According to TPWD, no designated Ecologically Significant Stream Segments occur within the project study area.

Construction of the proposed project should have minimal or no adverse impacts to water quality. Erosion control measures should minimize soil erosion and resulting siltation, as well as any nutrient loading of the water resources. To prevent erosion from occurring, BMPs such as vegetation and/or mulch will be used in conjunction with sediment retention structures such as straw bale dikes and filter fabric fences, which trap sediment to prevent it from entering a watercourse. Monitoring and maintenance of these structures will ensure proper performance. A Storm Water Pollution Prevention Plan (SWPPP) will be prepared and used in accordance with the TCEQ's Texas Pollutant Discharge Elimination System (TPDES) program. Inspection of equipment by Brazos Electric and/or its contractors for fluid leaks will become part of daily procedures to ensure no petroleum or other chemical products threaten watercourses within the project area.

When working near watercourses, care will be taken to minimize damage. If clearing within 25 feet of a permanent watercourse becomes necessary, it will be conducted by hand. Bulldozers will not be used. No clearing or construction will be done on banks of permanent tributaries. All appropriate and practicable measures will be taken to avoid adverse impacts to any aquatic ecosystems within the project area.

4.11 AESTHETICS

No impacts to scenic highways, national forests, national parks, or areas of high scenic beauty are anticipated. An existing electrical transmission line is found along the northern boundary of the study area. The proposed project would add a new electrical substation and a new electrical transmission line into an area with a mixture of undeveloped uses, residential subdivisions, sports fields, parks, and commercial uses.

Brazos Electric has located the proposed routes such that they parallel existing rights-of-way and property lines as much as practicable, in accordance with PUCT recommendations for routing. Temporary impacts within the project area include views of construction machinery and clearing and construction of the substation and transmission line. Permanent impacts include views of the substation and overhead transmission line. Any adverse visual impacts will be minimized as much as possible by location and design. Brazos Electric is committed to following the guidelines in *Environmental Criteria for Electric Transmission Systems*, a joint publication of the USDA and U.S. Department of the Interior (1970).

4.12 TRANSPORTATION

A new transmission line crossing of state-maintained roads such as US 380, FM 720, FM 424, and FM 2931 would be required for the proposed project, depending on the alternative selected; therefore, a TxDOT crossing permit would be acquired as necessary.

The proposed project would not cross any railroads; therefore, no railroad crossing permits would be required.

There are no public-use airports within or near the study area.

One private-use airfield, the Spanish Oaks Airport, is listed on an FAA database as occurring in Little Elm, in the southern part of the Oak Point Peninsula. None of the proposed route segments are located within 10,000 feet of this airfield, and the airfield would not be impacted by the proposed project. No other private airfields are shown as occurring within the study area, according to FAA data. Brazos Electric will notify airfields within 10,000 feet of the proposed centerline prior to construction activities and comply with FAA notification guidelines and/or permits if required.

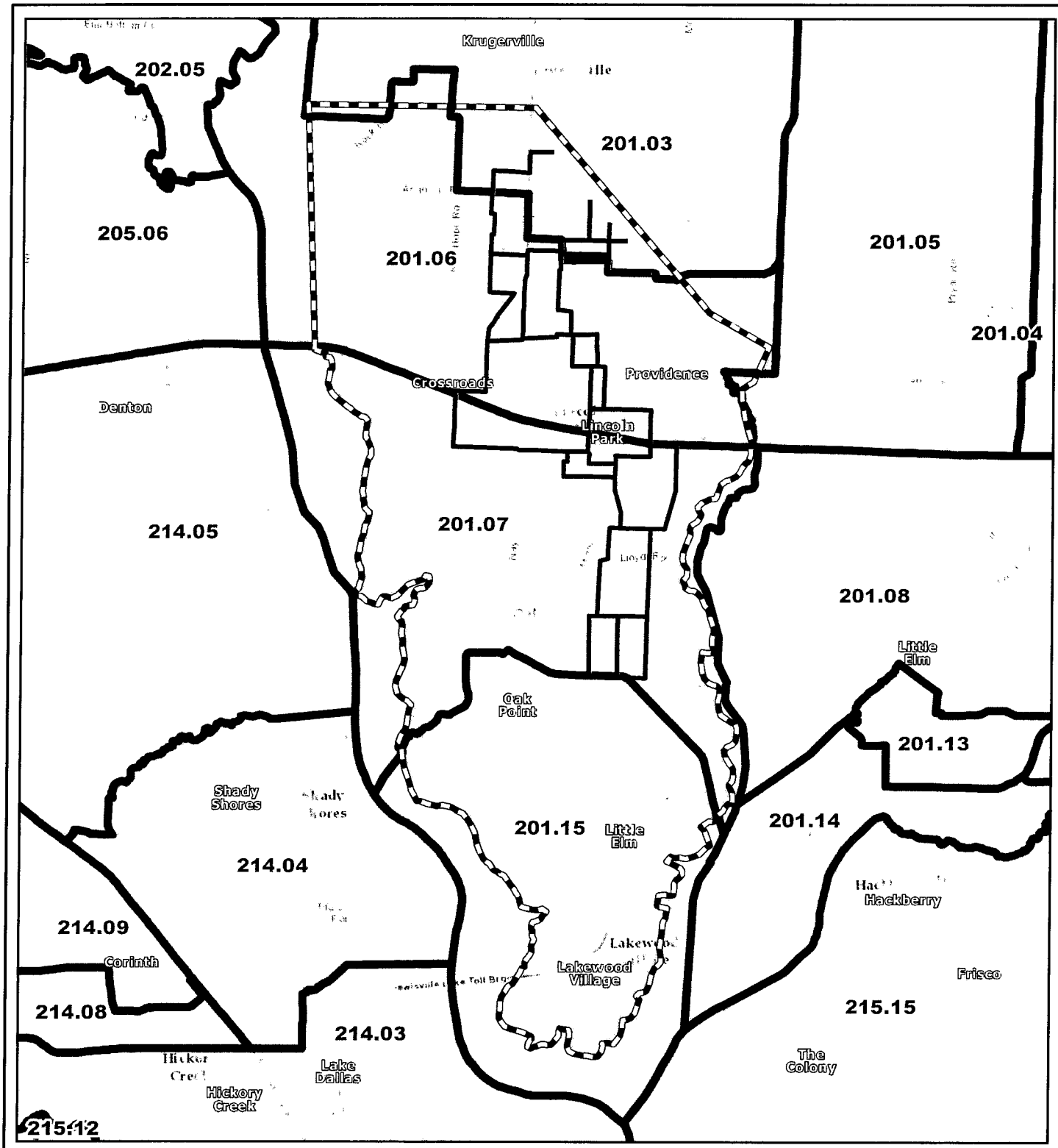
One private-use heliport, the Star Heliport, is listed on the FAA database. The location shown on the FAA database is incorrect; however, the owner of the heliport contacted Brazos Electric and provided the actual heliport location. The heliport is located in Crossroads, along Naylor Road south of US 380. It is within 5,000 feet of Segments 17, 30, and 31. No other private heliports are shown as occurring within the study area, according to FAA data. Brazos Electric will notify heliports within 5,000 feet of the proposed centerline prior to construction activities and comply with FAA notification guidelines and/or permits if required.

Copies of coordination letters between Brazos Electric and TxDOT are in **Appendix D.**

4.13 SOCIOECONOMIC AND COMMUNITY RESOURCES

As previously discussed, the proposed project consists of the construction of a new location substation and transmission line in Denton County, and the study area for the proposed project includes portions of the Town of Little Elm, City of Oak Point, City of Krugerville, City of Lakewood Village, Town of Cross Roads, Town of Lincoln Park, and the Town of Providence Village. A total of four census tracts are represented within the study area, as shown on **Figure 12.**

The proposed route alternatives would cross portions of the City of Krugerville, Town of Cross Roads, the Town of Providence Village, the City of Oak Point, and the Town of Little Elm. All four of the census tracts are traversed by the proposed route alternatives as illustrated on **Figure 12.** These four census tracts include Tracts 201.15, 201.07, 201.06 and 201.03. Data for these census tracts, as well as comparison data for the municipalities, Denton County, and the state of Texas, are presented throughout this analysis. **Table 6** provides race/ethnicity data for the study area.



