Hydric Rating by Map Unit— Summary by Map Unit — Bee County, Texas (TX025)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
24	Parrita-Olmos association, undulating	5	10,461.9	13.7%
25	Pernitas sandy clay loam, 2 to 5 percent slopes	0	3,252.8	4.3%
26	Pettus sandy clay loam, 2 to 5 percent slopes	0	852.7	1.1%
27	Racombes sandy clay loam, 0 to 1 percent slopes	5	790.1	1.0%
29	Sinton sandy clay loam, 0 to 1 percent slopes, occasionally flooded	1	172.6	0.2%
30	Weesatche fine sandy loam, 1 to 3 percent slopes	0	17,787.5	23.4%
31	Weesatche fine sandy loam, 2 to 5 percent slopes	0	2,636.7	3.5%
32	Weesatche sandy clay loam, 0 to 1 percent slopes	1	1,642.3	2.2%
33	Weesatche sandy clay loam, 1 to 3 percent slopes	0	3,852.3	5.1%
GP	Pits, gravel	0	24.7	0.0%
W	Water	0	21.2	0.0%
Totals for Area of Interest			**76,102.8**	**100.0%**

Description

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

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

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

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

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

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

References:

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

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

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

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

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

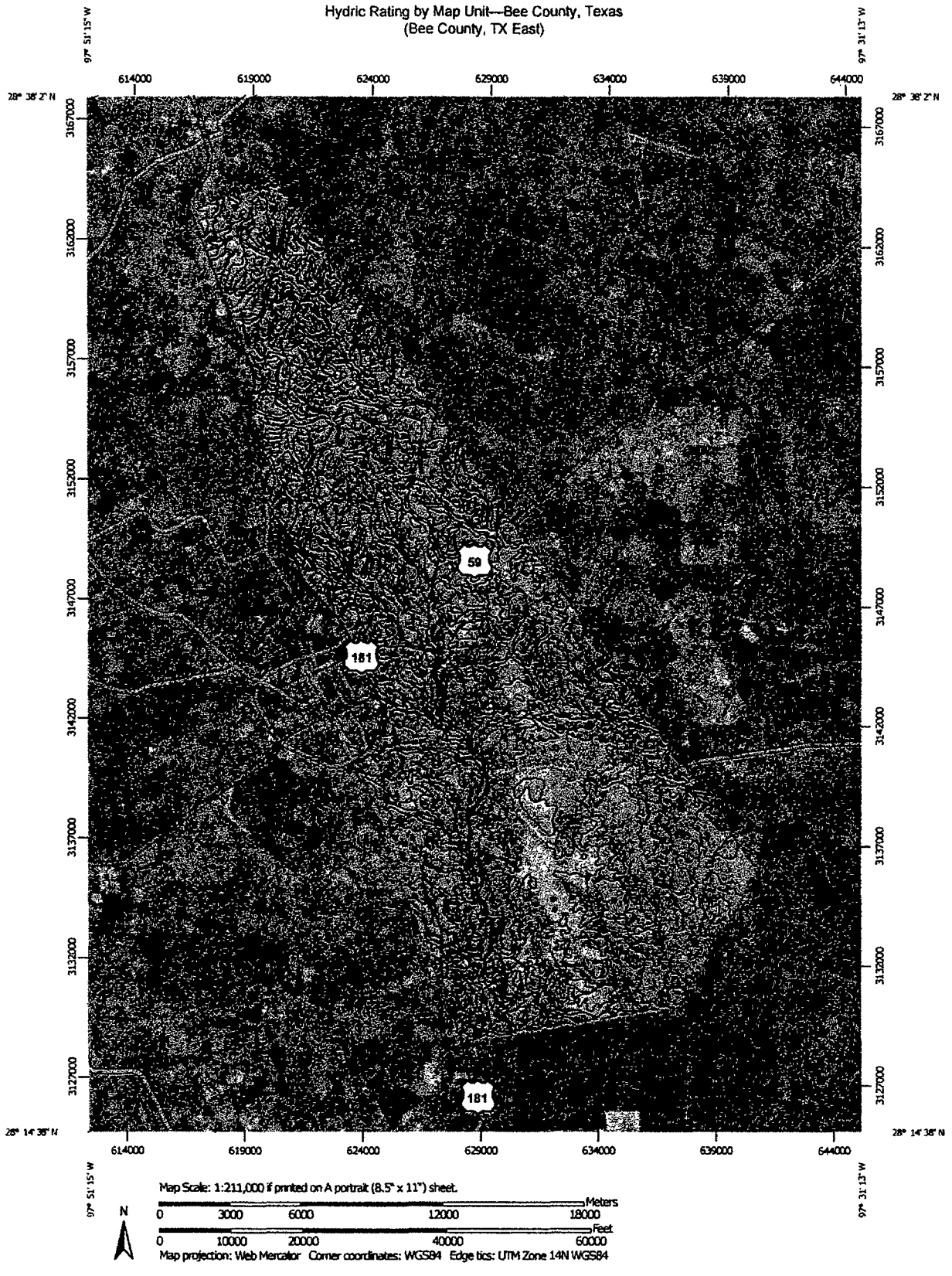
Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: *None Specified*

Tie-break Rule: Lower


Hydric Rating by Map Unit—Bee County, Texas
(Bee County, TX East)
97° 51' 15" W
97° 31' 13" W
28° 38' 2" N
28° 14' 38" N
614000
619000
624000
629000
634000
639000
644000
3167000
3162000
3157000
3152000
3147000
3142000
3137000
3132000
3127000
59
181
181
Map Scale: 1:211,000 if printed on A portrait (8.5" x 11") sheet.
Meters
0 3000 6000 12000 18000
N
Feet
0 10000 20000 40000 60000
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

MAP LEGEND

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

Soils

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
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: Bee County, Texas
Survey Area Data: Version 12, Sep 23, 2015

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

Date(s) aerial images were photographed: Jan 1, 1999—Dec 31, 2003

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.

Hydric Rating by Map Unit

Hydric Rating by Map Unit— Summary by Map Unit — Bee County, Texas (TX025)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1	Aransas clay	0	22.5	0.0%
2	Arents, smoothed, and gullied land complex, 2 to 10 percent slopes	0	64.3	0.1%
3	Clareville sandy clay loam, 0 to 1 percent slopes	0	7,476.0	8.6%
5	Banquete clay, 0 to 1 percent slopes	5	596.9	0.7%
6	Edroy clay, 0 to 1 percent slopes, ponded	87	623.5	0.7%
7	Goliad sandy clay loam, 0 to 1 percent slopes	0	1,189.6	1.4%
8	Goliad sandy clay loam, 1 to 3 percent slopes	0	1,076.3	1.2%
10	Lattas clay, 0 to 1 percent slopes	5	514.7	0.6%
12	Leming loamy fine sand, 0 to 3 percent slopes	5	1,349.3	1.6%
13	Monteola clay, 0 to 1 percent slopes	1	511.1	0.6%
15	Nusil fine sand, 0 to 5 percent slopes	5	606.3	0.7%
16	Odem fine sandy loam	5	1,872.4	2.2%
17	Olmos very gravelly loam, 1 to 8 percent slopes	0	998.6	1.2%
18	Orelia fine sandy loam, 0 to 1 percent slopes	2	17,992.4	20.8%
19	Papagua fine sandy loam	90	908.9	1.1%
20	Papalote loamy fine sand, 0 to 3 percent slopes	5	10,612.0	12.3%
21	Papalote fine sandy loam, 0 to 1 percent slopes	20	7,909.5	9.2%
22	Papalote fine sandy loam, 1 to 3 percent slopes	0	5,101.8	5.9%
23	Parrita sandy clay loam, 0 to 3 percent slopes	0	3,990.3	4.6%

Hydric Rating by Map Unit— Summary by Map Unit — Bee County, Texas (TX025)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
24	Parrita-Olmos association, undulating	5	5,287.7	6.1%
25	Pernitas sandy clay loam, 2 to 5 percent slopes	0	3,709.6	4.3%
26	Pettus sandy clay loam, 2 to 5 percent slopes	0	1,048.4	1.2%
27	Racombes sandy clay loam, 0 to 1 percent slopes	5	77.6	0.1%
28	Nusil-Rhymes association, 0 to 5 percent slopes	1	281.0	0.3%
29	Sinton sandy clay loam, 0 to 1 percent slopes, occasionally flooded	1	484.7	0.6%
30	Weesatche fine sandy loam, 1 to 3 percent slopes	0	7,603.1	8.8%
31	Weesatche fine sandy loam, 2 to 5 percent slopes	0	68.6	0.1%
32	Weesatche sandy clay loam, 0 to 1 percent slopes	1	953.3	1.1%
33	Weesatche sandy clay loam, 1 to 3 percent slopes	0	3,172.5	3.7%
GP	Pits, gravel	0	278.1	0.3%
M-W	Miscellaneous water	0	2.5	0.0%
W	Water	0	44.7	0.1%
Totals for Area of Interest			**86,428.1**	**100.0%**

Description

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

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

Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: *None Specified*

Tie-break Rule: Lower

Lisa Barko Meaux 5507

From: Trant, Angela SWG <Angela.Trant@usace.army.mil>
Sent: Tuesday, July 05, 2016 9:02 AM
To: Lisa Barko Meaux 5507
Cc: Kimmel, Matthew L SWG
Subject: AEP Texas Central Company Three Rivers - Borglum - Tuleta Transmission Line Project

We received your determination request on July 1, 2016. It has been assigned Corps of Engineers file number SWG-2016-00496 and has been assigned to Mr. Matthew Kimmel. Mr. Kimmel may be reached by telephone at 361-814-5847 (ext 1002) or by e-mail at Matthew.L.Kimmel@usace.army.mil

Please be advised that all requests received in this office are assigned based on perceived complexity of the action and on a first-come, first-served basis. We ask that you please allow the Corps regulator assigned this action time to review this action and note that he will contact you if further information is required.

Please reference the above number on any future correspondence to this office.

Thank you.

Ms. Angela Trant
Legal Instruments Examiner
US Army Corps of Engineers
Regulatory Field Office
5151 Flynn Parkway, Suite 306
Corpus Christi, TX 78411-4318
361-814-5847 phone, ext 1001
361-814-5912 fax

DEPARTMENT OF THE ARMY
GALVESTON DISTRICT, CORPS OF ENGINEERS
CORPUS CHRISTI REGULATORY FIELD OFFICE
5151 FLYNN PARKWAY, SUITE 306
CORPUS CHRISTI, TX 78411-4318

July 8, 2016

REPLY TO
ATTENTION OF:

Corpus Christi Regulatory Field Office

SUBJECT: Permit Application No. SWG-2016-00496; Approved Jurisdictional Determination

Ms. Lisa Barko Meaux
Power Engineers
509 North Sam Houston Parkway East, Suite 200
Houston, Texas 77060-4131

Dear Ms. Meaux:

This letter is in regard to your request, dated July 1, 2016, for the Corps of Engineers to provide information concerning environmental and land use constraints or other issues of interest for constructing new electrical transmission facilities within an approximately 360-square-mile portion of Live Oak and Bee Counties, Texas. The study area lies between the city of Three Rivers in the west, runs in an easterly direction to a line east of Beeville; and from a line north of Skidmore in a northwesterly direction to a line south of the community of Pettus. The study area is more clearly defined on the attached map, in 1 sheet.

We have determined that the study area contains waters of the United States, including but not limited to; the Nueces River, Rock Quarry Branch, Sulphur Creek and its tributaries, La Para Creek, Mustang Creek, Poesta Creek, Aransas Creek, Dry Creek and its tributaries, San Domingo Creek, Boggy Creek, Medio Creek, Parker Hollow Creek, Talpacate Creek, Spring Creek and their abutting wetlands. Wetlands, under normal circumstances, exhibit wetland hydrology, a predominance of hydrophytic vegetation, and contain hydric soils as identified utilizing the Great Plains Regional supplement (version 2.0) to the 1987 Corps of Engineers Wetland Delineation Manual. The Corps of Engineers regulates the discharge of dredged and/or fill material into waters of the United States, including navigable waters, under Section 404 of the Clean Water Act. Therefore, the discharge of dredged and/or fill material into all waters of the United States requires a Department of the Army permit prior to doing so. This determination is valid for 5 years unless new information warrants revision prior to its expiration date.

Due to our current workload we regret that we are not able to conduct a more specific and comprehensive delineation for the study area under review. Please note, additional waters of the United States may exist within the study area and that have not

yet been identified and delineated. We recommend that if you require a more comprehensive delineation, please contact a consultant to conduct such work and submit it to us for verification/concurrence. Attached is a list of consultants registered with the Galveston District.

Corps determinations are conducted to identify the limits of the Corps Clean Water Act jurisdiction for particular sites. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985, as amended. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331.5. Also enclosed are a combined Notification of Administrative Appeal Options and Process (NAP) and Request for Appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA to the Southwestern Division Office at the following address:

Mr. Elliott Carman
Regulatory Appeals Officer
Southwest Division USACE (CESWD-PD-O)
1100 Commerce Street, Suite 831
Dallas, Texas 75242-1317
Telephone: 469-487-7061; FAX: 469-487-7199

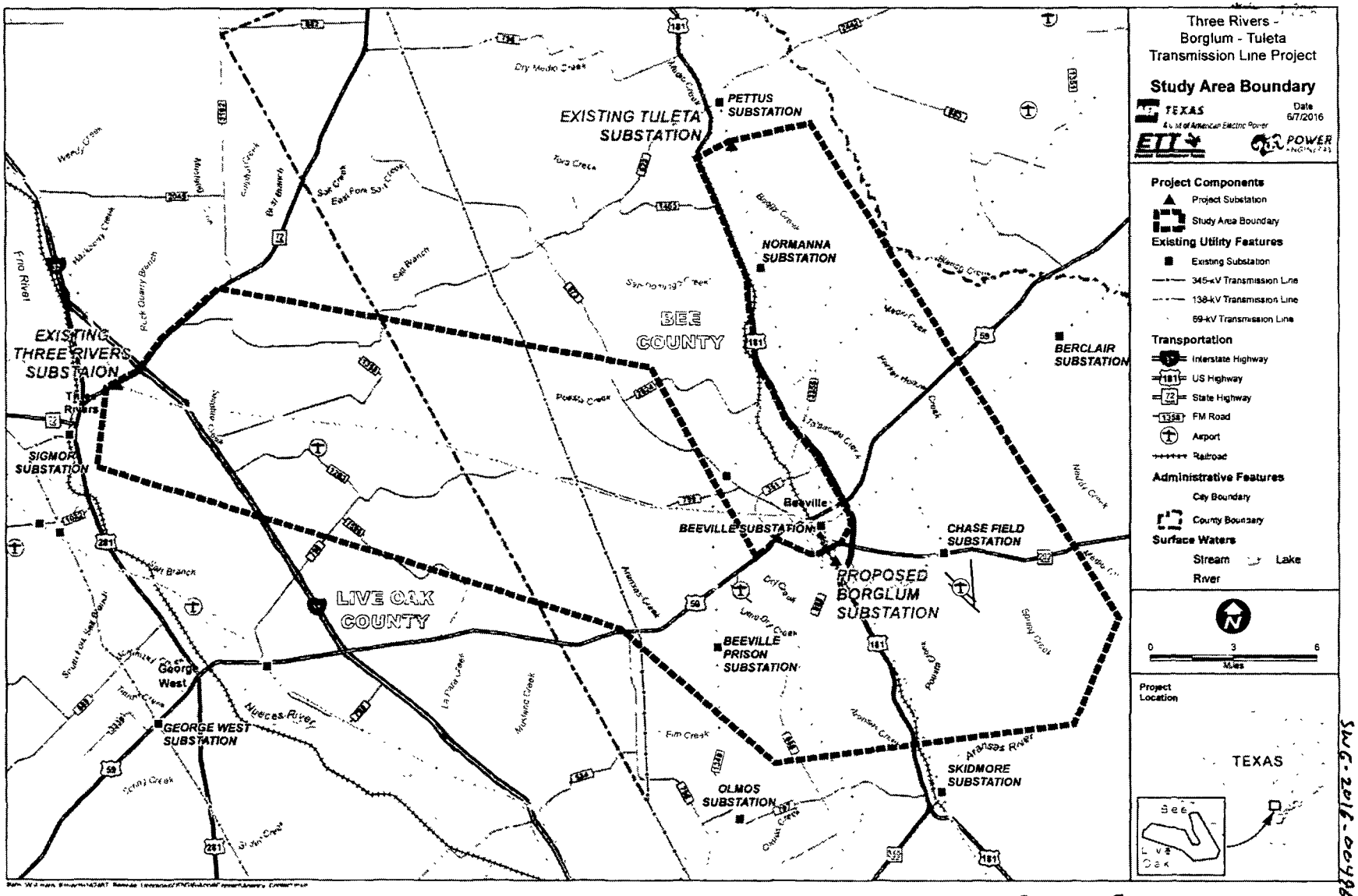
In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR Part 331.5, and that it has been received by the Division Office within **60 days** of the date of the NAP. It is not necessary to submit an RFA form to the Division office if you do not object to the determination in this letter.

