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Control Number - 57519

Item Number - 4

STANDARD APPLICATION FOR A CERTIFICATE OF CONVENIENCE AND NECESSITY FOR A PROPOSED TRANSMISSION LINE

DOCKET NO. 57519

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

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

Standard Application for a Certificate of Convenience and Necessity for a Proposed Transmission Line
and
Application for a Certificate of Convenience and Necessity for a Proposed Transmission Line Pursuant To 16 TAC §25.174

Note: As used herein, the term "joint application" refers to an application for proposed transmission facilities for which ownership will be divided. All applications for such facilities should be filed jointly by the proposed owners of the facilities.

1. Applicant (Utility) Name:

For joint applications, provide all information for each applicant.

Applicant (Utility) Name:	Oncor Electric Delivery Company LLC ("Oncor")
Certificate Number:	30043
Street Address:	1616 Woodall Rodgers Freeway Dallas, Texas 75202
Mailing Address:	1616 Woodall Rodgers Freeway Dallas, Texas 75202-1234

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

Oncor will hold the sole ownership interest in the Ranger Camp Switch – Cattleman Switch 345 kilovolt ("kV") Transmission Line Project (the "Proposed Transmission Line Project").

3.	**Person to Contact:**	Jeremy McConnell
	Title/Position:	Regulatory Manager II
	Phone Number:	(214) 486-5216
	Mailing Address:	1616 Woodall Rodgers Freeway, Suite 6A-015 Dallas, Texas 75202-1234
	Email Address:	Jeremy.McConnell@oncor.com
3a.	**Alternate Contact:**	Thomas Yamin
	Title/Position:	Director of Regulatory, Transmission & Planning
	Phone Number:	(214) 486-3512
	Mailing Address:	1616 Woodall Rodgers Freeway, Suite 6B-005 Dallas, Texas 75202-1234
	Email Address:	Thomas.Yamin@oncor.com

3b.	**Legal Counsel:**	Jaren A. Taylor Erik S. Jacobson
	Phone Number:	(214) 220-7754
	Mailing Address:	Vinson & Elkins LLP Trammell Crow Center 2001 Ross Avenue, Suite 3900 Dallas, Texas 75201
	Email Address:	jarentaylor@velaw.com ejacobson@velaw.com

Please contact Jaren A. Taylor with any inquiries regarding the project.

4. Project Description:

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

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

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

Name or Designation of Project:	Ranger Camp Switch – Cattleman Switch 345 kV Transmission Line Project
Design Voltage Rating (kV):	345 kV
Operating Voltage Rating (kV):	345 kV
Normal Peak Operating Current (A):	5,138 A

The Proposed Transmission Line Project is a new, double-circuit 345 kV transmission line to be built on double-circuit steel monopoles between Oncor's Ranger Camp Switch and Cattleman Switch, which are both currently under construction, in Mitchell County,

Texas.[1] The Proposed Transmission Line Project is needed to address reliability issues identified by the Electric Reliability Council of Texas, Inc. ("ERCOT") and Oncor.

The Proposed Transmission Line Project is wholly located in Mitchell County, Texas. Oncor's Ranger Camp Switch is located approximately 0.7 miles southwest of the intersection of South Farm-to-Market Road ("FM") 1229 and State Highway ("SH") 163, near the City of Colorado City. Oncor's Cattleman Switch is located approximately 0.8 miles west of the intersection of SH 163 and FM 2836.

The Proposed Transmission Line Project's route is approximately 4.2 miles in length. The proposed route directly affects properties owned by Oncor and five other landowners. Oncor acquired all necessary right-of-way ("ROW") for the Proposed Transmission Line Project. The total estimated cost of the Proposed Transmission Line Project, including costs for modifications at the Ranger Camp Switch, is approximately $32,409,000.

5. Conductor and Structures:

Conductor Size and Type:	1926.9 kcmil Aluminum Conductor Steel Supported Trapezoidal-Shaped Wire ("ACSS/TW")
Number of conductors per phase:	2
Continuous Summer Static Current Rating (A):	5,138 A
Continuous Summer Static Line Capacity at Operating Voltage (MVA):	3,070 MVA
Continuous Summer Static Line Capacity at Design Voltage (MVA):	3,070 MVA
Type and composition of Structures:	Double-Circuit Steel Poles
Height of Typical Structures:	130 feet*
Estimated Maximum Height of Structures:	199 feet*

*This number reflects the approximate visible height of the structure from ground to structure top, which may vary depending on terrain and other engineering constraints.

Explain why these structures were selected; include such factors as landowner preference, engineering considerations, and costs comparisons to alternate structures that were considered.

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

[1] The Ranger Camp Switch and Cattleman Switch are currently under construction, are independent of, and are planned for completion prior to the estimated construction start date for the Proposed Transmission Line Project. A certificate amendment for the Ranger Camp Switch and Cattleman Switch is not required under 16 TAC § 25.101(c)(2).

Oncor selected the double-circuit 345 kV steel monopoles for numerous reasons including but not limited to span length between structures, construction and maintenance issues, structure footprint, ROW requirements, commodity and labor costs, technical specifications, the specific characteristics of the study area, and other engineering-related reasons.

Provide dimensional drawings of the typical structures to be used in the project.

A dimensional drawing of the typical tangent structure is shown in Figure 1-2, page 1-5, of the *Environmental Assessment for the Ranger Camp Switch to Cattleman Switch 345 kV Transmission Line Project in Mitchell County, Texas* ("Environmental Assessment"), prepared by Burns & McDonnell Engineering Company, Inc. ("Burns & McDonnell") and included as Attachment No. 1.

6. **Right-of-way:**

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

Miles of Right-of-Way:	Approximately 4.2 miles
Miles of Circuit:	Approximately 8.4 miles
Width of Right-of-Way:	Approximately 100 feet
Percent of Right-of-Way Acquired:	100%*

*Oncor has acquired the necessary ROW for the project.

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

The study area is situated in a remote area of Mitchell County, Texas, with no incorporated cities within or extending into the study area. Although no incorporated city is located within the study area, a small portion of the unincorporated community of Lake Colorado City is located in the study area's northwest boundary. The study area consists of rural, undeveloped shrubland used primarily for livestock grazing, some cropland, and Lake Colorado City. Isolated residences and farmsteads are scattered along South FM 1229, FM 2836, and SH 163, the three major roadways in the study area.

The Morgan Creek Power Plant and Oncor's Morgan Creek Switch are located on the eastern shoreline of Lake Colorado City in the north-central portion of the study area. The Texas Parks and Wildlife Department ("TPWD") manages the Lake Colorado City State Park. This park is approximately 500 acres and located on the southwest banks of Lake Colorado City within the western portion of the study area.

The topography of the study area generally consists of a level to gently rolling terrain that decreases in elevation from north to south.

Specific discussion regarding natural, human, and cultural resources in the study area is provided in Sections 3.1 through 3.8, pages 3-1 through 3-40, of the Environmental Assessment.

7. Substations or Switching Stations:

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

Both Oncor's Ranger Camp Switch and Cattleman Switch are currently under construction due to the timeline of the larger project of which the Proposed Transmission Line Project is a component, as discussed in Oncor's response to Question No. 14 herein.

Ranger Camp Switch

The Ranger Camp Switch is located on Oncor's fee-owned property. The Ranger Camp Switch will include: (1) a 345 kV switchyard, initially constructed in a 6-breaker, breaker-and-a-half bus arrangement with two 345/138 kV autotransformers and two 37.5 megavolt-ampere reactive ("Mvar") reactors on the tertiary of each autotransformer; (2) a 138 kV switchyard, initially constructed in a 16-breaker, 138 kV breaker-and-a-half bus arrangement; and (3) a 69 kV switchyard, initially constructed in a 2-breaker, 69 kV single breaker – single bus arrangement. Two separate control centers will each house relay panels, a Supervisory Control and Data Acquisition ("SCADA") system, and controls. One of these control centers will be dedicated to the 345 kV switchyard equipment and the other control center will be dedicated to both the 138 kV and 69 kV switchyard equipment. The Ranger Camp Switch will include capacity for expansion to accommodate additional 345 kV and 138 kV terminals.

The Proposed Transmission Line Project will add four new 345 kV breakers, in a breaker-and-a-half arrangement, and related controls within the existing 345 kV switchyard. Ultimately, the layout can be expanded to accommodate additional 345 kV terminals with an 18-breaker, 345 kV breaker-and-a-half bus arrangement.

The dimensions of the Ranger Camp Switch will be approximately 1,250 feet by 850 feet. The dimensions and additional details regarding the layout of the Ranger Camp Switch are illustrated in Attachment No. 2-A. Construction of the Proposed Transmission Line Project will not change the dimensions of the Ranger Camp Switch.

Cattleman Switch

The Cattleman Switch is located on Oncor's fee-owned property. The Cattleman Switch will be a 345/138 kV switchyard located approximately 0.8 miles west of the intersection of SH 163 and FM 2836, near the City of Colorado City. The Cattleman Switch is being

built adjacent to Oncor's existing Morgan Creek Switch to Consavvy Switch and Morgan Creek Switch to Longshore Switch 345 kV circuits. These circuits will terminate into the Cattleman Switch 345 kV switchyard prior to construction of the Proposed Transmission Line Project.

The Cattleman Switch will include: (1) a 345 kV switchyard, initially constructed in a 14-breaker, breaker-and-a-half bus arrangement with two 345/138 kV autotransformers and two 37.5 Mvar reactors on the tertiary of each autotransformer; and (2) a 138 kV switchyard, initially constructed in a 5-breaker, 138 kV breaker-and-a-half bus arrangement. Two separate control centers will each house relay panels, a SCADA system, and controls. One control center will be dedicated to the 345 kV switchyard equipment and the other control center will be dedicated to the 138 kV switchyard equipment. The Cattleman Switch will include capacity for expansion to accommodate additional 345 kV and 138 kV terminals.

The Proposed Transmission Line Project will connect to two of the fourteen initial 345 kV breakers in a breaker-and-a-half bus arrangement and to related controls within the 345 kV switchyard. Ultimately, the layout can be expanded to accommodate additional 345 kV terminals with an 18-breaker, 345 kV breaker-and-a-half bus arrangement.

The dimensions of the Cattleman Switch will be approximately 1,500 feet by 700 feet. The dimensions and additional details regarding the layout of the Cattleman Switch are illustrated in Attachment No. 2-B. Construction of the Proposed Transmission Line Project will not change the dimensions of the Cattleman Switch.

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

Oncor's Ranger Camp Switch and Cattleman Switch are currently under construction.

8. Estimated Schedule:

Estimated Dates of:	Start[1]	Completion[1]
Right-of-way and Land Acquisition	08/2024[2]	01/2025
Engineering and Design	06/2024	03/2025
Material and Equipment Procurement	07/2024	10/2025
Construction of Facilities	06/2025	12/2025
Energize Facilities	-	12/2025

[1] Estimated schedule assumes administrative approval of the CCN application and numerous other factors. The estimated construction schedule should not in any way be considered a representation, promise, or guarantee.

[2] Oncor acquired the necessary ROW for the project.

9. Counties:

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

Mitchell County, Texas

10. Municipalities:

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

The proposed route will not traverse any municipality.

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

Not applicable.

11. Affected Utilities:

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

No other electric utility will be served by or connected to the Proposed Transmission Line Project.

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

No other electric utility will be involved in the construction of the Proposed Transmission Line Project, and no other electric utility's existing facilities will be utilized for the Proposed Transmission Line Project.

12. Financing:

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

Oncor proposes to finance the facilities included in the Proposed Transmission Line Project with a combination of debt and equity in compliance with its authorized capital structure, which is similar to the means used for previous construction projects. Oncor plans to utilize internally generated funds (equity) and proceeds received from the issuance of securities. Oncor will typically obtain short-term borrowings as needed for interim financing of its construction expenditures in excess of funds generated internally. These borrowings are then repaid through the issuance of long-term debt securities, the type and amount of which are as of yet undetermined.

Oncor is the sole applicant. No other party will be reimbursed for any portion of the Proposed Transmission Line Project.

13. Estimated Costs:

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

[*This space intentionally left blank. The table begins on the following page.*]

	Transmission Facilities	Station Facilities	
		Ranger Camp Switch[1]	Cattleman Switch[2]
Right-of-way and Land Acquisition	$75,000[3]	-	-
Engineering and Design (Utility)	$30,000	$246,000	-
Engineering and Design (Contract)	$1,350,000	$165,000	-
Procurement of Material and Equipment (including stores)	$12,863,000	$2,499,000	-
Construction of Facilities (Utility)	$0	$0	-
Construction of Facilities (Contract)	$13,768,000	$1,413,000	-
Other (all costs not included in the above categories)	$0	$0	-
Estimated Total Cost	**$28,086,000**	**$4,323,000**	-

[1] Cost estimates for the Ranger Camp Switch include a four-breaker, breaker-and-a-half expansion of the 345 kV switchyard and associated controls to connect the Proposed Transmission Line Project. Relay panels and controls for the 345 kV switchyard equipment will be housed in an existing control center.

[2] The cost for the minimal work needed to terminate the Proposed Transmission Line Project at the Cattleman Switch is included in the transmission line cost category. Costs associated with the establishment of the switch and termination of the existing 345 kV circuits will be captured in a separate project.

[3] Oncor acquired the necessary ROW for the project.

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

Not applicable.

14. Need for the Proposed Project:

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

portion(s) of an appropriate commission order specifying that the facilities are needed. For all projects, provide any documentation of the review and recommendation of a PURA §39.151 organization.

The Proposed Transmission Line Project is part of Oncor's numerous transmission system improvements (collectively, the "West Texas Rebuild Project") endorsed by ERCOT. On August 9, 2024, the Commission approved the first of these Oncor infrastructure projects requiring a CCN amendment—the Ranger Camp Switch 345 kV Transmission Tap Line project—in Commission Docket No. 56597. The Proposed Transmission Line Project will expand and upgrade Oncor's transmission system in West Texas to address reliability issues. Load growth, load integration requests, and the age of existing facilities all contribute to the Proposed Transmission Line Project's need. The following table shows project area historical load from 2020 to 2024 and projected load growth from 2025 to 2029:

YEAR	2020	2021	2022	2023	2024
LOAD (MW)	4,834	5,119	5,699	6,476	8,480

YEAR	2025	2026	2027	2028	2029
LOAD (MW)	10,139	11,119	11,595	11,993	12,226

Oncor's West Texas 345 kV Infrastructure Rebuild Project submittal to ERCOT's Regional Planning Group on November 3, 2023 ("RPG Submittal"), which is included as Attachment No. 4, shows that the West Texas Rebuild Project is needed to address this reliability need in West Texas. The Proposed Transmission Line Project is the second transmission infrastructure project associated with the West Texas Rebuild Project needing the Commission's approval that will address the reliability issues identified in the RPG Submittal.

The ERCOT Independent Review of the Oncor West Texas 345-kV Infrastructure Rebuild Project ("Independent Review") was published on May 16, 2024, and is included as Attachment No. 5. ERCOT's Independent Review recommends the addition of each component of the RPG Submittal. ERCOT's Board of Directors endorsed the West Texas Rebuild Project as a Tier 1 project. The ERCOT Board of Directors resolution and meeting minutes endorsing the West Texas Rebuild Project are included as Attachment No. 6.

Oncor's steady-state contingency analysis under summer 2028 conditions revealed thermal overloads on several 345 kV transmission lines and 345/138 kV autotransformers in the West Texas portion of Oncor's transmission grid. Oncor identified these thermal overloads under certain North American Electric Reliability Corporation ("NERC") post-contingency conditions.

Oncor's analysis was based on ERCOT's October 10, 2022, Steady State Working Group (SSWG) case. The following table from the RPG Submittal indicates that by summer 2028, thermal overloads will occur if the West Texas Rebuild Project, including the Proposed Transmission Line Project, is not built. Loading is shown as a percentage of an element's emergency rating, and any loading at or above 100 percent constitutes a thermal overload that must be addressed.

[*This space intentionally left blank. The table begins on the following page.*]

Pre-Project Thermal Loading				
NERC Category	Contingency		Monitored Element	2028 Summer % Loading Without Proposed Projects
	Initial Event (PSSE Buses)	Second Event (PSSE Buses)		
P1	Prairieland - Morgan Creek 345 kV Line (18548 - 19000 id 1, 19000 - 1030 id 1)	N/A	Longshore - Prairieland 345 kV Line	107.5
	Consavvy - Prairieland 345 kV Line 1 (11387 - 18548 id 1)	N/A	Consavvy - Prairieland 345 kV Line 2	99.4
	Consavvy - Prairieland 345 kV Line 2 (11387 - 18548 id 2)	N/A	Consavvy - Prairieland 345 kV Line 1	99.4
P7	Morgan Creek - Champion Creek/LCRA Bitter Creek 345 kV Double-circuit Line (1030 - 1414 id 1, 1030 - 71050 id 1)	N/A	Morgan Creek - Tonkawa 345 kV Line	129.1
	Prairieland - Longshore/Morgan Creek 345 kV Double-circuit Line (18548 -1058 id 1, 18548 - 19000 id 1, 19000 - 1030 id 1)	N/A	Falcon Seaboard - Rockhound 345 kV Line	105.8
P3	Either Odessa Ector CC Train (130321 id C1, 130322 id C2, 130323 id C0)	Prairieland - Morgan Creek 345 kV Line (18548 - 19000 id 1, 19000 - 1030 id 1)	Morgan Creek - Longshore 345 kV Line	95.1
		Consavvy - Prairieland 345 kV Line 1 (11387 - 18548 id 1)	Consavvy - Prairieland 345 kV Line 2	114.7
		Consavvy - Prairieland 345 kV Line 2 (11387 - 18548 id 2)	Consavvy - Prairieland 345 kV Line 1	114.7
		Prairieland - Longshore 345 kV Line (18548 -1058 id 1)	Prairieland - Morgan Creek 345 kV Line	102.9
EP3	Either Odessa Ector CC Train (130321 id C1, 130322 id C2, 130323 id C0)	Morgan Creek - Champion Creek/LCRA Bitter Creek 345 kV Double-circuit Line (1030 - 1414 id 1, 1030 - 71050 id 1)	Morgan Creek - Tonkawa 345 kV Line	143.3
		Prairieland - Longshore/Morgan Creek 345 kV Double-circuit Line (18548 -1058 id 1, 18548 - 19000 id 1, 19000 - 1030 id 1)	Falcon Seaboard - Rockhound 345 kV Line	116.4
	Falcon Seaboard CC Train (130001 id C1, 130002 id C2, 130003 id C0)	Prairieland - Longshore/Morgan Creek 345 kV Double-circuit Line (18548 -1058 id 1, 18548 - 19000 id 1, 19000 - 1030 id 1)	Falcon Seaboard - Morgan Creek 345 kV Line	108.8
EP6	Consavvy 345/138 kV Autotransformer 1 (11386, 11387, 11388 id 1)	Consavvy - Midessa South/Tesoro 345 kV Double-circuit Line (11387 - 18540 id 1, 11387 - 1125 id 1)	Consavvy 345/138 kV Autotransformer 2	100.5
	Consavvy 345/138 kV Autotransformer 2 (11386, 11387, 11389 id 2)	Consavvy - Midessa South/Tesoro 345 kV Double-circuit Line (11387 - 18540 id 1, 11387 - 1125 id 1)	Consavvy 345/138 kV Autotransformer 1	100.5
	Einstein 345/138 kV Autotransformer (23852, 23874, 23875 id 1)	Bearkat - North McCamey 345 kV Double-circuit Line (59903 - 76000 id 1, 59903 - 76000 id 2)	Longshore - Prairieland 345 kV Line	120.8

Table 1 – Worst Post-Contingency Line Loading (Pre-Project)

This table shows that multiple Oncor transmission lines and 345/138 kV autotransformers would experience thermal overloads under eleven different NERC and ERCOT post-contingency conditions. Thermal overloads can cause damage to the electrical equipment of both transmission lines and autotransformers, threatening reliable electric transmission service. The Proposed Transmission Line Project is a component of the overall solution necessary to address this reliability issue.