Study Area
Proposed Transmission Line
2010 Census Tract
City Limits

0 1.5 Miles
0 2 Kilometers

Figure 12
Census Geographies

Brazos Electric - Oak Point
Transmission Line and Substation Project

COX | McLAIN
Environmental Consulting

Prepared for: BEPC	1 in = 1.5 miles
	Scale: 1:95,040
Prepared by: RA	Date: 9/2/2015

Data Sources: US Census Bureau (2010), Denton County (2014)
Basemap Source: ESRI (2014)

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Table 6: Race/Ethnicity in the Study Area (2010)

	Total Population	Not Hispanic							% Hispanic	% Total Minority
		% White	% Black or African-American	% American Indian & Alaska Native Alone	% Asian	% Native Hawaiian & Other Pacific Islander	% Some Other Race	% Two or More Races		
Study Area Census Tracts										
Tract 201.03	10,076	78.4	1.8	0.8	0.3	0.1	0	1.4	17.2	21.6
Tract 201.06	5,860	79.1	4.4	0.6	0.8	0.1	0.1	2	12.9	20.9
Tract 201.07	4,957	72.1	8.7	0.6	1.3	0.2	0.1	1.9	15.1	27.9
Tract 201.15	4,853	63.7	2.1	0.4	0.9	0.1	0.1	1.4	31.4	36.3
Comparison Geographies										
Town of Lincoln Park	308	82.5	1	2.3	0.3	0	0	1.3	12.7	17.5
City of Lakewood Village	545	83.3	0.7	0.6	3.3	0	0.6	1.3	10.3	16.7
Town of Cross Roads	1,563	75.6	7.7	0.3	1.6	0.1	0.3	1.1	13.4	24.4
City of Krugerville	1,662	88.6	0.5	1.1	0.5	0.1	0.1	0.5	8.7	11.4
City of Oak Point	2,786	80.9	2.4	0.3	0.8	0.1	0	1.3	14.3	19.1
Town of Providence Village	4,786	77.3	5	0.6	0.8	0.1	0.1	2.2	13.9	22.7
City of Little Elm	25,898	55.3	14	0.6	3.4	0	0.3	2.4	24	44.7
Denton County	662,614	64.4	8.2	0.5	6.5	0.1	0.2	2	18.2	35.6
Texas	25,145,561	45.3	11.5	0.3	3.8	0.1	0.1	1.3	37.6	54.7

Source: 2010 Census Summary File 1. Texas[machine-readable data files]#/prepared by the U.S. Census Bureau, 2011. Table P9.

In terms of race and ethnicity, the four census tracts in the study area are predominantly populated by individuals who identify themselves as white. The Black or African American population ranges from 1.8 to 8.7 percent in study-area tracts, with Denton County at 8.2 percent. The Asian population ranges from 0.3 to 1.3 percent in study-area tracts, with Denton County at 6.5 percent. Hispanic persons constitute between 12.9 and 31.4 percent of tract populations compared to 18.2 percent at the county level. All other race/ethnicity categories each represent 2.0 percent of the total tract population or less.

The total minority percentages ranged from 20.9 percent to 36.3 percent in the four study-area tracts, compared to 35.6 percent for Denton County. All total minority population percentages in the study area were below the state of Texas' overall percent minority population of 54.7 percent in 2010.

Table 7 shows that there are approximately 8,962 households in the four study-area tracts in Denton County, based on American Community Survey (ACS) 2009-2013 data. In 2013 inflation-adjusted dollars, the median household income ranged from $61,394 to $87,447 within the four study-area tracts.

The median household income for Denton County was $74,155; the median household incomes for the seven municipalities ranged from $45,000 (Town of Lincoln Park) to $106,250 (Town of Cross Roads). As shown in **Table 7** at the tract level, the median household income throughout the study area is higher than the median household income of the state ($51,900).

Table 7: Total Households and Median Household Income (ACS 2009-2013)		
Census 2010 Geography	**Total Households**	**Median Household Income ($)**
Study Area Census Tracts		
Tract 201.03	3,609	61,394
Tract 201.06	2041	87,447
Tract 201.07	1,716	72,500
Tract 201.15	1,596	73,415
Study Area Total	**8,962**	**N/A**
Comparison Geographies		
Town of Lincoln Park	122	45,000
City of Lakewood Village	235	96,250
Town of Cross Roads	290	106,250
City of Krugerville	526	87,500
City of Oak Point	1,012	90,926
Town of Providence Village	1,618	85,599
City of Little Elm	8,702	83,223
Denton County	243,394	74,155
Texas	8,886,471	51,900

Source: U.S. Census Bureau, 2009-2013 American Community Survey, Tables B11001 and B19013.

Table 8 shows populations for whom the poverty status is determined and populations with income in the past 12 months below poverty level. In 2015, the federal poverty guideline (developed by the Department of Health and Human Services) is $24,250 for a family of four. It should be noted that none of the tracts in the study area reported median household incomes below the 2015 poverty level (**Table 7**), but there were some persons within all study-area tracts who were living in poverty (**Table 8**).

Table 8: Populations in Poverty (ACS 2009-2013)		
Census 2010 Geography	**Total Population for Whom Poverty Status is Determined**	**Population with Income in the Past 12 Months below Poverty Level**
Study Area Census Tracts		
Tract 201.03	9,998	761
Tract 201.06	5,984	233
Tract 201.07	4,937	286
Tract 201.15	5,018	685
Comparison Geographies		
Town of Lincoln Park	273	16
City of Lakewood Village	727	78
Town of Cross Roads	820	14
City of Krugerville	1,589	22
City of Oak Point	2,904	81
Town of Providence Village	4,840	229
City of Little Elm	27,924	1,649
Denton County	675,087	59,068
Texas	25,032,531	4,416,829

Source: U.S. Census Bureau, 2009-2013 American Community Survey, Table B17001. ACS data are estimates; they are not counts. Percentage of people whose income in the past 12 months is below the poverty level.

As shown in **Table 9,** the majority of homes in the study area are owner-occupied. The four tracts traversed by the proposed route alternatives exhibit owner-occupied rates ranging from 87.6 to 94.1 percent. The ownership rates throughout the study area are relatively high compared with 63.7 percent in the state and 65.3 percent in Denton County.

Table 9: Occupancy Status

Census 2010 Geography	Occupied Housing Units	Owner-Occupied				Renter-Occupied	
		Mortgage or Loan		*Free & Clear*			
		#	%	#	%	#	%
Study Area Census Tracts							
Tract 201.03	2,718	2,274	83.7	108	4.0	336	12.4
Tract 201.06	662	582	87.9	41	6.2	39	5.9
Tract 201.07	1,550	1,368	88.3	69	4.5	113	7.3
Tract 201.13	1,150	1,029	89.5	48	4.2	73	6.3
Comparison Geographies							
Town of Lincoln Park	137	44	32.1	30	21.9	63	46
City of Lakewood Village	199	156	78.4	27	13.6	16	8.0
Town of Cross Roads	562	385	68.5	77	13.7	100	17.8
City of Krugerville	582	443	76.1	101	17.4	38	6.5
City of Oak Point	986	756	76.7	145	14.7	85	8.6
Town of Providence Village	1,550	1,262	81.4	55	3.5	233	15
City of Little Elm	8,160	6,341	77.7	383	4.7	1,436	17.6
Denton County	240,289	131,705	54.8	25,169	10.5	83,415	34.7
Texas	8,922,933	3,728,987	41.8	1,956,366	21.9	3,237,580	36.3

Source: 2010 Census Summary File 1—Texas [machine-readable data files]/prepared by the U.S. Census Bureau, 2011. Table H4. U.S. Census Bureau, 2009-2013 American Community Survey Table B25077. ACS data are estimates; they are not counts.

