imply that a species is absent from that area. Although it is based on the best data available to TPWD regarding rare species, the data from the TXNDD do not provide a definitive statement as to the presence, absence, or condition of special species, natural communities, or other significant features within your project area. These data are not inclusive and **cannot be used as presence/absence data**. This information cannot be substituted for on-the-ground surveys. The TXNDD is updated continuously based on new, updated and undigitized records. For questions regarding a record or to obtain digital data, please visit the TXNDD website for guidance.

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
Wildlife Habitat Assessment Program
Wildlife Division

KBH:43876

cc: Ms. Rachelle Robles, PUC

References

Butler, Matthew J. and Wade Harrell. 2019. *Whooping Crane Survey Results: Winter 2018-2019*. U.S. Fish and Wildlife Service, Aransas National Wildlife Refuge, Whooping Crane Updates. Available at https://www.fws.gov/refuge/Aransas/wwd/science/updates.html. Accessed: May 4, 2020.

Pearse, A.T., Brandt, D.A., Harrell, W.C., Metzger, K.L., Baasch, D.M., and Hefley, T.J., 2015, Whooping crane stopover site use intensity within the Great Plains: U.S. Geological Survey Open-File Report 2015–1166, 12 p., http://dx.doi.org/10.3133/ofr20151166.

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.

Meaux, Lisa

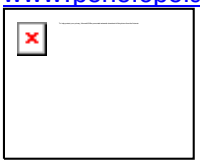
From: David Timmons <dtimmons@penelopeisd.org>
Sent: Thursday, May 21, 2020 12:38 PM
To: Meaux, Lisa
Subject: [EXTERNAL] Penelope ISD Response - Proposed Sam Switch to Aquilla Lake Wind Project

To my knowledge, there are no major construction projects or any other major environmental and/or land use constraints within the study area provided on the study area map in the letter dated May 5, 2020.

Please do not hesitate if additional information is ever needed.

Sincerely,

David Z. Timmons
Superintendent
Penelope ISD
www.penelopeisd.org



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Appendix B

Open-House Information

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May 29, 2020

<<Landowner>>
<<Address>>

Re: New Electric Transmission Line Project in Hill County
Parcel ID: *<<parcel>>*

Dear *<<Landowner>>*:

You are invited to attend an online public meeting hosted by Lone Star Transmission, LLC (Lone Star) to learn more about the 345 kilovolt (kV) transmission line project being planned in your area.

Lone Star proposes to construct a new 345 kV transmission line from its Sam Switch Station, located southeast of Hillsboro on Hill County Road 3165, to the Hubbard Wind Energy Center Collector Station, to be located just west of Mount Calm off of State Highway 31. This transmission line project is needed to connect the renewable power generated by the Hubbard Wind Energy Center (Hubbard Wind) to the electric grid via the Sam Switch Station. See the enclosed map showing the project study area and proposed route for the transmission line.

Public Utility Commission of Texas (PUCT) rules require utilities who are seeking approval to construct new transmission lines to hold public meetings if 25 or more landowners will be affected by a new transmission line project. The purpose of the public meeting is to gather input from stakeholders. Because you are an owner of land that either may be crossed by the proposed transmission line route, or may be within 500 feet of the proposed transmission line centerline, Lone Star has identified you as a potentially affected landowner and welcomes your input or questions about the project. Please note that landowners whose property will be crossed by the transmission line have granted easement options to allow the construction, operation and maintenance of the proposed line. However, Lone Star must still hold a public meeting in order to comply with PUCT rules.

At the public meeting, information about the transmission line project will be presented and there will be Lone Star staff and consultants available to answer your questions. The public meeting is important because, in addition to giving landowners and the general public the opportunity to learn more about the project, it allows Lone Star to gather information from landowners that it will use to further develop and finalize the route for the proposed transmission line.

Lone Star will host the public meeting over the Internet and via phone to minimize possible exposure or spread of COVID 19. We also believe that an online format for this project may offer greater convenience to the many individuals who are balancing the demands of work and family. The online public meeting will be on June 11, 2020 from 7 p.m. to 8:00 p.m. There are two options to attend: (1) via the web at https://themediaframe.com/links/sam-to-hubbard.html;

or (2) you may dial in to listen to the presentation by calling 1-866-807-9684. Whether you participate on the web or phone, you will be able to ask Lone Star questions during the presentation. For your convenience, the directions for participating in the online public meeting are provided on a separate, enclosed page.

Lone Star will post the materials presented at the online meeting on its website at http://www.lonestartransmission.com/sam-switch-to-hubbard-wind.html allowing those that could not attend the online event the opportunity to view project information. In addition, in case you cannot participate in the public meeting at the designated time or have additional questions, you may contact me directly at 512-810-5561 (voice or text) or via email at Kelly.Wells@lonestar-transmission.com with any questions or comments before or after the online meeting. If you leave a message, we would appreciate you including your property ID number, which is shown in the subject line of this letter.

Enclosed is a project map and Frequently Asked Questions (FAQs) about the project that we hope will answer some of your questions in advance of the public meeting. Also enclosed is a project questionnaire to complete and send to Lone Star after the public meeting. This questionnaire will also be available on our website. Again, if you need more information before the public meeting, please call or email me.

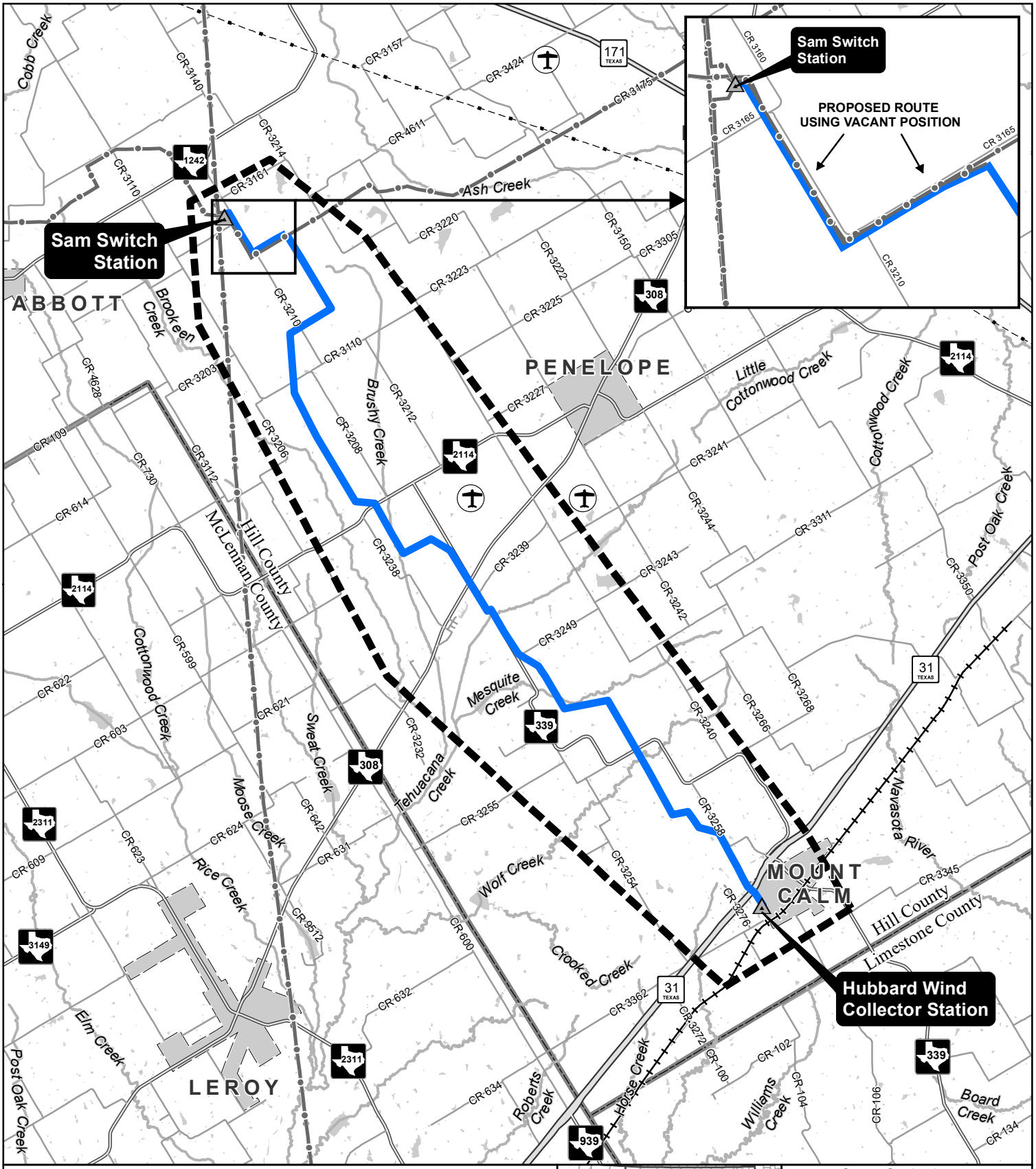
We look forward to meeting you online or over the phone. We thank you in advance for providing comments and input that will be used in the evaluation of the transmission line route for this project.

Kind regards,

Kelly Wells,
Director, Land Strategy and Community Relations

Enclosures:

1. Project Study Area and Route Map
2. Directions to join online public meeting
3. Sam Switch to Hubbard Wind Project FAQs
4. Project Questionnaire



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Sam Switch to Hubbard Wind Transmission Project

Online Public Meeting, June 11th, 7 pm to 8:00 pm

Two easy options for joining the meeting:

1.By phone (line opens at 6:45 pm)
Call 1-866-807-9684 - Ask to join “the Lone Star call"

2.Online (allows you to view presentation)
Open your web browser
Go to: https://themediaframe.com/links/sam-to-hubbard.html
Fill out contact information
Click on the "Join Webcast" link

Meeting Agenda

7 pm: Get started

- Welcome and team introductions

7:10 pm: Project Overview

- About Lone Star
- Project description and need for project
- Transmission line routing
- Transmission line design
- Construction
- Public Utility Commission of Texas permitting process
- Rights of Way
- Operation and maintenance of facility post construction
- Next steps

7:40 pm: Wrap up

- Q&A session
- How to contact us

FAQ

Sam Switch to Hubbard Wind Transmission Project

What is the Sam Switch to Hubbard Wind Transmission Project?

Lone Star Transmission, LLC (Lone Star) is proposing to build, own, and operate a new, approximately 15.4-mile-long 345 kilovolt (kV) transmission line that will connect the new Hubbard Wind Energy Center (Hubbard Wind) to the electric grid.* The new transmission line will be constructed between Lone Star's Sam Switch Station, which is located along Hill County Road 3165, and the Hubbard Wind Energy Center Collector Station to be located just west of Mount Calm along State Highway 31.

* The Hubbard Wind Energy Center is also sometimes referred to as the "Aquilla Lake Wind Project".

Does Lone Star need approval to construct this project?

Yes. Lone Star will seek approval of this project from the Public Utility Commission of Texas (PUCT).

What is the process for obtaining the PUCT's approval?