The following table from the RPG Submittal shows that the Proposed Transmission Line Project, as part of the West Texas Rebuild Project, will solve thermal overloads of Oncor's existing and future transmission lines and autotransformers in the area. This table projects the summer 2028 loading percentage of Oncor's facilities after the West Texas Rebuild Project is in-service. Akin to the previous table, loading is shown as a percentage of each element's emergency rating.

[*This space intentionally left blank. The table begins on the following page.*]

Post-Project Thermal Loading	
Monitored Element	**2028 Summer Worst % Loading After Proposed Projects (All Contingencies)**
Ranger Camp - Cattleman 345 kV Line 1	18.8
Ranger Camp - Cattleman 345 kV Line 2	18.8
Falcon Seaboard - Prong Moss 345 kV Line 1	24.6
Falcon Seaboard - Prong Moss 345 kV Line 2	24.6
Midland East - Rockhound 345 kV Line 1	25.1
Midland East - Rockhound 345 kV Line 2	25.1
Ranger Camp - Prong Moss 345 kV Line 1	29.9
Ranger Camp - Prong Moss 345 kV Line 2	29.9
Cattleman - Longshore 345 kV Line 1	32.5
Cattleman - Longshore 345 kV Line 2	32.5
Consavvy - Prairieland 345 kV Line 1	36.1
Consavvy - Prairieland 345 kV Line 2	36.1
Ranger Camp - Tonkawa 345 kV Line 1	37.0
Ranger Camp - Tonkawa 345 kV Line 2	37.0
Prong Moss - Rockhound 345 kV Line 1	38.2
Prong Moss - Rockhound 345 kV Line 2	38.2
Longshore - Prairieland 345 kV Line 1	42.9
Longshore - Prairieland 345 kV Line 2	42.9
Consavvy 345/138 kV Autotransformer 1	84.4
Consavvy 345/138 kV Autotransformer 2	84.4

Table 2 – Worst Post-Contingency Line Loading (Post-Project)

This table shows that the West Texas Rebuild Project will resolve thermal overloads because the loading percentage is well below 100 percent for the relevant facilities. Each 345 kV transmission line's loading percentage is at or below 42.9 percent, and both 345/138 kV autotransformers' loading percentage is 84.4 percent.

In sum, the Proposed Transmission Line Project will address reliability issues, including thermal overloading on Oncor's system in West Texas. The Proposed Transmission Line Project will facilitate additional transmission system upgrades associated with the West Texas Rebuild Project, which will result in other grid benefits. These additional grid benefits include: (1) increasing system load serving capacity; (2) improving system

operational flexibility; (3) creating an additional 345 kV source in this area of West Texas; and (4) upgrading and retiring aging infrastructure that is not suitable to serve rapidly increasing demand for reliable electric service in the project area. The Proposed Transmission Line Project will improve service for new and existing customers in an area of accelerated demand growth.

15. Alternatives to Project:

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

Due to the existing system configuration and remote location of the surrounding transmission lines (*see* Attachment No. 7), alternatives to the Proposed Transmission Line Project are limited. There are no feasible alternatives to many of the transmission system improvements (e.g., station reconfigurations) comprising the West Texas Rebuild Project.

Oncor analyzed constructing additional 345 kV circuits on new structures within new ROW next to the existing 345 kV transmission lines leaving Oncor's Morgan Creek Switch. This alternative provides certain advantages, such as avoidance of "hot work," creation of an alternative transmission path into the area, and other operational, resiliency, and flexibility benefits to the system. However, this alternative did not improve system performance to the same degree as the West Texas Rebuild Project. In addition, building more 345 kV transmission lines adjacent and parallel to the existing 345 kV transmission lines would require purchasing additional new ROW and a CCN amendment for each new 345 kV transmission line, resulting in additional time to complete and the likelihood of higher costs Oncor did not deem this to be a viable alternative from a cost or timeliness perspective.

Distribution alternatives to the Proposed Transmission Line Project would not resolve the identified reliability issues on the transmission system or address the large loads and generation seeking interconnection at transmission-level voltage. Upgrading voltage or bundling of conductors of existing facilities, and adding transformers would also fail to address the identified reliability issues or provide the necessary level of service to meet electric demand in the area.

16. Schematic or Diagram:

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

A schematic of the transmission system in the proximate area of the Proposed Transmission Line Project is shown in Attachment No. 8. The location and voltage of existing transmission lines, substations, taps, ties, meter points, and other facilities involving electric utilities in relation to the Proposed Transmission Line Project are included in the map provided as Attachment No. 7. A map outlining the study area is in Figure 3-1 in Appendix B of the Environmental Assessment.

17. Routing Study:

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

Oncor retained Burns & McDonnell to prepare the Environmental Assessment. The objective of the Environmental Assessment was to provide information in support of this application in addressing the requirements of Texas Utilities Code § 37.056(c)(4)(A)-(D), the PUC CCN Application form, and 16 Texas Administrative Code ("TAC") § 25.101 as they apply to the Proposed Transmission Line Project. By examining existing environmental conditions, including the human and natural resources that are located in the study area, the Environmental Assessment appraises the environmental effects of construction, operation, and maintenance of the Proposed Transmission Line Project. The Environmental Assessment may also be used in support of any additional local, state, or federal permitting activities that may be required for the Proposed Transmission Line Project.

To assist Burns & McDonnell in its evaluation, Oncor provided information regarding the project endpoints and route, need for the project, engineering and design requirements, construction practices, and ROW requirements.

The Proposed Transmission Line Project includes a single proposed route, for which all necessary ROW was acquired, and which addresses the requirements of PURA and the PUC's Substantive Rules.

Specific discussion regarding selection of a study area, identification of constraints, and assessment of the proposed route is set forth in the Environmental Assessment.

18. Public Meeting or Public Open House:

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

or public open house provide a description of the method of notice, a copy of any notices, and the number of notices that were mailed and/or published.

The Proposed Transmission Line Project, including both endpoints, directly affects properties owned by Oncor and five other landowners. Under 16 TAC § 22.52(a)(4), a utility must hold a public meeting prior to filing its application if 25 or more persons would be entitled to receive direct mail notice of the application. Therefore, no public meeting for the Proposed Transmission Line Project was required.

19. **Routing Maps:**

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

A one inch = 1,000 feet map is included as Figure 3-1 in Appendix B of the Environmental Assessment. This base map includes sufficient cultural and natural features to identify the location of the proposed route in the field. This figure delineates the study area and proposed route for the Proposed Transmission Line Project. This map also depicts the approximate locations of electronic installations (such as radio transmitters), airstrips, irrigated pasture or cropland, parks and recreational areas, historical and archeological sites, and environmentally sensitive areas (such as wetlands), if any. Figure 3-1 in Appendix B of the Environmental Assessment identifies existing facilities in the area of the Proposed Transmission Line Project, including taps, ties, meter points, or other utility facilities, as applicable.

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

Figure 3-1 in Appendix B of the Environmental Assessment depicts on an aerial photograph, as applicable: (1) the location of the route for the Proposed Transmission Line Project; (2) the locations of all major public roads, including all federal and state

roadways; (3) the locations of all known habitable structures on properties directly affected by the route; and (4) the boundaries (approximate or estimated according to best available information) of all properties directly affected by the route.

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

Attachment No. 9 includes a table that cross-references each directly affected property identified in Figure 3-1 in Appendix B of the Environmental Assessment; the cross-reference table includes corresponding landowner names and addresses. Four known habitable structures were located within 500 feet of the proposed route and are referenced in Attachment No. 9.

20. Permits:

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

The following permits/approvals and related actions will be obtained/taken after Commission approval of the application and prior to beginning construction, if necessary:

1. Texas Department of Transportation (TxDOT) permit(s) for crossing a state-maintained roadway.
2. A Storm Water Pollution Prevention Plan (SWPPP) will be prepared and a Notice of Intent will be submitted to the Texas Commission on Environmental Quality under the Texas Pollutant Discharge Elimination System (TPDES) program.
3. A cultural resources survey plan will be developed with the Texas Historical Commission ("THC") for the proposed project.
4. Consultation with the U.S. Army Corps of Engineers will occur following the Commission's approval of this application to determine appropriate requirements under Section 404/Section 10 Permit criteria.
5. Consultation with the U.S. Fish and Wildlife Service will occur following the Commission's approval of this application to determine appropriate requirements under the Endangered Species Act.
6. Consultation with the Federal Aviation Administration ("FAA") will occur following the Commission's approval of this application to determine appropriate requirements and notification under Federal Aviation Regulations (14 CFR Part 77).
7. Texas General Land Office miscellaneous easement(s) for crossing riverbeds, navigable streams, or other properties involving state property interests.

21. Habitable structures:

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

As depicted on Figure 3-1 in Appendix B of the Environmental Assessment, four habitable structures were identified within 500 feet of the proposed route centerline. To account for photographic interpretation limitations such as shadows, tree canopies, and horizontal accuracy of the photography, Burns & McDonnell identified all habitable structures within a measured distance of 520 feet of the proposed route centerline.

Habitable Structure ID	Description	Distance From Proposed Route Centerline (ft)	Direction From Proposed Route Centerline[(1)]
1	Administrative building	177	South
2	Facilities building	365	South
3	Facilities building	440	South
4	Single-family residence	303	North

(1) Represents the direction heading from the proposed route centerline to the habitable structure.

22. Electronic Installations:

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

There are no known AM radio transmitters located within 10,000 feet of the proposed route centerline and no known FM radio transmitters located within 2,000 feet of the proposed route centerline.

One microwave tower is located within 2,000 feet of the proposed route centerline. This microwave tower is located approximately 0.8 miles southwest of the intersection of

SH 163 and South FM 1229, which is approximately 925 feet east of the proposed route centerline. The location of this microwave tower ("Tower 1") is depicted on Figure 3-1 in Appendix B of the Environmental Assessment.

A tower associated with an abandoned gas station on the south side of FM 2836 is also located within 2,000 feet of the proposed route centerline. This tower is located approximately 1,934 feet northeast of the proposed route centerline, northwest of the intersection of SH 163 and FM 2836 in the southwestern portion of the study area. The location of this tower ("Tower 2") is depicted on Figure 3-1 in Appendix B of the Environmental Assessment.

The below table shows information regarding electronic installations in the study area:

Facility ID	Installation Type	Licensee	Distance (ft)	Direction
THERE ARE NO AM RADIO TRANSMITTERS WITHIN 10,000 FEET OF ROUTE				
Facility ID	**Installation Type**	**Licensee**	**Distance (ft)**	**Direction**
THERE ARE NO FM RADIO TRANSMITTERS WITHIN 2,000 FEET OF ROUTE				
Facility ID	**Installation Type**	**Licensee**	**Distance (ft)**	**Direction**
OTHER ELECTRONIC INSTALLATIONS WITHIN 2,000 FEET OF ROUTE				
Tower 1	Microwave Tower	Oncor License Holding Company LLC	925	East
Tower 2	Unknown	Unknown	1,934	Northeast

Please refer to Table 4-3, page 4-20; Section 3.7.7, page 3-30; and Section 4.7.7, pages 4-16 to 4-17, of the Environmental Assessment.

23. Airstrips:

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

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

Burns & McDonnell's review of federal and state aviation/airport maps and directories, aerial photograph interpretation, and reconnaissance survey identified: (1) no FAA-registered airport with a runway greater than 3,200 feet in length within 20,000 feet of the proposed route centerline; (2) no FAA-registered airport with a runway 3,200 feet or less in length within 10,000 feet of the proposed route centerline; (3) no heliport within 5,000 feet of the proposed route centerline; and (4) no private airstrip within 10,000 feet of the proposed route centerline.

Please refer to Table 4-3, page 4-20; Section 3.7.6, page 3-30; and Section 4.7.6, page 4-16, of the Environmental Assessment.

24. Irrigation Systems:

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

Aerial photography interpretation and a field reconnaissance survey did not identify any agricultural land irrigated by traveling irrigation systems (rolling or pivot type) that the proposed route will traverse.

Please refer to Table 4-3, page 4-20; Section 3.7.3, pages 3-27 to 3-28; and Section 4.7.3, page 4-14, of the Environmental Assessment.

25. Notice:

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

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

A copy of the written direct notice, with attached route description and map, that will be provided via first-class mail to the owners of land that will be "directly affected" by the Proposed Transmission Line Project, as that term is used in 16 TAC § 22.52(a)(3), is included as Attachment No. 10. The names and addresses of the directly affected landowners to whom notice will be mailed via first-class mail are included as Attachment No. 9. The list of owners of directly affected land in Attachment No. 9 consists of landowner data obtained via the Mitchell County Tax Office and the Mitchell County Appraisal District. Oncor and five

other landowners are directly affected by the Proposed Transmission Line Project.

No notice is required under Texas Utilities Code § 37.054(c) because Oncor is not requesting approval to build a new substation in this application.

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

No other utilities are located within five miles of the Proposed Transmission Line Project.

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

A representative copy of the written notice, with attached route description and map, that will be provided to county authorities is included as Attachment No. 11. The following county authorities will be provided the requisite notice on or before the application filing date, as required by Commission rules:

Mitchell County, County Judge
Mitchell County, County Commissioners – Precincts 1, 2, 3, and 4

A representative copy of the written notice, with attached route description and map, that will be provided to municipal authorities is included as Attachment No. 11. The following municipal authorities will be provided the requisite notice on or before the filing date, as required by Commission rules:

City of Colorado City, Mayor
City of Colorado City, City Manager
City of Colorado City, Council Members – Districts 1, 2, 3, 4, 5, and 6

In addition, the following municipal authorities will be provided courtesy notice on or before the application filing date, as it is a municipality more than five miles away from the requested facilities:

City of Westbrook, Mayor
City of Westbrook, City Commissioners

A representative copy of the written notice, with attached route description and map, that will be provided to the Department of Defense Military Aviation and Installation Assurance Siting Clearinghouse by email at osd.dod-siting-

clearinghouse@mail.mil, and by first-class mail to the address below on the date this application is filed, is included as Attachment No. 11.

DOD Military Aviation and Installation Assurance Siting Clearinghouse
3400 Defense Pentagon, Room 5C646
Washington, DC 20301-3400

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

Notice for this application will be published in the *Colorado City Record*, a newspaper of general circulation in Mitchell County, Texas. A representative copy of the general public notice to be published is included as Attachment No. 12.

Proof of publication will be provided in the form of a publisher's affidavit and tear sheet following publication of this notice.

A copy of the application and all attachments will be provided to the Texas Office of Public Utility Counsel ("OPUC"). A representative copy of the written notice, with attached route description and map, that will be provided to OPUC is included as Attachment No. 11.

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

Not applicable.

26. Parks and Recreation Areas:

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

After review of federal, state, and local websites and maps, as well as field reconnaissance surveys, one park owned by a government body or an organized group,

club or church is located within 1,000 feet of the proposed route centerline. TPWD manages the Lake Colorado City State Park located on the southwest banks of Lake Colorado City within the western portion of the study area. The proposed route centerline does not cross the Lake Colorado City State Park.

Please refer to Table 4-3, page 4-20; Section 3.7.2, page 3-27; and Section 4.7.2, page 4-14, of the Environmental Assessment.

27. Historical and Archeological Sites:

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

Research and a records review of the THC Historic Sites Atlas and the THC Archaeological Sites Atlas were conducted to locate known cultural resources within 1,000 feet of the proposed route centerline. THC records indicated no National Register of Historic Places ("NRHP"), State Antiquities Landmarks (SALs), or cemeteries recorded within 1,000 feet of the proposed route centerline.

THC records indicated five archeological sites of undetermined NRHP eligibility are known to be within 1,000 feet of the proposed route centerline. The distances from these cultural resources to the proposed route centerline are provided below.

Cultural Resource	Distance from Route Centerline (ft)	Direction from Route Centerline
41MH67	81	East
41MH68	255	East
41MH82	766	North
41MH86	864	North
41MH135	505	East

Please refer to Table 4-3, page 4-20; Section 3.8, pages 3-31 through 3-40; and Section 4.8, pages 4-17 through 4-19, of the Environmental Assessment.

28. Coastal Management Program:

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

The Proposed Transmission Line Project is not located, either in whole or in part, within the coastal management program boundary as defined in 31 TAC § 27.1 (formerly 31 TAC § 503.1).

29. Environmental Impact:

Provide copies of any and all environmental impact studies and/or assessments of the project. If no formal study was conducted for this project, explain how the routing and construction of this project will impact the environment. List the sources used to identify the existence or absence of sensitive environmental areas. Locate any environmentally sensitive areas on a routing map. In some instances, the location of the environmentally sensitive areas or the location of protected or endangered species should not be included on maps to ensure preservation of the areas or species.

The Environmental Assessment prepared by Burns & McDonnell is included as Attachment No. 1.

Within seven days after filing the application for the project, provide a copy of each environmental impact study and/or assessment to the Texas Parks and Wildlife Department (TPWD) for its review at the address below. Include with this application a copy of the letter of transmittal with which the studies/assessments were or will be sent to the TPWD.

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

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

A copy of the application and all attachments, including the Environmental Assessment, will be provided to TPWD for review within seven days following the filing of the application for the Proposed Transmission Line Project. Please refer to Attachment No. 14 for a copy of the transmittal letter with which the application and all attachments, including the Environmental Assessment, will be sent to TPWD.