Please note, this is **not authorization to begin work in jurisdictional areas**. If you have any questions, please contact me at 361-814-5847 ext. 1002.

Sincerely,

Matthew Kimmel
Supervisor
Corpus Christi Regulatory Field Office

Enclosures



SWG-2016-00496

PROJECT SWG-2016-00496
SHEET 1 of 1

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Power Engineers	File Number: SWG-2016-00496	Date: 8 July 2016
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/appeals.aspx **or Corps regulations at 33 CFR Part 331.**

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT		
REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)		
ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.		
POINT OF CONTACT FOR QUESTIONS OR INFORMATION:		
If you have questions regarding this decision and/or the appeal process you may contact: Mr. Matthew Kimmel Supervisor CESWG-RD-CC U.S. Army Corps of Engineers 5151 Flynn Parkway, Suite 306 Corpus Christi, Texas 78411-4318 361-814-5847 ext. 1002; FAX: 361-814-5912	If you only have questions regarding the appeal process you may also contact: Mr. Elliott Carman Administrative Appeals Review Officer (CESWD-PD-O) U.S. Army Corps of Engineers 1100 Commerce Street, Suite 831 Dallas, Texas 75242-1317 469-487-7061	
RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.		
_____ Signature of appellant or agent.	Date:	Telephone number:

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Texas Coastal Ecological Services Field Office
17629 EL CAMINO REAL, SUITE 211
HOUSTON, TX 77058
PHONE: (281)286-8282 FAX: (281)488-5882
URL: www.fws.gov/southwest/es/TexasCoastal/;
www.fws.gov/southwest/es/ES_Lists_Main2.html

Consultation Code: 02ETTXX0-2016-SLI-1037 August 15, 2016
Event Code: 02ETTXX0-2016-E-01183
Project Name: Three Rivers to Borglum & Tuleta to Borglum Transmission Line Projects

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 U.S. Fish and Wildlife Service (Service) field offices in Clear Lake, Tx, and Corpus Christi, Tx, have combined administratively to form the Texas Coastal Ecological Services Field Office. A map of the Texas Coastal Ecological Services Field Office area of responsibility can be found at: http://www.fws.gov/southwest/es/TexasCoastal/Map.html. All project related correspondence should be sent to the field office responsible for the area in which your project occurs. For projects located in southeast Texas please write to: Field Supervisor; U.S. Fish and Wildlife Service; 17629 El Camino Real Ste. 211; Houston, Texas 77058. For projects located in southern Texas please write to: Field Supervisor; U.S. Fish and Wildlife Service; P.O. Box 81468; Corpus Christi, Texas 78468-1468.

The enclosed species list identifies federally threatened, endangered, and proposed to be listed species; designated critical habitat; and candidate species that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list is provided by the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information from updated surveys, changes in the abundance and distribution of species, changes in habitat conditions, or other factors could change the list. 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. The Service recommends that verification be completed by visiting the ECOS-IPaC website http://ecos.fws.gov/ipac/ at regular intervals during project planning and implementation for updates to species list and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

Candidate species have no protection under the Act but are included for consideration because they could be listed prior to the completion of your project. The other species information should help you determine if suitable habitat for these listed species exists in any of the proposed project areas or if project activities may affect species on-site, off-site, and/or result in "take" of a federally listed species.

"Take" is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. In addition to the direct take of an individual animal, habitat destruction or modification can be considered take, regardless of whether it has been formally designated as critical habitat, if the activity results in the death or injury of wildlife by removing essential habitat components or significantly alters essential behavior patterns, including breeding, feeding, or sheltering.

Section 7

Section 7 of the Act requires that all Federal agencies consult with the Service to ensure that actions authorized, funded or carried out by such agencies do not jeopardize the continued existence of any listed threatened or endangered species or adversely modify or destroy critical habitat of such species. It is the responsibility of the Federal action agency to determine if the proposed project may affect threatened or endangered species. If a "may affect" determination is made, the Federal agency shall initiate the section 7 consultation process by writing to the office that has responsibility for the area in which your project occurs.

Is not likely to adversely affect the project may affect listed species and/or critical habitat; however, the effects are expected to be discountable, insignificant, or completely beneficial. Certain avoidance and minimization measures may need to be implemented in order to reach this level of effects. The Federal agency or the designated non-Federal representative should seek written concurrence from the Service that adverse effects have been eliminated. Be sure to include all of the information and documentation used to reach your decision with your request for concurrence. The Service must have this documentation before issuing a concurrence.

Is likely to adversely affect adverse effects to listed species may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effect is not discountable, insignificant, or beneficial. If the overall effect of the proposed action is beneficial to the listed species but also is likely to cause some adverse effects to individuals of that species, then the proposed action "is likely to adversely affect" the listed species. An "is likely to adversely affect" determination requires the Federal action agency to initiate formal section 7 consultation with this office.

No effect the proposed action will not affect federally listed species or critical habitat (i.e., suitable habitat for the species occurring in the project county is not present in or adjacent to the action area). No further coordination or contact with the Service is necessary. However, if the project changes or additional information on the distribution of listed or proposed species becomes available, the project should be reanalyzed for effects not previously considered.

Regardless of your determination, the Service recommends that you maintain a complete record of the evaluation, including steps leading to the determination of affect, the qualified personnel

conducting the evaluation, habitat conditions, site photographs, and any other related articles.

Please be advised that while a Federal agency may designate a non-Federal representative to conduct informal consultations with the Service, assess project effects, or prepare a biological assessment, the Federal agency must notify the Service in writing of such a designation. The Federal agency shall also independently review and evaluate the scope and contents of a biological assessment prepared by their designated non-Federal representative before that document is submitted to the Service.

The Service's Consultation Handbook is available online to assist you with further information on definitions, process, and fulfilling Act requirements for your projects at: http://www.fws.gov/endangered/esa-library/pdf/esa_section7_handbook.pdf

Section 10

If there is no federal involvement and the proposed project is being funded or carried out by private interests and/or non-federal government agencies, and the project as proposed may affect listed species, a section 10(a)(1)(B) permit is recommended. The Habitat Conservation Planning Handbook is available at http://www.fws.gov/midwest/endangered/permits/hcp/hcphandbook.html.

Service Response

Please note that the Service strives to respond to requests for project review within 30 days of receipt, however, this time period is not mandated by regulation. Responses may be delayed due to workload and lack of staff. Failure to meet the 30-day timeframe does not constitute a concurrence from the Service that the proposed project will not have impacts to threatened and endangered species.

Candidate Species

Several species of freshwater mussels occur in Texas and five are candidates for listing under the ESA. The Service is also reviewing the status of six other species for potential listing under the ESA. One of the main contributors to mussel die offs is sedimentation, which smothers and suffocates mussels. To reduce sedimentation within rivers, streams, and tributaries crossed by a project, the Service recommends that that you implement the best management practices found at: http://www.fws.gov/southwest/es/TexasCoastal/FreshwaterMussels.html.

Candidate Conservation Agreements (CCAs) or Candidate Conservation Agreements with Assurances (CCAAs) are voluntary agreements between the Service and public or private entities to implement conservation measures to address threats to candidate species. Implementing conservation efforts before species are listed increases the likelihood that simpler, flexible, and more cost-effective conservation options are available. A CCAA can provide participants with assurances that if they engage in conservation actions, they will not be required to implement additional conservation measures beyond those in the agreement. For additional information on CCAs/CCAAs please visit the Service's website at http://www.fws.gov/endangered/what-we-do/cca.html.

Migratory Birds

The Migratory Bird Treaty Act (MBTA) implements various treaties and conventions for the protection of migratory birds. Under the MBTA, taking, killing, or possessing migratory birds is unlawful. Many may nest in trees, brush areas or other suitable habitat. The Service recommends activities requiring vegetation removal or disturbance avoid the peak nesting period of March through August to avoid destruction of individuals or eggs. If project activities must be conducted during this time, we recommend surveying for active nests prior to commencing work. A list of migratory birds may be viewed at http://www.fws.gov/migratorybirds/regulationspolicies/mbta/mbtandx.html.

The bald eagle (*Haliaeetus leucocephalus*) was delisted under the Act on August 9, 2007. Both the bald eagle and the goden eagle (*Aquila chrysaetos*) are still protected under the MBTA and BGEPA. The BGEPA affords both eagles protection in addition to that provided by the MBTA, in particular, by making it unlawful to "disturb" eagles. Under the BGEPA, the Service may issue limited permits to incidentally "take" eagles (e.g., injury, interfering with normal breeding, feeding, or sheltering behavior nest abandonment). For more information on bald and golden eagle management guidlines, we recommend you review information provided at http://www.fws.gov/midwest/eagle/pdf/NationalBaldEagleManagementGuidelines.pdf

The construction of overhead power lines creates threats of avian collision and electrocution. The Service recommends the installation of underground rather than overhead power lines whenever possible. For new overhead lines or retrofitting of old lines, we recommend that project developers implement, to the maximum extent practicable, the Avian Power Line Interaction Committee guidelines found at http://www.aplic.org/.

Meteorological and communication towers are estimated to kill millions of birds per year. We recommend following the guidance set forth in the Service Interim Guidelines for Recommendations on Communications Tower Siting, Constructions, Operation and Decommissioning, found online at: http://www.fws.gov/habitatconservation/communicationtowers.html, to minimize the threat of avian mortality at these towers. Monitoring at these towers would provide insight into the effectiveness of the minimization measures. We request the results of any wildlife mortality monitoring at towers associated with this project.

We request that you provide us with the final location and specifications of your proposed towers, as well as the recommendations implemented. A Tower Site Evaluation Form is also available via the above website; we recommend you complete this form and keep it in your files. If meteorological towers are to be constructed, please forward this completed form to our office.

More information concerning sections 7 and 10 of the Act, migratory birds, candidate species, and landowner tools can be found on our website at: http://www.fws.gov/southwest/es/TexasCoastal/ProjectReviews.html.

Wetlands and Wildlife Habitat

Wetlands and riparian zones provide valuable fish and wildlife habitat as well as contribute to

ood control, water quality enhancement, and groundwater recharge. Wetland and riparian vegetation provides food and cover for wildlife, stabilizes banks and decreases soil erosion. These areas are inherently dynamic and very sensitive to changes caused by such activities as overgrazing, logging, major construction, or earth disturbance. Executive Order 11990 asserts that each agency shall provide leadership and take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial value of wetlands in carrying out the agency's responsibilities. Construction activities near riparian zones should be carefully designed to minimize impacts. If vegetation clearing is needed in these riparian areas, they should be re-vegetated with native wetland and riparian vegetation to prevent erosion or loss of habitat. We recommend minimizing the area of soil scarification and initiating incremental re-establishment of herbaceous vegetation at the proposed work sites. Denuded and/or disturbed areas should be re-vegetated with a mixture of native legumes and grasses. Species commonly used for soil stabilization are listed in the Texas Department of Agriculture's (TDA) Native Tree and Plant Directory, available from TDA at P.O. Box 12847, Austin, Texas 78711. The Service also urges taking precautions to ensure sediment loading does not occur to any receiving streams in the proposed project area. To prevent and/or minimize soil erosion and compaction associated with construction activities, avoid any unnecessary clearing of vegetation, and follow established rights-of-way whenever possible. All machinery and petroleum products should be stored outside the oodplain and/or wetland area during construction to prevent possible contamination of water and soils.

Wetlands and riparian areas are high priority fish and wildlife habitat, serving as important sources of food, cover, and shelter for numerous species of resident and migratory wildlife. Waterfowl and other migratory birds use wetlands and riparian corridors as stopover, feeding, and nesting areas. We strongly recommend that the selected project site not impact wetlands and riparian areas, and be located as far as practical from these areas. Migratory birds tend to concentrate in or near wetlands and riparian areas and use these areas as migratory yways or corridors. After every effort has been made to avoid impacting wetlands, you anticipate unavoidable wetland impacts will occur; you should contact the appropriate U.S. Army Corps of Engineers office to determine if a permit is necessary prior to commencement of construction activities.

If your project will involve filling, dredging, or trenching of a wetland or riparian area it may require a Clean Water Act Section 404 permit from the U.S. Army Corps of Engineers (COE). For permitting requirements please contact the U.S. Corps of Engineers, District Engineer, P.O. Box 1229, Galveston, Texas 77553-1229, (409) 766-3002.

Beneficial Landscaping

In accordance with Executive Order 13112 on Invasive Species and the Executive Memorandum on Beneficial Landscaping (42 C.F.R. 26961), where possible, any landscaping associated with project plans should be limited to seeding and replanting with native species. A mixture of grasses and forbs appropriate to address potential erosion problems and long-term cover should be planted when seed is reasonably available. Although Bermuda grass is listed in seed mixtures, this species and other introduced species should be avoided as much as possible. The Service also recommends the use of native trees, shrubs, and herbaceous species that are adaptable, drought tolerant and conserve water.

State Listed Species

The State of Texas protects certain species. Please contact the Texas Parks and Wildlife Department (Endangered Resources Branch), 4200 Smith School Road, Austin, Texas 78744 (telephone 512/389-8021) for information concerning fish, wildlife, and plants of State concern or visit their website at: http://www.tpwd.state.tx.us/huntwild/wild/wildlife_diversity/texas_rare_species/listed_species/.

If we can be of further assistance, or if you have any questions about these comments, please contact 281/286-8282 if your project is in southeast Texas, or 361/994-9005 if your project is in southern Texas. Please refer to the Service consultation number listed above in any future correspondence regarding this project.

Attachment

United States Department of Interior
Fish and Wildlife Service

Project name: Three Rivers to Borglum & Tuleta to Borglum Transmission Line Projects

Official Species List

Provided by:

Texas Coastal Ecological Services Field Office
17629 EL CAMINO REAL, SUITE 211
HOUSTON, TX 77058
(281) 286-8282
http://www.fws.gov/southwest/es/TexasCoastal/
http://www.fws.gov/southwest/es/ES_Lists_Main2.html

Consultation Code: 02ETTXX0-2016-SLI-1037
Event Code: 02ETTXX0-2016-E-01183

Project Type: TRANSMISSION LINE

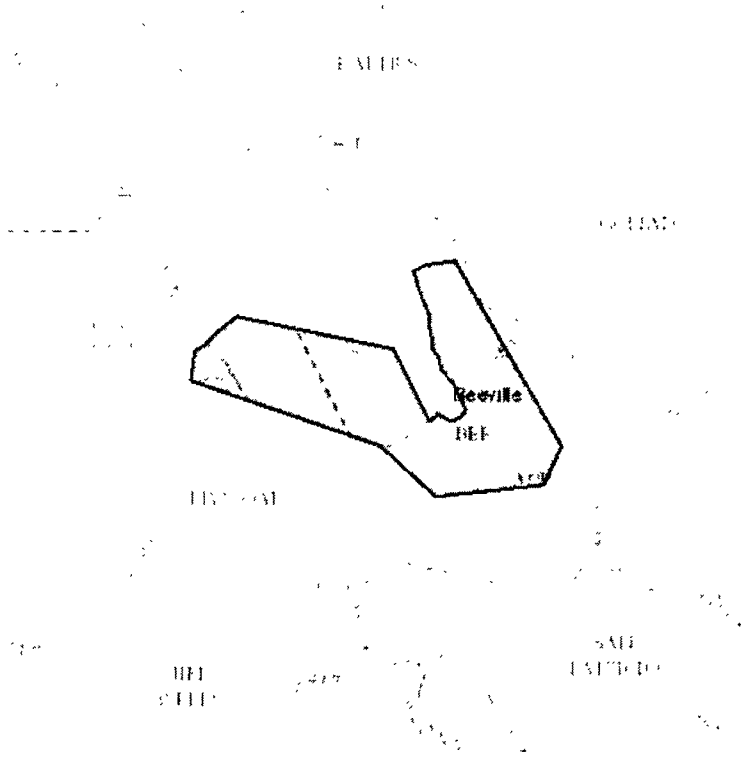
Project Name: Three Rivers to Borglum & Tuleta to Borglum Transmission Line Projects
Project Description: Three Rivers to Borglum & Tuleta to Borglum Transmission Line Projects

Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.

United States Department of Interior
Fish and Wildlife Service

Project name: Three Rivers to Borglum & Tuleta to Borglum Transmission Line Projects

Project Location Map:



Project Coordinates: The coordinates are too numerous to display here.