Lone Star will file a Certificate of Convenience and Necessity (CCN) application with the PUCT that will address compliance with all regulatory requirements, including: the purpose and need for the project; details on costs associated with the engineering, right of way acquisition, and construction of the project; and the public involvement process including information about how easements needed for this project have been secured, as well as how additional input from landowners and other stakeholders regarding the proposed transmission line route has been taken into consideration. In addition, the application will outline Lone Star's experience and capabilities owning, operating, and maintaining reliable transmission facilities in Texas. Lone Star will also include an analysis and environmental site assessment of the route proposed for the new transmission line.

Has Lone Star considered environmental impacts that may result from the Sam Switch to Hubbard Wind Project?

Yes. Impacts to environmentally sensitive areas were considered when determining the new transmission line's location between Sam Switch Station and the Hubbard Wind Collector Station, and are also being considered in the environmental assessment that Lone Star is conducting and will file with the PUCT. Additionally, the transmission line route was developed in coordination with landowners whose property will be crossed by the new line in order to avoid environmentally sensitive areas as much as possible. Potential impacts will continue to be considered and reviewed during the CCN approval process.

Will new right of way be required?

Yes, the new transmission line will require new rights of way between the Hubbard Wind Collector Station to the point where the new transmission line will meet Lone Star's existing transmission line along Hill County Road 3165. Hubbard Wind has been working with landowners crossed by the proposed transmission line to obtain all of the new easements needed between these two points.

(As the new transmission line exits the Sam Switch Station, it will be located on Lone Star's existing transmission structures until the new line's proposed route turns south to head to the Hubbard Wind Collector Station at the point described above. Please see the detail on the enclosed project map.

Why have you notified me about this project?

When transmission lines cross or affect 25 or more landowners, the PUCT requires transmission services providers, like Lone Star, to hold public meetings to gather input from area landowners. Although you may have already entered into an easement option agreement for this transmission line, or are not crossed by the proposed route for the new transmission line, Lone Star welcomes your input about the project. In fact, any information you provide will be considered in the route evaluation and environmental assessment report being prepared to support the CCN application.

Once the CCN application is filed, all landowners crossed or those having habitable structures located within 500 feet of the proposed transmission line route centerline will be mailed a notice of the filing that includes a description of the route submitted to the PUCT. The notice will also include information on how to participate in the PUCT review process.

What happens after the PUCT selects the transmission line's route and approves the project?

After the PUCT issues a final order, Lone Star will notify all affected landowners by mail to inform them of the PUCT's decision. Hubbard Wind, LLC will transfer all of the easements for the new line to Lone Star, and Lone Star will let landowners know when construction activities will begin.

When will construction begin?

Lone Star will complete pre-construction activities such as surveying, soils testing, and obtaining other necessary permits while the project is being reviewed by the PUCT. Information gathered from these activities will be incorporated into the final design and construction plans. If the PUCT approves the project, then Lone Star will finalize its construction plans, obtain any other required permits, and notify landowners that construction will begin.

What permits will be required to build the project?

The project will require permits and regulatory approvals from various state and local agencies including the Texas Department of Transportation and Hill County Road Department.

When will the project be completed and operational?

The project is required to be in service by end of 2021.

BENEFITS

How will the region benefit from the project?

This project will bring a reliable source of renewable energy to Texas' electric consumers. In addition, the project will create jobs in the area while construction is underway and increase property tax revenues in Hill County.

Will local resources be used to construct the project?

Lone Star expects to utilize local resources to support the project with regard to certain materials acquisition, trucking, and other goods and services.

How much tax revenue will be generated for local communities?

This transmission line project will generate tens of thousands of dollars in property tax revenue each year over for the next 20 years, benefitting residents and school districts in Hill County.

PROJECT COST

How much will the Sam Switch to Hubbard Wind Transmission project cost, and who will pay for it?

The Sam Switch to Hubbard Wind project is an efficient and cost-effective transmission solution to connect the Hubbard Wind Energy Center to the grid. The estimated cost of this transmission project is approximately $22.4 million. As with other transmission lines constructed in the state, all electric customers within ERCOT (Electric Reliability Council of Texas) will share in the cost for this project over time.

Will the Sam Switch to Hubbard Wind Project request any tax abatements?

No, this project does not seek or receive any property or sales tax abatements.

ELECTRIC AND MAGNETIC FIELDS

What about electric and magnetic fields?

Electric and magnetic fields (EMF) are found everywhere, especially where electricity is used, including household items (such as cell phones, hair dryers and microwave ovens), electrical equipment, communications equipment and power lines. Neither the state nor federal government has established any health standards relating to EMF. For more information, visit: https://www.niehs.nih.gov/health/topics/agents/emf/

ABOUT LONE STAR TRANSMISSION, LLC

- Lone Star's core focus is to deliver reliable and cost-effective electric energy to Texans across the state.
- Lone Star's core values are commitment to excellence, doing the right thing, and treating people with respect. These values are deeply rooted throughout Lone Star's culture and integral to everything we do.
- Lone Star delivers industry leading transmission services to organizations connecting to the Texas electric grid, bringing affordable and cost-effective energy to Texans across the state.
- Lone Star is continually evaluating transmission solutions to assure that Texans have the power they need at the most cost-effective prices.
- Lone Star has proven safety records when it comes to owning, operating, and maintaining electric transmission assets.
- We help build a strong Texas by safely and reliably transmitting electric power while keeping our neighbors in mind. To that end, we support volunteer fire departments and other non-profit community-focused organizations to help meet the needs of local communities.
- For more information, visit www.LoneStarTransmission.com.

Sam Switch to Hubbard Wind Transmission Project

Project Questionnaire

This questionnaire is designed to help Lone Star Transmission, LLC (Lone Star) identify and understand interests and concerns of stakeholders in the project area. Responses to the questionnaire will be used in the evaluation of the proposed route for the new transmission line. The questionnaire is also a tool to help us measure our effectiveness in providing stakeholders with information about the project. We thank you in advance for taking the time to review and complete the questionnaire.

1. Did you attend the online public meetings? Yes ◯ No ◯

2. How did you obtain this questionnaire?

_____Downloaded from project website.

_____Received in mail with invitation to online public meeting.

_____Other, please explain.

_____

_____

3. Was the need for the project adequately explained to you? Yes ◯ No ◯

3a. Do you understand why the project is needed? Yes ◯ No ◯

4. If you attended the online open house, rate each of the following (strongly agree to strongly disagree). Please skip questions 4-4b if you did not attend the online meeting.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	N/A
I was given an opportunity to ask questions and receive answers.	◯	◯	◯	◯	◯	◯
Lone Star and POWER Engineers were knowledgeable about the project.	◯	◯	◯	◯	◯	◯
Lone Star listened to my issues and concerns.	◯	◯	◯	◯	◯	◯
This meeting was a good use of my time.	◯	◯	◯	◯	◯	◯

4a. Do you believe the information that was provided in the online meeting and / or on the Lone Star Sam Switch to Hubbard Wind project website were helpful for understanding the transmission project?

Yes ◯ No ◯

4b. How could we have improved the online meeting?

_____

_____

5. Which of the following applies to you?

Question	Yes	No	Comments
The proposed transmission line is near my home.			
The proposed transmission line is near my business.			
The proposed transmission line is on my land.			
My property is cultivated (whether all or some of it).			
My cultivated property is irrigated (traveling or gravity feed/indicate type).			
I am located in the project area.			
An existing transmission line is on my land or near my home.			
Other. Please explain (e.g. I lease land and/or am responsible for land improvements or upkeep near the proposed route).			

6. Identifying a route and constructing transmission lines involves many considerations. From the following list of factors used to route transmission lines, please select and rank the top 5 to 10 factors that are the most important to you. (1=greatest concern; 5 (or more) =least concern)

___Parallel existing electric transmission line right of way where possible.

___Parallel other existing compatible right of way (e.g. roads, highways) where possible.

___Parallel property lines where possible.

___Maximize length through undeveloped land.

___Minimize total length of line (reduces cost of line).

___Maximize distance from residences.

___Maximize distance from schools, churches, nursing homes, etc.

___Maximize distance from commercial buildings.

___Maximize distance from historic sites or archaeological areas.

___Maximize distance from parks and recreational areas.

___Minimize visibility of the lines.

___Minimize environmental impacts.

___Minimize loss of trees.

___Minimize length across cropland.

___Minimize length through grassland or pasture.

___Minimize length through wetlands/floodplains.

6a. Is there any other information you would like the project team to know or take into consideration when evaluating the proposed route?

_____

_____

7. Lone Star and its consultant, POWER Engineers, take many environmental and land use features into consideration when identifying possible routes for electric transmission facilities, including but not limited to the following:

Nearby residences, businesses, cemeteries, schools, churches, hospitals, nursing homes and other nearby structures

Nearby commercial radio transmitters, microwave relay stations or similar electronic installations

Nearby parks and/or recreational areas

Nearby historical or archaeological sites

Nearby airport runways, airstrips or heliports

Agricultural areas irrigated by traveling irrigation systems

Areas containing threatened or endangered species or other environmentally sensitive areas

Pipeline rights of way

Canals, levees, drainage ditches

Floodplains

7a. After reviewing the constraints maps shown during the online meeting and available for closer viewing at www.lonestartransmission.com\samswitchtohubbardwind, are any of the features listed above incorrectly shown on the map, or are you aware of any additional features that were not included? Yes ◯ No ◯

If yes, please explain.

_____

_____

7b. If there are any other features in the study area or any specific characteristics about your property that you feel are important, please describe the locations and/or mark them on the attached map.

_____

_____

8. If you have a specific concern with any particular aspect of the proposed transmission line route shown on the route map or map handouts, please identify the location and describe your concern.

_____

_____

_____

9. Please provide any additional comments you would like us to consider in planning for this project.

_____

_____

Please provide your name and address below (optional).

Name: _____ Date _____
Address: _____
City, State, Zip: _____
Telephone: _____
Email: _____

Please send your completed questionnaire to Kelly.Wells@lonestar-transmission.com

Or by U.S mail to:

Sam Switch to Hubbard Wind
Lone Star Transmission
Attn: Kelly Wells
5920 W. William Cannon Dr., Bldg 2
Austin, Texas 78749

Or via fax to 512-236-0484

Sam Switch to Hubbard Wind Transmission Line Project

Public Meeting • June 11, 2020

Welcome

Agenda

About Lone Star

» Overview

Project Overview

» Sam Switch to Hubbard Wind Transmission Line Project
» Roadmap to Route Approval
» Route Map
» Right-Of-Way Easements
» Construction Activities
» Operations and Maintenance
» Anticipated Project Schedule

Wrap Up

» How to Contact Us
» Q&A Session

Lone Star Transmission Overview

Connecting Communities across Texas with Reliable Energy

Lone Star Transmission, LLC (Lone Star) is a subsidiary of NextEra Energy Transmission, LLC, a leading competitive transmission company in North America. Founded in 2009, Lone Star currently owns and operates high-voltage transmission assets throughout the State of Texas. Lone Star is known for its innovative technology and cost-effective spun-concrete monopoles that stretch from Scurry County, northwest of Abilene, to Navarro County, just south of Dallas. Lone Star is headquartered in Austin, Texas.

Please visit our website at LoneStarTransmission.com for more information about us!