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, dated February 11, 1994, requires the consideration of environmental justice issues during NEPA environmental reviews. These issues include: (1) analyzing for the potential of disproportionately high and adverse human health or environmental effects to minority and low-income populations; (2) providing opportunities for minority and low-income populations to participate in the NEPA process if these populations may be adversely affected; and, (3) identifying mitigation measures that would reduce adverse human health or environmental effects to minority and low-income populations.

The socioeconomic data previously provided indicates that there is a lower percentage of minority persons in the four study-area tracts compared with the State of Texas. Economic data show that the study-area tracts and Denton County are not considered low income based on median household income, although some people in the study-area tracts live below the poverty guideline. All of the census tracts within the study area have median incomes well above the poverty rate; and very low minority and poor populations.

The proposed transmission line would traverse a growing, affluent suburban area. No residential relocations or business displacements would be required as a result of any of the proposed alignment alternatives. Throughout the study area, the route alternatives transverse and are located near developed residential areas as well as undeveloped sparsely populated areas, some of which may be more affected than others.

The proposed project should have minimal impact on local activities. The most obvious change that area residents would notice is the presence of a new substation and transmission line where one was not previously present. Furthermore, Brazos Electric will consider the design of the structures in areas of close proximity to habitable structures, parks and recreation facilities, agricultural areas, airstrips, historical sites, and other areas of human activity. Temporary impacts, such as views of construction machinery or clearing/construction activities, would result from the development of the proposed substation and transmission line.

Furthermore, impacts to human activity could also be seen as beneficial. Minimal short-term local employment will be generated. Brazos Electric uses its own employees or contract employees during the clearing and construction phases of the majority of these projects. As a result, a portion of the wages generated will filter into the local economy through purchases of fuel, food, and possibly lodging and building materials.

Potential long-term economic benefits to the community resulting from the construction of this project are based on the necessity of electric utilities to provide reliable power throughout the service area. The socioeconomic data provided here is intended as a backdrop for the proposed new-location substation and transmission line construction. No adverse impacts are expected to occur to low-income and/or minority communities as a result of the project. Therefore, no disproportionate adverse effects are anticipated and the project complies with Executive Order 12898 on Environmental Justice.

4.14 NOISE, RADIO, AND TELEVISION INTERFERENCE

No changes in noise levels or radio or television reception are anticipated. Noise levels after construction of the proposed project are not expected to vary perceivably from existing conditions. Noise from construction activities will be temporary in nature, lasting only a few months. No adverse impacts are anticipated for radio or television reception; however, if any radio or television interference results from the proposed project, such interference would be rectified by Brazos Electric. During the construction phase, noise abatement techniques such as work-hour controls would be employed to minimize noise impacts. Work will be scheduled to avoid evening or weekend shifts that might result in noise impacts for neighboring residents.

4.15 HUMAN HEALTH AND SAFETY

According to databases maintained by the TCEQ, no superfund sites have been identified as occurring within or near the study area (TCEQ, 2014).

No potential hazardous materials or signs of contamination were observed during preliminary field investigations. The observations made during the field assessment do not constitute a Phase I Environmental Site Assessment.

Presently, it does not appear that there is sufficient credible evidence to conclude that exposure to 60-Hertz electromagnetic fields (EMFs) poses a significant risk to humans. Recent laboratory and epidemiological studies on EMFs have been conflicting and inconclusive. Brazos Electric, however, will continue to monitor EMF research independently and in conjunction with the USDA's RUS and the PUCT. Furthermore, Brazos Electric is committed to abide by any final rules or regulations regarding EMFs promulgated by the RUS, the PUCT, or other regulatory agencies having jurisdiction.

4.16 CUMULATIVE EFFECTS

If a project does not cause direct or indirect impacts on a resource, it will not contribute to a cumulative impact on that resource. As discussed in previous sections, the proposed action would not cause significant direct impacts. Indirect effects include those that are removed in time or distance; these are described briefly here as they pertain to determining resources assessed in the cumulative impacts analysis. **Table 10** summarizes the direct, indirect, and cumulative impacts for each resource category potentially impacted.

Table 10: Summary of Direct, Indirect, and Cumulative Impacts Analyses

Resources Potentially Impacted	Category of Impact		
	Direct	Indirect	Cumulative
Land use	Existing land uses would be converted for electrical transmission use. No relocations or displacements anticipated.	Induced development as a result of substation and transmission line construction is unlikely.	No cumulative impacts anticipated.
Floodplains	No floodplain impacts anticipated.	No indirect impacts anticipated.	No cumulative impacts anticipated.
Water resources (wetlands and water quality)	Impacts to wetlands/ waters of the U.S. will be determined after final route selection; waters will be spanned as much as practicable. No impacts to water quality anticipated. Project would comply with TPDES General Permit, including preparation of SWPPP and BMPs.	Potential decreased water quality from stormwater runoff during construction phase.	Although water quality could continue to decline slightly in the region, the proposed project would not contribute to significant cumulative impacts to the area's water resources.

Table 10: Summary of Direct, Indirect, and Cumulative Impacts Analyses

Resources Potentially Impacted	Category of Impact		
	Direct	Indirect	Cumulative
Cultural resources	TARL search revealed 29 archeological sites (one a National Register site), seven cemeteries, and one historical marker within the study area. If required by THC, an archeological survey will be conducted for the preferred alignment.	No indirect impacts anticipated.	No cumulative impacts anticipated.
Threatened and endangered species	No impacts to federally listed species or state listed species or their habitats anticipated at present.	No indirect impacts anticipated.	No cumulative impacts anticipated.
Vegetation and wildlife habitat	Existing vegetation would be removed for construction, and the right-of-way would be maintained such that it is clear of woody vegetation.	No indirect impacts anticipated.	No cumulative impacts anticipated.
Air quality	Emissions limited to construction phase, primarily from construction vehicles; any brush burning would be done under controlled safety conditions.	No indirect impacts anticipated.	No cumulative impacts anticipated.
Social and economic factors	No adverse impacts to low-income or minority communities. Impacts generally beneficial.	Positive effect on local economy (generation of short term local employment or purchase of local goods by employees).	Net positive effect for residents associated with a reliable and economical source of electric power.

Indirect and cumulative impacts are discussed in more detail in the sections below.

Indirect Impacts

Any noise or air quality effects would be temporary in nature, confined to the construction phase of the project. In addition, water quality in the area could slightly decrease from stormwater runoff during the construction phase.

A positive net effect on the local economy is expected as a result of short-term local employment for construction crews.

No induced growth as a result of the project is anticipated.

Cumulative Impacts

The extent that the construction of the proposed project would contribute to cumulative impacts depends on several factors, including distance from the project, other anticipated projects planned for the region, municipal planning and zoning regulations, and proximity and size of metropolitan areas.

Reasonably foreseeable actions planned in the project vicinity include the planned widening of FM 720 and US 380, the construction of a new Denton ISD school at FM 720 and Martop Road, and new residential and commercial developments.

The developing suburban nature of the project area and the nature of the project (construction of a new electric substation and transmission line) make it unlikely that substantive land use impacts (positive or negative) would occur as a result of the proposed action, as much of the study area is already developed or planned for development. Water quality may decline slightly in the region, but the project would not contribute to significant cumulative impacts to the area's water resources. Socioeconomic effects would be positive, associated with continuing to supply reliable, economical electrical power for the citizens of the counties served by Brazos Electric and their local member cooperative, CoServ Electric.

The proposed project is not anticipated to cause any lasting direct or indirect effects on either the human or natural environment. The proposed project is not anticipated to result in significant cumulative impacts.

5.0 SUMMARY OF MITIGATION AND MONITORING MEASURES

The mitigation and monitoring commitments described below will be honored for the proposed project.

Efforts will be made to avoid impacts to individuals of state listed species if they are observed within the project area during construction.

The project area would be investigated for the presence of any wetlands/waters of the U.S. after a final route for the project is selected. At that time, wetlands/waters of the U.S. delineation would take place and it would be determined whether any permits from the USACE would be required. If required, mitigation would be negotiated with the USACE and other resource protection agencies.