Project Counties: Bee, TX | Live Oak, TX

United States Department of Interior
Fish and Wildlife Service

Project name: Three Rivers to Borglum & Tuleta to Borglum Transmission Line Projects

Endangered Species Act Species List

There are a total of 7 threatened, endangered, or candidate species on your 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. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Birds	**Status**	**Has Critical Habitat**	**Condition(s)**
Least tern *(Sterna antillarum)* Population interior pop	Endangered		Wind Related Projects Within Migratory Route
Piping Plover *(Charadrius melodus)* Population except Great Lakes watershed	Threatened	Final designated	Wind related projects within migratory route.
Red Knot *(Calidris canutus rufa)*	Threatened		Wind Related Projects Within Migratory Route
Whooping crane *(Grus americana)* Population except where EXPN	Endangered	Final designated	
Clams			
golden orb *(Quadrula aurea)*	Candidate		
Mammals			
Gulf Coast jaguarundi *(Herpailurus (=felis) yagouaroundi cacomitli)* Population Wherever found	Endangered		

United States Department of Interior
Fish and Wildlife Service

Project name: Three Rivers to Borglum & Tuleta to Borglum Transmission Line Projects

ocelot *(Leopardus (=felis) pardalis)* Population wherever found	Endangered		

United States Department of Interior
Fish and Wildlife Service

Project name: Three Rivers to Borglum & Tuleta to Borglum Transmission Line Projects

Critical habitats that lie within your project area

There are no critical habitats within your project area.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

June 23, 2016

Lisa Barko Meaux
Power Engineers
509 N Sam Houston Pkwy Ste., 200
Houston, Texas 77060
Via: lisa.barko@powereng.com

Re: TCEQ NEPA Request #2016-101, Project No. 142467/142468, City of Beeville, Live Oak and Bee Counties

Dear Ms. Meaux:

The Texas Commission on Environmental Quality (TCEQ) has reviewed the above-referenced project and offers the following comments:

A review of the project for general conformity impact in accordance with 40 CFR Part 93 indicates that the proposed action is located in Live Oak and Bee Counties, which is currently unclassified or in attainment of the National Ambient Air Quality Standards for all six criteria air pollutants. Therefore, general conformity rules do not apply.

We recommend the environmental assessment address actions that will be taken to prevent surface and groundwater contamination.

Any debris or waste disposal should be at an appropriately authorized disposal facility.

Thank you for the opportunity to review this project. If you have any questions, please contact the agency NEPA Coordinator, at (512) 239-3500 or NEPA@tceq.texas.gov.

Sincerely,

Mark Harmon

Mark Harmon
Division Director
Intergovernmental Relations

TEXAS GENERAL LAND OFFICE
GEORGE P. BUSH, COMMISSIONER

June 20, 2016

Lisa Barko Meaux
Power Engineers, Inc.
509 N Sam Houston Pkwy East, Suite 200
Houston, TX 77060-4131

Re: AEP Texas Central Company Three Rivers-Borglum-Tuleta Transmission Line Project
Live Oak and Bee Counties, Texas
POWER Engineers, Inc. Project No. 142467/142468

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 work 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 about 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

1700 North Congress Avenue, Austin, Texas 78701-1495
P.O. Box 12873, Austin, Texas 78711-2873
512-463-5001 glo.texas.gov

TEXAS HISTORICAL COMMISSION
real places telling real stories

June 27, 2016

Lisa Barko Meaux
Project Manager
Power Engineers, Inc.
509 N Sam Houston Pkwy, Suite 200
Houston, Texas 77060

Re: Project review under Section 106 of the National Historic Preservation Act of 1966 and the Antiquities Code of Texas
AEP Texas Central Company Three Rivers-Borglum-Tuleta Transmission Line Project, Live Oak and Bee Counties, Texas (PUC)

Dear Ms. Meaux:

Thank you for your correspondence describing the above referenced project. This letter serves as comment on the proposed federal undertaking from the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission. As the state agency responsible for administering the Antiquities Code of Texas, these comments also provide recommendations on compliance with state antiquities laws and regulations.

The review staff, led by Casey Hanson, has examined our records. According to our maps, the majority of the study area has not been surveyed for cultural resources although there are numerous previously recorded archaeological sites within the study area and the surrounding vicinity. As a result, we believe that the final proposed transmission line routes should be surveyed by a professional archeologist.

The work should meet the minimum archeological survey standards posted on-line at www.thc.state.tx.us. A report of investigations should be produced in conformance with the Secretary of the Interior's Guidelines for Archaeology and Historic Preservation, and submitted to this office for review. In addition, any buildings 45 years old or older that are located on or adjacent to the tract should be documented with photographs and a map with a key to the photographs included in the report. You may obtain lists of most professional archeologists in Texas on-line at: www.c-tx-arch.org or www.rpanet.org. Please note that other potentially qualified archeologists not included on these lists may be used.

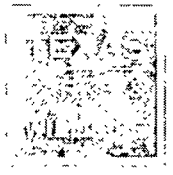
If this work will occur on land owned or controlled by an entity of the state, an Antiquities Permit must be obtained from our office before any investigations are undertaken. An Antiquities Permit can be issued as soon as we have a completed permit application.

Thank you for your cooperation in this federal 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 contact Casey Hanson at 512.463.5915 or Casey.Hanson@thc.state.tx.us.**

Sincerely,

for
Mark Wolfe, State Historic Preservation Officer

MW/cjh



Life's better outside.

July 29, 2016

Lisa Barko Meaux
Power Engineers, Incorporated
509 N Sam Houston Parkway East, Suite 200
Houston, TX 77060

RE: Proposed AEP TCC Three Rivers – Borglum – Tuleta transmission line, Live Oak and Bee Counties, Texas

Dear Ms. Meaux:

Texas Parks and Wildlife Department (TPWD) received the preliminary request regarding the project referenced above. On behalf of American Electric Power (AEP) Texas Central Company (TCC), Power Engineers, Inc. (POWER) is preparing an Environmental Assessment (EA) and Alternatives Routing Study to support AEP TCC's application to amend its existing Certificate of Convenience and Necessity (CCN) for the proposed project.

Project Description

AEP TCC is proposing to construct a new 138-kV transmission line from the existing Three Rivers Substation to a new AEP TCC Borglum Substation to be located approximately two miles south of Beeville, Texas. The proposed transmission line project also includes construction of a new double-circuit 69/138-kV transmission line from the new Borglum substation to the existing AEP TCC Tuleta Substation north of Tuleta, Texas. POWER is gathering and evaluating land use and environmental resources data for the study area.

TPWD staff reviewed the information provided and offer the following comments and recommendations.

Recommendation: When new construction is the only feasible option, TPWD recommends routing new transmission lines along existing road, pipeline, transmission line or other utility ROW or easements to reduce habitat fragmentation. By utilizing previously disturbed areas, existing utility corridors, county roads, and highway ROW, adverse impacts to fish and wildlife resources would be mitigated by avoiding and/or minimizing impacts to undisturbed habitats. Please see the *TPWD Recommendations for Electrical Transmission/Distribution Line Design and Construction*, available at:
http://tpwd.texas.gov/huntwild/wild/wildlife_diversity/habitat_assessment/media/tpwd_electrical_transmission.pdf.

4200 SMITH SCHOOL ROAD
AUSTIN, TEXAS 78744-3291
512.389.4800
www.tpwd.texas.gov

Federal Regulations

Clean Water Act

Section 404 of the Clean Water Act (CWA) establishes a federal program to regulate the discharge of dredged and fill material into waters of the U.S., including wetlands. The U.S. Army Corps of Engineers (USACE) and the Environmental Protection Agency (EPA) are responsible for making jurisdictional determinations and regulating wetlands and other waters under Section 404 of the CWA.

TPWD identified several aquatic resources in the project study area. These include:

- Nueces River
- Tributaries of the Nueces River
- Tributaries of the Aransas River
- Medio Creek
- Tributaries of Medio Creek

as well as named and unnamed ponds, lakes, potential wetlands and other features, both natural and manmade.

Recommendation: TPWD recommends developing a route for the proposed transmission line that avoids or minimizes the number of water body crossings. Many of the creeks and rivers in the study area have well developed riparian corridors that provide important nesting, loafing, and feeding areas for waterfowl, wading birds, raptors, and migrating songbirds. Similarly, adjacent wetlands and marsh habitat in the study area may hold water and provide important loafing and feeding areas for waterfowl, shorebirds, wading birds, and migrating birds.

All waterways and associated floodplains, riparian corridors and wetlands, regardless of their jurisdictional status, provide valuable wildlife habitat and should be preserved to the maximum extent possible. Natural buffers contiguous to any wetland or aquatic system should remain undisturbed to preserve wildlife cover, food sources, and travel corridors. Transmission line support structures should be located as far from waterbodies as possible to preserve riparian and/or marsh vegetation. Necessary waterway crossings should be made perpendicular to channels, where applicable, to minimize disturbance of riparian habitat.

Best management practices (BMPs) for erosion control and sediment runoff should be installed prior to construction and maintained until disturbed areas are permanently revegetated using site-specific native vegetation, if applicable. BMPs should be properly installed in order to effectively minimize the amount of sediment and other debris entering the waterways.

During construction, trucks and other heavy equipment should access project sites in a way that would avoid and/or minimize impacts to aquatic resources including wetlands. Equipment staging areas should be located in previously disturbed areas away from aquatic sites.

If the proposed project would impact waterways or associated wetlands, TPWD recommends consulting with the USACE for potential impacts to waters of the U.S. including jurisdictional determinations, delineations, and mitigation

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implicitly prohibits intentional and unintentional take of migratory birds, including their nests and eggs, except as permitted by the U.S. Fish and Wildlife Service (USFWS). This protection applies to most native bird species, including ground nesting species. Although not documented in the Texas Natural Diversity Database (TXNDD), many bird species which are not listed as *threatened* or *endangered* are protected by the MBTA and are known to be year-round or seasonal residents or seasonal migrants through the proposed project area. Additional information regarding the MBTA is available from the USFWS-Southwest Regional Office (Region 2) at (505) 248-7882.

Review of aerial photography and the Ecological Mapping Systems of Texas (EMST), indicate that the study area is located at the convergence of three ecoregions: South Texas Plains, Western Gulf Coastal Plains, and East Central Texas Plains. The area consists of a mosaic of habitats dominated by mixed shrubland, oak woodland, coastal prairie, riparian hardwood forests, and grasslands.

Biologically, this area of south Texas is highly productive and provides a range of habitats including large tracts of undeveloped land, grasslands, remnant coastal prairie, woodlands, riparian areas, wetlands, and thornscrub. The majority of the study area consists of a diversity of habitats suitable to support a diversity of wildlife species. In particular, the range of habitats provides areas of cover, feeding, nesting and loafing areas for many species of birds including grassland

birds, Neo-tropical migrants, raptors and waterfowl. Additionally, the project area is in the middle of the Central Migratory Flyway through which millions of birds pass during spring and fall migration.

Recommendation: TPWD recommends identifying existing utility corridors or other previously disturbed areas (e.g., existing roads) to parallel the proposed transmission line. The location of the transmission line should avoid bisecting bird roosting and feeding areas that are identified during pre-construction avian surveys. Also, impacts to vegetation associated with aquatic habitats should be avoided.

TPWD recommends scheduling any vegetation clearing or trampling outside of the March 15 - September 15 migratory bird nesting season in order to fully comply with the MBTA. Contractors should be made aware of the potential of encountering migratory birds (either nesting or wintering) in the proposed project site and be instructed to avoid negatively impacting them.

Regardless of the preferred transmission line route, due to the potential bird diversity in the area, the number of migrating and wintering raptors, the number of resident and migrant birds that occur in the area, the number of other listed bird species that winter or nest in the general area, and the existing and potential bird strike hazards in the study area (e.g., proposed wind energy development southwest of Beeville), TPWD strongly recommends that transmission lines, particularly those spanning waterbodies, should be marked with line markers or bird flight diverters to reduce the potential of birds flying into the lines. Line alterations to prevent bird electrocutions should not necessarily be implemented *after* such events occur as all electrocutions may not be known or documented. Incorporation of preventative measures along portions of the routes that are most attractive to birds (as indicated by frequent sightings) prior to any electrocutions is a much preferred alternative.

TPWD recommends the transmission line design should utilize avian safety features described in the revised:

Avian Power Line Interaction Committee (APLIC). 2012. *Reducing Avian Collisions with Power Lines: The State of the Art in 2012.* Edison Electric Institute and APLIC. Washington, D.C.

In particular, the overhead ground wire should be marked with line markers to increase its visibility. Additional recommendations are available in the previously mentioned document entitled, "*TPWD Recommendations for Electrical Transmission/Distribution Line Design and Construction.*"

Endangered Species Act

Federally-listed animal species and their habitat are protected from "take" on any property by the Endangered Species Act (ESA). Take of a federally-listed species can be allowed if it is "incidental" to an otherwise lawful activity and must be permitted in accordance with Section 7 or 10 of the ESA. Federally-listed plants are not protected from take except on lands under federal/state jurisdiction or for which a federal/state nexus (i.e., permits or funding) exists. Any take of a federally-listed species or its habitat without the required take permit (or allowance) from the USFWS is a violation of the ESA.

Whooping Crane

The proposed project is located within the Whooping Crane migration corridor. Structures more than 15 feet in height can be considered hazardous obstructions to Whooping Cranes within the migration corridor.

> **Recommendation:** TPWD recommends incorporating operational measures listed above under "Migratory Bird Treaty Act" to avoid and/or minimize potential impacts to Whooping Cranes. Additionally, due to the location of the project within the migration corridor, TPWD recommends coordinating with the local USFWS Ecological Services Field Station in Corpus Christi (361-994-9005) if you have not already done so.

State Regulations

Aquatic Resources

TPW Code § 1.011 grants TPWD the authority to regulate and conserve aquatic animal life in public waters. TPW Code § 12.301 of identifies liability for wildlife taken in violation of TPW Code or a regulation adopted under TPW Code.

It appears that any route developed within the study area would cross water to install transmission lines between the three substations.

> **Recommendation:** TPWD encourages the developer to consider and evaluate all possible alternatives of installation techniques in order to identify one method that would best minimize potential impacts to aquatic resources. During project planning and construction, TPWD recommends implementing measures to avoid impacts to aquatic organisms.

Under TPW Code § 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. The Permit to Introduce Fish, Shellfish or Aquatic Plants into Public Waters allows for movement (i.e., introduction, stocking, transplant, relocation) of aquatic species in waters of the state. Movement of aquatic species has potential natural resources risks (e.g., exotics, timing for survival success).

Recommendation: If dewatering aquatic sites in the project area is anticipated in order to complete the project (e.g., installing support structure foundations), TPWD recommends coordinating those activities with TPWD Kills and Spills Team (KAST) for the appropriate authorization. For more information on KAST and the appropriate point of contact, please visit **http://www.tpwd.state.tx.us/landwater/water/environconcerns/kills_and_spills/regions**.

Parks and Wildlife Code

State law prohibits the capture, trap, take or kill (incidental or otherwise) of state-listed species. Laws and regulations pertaining to state-listed endangered or threatened animals are contained in Chapters 67 and 68 of the Texas Parks and Wildlife (TPW) Code; laws pertaining to endangered or threatened plants are contained in Chapter 88 of the TPW Code. There are penalties, which may include fines and/or jail time in addition to payment of restitution values, associated with take of state-listed species. Please see "Laws and Regulations Applicable to TPWD Review" at: **http://www.tpwd.state.tx.us/huntwild/wild/wildlife_diversity/habitat_assessment/laws.phtml**.

For purposes of relocation, surveys, monitoring, and research, terrestrial state-listed species may only be handled by persons permitted through the TPWD Wildlife Permits Program. For more information regarding Wildlife Permits, please visit TPWD's Wildlife Permits website at: **http://www.tpwd.state.tx.us/business/permits/land/wildlife/** or call the Wildlife Permits Office at (512) 389-4647. For the above-listed activities that involve aquatic species please contact the TPWD KAST for the appropriate authorization. As previously stated, for more information on KAST please visit **http://www.tpwd.state.tx.us/landwater/water/environconcerns/kills_and_spills/regions**.

State-listed Species

The potential occurrence of state-listed species in the project area is primarily dependent upon the availability of suitable habitat. Direct impacts to high quality or suitable habitat therefore are directly proportional to the magnitude and potential to directly impact state-listed species. State-listed reptiles that are typically slow moving or unable to move due to cool temperatures are especially susceptible to being directly impacted during ROW clearing and construction of the transmission line.

Recommendation: Environmental documents prepared for the project should include an inventory of existing natural resources within the alternative transmission line routes; specific evaluations should be designed to predict project impacts upon these natural resources including potential impacts to state-listed species.

The following state-listed species have the potential to occur within the study area if suitable habitat is available:

Black-spotted newt (*Notophthalmus meridionalis*)
Sheep frog (*Hypopachus variolosus*)
Golden orb (*Qudrula aurea*)
White-faced ibis (*Plegadis chihi*)
White tailed hawk (*Buteo albicaudatus*)
Wood stork (*Mycteria americana*)
Reticulate collared lizard (*Crotaphytus reticulatus*)
Texas horned lizard (*Phrynosoma cornutum*)
Texas indigo snake (*Drymarchon melanurus erebennus*)
Texas tortoise (*Gopherus berlandieri*)

Black-spotted newt

The black-spotted newt occurs in wet areas including ditches, arroyos, resacas or shallow depressions. Due to the availability of the preferred habitat of the black-spotted newt in the area, this species could occur in the project area.

Recommendation: In addition to complying with the aquatic resources regulations referenced above, TPWD recommends utilizing properly installed and maintained erosion control/sedimentation best management practices (BMPs) near aquatic areas during construction to avoid potential impacts to water quality. Additionally, TPWD recommends locating equipment and

material staging areas away from aquatic sites in order to avoid potential hazardous spills or leaks (e.g., oil, fuel) from affecting aquatic resources.