Sam Switch to Hubbard Wind Project

345 kV Transmission Line Project

What Is The Project And Why Is It Needed?

This project is a new 345 kilovolt (kV) transmission line in Hill County to connect a new, 300 megawatt (MW) wind generator the Hubbard Wind Energy Center (Hubbard Wind) to the electric grid.

Hubbard Wind requested to connect to the electric grid via Lone Star's Sam Switch Station.

How Will Lone Star Connect Hubbard Wind?

Lone Star proposes to:

1. Construct a new 15.4-mile 345 kV transmission line to connect Lone Star's Sam Switch Station, located between Hillsboro and Mount Calm, to the new Hubbard Wind Collector Station, located west of Mount Calm.
2. Coordinate with Hubbard Wind to acquire the right of way to construct the Project by the end of 2021.
3. Modify Lone Star's existing Sam Switch Station.

Roadmap to Route Approval

Lone Star identified beginning and end points for the project, based upon Hubbard Wind's request to interconnect.

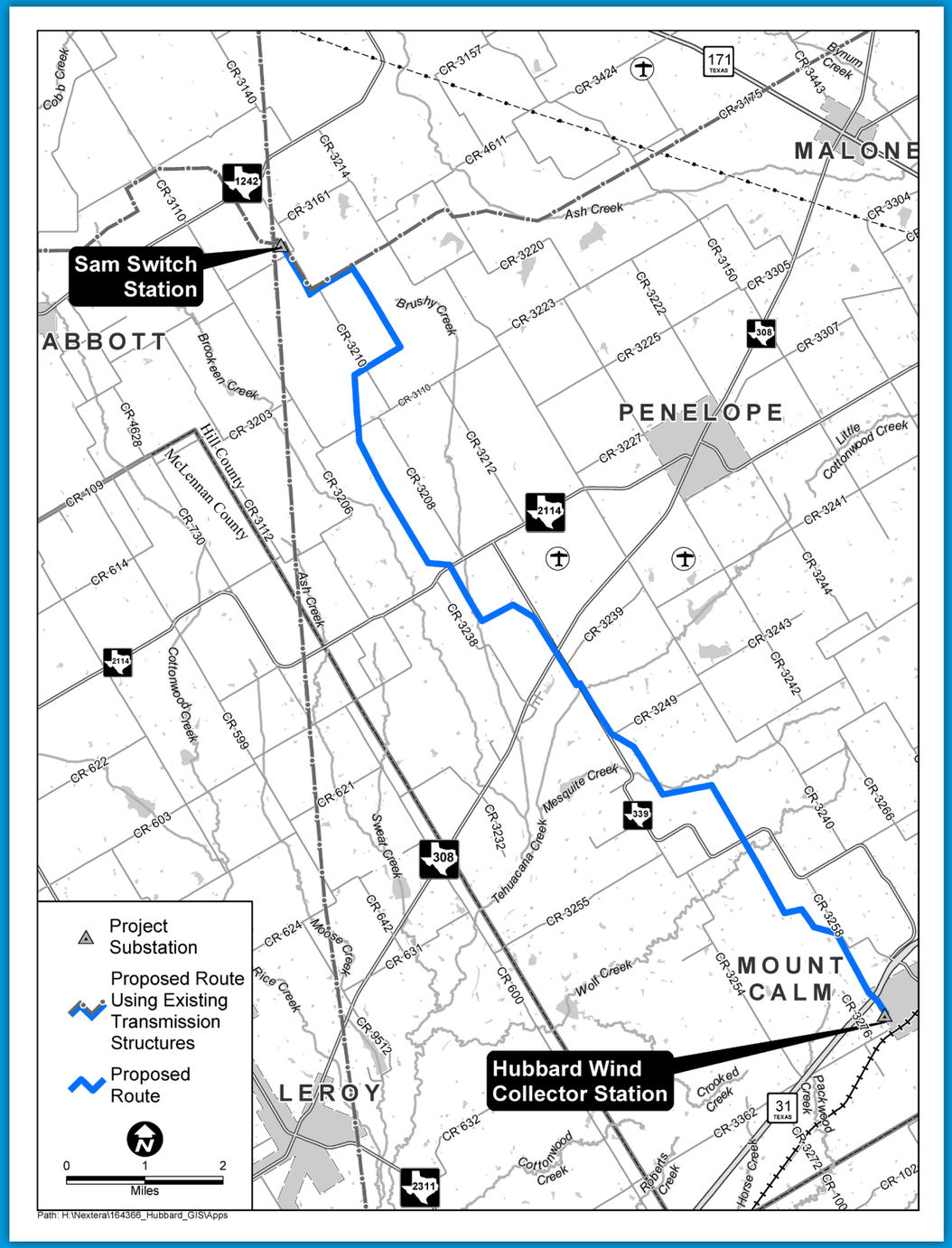
Lone Star engaged routing consultants to evaluate the route using over 40 environmental and land use routing criteria, perform an Environmental Assessment and solicit feedback from approximately 30 government agencies and officials.

Lone Star will request approval from the Public Utility Commission of Texas (PUCT) to construct, own and operate the proposed transmission line that will be located along the proposed route.

PUCT Approval

- Lone Star files application with the PUCT and landowners and other stakeholders
- PUCT Staff and parties reviews application and ask follow-up questions
- If a hearing is requested, parties and PUCT Staff may file testimony and participate in the hearing
- PUCT will complete its review and make a decision to approve or deny the application within 12 months

Route Map


Sam Switch Station
Hubbard Wind Collector Station
ABBOTT
PENELOPE
MALONE
MOUNT CALM
LEROY
McLennan County
Hill County
Project Substation
Proposed Route Using Existing Transmission Structures
Proposed Route
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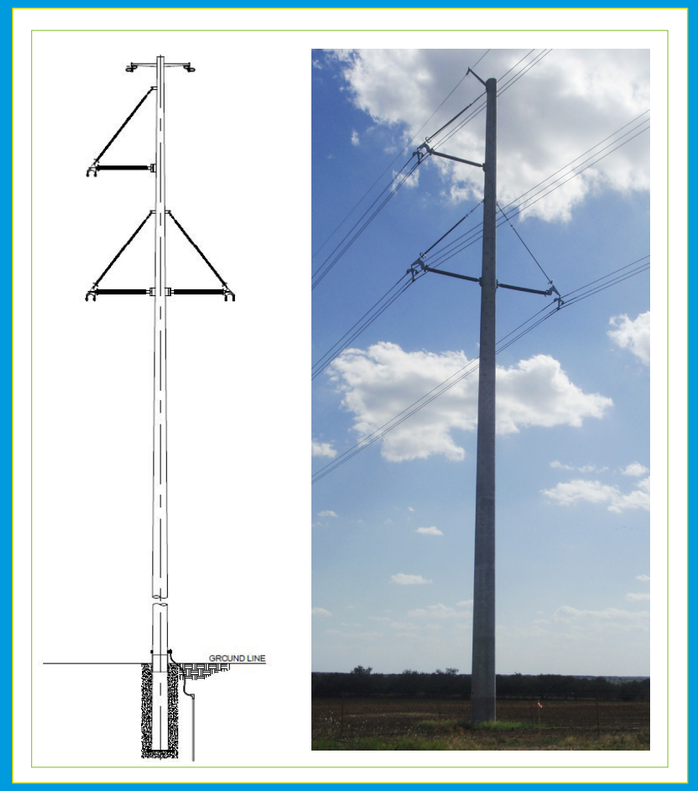
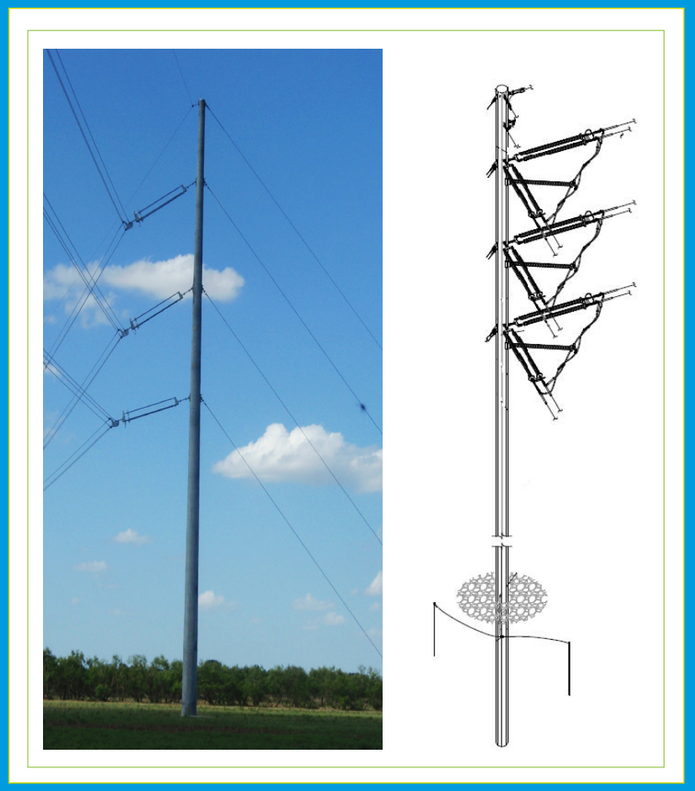
Proposed Transmission Structures

The 15.4-mile transmission line route will utilize approximately 100 single-pole transmission structures

Typical Tangent Information

- Typical heights from 90 to 120 feet
- Typical spans from 700 to 1500 feet
- Right of way is 150 to 200 feet wide
- Concrete or steel
- Embedded or on independent foundation
- Larger angle structures will require additional structural support (guy wires)





Right-of-Way Easements

Working with Landowners

Hubbard Wind has secured options for easements from landowners that will be crossed by the proposed transmission line. Following PUCT approval of the project, Hubbard Wind will finalize the purchase of the easements and will transfer the easements to Lone Star.

Crews and contractors may access the rights of way to conduct the following activities while the project approval process is underway.

- Surveying
- Cultural and natural resources assessments
- Wetlands delineations
- Soils testing

Lone Star will work with landowners on an ongoing basis throughout the construction, clean up phase of the project and beyond.