30. Affidavit

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

31. List of Attachments to the CCN Application

Attachment No. 1:	Environmental Assessment
Attachment No. 2-A:	Preliminary Layout – Ranger Camp Switch with the Proposed Transmission Line Project Connection
Attachment No. 2-B:	Preliminary Layout – Cattleman Switch with the Proposed Transmission Line Project Connection
Attachment No. 3:	ERCOT's Permian Basin Load Interconnection Study Report (December 8, 2021)
Attachment No. 4:	ERCOT RPG Submittal for the West Texas 345 kV Infrastructure Rebuild Project (November 3, 2023)
Attachment No. 5:	ERCOT Independent Review of the Oncor West Texas 345 kV Infrastructure Rebuild Project (May 16, 2024)
Attachment No. 6:	ERCOT Board of Directors Resolution and Meeting Minutes Memorializing Approval of the Oncor West Texas 345 kV Infrastructure Rebuild Project (June 18, 2024)
Attachment No. 7:	Transmission Area Map in Project Area
Attachment No. 8:	Schematic of Transmission System in Proximate Area of Project
Attachment No. 9:	List of Directly Affected Landowners for Notice and Pipeline Owners, Operators, and Associations for Courtesy Notice
Attachment No. 10:	Copy of Notice to Directly Affected Landowners
Attachment No. 11:	Copy of Notice to County, OPUC, Municipalities, and Department of Defense Military Aviation and Installation Assurance Siting Clearinghouse
Attachment No. 12:	Copy of Newspaper/Public Notice
Attachment No. 13:	Copy of Courtesy Notice to Pipeline Owners, Operators, and Associations
Attachment No. 14:	Transmittal Letter to TPWD
Attachment No. 15:	Affidavit

BURNS McDONNELL

Environmental Assessment

ONCOR

Oncor Electric Delivery Company LLC

Ranger Camp Switch to Cattleman Switch
345 kV Transmission Line Project
in Mitchell County, Texas

January 2025

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LIST OF ABBREVIATIONS

Abbreviation	Term/Phrase/Name
AM	Amplitude Modulation
APLIC	Avian Power Line Interaction Committee
Atlas	Texas Archeological Sites Atlas
BEG	Bureau of Economic Geology
BGEPA	Bald and Golden Eagle Protection Act
BMP	Best Management Practice
Burns & McDonnell	Burns & McDonnell Engineering Company, Inc.
ca.	circa
CCN	Certificate of Convenience and Necessity
CFR	Code of Federal Regulations
CR	County Road
Cropland CROS	Cropland Collaborative Research Outcomes System
CWA	Clean Water Act
DoD	Department of Defense
EA	Environmental Assessment
e.g.	exempli gratia (for example)
EMST	Ecological Mapping Systems of Texas
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
et al.	and others
etc.	et cetera
FAA	Federal Aviation Administration
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FM	Farm-to-Market Road

Abbreviation	Term/Phrase/Name
FM	Frequency Modulation
FRA	Federal Railroad Administration
ft	Foot/Feet
FVZ	Foreground Visual Zone
GIS	Geographic Information System
GLO	General Land Office
HIFLD	Homeland Infrastructure Foundation-Level Data
HPA	High Probability Area
HPALM	Hybrid Potential Archeological Liability Map
i.e.	id est (that is)
IPaC	Information for Planning and Consultation
ISD	Independent School District
kV	Kilovolt
Luminant	Luminant Generation Company, LLC
MBTA	Migratory Bird Treaty Act
msl	Mean Sea Level
MW	Megawatt
NAI	Need Additional Information
NAIP	National Agriculture Imagery Program
NAS	National Audubon Society
NASS	National Agricultural Statistics Service
NCED	National Conservation Easement Database
NHL	National Historic Landmark
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory

Abbreviation	Term/Phrase/Name
NWP	Nationwide Permit
Oncor	Oncor Electric Delivery Company LLC
OTHM	Official Texas Historical Marker
PADUS	Protected Areas Database of the United States
PUCT	Public Utility Commission of Texas
ROW	Right-of-Way
RRC	Railroad Commission of Texas
RTHL	Recorded Texas Historic Landmark
SAL	State Antiquities Landmark
SCS	Soil Conservation Service
SH	State Highway
S	South
spp.	species
ssp.	subspecies
SWPPP	Storm Water Pollution Prevention Plan
TAC	Texas Administrative Code
TARC	Texas Association of Regional Councils
TARL	Texas Archeological Research Laboratory
TCEQ	Texas Commission on Environmental Quality
TEA	Texas Education Agency
THC	Texas Historical Commission
TLC	Texas Land Conservancy
TNC	The Nature Conservancy
TPWD	Texas Parks and Wildlife Department
TSHA	Texas State Historical Association
TWDB	Texas Water Development Board
TxDOT	Texas Department of Transportation

Abbreviation	Term/Phrase/Name
TXNDD	Texas Natural Diversity Database
UPRR	Union Pacific Railroad
U.S.	United States
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDA	U.S. Department of Agriculture
USDHS	U.S. Department of Homeland Security
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WCTCOG	West Central Texas Council of Governments
WHAB	Wildlife Habitat Assessment
WOTUS	Waters of the U.S.
3DHP	USGS 3D National Hydrography Program

1.0 PROJECT DESCRIPTION

1.1 Scope of the Project

Oncor Electric Delivery Company LLC (Oncor) proposes to construct a 4.2-mile long 345 kilovolt (kV) transmission line between Oncor's Ranger Camp Switch and Cattleman Switch, which are both currently under construction (Proposed Project). The Ranger Camp Switch is located approximately 0.7 miles southwest of the intersection of South Farm-to-Market Road (FM) 1229 and State Highway (SH) 163, near Colorado City. The Cattleman Switch is located approximately 0.8 miles west of the intersection of SH 163 and FM 2836. The proposed transmission line will be approximately 4.2 miles in length. The study area, the Project's alignment, and the two endpoints are shown on **Figure 1-1**.

Oncor retained Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) to prepare this Environmental Assessment (EA) to support Oncor's application for a Certificate of Convenience and Necessity (CCN). This report has been prepared to provide information and address the requirements of Section 37.056(c)(4)(A)-(D) of the Texas Utilities Code, Public Utility Commission of Texas (PUCT) Procedural Rule Section 22.52(a)(4), PUCT Substantive Rule Section 25.101, and the PUCT CCN application form for a proposed transmission line. This report may also be used in support of additional local, state, or federal permitting activities that may be required for the Proposed Project.

To assist Burns & McDonnell in the evaluation of the Proposed Project, Oncor provided Burns & McDonnell with information regarding the need, construction practices, and right-of-way (ROW) requirements for the Proposed Project. Oncor also provided information regarding the engineering and design requirements for the EA.

Following this project description section, this document includes an explanation of the environmental assessment methodology **(Section 2.0)** and an evaluation of the existing environmental and social conditions in the study area **(Section 3.0)**. An evaluation of the expected environmental impacts of the Proposed Project is presented in **Section 4.0**, followed by a list of report preparers **(Section 5.0)** and bibliographical references used in preparing this report **(Section 6.0)**. The appendices include copies of agency correspondence **(Appendix A)** and the environmental and land use constraints map **(Appendix B)**.

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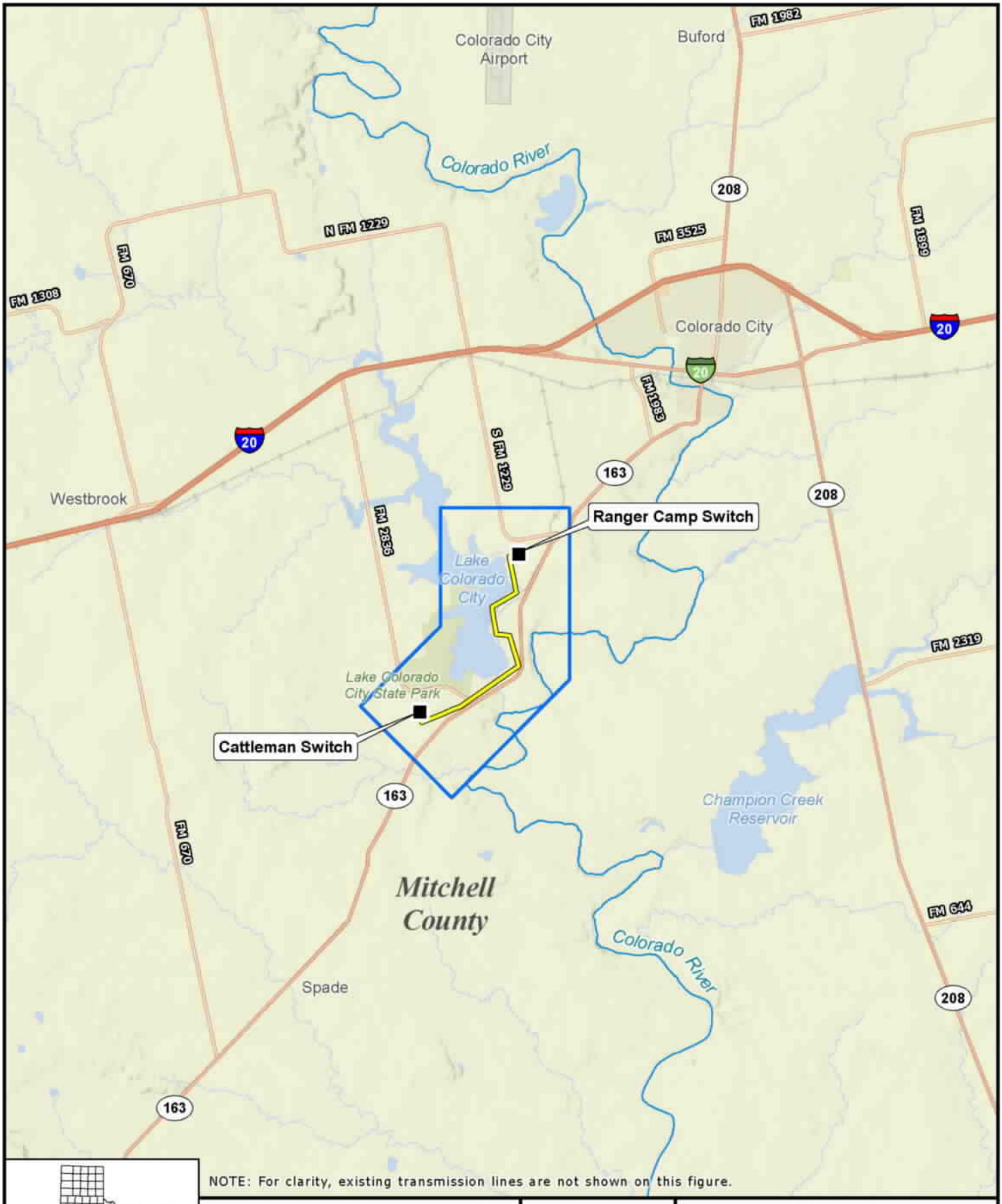


Figure 1-1
Project Location
Ranger Camp Switch
to Cattleman Switch
345 kV Transmission Line
Oncor Electric Delivery Company LLC
Mitchell County, Texas

Source: ESRI

Issued: 11/22/2024

1.2 Need for the Project

Oncor will provide support for the purpose and need for the Proposed Project as a part of the CCN application.

1.3 Description of Proposed Construction

1.3.1 Transmission Line Design

For the Proposed Project, Oncor plans to install 345 kV self-supporting, double-circuit steel monopoles (**Figure 1-2**). Design criteria will comply with applicable statutes, the appropriate edition of the National Electrical Safety Code, and Oncor's standard design practices. The typical structure height is anticipated to be 130 to 199 feet, but pole height will vary depending on terrain and other engineering constraints. The results of site-specific geotechnical and engineering studies will be used to determine the appropriate design and placement of the structures.

1.3.2 Right-of-Way Requirements

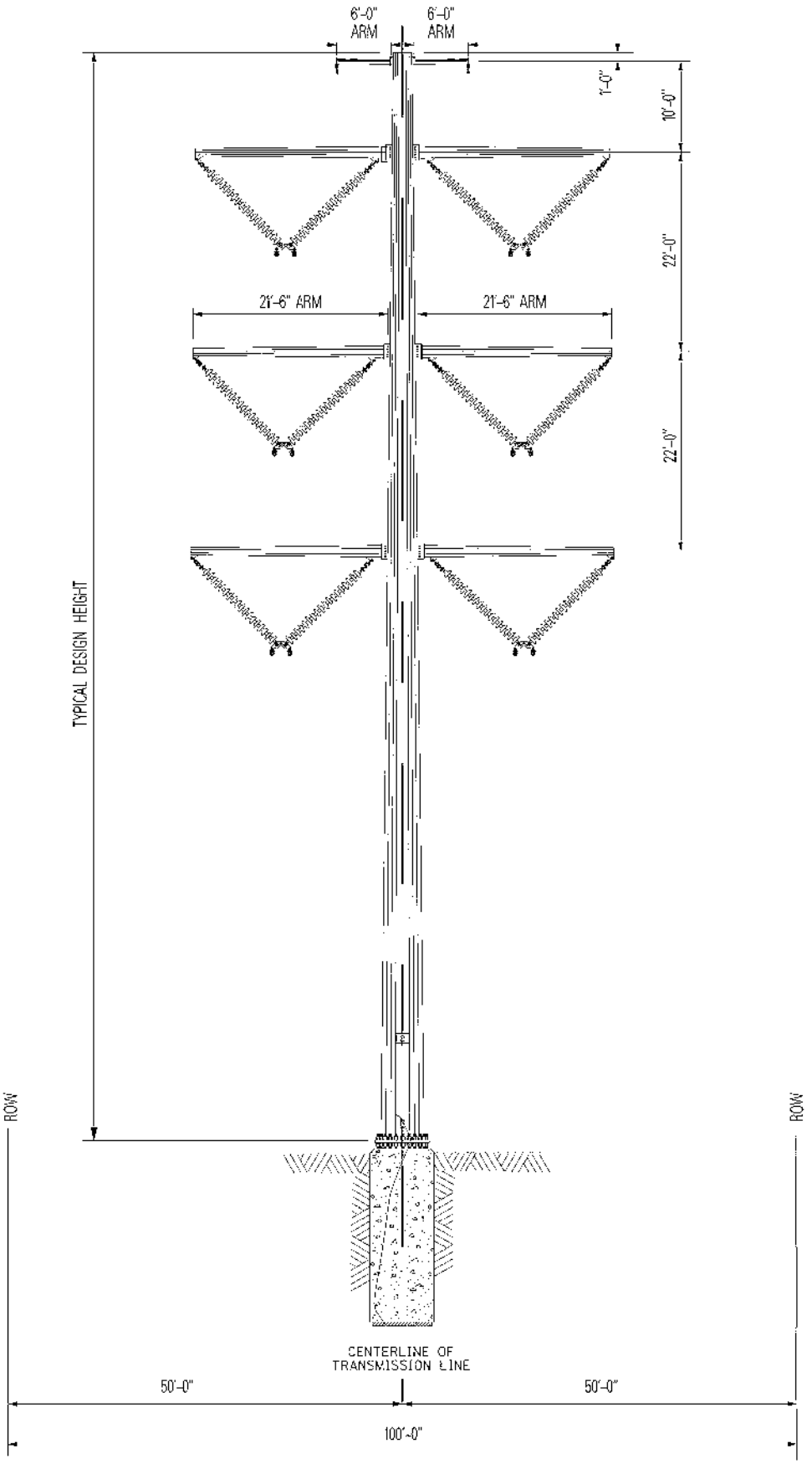
Oncor has acquired all ROW required for the Proposed Project. The proposed typical ROW width for the Proposed Project is approximately 100 feet. The ROW normally extends an equal distance on each side of the transmission line centerline. In certain locations, additional ROW may be necessary to address engineering constraints.

1.3.3 Clearing Requirements

All brush and undergrowth within the ROW will be removed and maintained. For areas requiring hand clearing, vegetation will be cut level with the ground. No stump exceeding 2 inches above the ground will remain. Any tree located in a fence line having a diameter greater than 4 inches will be cut even with the top of the fence. Stumps located on hillsides or uneven ground will be cut to where a mowing machine can pass over the ROW without striking any stumps, roots, or snags.

1.3.4 Monopole Structure Assembly and Erection

Foundations for the monopole structures will be completed before erecting the structures. All monopole structures will have an anchor bolted foundation. A hole will be augered into the ground at each structure location, an anchor bolt cage will be placed in addition to steel rebar to reinforce the foundation, and the hole will be filled with concrete. The depth and diameter of the foundation will vary depending on the design of the structure specific to that location.



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NOT TO SCALE

Figure 1-2
Typical 345 kV Tangent
Double-Circuit Monopole
Ranger Camp Switch to Cattleman Switch
345 kV Transmission Line
Oncor Electric Delivery Company LLC
Mitchell County, Texas

Issued: 11/4/2024

1.3.5 Conductor Stringing

Once a series of structures has been erected along the transmission line centerline, the conductor stringing phase can begin. Specialized equipment will be attached to properly support and protect the conductor during the pulling, tensioning, and sagging operations. Once conductors and shield wire are in place and tension and sag have been verified, conductor and shield wire hardware will be installed at each suspension point to maintain conductor position. Conductor stringing will continue until the transmission line construction is complete. All construction equipment, temporary culverts, and environmental controls previously installed as part of the project will be removed after construction is completed.

2.0 ENVIRONMENTAL ASSESSMENT METHODOLOGY

The objective of this study was to evaluate the proposed transmission line route for Oncor's Ranger Camp Switch to Cattleman Switch 345 kV Transmission Line Project. Throughout this EA, the terms "environment" or "environmental" are intended to include the human environment as well as the natural environment. Burns & McDonnell utilized a comprehensive methodology to analyze the Proposed Project in accordance with Section 37.056(c)(4)(A)-(D) of the Texas Utilities Code; PUCT Substantive Rule Section 25.101, including the PUCT policy of prudent avoidance; PUCT Procedural Rule Section 22.52(a)(4); and the PUCT CCN application form for a proposed transmission line.

The following subsections provide a description of the evaluation methodology, including study area delineation; data collection; solicitation of information from local, state, and federal agencies and officials; reconnaissance surveys; constraints mapping; and evaluation of the Proposed Project.

2.1 Study Area Delineation

The first step in the evaluation of the Proposed Project was to define a study area. The study area needed to encompass the endpoints for the Proposed Project (i.e., Oncor's Ranger Camp Switch and Cattleman Switch) and include an area large enough to adequately evaluate the Proposed Project. The boundaries of this area were dictated by the location of existing facilities and other physical and cultural features. The purpose of delineating the study area for the Proposed Project was to establish boundaries and limits for the information gathering process (i.e., identifying environmental and land use constraints).

Numerous ecological, land use, and cultural resource features and constraints were considered as the study area boundaries were developed. Burns & McDonnell reviewed recent aerial imagery (March 2022–January 2023 ESRI World Imagery; 2022 United States (U.S.) Department of Agriculture (USDA) National Agriculture Imagery Program (NAIP); January 2022 Bing; and June 2024 Google Earth) and U.S. Geological Survey (USGS) topographic maps (USGS, 1950, 1978, 2022) to refine the study area boundaries. This effort resulted in the establishment of a chevron-shaped study area approximately 3.6 miles in length on the west side (1.85 miles north/south and 1.75 miles angling to the southwest), 5.25 miles in length on the east side (2.7 miles north/south and 2.6 miles angling to the southwest), and 2 miles wide, encompassing an area of approximately 8.84 square miles (5,658 acres) in Mitchell County, Texas (**Figure 2-1**).

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Figure 2-1
Study Area Location
Ranger Camp Switch to Cattleman Switch 345 kV Transmission Line
Oncor Electric Delivery Company LLC
Mitchell County, Texas

Service Layer Credits: Bing Maps Aerial: © 2024 Microsoft Corporation © 2024 Maxar ©CNES (2024) Distribution Airbus DS

Source: ESRI; Bing; TPWD

Issued: 11/22/2024

2.2 Data Collection

Data used by Burns & McDonnell in the evaluation of the Proposed Project was drawn from a variety of sources, including:

- published literature (e.g., documents, reports, maps, aerial photography, et cetera [etc.]);
- information from local, state, and federal agencies;
- site-specific studies or investigations performed by others;
- recent aerial imagery
    - ESRI World Imagery (mosaic of Maxar Vivid satellite imagery, March 2022–January 2023);
    - 2022 USDA NAIP;
    - Bing Imagery, January 2022;
    - Google Earth Imagery, June 2024;
- 7.5-minute USGS topographic maps (1950, 1978, 2022);
- USGS 3D National Hydrography Program (3DHP);
- USGS Protected Areas Database of the United States (PADUS);
- Federal Emergency Management Agency (FEMA) maps;
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) maps;
- USFWS Information for Planning and Consultation (IPaC);
- Texas Parks and Wildlife Department (TPWD) Texas Natural Diversity Database (TXNDD);
- TPWD Ecological Mapping Systems of Texas (EMST);
- Texas Archeological Sites Atlas (Atlas) through the Texas Archeological Research Laboratory (TARL) and the Texas Historical Commission (THC); and
- ground reconnaissance surveys.

2.2.1 Solicitation of Information from Local, State, and Federal Agencies and Officials

Once the study area boundary was identified, Burns & McDonnell conducted numerous data collection activities. One of the first such activities was the development of a list of officials to whom a consultation letter regarding the Proposed Project would be mailed. The purpose of the consultation letters was to inform the various officials and agencies of the Proposed Project and to give them the opportunity to provide information they may have regarding the study area. Burns & McDonnell contacted the following federal, state, county, and local agencies and officials by letter or email to solicit comments, concerns, and information regarding potential environmental impacts, permits, or approvals relating to the

construction of the proposed 345 kV transmission line within the study area. Burns & McDonnell sent letters to these agencies and officials on August 19, 2024. A map of the study area was included with each letter. Copies of all correspondence with these agencies and officials, as listed below, are included in **Appendix A**.