Sheep frog

In the United States, the sheep frog is a tropical frog species that found only in south Texas. The sheep frog may occur in tropical thorn scrub, woodlands, and pastures with short grass. It is nocturnal but will seek shelter in burrows or under dead vegetation during the day. This species breeds explosively following rainfall events throughout the year. Water bodies, including streams and rivers and associated wetlands in the project area may provide suitable habitat for this species.

Recommendation: Contractors should be made aware of the potential to encounter state-listed amphibians in the project area and instructed to avoid negatively impacting them if encountered. TPWD recommends developing routes that minimize the number of potential crossings of freshwater bodies. At water crossings, TPWD recommends minimizing impacts to vegetation along canals and ditches, installing erosion control BMPs, and locating staging areas and fuels or other hazardous chemicals away from water bodies to avoid potential spills or leaks into adjacent aquatic areas.

Golden orb

The golden orb is a small, round-shaped freshwater mussel that has declined significantly in the Nueces-Frio watersheds. There is evidence of its occurrence upstream of Choke Canyon and east of the project area in the San Antonio River basin. Habitat destruction and impoundment modifications are the greatest threats to the golden orb followed by decreased water quality, sedimentation, dewatering, and sand/gravel mining.

Recommendation: TPWD recommends ensuring that precipitation runoff, which could potentially carry sediments and pollutants, is intercepted and treated before reaching any water bodies by installing storm water BMPs. TPWD recommends installing erosion and sediment control BMPs that would aide in construction stabilization. Erosion and sediment control measures include temporary or permanent seeding (with native plants), mulching, earth dikes, silt fences, sediment traps, and sediment basins. Examples of post-construction BMPs include vegetation systems (biofilters) such as grass filter strips and vegetated swales as well as retention basins capable of treating any additional runoff.

White-faced ibis, White-tailed hawk, Wood stork

The project areas contains suitable foraging and nesting habitat for these three state-listed birds.

> **Recommendation:** Incorporating the recommendations provided under the "Migratory Bird Treaty Act" section of this letter would help avoid and/or minimize potential impacts to white-tailed hawks and gray hawks.

Reticulate collared lizard

The reticulate collared lizard is a large lizard that can occur in areas void of vegetation (i.e., bare rock, gravel) and in typical shrubland/chaparral habitat. They are often seen basking on dirt piles along unimproved roads throughout south Texas.

> **Recommendation:** When approached, reticulate collared lizards will typically flee to the base of a shrub and remain motionless. Contractors should be made aware of the potential to encounter reticulate collared lizards in the project area. If encountered, contractors should allow the lizards to escape; contractors should also be instructed to avoid negatively impacting any lizards encountered.

Texas horned lizard

Suitable habitat for the Texas horned lizard may be present in the project area. The Texas horned lizard can be found in open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees. Based on aerial photographs, online resources and visits to the project area, it appears that portions of the project area may provide suitable habitat for the state-listed Texas horned lizard.

If present in the project area, the Texas horned lizard could be impacted by ground disturbing activities, including ROW clearing. A useful indication that the Texas horned lizard may occupy the area is the presence of Harvester ant (*Pogonomyrmex* sp.) nests as they are the primary food source of horned lizards. Texas horned lizards may hibernate on-site in loose soils a few inches below ground during the cooler months from September/October to March /April. Construction in these areas could harm hibernating lizards. Horned lizards are active above ground when temperatures exceed 75 degrees Fahrenheit. If horned lizards (nesting, gravid females, newborn young, lethargic from cool temperatures

or hibernation) cannot move away from noise and approaching construction equipment, they could be negatively affected by construction activities.

Recommendation: TPWD recommends that a pre-construction survey be conducted to determine if horned lizards are present within the preferred transmission line corridor. As stated above, a useful indicator of potential occupancy is the presence of Harvester ants. Surveys should be conducted during warmer months of the year when horned lizards are active. Fact sheets, including survey protocols and photos of Texas horned lizards, can be found on-line at: **https://tpwd.texas.gov/huntwild/wild/wildlife_diversity/texas_nature_trackers/horned_lizard/facts/**

TPWD recommends avoiding disturbance of the Texas horned lizard and colonies of the Harvester ant during clearing and construction. If horned lizards are found on site, TPWD recommends contacting this office to discuss relocation options, particularly if there is likelihood that they would be harmed by project activities. To minimize impacts to Texas horned lizards, TPWD recommends the use of the best management practices (BMPs) described in the *Texas Horned Lizard Watch – Management and Monitoring Packet* which can be found online at **https://tpwd.texas.gov/publications/pwdpubs/media/pwd_bk_w7000_0038.pdf**.

Texas indigo snake

The Texas indigo snake is the largest nonvenomous snake in North America and is typically associated with aquatic habitats. Due to its high metabolism, it has a large home range in which it searches for prey and may be encountered away from aquatic habitats.

Recommendation: Because all snakes are generally perceived as a threat and killed when encountered during vegetation clearing, TPWD recommends project plans include comments to inform contractors of the potential for state-listed snake species to occur in the project area. The state-listed species described here is non-venomous and contractors should be advised to avoid impacts to this species and other snakes as long as the safety of the workers is not compromised. For the safety of workers and preservation of a natural resource, attempting to catch, relocate and/or kill non-venomous or venomous snakes is discouraged by TPWD. If encountered, snakes should be permitted to safely leave project areas on their own. TPWD encourages construction sites to have a "no kill" policy in regard to wildlife encounters.

Texas tortoise

The Texas tortoise has a home range of approximately five to ten acres. Due to their small home range, they may occur in the small patches of suitable habitat, such as lomas, interspersed or adjacent to the project area. The project corridor is in close proximity to sites that have been used for Texas tortoise research for a several decades.

Recommendation: TPWD recommends that contractors working in the ROW be made aware of the potential for the state-listed Texas tortoise to occur in the area. If a tortoise is located at the project area, it should be relocated as far from the proposed activity as possible, but within its 5 to 10 acre range. After tortoises are removed from the immediate project area, TPWD recommends constructing an exclusion fence with metal flashing or drift fence material; regular silt fence material may be used. The exclusion fence should be buried at least six-inches deep and be 24-inches high. In addition to tortoises, exclusion fences are effective in preventing other reptile species from entering a construction area. Additional information regarding Texas tortoise best management practices is available on the TPWD website at:
http://www.tpwd.state.tx.us/huntwild/wild/wildlife_diversity/habitat_assessment/tools.phtml.

Species of Concern

In addition to state- and federally-protected species, TPWD tracks special features, natural communities, species of concern (SOC), and species of greatest conservation need (SGCN) in the TXNDD and actively promotes their conservation. TPWD considers it important to evaluate and, if necessary, minimize impacts to rare species and their habitat to reduce the likelihood of endangerment.

Based on a review of TXNDD information, aerial photographs and site visits to the area, the following SOCs have potential to occur within the study area if suitable habitat is available:

Audubon's oriole (*Icterus graduacauda audubonii*)
Henslow's sparrow (*Ammodramus henslowii*)
Mountain plover (*Charadrius montanus*)
Sprague's pipit (*Anthus spragueii*)
Western burrowing owl (*Athene cunicularia hypugaea*)
Plain's spotted skunk (*Spilogale putoris interrupta*)

Spot-tailed earless lizard (*Holbrookia lacerata*)

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. Absence of information in an area 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 presences, 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**. They represent species that could potentially be in your project area. This information cannot be substituted for on-the-ground surveys. The TXNDD date is updated continuously based on new, updated and undigitized records; therefore, TPWD recommends requesting the most recent TXNDD data on a regular basis. For questions regarding a record or to request the most recent data, please contact: **TexasNatural.DiveristyDatabase@tpwd.texas.gov**.

Please be aware that determining the actual presence of a species in a given area depends on many variables including daily and seasonal activity cycles, environmental activity cues, preferred habitat, transiency and population density (both wildlife and human). The absence of a species can be demonstrated only with great difficulty and then only with repeated negative observations, taking into account all the variable factors contributing to the lack of detectable presence.

Spot-tailed earless lizard

Suitable habitat for the spot-tailed earless lizard includes moderately open prairie-brushland and fairly flat areas free of vegetation and other obstructions.

In January 2010, the spot-tailed earless lizard was petitioned for listing under the Endangered Species Act (ESA). On May 24, 2011, the USFWS issued a 90-day finding on that petition. Based on their review, the USFWS found the petition presents substantial scientific or commercial information indicating that listing the spot-tailed earless lizard may be warranted. The USFWS has therefore initiated a status review to determine if listing is in fact warranted. Based on this status review, the USFWS will issue a 12-month finding on the petition.

Recommendation: TPWD recommends that AEP TCC and/or POWER monitor the listing status of the spot-tailed earless lizard throughout the project planning, construction, and operation that occurs in the lease area and

perform consultation, permitting, and mitigation with the USFWS if the species becomes listed under the ESA. Contractors should be instructed to avoid impacting any individuals of this species if found on site within the easement.

Numerous plant species designated "SOC" are included on Annotated County List of Rare Species for Bee and Live Oak Counties. Although SOCs do not have regulatory protection, TPWD actively promotes their conservation and considers it important to avoid or minimize impacts to these species in order to reduce the likelihood of further loss and the potential listing of these species.

Recommendation: Please review the TPWD county list for Bee County and Live Oak County as rare species, including plant species, in addition to those discussed above could be present, depending on the availability of suitable habitat. TPWD recommends that surveys for the presence of SOC plant species should be conducted along the alternative routes that are developed or selected for the project. Plant surveys should be conducted by qualified botanists familiar with the rare plant species of Texas.

Vegetation

Based on data from TPWD's high resolution land classification map, the EMST, the project area consists of the following vegetation types:

- Central Texas: Floodplain Deciduous Shrubland
- Central Texas: Floodplain Evergreen Shrubland
- Central Texas: Floodplain Hardwood Forest-Evergreen Forest
- Central Texas: Floodplain Hardwood Forest
- Central Texas: Floodplain Herbaceous Vegetation
- Central Texas: Floodplain Live Oak Forest
- Central Texas: Riparian Deciduous Shrubland
- Central Texas: Riparian Hardwood Forest
- Central Texas: Riparian Herbaceous Vegetation
- Coastal Bend: Floodplain Love oak Forest
- Gulf Coast: Coastal Prairie
- Native Invasive: Deciduous Woodland
- Native Invasive: Huisache Woodland or Shrubland
- Post Oak Savanna: Post Oak-Live Oak Motte and Woodland
- Row Crops
- South Texas: Clayey Blackbrush Mixed Shrubland
- South Texas: Clayey Live Oak Motte and Woodland

- South Texas: Clayey Mesquite Mixed Shrubland
- South Texas: Disturbance Grassland
- South Texas: Sandy Live Oak Motte and Woodland
- South Texas: Sandy Mesquite Dense Shrubland
- South Texas: Sandy Mesquite Savanna Grassland
- South Texas: Sandy Mesquite Woodland and Shrubland
- South Texas: Shallow Shrubland
- South Texas: Shallow Sparse Shrubland
- South Texas: Floodplain Deciduous Shrubland
- South Texas: Floodplain Grassland
- South Texas: Floodplain Hardwood Forest and Woodland
- Invasive: Evergreen Shrubland
- Urban High Intensity
- Urban Low Intensity

Additional information about the EMST, including a link to download shapefiles, can be found at **http://tpwd.texas.gov/gis/data/downloads#EMS-T**

Habitat fragmentation is defined as the separation of a block of habitat for a species into segments, such that the genetic or demographic viability of the populations surviving in the remaining habitat segments is reduced. In many cases, site clearing, access roads, and transmission line ROW remove habitat and displace some species of wildlife, and may fragment continuous habitat into smaller, isolated tracts. Habitat fragmentation is of particular concern for species that require large expanses of habitat for activities such as breeding and foraging.

Consequences of isolating local populations of some species include decreased reproductive success, reduced genetic diversity, and increased susceptibility to chance events (e.g., disease and natural disasters), which may lead to extirpation or local extinctions. In addition to displacement, development of cleared transmission line corridors may result in the additional loss of habitat for some species due to edge effects. Edge effects occur when there is a break-up of continuous stands of similar vegetation. This results in an interface (edge) between two or more types of vegetation. The extent of edge effects will vary by species and may result in adverse impacts from such effects as a greater susceptibility to colonization by invasive species, increased risk of predation, and competing species that favor landscapes with a mosaic of vegetation.

The proposed project area consists primarily of a mosaic of undeveloped land that represent tracts of high quality wildlife habitat. .

Recommendation: As indicted above, TPWD recommends locating the proposed transmission line as close to existing disturbed corridors as possible in order to minimize potential impacts to undisturbed areas. Aligning the new transmission line as close to existing transmission line or road corridors as possible and away from streams, creeks and rivers would minimize potential impacts to woody vegetation since many woody tracts and corridors are associated with water courses. If small, narrow tracts of woody vegetation must be crossed, TPWD recommends, if possible, locating support structures on either side of the woody patch and spanning it with the transmission line.

Tracts of grasslands, shrubland, woodland, and riparian corridors occurs throughout much of the project area. Locating the transmission line through grassland areas may minimize the necessity of clearing the entire ROW as they are naturally maintained in an herbaceous state. Ground disturbance in these areas could potentially be reduced to occur only at the locations of the transmission line support structures.

Unavoidable removal of vegetation should be mitigated by revegetating disturbed areas with site specific native plant species where feasible. The replacement of native plants will help control erosion, preserve and provide habitat for wildlife, and provide native species an opportunity to compete with undesirable, non-native, invasive plant species.

Lists of suitable plants and seed sources can be obtained by contacting the U.S. Department of Agriculture-Natural Resource Conservation Service (USDA-NRCS) Plant Materials Center in Kingsville, Texas (**http://plant-materials.nrcs.usda.gov/stpmc**) or 361-595-1313, or the Lady Bird Johnson Wildflower Center (**http://www.wildflower.org**). Information regarding the importance of native vegetation in revegetation or restoration activities, suitable seed mixes for South Texas, and seed availability are available from South Texas Natives (**http://ckwri.tamuk.edu/research-programs/south-texas-natives/**).

As previously stated, the proposed project area consists of a mixture of habitat types and vegetation communities. Current and past vegetation clearing can be a significant threat to native plant communities in the area as disturbed areas are often revegetated with invasive, introduced species.

Recommendation: When preparing any ROW or easements for construction of the transmission line, TPWD recommends removing vegetation with a flail mower instead of a bulldozer to preserve cover crops of grass and low growing brush. Cleared vegetation should be mulched and spread out over the

ROW or given to the landowner. With landowner consent, any native trees or shrubs removed from the ROW should be used to construct brush piles outside of the cleared ROW. Created brush piles can provide cover and nesting habitat for wildlife and replace habitat lost due to clearing trees in the ROW.

As stated above, for herbaceous revegetation efforts in the ROW, TPWD recommends the exclusive use of a mixture of native grasses and forbs. TPWD recommends that native grasses having the same desirable characteristics as introduced grasses commonly use in revegetation plans be incorporated into project planning and implemented following construction.

Lists of suitable plants and seed sources were listed above.

Conservation Easements

A conservation easement is a legal agreement between a landowner and a land trust or governmental agency that permanently limits uses of the land (including future fragmentation) to protect and conserve the land's natural values such as 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. Potential 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.

Recommendation: TPWD recommends properties protected by conservation easements be identified in the constraints analysis and should be avoided during development of alternative transmission line routes. Data sources for the location of these properties include, but are not limited to, online databases such as the Protected Areas Data Portal (**http://gapanalysis.usgs.gov/padus/**) and the National Conservation Easement Database (**http://conservationeasement.us**), as well as available county records. If properties protected by conservation easements would be affected, TPWD recommends the length of routes through these properties be included in any accounting of alternative route impacts presented in the EA.

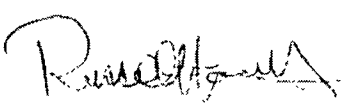
Mitigation Plan

TPWD recommends preparing a mitigation plan to provide compensatory mitigation for those habitats where impacts from the transmission line cannot be avoided or minimized. This would include impacts to species and habitats

covered under federal law (wetlands and associated habitats, threatened or endangered species) and state resource habitat types not covered by state or federal law (e.g., coastal prairie). At a minimum, TPWD recommends a replacement ratio of 1:1 for state resource habitat types. For more detailed suggestions or information regarding a mitigation plan, please contact this office.

TPWD advises review and implementation of these recommendations in the preparation of the environmental document for the project. Please contact me at (361) 825-3240 or **russell.hooten@tpwd.texas.gov** if you have any questions or we may be of further assistance.