Construction Activities

With safety at the forefront of everything we do, Lone Star will:

- Construct the line with qualified, insured, experienced contractors with proven safety records and that use protocols to help prevent the spread of COVID-19
- Require its contractors to minimize disturbances, protect landowners and their property

Activities that will happen on your property:

- Meet with landowners to address issues and questions
- Clear rights of way (ROW) for construction access
- Install new foundations, poles and wires
- Clean up and restore the ROW to as near original condition as possible

Operations and Maintenance

Lone Star focuses on reliability and safety standards for operating transmission assets

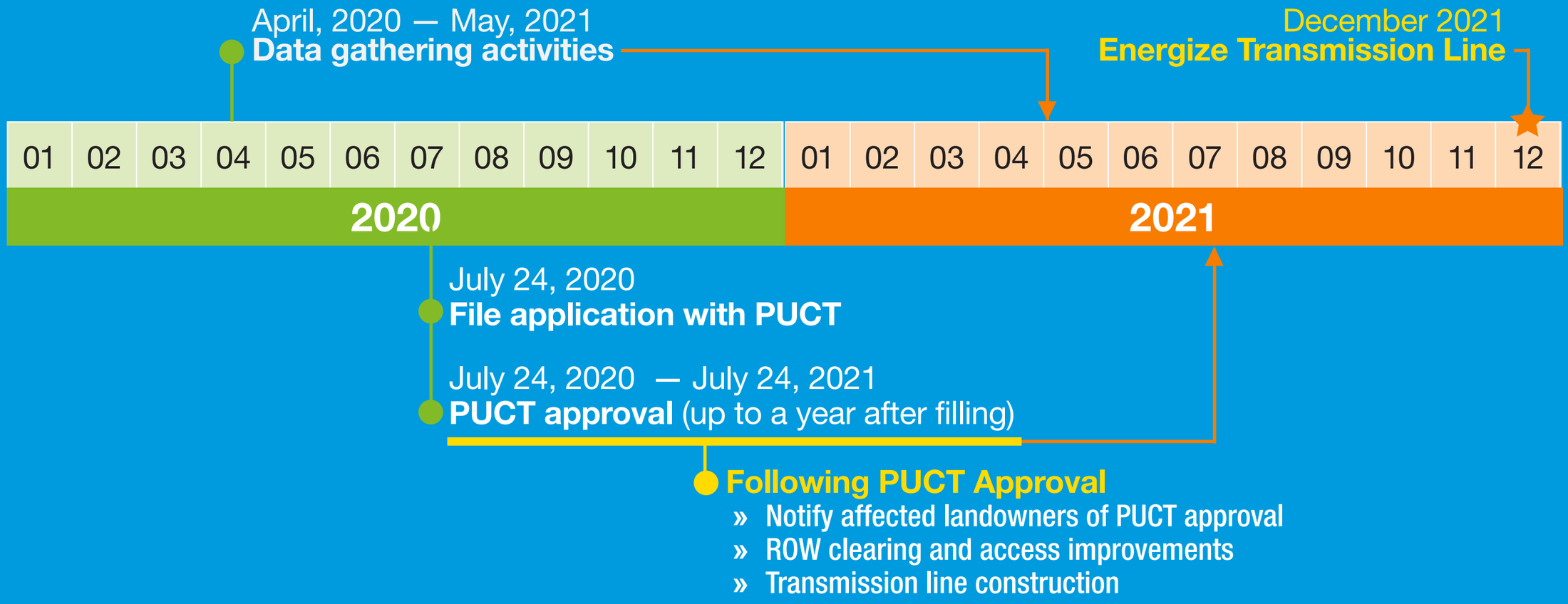
To do this, Lone Star:

- Monitors system on a 24-hour basis from its state-of-the-art operations control center
- Performs regular, preventative, time-based inspections
- Makes timely repairs when needed
- Monitors and removes vegetation in ROW to help assure of the safe and reliable operation of the transmission line

Lone Star provides landowners advance notice before accessing the ROW to perform scheduled maintenance. In the unlikely event of an emergency, Lone Star will immediately deploy local crews to ensure safety and resolve any issues.

Anticipated Project Schedule

Transmission line construction activities will start in the summer of 2021 following PUCT approval, and will take approximately 6 months. The following is a list of events and approximate dates contingent upon PUCT approval date:



How to Contact Us?

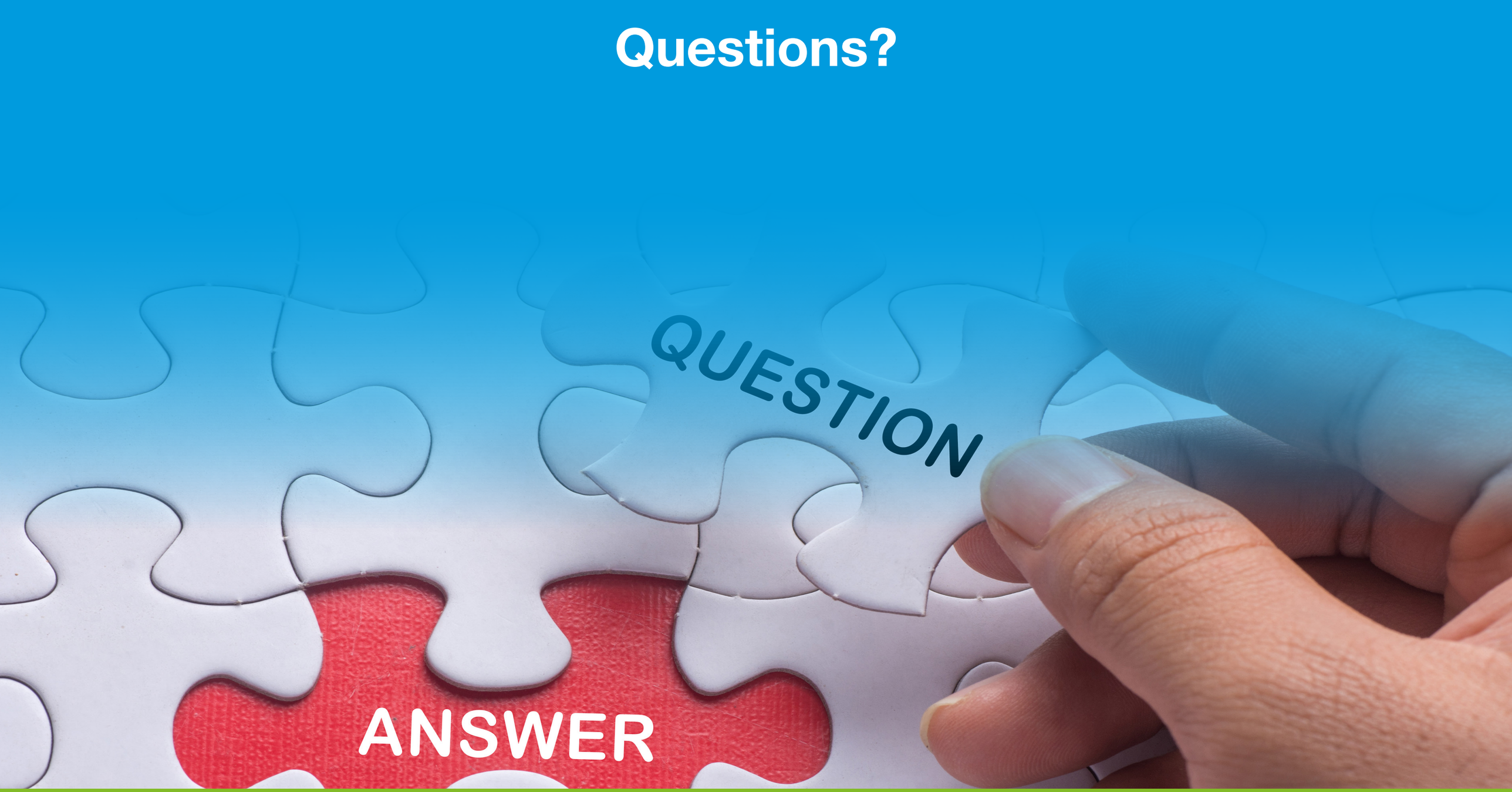
For more information, please contact us at:

Main: 512-236-3130
Office: 512-236-3151
Voice or text: 512-810-5561

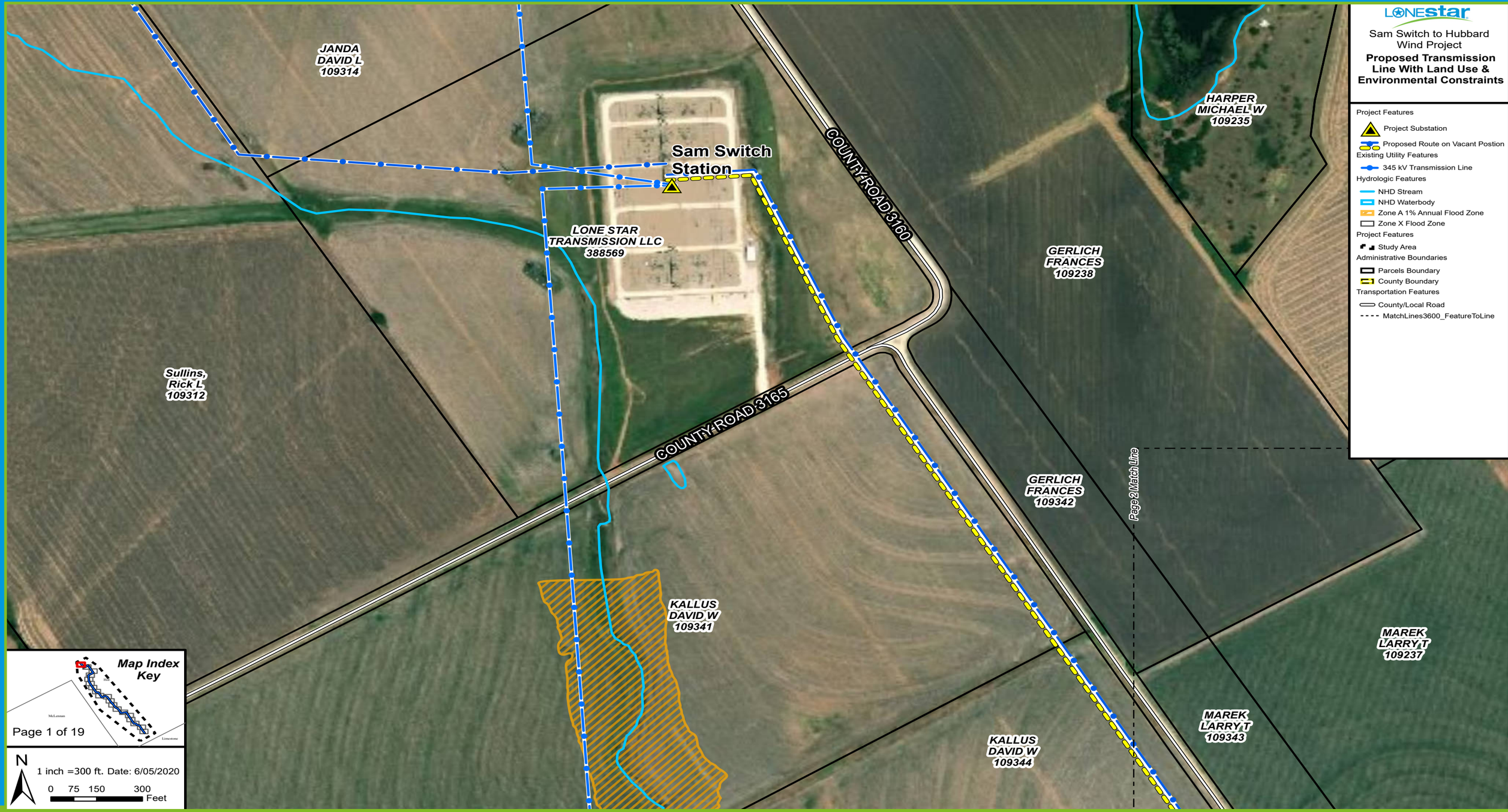
Kelly.Wells@lonestar-transmission.com

www.lonestartransmission.com\samswitchtohubbardwind

Questions?