Federal Agencies

- Federal Aviation Administration (FAA) - Southwest Region
- Federal Emergency Management Agency (FEMA) - Region VI
- Natural Resources Conservation Service (NRCS) - State Conservationist and San Angelo Office
- U.S. Army Corps of Engineers (USACE) - Fort Worth District
- U.S. Department of Defense (DoD), Military Aviation and Installation Assurance Siting Clearinghouse
- U.S. Environmental Protection Agency (EPA) - Region 6
- USFWS - Austin Ecological Services Field Office

State Agencies

- Railroad Commission of Texas (RRC)
- Texas Commission on Environmental Quality (TCEQ) - Region 3
- Texas Department of Transportation (TxDOT) - Aviation Division, Environmental Affairs Division, and Abilene District
- Texas General Land Office (GLO)
- Texas Historical Commission (THC)
- Texas Parks and Wildlife Department (TPWD)
- Texas Water Development Board (TWDB)

County Agencies/Officials

- Mitchell County Judge
- Mitchell County Commissioners (Precincts 1 through 4)
- Mitchell County Farm Service Agency
- Mitchell County Soil and Water Conservation District #207

Local Agencies/Officials

- Mayor, Colorado City
- City Manager, Colorado City
- Lone Wolf Groundwater Conservation District
- Lake Colorado City State Park

- Colorado Independent School District (ISD)
- Westbrook ISD
- West Central Texas Council of Governments (WCTCOG)
- Permian Basin Regional Planning Commission

Additional Contacts

- Texas Agricultural Land Trust
- Texas Land Conservancy (TLC)
- Texas Land Trust Council
- The Nature Conservancy (TNC)

As of December 6, 2024, written replies to the letters sent on August 19, 2024, have been received from the following agencies and officials: USACE, DoD, TCEQ, GLO, THC, and TPWD. Copies of all responses are included in **Appendix A**.

In addition to letters sent to the agencies and officials on August 19, 2024, Burns & McDonnell also reviewed the TXNDD Element Occurrence Records from the TPWD, the IPaC from the USFWS, TARL records, and the THC Texas Archeological Sites Atlas (THC, 2024a) to verify or update cultural and natural resource records for the study area. All agency comments, concerns, and information received were taken into consideration by Burns & McDonnell and Oncor in the preparation of this EA and in the evaluation of the Proposed Project. Additionally, the information received from the agencies will be taken into consideration before and during construction of the Proposed Project. The following is a summary of the comments provided by federal, state, county, and local officials that have responded as of December 6, 2024. Agency comments are also included in **Section 3.0** and **Section 4.0** of this document.

- The USACE responded via email on September 9, 2024, saying that the project has been assigned Project Number SWF-2024-00415 and has been marked as withdrawn until the need to submit a permit or to request a Pre-Application meeting. A Need Additional Information (NAI) letter was attached, noting that the proposed construction activities may be authorized by general permit, such as Nationwide Permit (NWP) 57 for Electric Utility Line and Telecommunications Activities or by a "No Permit Required" action.

- The DoD responded with a letter dated October 9, 2024, saying that the results of an informal review indicated that the Proposed Project will have minimal impact on military operations in the area. The DoD requested that project number 2024-08-T-DEV-34 be included in the comments section of future filings, if any, with the DoD or the FAA.

- Although a letter was sent to the USFWS on August 19, 2024, this agency often no longer responds to such letters and instead requests that the applicant use the IPaC system on its website. Burns & McDonnell accessed the IPaC system on December 16, 2024, to request an Official Species List, which also generated an official consultation response letter and Project Code 2024-0121946. The IPaC system provided a species list identifying federally threatened, endangered, and proposed to be listed species; designated critical habitat; and candidate species that may occur within the study area. A copy of the response letter generated by the IPaC system is included in **Appendix A**.

- The TCEQ responded via email on August 27, 2024, advising how to file a request for Public Information. Burns & McDonnell filed the request as instructed on August 27, 2024, and received a response via email on the same day, assigning a Public Information Request number (PIR 24-96809). A third email was received from the TCEQ on September 3, 2024, noting that the agency was unable to locate any responsive information in the possession of the TCEQ concerning the request.

- The GLO responded with a letter dated August 23, 2024, stating that the agency does not appear to have any environmental issues or land use constraints associated with the Proposed Project and asking to be provided the final route so that the agency can assess the route and determine if the project will cross any streambeds or Permanent School Fund land that would require a GLO easement.

- The THC responded via email on September 20, 2024, assigning Tracking #202416754 and saying that no historic properties are present or affected by the project as proposed and that no effect on identified archeological sites or other cultural resources would occur.

- The TPWD responded with an automated message on August 19, 2024, saying that the Wildlife Habitat Assessment (WHAB) program had received Burns & McDonnell's email and that responses to requests for project review generally take approximately 45 days to complete. This was followed by a letter dated September 12, 2024, sent via email, assigning TPWD project number 52739 and providing a list of species that could be impacted by Proposed Project activities if suitable habitat is present. The agency provided a list of regulations pertaining to the project and recommendations regarding compliance with these regulations. TPWD also provided information and recommendations for conservation easements, managed areas, water resources,

the Migratory Bird Treaty Act (MBTA), the Bald and Golden Eagle Protection Act (BGEPA), EMST, monarch and pollinator conservation, and general construction (TPWD, 2024l).

- The RRC responded with a letter dated November 14, 2024, and provided a website address for the agency's Geographic Information System (GIS) concerning oil and gas well and pipeline locations. The RRC also provided contact information for oil and gas drilling permits, for pipeline permitting, and for information regarding surface mining operations.

2.2.2 Reconnaissance Surveys

Burns & McDonnell conducted reconnaissance surveys of the study area on September 17–19, 2024, to confirm the findings of the previously mentioned research and data collection activities and to identify existing conditions or constraints that may not have been previously noted. Ground reconnaissance surveys were conducted from within the Morgan Creek Power Plant site, from the ROW south of the Morgan Creek Power Plant site, from public roads, and from public ROW located within the study area. With landowner permission, Burns & McDonnell personnel walked the Proposed Project ROW during the surveys. Reconnaissance survey information was noted on field maps and geographically referenced to digital aerial imagery base maps. Ground reconnaissance of the study area and computer-based evaluation of digital aerial imagery were utilized during the Proposed Project evaluation process.

Results of the various data collection activities (e.g., solicitation of information from local, state, and federal agencies and officials, file/record review, and reconnaissance surveys) are presented throughout **Sections 3.0** and **4.0** of this EA.

2.3 Constraints Mapping

The data and information collected from the activities outlined above were used to develop an environmental and land use constraints map. The constraints map, public maps, aerial imagery, reconnaissance surveys, and other research materials were used to analyze the Proposed Project within the study area. These constraints were mapped onto an aerial base map created using March 2022–January 2023 ESRI World Imagery, 2022 Bing imagery, and 2022 USDA NAIP.

2.4 Evaluation of the Proposed Route

Evaluation of the Proposed Project involved the inventory and tabulation of data related to multiple environmental and land use evaluation factors. Many of these tabulated factors relate to natural and man-made features that would be crossed by the Proposed Project (e.g., number of stream crossings, length across pastureland/rangeland, etc.). Some of the evaluation factors include features that are counted or measured within a specified distance of the proposed route (e.g., habitable structures, airports, or

communication towers). Other factors included the length of the Proposed Project that runs parallel to and/or utilizes existing compatible corridors, such as electric transmission lines and public roads. Burns & McDonnell determined the number, quantity, or value of each factor primarily by reviewing recent aerial imagery within a GIS mapping program and verifying by visual observations during field reconnaissance. Potential environmental and land use impacts of the Proposed Project are addressed in **Section 4.0**.

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3.0 ENVIRONMENTAL SETTING OF THE STUDY AREA

3.1 Constraints Mapping

As stated in **Section 2.3**, Burns & McDonnell identified environmental and land use constraints within the study area during data collection activities. A constraints map was developed, identifying the locations of environmentally sensitive areas and other land use constraints, all of which are mapped on an aerial imagery base map shown on **Figure 3-1 (Appendix B**, map pocket). The information obtained and reviewed in completing the EA and the environmental and land use constraints depicted on the constraints map, are described in detail in the following sections.

3.2 Physiography and Geology

As shown on **Figure 3-2**, almost all of Mitchell County (including the study area) is located within the North-Central Plains Physiographic Province of Texas (Bureau of Economic Geology [BEG], 1996). This province is bordered on the west by the High Plains Physiographic Province of Texas; on the east by the Grand Prairie and Edwards Plateau Physiographic Provinces; on the south by the Edwards Plateau and Central Texas Uplift Physiographic Provinces; and on the north by Oklahoma.

The North-Central Plains Physiographic Province forms low north-south ridges (questas) ranging from approximately 900 to 3,000 feet in elevation above mean sea level (msl). This area has an erosional surface that developed on upper Paleozoic formations; where shale bedrock prevails, meandering rivers traverse stretches of local prairie. In areas of harder bedrock, hills and rolling plains dominate, and local areas of hard sandstones and limestones cap steep slopes severely dissected near rivers. Western rocks and soils are oxidized red or gray where gypsum dominates, whereas eastern rocks and soils weather tan to buff in color (BEG, 1996). Study area elevations range from a high of approximately 2,176 feet above msl along County Road (CR) 309 in the northeast corner of the study area to a low of approximately 1,996 feet above msl in the southeastern corner of the study area along the Colorado River.

According to BEG (1974), the study area includes Quaternary-aged fluviatile terrace deposits and Triassic-aged Dockum Group undivided. Fluviatile terrace deposits occur along the Colorado River within the study area and consist of gravel, sand, and silt. They commonly contain pebbles and cobbles of chert, quartzite, igneous rock, metamorphic rock, caliche, and, at higher elevations, abraded Gryphaea.

The Triassic-aged Dockum Group undivided occurs throughout the majority of the study area and consists of sandstone, clay, shale, and conglomerate with a maximum thickness of 450 feet. No reported geologic faults are located within the study area or in the immediate vicinity of the study area.

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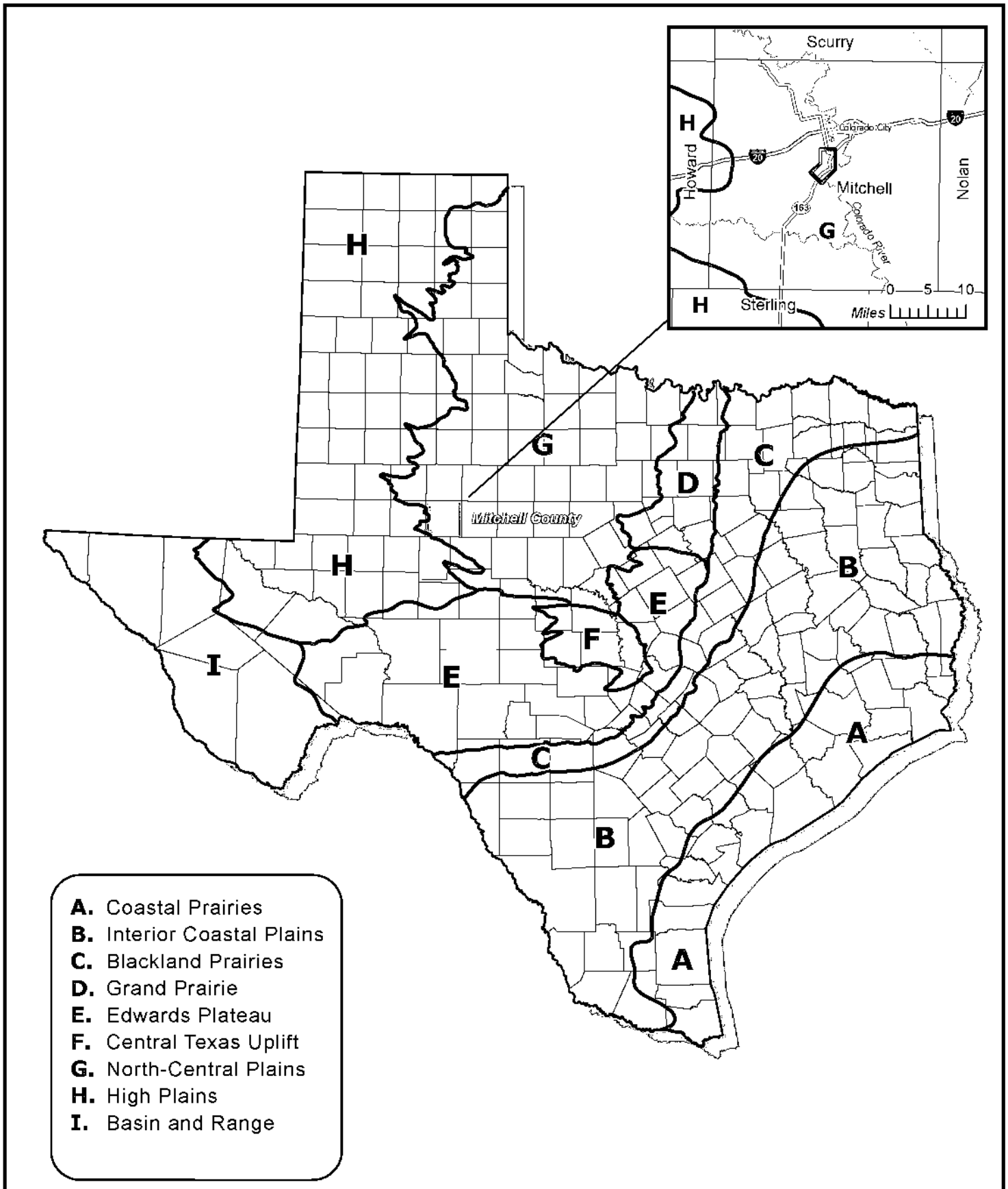


Figure 3-2
Location of Study Area
in Relation to the
Physiographic Provinces of Texas
Ranger Camp Switch
to Cattleman Switch
345 kV Transmission Line

Source: BEG (1996)

Issued: 9/5/2024

No major mineral resources are mapped as occurring within the study area (BEG, 1979). Additionally, a review of the USGS Mineral Data Resource System found no operations within the study area, including quarries or mines (USGS, 2011), and no active operations were observed during field reconnaissance.

Mapped uranium deposits underly the study area and region (BEG, 1976). According to RRC data, four oil or gas wells are recorded within the study area (RRC, 2024).

3.3 Soils

The study area is located wholly within Mitchell County. The general soil map of Mitchell County (Soil Conservation Service [SCS], 1969) was referenced for the descriptions of the soil associations within the study area in this section.

3.3.1 Soil Associations

The NRCS defines a soil association as "a landscape that has a distinctive proportional pattern of soils. It normally consists of one or more major soils and at least one minor soil, and it is named for the major soils. The soils in one association may occur in another, but in a different pattern." According to the general soil map of Mitchell County, two soil associations occur within the study area.

The Cobb-Miles association, in the north and eastern portion of the study area, comprises less than half of the study area and is characterized by nearly level to moderately sloping, loamy soils that are deep or moderately deep over sandstone and calcareous earth. This association, which encompasses approximately 30 percent of the county, contains approximately 40 percent Cobb soils; approximately 30 percent Miles soils; and approximately 30 percent minor Acuff, Altus, and Spade soils. Most of this association is farmed with cotton, sorghums, and small grains, with some areas being irrigated (SCS, 1969).

The Spade-Latom association, which comprises the majority of the study area and surrounds Lake Colorado City, consists of calcareous, loamy soils that are moderately deep or very shallow over sandstone. This association, which encompasses approximately 8 percent of the county, occurs throughout the county but is most extensive along the Colorado River and its tributaries. The Spade soils make up approximately 50 percent of the association; the Latom soils make up about 30 percent; and rough broken land makes up most of the remaining approximately 20 percent. Rough broken land consists of stony, sloping to extremely steep breaks below the Spade and Latom soils and just above the floodplains of local streams. This association is used mostly for range and is not well suited to crops (SCS, 1969).

3.3.2 Prime Farmland

The Secretary of Agriculture, in Title 7, United States Code (USC), Chapter 73, § 4201(c)(1)(A), defines prime farmland soils "as soils that have the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion, as determined by the Secretary." Additional potential prime farmland soils are those soils that meet most of the requirements of prime farmland but fail because they lack sufficient natural moisture, or they lack the installation of water management facilities. Such soils would be considered prime farmland if the appropriate practices were implemented.

According to the NRCS (2023), prime farmland soils comprise approximately 8.7 percent (492 acres) of the study area, with an additional 0.9 percent (51 acres) included, if irrigated, and 32.3 percent (1,829 acres) of the study area would be considered farmland of statewide importance, if irrigated. Mitchell County encompasses 586,070 acres, of which approximately 23.1 percent (135,515 acres) are considered prime farmland soils, with an additional 14.3 percent (83,611 acres) included, if irrigated. An additional 23.0 percent (134,632 acres) would be considered farmland of statewide importance, if irrigated.

3.4 Water Resources

3.4.1 Surface Water and Floodplains

For surface water planning purposes, Mitchell County lies within the Colorado River Basin. The Colorado River Basin is the third largest basin by area in Texas, draining a total area of approximately 42,318 square miles, 39,428 square miles of which are within Texas. The Colorado River, the second longest river in Texas, flows from Dawson County to Matagorda Bay and the Gulf of Mexico. The Colorado River is only the sixth largest river by average flow volume, with a large portion of the basin being located within relatively arid regions, resulting in a low average watershed yield (TWDB, 2012).

According to USGS topographic maps and the USGS 3DHP, named surface water features (e.g., streams, ponds, lakes, canals, etc.) mapped within the study area include Lake Colorado City, the Colorado River, Camp Creek, Morgan Creek, unnamed tributaries of the former Morgan Creek that was inundated to form Lake Colorado City by construction of the Lake Colorado City Dam, and several mapped ponds. Average rainfall within the study area ranges from approximately 20 to 25 inches annually (TWDB, 2012).

To assist regional water planning groups in identifying sensitive stream segments under Title 31 Texas Administrative Code (TAC) Section 31 § 357.8, TPWD has identified ecologically significant stream segments throughout the state based on criteria pertaining to biological function, hydrological function,

riparian conservation areas, water quality, aquatic life, aesthetic value, and the presence of threatened or endangered species or unique communities. No stream segments within the study area are designated as ecologically significant streams (TPWD, 2024a).

FEMA has conducted detailed countywide floodplain analyses for Mitchell County (FEMA, 1985). The resulting Flood Insurance Rate Maps (FIRMs) indicate the limits of the 100-year floodplain (i.e., areas with a 1 percent annual chance of flooding). The mapped 100-year floodplains within the study area are associated with the named water features and low-lying areas.

3.4.2 Groundwater/Aquifers

According to the TWDB, 9 major aquifers (i.e., aquifers that produce large amounts of water over large areas) and 21 minor aquifers (i.e., aquifers that produce minor amounts of water over large areas or large amounts of water over small areas) are recognized within Texas. These major and minor aquifers can produce groundwater for household, municipal, industrial, and agricultural uses and supply over 59 percent of the water used in Texas (TWDB, 2007).

The principal water-bearing unit within the study area is the Dockum Aquifer, a minor aquifer (TWDB, 1997). The Dockum Aquifer contains an outcrop of 3,519 square miles and a subsurface area of 21,992 square miles, beneath 46 counties in Texas. It consists of gravel, sandstone, siltstone, mudstone, shale, and conglomerate. The water quality is generally poor, with freshwater in outcrop areas in the eastern subsurface portions, and brine and very hard water in the western subsurface portions of the aquifer. Groundwater from the aquifer is used for irrigation, municipal water supply, and oil field waterflooding operations, particularly in the southern High Plains (TWDB, 2011).