Sincerely,



Russell Hooten
Wildlife Habitat Assessment Program
Wildlife Division

/rh 36718

cc: Karen Hubbard, Public Utilities Commission of Texas

From: Lisa Barko Meaux 5507
To: Denise Williams 5511
Subject: FW: AEP Live Oak and Bee Counties Projects
Date: Friday, July 22, 2016 12:11:03 PM
Attachments: 2016_06_13 Letter AEP Bee-Live Oak Cos.pdf

Lisa Barko Meaux
Project Manager
Environmental Department Manager
509 N. Sam Houston Parkway East, Suite 200
Houston, Texas 77060
281-765-5507 direct
713-962-8476 cell
lisa.barko@powereng.com

POWER Engineers, Inc.
Energy ▪ Facilities ▪ Communications ▪ Environmental
www.powereng.com

From: Mireya Loewe [mailto:Mireya.Loewe@twdb.texas.gov]
Sent: Friday, July 22, 2016 12:07 PM
To: Lisa Barko Meaux 5507
Subject: AEP Live Oak and Bee Counties Projects

Dear Ms. Barko Meaux:

This is in response to your letter dated June 13, 2016 (attached), inquiring about any projects in Live Oak or Bee Counties that the Texas Water Development Board (TWDB) is involved with that could be impacted by AEP Texas Central Company's proposed new transmission facilities projects. The TWDB has participated in only two projects in that area; both are new projects with the City of Beeville:

Project #/Name: **62684 / Morrill WTP Pretreatment Improvements** County: Bee

Project Status: Active Project Phase: PreConstruction

Need: Noncompliance due to an aging filtration system and periods of excessive raw water turbidity have resulted in the need to expand and upgrade the existing pretreatment and disinfection systems at the City's water treatment plant in order to improve system reliability and regain TCEQ compliance.

Description: In order to regain TCEQ compliance at the City's water treatment plant, the City will expand the plant's existing pretreatment and disinfection system.

Project #/Name: **51038 / Chase Field Project** County: Bee

Project Status: Active Project Phase: Commitment

Need: Currently, the City of Beeville's (City) sole source of raw water is Lake Corpus Christi. The City needs to diversify and augment its water supplies, particularly during times of drought. The City also wishes to improve resiliency and provide redundancy to its potable water system in the case of an emergency by implementing another source of drinking water.

Description: The City of Beeville is proposing to construct a well field at Chase Field, a former Naval air station, located southeast of the City. The well field is anticipated to produce an average of 1.3 million gallons per day. The project will also include a 500,000 gallon ground storage tank, booster pump station, electrical equipment, disinfection treatment facilities, and necessary piping within Chase Field. The water will be transported from Chase Field to the City's water distribution system using an existing pipeline, where it will blend with the potable water from the City's surface water treatment plant.

Funding for the first project was committed in March 2016, and is just starting the planning phase. Funding for the second project was just committed yesterday, July 21, 2016. Given the early stages of both projects, at this time we don't have any significant information regarding environmental and land use constraints or other issues. Please contact the City of Beeville for information regarding these projects. Mr. Jack Hamlett, City of Beeville City Manager, will be able to provide you with more up-to-date information as the two projects develop.

Please contact me at this email address or at 512-475-0590 if you have any additional questions.

Regards,

Mireya Loewe ("Me-ray-ah" "Low-eee")
Team Manager, South Region

Regional Financial Assistance Workshops

Opportunities for Helpful One-on-One Discussions

December 6, 2016 at 9:00 a.m.

McAllen City Hall Commission Chambers, 3rd Floor

Other times and locations scheduled:

http://www.twdb.texas.gov/home/tabs/doc/hot/Regional_financial_assistance_workshop.pdf

Regional Water Planning and Development
P.O. Box 13231
Austin, TX 78711-3231
(512) 475-0590

Texas Water
Development Board

Texas Department of Transportation

AVIATION DIVISION
125 E. 11TH STREET • AUSTIN, TEXAS 78701-2483 • 512/416-4500 • FAX 512/416-4510

Ms. Lisa Barko Meaux
Power Engineers, Inc.
509 N. Sam Houston Parkway East
Suite 200, Houston, Texas 77060

June 16, 2016

Dear Ms. Barko Meaux;

I received your letter dated June 13, 2016 concerning Power Engineers projects numbered 142467/142468.

Title 14, US Code, Part 77 of the Federal Aviation Administration's (FAA) Federal Aviation Regulations (FAR) requires notice to the FAA if the facility to be constructed fits either of the below listed conditions:

77.9 a. Any construction or alteration that is more than 200 ft. AGL (Above Ground Level) at its site.

77.9 b.(1) 100 to 1 for a horizontal distance of 20,000 ft. from the nearest point of the nearest runway of each airport described in paragraph (d) of this section with its longest runway more than 3,200 ft. in actual length, excluding heliports.

(2) 50 to 1 for a horizontal distance of 10,000 ft. from the nearest point of the nearest runway of each airport described in paragraph (d) of this section with its longest runway no more than 3,200 ft. in actual length, excluding heliports.

(3) 25 to 1 for a horizontal distance of 5,000 ft. from the nearest point of the nearest landing and takeoff area of each heliport described in paragraph (d) of this section

There are three public use airports in or near the study area, Beeville Municipal airport at Airport Reference Point (ARP) 28-21-51.20N / 097-47-31.00W with the single runway 4553 feet; Chase Field at ARP 28-21-44.80N / 097-39-42.90W with the longest runway 8000 feet; and George West Airport at ARP 28-21-46.10N / 098-06-59.30W with the single runway 3799 feet. There are no public use heliports in or near the study area.

If the criterion of FAR 77.9a or 77.9b(1) is met, the FAA must be notified electronically at http://oeaaa.faa.gov.

William B. Gunn
Compliance

Lisa Barko Meaux 5507

From: David Nicholson <dnicholson2@yahoo.com>
Sent: Friday, July 08, 2016 2:38 PM
To: Lisa Barko Meaux 5507
Subject: Re: AEP/ETT Three Rivers-Borglum-Tuleta input request

Hello, Lisa
I have talked with the County Commissioner over the section that your transmission will traverse and the only concern that she and myself could think of would be a new bridge that is planned on FM 1358 where it crosses Sulphur Creek. If you would look at any possible deviation that could be needed re: your transmission line in its crossing of FM 1358.

That is all of "concern" that we could think o ion the Live Oak County section of your project. If you have other questions please let me know.
Best wishes

David L. Nicholson

From: "lisa.barko@powereng.com" <lisa.barko@powereng.com>
To: "dnicholson2@yahoo.com" <dnicholson2@yahoo.com>
Sent: Wednesday, July 6, 2016 3:08 PM
Subject: AEP/ETT Three Rivers-Borglum-Tuleta input request

Mr. Nicholson,

Per our telephone conversation today I am sending you an email request to identify any ongoing or near-term development projects or construction within the study area boundary (see attached) within Live Oak County that we should consider in our routing process as described in the attached letter. Some examples of new development projects or construction may include new schools, new water towers, new construction projects for county or facilities or any zoning restrictions.

From the letter: "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."

Thank you for your input and attention to this request.

Thank you,
Lisa

Lisa Barko Meaux
Project Manager
Environmental Department Manager
509 N. Sam Houston Parkway East, Suite 200
Houston, Texas 77060

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

POWER Engineers, Inc.
Energy ▪ Facilities ▪ Communications ▪ Environmental
www.powereng.com

Live Oak County Farm Bureau
3460 Hwy 281
George West, TX 78022

July 1, 2016

Lisa Barko Meaux
Project Manager, Project No. 142467/142468
POWER Engineers, Inc.
509 N. Sam Houston Pkwy. East
Suite 200
Houston, Texas 77060

Re: AEP TCC Transmission Line Project - Live Oak and Bee Counties, TX
POWER Engineers, Inc. Project No. 142467/142468

Ms. Meaux,

The Live Oak County Farm Bureau does not require any permits.

I have talked to a couple of people in the outlined area about the proposed study area. The one suggestion that I received was to put the new line on or with the exiting power line that currently runs from the Three Rivers substation to the Beeville substation or to stay in the same right-of-way. This would remove less farm and ranch land from production and disruption of top soil which could result in erosion.

The county board of directors does not meet in July and I would like to get their feedback but many are currently in the fields harvesting. The board does not meet again until August 8. I will bring it up at that meeting even though it will be past your deadline for input.

If you have other questions or concerns, please feel free to contact me.

Sincerely,

Harriet Lamm
President
Live Oak County Farm Bureau
3460 Hwy 281
George West, Texas 78022

From: Lisa Barko Meaux 5507
To: Denise Williams 5511
Cc: David Morgan 2418
Subject: FW: June 13 letter
Date: Thursday, June 30, 2016 9:01:41 AM

Please see below regarding conservation easements.

Lisa Barko Meaux
Project Manager
Environmental Department Manager
509 N. Sam Houston Parkway East, Suite 200
Houston, Texas 77060
281-765-5507 direct
713-962-8476 cell
lisa.barko@powereng.com

POWER Engineers, Inc.
Energy ▪ Facilities ▪ Communications ▪ Environmental
www.powereng.com

From: lori@texaslandtrustcouncil.org [mailto:lori@texaslandtrustcouncil.org]
Sent: Wednesday, June 29, 2016 8:49 AM
To: Lisa Barko Meaux 5507
Subject: June 13 letter

Lisa,
According to our records, there is only one conservation easement in each of those two counties, Bee and Live Oak. You should contact the following organizations directly to make them aware of the project:
Bee: The Nature Conservancy of TX
Live Oak: Texas Land Conservancy

Best,
Lori

Lori Olson | Executive Director
Texas Land Trust Council
P.O. Box 2677 | Wimberley, TX 78676
512-994-TLTC (8582)
www.texaslandtrustcouncil.org

From:	David Morgan 2418
To:	Austin Streetman 8934
Cc:	Denise Williams 5511
Subject:	FW: TXNDD Request for Two Proposed New Transmission Line Projects
Date:	Thursday, June 16, 2016 4:50:30 PM
Attachments:	morgan_20160608.zip

FYI

From: Texas Natural Diversity Database [mailto:TexasNatural.DiversityDatabase@tpwd.texas.gov]
Sent: Thursday, June 16, 2016 4:46 PM
To: David Morgan 2418
Subject: RE: TXNDD Request for Two Proposed New Transmission Line Projects

Dear David,

The Texas Natural Diversity Database (TXNDD) staff provides the following information in response to your request for data. Please read this entire message for important information regarding your request, additional data sources, and project review.

Your information request area contains known ecologically significant stream segments. Use the links below to obtain these data.

Data

The TXNDD includes federal and state listed and tracked Threatened, Endangered, and Rare species. Please note that **areas where Element Occurrence (EO) data are absent should not be interpreted as an absence of Threatened, Endangered, and Rare species.** *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. 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 cannot substitute for an on-site evaluation by qualified biologists.*

Attached documents

The attached .zip file contains several documents that will guide you in appropriate use, restrictions, and interpretation of TXNDD data as well as a reporting form for submitting data to the TXNDD. The .zip file also includes additional supplemental documents. Below is a list of the files in the attached folder:

- **Shapefile** (*eo_[last name of requestor]_yyyymmdd.zip*) of the Threatened, Endangered and Rare species Element Occurrences made from information the TXNDD presently has available for the requested quad(s) (or within the requested county/by requested species when applicable).

- **EO Report** (*eoreport_[last name of requestor]_yyyymmdd.pdf*) of the EOs in the shapefile mentioned above. The **EO Report** includes more detailed information about each EO than

what is contained in the attribute table of the shapefile. Link the information in the shapefile to the information in the **EO Report** by *EO ID*. Note that if the number of records in your request area is large, this report may not be included; however, if, in this circumstance, you would like more detailed information about a particular EO, species, or smaller geographic area, you may request those data.

- **EO List** (*eolist_[last name of requestor]_yyyymmdd.pdf*) for those requests made by USGS 7.5 minute quadrangles. The **EO List** is a list of species for which we have records in the database in the USGS 7.5 minute quadrangles *surrounding* your request area The **EO List** is to inform you of federal and state listed and tracked Threatened, Endangered, and Rare species in the area. Note that the EO list is not included in county requests.

- **County List FAQ** (*County_lists_FAQ_20150415.pdf*) produced by the Wildlife Habitat Assessment Program provides information about the County List Application.

- **TXNDD Information** document (*txndd_information.docx*) that includes a background of the TXNDD, a description of past and current spatial methodology employed, and an explanation of correct interpretation of the data. Global and subnational (state) conservation ranks are also explained in this document as are the shapefile attributes and EO report sections.

- **TXNDD Reporting Form** (txndd_reporting_form.doc) for reporting observations of tracked elements to the Texas Natural Diversity Database. To submit data, fill out this form and send it to TexasNaturalDiversityDatabase@tpwd.texas.gov. Note that you can also submit data in the form of an Excel spreadsheet or written report.

Project Review, Rare Species County Lists, Project Planning, and BMPs

This email cannot substitute for an environmental review of your project by TPWD. For information on project review and to access the county lists of protected species and species of greatest conservation need with potential to occur in the county, please visit the Wildlife Habitat Assessment (WHAB) website at http://tpwd.texas.gov/huntwild/wild/wildlife_diversity/habitat_assessment/. The WHAB website includes several resources to consider while planning your project to minimize impacts to fish and wildlife resources, including information /guidelines on Wind Energy projects, Transmission Line projects, Communication Towers, and Karst Zones (Travis, Williamson, and Bexar Counties).

Ecologically Significant Stream Segments

If your information request area contains known ecologically significant stream segments, the data can be obtained at
http://tpwd.texas.gov/landwater/water/conservation/water_resources/water_quantity/sigsegs/index.phtml

Critical Habitat

If your information request area contains federally designated critical habitat, the data can be obtained at http://ecos.fws.gov/crithab/.

TPWD Managed Areas

We are no longer providing Managed Area shapefiles and associated Managed Area Reports. To obtain shapefiles for Wildlife Management Areas and State Park Boundaries, please visit the Texas Parks and Wildlife Department GIS Data Download page (https://tpwd.texas.gov/gis/data/).

Thank-you,

Laura Dugan, Ph.D.
Texas Parks & Wildlife Department
Texas Natural Diversity Database Manager
4200 Smith School Rd., Austin, TX 78744
O: (512) 389-8731
F: (512) 389-4599
laura.dugan@tpwd.texas.gov

*Support Wildlife Diversity: Order a conservation license plate! *

From: david.morgan@powereng.com [mailto:david.morgan@powereng.com]
Sent: Wednesday, June 08, 2016 7:35 PM
To: Texas Natural Diversity Database <TexasNatural.DiversityDatabase@tpwd.texas.gov>
Subject: TXNDD Request for Two Proposed New Transmission Line Projects

Texas Natural Diversity Database,
POWER Engineers Inc. is requesting a TXNDD review for the proposed new Three Rivers to Borglum and Tuleta to Borglum 138/69 kV transmission line projects behalf of American Electric Power Texas Central Company (AEP TCC). The proposed project study area is within **Live Oak and Bee Counties, TX** and is within or near the following USGS 7.5 minute quadrangles:

Comanche Hills
Ray Point
Mineral
Tuleta
Lazy F Ranch
Three Rivers
Oakville
Cadiz
Beeville East

Beeville West
Skidmore NE
George West
Mulos Hills
Clareville
Skidmore
Burkes Ridge

The TXNDD data review is relevant for the routing study and environmental assessment for the project. The review deliverable should include an ArcGIS file of element occurrences, Element Occurrence Record List and EOR Report. This information will assist us during the routing process and drafting the environmental assessments for the project.

Please provide all three of the following types of data for each of the USGS quadrangles listed for each project location:
ArcGIS shapefile,
Element Occurrence Record list, and
EOR report

Thank you!

David Morgan
Biologist

7600B N. Capital of Texas Hwy #320
Austin, TX 78731
Office: 512-735-1818
Cell: 214-912-7907

POWER Engineers, Inc.
Energy ▪ Facilities ▪ Communications ▪ Environmental
www.powereng.com

Appendix B

Open-House Information

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AEP TEXAS

An AEP Company

BOUNDLESS ENERGY

AEP Texas
400 W 15th Street, Suite 1520
Austin, TX 78701
aeptexas.com

May 10, 2017

Name
Title
Address
Street

Dear

AEP Texas invites you to attend an open-house format public meeting to learn about and provide input on an AEP Texas plan to construct a new 138-kV double-circuit transmission line in Live Oak and Bee Counties (Project).

You are receiving this notice because your property has been identified as being crossed by, or in close proximity to preliminary routing links that are being considered for the Project.

The Public Utility Commission of Texas (PUC) will ultimately select which combination of the routing links will be approved for construction of the Project.

AEP Texas invites you to attend either of the open-house public meetings – The same information will be available at each meeting. Numerous stations will be manned by AEP Texas representatives to provide information on the Project, the routing and regulatory process before the PUC, and the type of structures being considered. Large aerial-photography based maps that show the preliminary routing links will be available for review.

Monday May 22, 2017 **4:30 – 6:30 P.M.** **Three Rivers Elementary School Cafeteria** **351 S. School Road** **Three Rivers, Texas**	**Tuesday May 23, 2017** **4:30 – 6:30 P.M.** **Beeville Community Center** **400 N. Washington Street** **Beeville, Texas**

Come and go any time at your convenience – You are invited to arrive any time after 4:30 p.m. Usually, the time required for attendees to walk through the stations and provide input is approximately 30 minutes. The open-house format is used to encourage individual participation, to ensure that participants get questions answered, and provide their input. This informal public meeting process provides interaction that is more personal so each attendee has an opportunity to participate equally.