Thank you for participating in the Sam Switch to Hubbard Wind Online Public Meeting!



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Sam Switch to Hubbard Wind Project

Proposed Transmission Line With Land Use & Environmental Constraints

Project Features
- Project Substation
- Proposed Route on Vacant Postion

Existing Utility Features
- 345 kV Transmission Line

Hydrologic Features
- NHD Stream
- NHD Waterbody
- Zone A 1% Annual Flood Zone
- Zone X Flood Zone

Project Features
- Study Area

Administrative Boundaries
- Parcels Boundary
- County Boundary

Transportation Features
- County/Local Road
- MatchLines3600_FeatureToLine

LONEstar

Sam Switch to Hubbard Wind Project

Proposed Transmission Line With Land Use & Environmental Constraints

Project Features
- Proposed Route
- Proposed Route on Vacant Postion

Hydrologic Features
- NHD Stream
- NHD Waterbody
- Zone A 1% Annual Flood Zone
- Zone X Flood Zone

Project Features
- Study Area

Administrative Boundaries
- Parcels Boundary
- County Boundary

Transportation Features
- County/Local Road
- MatchLines3600_FeatureToLine

LONEstar

Sam Switch to Hubbard Wind Project

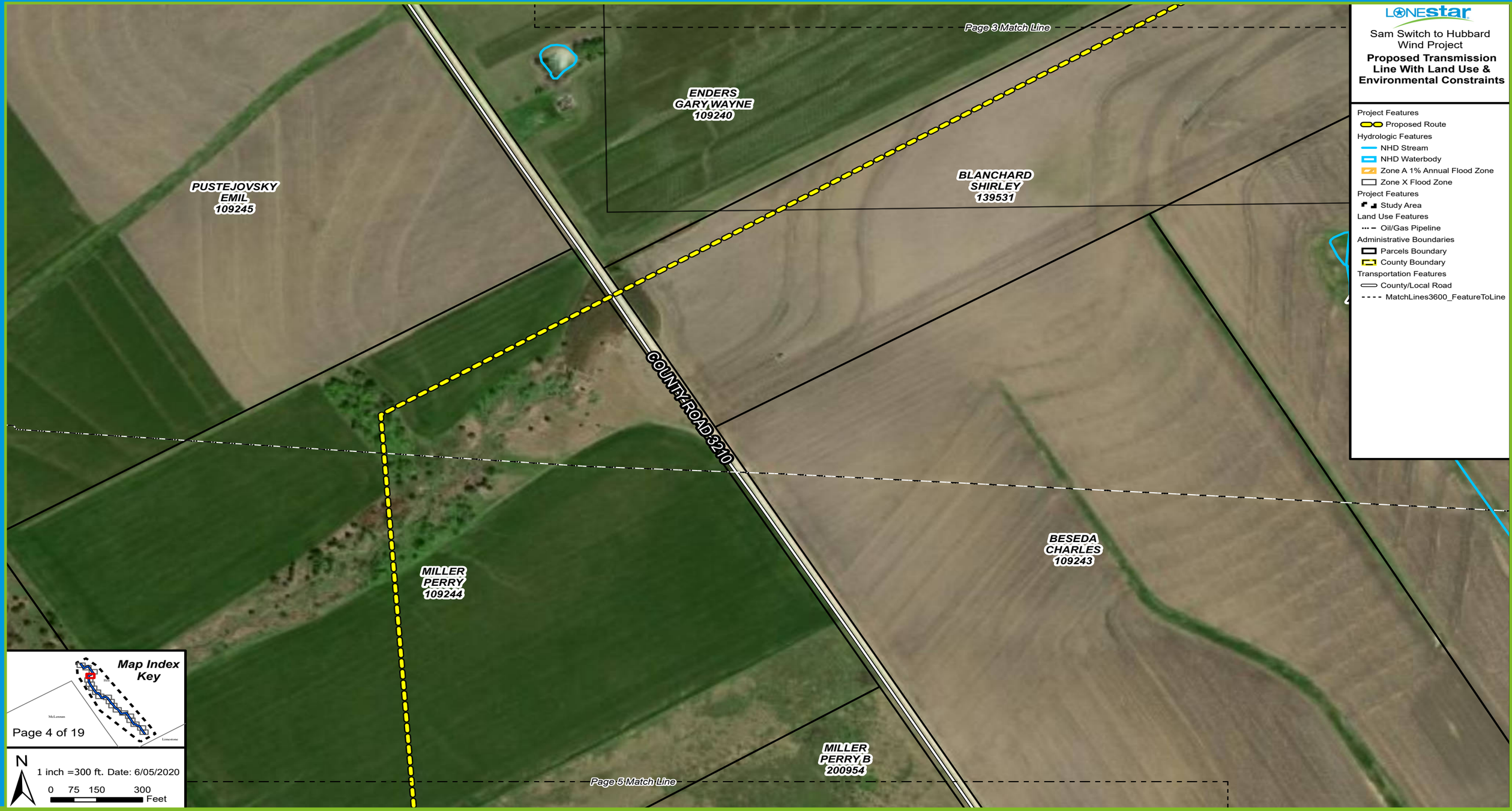
Proposed Transmission Line With Land Use & Environmental Constraints

Project Features
- Proposed Route

Hydrologic Features
- NHD Stream
- Zone X Flood Zone

Project Features
- Study Area

Administrative Boundaries
- Parcels Boundary
- County Boundary
- MatchLines3600_FeatureToLine



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Sam Switch to Hubbard Wind Project

Proposed Transmission Line With Land Use & Environmental Constraints

Project Features
- Proposed Route

Hydrologic Features
- NHD Stream
- NHD Waterbody
- Zone A 1% Annual Flood Zone
- Zone X Flood Zone

Project Features
- Study Area

Land Use Features
- Oil/Gas Pipeline

Administrative Boundaries
- Parcels Boundary
- County Boundary

Transportation Features
- County/Local Road
- MatchLines3600_FeatureToLine

Page 4 of 19

N

1 inch =300 ft. Date: 6/05/2020

0 75 150 300 Feet

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Sam Switch to Hubbard Wind Project

Proposed Transmission Line With Land Use & Environmental Constraints

Project Features
- Proposed Route

Hydrologic Features
- NHD Stream
- NHD Waterbody
- Zone A 1% Annual Flood Zone
- Zone X Flood Zone

Project Features
- Study Area

Administrative Boundaries
- Parcels Boundary
- County Boundary

Transportation Features
- County/Local Road
- MatchLines3600_FeatureToLine

N

1 inch =300 ft. Date: 6/05/2020

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Sam Switch to Hubbard Wind Project

Proposed Transmission Line With Land Use & Environmental Constraints

Project Features
- Proposed Route

Hydrologic Features
- NHD Stream
- NHD Waterbody
- Zone A 1% Annual Flood Zone
- Zone X Flood Zone

Project Features
- Study Area

Administrative Boundaries
- Parcels Boundary
- County Boundary

Transportation Features
- County/Local Road
- MatchLines3600_FeatureToLine

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Sam Switch to Hubbard Wind Project

Proposed Transmission Line With Land Use & Environmental Constraints

Project Features
- Proposed Route

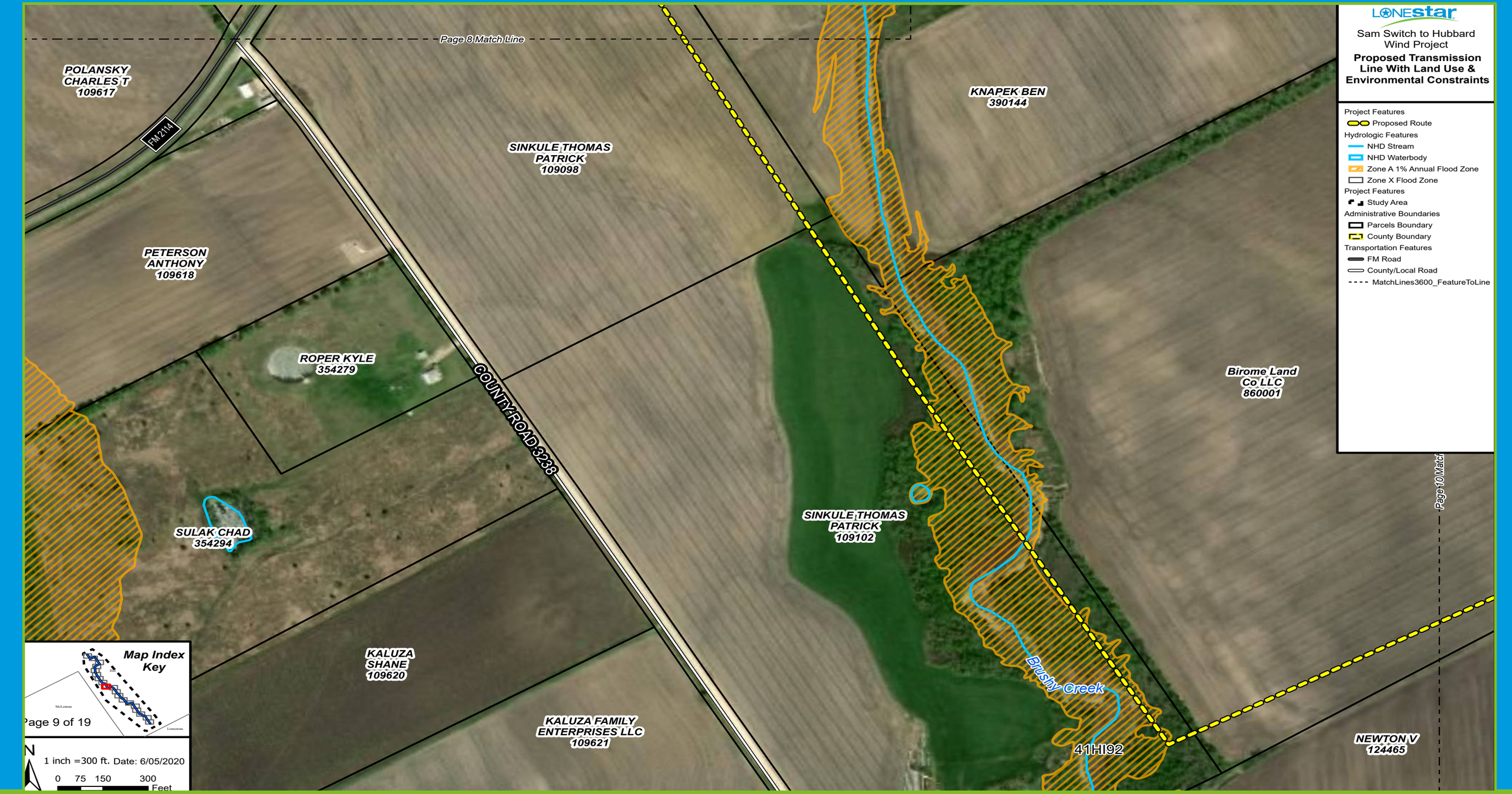
Hydrologic Features
- NHD Stream
- NHD Waterbody
- Zone A 1% Annual Flood Zone
- Zone X Flood Zone