In order to reduce raptor electrocutions, structures will be designed and constructed in accordance with Suggested Practices for Raptor Protection on Power Lines, the State of the Art in 1996, Raptor Research Report No. 4 by the Raptor Research Foundation. Further, Brazos Electric is committed to following avian protection procedures as outlined in Mitigating Bird Collisions with Power Lines, a publication of the Avian Power Line Interaction Committee for the Edison Electric Institute (1994).

In order to comply with the Migratory Bird Treaty Act, Brazos Electric will attempt to avoid impacts to migratory bird nests by minimizing tree and brush removal within the nesting season (March through August).

Disturbed portions of the site that are outside of active construction areas will be revegetated as much as practicable. All revegetation will be in accordance with the Executive Memorandum on Beneficial Landscaping (April 26, 1994) and Executive Order 13112 on Invasive Species.

If any unanticipated cultural materials are discovered during construction, the work shall stop and the RUS and THC shall be contacted. Work should not resume until the appropriate approvals have been obtained.

If necessary, any burning will be conducted under TCEQ Control of Air Pollution from Visible Emission and Particulate Matter, 30 TAC Subchapter B, Chapter 111.201-111.221. In addition, burning will be conducted under carefully controlled safety conditions, as well as during appropriate weather conditions, to minimize the danger of wildfires and to meet ambient air quality standards. Workers and equipment will remain on site during any burning.

To prevent erosion from occurring, vegetation and/or mulch will be used in conjunction with sediment retention structures such as straw bale dikes and filter fabric fences, which trap sediment

to prevent it from entering a watercourse. Monitoring and maintenance of these structures will ensure proper performance. An SWPPP will be prepared and used in accordance with the TCEQ's TPDES program. Inspection of equipment for fluid leaks by Brazos Electric and/or its contractors will become part of daily procedures to ensure no petroleum or other chemical products threaten watercourses within the project area. If it appears that erosion may become a problem within the project area, Brazos Electric will consult the local NRCS office for advice on erosion control. Brazos Electric is committed to following any reasonable recommendations by the TCEQ regarding erosion control as it affects water quality.

New road crossings may occur as a result of the proposed project; therefore, TxDOT road crossing permits would be acquired as necessary. Brazos Electric will notify airfields within 10,000 feet and heliports within 5,000 feet of the project area prior to construction activities and will comply with FAA notification guidelines and/or permits, if required.

Work will be scheduled to avoid evening or weekend shifts, which might result in noise impacts for neighboring residents. If any radio or television interference results from the proposed project, such interference would be rectified. Thorough cleanup and revegetation of the project area will take place after construction is completed to minimize effects on the aesthetics of the project area.

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Appendix A

Route Evaluation Table A: Route Segment Evaluation

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OVERSIZED DOCUMENT

A -1 (167)

TO VIEW OVERSIZED DOCUMENTS, PLEASE CONTACT CENTRAL RECORDS 512-936-7180

OVERSIZED DOCUMENTS

A -1 (167) A-2 (168), A-3 (169) AND A-4 (170)

TO VIEW OVERSIZED DOCUMENTS, PLEASE CONTACT CENTRAL RECORDS 512-936-7180

Appendix B

Route Evaluation Table B: Summary of End-to-End Routes

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OVERSIZED DOCUMENTS

B-1 (173)

TO VIEW OVERSIZED DOCUMENTS, PLEASE CONTACT CENTRAL RECORDS 512-936-7180

Appendix C

Route Segment Descriptions

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Segment 1

Segment 1 begins at Tap 1, located along an existing Brazos transmission line at a point approximately 1,370 feet east of State Highway (SH) 377 and directly south of the Lone Star Boat, RV & Self Storage facility. It extends west for approximately 1,302 feet and then turns south for approximately 1,154 feet along the eastern side of SH 377. It then crosses SH 377 and extends west for approximately 2,047 feet, and then turns south for approximately 1,221 feet where it crosses Arvin Hill Road and continues south for approximately 1,192 feet. It then turns east for approximately 201 feet, then turns south for approximately 1,157 feet, then turns west for approximately 125 feet, then turns south for approximately 1,073 feet where it terminates at its junction with Segments 13 and 18.

Segment 2

Segment 2 begins at Tap 2, located along an existing Brazos transmission line in open land, approximately 3,574 feet east of SH 377 and approximately 3,396 feet north of Liberty Road. It extends south for approximately 2,263 feet, terminating at its junction with Segments 7 and 9.

Segment 3

Segment 3 begins at Tap 3, located along an existing Brazos transmission line in open land, approximately 4,590 feet east of SH 377 and approximately 2,115 feet north of Liberty Road. It extends south across open land for approximately 1,008 feet, terminating at its junction with Segments 4 and 7.

Segment 4

Segment 4 begins at Tap 4, located along an existing Brazos transmission line in open land, approximately 3,715 feet due west from the intersection of Liberty Road and Bailey Lane. It extends west across open land for approximately 1,008 feet, terminating at its junction with Segments 6 and 7.

Segment 5

Segment 5 begins at Tap 5, located along an existing Brazos transmission line in open land directly north of Liberty Road and extends west along the north side of Liberty Road for approximately 2,403 feet. It then continues north along the east side of Liberty Road and open land for approximately 971 feet to its terminus at the junction of Segments 6 and 8.

Segment 6

Segment 6 begins at the junction of Segments 3, 4, and 7 and extends south across open land for approximately 769 feet to its terminus at its junction with Segments 8 and 5.

Segment 7

Segment 7 begins at the junction of Segments 3, 4, and 6 and extends west across open land for approximately 1,094 feet to its terminus at the junction of Segments 2 and 9.

Segment 8

Segment 8 begins at the junction of Segments 5 and 6 and extends west across open land for approximately 2,682 feet, crosses Liberty Road, then terminates at the junction of Segments 10 and 12.

Segment 9

Segment 9 begins at the junction of Segments 2 and 7. It extends west across open land for approximately 1,613 feet, crosses Liberty Road south of the intersection of Liberty Road and Bailey Lane, and then continues south along the west side of Liberty Road for approximately 561 feet to its terminus at the junction of Segments 10 and 11.

Segment 10

Segment 10 begins at the junction of Segments 9 and 11 and extends south along the western side of Liberty Road for approximately 172 feet to its terminus at the junction of Segments 8 and 12.

Segment 11

Segment 11 begins at the junction of Segments 9 and 10 and extends west across open land for approximately 1,880 feet, then turns south along the eastern side of SH 377 approximately 278 feet to its terminus at the junction of Segments 13 and 14.

Segment 12

Segment 12 begins at the junction of Segments 8 and 10 and extends south for approximately 861 feet, then shifts slightly to the southwest for approximately 111 feet, then continues south for approximately 2,211 feet. The line then turns east for approximately 743 feet, then turns south for approximately 1,306 feet and terminates at the junction of Segments 15 and 16.

Segment 13

Segment 13 begins at the junction of Segments 11 and 14 and extends west across SH 377 and open land for approximately 2,065 feet to its terminus at the junction of Segments 1 and 18.

Segment 14

Segment 14 begins at the junction of Segments 11 and 13 and extends south along the eastern side of SH 377 for approximately 1,044 feet where it shifts slightly to the southwest for approximately 334 feet and crosses FM 424. From there, it turns south for approximately 3,250 feet along the western side of FM 424 to its terminus at the junction of Segments 15 and 24.

Segment 15

Segment 15 begins at the junction of Segments 12 and 16 and extends west along the southern side of a parcel boundary for approximately 772 feet, turns south for approximately 142 feet, then turns west

again along the northern side of a parcel boundary for approximately 1,933 feet where it crosses FM 424 and terminates at the junction of Segments 14 and 24.

Segment 16

Segment 16 begins at the junction of Segments 12 and 15 and extends east for approximately 117 feet to its terminus at the junction of Segments 19 and 21.

Segment 17

Segment 17 begins at the junction of Segments 18 and 24. It extends south for approximately 1,209 feet, crosses Fishtrap Road, and then continues south for approximately 1,619 feet. From there it turns west across open land for approximately 1,730 feet, then turns south for approximately 185 feet where it crosses U.S. Highway (US) 380. From there, it continues south for approximately 2,918 feet along the eastern side of South Potter Shop Road, then turns east across dense woodlands and open land for approximately 3,658 feet where it crosses Naylor Road. It then continues east approximately 2,818 feet crossing open land and dense woodlands to its terminus at the junction of Segments 30 and 31.