Project Description – The transmission Project is planned as two separate 138-kV double-circuit transmission line segments. The Three Rivers to Borglum Segment is a new transmission line that will begin at the newly expanded AEP Texas Three Rivers Substation located on State Highway 72 northeast of City of Three Rivers. The new transmission line will extend generally to the east to a new AEP Texas Borglum Substation to be constructed south of Beeville near U.S. Highway 181, which will include a new 138/69 kV autotransformer installed at this substation. The Borglum to Tuleta Segment is a new transmission line that will begin at the new AEP Texas Borglum Substation and will extend generally to the north to the existing AEP Texas Tuleta Substation near U.S. Highway 181 approximately 2 mile south of Pettus, Texas. The final location of the Project will depend on what route (or combinations of routing links) for each segment is approved by the PUC after a Certificate of Convenience and Necessity (CCN) application is filed with the PUC.

Project Need – The Electric Reliability Council of Texas (ERCOT) is responsible for identifying the necessary transmission system improvements to provide a reliable and adequate transmission network in most of Texas, including this area. ERCOT has determined that the load growth in Live Oak County and Bee County has created the need for transmission improvements in this area. In addition, overloading conditions on the existing transmission line system make it difficult to perform maintenance on the existing system without exposing consumers to the loss of load if another system facility is unexpectedly taken out of service. ERCOT has determined that a new 138-kV double-circuit capable transmission line is required to address transmission facility overloads caused by the increase in electrical load in the area.

Only one route for each transmission line segment will be approved by the PUC – Enclosed are maps showing the current preliminary routing links that are being considered in the development of alternative routes for the new transmission line. The factors that have gone into the selection of these preliminary links will be discussed at the open houses. Your participation will be helpful in refining these preliminary routing links, which might be modified based on input received at these open houses. Multiple combinations of these links will make up alternative routes for each segment of the Project that will be submitted to the PUC in an AEP Texas CCN application. Only one route for each transmission line segment will ultimately be approved by the PUC.

Questions and Answers – Also enclosed is an informational handout that should answer questions you may have about the Project. Personnel will be available at the open houses to answer other questions. If you would like to contact us regarding the upcoming open houses, please call me at (512) 481-4572, or Mel Eckhoff at (512) 391-2979.

Sincerely,

Randal E. Roper
Regulatory Case Manager
AEP Texas

Enclosures

Three Rivers to Borglum to Tuleta 138-kV

Transmission System Improvement Project Q&A

AEP TEXAS®

A unit of American Electric Power

Q. WHAT IS THE TRANSMISSION PROJECT?

A. The transmission Project is planned as two separate 138-kV double-circuit transmission line segments. The Three Rivers to Borglum Segment is a new transmission line that will begin at the newly expanded AEP Texas Three Rivers Substation located on State Highway 72 northeast of City of Three Rivers. The new transmission line will extend generally to the east to a new AEP Texas Borglum Substation to be constructed south of Beeville near U.S. Highway 181, which will include a new 138/69 kV autotransformer installed at this substation. The Borglum to Tuleta Segment is a new transmission line that will begin at the new AEP Texas Borglum Substation and will extend generally to the north to the existing AEP Texas Tuleta Substation near U.S. Highway 181 approximately 2 mile south of Pettus, Texas. The final location of the Project will depend on what route (or combinations of routing links) for each segment is approved by the PUC after a Certificate of Convenience and Necessity (CCN) application is filed with the PUC.

Q. WHY IS THE PROJECT NEEDED?

A. The Project is needed to support the load growth in the Live Oak County and Bee County area, and to improve system reliability. The Electric Reliability Council of Texas (ERCOT) is responsible for identifying the necessary transmission system improvements to provide a reliable and adequate transmission network in most of Texas, including this area. ERCOT has determined that the load growth in Live Oak County and Bee County has created the need for transmission improvements in this area. In addition, overloading conditions on the existing transmission line system make it difficult to perform maintenance on the existing system without exposing consumers to the loss of load if another system facility is unexpectedly taken out of service. ERCOT has determined that new 138-kV double-circuit capable transmission line segments are required to address transmission facility overloads caused by the increase in electrical load in the area.

Q. WHAT IS ERCOT?

A. In early 1996, the PUC issued revised rules to incorporate the Texas Legislature's changes to the Public Utility Regulatory Act (PURA) to create an Independent System Operator (ISO). Essentially an ISO is an independent, third-party entity that oversees the activities related to the reliable and safe transmission of electricity within a specified geographic area. However, as part of the electric retail choice implementation by the Texas Legislature, in the case of the ERCOT ISO, it also provides the platform for an open, competitive marketplace in the areas in Texas open to retail competition. Under PURA, the ERCOT ISO is required to perform four primary functions:

1. Ensure non-discriminatory access to the transmission and distribution systems for all electricity buyers and sellers.
2. Ensure the reliability and adequacy of the regional electric network.
3. Ensure that information related to customer retail choice is provided in a timely manner.
4. Ensure that electricity production and delivery are accurately accounted for among all regional generators and wholesale buyers and sellers.

Q. WHAT IS THE PUC?

A. The PUC is the state agency that was created by the Texas Legislature to provide statewide regulation of the rates and services of electric and telecommunications utilities.

Q. DOES THE PUC HAVE JURISDICTION OVER AEP TEXASexas?

A. Yes, AEP Texas activities are regulated by the PUC. AEP Texas must submit a CCN Application to the PUC to obtain approval to construct the transmission line segments. In that CCN Application, AEP Texas will present to the PUC numerous alternative routes for the PUC to consider for each segment. If the PUC agrees with AEP Texas that the transmission line is needed, the PUC will then make the final determination of the transmission route segments to be used for this Project. The PUC will only approve one route for each transmission line segment.

Q. WHAT IS THE PURPOSE OF THE PUBLIC OPEN HOUSE?

A. The open houses provide AEP Texas and its routing consultant the opportunity to obtain public input on the route links presented. This input will be considered in the future development of the alternative routes to be submitted to the PUC and considered in the evaluation process of the alternative routes. The open houses also provide an effective venue to inform the public on the project and the routing process. All public open houses are held in the evening and on days that are not intended to conflict with landowners' availability to attend. Meetings are "come and go" settings with different stations available to discuss different aspects of the proposed transmission line -- from the need for the transmission line to the routing evaluation process. Questionnaires are provided to solicit attendee responses that will also be considered as part of the routing development and evaluation process.

Q. WILL AN ENVIRONMENTAL ANALYSIS OF THE ROUTES BE PERFORMED?

A. Yes. AEP Texas is currently working with an experienced routing consultant to perform an environmental assessment and routing analysis for the proposed transmission line Project. The routing consultant employs professional personnel with backgrounds in various environmental sciences, socioeconomics, and cultural resources. The environmental assessment and routing analysis will be part of the CCN Application filed with the PUC.

Q. WHEN WILL AEP TEXAS FILE THE CCN APPLICATION AND START CONSTRUCTION OF THE TRANSMISSION LINE?

A. AEP Texas plans to file the CCN Application in the late Fall of 2017 and anticipates approval by the late Fall of 2018. After final design is completed and easements are obtained, AEP Texas anticipates that construction would begin in 2019.

Q. WHAT IS AN EASEMENT?

A. An easement is a legal document that gives a utility certain rights to use privately owned land for a specific purpose. The landowner retains ownership of the property. The proposed project will require easements to be obtained from landowners on the route approved by the PUC. Easement rights would be purchased along the path of the transmission line as needed to allow for installation, operation, and maintenance of the transmission line.

Q. HOW WIDE IS AN EASEMENT?

A. The typical easement for this project will be 100 feet wide. Additional easement area may be necessary in some locations for specialized structures.

Q. HOW ARE LANDOWNERS IMPACTED BY EASEMENTS?

A. Easements provide the utility the ability to clear right-of-way and construct electric facilities within the easement boundaries. Clearing includes the removal of trees and shrubs in the easement that would interfere with the safe operation and maintenance of the transmission line. Erosion control measures are implemented during the clearing and construction process. After AEP Texas has obtained a necessary easement from a landowner, the landowner will be contacted prior to clearing and construction activities. AEP Texas will undertake reasonable efforts to minimize disturbances to the landowner's use of the property and the impact to landowner's property in general during clearing and construction activities. After completing construction of the transmission line, the surface of the easement area will be restored as nearly as possible to its original contours and grades and will be re-vegetated as necessary using native species, while giving consideration to landowner preferences. The landowner may continue to use the easement property, as long as the activity does not interfere with the construction, operation and maintenance of the line and does not jeopardize the safe use of the easement area. PUC rules require that a new easement restrict the new construction of any above-ground structures within the right-of-way.

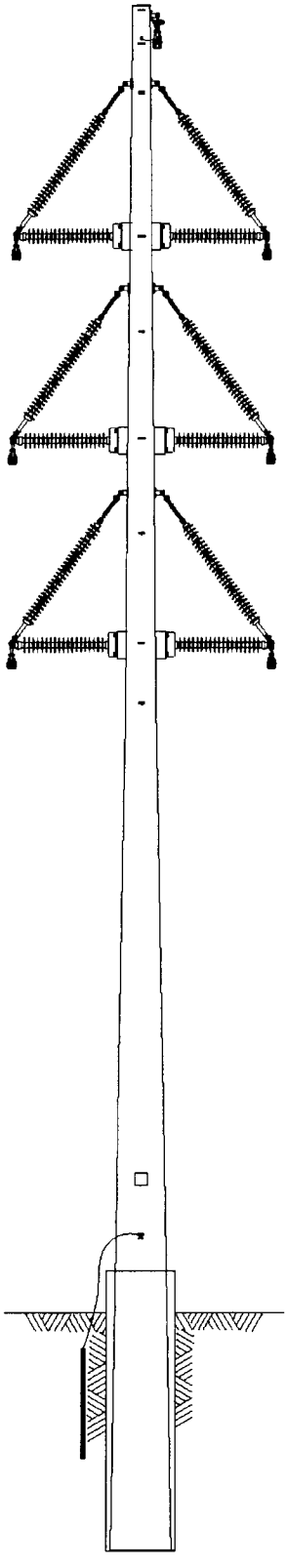
Q. WHAT TYPE OF STRUCTURES WILL BE USED TO CONSTRUCT THE LINE?

A. AEP Texas anticipates that the typical structure will be either a steel or concrete single-pole structure. The typical single-pole structure will be between 90 to 110 feet tall with a typical span distance between structures of 625 feet. A structure height must provide the minimum clearances to the ground, roadways, structures, and other utility structures to comply with the National Electrical Safety Code (NESC). These clearance requirements are for the safety of the general public. A drawing of a typical structure for this project is included on page four of this document.

Q. ARE THE STRUCTURES SECURE AND SAFE?

A. Yes. AEP Texas designs and constructs transmission lines with safety in mind. The materials that are used comply with the strength requirements of all applicable codes, including the NESC (as required by Texas statute) and the American Standard Testing Materials Specifications. The AEP Texas design and construction practices meet or exceed all of these codes and specifications. These codes and specifications were developed in part to protect the general public from electrical shock. Also, if a severe event occurs such as extreme wind conditions, and causes an overhead conductor to break and fall to the ground, AEP Texas has protective devices in place to de-energize the line to further protect the general public. It is important to remember that a conductor on the ground should always be considered dangerous. AEP Texas requests that if one is found, contact with it should be avoided and AEP Texas should be called immediately.

AEP TEXAS
138-KV TRANSMISSION LINE
TYPICAL SINGLE-POLE STRUCTURE



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Open House Questionnaire
Three Rivers to Borglum to Tuleta
138-kV Transmission Line Project

Welcome and thank you for taking the time to attend this public open-house meeting for the proposed Three Rivers to Borglum to Tuleta 138-kV transmission line project. The purpose of this open house is to present information, receive your ideas and concerns, and answer your questions about the project. Before AEP Texas Inc. and their routing consultant make any recommendations concerning which potential routes will be filed for consideration by the Public Utility Commission of Texas, we want to hear your opinion on several issues.

After you have visited the various display stations around the room and talked with the project representatives, please fill out this questionnaire and place it in the box marked questionnaires at the door before you leave. Your responses will help AEP Texas, and their routing consultant understand the community's concerns and better aid the project team as it incorporates the community's input in the route development and evaluation process.

Again, thank you for your time and interest.

1. Did you attend an open house meeting?

   ☐ **Yes** ☐ **No**

2. If yes, which open house did you attend?

   ☐ **Three Rivers** ☐ **Beeville**

3. In your opinion, has the purpose for the project been adequately explained?

   ☐ **Yes** ☐ **No**

4. How could we have improved on this effort? Was there something that you did not understand?

5. Do you believe the public open-house format and the information that was provided were helpful for your understanding of the project?

Open-house Format was Helpful	☐ **Yes**	☐ **No**
Information Provided was Helpful	☐ **Yes**	☐ **No**

6. As explained at one of the stations of the open house, the routing of a transmission line involves many considerations. Please circle the number corresponding to the level of importance that each specific factor in the routing of the transmission line is to you.

	FACTORS	**RATINGS**				
		Not Important	----------	Somewhat Important	----------	Very Important
a)	Maximize distance from residences	1	2	3	4	5
b)	Maximize distance from businesses	1	2	3	4	5
c)	Maximize distance from public facilities (e.g., parks & schools)	1	2	3	4	5
d)	Maximize length along existing transmission lines	1	2	3	4	5
e)	Maximize length along highways or other roads	1	2	3	4	5
f)	Maximize length along property boundary lines	1	2	3	4	5
g)	Maximize length through undeveloped land	1	2	3	4	5
h)	Minimize total length of line (reduces cost of line)	1	2	3	4	5
i)	Minimize visibility of the line	1	2	3	4	5
j)	Minimize loss of trees	1	2	3	4	5
k)	Minimize length across cropland	1	2	3	4	5
l)	Minimize length through grassland or pasture	1	2	3	4	5
m)	Minimize impacts on streams and rivers	1	2	3	4	5
n)	Minimize length through wetlands/floodplains	1	2	3	4	5
o)	Minimize impacts to archaeological and historic sites	1	2	3	4	5

7. If you wish to comment on the factors listed in the previous question, or add any factors that you think should be considered, please use the space below.

8. If there are any other features in the study area that you feel are important, please describe the locations.

9. If you have a concern with a particular transmission line link shown on the displays and the attached map, please identify the link and describe your concern.

Link	Concern

16. Which of the following applies to your situation?

☐ Potential link is near my home. Please specify which link(s)_____

☐ Potential link is near my business. Please specify which link(s)_____

☐ Potential link crosses my land. Please specify which link(s)_____

☐ Other (please specify).

_____

_____

_____

_____

Please provide any additional comments below, if necessary.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

THANK YOU FOR YOUR COMMENTS!