Project Features
- Study Area

Administrative Boundaries
- Parcels Boundary
- County Boundary

Transportation Features
- County/Local Road
- MatchLines3600_FeatureToLine


Knapek, Larry 390146
Page 7 Match Line
CASADY RONALD D 109607
VIEDO
ACHELL
09606
CASADY RONALD D 109616
AYERS JEANETTE 108630
COUNTY ROAD 3208
AYERS JEANETTE 139526
Brookeen Creek
POLANSKY CHARLES T 109617
FM 2114
KNAPEK BEN 390144
Habitable Structure 1
SINKULE THOMAS PATRICK 109098
Page 9 Match Line
UPTMOR
Map Index Key
Page 8 of 19
1 inch =300 ft. Date: 6/05/2020
0 75 150 300
Feet
LONEstar
Sam Switch to Hubbard Wind Project
Proposed Transmission Line With Land Use & Environmental Constraints
Project Features
Proposed Route
Hydrologic Features
NHD Stream
NHD Waterbody
Zone A 1% Annual Flood Zone
Zone X Flood Zone
Project Features
Study Area
Land Use Features
Habitable Structures
Administrative Boundaries
Parcels Boundary
County Boundary
Transportation Features
FM Road
County/Local Road
MatchLines3600_FeatureToLine



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Sam Switch to Hubbard Wind Project

Proposed Transmission Line With Land Use & Environmental Constraints

Project Features
- Proposed Route

Hydrologic Features
- NHD Stream
- NHD Waterbody
- Zone A 1% Annual Flood Zone
- Zone X Flood Zone

Project Features
- Study Area

Administrative Boundaries
- Parcels Boundary
- County Boundary

Transportation Features
- FM Road
- County/Local Road
- MatchLines3600_FeatureToLine

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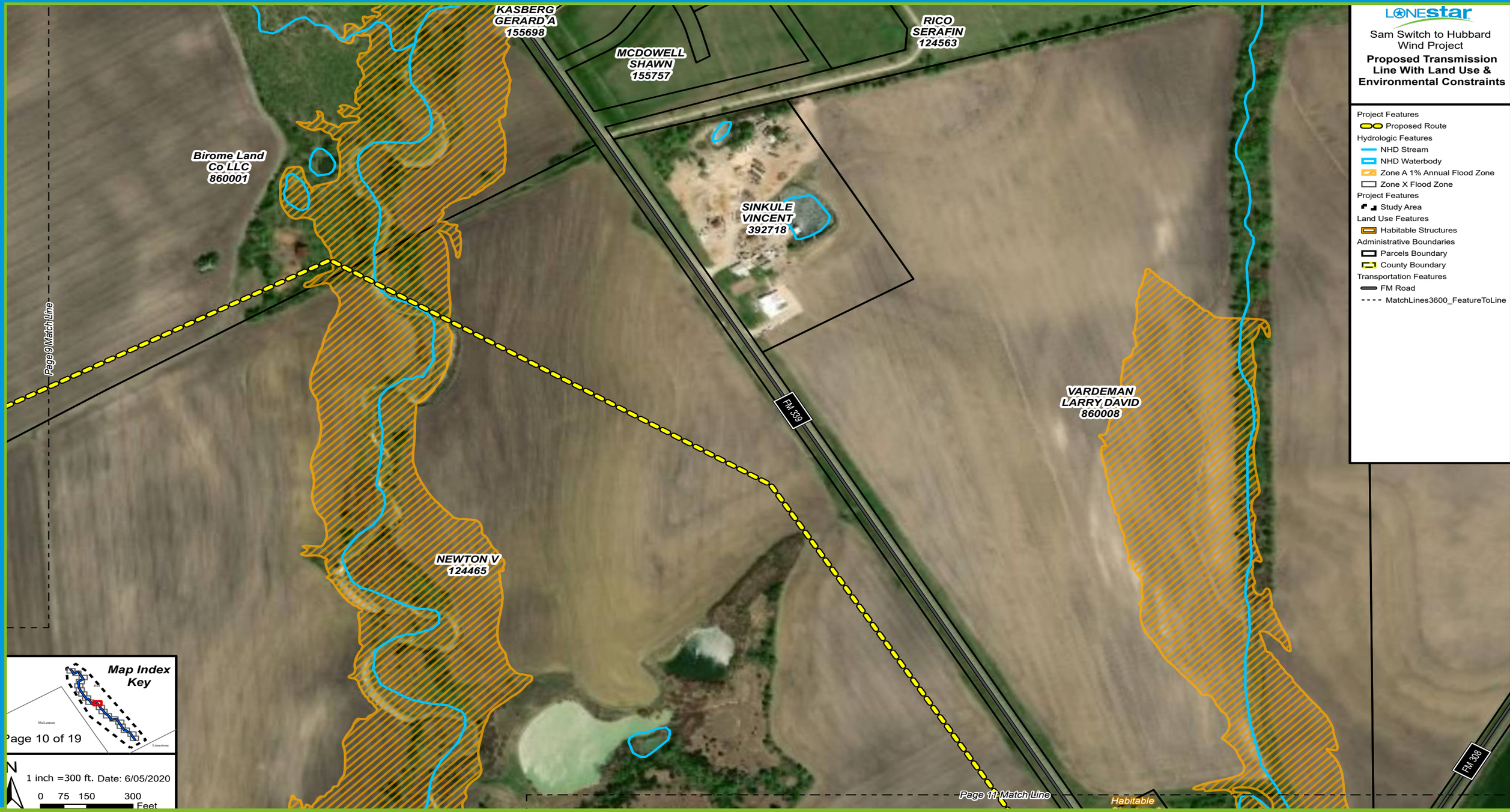

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Sam Switch to Hubbard Wind Project

Proposed Transmission Line With Land Use & Environmental Constraints

Project Features
- Proposed Route

Hydrologic Features
- NHD Stream
- NHD Waterbody
- Zone A 1% Annual Flood Zone
- Zone X Flood Zone

Project Features
- Study Area

Land Use Features
- Habitable Structures

Administrative Boundaries
- Parcels Boundary
- County Boundary

Transportation Features
- FM Road
- MatchLines3600_FeatureToLine

Page 10 of 19

N

1 inch =300 ft. Date: 6/05/2020

0 75 150 300 Feet

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Habitable Structure 2
Page 10 Match Line
VARDEMAN LARRY DAVID 860008
NEWTON V 860140
RICO SERAFIN 124563
COUNTY ROAD 3239
NEWTON V 124465
FM 308
FM 339
BIROME LAND CO 860005
Habitable Structure 3
TRUSSELL MARVIN J 124501
Birome
PEREZ MICHAEL 124466
BIROME GIN CO INC 141757
Birome Lakes
Page 12 Match Line
Map Index Key
Page 11 of 19
N
1 inch =300 ft. Date: 6/05/2020
0 75 150 300
Feet
LONEstar
Sam Switch to Hubbard Wind Project
Proposed Transmission Line With Land Use & Environmental Constraints
Project Features
Proposed Route
Hydrologic Features
NHD Stream
NHD Waterbody
Cultural Features
Cultural Site
Historical Marker
Hydrologic Features
Zone A 1% Annual Flood Zone
Zone X Flood Zone
Project Features
Study Area
Land Use Features
Habitable Structures
Administrative Boundaries
Parcels Boundary
County Boundary
Transportation Features
FM Road
County/Local Road
MatchLines3600_FeatureToLine

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Sam Switch to Hubbard Wind Project

Proposed Transmission Line With Land Use & Environmental Constraints

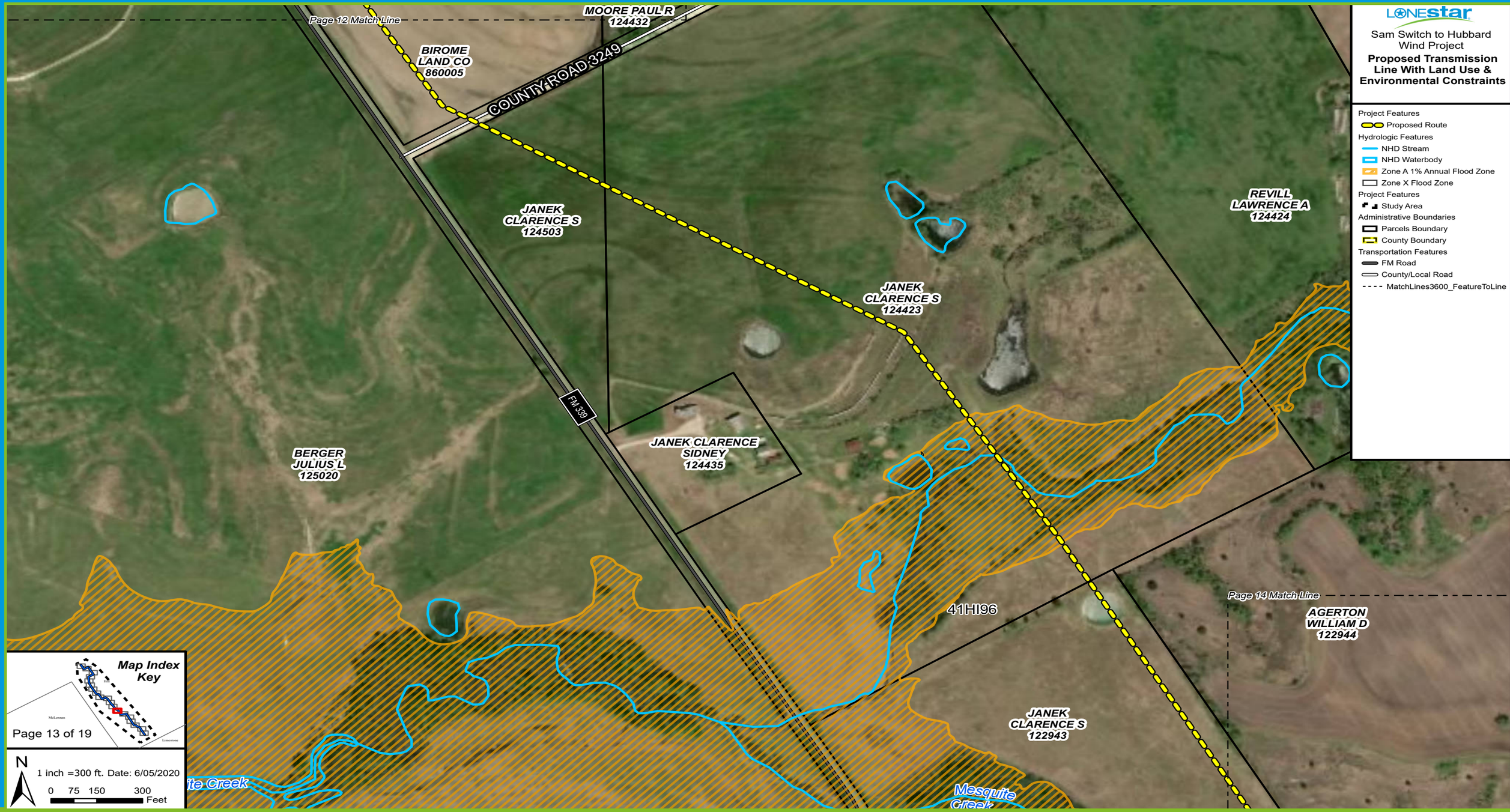
Project Features
- Proposed Route

Hydrologic Features
- NHD Stream
- NHD Waterbody
- Zone A 1% Annual Flood Zone
- Zone X Flood Zone