3.5 Ecology

3.5.1 Vegetation

3.5.1.1 Terrestrial Vegetation

As shown on **Figure 3-3**, portions of Mitchell County are located within the Rolling Plains Vegetational Area and the Edwards Plateau Vegetational Area, which were delineated by Gould and others (et al.) (1960) and characterized by Hatch et al. (1990). The study area lies within the Rolling Plains Vegetational Area. The Rolling Plains Vegetational Area is bordered on the west by the High Plains Vegetational Area and on the east by the Cross Timbers and Prairies Vegetational Area and is characterized by a near level to rolling plain with moderate to rapid surface drainage. The original prairie vegetation included tall- and midgrasses such as little bluestem (*Schizachyrium scoparium*), big bluestem (*Andropogon gerardii*),

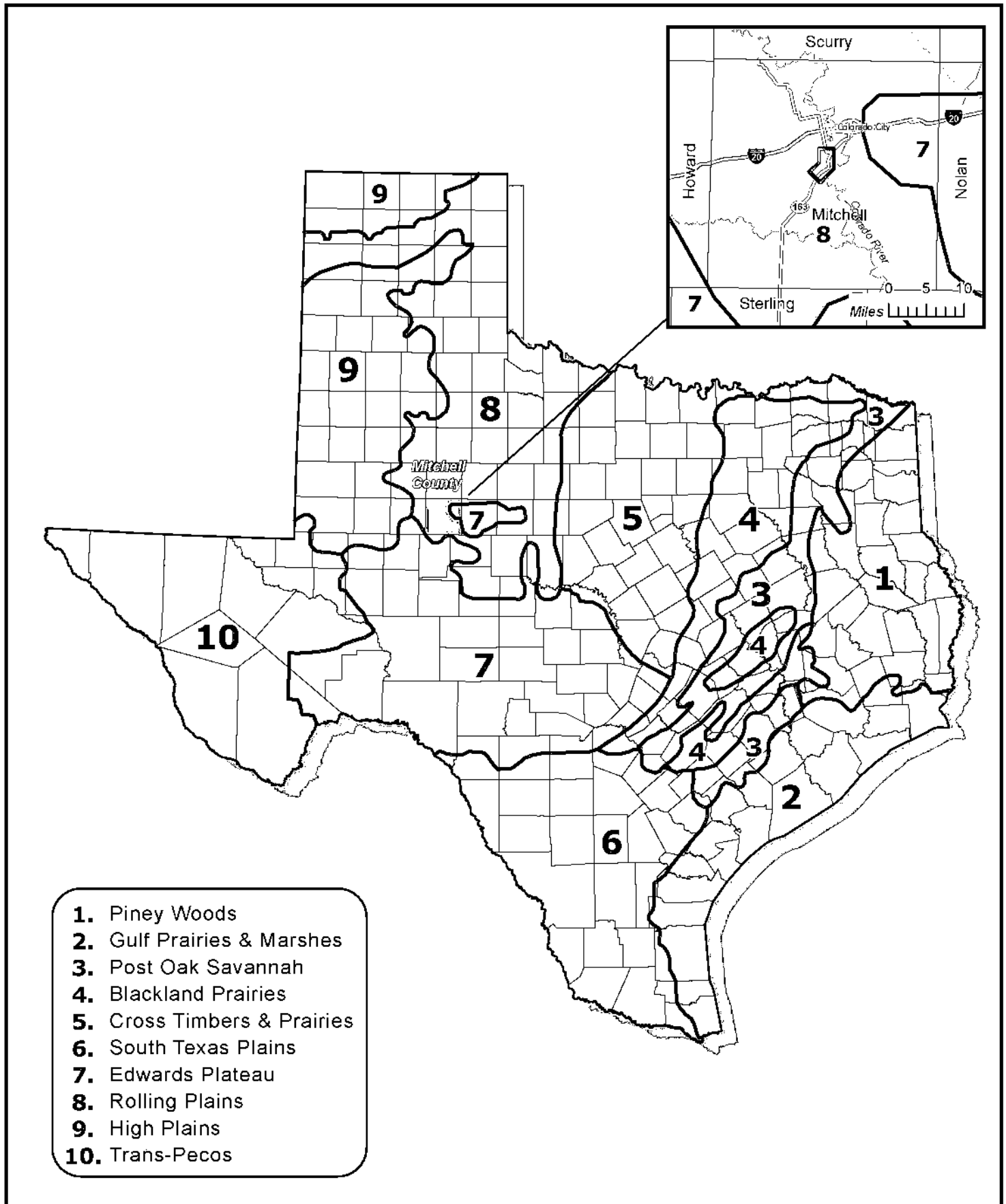


Figure 3-3
Location of Study Area
in Relation to the
Vegetational Areas of Texas
Ranger Camp Switch
to Cattleman Switch
345 kV Transmission Line

Source: Hatch et al (1990)

Issued: 9/5/2024

sand bluestem (*Andropogon hallii*), sideoats grama (*Bouteloua curtipendula*), Indiangrass (*Sorghastrum nutans*), switchgrass (*Panicum virgatum*), hairy grama (*Bouteloua hirsuta*), blue grama (*Bouteloua gracilis*), Canada wildrye (*Elymus canadensis*), and western wheatgrass (*Pascopyrum smithii*) on the wetter sites. Buffalograss (*Bouteloua dactyloides*), curly mesquite (*Hilaria belangeri*), tobosagrass (*Pleuraphis mutica*), threeawns (*Aristida* spp.), sand dropseed (*Sporobolus cryptandrus*), and windmillgrass (*Chloris texensis*) are more common on the xeric or overgrazed sites. More than 75 percent of the vegetational area is rangeland, but dryland and irrigated sorghum, small grain, cotton, and forages are important crops in the area (Hatch et al., 1990). According to the TPWD EMST, vegetation cover types in the study area, by percentage, are as follows:

- Native Invasive: Mesquite Shrubland (approximately 19.8 percent);
- Rolling Plains: Mixedgrass Sandy Prairie (approximately 18.9 percent);
- Row Crops (approximately 14.6 percent);
- Open Water (approximately 12.6 percent);
- High Plains: Sandy Deciduous Shrubland (approximately 9.9 percent);
- High Plains: Mesquite Shrubland (approximately 5.8 percent);
- Rolling Plains: Mixedgrass Prairie (approximately 4.3 percent);
- Rolling Plains: Breaks Deciduous Shrubland (approximately 3.7 percent);
- Urban High Intensity (approximately 2.1 percent);
- High Plains: Shortgrass Prairie (approximately 2.0 percent);
- Urban Low Intensity (approximately 1.4 percent);
- Native Invasive: Juniper Shrubland (approximately 1.0 percent); and
- Rolling Plains: Breaks Grassland (approximately 1.0 percent).

The remaining 2.9 percent consists of 14 additional vegetation cover types (TPWD, 2024b).

Native Invasive: Mesquite Shrubland. Honey mesquite (*Prosopis glandulosa*) is often the dominant species of this broadly defined type, but other common species include lotebush (*Ziziphus obtusifolia*), huisache (*Acacia farnesiana*), sugar hackberry (*Celtis laevigata*), Ashe juniper (*Juniperus ashei*), agarito (*Mahonia trifoliolata*), winged elm (*Ulmus alata*), sumacs (*Rhus* spp.), brasil (*Condalia hookeri*), Texas persimmon (*Diospyros texana*), and Engelmann pricklypear (*Opuntia engelmannii*). Trees such as plateau live oak (*Quercus fusiformis*), coastal live oak (*Quercus virginiana*), or post oak (*Quercus stellata*) may form a sparse canopy. Prairie broomweed (*Amphiachyris dracunculoides*), Texas wintergrass (*Nassella leucotricha*), and tobosagrass are common herbaceous species. This vegetation type is mapped on soils

that are classically considered to have supported grasslands or open shrublands in pre-European settlement times.

Rolling Plains: Mixedgrass Sandy Prairie. This vegetation cover type is characterized by grasslands dominated by species such as little bluestem, Texas wintergrass, sideoats grama, and silver bluestem (*Bothriochloa laguroides* ssp. *torreyana*). This vegetation type typically contains a greater cover of sand dropseed and forbs such as annual wild buckwheat (*Eriogonum annuum*), gray goldaster (*Heterotheca canescens*), Palmer's spectaclepod (*Dimorphocarpa candicans*), and Indian blanket (*Gaillardia pulchella*).

Row Crops. This vegetation type includes all cropland where fields are fallow for some portion of the year. Some fields may rotate in and out of cultivation frequently, and year-round cover crops and tame hay fields are generally mapped as grassland.

Open Water. In addition to large lakes and rivers, ephemeral ponds may be mapped as open water. Some mapped areas may support vegetation with pioneering species such as black willow (*Salix nigra*), eastern cottonwood (*Populus deltoides*), saltcedar (*Tamarix* spp.), rushes (*Juncus* spp.), sedges (*Carex* spp.), cattails (*Typha* spp.), and spikerushes (*Eleocharis* spp.).

High Plains: Sandy Deciduous Shrubland. This shrubland occurs on relatively sandy plains, as opposed to the rolling dune lands. It is typically dominated by species other than Havard's shin oak (*Quercus havardii*), although it is often present. Sand sage (*Artemisia filifolia*) and honey mesquite are common dominants, and the understory cover varies from significant herbaceous cover to sparsely vegetated.

High Plains: Mesquite Shrubland. This shrubland has shrub-dominated occurrences with a scattered overstory component, if any. This vegetation type is mapped only in bottomlands or other lower landscape positions and is dominated by honey mesquite together with shrubs and small trees such as netleaf hackberry (*Celtis laevigata* var. *reticulata*), western soapberry (*Sapindus saponaria* var. *drummondii*), lotebush, redberry juniper (*Juniperus pinchotii*), and Chickasaw plum (*Prunus angustifolia*). A variety of herbaceous species may be important, including tobosagrass, prairie broomweed, rescuegrass (*Bromus catharticus*), Texas wintergrass, threeawns, species of *Tridens*, blue grama, and buffalograss. Some areas may be salty and include saltcedar as a woody component.

Rolling Plains: Mixedgrass Prairie. This vegetation type is a grassland dominated by species such as little bluestem, Texas wintergrass, sideoats grama, and silver bluestem. This vegetation type typically occupies loam, clay loams, or sandy loams. Honey mesquite is often an important woody component. Dry sites to

the west often contain shortgrasses such as tobosagrass, purple threeawn (*Aristida purpurea*), and buffalograss together with honey mesquite and succulents such as Engelmann pricklypear and Arkansas yucca (*Yucca arkansana*). Wetter sites to the east may contain mid-grasses such as little bluestem, sideoats grama, Texas wintergrass, and tallgrasses such as Indiangrass and big bluestem in locally well-watered areas.

Rolling Plains: Breaks Deciduous Shrubland. This shrubland is dominated by species such as Mohr's shin oak (*Quercus mohriana*), feather dalea (*Dalea formosa*), honey mesquite, and mountain mahogany (*Cercocarpus ledifolius*). Redberry juniper is a common component with common grasses including purple threeawn, sideoats grama, blue grama, and hairy grama.

Urban High Intensity. This mapped type consists of developed areas and wide transportation corridors that are dominated by impervious cover.

High Plains: Shortgrass Prairie. These grasslands are typically dominated by shortgrasses such as buffalograss, blue grama, and hairy grama. Other species frequently encountered include sideoats grama, western wheatgrass, purple threeawn, sand dropseed, little barley (*Hordeum pusillum*), and silver bluestem. Forbs and woody species that may be encountered include sand sage, broom snakeweed (*Gutierrezia sarothrae*), narrowleaf yucca (*Yucca glauca*), western ragweed (*Ambrosia psilostachya*), Mexican hat (*Ratibida columnifera*), slimflower scurfpea (*Psoralidium tenuiflorum*), and tree cholla (*Cylindropuntia imbricata*).

Urban Low Intensity. This mapped type includes areas that are developed but not entirely covered by impervious cover and includes most of the nonindustrial areas within cities and towns.

Native Invasive: Juniper Shrubland. This shrubland is dominated by Ashe juniper, while additional species including plateau live oak, honey mesquite, sugar hackberry, and cedar elm (*Ulmus crassifolia*) occur throughout.

Rolling Plains: Breaks Grassland. This vegetation type has reduced shrub canopy cover and is typically dominated by graminoids, including little bluestem, sideoats grama, silver bluestem, tobosagrass, buffalograss, and slim tridens (*Tridens muticus*).

3.5.1.2 Aquatic/Hydric Vegetation

Waters of the U.S. (WOTUS) include, but are not limited to, territorial seas, lakes, rivers, streams, oceans, bays, ponds, and other special aquatic features, including wetlands. The USACE regulates WOTUS,

including wetlands, under Section 404 of the Clean Water Act (CWA). The USACE and EPA jointly define wetlands as those "areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include bogs, seeps, marshes, swamps, forested bottomland wetlands, and other similar areas" [40 Code of Federal Regulations [CFR] 230.3(t)]. Wetlands are defined in a broad sense as transitional areas (ecotones) between terrestrial and aquatic systems where the water table is usually at or near the ground surface, or where shallow water covers the land (Cowardin et al., 1979).

The USFWS NWI maps encompassing the study area indicate the presence of wetland and open-water habitat features within the study area (USFWS NWI, 2024). Features in the study area are classified as riverine and palustrine. Riverine systems include all wetlands and deepwater habitats contained within a channel, with two exceptions: (1) wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens; and (2) habitats with water containing ocean-derived salts exceeding 0.5 percent. Palustrine systems include vegetated, freshwater wetlands and small (i.e., less than 20 acres), nonvegetated freshwater wetlands that are both shallow (i.e., deepest point less than 6.6 feet at low water) and lack an active wave-formed or bedrock shoreline (Cowardin et al., 1979).

Hydric and aquatic habitats may be considered regulatory wetlands by the USACE. Construction activities resulting in the discharge of dredged or fill materials within WOTUS are subject to the regulations and restrictions outlined in Section 404 of the CWA and may require coordination with the USACE to ensure compliance.

3.5.1.3 Commercially or Recreationally Important Vegetation

The study area contains very little cropland, which typically requires irrigation, due to a lack of rainfall (20 to 25 inches annually). Pastureland/rangeland dominates the study area in areas that have not been utilized for recreation; however, native grasslands are generally lacking, and overgrazing has allowed less-desirable introduced species to proliferate. The Proposed Project crosses minimal cropland (see **Table 4-3** at the end of **Section 4**).

3.5.1.4 Endangered and Threatened Plant Species

An endangered species is one that is in danger of extinction throughout all or a significant portion of its natural range, while a threatened species is one likely to become endangered within the foreseeable future throughout all or a significant portion of its natural range.

3.5.1.4.1 Federally Listed Plant Species

Available information from the USFWS IPaC (2024a), TPWD (2024c), and TXNDD (TPWD, 2024d) was reviewed to identify endangered or threatened plant species of potential occurrence within the study area. Currently, 35 plant species are listed by the USFWS as endangered or threatened species in Texas (USFWS, 2024b). The USFWS (2024a) and TPWD (2024c) county lists of endangered and threatened species indicate that one federally listed plant species, the endangered Texas poppy-mallow (*Callirhoe scabriuscula*), may occur in Mitchell County within the study area.

The Texas poppy-mallow, an erect perennial, only occurs in the Rolling Plains of Texas, in Coke, Mitchell, Runnels, and Scurry counties (TPWD, 2024c). Endemic to the upper Colorado River watershed, it is found in grasslands and open oak shrublands or mesquite woodlands on deep, loose sand (Tivoli Series) of ancient and contemporary Colorado River terraces. Flowering occurs from April to June, and in late July the plants die back to the taproots (Poole et al., 2007). No documented records of the Texas poppy-mallow exist within the study area; however, two records exist approximately 4 miles northeast and 5 miles southeast of the study area (TPWD, 2024d; iNaturalist, 2024). This perennial may occur in the study area within appropriate habitat.

3.5.1.4.2 State-Listed Plant Species

Available information from the TPWD (2024c) and TXNDD (TPWD, 2024d) was reviewed to identify endangered or threatened plant species of potential occurrence within the study area. The TPWD (2024c) county list of endangered and threatened species indicates that no state-listed plant species occur in Mitchell County, which includes the study area.

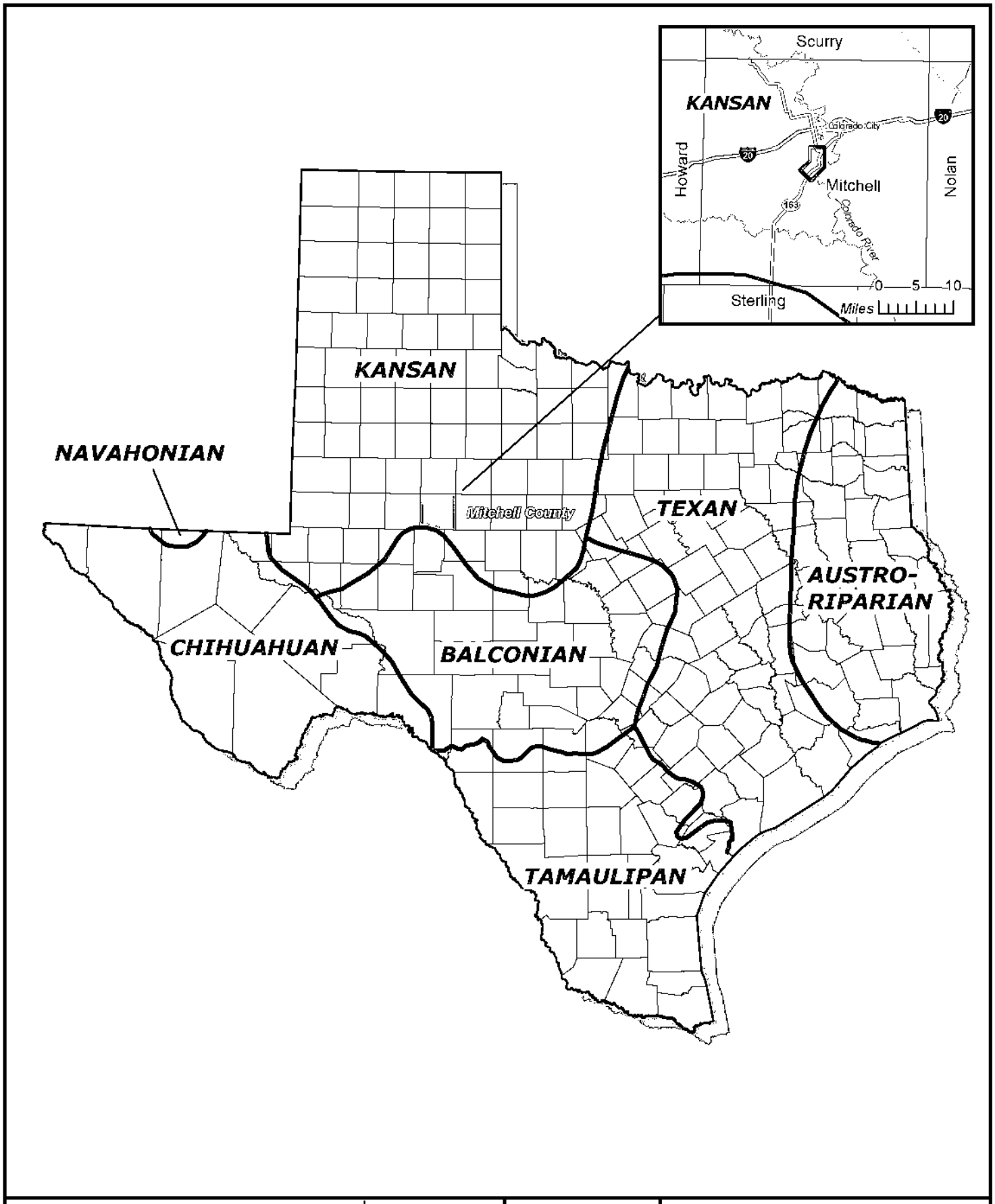
3.5.1.4.3 Sensitive Plant Communities

No sensitive plant communities have been specifically identified by either the USFWS or TPWD as occurring within the study area (USFWS, 2024a; TPWD 2024c, 2024d).