Segment 18

Segment 18 begins at the junction of Segments 1 and 13 and extends south across open land for approximately 1,339 feet where it crosses Dr Griffin Road. Then, it continues south approximately 793 feet before turning east for approximately 1,397 feet. From there, it turns southwest along the western side of SH 377 for 2,475 feet. It then crosses SH 377 and extends south for approximately 650 feet terminating at its junction with Segments 17 and 24.

Segment 19

Segment 19 begins at the junction of Segments 16 and 21. It extends south across open land for approximately 1,748 feet, then turns east for approximately 1,091 feet through dense woodlands along the northern side of Fishtrap Road to its terminus at the junction of Segments 20 and 23.

Segment 20

Segment 20 begins at the junction of Segments 19 and 23 and extends east along the northern side of Fishtrap Road for approximately 326 feet where it crosses Dr Sanders Road and terminates at the junction of Segments 21 and 22.

Segment 21

Segment 21 begins at the junction of Segments 16 and 19. It extends east for approximately 1,353 feet, turns south along the western side of Dr Sanders Road for approximately 821 feet, then shifts southeast and crosses Dr Sanders Road for approximately 216 feet, then continues south for approximately 775 feet to its terminus at the junction of Segments 20 and 22.

Segment 22

Segment 22 begins at the junction of Segments 20 and 21. It extends east along the northern side of Fishtrap Road for approximately 448 feet where it turns south, crossing Fishtrap Road and continuing south across open land and dense woodlands for approximately 2,354 feet to its terminus at the junction of Segments 25 and 26.

Segment 23

Segment 23 begins at the junction of Segments 19 and 20. It crosses Fish Trap Road and extends south for approximately 2,357 feet along the western side of Oak Grove Lane to its terminus at the junction of Segments 25 and 29.

Segment 24

Segment 24 begins at the junction of Segments 14 and 15. It extends south approximately 75 feet along the western side of FM 424, then turns west across open land for approximately 2,081 feet to its terminus at the junction of Segments 17 and 18.

Segment 25

Segment 25 begins at the junction of Segments 22 and 26 and extends west across dense woodlands for approximately 782 feet where it crosses Oak Grove Lane and terminates at the junction of Segments 23 and 29.

Segment 26

Segment 26 begins at the junction of Segments 22 and 25. It extends east across dense woodlands and open land for approximately 2,659 feet, then turns south along the western side of FM 2931 for approximately 1,975 feet where it crosses US 380 and terminates at the junction of segments 27 and 28.

Segment 27

Segment 27 begins at the junction of Segments 26 and 28. It extends east along the southern side of US 380 for approximately 1,471 feet, then turns south across open land for approximately 2,529 feet. It continues south/southwest across open land for approximately 2,167 feet, and then turns west across dense woodlands for approximately 801 feet before terminating at the junction of Segments 36 and 37.

Segment 28

Segment 28 begins at the junction of Segments 26 and 27. It extends south across open land and along a property boundary for approximately 623 feet, turns west across open land and along the southern side of a property boundary for approximately 1,922 feet, and then continues south across open land and along the eastern side of a property boundary for approximately 448 feet before terminating at the junction of Segments 32 and 33.

Segment 29

Segment 29 begins at the junction of Segments 23 and 25. It extends south along the western side of Oak Grove Lane for approximately 1,322 feet, crosses US 380, and then continues south along the western side of FM 720 for approximately 1,076 feet before terminating at the junction of Segments 30 and 32.

Segment 30

Segment 30 begins at the junction of Segments 29 and 32 and continues west for approximately 1,147 feet before terminating at the junction of Segments 17 and 31.

Segment 31

Segment 31 begins at the junction of Segments 17 and 30. It extends south for approximately 553 feet, then turns west for approximately 233 feet, then turns south for approximately 827 feet, then turns east for approximately 1,384 feet where it crosses FM 720. It continues east across open land for 1,529 feet before terminating at the junction of Segments 33 and 34.

Segment 32

Segment 32 begins at the junction of Segments 29 and 30. It crosses FM 720 and extends southeast for approximately 182 feet, then turns south along the eastern side of FM 720 for approximately 513 feet, after which it turns east across open land for approximately 1,489 feet, before terminating at the junction of Segments 28 and 33.

Segment 33

Segment 33 begins at the junction of Segments 28 and 32 and extends south across open land for approximately 754 feet to its terminus at the junction of Segments 31 and 34.

Segment 34

Segment 34 begins at the junction of Segments 31 and 33. It extends south for approximately 702 feet, then turns southeast across open land for approximately 1,327 feet, and then south for approximately 850 feet to its terminus at the junction of Segments 35 and 36.

Segment 35

Segment 35 begins at the junction of Segments 34 and 36. It extends west for approximately 623 feet, south for approximately 1,689 feet, and then west/southwest along the north side of Lloyds Road for approximately 454 feet. It then crosses Lloyds Road and extends south along the eastern side of property boundaries for approximately 3,092 feet before terminating at the junction of Segments 38 and 39.

Segment 36

Segment 36 begins at the junction of Segments 34 and 35 and extends east for approximately 1,694 feet to its terminus at the junction of Segments 27 and 37.

Segment 37

Segment 37 begins at the junction of Segments 27 and 36 and extends south across dense woodlands and open land for approximately 1,518 feet, crosses Lloyds Road, and continues south along the western side of property boundaries and across open land and dense woodlands for approximately 3,412 feet before terminating at the junction of Segments 42 and 43.

Segment 38

Segment 38 begins at the junction of Segments 35 and 39. It extends west for approximately 433 feet, then turns south for approximately 3,396 feet along the eastern side of FM 720, before crossing Shahan Prairie Road and terminating at the junction of Segments 47 and 48.

Segment 39

Segment 39 begins at the junction of Segments 35 and 38 and extends east for approximately 1,168 feet to its terminus at the junction of Segments 40 and 44.

Segment 40

Segment 40 begins at the junction of Segments 39 and 44 and extends east for approximately 434 feet to its terminus at the junction of Segments 41 and 42.

Segment 41

Segment 41 begins at the junction of Segments 40 and 42 and extends south across open land for approximately 64 feet to its terminus at Substation 1.

Segment 42

Segment 42 begins at the junction of Segments 37 and 43 and extends west for approximately 1,222 feet to its terminus at the junction of Segments 40 and 41.

Segment 43

Segment 43 begins at the junction of Segments 37 and 42. It extends south across dense woodlands and open land for approximately 3,428 feet, then turns west for approximately 1,131 feet before crossing Shahan Prairie Road. It then continues west along the southern side of Shahan Prairie Road for approximately 430 feet to its terminus at the junction of Segments 44 and 45.

Segment 44

Segment 44 begins at the junction of Segments 39 and 40 and extends south across dense woodlands and open land for approximately 3,416 feet where it crosses Shahan Prairie Road and terminates at the junction of Segments 43 and 45.

Segment 45

Segment 45 begins at the junction of Segments 43 and 44 and extends west along the southern side of Shahan Prairie Road for approximately 1,191 feet to its terminus at the junction of Segments 46 and 47.

Segment 46

Segment 46 begins at the junction of Segments 45 and 47 and extends south across open land for approximately 70 feet before terminating at Substation 3.

Segment 47

Segment 47 begins at the junction of Segments 38 and 48 and extends east along the southern side of Shahan Prairie Road for approximately 376 feet to its terminus at the junction of Segments 45 and 46.

Segment 48

Segment 48 begins at the junction of Segments 38 and 47. It crosses FM 720 and extends west for approximately 238 feet, then turns south for approximately 78 feet before terminating at Substation 2.