Name _____

Address _____

City _____ Zip Code _____

Phone (optional) _____

Email Address (optional) _____

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Estimated Lengths of Alternative Routes (Miles)

TRB ROUTES	TRB ROW	TRB CIRCUIT
TRB-1	34.05	34.05
TRB-2	34.74	34.74
TRB-3	34.37	34.37
TRB-4	33.28	33.28
TRB-5	32.55	32.55
TRB-6	34.52	34.52
TRB-7	29.41	29.41
TRB-8	28.32	28.32
TRB-9	33.95	33.95
TRB-10	35.64	35.64
TRB-11	34.30	34.30
TRB-12	39.38	39.38
TRB-13	34.20	34.20
TRB-14	40.69	40.69
TRB-15	46.70	46.70
TRB-16	38.44	38.44
TRB-17	33.16	33.16
TRB-18	28.96	28.96
TRB-19	28.95	28.95
TRB-20	29.86	29.86
TRB-21	30.75	30.75

BT ROUTES	BT ROW	BT CIRCUIT
BT-1	21.66	43.32
BT-2	37.52	75.04
BT-3	23.81	47.62
BT-4	28.80	57.60
BT-5	22.87	45.74
BT-6	23.43	46.86
BT-7	27.84	55.68
BT-8	24.99	49.98
BT-9	25.95	51.90
BT-10	25.39	50.78
BT-11	37.05	74.10

Estimated Costs of Alternative Routes

ROUTES	ESTIMATED COST
TRB-1	$ 44,337,000
TRB-2	$ 45,266,000
TRB-3	$ 43,538,000
TRB-4	$ 42,290,000
TRB-5	$ 41,985,000
TRB-6	$ 42,845,000
TRB-7	$ 36,808,000
TRB-8	$ 34,311,000
TRB-9	$ 42,366,000
TRB-10	$ 44,291,000
TRB-11	$ 43,776,000
TRB-12	$ 48,684,000
TRB-13	$ 44,189,000
TRB-14	$ 51,083,000
TRB-15	$ 56,190,000
TRB-16	$ 46,938,000
TRB-17	$ 40,144,000
TRB-18	$ 36,334,000
TRB-19	$ 36,533,000
TRB-20	$ 37,601,000
TRB-21	$ 37,788,000

ROUTES	ESTIMATED COST
BT-1	$ 39,539,000
BT-2	$ 63,635,000
BT-3	$ 41,870,000
BT-4	$ 50,563,000
BT-5	$ 40,262,000
BT-6	$ 41,612,000
BT-7	$ 49,122,000
BT-8	$ 46,866,000
BT-9	$ 45,198,000
BT-10	$ 44,664,000
BT-11	$ 61,172,000

Route TRB-1 Transmission Facilities	TOTAL
Right-of-way and Land Acquisition	$ 8,023,000
Engineering and Design (Utility)	$ 903,000
Engineering and Design (Contract)	$ 2,620,000
Procurement of Material and Equipment	$ 9,997,000
Construction of Facilities (Utility)	$ 10,000
Construction of Facilities (Contract)	$ 22,784,000
Other	$ -
Estimated Total Cost	**$ 44,337,000**

Route TRB-2 Transmission Facilities	TOTAL
Right-of-way and Land Acquisition	$ 8,141,000
Engineering and Design (Utility)	$ 910,000
Engineering and Design (Contract)	$ 2,626,000
Procurement of Material and Equipment	$ 10,015,000
Construction of Facilities (Utility)	$ 10,000
Construction of Facilities (Contract)	$ 23,564,000
Other	$ -
Estimated Total Cost	**$ 45,266,000**

Route TRB-3 Transmission Facilities	TOTAL
Right-of-way and Land Acquisition	$ 8,078,000
Engineering and Design (Utility)	$ 885,000
Engineering and Design (Contract)	$ 2,583,000
Procurement of Material and Equipment	$ 9,662,000
Construction of Facilities (Utility)	$ 10,000
Construction of Facilities (Contract)	$ 22,320,000
Other	$ -
Estimated Total Cost	**$ 43,538,000**

Route TRB-4 Transmission Facilities	TOTAL
Right-of-way and Land Acquisition	$ 7,892,000
Engineering and Design (Utility)	$ 854,000
Engineering and Design (Contract)	$ 2,498,000
Procurement of Material and Equipment	$ 9,284,000
Construction of Facilities (Utility)	$ 10,000
Construction of Facilities (Contract)	$ 21,752,000
Other	$ -
Estimated Total Cost	**$ 42,290,000**

Route TRB-5 Transmission Facilities	TOTAL
Right-of-way and Land Acquisition	$ 7,769,000
Engineering and Design (Utility)	$ 851,000
Engineering and Design (Contract)	$ 2,486,000
Procurement of Material and Equipment	$ 9,401,000
Construction of Facilities (Utility)	$ 10,000
Construction of Facilities (Contract)	$ 21,468,000
Other	$ -
Estimated Total Cost	**$ 41,985,000**

Route TRB-6 Transmission Facilities	TOTAL
Right-of-way and Land Acquisition	$ 8,104,000
Engineering and Design (Utility)	$ 878,000
Engineering and Design (Contract)	$ 2,573,000
Procurement of Material and Equipment	$ 9,544,000
Construction of Facilities (Utility)	$ 10,000
Construction of Facilities (Contract)	$ 21,736,000
Other	$ -
Estimated Total Cost	**$ 42,845,000**

Route TRB-7 Transmission Facilities	TOTAL
Right-of-way and Land Acquisition	$ 7,235,000
Engineering and Design (Utility)	$ 746,000
Engineering and Design (Contract)	$ 2,255,000
Procurement of Material and Equipment	$ 8,003,000
Construction of Facilities (Utility)	$ 10,000
Construction of Facilities (Contract)	$ 18,559,000
Other	$ -
Estimated Total Cost	**$ 36,808,000**

Route TRB-8 Transmission Facilities	TOTAL
Right-of-way and Land Acquisition	$ 7,051,000
Engineering and Design (Utility)	$ 695,000
Engineering and Design (Contract)	$ 2,150,000
Procurement of Material and Equipment	$ 7,322,000
Construction of Facilities (Utility)	$ 10,000
Construction of Facilities (Contract)	$ 17,083,000
Other	$ -
Estimated Total Cost	**$ 34,311,000**

Route TRB-9 Transmission Facilities	TOTAL
Right-of-way and Land Acquisition	$ 8,006,000
Engineering and Design (Utility)	$ 865,000
Engineering and Design (Contract)	$ 2,544,000
Procurement of Material and Equipment	$ 9,423,000
Construction of Facilities (Utility)	$ 10,000
Construction of Facilities (Contract)	$ 21,518,000
Other	$ -
Estimated Total Cost	**$ 42,366,000**

Route TRB-10 Transmission Facilities	TOTAL
Right-of-way and Land Acquisition	$ 8,294,000
Engineering and Design (Utility)	$ 911,000
Engineering and Design (Contract)	$ 2,658,000
Procurement of Material and Equipment	$ 9,994,000
Construction of Facilities (Utility)	$ 10,000
Construction of Facilities (Contract)	$ 22,424,000
Other	$ -
Estimated Total Cost	**$ 44,291,000**

Route TRB-11 Transmission Facilities	TOTAL
Right-of-way and Land Acquisition	$ 8,066,000
Engineering and Design (Utility)	$ 900,000
Engineering and Design (Contract)	$ 2,618,000
Procurement of Material and Equipment	$ 9,916,000
Construction of Facilities (Utility)	$ 10,000
Construction of Facilities (Contract)	$ 22,266,000
Other	$ -
Estimated Total Cost	**$ 43,776,000**

Route TRB-12 Transmission Facilities	TOTAL
Right-of-way and Land Acquisition	$ 8,927,000
Engineering and Design (Utility)	$ 1,017,000
Engineering and Design (Contract)	$ 2,908,000
Procurement of Material and Equipment	$ 11,244,000
Construction of Facilities (Utility)	$ 10,000
Construction of Facilities (Contract)	$ 24,578,000
Other	$ -
Estimated Total Cost	**$ 48,684,000**

Route TRB-13 Transmission Facilities	TOTAL
Right-of-way and Land Acquisition	$ 8,048,000
Engineering and Design (Utility)	$ 912,000
Engineering and Design (Contract)	$ 2,634,000
Procurement of Material and Equipment	$ 10,070,000
Construction of Facilities (Utility)	$ 10,000
Construction of Facilities (Contract)	$ 22,515,000
Other	$ -
Estimated Total Cost	**$ 44,189,000**

Route TRB-14 Transmission Facilities	TOTAL
Right-of-way and Land Acquisition	$ 9,150,000
Engineering and Design (Utility)	$ 1,072,000
Engineering and Design (Contract)	$ 3,047,000
Procurement of Material and Equipment	$ 12,045,000
Construction of Facilities (Utility)	$ 10,000
Construction of Facilities (Contract)	$ 25,759,000
Other	$ -
Estimated Total Cost	**$ 51,083,000**

Route TRB-15 Transmission Facilities	TOTAL
Right-of-way and Land Acquisition	$ 10,170,000
Engineering and Design (Utility)	$ 1,171,000
Engineering and Design (Contract)	$ 3,303,000
Procurement of Material and Equipment	$ 13,059,000
Construction of Facilities (Utility)	$ 10,000
Construction of Facilities (Contract)	$ 28,477,000
Other	$ -
Estimated Total Cost	**$ 56,190,000**

Route TRB-16 Transmission Facilities	TOTAL
Right-of-way and Land Acquisition	$ 8,769,000
Engineering and Design (Utility)	$ 970,000
Engineering and Design (Contract)	$ 2,810,000
Procurement of Material and Equipment	$ 10,690,000
Construction of Facilities (Utility)	$ 10,000
Construction of Facilities (Contract)	$ 23,689,000
Other	$ -
Estimated Total Cost	**$ 46,938,000**

Route TRB-17 Transmission Facilities	TOTAL
Right-of-way and Land Acquisition	$ 7,873,000
Engineering and Design (Utility)	$ 809,000
Engineering and Design (Contract)	$ 2,438,000
Procurement of Material and Equipment	$ 8,675,000
Construction of Facilities (Utility)	$ 10,000
Construction of Facilities (Contract)	$ 20,339,000
Other	$ -
Estimated Total Cost	**$ 40,144,000**

Route TRB-18 Transmission Facilities	TOTAL
Right-of-way and Land Acquisition	$ 7,160,000
Engineering and Design (Utility)	$ 717,000
Engineering and Design (Contract)	$ 2,200,000
Procurement of Material and Equipment	$ 7,615,000
Construction of Facilities (Utility)	$ 10,000
Construction of Facilities (Contract)	$ 18,632,000
Other	$ -
Estimated Total Cost	**$ 36,334,000**

Route TRB-19 Transmission Facilities	TOTAL
Right-of-way and Land Acquisition	$ 7,157,000
Engineering and Design (Utility)	$ 722,000
Engineering and Design (Contract)	$ 2,208,000
Procurement of Material and Equipment	$ 7,690,000
Construction of Facilities (Utility)	$ 10,000
Construction of Facilities (Contract)	$ 18,746,000
Other	$ -
Estimated Total Cost	**$ 36,533,000**

Route TRB-20 Transmission Facilities	TOTAL
Right-of-way and Land Acquisition	$ 7,313,000
Engineering and Design (Utility)	$ 748,000
Engineering and Design (Contract)	$ 2,268,000
Procurement of Material and Equipment	$ 8,008,000
Construction of Facilities (Utility)	$ 10,000
Construction of Facilities (Contract)	$ 19,254,000
Other	$ -
Estimated Total Cost	**$ 37,601,000**

Route TRB-21 Transmission Facilities	TOTAL
Right-of-way and Land Acquisition	$ 7,463,000
Engineering and Design (Utility)	$ 752,000
Engineering and Design (Contract)	$ 2,288,000
Procurement of Material and Equipment	$ 7,999,000
Construction of Facilities (Utility)	$ 10,000
Construction of Facilities (Contract)	$ 19,276,000
Other	$ -
Estimated Total Cost	**$ 37,788,000**

Route BT-1 Transmission Facilities	TOTAL
Right-of-way and Land Acquisition	$ 5,921,000
Engineering and Design (Utility)	$ 610,000
Engineering and Design (Contract)	$ 1,892,000
Procurement of Material and Equipment	$ 12,343,000
Construction of Facilities (Utility)	$ 10,000
Construction of Facilities (Contract)	$ 18,763,000
Other	$ -
Estimated Total Cost	**$ 39,539,000**

Route BT-2 Transmission Facilities	TOTAL
Right-of-way and Land Acquisition	$ 8,612,000
Engineering and Design (Utility)	$ 986,000
Engineering and Design (Contract)	$ 2,833,000
Procurement of Material and Equipment	$ 20,901,000
Construction of Facilities (Utility)	$ 10,000
Construction of Facilities (Contract)	$ 30,293,000
Other	$ -
Estimated Total Cost	**$ 63,635,000**

Route BT-3 Transmission Facilities	TOTAL
Right-of-way and Land Acquisition	$ 6,286,000
Engineering and Design (Utility)	$ 650,000
Engineering and Design (Contract)	$ 1,972,000
Procurement of Material and Equipment	$ 13,096,000
Construction of Facilities (Utility)	$ 10,000
Construction of Facilities (Contract)	$ 19,856,000
Other	$ -
Estimated Total Cost	**$ 41,870,000**

Route BT-4 Transmission Facilities	TOTAL
Right-of-way and Land Acquisition	$ 7,133,000
Engineering and Design (Utility)	$ 787,000
Engineering and Design (Contract)	$ 2,315,000
Procurement of Material and Equipment	$ 16,423,000
Construction of Facilities (Utility)	$ 10,000
Construction of Facilities (Contract)	$ 23,895,000
Other	$ -
Estimated Total Cost	**$ 50,563,000**

Route BT-5 Transmission Facilities	TOTAL
Right-of-way and Land Acquisition	$ 6,127,000
Engineering and Design (Utility)	$ 639,000
Engineering and Design (Contract)	$ 1,962,000
Procurement of Material and Equipment	$ 13,028,000
Construction of Facilities (Utility)	$ 10,000
Construction of Facilities (Contract)	$ 18,496,000
Other	$ -
Estimated Total Cost	**$ 40,262,000**

Route BT-6 Transmission Facilities	TOTAL
Right-of-way and Land Acquisition	$ 6,222,000
Engineering and Design (Utility)	$ 660,000
Engineering and Design (Contract)	$ 2,026,000
Procurement of Material and Equipment	$ 13,624,000
Construction of Facilities (Utility)	$ 10,000
Construction of Facilities (Contract)	$ 19,070,000
Other	$ -
Estimated Total Cost	**$ 41,612,000**

Route BT-7 Transmission Facilities	TOTAL
Right-of-way and Land Acquisition	$ 6,970,000
Engineering and Design (Utility)	$ 766,000
Engineering and Design (Contract)	$ 2,270,000
Procurement of Material and Equipment	$ 16,019,000
Construction of Facilities (Utility)	$ 10,000
Construction of Facilities (Contract)	$ 23,087,000
Other	$ -
Estimated Total Cost	**$ 49,122,000**

Route BT-8 Transmission Facilities	TOTAL
Right-of-way and Land Acquisition	$ 6,486,000
Engineering and Design (Utility)	$ 724,000
Engineering and Design (Contract)	$ 2,221,000
Procurement of Material and Equipment	$ 15,487,000
Construction of Facilities (Utility)	$ 10,000
Construction of Facilities (Contract)	$ 21,938,000
Other	$ -
Estimated Total Cost	**$ 46,866,000**

Route BT-9 Transmission Facilities	TOTAL
Right-of-way and Land Acquisition	$ 6,649,000
Engineering and Design (Utility)	$ 706,000
Engineering and Design (Contract)	$ 2,122,000
Procurement of Material and Equipment	$ 14,425,000
Construction of Facilities (Utility)	$ 10,000
Construction of Facilities (Contract)	$ 21,286,000
Other	$ -
Estimated Total Cost	**$ 45,198,000**

Route BT-10 Transmission Facilities	**TOTAL**
Right-of-way and Land Acquisition	$ 6,554,000
Engineering and Design (Utility)	$ 692,000
Engineering and Design (Contract)	$ 2,098,000
Procurement of Material and Equipment	$ 14,264,000
Construction of Facilities (Utility)	$ 10,000
Construction of Facilities (Contract)	$ 21,046,000
Other	$ -
Estimated Total Cost	**$ 44,664,000**

Route BT-11 Transmission Facilities	**TOTAL**
Right-of-way and Land Acquisition	$ 8,533,000
Engineering and Design (Utility)	$ 946,000
Engineering and Design (Contract)	$ 2,732,000
Procurement of Material and Equipment	$ 19,785,000
Construction of Facilities (Utility)	$ 10,000
Construction of Facilities (Contract)	$ 29,166,000
Other	$ -
Estimated Total Cost	**$ 61,172,000**

Estimated Costs of Substations

AEP TEXAS Three Rivers Substation (Termination)	Substation Facilities
Right-of-way and Land Acquisition	$ -
Engineering and Design (Utility)	$ 201,000
Engineering and Design (Contract)	$ 255,000
Procurement of Material and Equipment (including stores)	$ 566,000
Construction of Facilities (Utility)	$ 25,000
Construction of Facilities (Contract)	$ 531,000
Other (all costs not included in the above categories)	$ -
Estimated Total Cost	**$ 1,578,000**

AEP TEXAS Borglum Substation (New)	Substation Facilities
Right-of-way and Land Acquisition	$ 433,000
Engineering and Design (Utility)	$ 424,000
Engineering and Design (Contract)	$ 954,000
Procurement of Material and Equipment (including stores)	$ 6,658,000
Construction of Facilities (Utility)	$ 300,000
Construction of Facilities (Contract)	$ 6,628,000
Other (all costs not included in the above categories)	$ -
Estimated Total Cost	**$ 15,397,000**

AEP TEXAS Tuleta Substation (Termination)	Substation Facilities
Right-of-way and Land Acquisition	$ -
Engineering and Design (Utility)	$ 25,000
Engineering and Design (Contract)	$ -
Procurement of Material and Equipment (including stores)	$ 1,000
Construction of Facilities (Utility)	$ -
Construction of Facilities (Contract)	$ 25,000
Other (all costs not included in the above categories)	$ -
Estimated Total Cost	**$ 51,000**

Live Oak County Transmission Project

ERCOT Regional Planning Group Proposal

March 2014

Prepared By:
American Electric Power Service Corporation (AEPSC)
Texas Transmission Planning

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EXECUTIVE SUMMARY

Live Oak County Texas is presently served by two 138 kV lines terminating at the AEP Sigmor 138 kV Station. The Sigmor 138 kV Station then serves as a source to the underlying 69 kV system through a nearby AEP Three Rivers 138 kV Station. The two 138kV lines terminating at the Sigmor 138 kV Station are:

- San Miguel – Sigmor 138 kV line (28 miles)
- Lon Hill – Orange Grove – Sigmor 138 kV line (66 miles)

The present transmission system is not able to reliably serve this area if either of the above lines is removed from service in order to perform scheduled maintenance or the result of other outage conditions. The purpose of this Regional Planning Group (RPG) submission is to request that ERCOT review various proposals addressing this reliability issue and endorse a transmission project that will reinforce the area and allow future planned maintenance to occur.

American Electric Power Service Corporation Company (AEPSC) has examined the following three (3) options to improve the reliability of the Live Oak County and surrounding electric system:

Option 1: Construct new 345/138kV Station in the Pawnee - Lon Hill 345 kV line and build a new 138 kV line from Three Rivers Station to this new 345/138 kV Station.