3.5.2 Fish and Wildlife

3.5.2.1 Terrestrial Wildlife

Blair (1950) delineated seven biotic provinces within Texas. As shown on **Figure 3-4**, Mitchell County (including the study area) occurs within the Kansan Biotic Province. The Kansan Biotic Province in Texas extends south and east from the Oklahoma and New Mexico borders, eventually transitioning to the Chihuahuan, Balconian, and Texan biotic provinces. The Kansan includes three distinct biotic districts: the Mixed-grass Plains, Short-grass Plains, and Mesquite Plains districts. The study area lies within the



Study Area

NORTH

0 50 100 200

Miles

ONCOR

BURNS McDONNELL

Figure 3-4
Location of Study Area
in Relation to the
Biotic Provinces of Texas
Ranger Camp Switch
to Cattleman Switch
345 kV Transmission Line

Source: Blair (1950)

Issued: 9/5/2024

Short-grass Plains District. Within the Short-grass Plains District, buffalograss is the principal vegetational constituent and is the most important plant association. Various species of grama grasses are also important to this area (Blair, 1950). Characteristic faunal species of the area are discussed below. As a result of extensive agricultural development, the area includes very little remaining native grassland habitats. Wildlife species that occur include species that have historically occurred in the area, as well as others that are particularly adapted to this agricultural environment.

A wide variety of vertebrate species, including amphibians, reptiles, mammals, and birds occur throughout the study area. Habitat types include woodland, shrubland, grassland, water, agricultural, and urban habitats. Woodland habitat is home to species that live on or in the ground within forested areas or are arboreal in nature. Woodland areas include riparian forest areas found in stream floodplains and can overlap with water habitats to some extent. Shrubland habitat is dominated by woody vegetation but is generally low-growing and lacks taller trees. Grasslands are open areas, but arid/semi-arid rocky areas may also be considered open areas. Agricultural areas consist of row crops, orchards, or grain fields, although hay meadows would be considered grassland habitat. Water habitat includes all aquatic species, as well as those which live exclusively near water (e.g., frogs or wading birds). Urban habitats are favored by those species that thrive in man-made environments and succeed in disturbed areas. Representative terrestrial wildlife species of potential occurrence in the study area are presented in **Tables 3-1 through 3-3**, below.

3.5.2.1.1 Amphibians and Reptiles

A representative list of amphibian and reptile species of potential occurrence in the study area is included as **Table 3-1**.

Table 3-1: Representative List of Amphibian and Reptile Species of Potential Occurrence[a] in the Study Area

Common Name[b]	Scientific Name[b]
Frogs and Toads	
American bullfrog	*Lithobates catesbeianus*
Blanchard's cricket frog	*Acris blanchardi*
Couch's spadefoot	*Scaphiopus couchii*
Plains leopard frog	*Lithobates blairi*
Plains spadefoot	*Spea bombifrons*
Rio Grande leopard frog	*Lithobates berlandieri*
Texas toad	*Anaxyrus speciosus*
Western narrow-mouthed toad	*Gastrophryne olivacea*

Table 3-1: Representative List of Amphibian and Reptile Species of Potential Occurrence[a] in the Study Area (Continued)

Lizards	
Eastern collared lizard	*Crotaphytus collaris*
Great Plains skink	*Pleistiodon obsoletus*
Prairie lizard	*Sceloporus consobrinus*
Texas greater earless lizard	*Cophosaurus texanus texanus*
Texas horned lizard	*Phrynosoma cornutum*
Texas spiny lizard	*Sceloporus olivaceus*
Texas spotted whiptail	*Aspidoscelis gularis gularis*
Snakes	
Bullsnake	*Pituophis catenifer sayi*
Checkered gartersnake	*Thamnophis marcianus*
Chihuahuan nightsnake	*Hypsiglena jani*
Desert kingsnake	*Lampropeltis splendida*
Diamond-backed watersnake	*Nerodia rhombifer*
Great Plains ratsnake	*Pantherophis emoryi*
Kansas glossy snake	*Arizona elegans elegans*
Long-nosed snake	*Rhinocheilus lecontei*
Plain-bellied watersnake	*Nerodia erythrogaster*
Plains black-headed snake	*Tantilla nigriceps*
Plains hog-nosed snake	*Heterodon nasicus*
Prairie rattlesnake	*Crotalus viridis*
Texas threadsnake	*Rena dulcis*
Variable groundsnake	*Sonora semiannulata semiannulata*
Western coachwhip	*Coluber flagellum testaceus*
Western diamond-backed rattlesnake	*Crotalus atrox*
Turtles	
Plains box turtle	*Terrapene ornata ornata*
Red-eared slider	*Trachemys scripta elegans*
Texas cooter	*Pseudemys texana*
Yellow mud turtle	*Kinosternon flavescens*

(a) According to Werler and Dixon (2000) and Dixon (2013).
(b) Nomenclature follows Crother et al. (2017).

3.5.2.1.2 Birds

Avian species of potential occurrence in the study area include many year-round residents, migrants/summer residents, and migrants/winter residents. A representative list of bird species of potential occurrence in the study area is included as **Table 3-2**.

Table 3-2: Representative List of Avian Species of Potential Occurrence[a] in the Study Area

Common Name[b]	Scientific Name[b]	Likely Seasonal Occurrence[a, c]
American avocet	*Recurvirostra americana*	M
American robin	*Turdus migratorius*	M, WR
American wigeon	*Mareca americana*	M, WR
Black-chinned hummingbird	*Archilochus alexandri*	M, SR
Blue jay	*Cyanocitta cristata*	R
Brewer's blackbird	*Euphagus cyanocephalus*	M, WR
Brown-headed cowbird	*Molothrus ater*	R
Bullock's oriole	*Icterus bullockii*	M, SR
Canyon towhee	*Melozone fusca*	R
Canada goose	*Branta canadensis*	M, WR
Cedar waxwing	*Bombycilla cedrorum*	M, WR
Cliff swallow	*Petrochelidon pyrrhonota*	M, SR
Common nighthawk	*Chordeiles minor*	M, SR
Common raven	*Corvus corax*	R
Curve-billed thrasher	*Toxostoma curvirostre*	R
Dark-eyed junco	*Junco hyemalis*	M, WR
European starling	*Sturnus vulgaris*	R
Franklin's gull	*Leucophaeus pipixcan*	M
Gadwall	*Mareca strepera*	M, WR
Great blue heron	*Ardea herodias*	R
Great horned owl	*Bubo virginianus*	R
Great-tailed grackle	*Quiscalus mexicanus*	R
Greater roadrunner	*Geococcyx californianus*	R
Green heron	*Butorides virescens*	M, SR
Green-winged teal	*Anas crecca*	M, WR
House finch	*Haemorhous mexicanus*	R
House sparrow	*Passer domesticus*	R
Killdeer	*Charadrius vociferus*	R
Ladder-backed woodpecker	*Dryobates scalaris*	R

Table 3-2: Representative List of Avian Species of Potential Occurrence[a] in the Study Area (Continued)

Lark bunting	*Calamospiza melanocorys*	M, WR
Least sandpiper	*Calidris minutilla*	M, WR
Loggerhead shrike	*Lanius ludovicianus*	R
Mallard	*Anas platyrhynchos*	M, WR
Mississippi kite	*Ictinia mississippiensis*	M, SR
Mourning dove	*Zenaida macroura*	R
Northern bobwhite	*Colinus virginianus*	R
Northern cardinal	*Cardinalis cardinalis*	R
Northern harrier	*Circus hudsonius*	M, WR
Northern mockingbird	*Mimus polyglottos*	R
Northern pintail	*Anas acuta*	M, WR
Northern shoveler	*Spatula clypeata*	M, WR
Painted bunting	*Passerina ciris*	M, SR
Pied-billed grebe	*Podilymbus podiceps*	M, WR
Pyrrhuloxia	*Cardinalis sinuatus*	R
Redhead	*Aythya americana*	M, WR
Red-tailed hawk	*Buteo jamaicensis*	R
Red-winged blackbird	*Agelaius phoeniceus*	M, R
Rock wren	*Salpinctes obsoletus*	R
Ruby-crowned kinglet	*Corthylio calendula*	M, WR
Ruddy duck	*Oxyura jamaicensis*	M, WR
Rufous-crowned sparrow	*Aimophila ruficeps*	R
Sandhill crane	*Antigone canadensis*	M, WR
Savannah sparrow	*Passerculus sandwichensis*	M, WR
Say's phoebe	*Sayornis saya*	M, WR
Scissor-tailed flycatcher	*Tyrannus forficatus*	M, SR
Scaled quail	*Callipepla squamata*	R
Swainson's hawk	*Buteo swainsoni*	M, SR
Turkey vulture	*Cathartes aura*	M, SR
Western cattle-egret	*Ardea ibis*	M, SR
Western kingbird	*Tyrannus verticalis*	M, SR
Western meadowlark	*Sturnella neglecta*	R
White-crowned sparrow	*Zonotrichia leucophrys*	M, WR
White-winged dove	*Zenaida asiatica*	R

Table 3-2: Representative List of Avian Species of Potential Occurrence[a] in the Study Area (Continued)

Wild turkey	*Meleagris gallopavo*	R
Yellow-rumped warbler	*Setophaga coronata*	M, WR

(a) According to Lockwood and Freeman (2014).
(b) Nomenclature follows (Chesser et al., 2024).
(c) R – Resident: Occurring regularly in the same general area throughout the year; implies breeding.
SR – Summer Resident: Implies breeding but may include nonbreeders.
WR – Winter Resident: Occurring during winter season.
M – Migrant: Occurs as a transient passing through the area either in spring or fall or both.

3.5.2.1.3 Mammals

A representative list of common mammals that may occur in the study area is included as **Table 3-3**.

Table 3-3: Representative List of Mammal Species of Potential Occurrence[a] in the Study Area

Common Name[b]	Scientific Name[b]
Cingulantans	
Nine-banded armadillo	*Dasypus novemcinctus*
Chiroptera	
American parastrelle	*Parastrellus hesperus*
Brazilian free-tailed bat	*Tadarida brasiliensis*
Cave myotis	*Myotis velifer*
Eastern red bat	*Lasiurus borealis*
Carnivores	
American badger	*Taxidea taxus*
Bobcat	*Lynx rufus*
Common gray fox	*Urocyon cinereoargenteus*
Coyote	*Canis latrans*
Northern raccoon	*Procyon lotor*
Ringtail	*Bassariscus astutus*
Striped skunk	*Mephitis mephitis*
Artiodactyls	
Mule deer	*Odocoileus hemionus*
White-tailed deer	*Odocoileus virginianus*
Rodents	
Black-tailed prairie dog	*Cynomys ludovicianus*
Hispid cotton rat	*Sigmodon hispidus*
Hispid pocket mouse	*Chaetodipus hispidus*
Merriam's pocket mouse	*Perognathus merriami*
North American deermouse	*Peromyscus maniculatus*
Northern pygmy mouse	*Baiomys taylori*
Southern plains woodrat	*Neotoma micropus*

Table 3-3: Representative List of Mammal Species of Potential Occurrence[a] in the Study Area (Continued)

Texas deermouse	*Peromyscus attwateri*
White-footed deermouse	*Peromyscus leucopus*
White-toothed woodrat	*Neotoma leucodon*
Yellow-faced pocket gopher	*Cratogeomys castanops*
Lagomorphs	
Black-tailed jackrabbit	*Lepus californicus*
Desert cottontail	*Sylvilagus audubonii*
Eastern cottontail	*Sylvilagus floridanus*

(a) According to Schmidly and Bradley (2016).
(b) Nomenclature follows Schmidly et al. (2024).

3.5.2.2 Fish and Aquatic Wildlife

Aquatic habitats occurring within the study area include Lake Colorado City, the Colorado River, Camp Creek, Morgan Creek, unnamed tributaries of the former Morgan Creek that was inundated to form Lake Colorado City by construction of the Lake Colorado City Dam, and several mapped ponds. Fish species that may occur in the study area include the common carp (*Cyprinus carpio*), black bullhead (*Ameiurus melas*), green sunfish (*Lepomis cyanellus*), orangespotted sunfish (*Lepomis humilis*), bluegill (*Lepomis macrochirus*), white crappie (*Pomoxis annularis*), channel catfish (*Ictalurus punctatus*), flathead catfish (*Pylodictis olivaris*), and largemouth bass (*Micropterus salmoides*) (Thomas et al., 2007).

3.5.2.3 Commercially or Recreationally Important Fish and Wildlife Species

3.5.2.3.1 Wildlife Resources

Wildlife resources within the study area provide human benefits resulting from both consumptive and nonconsumptive uses. Consumptive uses, such as fishing, hunting, and trapping, are more easily quantified than nonconsumptive uses. Nonconsumptive uses include observing and photographing wildlife, birdwatching, and other similar activities. These nonconsumptive uses, although difficult to quantify, deserve consideration in the evaluation of the wildlife resources of the study area. Consumptive and nonconsumptive uses of wildlife are often enjoyed contemporaneously and are generally compatible. Many species occurring in the study area provide consumptive uses, and all provide the potential for nonconsumptive benefits.

The Rolling Plains Ecological Region provides habitat for a variety of economically and recreationally important upland game birds, including the mourning dove (*Zenaida macroura*), white-winged dove (*Zenaida asiatica*), northern bobwhite (*Colinus virginianus*), and wild turkey (*Meleagris gallopavo*).

During the 2019–2020 hunting season, an estimated 631,423 mourning dove, 121,335 white-winged dove, 53,303 Eurasian collared-dove (*Streptopelia decaocto*) 5,807 wild turkey, and 34,624 northern bobwhite were harvested within the Rolling Plains Ecological Region (Purvis, 2020).

The white-tailed deer (*Odocoileus virginianus*) is the most economically important big game mammal in Texas (Schmidly and Bradley, 2016); however, the mule deer (*Odocoileus hemionus*) is also desired in the region that contains the study area. The TPWD divides the state into ecological regions for deer management. Mitchell County falls within the Rolling Plains Ecological Region. During the 2022–2023 hunting season, an estimated 2,233 mule deer were harvested within the Rolling Plains Ecological Region. During the same period, 22,459 white-tailed deer were harvested within the Western Rolling Plains Ecological Region and 53,129 were harvested within the Eastern Rolling Plains Ecological Region (Purvis, 2023).

3.5.2.3.2 Fisheries/Aquatic Resources

Recreational fishing opportunities occur within the study area. The Colorado River and Lake Colorado City are the main perennial waterbodies within the study area. While additional small ponds and streams are also found in the study area, they may be only temporarily or intermittently flooded, and access may be limited. Recreational fish species within the study area may include largemouth bass, white crappie, channel catfish, flathead catfish, and sunfish species (*Lepomis* spp.). No commercial fishing occurs within the study area.

Waterfowl hunting on Lake Colorado City and ponds may also be limited. Waterfowl species that are potentially hunted in the region include the gadwall (*Mareca strepera*), green-winged teal (*Anas crecca*), American wigeon (*Mareca americana*), northern pintail (*Anas acuta*), and ring-necked duck (*Aythya collaris*), among others.

3.5.2.4 Endangered and Threatened Fish and Wildlife Species

As noted previously in **Section 3.5.1.4** (Endangered and Threatened Plant Species), an endangered species is one that is in danger of extinction throughout all or a significant portion of its natural range, while a threatened species is one likely to become endangered within the foreseeable future throughout all or a significant portion of its range. A species proposed for listing is one that USFWS has sufficient information to list as endangered or threatened, while a candidate species is one that is currently in the assessment process to determine if listing is appropriate using the listing factors in Section 4 of the ESA. However, proposed and candidate species are not provided protection under the ESA (USFWS, 1973).

3.5.2.4.1 Federally Listed Fish and Wildlife Species

The USFWS (2024a) and TPWD (2024c) county lists of endangered and threatened species indicate that five federally listed threatened or proposed for listing as threatened/endangered fish and wildlife species may occur in Mitchell County **(Table 3-4)**. Protection under the ESA can also include protection of habitat designated as critical habitat for supporting a listed species. It should be noted that inclusion in this table does not necessarily mean that a species is known to occur in the study area, but only acknowledges the potential for its occurrence, based on historic records, known ranges, and presence of potential habitat. Only those species that USFWS lists as endangered or threatened have federal protection under the ESA. Most avian species are protected under the MBTA, and bald and golden eagles are protected under the BGEPA.

Table 3-4: Federally Listed Fish and Wildlife Species for Mitchell County[a]

Common Name[b]	Scientific Name[b]	Status	Potential for Occurrence in the Study Area
		USFWS	
Birds			
Bald eagle	*Haliaeetus leucocephalus*	Delisted	Yes[c]
Piping plover	*Charadrius melodus*	Threatened	Yes[c]
Red knot	*Calidris canutus rufa*	Threatened	Yes[c]
Eastern black rail[d]	*Laterallus jamaicensis*	Threatened	Yes[c]
Insects			
Monarch butterfly	*Danaus plexippus*	Proposed threatened	Yes[c]
Mammals			
Tricolored bat[d]	*Perimyotis subflavus*	Proposed endangered	Yes[c]

(a) According to USFWS (2024a) and TPWD (2024c, 2024d).
(b) Nomenclature follows Chesser et al. (2024), Schmidly et al. (2024), USFWS (2024a), and TPWD (2024c).
(c) Only expected to occur as a migrant, transient, or rare vagrant within the study area.
(d) Not listed by USFWS (2024a) as occurring in Mitchell County.

The TPWD (2024c) county list for Mitchell County shows the eastern black rail to be federally listed as threatened. The USFWS (2024a) lists the eastern black rail in 13 Texas counties but does not list it for Mitchell County. In addition, the TPWD county list for Mitchell County includes the tricolored bat; however, the USFWS (2024a) does not include the species on its list for Mitchell County.

The bald eagle is present year-round in Texas, and individuals may include breeding, wintering, migrating, and postbreeding dispersing birds. In Texas, bald eagles breed primarily in the eastern third of the state. In the last decade nesting pairs have been found over a wider area of the state, including sites in

the Panhandle (Lockwood and Freeman, 2014). Bald eagles prefer large bodies of water surrounded by tall trees or cliffs, which they use as nesting sites. In 2007, the USFWS removed the bald eagle from the list of endangered and threatened wildlife species (72 Federal Register 130:37345–37372, July 9, 2007); however, the bald eagle still receives federal protection under provisions of the BGEPA and MBTA. According to TPWD (2024d), no documented bald eagle occurrences or nests occur in the study area, although the study area is within the general range of this species. The bald eagle may occur as a winter migrant, and utilize the study area for foraging, but is not likely a permanent or seasonal resident within the study area.

The piping plover is a small shorebird that inhabits sandy beaches and alkali flats (Cornell Lab of Ornithology, 2024). Approximately 35 percent of the known global population of the piping plover winters along the Texas Gulf Coast, where the plovers spend 60 to 70 percent of the year (Campbell, 2003). The piping plover population that winters in Texas breeds on the northern Great Plains and around the Great Lakes. The species is an uncommon to locally common winter resident along the coastal areas of Texas and can linger through the summer on very rare occasions (Lockwood and Freeman, 2014). No documented records of the piping plover exist within the study area (TPWD, 2024d; eBird, 2024), and it is only expected to occur as a migrant, transient, or rare vagrant within the study area.

The red knot is a medium-sized, stocky, short-necked sandpiper with a rather short straight bill. The *rufa* subspecies, one of three subspecies occurring in North America, has one of the longest migration distances known, travelling between its breeding grounds in the central Canadian Arctic to wintering areas that are primarily in South America (USFWS, 2011). During migration and winter in Texas, red knots may be found feeding in small groups on sandy, shell-lined beaches, and to a lesser degree, on flats of bays and lagoons (Oberholser, 1974). It is an uncommon migrant along the coast, especially the Upper Texas coast, and it is very rare to casual inland, primarily in the eastern half of the state (Lockwood and Freeman, 2014). No documented records of the red knot exist within the study area (TPWD, 2024d; eBird, 2024), and it is only expected to occur as a migrant, transient, or rare vagrant within the study area.