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Appendix D

Agency Coordination

COX | McLAIN
Environmental Consulting

June 5, 2015

Mark Wolfe
State Historic Preservation Officer
Texas Historical Commission
P.O. Box 12276
Capitol Station
Austin, TX 78711-2276

RE: Proposed Oak Point Transmission Line and Substation Project, Denton County, Texas

Dear Mr. Wolfe:

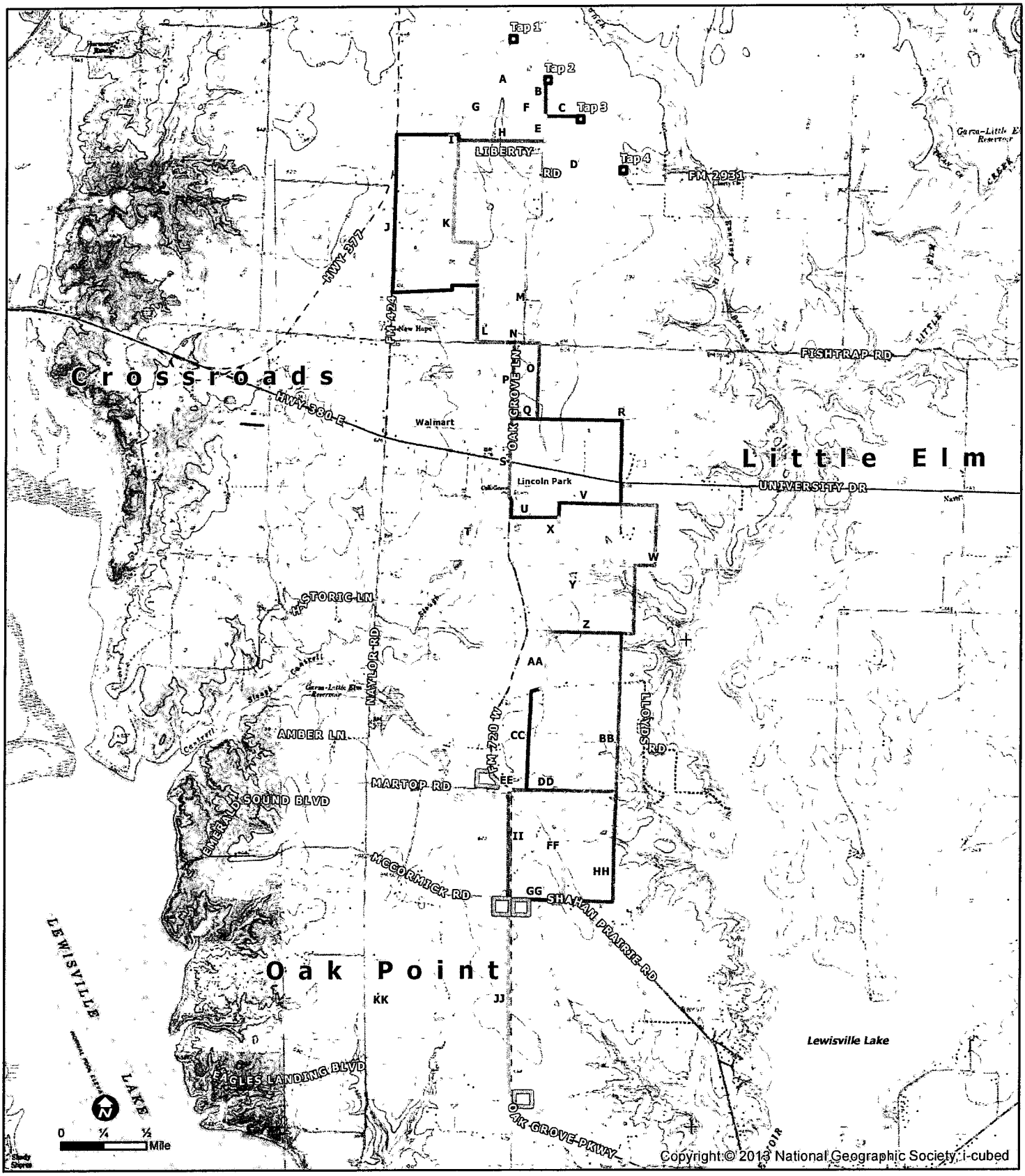
Brazos Electric Power Cooperative, Inc. (BEPC) is in the process of preparing a route study and environmental report for the Rural Utilities Service and the Public Utility Commission of Texas in order that it may assess the environmental impacts of the construction of a new transmission line and substation in Denton County, Texas. Brazos Electric plans to construct approximately 5.5 to 11 miles of 138 kV double circuit transmission line with single-pole structures from a new five-acre substation to be sited along or near FM 720 in the vicinity of Oak Point in eastern Denton County and proceeding north to a tap point along an existing Brazos Electric 138 kV transmission line located southeast of Krugerville in northeastern Denton County. The transmission line right-of-way would be 70 feet wide (100 feet wide where needed for angled structures). The proposed project will provide for increased capacity and better continuity of service for CoServ Electric, BEPC's member cooperative, and its member customers.

At this stage of the project, a study area has been established and potential constraints for substation location and transmission line routing have been identified within the study area. These constraints have been considered (and avoided as much as practicable) in the development of multiple substation location and transmission line route alternatives within the study area, as shown on the enclosed maps. An Environmental Report and a route study are being prepared to evaluate the impact of project alternatives on human and natural resources. These will be included in an Application for Certificate of Convenience and Necessity to be submitted to the Public Utility Commission of Texas (PUCT). As part of the Application, BEPC will submit multiple alternatives to the PUCT. If approved by the PUCT, only one transmission line route will be constructed.

We request the assistance of your office in identifying historic properties and archaeological sites that may be affected by the project. Please provide any recommendations you may have to mitigate or avoid these impacts. If you need any further information or wish to discuss the project, please contact me at (469) 647-4866 or christine@coxmclain.com.

Sincerely,

Christine Polito
Senior Ecologist



Route Segments

Existing Transmission Lines

Proposed Tap Sites

Proposed Substations

BRAZOS ELECTRIC COOPERATIVE

OAK POINT TRANSMISSION LINE AND SUBSTATION PROJECT

TRANSMISSION LINE ALTERNATIVE SEGMENTS

THE SUBSTATIONS, TAPS, AND ROUTE SEGMENTS SHOWN ARE PRELIMINARY AND SUBJECT TO CHANGE

Date Saved: 6/4/2015 NAIP Aerial Imagery Date: 7/25/2014 - 10/06/2014

Route Segments
Existing Transmission Lines
Proposed Tap Sites
Proposed Substations

BRAZOS ELECTRIC COOPERATIVE
OAK POINT TRANSMISSION LINE AND SUBSTATION PROJECT
TRANSMISSION LINE ALTERNATIVE SEGMENTS

THE SUBSTATIONS, TAPS, AND ROUTE SEGMENTS SHOWN ARE PRELIMINARY AND SUBJECT TO CHANGE

Date Saved: 5/1/2015 NAIP Aerial Imagery Date: 7/25/2014 - 10/06/2014

June 30, 2015

Christine Polito
Cox McLain Environmental Consulting
600 E. John Carpenter Freeway, Suite 380
Irving, Texas 75062

Re: Project review under Section 106 of the National Historic Preservation Act of 1966,
Proposed Oak Point Transmission Line & Substation Project, Denton County
(PUC)

Dear Ms. Polito:

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 (THC). The review staff, led by Rebecca Shelton, has examined our records. According to our maps, much of the proposed transmission line routes have not been surveyed for cultural resources. Numerous archeological sites have been recorded in the vicinity on similar landforms. The final, proposed transmission line route and substation locations 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 secured from our office before fieldwork may begin. Please ask prospective contractors if they are qualified to receive an Antiquities Permit.