Project Features
- Study Area

Administrative Boundaries
- Parcels Boundary
- County Boundary

Transportation Features
- FM Road
- MatchLines3600_FeatureToLine



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Sam Switch to Hubbard Wind Project

Proposed Transmission Line With Land Use & Environmental Constraints

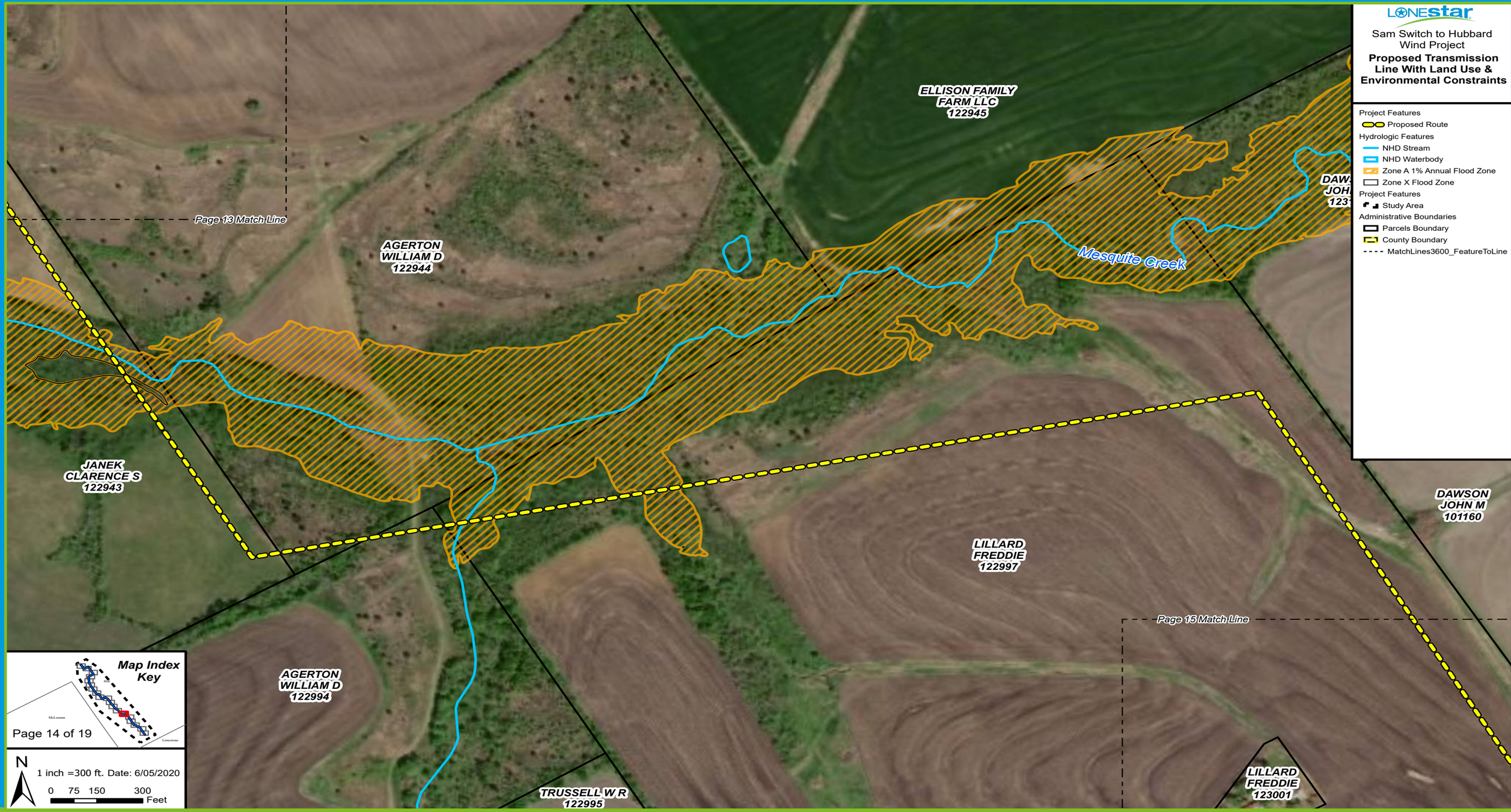
Project Features
- Proposed Route

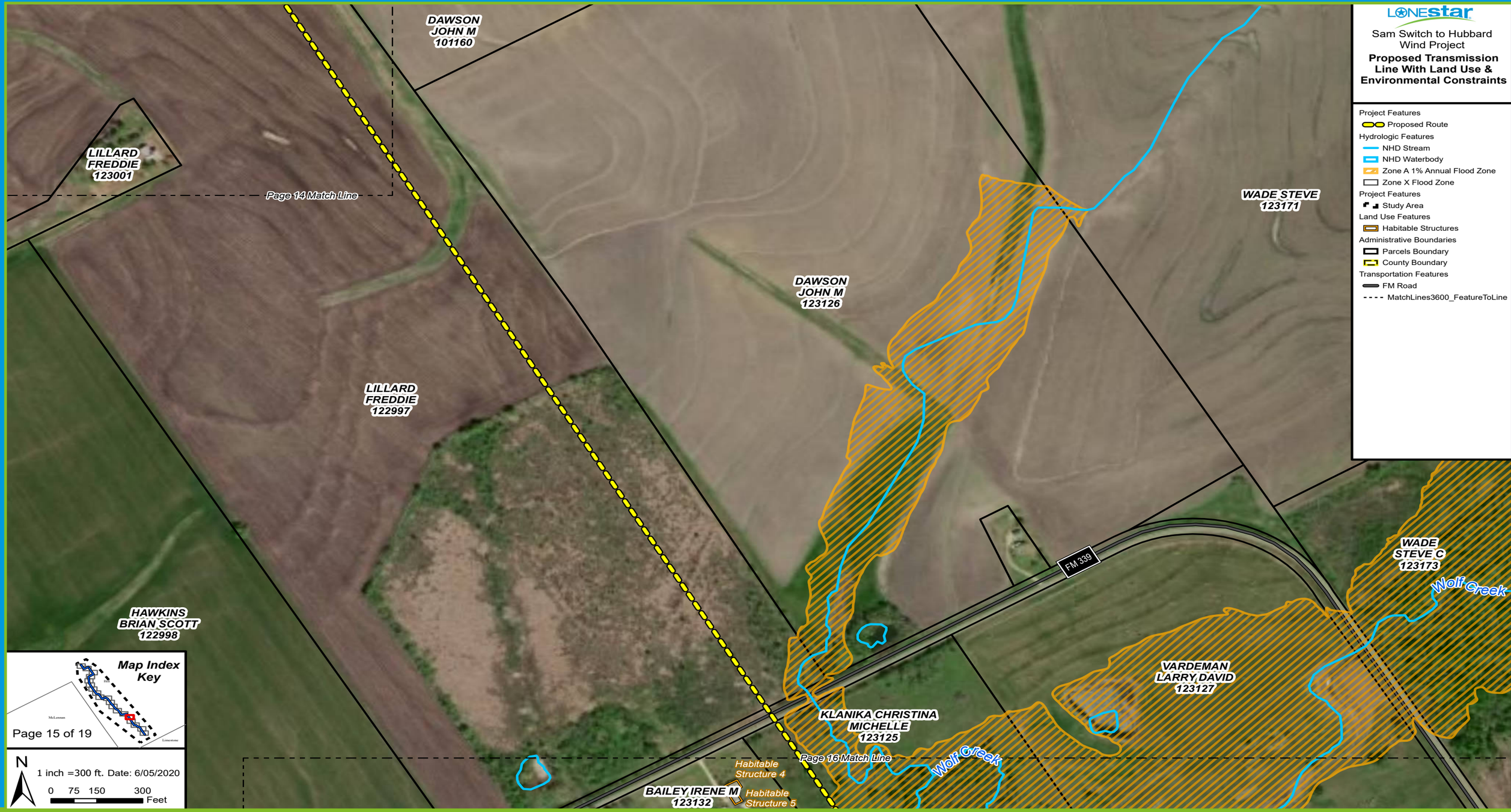
Hydrologic Features
- NHD Stream
- NHD Waterbody
- Zone A 1% Annual Flood Zone
- Zone X Flood Zone

Project Features
- Study Area

Administrative Boundaries
- Parcels Boundary
- County Boundary

Transportation Features
- FM Road
- County/Local Road
- MatchLines3600_FeatureToLine


Sam Switch to Hubbard Wind Project
Proposed Transmission Line With Land Use & Environmental Constraints
Project Features
Proposed Route
Hydrologic Features
NHD Stream
NHD Waterbody
Zone A 1% Annual Flood Zone
Zone X Flood Zone
Project Features
Study Area
Administrative Boundaries
Parcels Boundary
County Boundary
MatchLines3600_FeatureToLine
ELLISON FAMILY FARM LLC 122945
AGERTON WILLIAM D 122944
Mesquite Creek
Page 13 Match Line
JANEK CLARENCE S 122943
DAWSON JOHN M 101160
LILLARD FREDDIE 122997
Page 15 Match Line
AGERTON WILLIAM D 122994
TRUSSELL W R 122995
LILLARD FREDDIE 123001
Map Index Key
Page 14 of 19
N
1 inch =300 ft. Date: 6/05/2020
0 75 150 300
Feet



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Sam Switch to Hubbard Wind Project