Option 2: Construct new 138 kV transmission line from Three Rivers Station to Pawnee Station

Option 3: Construct a new 138 kV transmission line from Three Rivers Station to Tuleta Station

Based upon the results and benefits determined from the analysis presented in this report, AEPSC proposes and is seeking ERCOT endorsement for Option 3. The total cost of this proposed project is estimated at $33M.

INTRODUCTION

The San Miguel – Sigmor 138 kV line is a South Texas Electric Coop (STEC) transmission facility that required maintenance in 2013 to replace poles, insulators and other hardware. Breaker maintenance at the San Miguel Station was also required.

To accommodate this line outage, even during off-peak seasonal conditions, a large industrial customer in the area was required to significantly decrease load demand and the underlying 69 kV system had to be sectionalized in order to prevent branch overloads and low bus voltages, should the next worst 'forced' outage occur while the San Miguel – Sigmor 138 kV line was out of service. This reconfigured transmission network as described above also put approximately 80 MW of load in the Live Oak County area at risk of being disconnected should that next worst outage occur.

ERCOT granted the San Miguel – Sigmor 138 kV line outage contingent on the system adjustments described above and scheduled it for October 2013. On October 15th, system adjustments were completed, the San Miguel – Sigmor line was opened, and the required maintenance proceeded.

At about 21:00 on October 21st, the static shield wire of the Lon Hill - Orange Grove 138 kV line failed and faulted one of the phase conductors, causing the Orange Grove – Sigmor 138 kV line to trip and lock open. Approximately 80MW of load loss resulted from this forced outage that included a large industrial customer and seventeen (17) substations with load connected.

The purpose of the analysis that follows is to investigate various transmission improvements that would improve the transmission reliability of the area.

STUDY ASSUMPTIONS AND METHODOLOGY

This assessment used ERCOT SSWG 2017 Summer Peak and 2015 Spring cases developed in October 2014 as the starting point for this study. A steady state analysis was performed using version 33.5 of Siemens/PTI Corporation's Power System Simulator for Engineers software (PSS/E) to evaluate system performance and compliance with Transmission Planning Criteria established by NERC, ERCOT, and AEPSC.

The following criteria and assumptions reflect the development of the cases and the methodology used in this analysis.

Reliability Criteria

The following loading and voltage criteria were used to evaluate the proposed options:

Thermal Rating of Lines and Transformers

- Normal operating conditions: Less than 100% of Rate B
- Contingency operating conditions: Less than 100% of Rate C

Voltage Rating of Buses

- Normal operating conditions: Greater than 95% and Less than 105%
- Contingency operating conditions: Greater than 92% and Less than 105%

Any lines or transformers that exceeded Rate B during contingency were then assessed to determine if Rate C would be exceeded.

The following contingency scenarios were analyzed for the study system and ties from the study system:

ERCOT	NERC Existing TPL	NERC TPL-001-4	Description
N-0	Cat A	P0	System normal, Zero elements out of service.
N-1	Cat B	P1	Forced outage of a single Transmission line, Transformer, Generating unit, Common tower outage, Shunt or FACTS device.
N-A-1	Cat C	P6	Loss of a 345/138 kV autotransformer followed by an N-1 event defined above
N-G-1	Cat C	P3	Loss of a generating unit followed by an N-1 event defined above.
N-1-1 (2017 SPG Only)	Maintenance	Maintenance	A planned maintenance outage followed by an N-1 event defined above

Table 1
Contingency Events

Model Development

The following modifications were made to the SSWG system models.

- Since a 2017 Spring case was not available the 2015 Spring case was modified to reflect a 2017 system topology and referenced as a 2017 Spring case. Changes to this case included:
  1) Added the Kenedy SS – Tuleta 138 kV line
  2) Added the Tuleta – Euler – Coleto Creek 138 kV line
  3) Added the Fowlerton 345 kV and 138 kV buses and the Fowlerton 345/138 kV autotransformer
  4) Added the Sinton – Skidmore – Beeville 69 kV line upgrade
  5) Added the Kenedy SS – Kenedy – Pettus 69 kV line upgrade
  6) Added the Pleasanton 138/69 kV autotransformer upgrade
  7) Added the Three Rivers 138/69 kV autotransformer upgrade
  8) Added the Euler 138 kV bus on the Tuleta – Coleto Creek 138 kV line
  9) Moved 12 MW of the 13.5 MW load at Big Oak 69 kV (5675) to the Euler 138 kV bus

10) Removed the Whitsett 69 kV load (8137)
11) Removed the forecasted Three Rivers 69 kV load (8137 "P1")
12) Removed a Pettus 69 kV load (8593 "P1"), this load is captured at Tuleta 138 kV bus (8590).

Study System Region

The study system consisted of all facilities within and a wide area surrounding the Bee and Live Oak county region. Branch loading and bus voltages were monitored for all facilities 69 kV and above in the study system. A detailed list of the bus numbers used for the study system is presented in Appendix B.

ASSESSMENT OF THE EXISTING SYSTEM

The present transmission system has three (3) 138 kV transmission lines terminating at the Sigmor 138 kV Station:

- San Miguel - Choke Canyon - Sigmor 138 kV line
- Lon Hill - Orange Grove - AEP George West - STEC George West - Sigmor 138 kV line
- Three Rivers - Sigmor 138 kV line (sources the underlying 69 kV system at Three Rivers)

The figure below illustrates the transmission system being studied, which includes the new Kenedy SS - Tuleta 138 kV line and the new Tuleta 138 kV Station that are beginning construction activities, and the new Tuleta to Euler to Coleto Creek 138 kV transmission line that is in the CCN process:

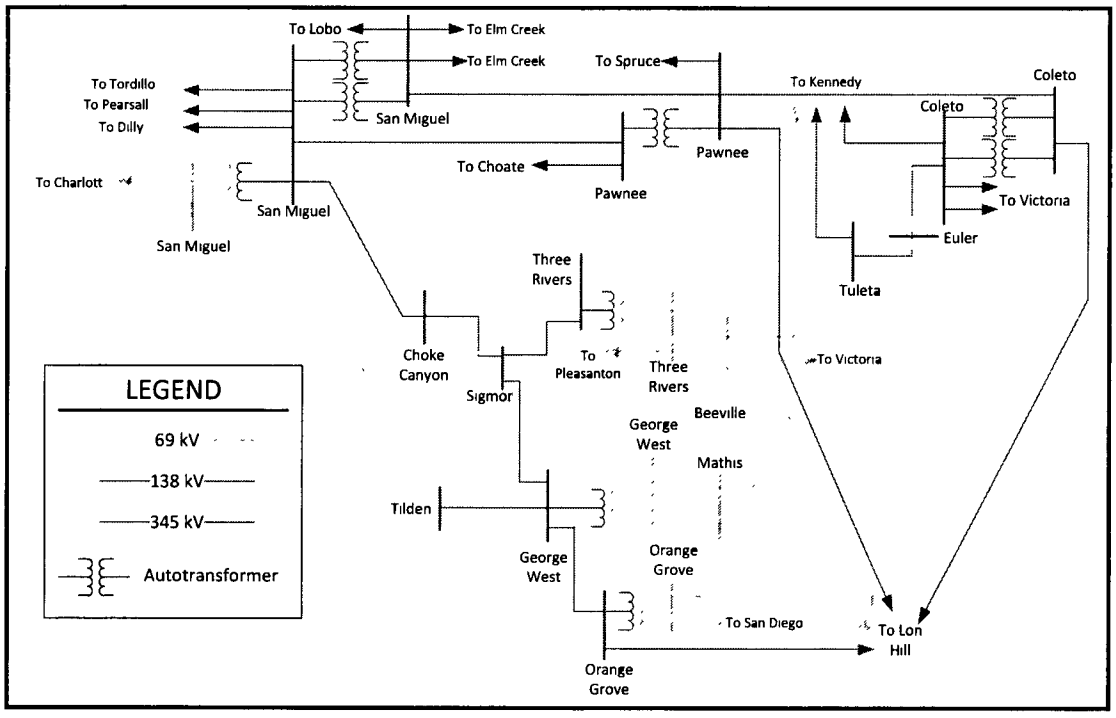

Figure 1
Existing Live Oak Area Transmission System

A steady state assessment of the existing system was performed to identify facilities that exceed the loading or voltage criteria discussed in the previous section. Any loading or voltage issues observed within the existing system under N-1-1, N-0, N-1, N-A-1, N-G-1 and conditions are presented in the following sections.

Existing System N-1-1 Analysis

The purpose of this system analysis and the reason for this RPG submission are to resolve the N-1-1 issues described in the introduction and to avoid another significant load loss event while performing planned maintenance.

Branch loading and low voltage issues were confirmed when modeling the existing system under N-1-1 conditions. The 2017 spring case was used for this N-1-1 analysis since planned system maintenance would normally occur during off-peak conditions. Table 2 and 3 below summarize the branch loading and bus voltage issues revealed. Detailed results are provided in Appendix B.

	BRANCH	OUTAGE	LENGTH	RATING	2017 SPRING BASE
N-1-1	8198 BEEVILLE2A 69.000 8400 THREE_RI2A 69.000 1	SINGLE 5688-8404(1):SINGLE 5689-5706(1)	26.10	38	179.5
N-1-1	8600 COYCTP2A 69.000 8603 IMOGNTAP2A 69.000 1	SINGLE 5688-8404(1):SINGLE 5689-5706(1)	14.92	38	167.6
N-1-1	8200 PLEASANT2A 69.000 8603 IMOGNTAP2A 69.000 1	SINGLE 5688-8404(1):SINGLE 5689-5706(1)	2.18	38	167.4
N-1-1	8406 SUNNILAN2A 69.000 8600 COYCTP2A 69.000 1	SINGLE 5688-8404(1):SINGLE 5689-5706(1)	16.59	38	119.3
N-1-1	5668 MATHISSUB9 69.000 5684 GEORGEWSTSB969.000 1	SINGLE 5686-5688(1):SINGLE 5693-5698(1)	18.44	45	152.2
N-1-1	5684 GEORGEWSTSB969.000 5685 WGORGEWSTAP969.000 1	SINGLE 5686-5688(1):SINGLE 5693-5698(1)	6.44	45	126.7
N-1-1	5668 MATHISSUB9 69.000 8407 MATHIS2A 69.000 1	SINGLE 5686-5688(1):SINGLE 5693-5698(1)	5.26	45	131.5
N-1-1	5693 SNMIGUELTAP969.000 5698 NCALLIHAMSB969.000 1	SINGLE 5686-5688(1):SINGLE 5668-5684(1):	17.52	45	146.2
N-1-1	5696 CALLIHAMSW9 69.000 5698 NCALLIHAMSB969.000 1	SINGLE 5686-5688(1):SINGLE 5668-5684(1)	11.79	45	120.6
N-1-1	8206 CHARLOTT2A 69.000 8208 DILLEY22A 69.000 1	SINGLE 8200-8203(1):SINGLE 8400-8406(1)	34.40	38	151.6
N-1-1	8206 CHARLOTT2A 69.000 8607 JOURDNTN2A 69.000 1	SINGLE 8200-8203(1):SINGLE 8400-8406(1)	10.40	38	127.1
N-1-1	8400 THREE_RI2A 69.000 8406 SUNNILAN2A 69.000 1	SINGLE 8200-8203(1):SINGLE 8206-8208(1)	7.60	38	114.4
N-1-1	5902 MIGUEL8 138.00 3WNDTR SMIGLT1 WND 2 1	SINGLE 5709-5901(1):SINGLE 5901-5902-5909(2)	3WXFMR	300	111.2
N-1-1	5902 MIGUEL8 138.00 3WNDTR SMIGLT2 WND 2 2	SINGLE 5709-5901(1):SINGLE 5901-5902-5908(1)	3WXFMR	300	110.8

Table 2
Existing System – N-1-1 High Branch Flows

- The Beeville - Three Rivers – Pleasanton 69 kV line is loaded up to 180% with outage of George West - Sigmor 138 kV in combination with loss of the San Miguel - Choke Canyon - Sigmor 138 kV line.
- The Mathis – Mathis (STEC) – George West 69 kV line sections are loaded up to 152% for outage of the George West 138/69 kV autotransformer in combination with loss of the San Miguel Tap – North Calliham 69 kV Line
- The San Miguel Tap – North Calliham – South Calliham Switch 69 kV line is loaded up to 146% for outage of the George West 138/69 kV autotransformer in combination with loss of the George West – Mathis 69 kV line.
- The Jordanton – Charlotte – Dilley 69 kV Line is loaded up to 152% for outage of the Pleasanton 138/69 kV autotransformer in combination with loss of the Three Rivers – Sunniland 69 kV line section.
- The San Miguel 345/138 kV autotransformer #1 (or #2) is loaded up to 111% for the loss of the companion San Miguel 345/138 kV autotransformer in combination with loss of the Lobo to San Miguel 345 kV line.

	BUS	OUTAGE	2017 SPRING BASE
N-1-1	8599 FASHING2A 69.000	SINGLE 8200-8203(1):SINGLE 8400-8406(1)	0.396
N-1-1	8406 SUNNILAN2A 69.000	SINGLE 8200-8203(1):SINGLE 8400-8406(1)	0.431
N-1-1	8600 COYCTP2A 69.000	SINGLE 8200-8203(1):SINGLE 8400-8406(1)	0.446
N-1-1	8603 IMOGNTAP2A 69.000	SINGLE 8200-8203(1):SINGLE 8400-8406(1)	0.517
N-1-1	8607 JOURDNTN2A 69.000	SINGLE 8200-8203(1):SINGLE 8400-8406(1)	0.552
N-1-1	8206 CHARLOTT2A 69.000	SINGLE 8200-8203(1):SINGLE 8400-8406(1)	0.639
N-1-1	5666 SANDIASUB9 69.000	SINGLE 5658-5660(1):SINGLE 5666-8407(1)	0.402
N-1-1	8166 CSABLK2A 69.000	SINGLE 5658-5660(1):SINGLE 5666-8407(1)	0.406
N-1-1	5662 ORANGEGRVSB969.000	SINGLE 5658-5660(1):SINGLE 5666-8407(1)	0.426
N-1-1	5658 ORANGEGRVSW969.000	SINGLE 5658-5660(1):SINGLE 5666-8407(1)	0.426
N-1-1	5695 SIMMONSSUB9 69.000	SINGLE 5686-5695(1):SINGLE 5702-5704(1)	0.545
N-1-1	5702 SNMIGUELSWA969.000	SINGLE 5686-5695(1):SINGLE 5702-5704(1)	0.690
N-1-1	5692 SNMIGUELSW9 69.000	SINGLE 5686-5695(1):SINGLE 5702-5704(1)	0.706
N-1-1	5708 CHARLOTTESB969.000	SINGLE 5686-5695(1):SINGLE 5702-5704(1)	0.796
N-1-1	5689 AEPCHKCNSUB8138.00	SINGLE 5688-8404(1):SINGLE 5689-5706(1)	0.618
N-1-1	8404 SIGMOR4A 138.00	SINGLE 5688-8404(1):SINGLE 5689-5706(1)	0.619
N-1-1	8403 THREE_RI4A 138.00	SINGLE 5688-8404(1):SINGLE 5689-5706(1)	0.626
N-1-1	8400 THREE_RI2A 69.000	SINGLE 5688-8404(1):SINGLE 5689-5706(1)	0.656
N-1-1	8406 SUNNILAN2A 69.000	SINGLE 5688-8404(1):SINGLE 5689-5706(1)	0.694
N-1-1	8599 FASHING2A 69.000	SINGLE 5688-8404(1):SINGLE 5689-5706(1)	0.765
N-1-1	8600 COYCTP2A 69.000	SINGLE 5688-8404(1):SINGLE 5689-5706(1)	0.806

Table 3
Existing System – N-1-1 Low Bus Voltages

- Voltages ranging from 40% to 64% at Fashing 69 kV, Sunniland 69kV, Coy City 69 kV , Imogene 69 kV, Jourdanton 69 kV, and Charlotte 69 kV buses for outage of the Three Rivers – Sunniland 69 kV line section, followed by loss of the Pleasanton 138/69 kV autotransformer.
- Voltages ranging from 40% to 43% at Sandia 69 kV, Casa Blanca 69kV, and Orange Grove 69 kV buses for outage of the Sandia - Mathis 69 kV line section, followed by loss of the Orange Grove 138/69 kV autotransformer.
- Voltages ranging from 55% to 80% at Simmons 69 kV, San Miguel, and Charlotte 69 kV buses for outage of the George West – Simmons 69kV line section, followed by loss of the San Miguel 138/69 kV autotransformer.
- Voltages ranging from 62% to 80% at Choke Canyon 138 kV, Sigmor 138 kV, Three Rivers 138 kV, Three Rivers 69 kV, Sunniland 69 kV, Fashing 69 kV, and Coy City 69 kV buses for an outage combination of the George West – Sigmor 138 kV line and the San Miguel – Sigmor 138 kV line.

The main purpose of this RPG submittal is to resolve the issues associated with these maintenance conditions followed by an outage event.