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 Rebecca Shelton at 512.463.6043 or Rebecca.Shelton@thc.state.tx.us.**

Sincerely,

for
Mark Wolfe, State Historic Preservation Officer

MW/rls

COX | McLAIN
Environmental Consulting

June 5, 2015

Debra Bills
Field Supervisor
Arlington Ecological Services Field Office
U.S. Fish and Wildlife Service
2005 NE Green Oaks Blvd, Suite 140
Arlington, Texas 76006-6247

RE: Proposed Oak Point Transmission Line and Substation Project, Denton County, Texas

Dear Ms. Bills:

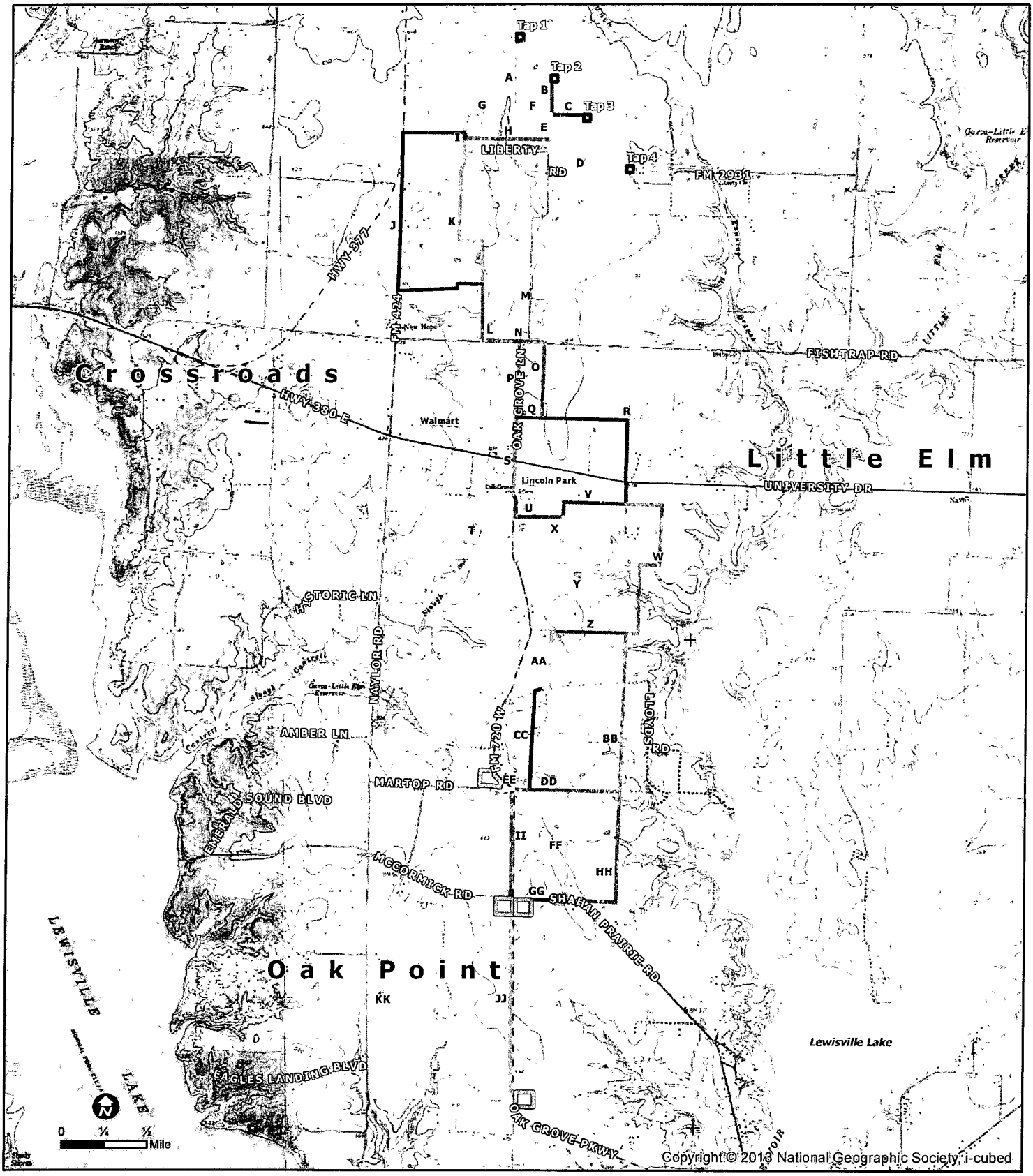
Brazos Electric Power Cooperative, Inc. (BEPC) is in the process of preparing a route study and environmental report for the Rural Utilities Service and the Public Utility Commission of Texas in order that it may assess the environmental impacts of the construction of a new transmission line and substation in Denton County, Texas. Brazos Electric plans to construct approximately 5.5 to 11 miles of 138 kV double circuit transmission line with single-pole structures from a new five-acre substation to be sited along or near FM 720 in the vicinity of Oak Point in eastern Denton County and proceeding north to a tap point along an existing Brazos Electric 138 kV transmission line located southeast of Krugerville in northeastern Denton County. The transmission line right-of-way would be 70 feet wide (100 feet wide where needed for angled structures). The proposed project will provide for increased capacity and better continuity of service for CoServ Electric, BEPC's member cooperative, and its member customers.

At this stage of the project, a study area has been established and potential constraints for substation location and transmission line routing have been identified within the study area. These constraints have been considered (and avoided as much as practicable) in the development of multiple substation location and transmission line route alternatives within the study area, as shown on the enclosed maps. An Environmental Report and a route study are being prepared to evaluate the impact of project alternatives on human and natural resources. These will be included in an Application for Certificate of Convenience and Necessity to be submitted to the Public Utility Commission of Texas (PUCT). As part of the Application, BEPC will submit multiple alternatives to the PUCT. If approved by the PUCT, only one transmission line route will be constructed.

The proposed project does not represent a "major construction activity" as defined in 50 CFR 4402.02. We request a list of any federally listed or proposed threatened or endangered species and designated or proposed critical habitat that may be present in the project area. In addition, please advise us of any present concerns you may have related to possible effects of the project listed above on such species or critical habitat, as well as any other wildlife or wetland concerns. If you need any further information or wish to discuss the project, please contact me at (469) 647-4866 or christine@coxmclain.com.

Sincerely,

Christine Polito
Senior Ecologist



Route Segments

Existing Transmission Lines

Proposed Tap Sites

Proposed Substations

BRAZOS ELECTRIC COOPERATIVE

OAK POINT TRANSMISSION LINE AND SUBSTATION PROJECT

TRANSMISSION LINE ALTERNATIVE SEGMENTS

THE SUBSTATIONS, TAPS, AND ROUTE SEGMENTS SHOWN ARE PRELIMINARY AND SUBJECT TO CHANGE

Date Saved: 6/4/2015 NAIP Aerial Imagery Date: 7/25/2014 - 10/06/2014

Route Segments

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BRAZOS ELECTRIC COOPERATIVE

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TRANSMISSION LINE ALTERNATIVE SEGMENTS

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Date Saved: 5/1/2015

NAIP Aerial Imagery Date: 7/25/2014 - 10/06/2014

Christine Polito

From: Puder, Sidney <sidney_puder@fws.gov>
Sent: Wednesday, July 08, 2015 3:13 PM
To: Christine Polito
Subject: Oak Point Transmission Line

Ms. Polito,

Please note that our office is currently utilizing the U.S. Fish and Wildlife Service's Information, Planning, and Conservation System (IPaC). The IPaC is an online conservation planning tool intended to streamline the environmental review process. Using IPaC, you may obtain a simple threatened and endangered species list, or map a project area and obtain information on federally listed species, wetlands, and other fish and wildlife resources. For future projects, we recommend IPaC be the first source of information in the environmental review process. You can access IPaC directly at: http://ecos.fws.gov/ipac/.

Sid Puder
U.S. Fish & Wildlife Service
2005 NE Green Oaks Blvd, Suite 140
Arlington, Texas 76006
(817) 277-1100 ext. 2112
(817) 277-1129 fax

COX | McLAIN
Environmental Consulting

June 5, 2015

Julie Wicker
Wildlife Habitat Assessment Program
Texas Parks and Wildlife Department
4200 Smith School Road
Austin, TX 78744

RE: Proposed Oak Point Transmission Line and Substation Project, Denton County, Texas

Dear Ms. Wicker:

Brazos Electric Power Cooperative, Inc. (BEPC) is in the process of preparing a route study and environmental report for the Rural Utilities Service and the Public Utility Commission of Texas in order that it may assess the environmental impacts of the construction of a new transmission line and substation in Denton County, Texas. Brazos Electric plans to construct approximately 5.5 to 11 miles of 138 kV double circuit transmission line with single-pole structures from a new five-acre substation to be sited along or near FM 720 in the vicinity of Oak Point in eastern Denton County and proceeding north to a tap point along an existing Brazos Electric 138 kV transmission line located southeast of Krugerville in northeastern Denton County. The transmission line right-of-way would be 70 feet wide (100 feet wide where needed for angled structures). The proposed project will provide for increased capacity and better continuity of service for CoServ Electric, BEPC's member cooperative, and its member customers.