The eastern black rail, a small secretive bird, is broadly distributed, living in salt and freshwater marshes in portions of the U.S., Central America, and South America. The habitat for the species can be tidally or nontidally influenced and can range in salinity from salt to brackish to fresh (USFWS, 2024c). The eastern black rail, a black rail subspecies, is a rare migrant in the eastern third of the state and is a rare to locally uncommon resident on the upper and central coasts (Lockwood and Freeman, 2014). TPWD (2024d) shows no documented records of the eastern black rail in the study area, and it is only expected to occur as a migrant, transient, or rare vagrant within the study area.

Adult monarch butterflies are large and conspicuous, with bright orange wings surrounded by a black border and covered with black veins. The bright coloring of a monarch serves as a warning to predators that eating them can be toxic. Texas is an important state in monarch migration because it is situated between the principal breeding grounds in the north and the overwintering areas in Mexico. Monarchs funnel through Texas both in the fall (September–November) and in the spring (March). Early each March, monarchs begin arriving from their overwintering grounds in Mexico. Seeking emerging milkweeds (*Asclepias* spp.), they move through Texas laying eggs before dying. Their offspring continue heading north, leaving Texas behind to become the first of several new generations of monarchs that repopulate the eastern half of the U.S. and southern Canada. Most adult butterflies live approximately 2 to 5 weeks; overwintering adults, however, enter into reproductive diapause (i.e., suspended reproduction) and live 6 to 9 months (USFWS, 2024d; TPWD, 2024f). The monarch butterfly may be found within the study area during migration but would not likely be found outside this period.

The tricolored bat, one of the smallest bats in eastern North America, is a small insectivorous bat that is distinguished by its unique tricolored fur and often appears yellowish to nearly orange. The once-common species is wide ranging across the eastern and central U.S. and portions of southern Canada, Mexico, and Central America. It is found in 39 states, including Texas. During the winter, tricolored bats are often found in caves and abandoned mines. However, in the southern U.S. where caves are sparse, tricolored bats are often found roosting in road-associated culverts and sometimes in tree cavities and abandoned water wells. During summer, the tricolored bat forages along forest edges and over ponds and waterways for small insects, and the sexes live separately. Males are often solitary, while females form small maternity colonies of 35 individuals or fewer in buildings, tree cavities, and rock crevices. Tricolored bats face extinction due primarily to the rangewide impacts of white-nose syndrome, a deadly disease affecting cave-dwelling bats across the continent (USFWS, 2024e). The species' western range lies along the easternmost edge of the study area and would only be expected in appropriate habitat within the study area as a transient or vagrant.

The USFWS, in Section 3(5)(A) of the ESA, defines critical habitat as:

> *"(i) the specific areas within the geographical area occupied by the species, at the time that it is listed in accordance with the ESA, on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination by the Secretary of the Interior that such areas are essential for the conservation of the species"* (USFWS, 1973).

No critical habitat has been designated in the study area for any species included under the ESA.

3.5.2.4.2 State-Listed Fish and Wildlife Species

State-listed species receive protection under state laws, such as Chapters 67, 68, and 88 of the TPWD Code, and Title 31 TAC Sections 65.171–65.184 and 69.01–69.14. Four species are protected at the state level and designated as threatened within Mitchell County (**Table 3-5**) (TPWD, 2024c).

Table 3-5: State-Listed Fish and Wildlife Species for Mitchell County[a]

Common Name	Scientific Name[b]	Status	Potential for Occurrence in the Study Area
		TPWD	
Birds			
White-faced ibis	*Plegadis chihi*	Threatened	Yes[c]
Fish			
Red River pupfish	*Cyprinodon rubrofluviatilis*	Threatened	Yes
Reptiles			
Brazos water snake	*Nerodia harteri*	Threatened	Yes
Texas horned lizard	*Phrynosoma cornutum*	Threatened	Yes

(a) According to TPWD (2024c, 2024d).
(b) Nomenclature follows Crother et al. (2017), Chesser et al. (2024), and TPWD (2024c)
(c) Only expected to occur as a migrant, transient, or rare vagrant within the study area.

The white-faced ibis is a medium-sized wading bird that inhabits freshwater marshes, sloughs, and irrigated rice fields, but also frequents brackish and saltwater habitats (Ryder and Manry, 1994). The white-faced ibis is a permanent resident along the Texas Gulf Coast with nesting records existing from areas away from the coast as far north as the Panhandle (Lockwood and Freeman, 2014). The species is a rare to uncommon migrant throughout the state and occasionally occurs as a postbreeding visitor north and west of its typical range. The white-faced ibis has been documented within the study area (eBird, 2024), and although unlikely, the species may occasionally occur within the study area.

The Red River pupfish, a small freshwater fish reaching up to 58 millimeters in length, occurs in Texas naturally in the upper Red and Brazos basins and has been introduced in the Canadian and Colorado basins. The species is found in river edges, channels, and backwaters over sandy bottoms (Thomas et al., 2007). Although unlikely, small numbers of introduced Red River pupfish may occur occasionally in the Colorado River within the study area.

The Brazos water snake, which averages 16 to 30 inches in length, is found only in a limited section of Central Texas. The principal habitat for the species is the riffle, a rock-filled section of shallow, fast-flowing water with a rocky or gravel substrate (Werler and Dixon, 2000). The species has been

documented within Mitchell County (Dixon, 2013), which is at the northwesternmost portion of its range (Werler and Dixon, 2000), and although unlikely, the species may occasionally occur within the study area.

The Texas horned lizard occurs throughout the western half of the state in a variety of habitats but prefers arid and semiarid environments in sandy loam or loamy sand soils, that support patchy bunchgrasses, cacti, yucca, and various shrubs (Henke and Fair, 1998). While the species has almost vanished from the eastern half of the state over the past 35 years, it still maintains relatively stable numbers in west Texas. Although TPWD (2024d) shows no documented records within the study area for this species, the Texas horned lizard may occur in small numbers in suitable habitat within the study area.

3.6 Community Values and Community Resources

The term "community values" is included as a factor for the consideration of transmission line certification under § 37.056(c)(4)(A) of the Texas Utilities Code. The PUCT CCN application requires consideration of values and resources that could be important to a local community, such as assessment of the following:

- public open house meeting, if applicable;
- approvals or permits required from other governmental agencies;
- habitable structure locations;
- FAA-registered airports, private airstrips, and heliports located in the area;
- Amplitude Modulation (AM), Frequency Modulation (FM), microwave, and other electronic installations in the area;
- irrigated pasture or croplands utilizing center-pivot or other traveling irrigation systems;
- parks and recreation areas;
- historical and archeological sites; and
- comments received from community leaders and members of the public.

In addition to the above-mentioned items, Burns & McDonnell evaluated the Proposed Project for community values or resources that might not be specifically listed by the PUCT in a rule or the application form, but may be of importance to a particular community as a whole. To evaluate the effects of the Proposed Project, Burns & McDonnell has defined community values as a "shared appreciation of an area or other natural or human resource by a national, regional, or local community." Examples of a community resource would be a park or recreational area, historical or archeological site, or a scenic vista (aesthetics). Burns & McDonnell mailed consultation letters to various local officials (see **Section 2.2.1**

and **Appendix A)** to identify and collect information regarding community values and community resources. Community values and community resources are discussed in **Section 4.0** of this document.

3.7 Land Use

The study area lies in State Planning Region Number 7, represented by the WCTCOG. Region 7 is approximately 18,000 square miles and serves 19 counties (Texas Association of Regional Councils [TARC], 2024). The USDA's National Agricultural Statistics Service (NASS) Cropland Collaborative Research Outcomes System (Cropland CROS) geospatial data was referenced to quantify land cover within the study area. The study area can be classified as approximately: 58 percent shrubland (rangeland); 13 percent open water (Lake Colorado City); 20 percent cultivated crops; 8 percent developed; less than 1 percent grassland/pasture; and less than 1 percent as woody wetlands, herbaceous wetlands, evergreen forests, mixed forest, deciduous forest, and barren land (USDA, 2024).

3.7.1 Urban/Residential Areas

The study area encompasses approximately 8.84 square miles in the center of Mitchell County, approximately 2.3 miles southwest of Colorado City, which serves as the county seat. Although no incorporated city is located in the study area, a small portion of the unincorporated community of Lake Colorado City is located on the study area's northwestern boundary.

The majority of the study area consists of rural, undeveloped shrubland primarily used for livestock grazing, some cropland, and Lake Colorado City. Residential development is concentrated in the northwestern corner of the study area around the unincorporated community of Lake Colorado City. Isolated residences and farmsteads are scattered along S FM 1229, FM 2836, and SH 163, the three major roadways in the study area. The Morgan Creek Power Plant, owned and operated by Luminant Generation Company, LLC (Luminant), is located on the eastern shoreline of Lake Colorado City in the north-central portion of the study area.

Westbrook ISD and Colorado ISD serve the study area (Texas Education Agency [TEA], 2024). However, neither school district has a property, campus, or facility located within the study area. Burns & McDonnell solicited information regarding environmental and/or land use constraints within the study area from regional and county officials, school districts, and various local, state, and federal regulatory agencies. Consultation letters and agency responses are available for review in **Appendix A**.

3.7.2 Recreation Areas

A review of federal, state, and local websites and maps and field reconnaissance identified one recreational facility within the study area. Lake Colorado City State Park is a 500-acre property managed

by TPWD and is located on the southwest banks of Lake Colorado City. The park includes 11 cabins and campsites for overnight stays, several group facilities, a boat ramp, water sport rentals, hiking, fishing, and swimming (TPWD, 2024g).

A review of the National Park Service (NPS) website indicated that no NPS park, wild and scenic river, national monument, national recreation area, national preserve, national battlefield, or other national historic site open to the public is located within the study area (NPS, 2024). No forest or grassland, wildlife refuge, wildlife management area, or preserve is located within the study area (TPWD, 2024g, 2024h; USFWS, 2024f; USGS, 2024). No conservation easement or preserve was identified on The Nature Conservancy (TNC, 2024) website, Texas Land Conservancy (TLC, 2024) website, or the National Conservation Easement Database (NCED) (NCED, 2024).

A search of the TPWD's database of Public Hunt Lands identified a Public Hunt Area at Lake Colorado State Park located inside of the study area boundary. This area (Unit 1096), allowing shotgun hunting only, consists of approximately 140 acres on the east and north side of FM 2836 (TPWD, 2024i). Additional recreational activities such as hunting and fishing may occur on private properties within the study area, but these properties are not open to the public.

The TPWD administers the Great Texas Wildlife Trails, a system of 9 driving trail maps that guide the public to the best spots to view wildlife. The study area is located within the southern portion of the Panhandle Plains Wildlife Trail. The Colorado Headwaters Loop, one of the smaller driving loops within the larger Panhandle Plains Wildlife Trail, identifies Lake Colorado City State Park (site PHP 018) as a point of interest within the study area (TPWD, 2024j).

3.7.3 Agriculture

Agriculture is a significant land use and an important economic contributor in Mitchell County. According to the USDA 2017 Census of Agriculture, the total market value of agricultural products sold in Mitchell County was $21,742,000 ($13,584,000 in crops and $8,158,000 in livestock, poultry, and other products). The total land in farms within the county increased by 1 percent to 583,017 acres in 2017 (USDA, 2019).

According to USDA Cropland CROS geospatial data and interactive maps: approximately 3,318 acres (59 percent) of the study area are classified as shrubland that is used for livestock grazing; and approximately 1,142 acres (20 percent) are classified as cropland. The two leading crop items by acreage within the study area are winter wheat (534 acres) and cotton (83 acres) (USDA, 2024).

3.7.4 Industry/Utilities

Luminant's 536.4-megawatt (MW) gas-fueled Morgan Creek Power Plant is located on the eastern shoreline of Lake Colorado City in the north-central portion of the study area. The plant contains 6 turbines, each with 89.4 MW capacity (Power Technology, 2024).

3.7.4.1 Electric Transmission Lines

Data sources used to identify existing electrical transmission and distribution lines include utility company and regional system maps, aerial imagery, USGS topographic maps, and field reconnaissance surveys. Numerous existing electric transmission lines occur in the study area, all of which are owned by Oncor, and exit Oncor's existing Morgan Creek Switch in the north-central portion of the study area.

3.7.4.2 Oil and Gas Wells/Pipelines

According to information obtained from the RRC, a total of 65 mapped oil and gas pipelines containing natural gas, high volatile liquid, or crude oil, traverse the study area. Additionally, four oil/gas wells are mapped as occurring in the study area (RRC, 2024).

3.7.5 Aesthetics

Aesthetics is included as a factor for consideration in the evaluation of transmission facilities in Section 37.056(c)(4) of the Texas Utilities Code. The term "aesthetics" refers to the subjective perception of natural beauty in the landscape, and this section of the document attempts to define and measure the study area's scenic qualities.

Consideration of the visual environment includes a determination of aesthetic values where the major potential effect of the Proposed Project on the resource is considered aesthetic, or where the location of a transmission line could affect the scenic enjoyment of an area. Burns & McDonnell considered the following aesthetic values in this EA, that may combine to give an area its aesthetic character:

- topographical variation (hills, valleys, etc.);
- prominence of water in the landscape;
- vegetation variety (forests, pasture, etc.);
- diversity of scenic elements;
- degree of human development or alteration; and
- overall uniqueness of the scenic environment compared to the larger region.

The study area exhibits a moderate degree of aesthetic value for the region. The topography of the study area generally consists of a level to gently rolling terrain that decreases in elevation from north to south.

The degree of human development and alteration within the rural study area is high. More than half of the study area is in agricultural use including shrubland used for livestock grazing, and areas of cropland. Residential development is concentrated along the study area's northwestern boundary in the unincorporated community of Lake Colorado City, with additional isolated residences and farmsteads located along the S FM 1229, FM 2836, and SH 163 corridors. Industrial development includes the Morgan Creek Power Plant and associated infrastructure, including substantial gas pipelines and storage facilities. The study area is also transected by transportation corridors including SH 163, S FM 1229, FM 2836, and county roads. The study area also contains a substantial number of electric transmission lines that terminate at Oncor's Morgan Creek Switch and at Luminant's Morgan Creek Power Plant.

Landscapes with water as a major element, such as Lake Colorado City, are generally considered to possess high aesthetic value. Lake Colorado City, an artificial lake with a surface area of approximately 1,618 acres, is owned and operated by Luminant. It was built in 1949 by impounding Morgan Creek to provide water supply for Colorado City and to cool water for the power plant. The TPWD manages and operates Lake Colorado City State Park, a 500-acre park that opened in 1972 on the southwestern shore of the lake. Views of the lake are aesthetically important, but the view quality is impacted by the power plant and associated infrastructure, including existing transmission lines (Texas State Historical Association [TSHA], 1995; TPWD, 2024l).

The THC operates the Texas Heritage Trails Program, a statewide heritage tourism program based on 10 scenic driving trails originally created by TxDOT. This program enables people to learn about, and be surrounded by, local customs, traditions, history, and culture of the 10 regions of Texas. The study area is in the Texas Plains Trail Region, and Lake Colorado City State Park is highlighted as a place of interest within the study area (THC, 2024b).

In 1998, TxDOT published a list of some of the best "Scenic Overlooks and Rest Areas" in Texas, each of which presented particularly strong aesthetic views or settings (TxDOT, 1998). A review of this list found that none of the highlighted scenic overlooks or rest areas are located within the study area. Additionally, a review of the NPS website identified no wild and scenic rivers, historic trails, national parks, national monuments, or national battlefields within the study area (NPS, 2024). No other outstanding aesthetic resources, designated scenic views, or unique visual elements were identified from the literature review or from ground reconnaissance of the study area.

3.7.6 Transportation/Aviation

The transportation system in the study area consists of: SH 163, which runs northeast/southwest in the eastern half of the study area; S FM 1229, which runs west and north from its intersection with SH 163 in the northeastern portion of the study area; FM 2836, which runs west and north from its intersection with SH 163 in the southern portion of the study area; county roads; and private roads.

According to TxDOT's "Project Tracker," an online database of TxDOT's active and proposed highway projects, no major projects are planned or are underway within the study area (TxDOT, 2024a). The only TxDOT roadwork for SH 163, S FM 1229, and FM 2836 within the study area includes ongoing roadway maintenance, seal coat, and repairs, where needed.

The Federal Railroad Administration (FRA) did not identify any railroads within the study area (FRA, 2024); however, an abandoned former Union Pacific Railroad (UPRR) spur line going into the Morgan Creek Power Plant still exists.

A review of: the FAA South Central U.S. Chart Supplement (formerly known as the Airport/Facility Directory) (FAA, 2024a); the Dallas-Ft. Worth Sectional Aeronautical Chart (FAA, 2024b); the TxDOT Airport Directory (TxDOT, 2024b); aerial imagery; USGS maps; AirNav (2024); and field reconnaissance identified no FAA-registered airports within 20,000 feet of the study area, no heliports within 5,000 feet of the study area, and no private airports or landing strips within 10,000 feet of the study area. The closest airport facility, Colorado City Airport, is approximately 33,520 feet (6.35 miles) north of the study area.

3.7.7 Communication Towers

A review of the Federal Communications Commission (FCC) website, Homeland Infrastructure Foundation-Level Data (HIFLD), other online databases, recent aerial imagery, and field reconnaissance identified two communication towers within the study area. A microwave tower registered to Oncor License Holding Company LLC is located north of the Morgan Creek Power Plant, approximately 0.8 miles southwest of the intersection of SH 163 and S FM 1229. A second tower, which was not listed on the public websites but was encountered during field reconnaissance, is associated with an abandoned gas station on the south side of FM 2836 in the southwestern portion of the study area (see **Figure 3-1** in **Appendix B)** (U.S. Department of Homeland Security [USDHS], 2024; FCC, 2024; AntennaSearch, 2024).

3.8 Cultural Resources

As shown on **Figure 3-5**, Mitchell County is located in the Texas Plains Planning Region as delineated by the THC (Mercado-Allinger et al., 1996). Human occupation of the Texas Plains is divided chronologically into five cultural periods that span over 11,500 years and include Paleoindian, Archaic, Ceramic, Protohistoric, and Historic periods (Perttula, 2004; Johnson and Holliday, 2004). These divisions are marked by shifts in subsistence strategies and technological innovations visible in the archeological record and through documented oral and written histories. The following sections present an overview of the region's cultural history and the associated archeological and historic resources that could potentially be located within the study area.

3.8.1 Cultural History

3.8.1.1 Paleoindian

Archeological evidence suggests that people first lived within the Texas Plains around 12,000 years ago. This occupational phase is referred to as the Paleoindian period and extends from the end of the Pleistocene Epoch until the early Holocene. The phase can be subdivided further into Clovis (11,500 to 11,000 B.C.), Folsom (10,800 to 10,300 B.C.), and Late Paleoindian cultures, including Plainview (circa [ca.] 10,000 B.C.) and Firstview (ca. 8600 B.C.) (Johnson and Holliday, 2004).

For decades, scholars commonly believed Paleoindian people traveled in highly mobile hunting and gathering bands, living a nomadic lifestyle, and utilizing a limited number of resources. However, more recent archeological research at the Aubrey and Lubbock Lake sites outside of Dallas and Lubbock, respectively, has revealed evidence of a more diversified subsistence base that included small and medium mammals in addition to the more traditional large mammals and megafauna. The Folsom culture is well represented at Lubbock Lake, and archeological investigations focusing on this period have provided evidence of increased reliance on extinct species of bison for subsistence, as well as shifting lithic technologies (Carlson, 2005).