Proposed Transmission Line With Land Use & Environmental Constraints

Project Features
- Proposed Route

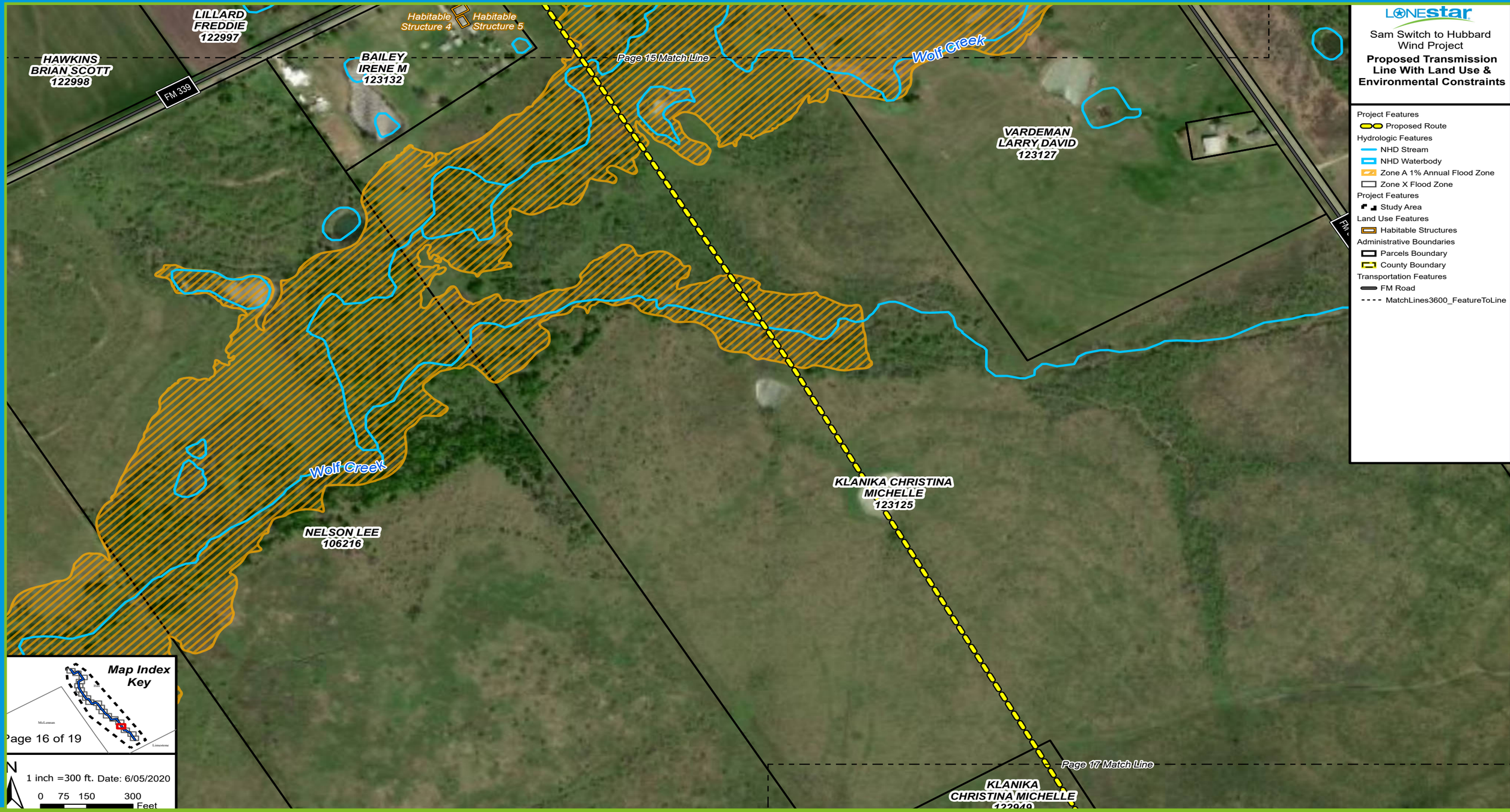
Hydrologic Features
- NHD Stream
- NHD Waterbody
- Zone A 1% Annual Flood Zone
- Zone X Flood Zone

Project Features
- Study Area

Land Use Features
- Habitable Structures

Administrative Boundaries
- Parcels Boundary
- County Boundary

Transportation Features
- FM Road
- MatchLines3600_FeatureToLine



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Sam Switch to Hubbard Wind Project

Proposed Transmission Line With Land Use & Environmental Constraints

Project Features
- Proposed Route

Hydrologic Features
- NHD Stream
- NHD Waterbody
- Zone A 1% Annual Flood Zone
- Zone X Flood Zone

Project Features
- Study Area

Land Use Features
- Habitable Structures

Administrative Boundaries
- Parcels Boundary
- County Boundary

Transportation Features
- FM Road
- MatchLines3600_FeatureToLine

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N

1 inch =300 ft. Date: 6/05/2020

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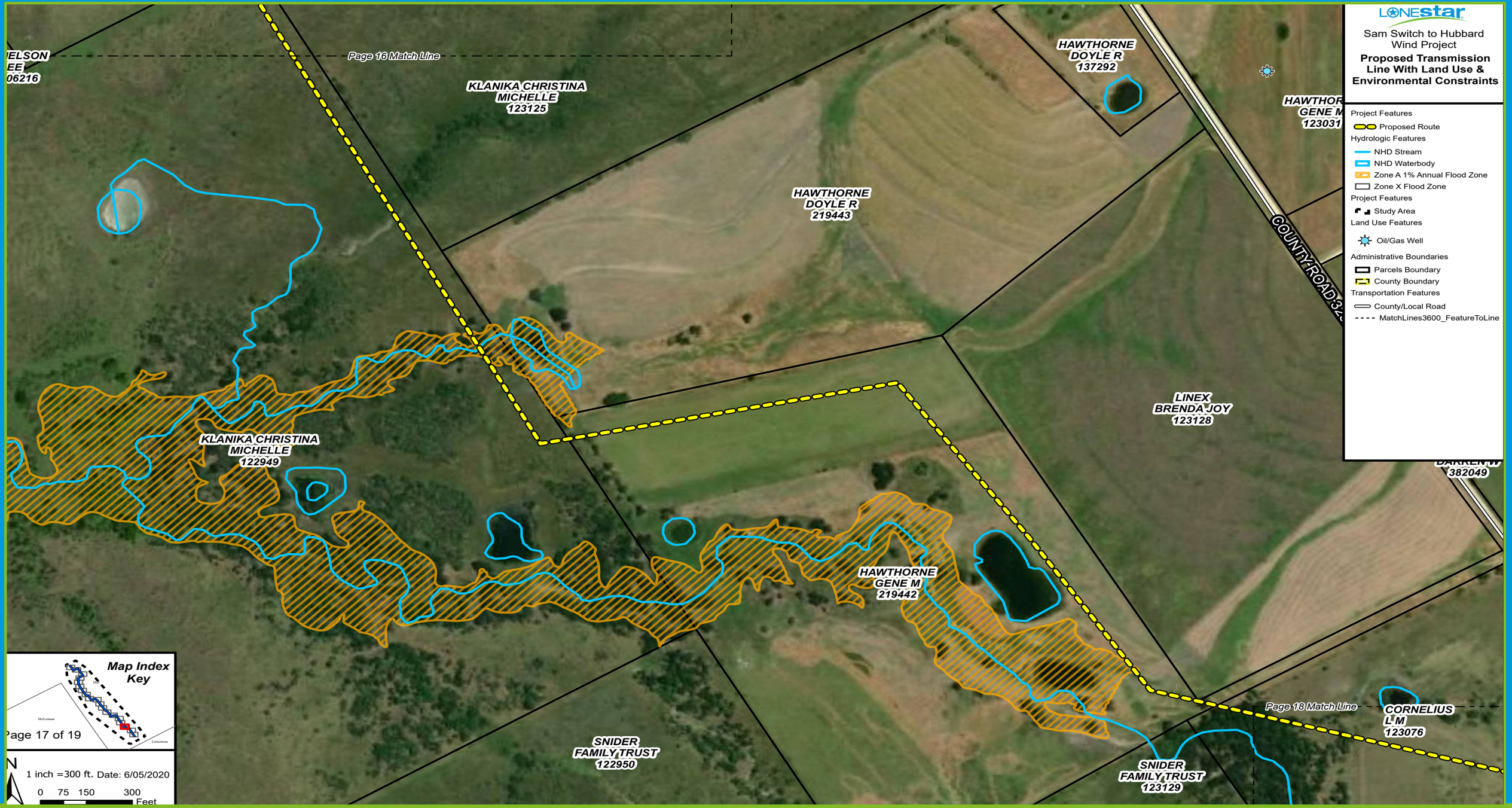
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KLANIKA CHRISTINA MICHELLE 123125
HAWTHORNE DOYLE R 137292
HAWTHOR GENE M 123031
HAWTHORNE DOYLE R 219443
COUNTY ROAD 32
LINEX BRENDA JOY 123128
KLANIKA CHRISTINA MICHELLE 122949
382049
HAWTHORNE GENE M 219442
Page 18 Match Line
CORNELIUS L M 123076
SNIDER FAMILY TRUST 122950
SNIDER FAMILY TRUST 123129
Map Index Key
Page 17 of 19
1 inch =300 ft. Date: 6/05/2020
0 75 150 300 Feet
LONEstar
Sam Switch to Hubbard Wind Project
Proposed Transmission Line With Land Use & Environmental Constraints
Project Features
Proposed Route
Hydrologic Features
NHD Stream
NHD Waterbody
Zone A 1% Annual Flood Zone
Zone X Flood Zone
Project Features
Study Area
Land Use Features
Oil/Gas Well
Administrative Boundaries
Parcels Boundary
County Boundary
Transportation Features
County/Local Road
MatchLines3600_FeatureToLine


SINKULE DARREN W
382049
PETTY
RONALD S
385507
HEATHMAN
HORACE P
123066
EMMAUS WALK CHRISTIAN
RETREAT INC
377821
Page 17 Match Line
ROBERTS
TOMMY J
123033
EMMAUS WALK CHRISTIAN
RETREAT INC
123089
CORNELIUS
L M
123076
COUNTY ROAD 3258
CORNELIUS
L M
300736
MCMANUS
JAMES D
123082
SNIDER
FAMILY TRUST
123129
CORNELIUS
L M
123077
FM 339
FORD
BRIAN P
123080
CORNELIUS
L M
123084
BENITEZ
SOTERO
123081
GARCIA
JESUS C
DOTY JESSE L
106155
KRIS
ROBERT L
Page 19 Match Line
Map Index
Key
Page 18 of 19
1 inch =300 ft. Date: 6/05/2020
0 75 150 300
Feet
LONEstar
Sam Switch to Hubbard
Wind Project
Proposed Transmission
Line With Land Use &
Environmental Constraints
Project Features
Proposed Route
Hydrologic Features
NHD Stream
NHD Waterbody
Zone A 1% Annual Flood Zone
Zone X Flood Zone
Project Features
Study Area
Land Use Features
Oil/Gas Well
Administrative Boundaries
Parcels Boundary
County Boundary
Transportation Features
State Highway
FM Road
County/Local Road
MatchLines3600_FeatureToLine

LONEstar

Sam Switch to Hubbard Wind Project

Proposed Transmission Line With Land Use & Environmental Constraints

Project Features
- Project Substation
- Proposed Route

Hydrologic Features
- NHD Waterbody

Cultural Features
- Cemetery

Hydrologic Features
- Zone A 1% Annual Flood Zone
- Zone X Flood Zone

Project Features
- Study Area

Land Use Features
- Habitable Structures
- Communication Tower
- Oil/Gas Well

Administrative Boundaries
- Parcels Boundary
- City Boundary
- County Boundary

Transportation Features
- State Highway
- FM Road
- County/Local Road
- Railroad
- MatchLines3600_FeatureToLine

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Figure 4-1

Consensus Route with Environmental and Land Use Constraints (Topographic Base with Constraints)

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FIGURE 4-1

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COLOR MAPS OR
DRAWINGS
AND
CAN BE VIEWED
IN
CENTRAL RECORDS
(PUBLIC UTILTY COMMISSION OF TEXAS
1701 N. CONGRESS AVENUE
AUSTIN, TX 78701)

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Figure 4-2

Habitable Structures and Other Land Use Features in the Vicinity of the Consensus Route (Aerial Photograph Base with CCN Inventory Items)

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FIGURE 4-2

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COLOR MAPS OR
DRAWINGS
AND
CAN BE VIEWED
IN
CENTRAL RECORDS
(PUBLIC UTILTY COMMISSION OF TEXAS
1701 N. CONGRESS AVENUE
AUSTIN, TX 78701)

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