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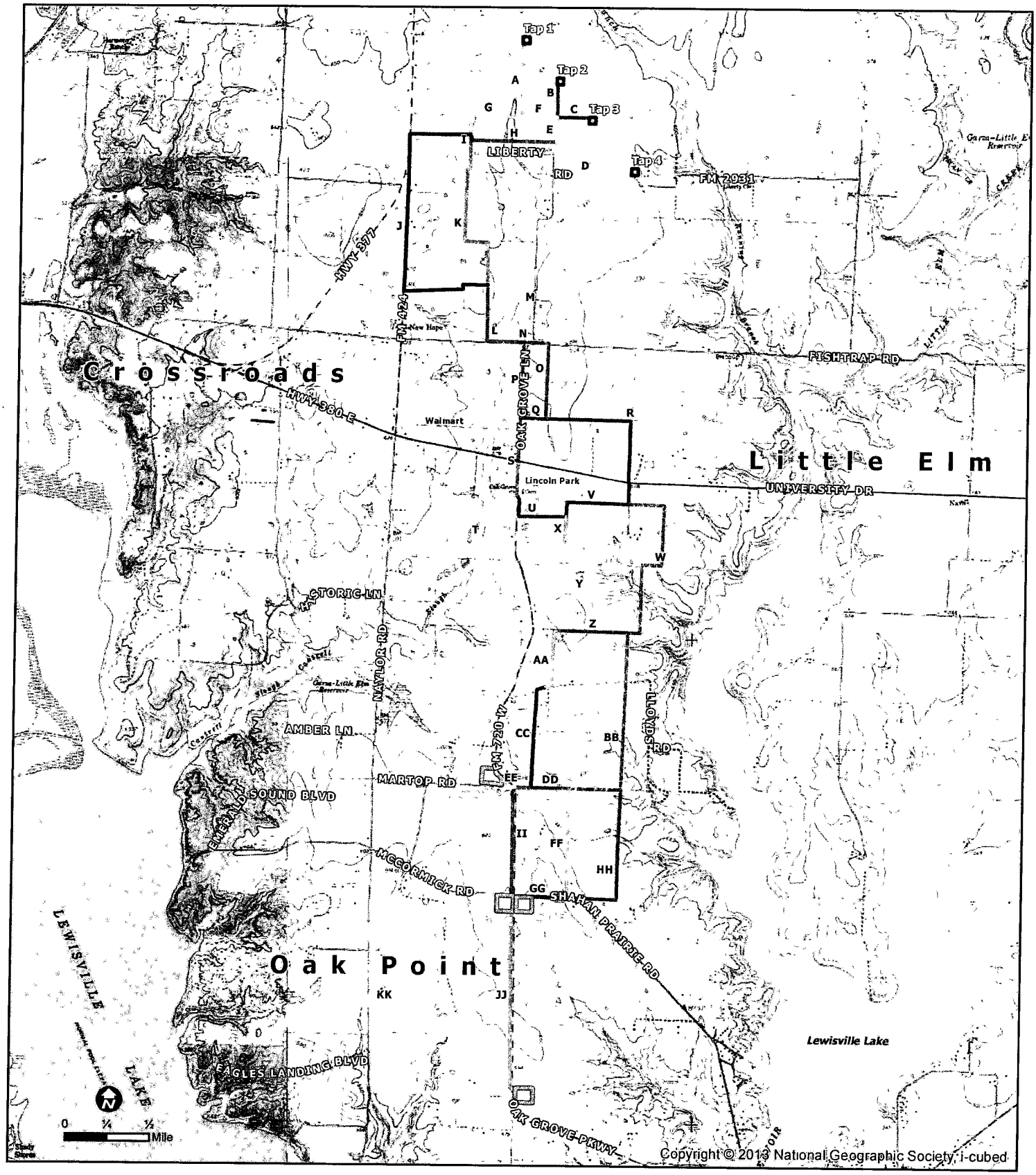
We request that your office review the proposed project for possible impacts to wetlands, threatened and endangered species, and other important State natural resources that may occur in the project area. Please provide any recommendations you may have to mitigate or avoid these impacts. If you need any further information or wish to discuss the project, please contact me at (469) 647-4866 or christine@coxmclain.com.

Sincerely,

Christine Polito
Senior Ecologist



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BRAZOS ELECTRIC COOPERATIVE
OAK POINT TRANSMISSION LINE AND SUBSTATION PROJECT
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Date Saved: 5/1/2015 NAIP Aerial Imagery Date: 7/25/2014 - 10/06/2014

From: Karen Hardin <Karen.Hardin@tpwd.texas.gov>
Sent: Tuesday, July 14, 2015 11:48 AM
To: Christine Polito
Subject: RE: BEPC Oak Point Project - Request for Shapefiles

Thank you,

It all came through and works in my GIS.

Karen Hardin
Habitat Assessment Biologist
Wildlife Habitat Assessment Program
Texas Parks and Wildlife Department

Support Texas Wildlife!
Order a conservation license plate today at www.conservationplate.org

From: Christine Polito [mailto:christine@coxmclain.com]
Sent: Tuesday, July 14, 2015 11:38 AM
To: Karen Hardin
Subject: RE: BEPC Oak Point Project - Request for Shapefiles

Hi Karen,

As requested, the shapefiles for Oak Point can be accessed via the link below. We did not include the study area boundary on the maps this time, but the shapefile for it is included with the other files. We have revised the substation locations and route alternative locations somewhat since the letter was sent to you. The shapefiles provided in the link reflect these revised alternatives. I have also attached a map showing the revised alternatives, for your reference.

https://coxmclainec-my.sharepoint.com/personal/robert_coxmclain_com/_layouts/15/guestaccess.aspx?guestaccesstoken=gdy7EQirPGIC8Zay2nb6UUOqi4tfP7HA37baLf%2bLFIk%3d&docid=0b3a2d2722f8a496b88ee9d8b7a1e3258

Please let me know if you have any questions.

Sincerely,

Christine Polito
Senior Ecologist
Cox|McLain Environmental Consulting Inc.
600 E John Carpenter Freeway, Suite 380

Irving, Texas 75062
www.coxmclain.com
469.647.4866 (office)
512.484.8807 (cell)

From: Karen Hardin [mailto:Karen.Hardin@tpwd.texas.gov]
Sent: Tuesday, July 14, 2015 9:26 AM
To: Christine Polito
Subject: RE: BEPC Oak Point Project - Request for Shapefiles

Ms. Polito,

I forgot to ask if this project has a defined study area. Every PUC CCN project I have reviewed has had a study area, but I didn't see that on the project maps. Maybe they were inadvertently missing from the maps?

Thanks,

Karen Hardin
Habitat Assessment Biologist
Wildlife Habitat Assessment Program
Texas Parks and Wildlife Department

Support Texas Wildlife!
Order a conservation license plate today at www.conservationplate.org

From: Karen Hardin
Sent: Monday, July 13, 2015 2:49 PM
To: 'christine@coxmclain.com'
Subject: BEPC Oak Point Project - Request for Shapefiles

Ms. Polito,

The Texas Parks and Wildlife Department (TPWD) has received the review request for the Brazos Electric Power Cooperative proposed Oak Point Transmission Line and Substation in Denton County. To assist in our review, TPWD respectfully requests electronic shapefiles of the study area, potential substation locations, potential tap points, and potential route alternatives.

Please note that TPWD servers do not allow zip files.

Sincerely,