Following the decline of the Folsom cultural phase around 10,300 B.C., archeologists have identified a series of varied cultural groups distinguished according to a wide range of projectile point styles. Common Late Paleoindian points include Plainview and Firstview, but other points, some of which have contracting stems, were also developed. It appears that people relied upon a diverse diet, including plants and small game, as well as the continued hunting of bison. Evidence of this subsistence strategy has been documented at the Lake Theo site in Briscoe County and at Lubbock Lake (Harrison and Killen, 1978; Johnson and Holliday, 2004).

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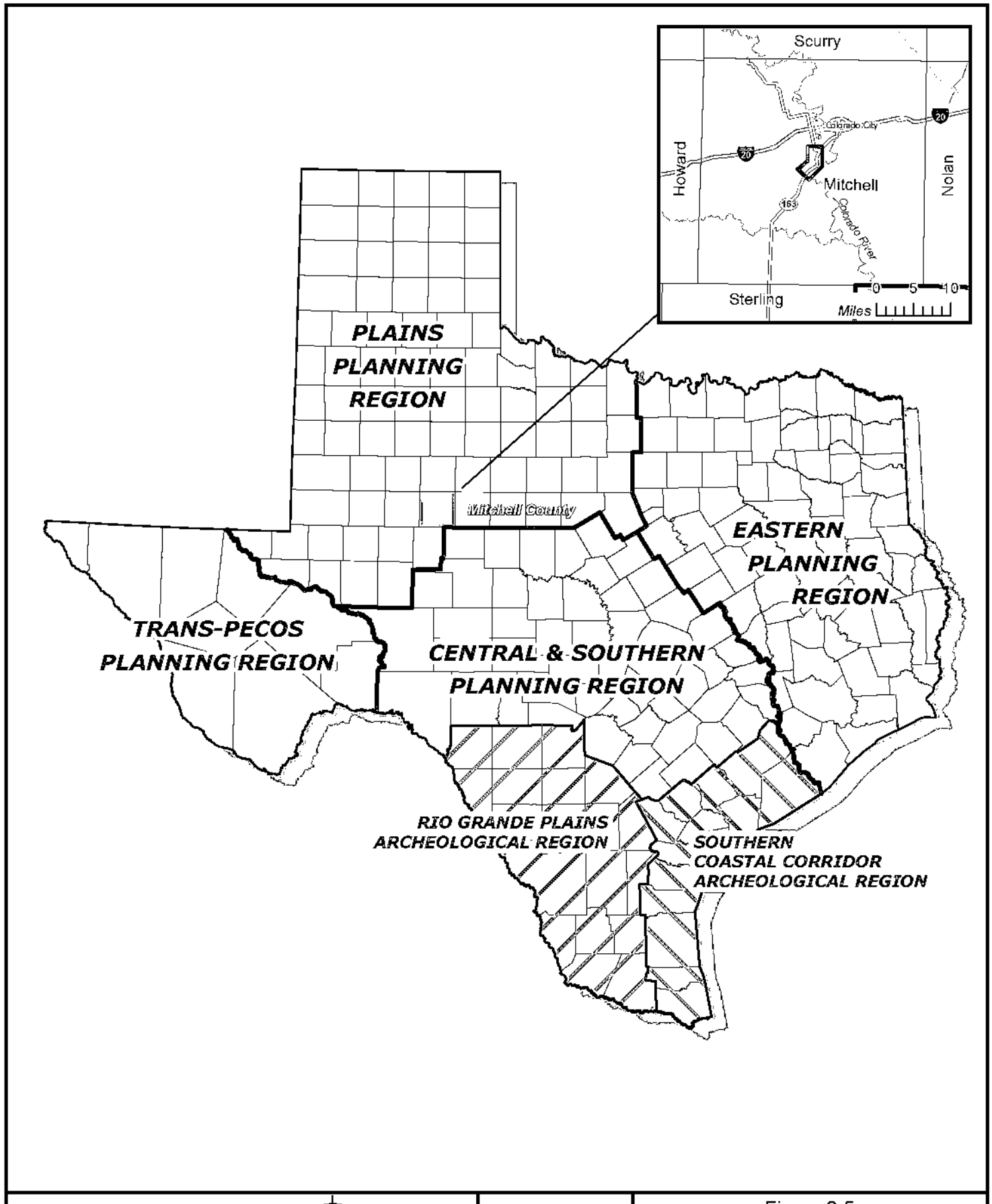

Figure 3-5
Location of Study Area
in Relation to the Cultural Resources
Planning Regions of Texas
Ranger Camp Switch
to Cattleman Switch
345 kV Transmission Line

Source: Mercado-Allinger et al. (1996)

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3.8.1.2 Archaic

The start of the Archaic period (8000 to 2000 B.C.) coincides roughly with the start of the Hypsithermal climatic episode that resulted in an overall warmer and drier climate (Hofman, 1989; Kay, 1998). Consequently, a sudden extinction of megafauna populations forced people to shift to faunal resources in bottomland and forested areas (Johnson and Holliday, 2004). Changes in overall subsistence practices during the Archaic period appear to have led to accompanying technological shifts. Stemmed (expanding and contracting) and notched (corner and basal) projectile points began to be used, and hafting technologies changed. The lithic toolkit was also expanded to include groundstone tools (e.g., manos, metates, and pestles) for the first time.

During the Middle and Late Archaic period, a further expansion of the lithic toolkit appears to have occurred. Varieties of stemmed, corner-notched, and shallow side-notched projectile points became increasingly popular during this period, as did scrapers, perforators, drills, knives, grooved axes, bannerstones, and plummets. The Archaic culture relied heavily upon bison as an important food source, along with other smaller game. An increase in groundstone tool use, including manos and pestles, also occurred, a phenomenon that is believed to reflect further inclusion of seeds and nuts in people's diets (Blackmar and Hofman, 2006).

3.8.1.3 Ceramic

The Early Ceramic period (2000 to 1000 B.C.) appears to have been a transitional time for people living in the Texas Plains. Several new innovations, including pottery and the bow and arrow, were introduced. Additionally, limited evidence of horticulture and the presence of storage features suggest people continued a foraging lifestyle while moving toward a more sedentary existence (Johnson and Holliday, 2004). Typical cultural markers for this period include thick, conoidal-shaped ceramic vessels and corner- and basally notched arrow points.

Diagnostic artifacts of the Early Ceramic include corner-notched and stemmed arrow points and brownware ceramics (Boyd, 2004). Excavations at the Kent and Sam Wahl sites in the panhandle suggest a continued foraging lifestyle, with seasonal habitation sites and hunting and plant-processing campsites. Excavated features include burials, hearths, pits, burned-rock features, and rectangular-to-oval pit houses.

During the Middle Ceramic period, people appear to have been primarily semi-sedentary horticulturists with semi-permanent to permanent residences. Artifact assemblages from this period include cord-marked pottery, diamond-shaped beveled knives, triangular projectile points, distal end scrapers, drills, bison-bone digging sticks, and scapula hoes for practicing agriculture. It was during this period that the first

widespread permanent villages appear to have been established, typically on ridges and terraces near perennial streams and arable land (Brosowske, 2005). Subsistence strategies included the harvesting of cultigens such as corn, squash, and beans, as well as hunting game and collecting edible wild plants. Bison continued to play a major role in people's diets (Brooks, 2004).

3.8.1.4 Protohistoric

In general, scholars believe Apachean groups dominated the Texas Plains during the period of European contact, particularly the Lipan Apache, with later incursions by the Comanche, Cheyenne, Arapaho, and Kiowa (Hofman, 1989). Evidence from archeological excavations suggests people were primarily nomadic bison hunters with some sedentary camp settlements and limited horticulture. The Tierra Blanca site in Deaf Smith County contains some of the best evidence for protohistoric life on the Texas Plains. Features include tipi rings, stone foundations, open hearths, and semi-subterranean, slab-lined circular structures (Hofman, 1989).

The Comanche moved into the Texas Plains region during the eighteenth century. Originally from the Great Basin region to the northwest, family bands and groups migrated south following the cultural incorporation of the European horse, which drastically changed the Comanche social, economic, and political structure (Wallace and Hoebel, 1952). The Comanche were highly mobile, followed the seasons, and came together to hunt bison. While groups of Lipan Apache, Kiowa, Cheyenne, Arapaho, and other surviving indigenous cultures continued to occupy the region during the eighteenth and nineteenth centuries, the Comanche dominated the Texas Plains during the Protohistoric period (Hofman, 1989).

3.8.1.5 Historic

From the sixteenth through the eighteenth centuries, the history of Mitchell County was characterized by Spanish exploration and interaction with bands of Jumano people who resided in the area, providing the first recorded history of Mitchell County. Spanish exploration of the southern Great Plains within Texas began in the early seventeenth century and primarily revolved around contact with Jumano people. During this time, bands of Jumano ranged from northern Mexico, through southern New Mexico, and across West Texas (Hickerson, 2019).

Interactions between Spaniards and Jumanos have been recorded since 1580. In 1629, a group of Jumano people in West Texas requested religious instruction from Fray Juan de Salas, resulting in more sustained interactions (Kenmotsu, 2008). Captains Hernán Martín and Diego del Castillo led an expedition in 1650, spending 6 months in Jumano territory along the Concho River, formerly known as the Río de los Nueces (Goodwyn, 1995). The discovery of pearls in Jumano lands prompted another expedition in 1654, led by

Diego de Guadalajara, which reached east of the Colorado River (Blake, 2019). Over the course of the eighteenth century, bands of Comanche began their migration south into Texas and increased tensions with their rivals the Apache, leading to the Jumanos' retreat from the southern plains of western central Texas. By 1780, the Penateka band had settled in present-day Mitchell County (Amin and Leffler, 2019).

The first recorded Anglo-American excursion into Mitchell County occurred in 1840 when Colonel J. H. Moore pursued a band of Comanche that led him to the headwaters of the Colorado River near present-day Colorado City (Welch, 2011). The springs south of present-day Colorado City had long served as a gathering place for wildlife and Native Americans on the southern plains. The Penateka Comanche maintained their hold on the area of Mitchell County until the mid-1870s when U.S. forces, under the command of Ranald S. Mackenzie, began moving the Comanches onto Oklahoma reservations in the wake of the Red River War (Wallace, 2019). In 1876, the Texas Legislature formed Mitchell County, named after Asa and Eli Mitchell, members of the Old Three Hundred settlers from the 1820s (Isbell, 1995).

At the time of the county's formation, administrative responsibility was assigned to Shackleford County as no permanent settlements existed within Mitchell County (Amin and Leffler, 2019). Early settlers in the late 1870s were primarily buffalo hunters and cattle ranchers, forming the foundation of Mitchell County's early economy. A ranger camp was established in modern-day Colorado City and quickly grew into a trading post (Hunt, 2023). By 1880, the census recorded 112 residents in the county, allowing for elections for formal organization of the county in 1881. Colorado City was chosen as the county seat (Amin and Leffler, 2019).

After the county's formal organization, the population skyrocketed. A post office, school, and a rail station on the Texas and Pacific Railway in Colorado City were erected in 1881 (Hunt, 2023). Three more rail stations were established in Mitchell County the following year, transforming the county into a major rail hub serving much of the southern Great Plains within Texas. Cattle and buffalo were a major force in the economy, allowing cities like Camilla and Colorado City to grow exponentially. Once their stock was loaded, hunters and cowboys were free to enjoy their respective town's amenities, resulting in a growth of local businesses within the community. The county grew from a population of 112 in 1880 to an estimated high of 6,000 by 1885 (Hunt, 2023). Colorado City emerged as a major shipping center and cattle town, boasting upwards of 28 saloons and beer parlors, numerous general stores, lawyer's offices, doctor's practices, and supporting a population of over 3,000 people (Amin and Leffler, 2019).

However, Mitchell County's explosive growth did not last. Natural disasters in the late 1880s and the expansion of Amarillo and San Angelo in the 1890s led to a sharp decline in population and economic status within the county. The 1890 census recorded a population of roughly 2,059 residents within the entire county (Amin and Leffler, 2019). Near the turn of the twentieth century, Colorado City was bypassed by three railroad lines, further reducing the influence of the city (Amin and Leffler, 2019).

The remaining residents of Mitchell County generally worked in agriculture, focusing on cattle, cotton, corn, and sorghum production. Cotton and sorghum quickly became cash crops, supporting a large majority of individuals working in agriculture (Amin and Leffler, 2019). Oil was discovered in the county in 1920, contributing to the county's growth in population and quickly becoming a steady source of employment in Mitchell County throughout the remainder of the twentieth century (Texas Almanac, 2010). By 1910, Colorado City constructed a new public school, waterworks, and an electric power plant. Local government buildings were rebuilt in 1926, including the courthouse and Colorado City Hall (Hunt, 2023). The Great Depression only had a slight effect on the county, as the recent infrastructure upgrades and the oil-based economy maintained residents' quality of life (Texas Almanac, 2010).

Post World War II, Mitchell County's population continued to grow. Agriculture rebounded after the Great Depression and oil production remained stable. Morgan Creek, 5 miles southwest of Colorado City, was dammed to create Lake Colorado City, providing cooling water for the new Morgan Creek Power Plant (TSHA, 1995). In 1971, TPWD signed a lease on 500 acres of land along the southwest shore of the reservoir, with Lake Colorado City State Park opening the following year (TPWD, 2024k). A decade later the Champion Creek Reservoir, located 7 miles south of Colorado City, was constructed by the Texas Electric Service Company (TSHA, 1994).

Since the 1950s, Mitchell County has experienced a gradual population decline and economic stagnation. Family owned farms and ranches were replaced with commercial agribusiness, with cotton and sorghum remaining as the main sources of economic stability for the county (Texas Almanac, 2010). Cattle ranching continued as well, with approximately 20,000 head of cattle produced and harvested per fiscal year (Welch, 2011). Energy operations continued in the county, expanding from oil to other renewable resources, including solar and wind farms (Amin and Leffler, 2019).

3.8.2 Records Review

3.8.2.1 Previous Archeological Investigations

Burns & McDonnell reviewed the Atlas, maintained by the THC and TARL, to identify previous cultural resources investigations within the study area. Five previous cultural resources investigations are reported within the study area on the Atlas, as shown in **Table 3-6** (THC, 2024a). Burns & McDonnell conducted a survey for Oncor's Ranger Camp Switch 345 kV Transmission Tap Line Project in April 2024 (Pruden, 2024). The limits of the survey are not yet depicted on the Atlas. No archeological sites or other cultural resources were identified (Pruden, 2024). The site forms for sites 41MH67 and 41MH68 indicate an additional survey was conducted in 1994 for a Colorado City water and wastewater project on the east side of Lake Colorado City, but the limits of the survey are not depicted on the Atlas.

Table 3-6: Previous Archeological Surveys Within the Study Area

Atlas ID	Date	TAC Permit	Investigating Firm	Sponsor
–	1994	1351	Water Development Board	Colorado City
8500009646	1995	1495	TPWD	TPWD
8500009647	1995	1495	TPWD	TPWD
8500081226	2001	–	Atkins	Oncor
8500011866	2002	2765	TPWD	TPWD
8500081560	2019	8896	Gray & Pape	Lone Star Express Pipeline
–	2024	–	Burns & McDonnell	Oncor

Source: THC (2024a)

3.8.2.2 Previously Recorded Archeological Sites

Burns & McDonnell reviewed the Atlas to identify previously recorded archeological sites and other designated non-archeological historic resources, including: National Register of Historic Places (NRHP)-listed properties and districts; National Historic Landmarks (NHLs); historic-age cemeteries; and Official Texas Historical Markers (OTHMs), including Recorded Texas Historic Landmarks (RTHLs), within the study area. This review identified 13 archeological sites within the study area as shown in **Table 3-7** (THC, 2024a). Two archeological sites, 41MH10 and 41MH11, were determined NRHP-eligible by the THC and designated as State Antiquities Landmarks (SALs) in 1983. The remaining sites have undetermined NRHP eligibility (THC, 2024a).

Table 3-7: Previously Recorded Archeological Sites Within the Study Area

Trinomial	Site Type	Cultural Affiliation	NRHP Eligibility/Designation
41MH10	Open campsite	Archaic	Eligible; Designated SAL
41MH11	Lithic scatter	Archaic	Eligible; Designated SAL
41MH67	Open campsite	Unknown prehistoric	Unknown/Undetermined
41MH68	Lithic scatter	Unknown prehistoric	Unknown/Undetermined
41MH81	Lithic scatter	Unknown prehistoric	Unknown/Undetermined
41MH82	Dump	Historic; Early 20th century	Unknown/Undetermined
41MH83	Lithic scatter	Unknown prehistoric	Unknown/Undetermined
41MH84	Lithic scatter	Unknown prehistoric	Unknown/Undetermined
41MH85	Farmstead	Historic; 1930-1950	Unknown/Undetermined
41MH86	Dump	Historic; 1920-1950	Unknown/undetermined
41MH88	Lithic scatter	Unknown prehistoric	Unknown/Undetermined
41MH89	Lithic scatter	Early archaic	Unknown/Undetermined
41MH135	Lithic scatter	Unknown prehistoric	Unknown/Undetermined

Source: THC (2024a)

3.8.2.3 Historic Sites

One OTHM (#4042 [Plainview Baptist Church]) was identified within the study area (THC, 2024a). The extant church is not an RTHL. The marker commemorates the founding of the church with the following text (THC, 2024a):

> *"Begun as a mission of the Spade Community's Liberty Baptist Church, this fellowship met as early as 1906 in the Plainview Community Schoolhouse. On May 16, 1908, an organizational meeting was held to establish an independent congregation that became known as Plainview Baptist Church. Several members of the Liberty Baptist Church joined the new church at Plainview to provide leadership during its early years. Throughout its history, Plainview Baptist Church has maintained an active fellowship and has played an important role in the community's development."*

No NRHP-listed properties and districts, NHLs, or historic-age cemeteries were identified within the study area (THC, 2024a).

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4.0 EVALUATION OF THE PROPOSED ROUTE

The environmental evaluation presented in this section addresses impacts on the environment in consideration of the requirements of Section 37.056(c)(4)(A)-(D) of the Texas Utilities Code; the PUCT's Substantive Rule 25.101, including the PUCT's policy of prudent avoidance; Burns & McDonnell's environmental analysis; reconnaissance surveys; and the information and responses received from federal and state agencies and local officials. Measurements of the environmental factors were primarily taken from recent aerial imagery (March 2022–January 2023 ESRI World Imagery; 2022 USDA NAIP; January 2022 Bing; June 2024 Google Earth) and from available digital resource layers using GIS software.

Burns & McDonnell professionals with a proficiency in different environmental disciplines (e.g., terrestrial and aquatic ecology, land use and planning, cultural resources, and GIS) evaluated the proposed route based upon environmental conditions present along the proposed route. Each Burns & McDonnell evaluator independently analyzed the Proposed Project using the environmental and land use data presented in **Table 4-3**, located at the end of this chapter.

The potential impacts on natural, human, and cultural resources resulting from the Proposed Project are discussed below by discipline.

4.1 Impact on Physiography and Geology

Construction of the Proposed Project will have no significant effect on the physiographic features, geologic features, or mineral resources of the area. Erection of the structures would require the removal or minor disturbance of small amounts of near surface materials but would have no measurable impact on the geologic features or mineral resources along the Proposed Project (BEG, 1979; USGS, 2011).

4.2 Impact on Soils

4.2.1 Soil Associations

The construction and operation of transmission lines normally create very few long-term adverse impacts on soils. Transmission lines do not normally cause a conversion of pastureland because the land can still be used in this capacity after construction. The predominant potential impacts on soils from any transmission line construction are erosion and soil compaction. The potential for soil erosion is generally greatest during the initial clearing of the ROW; however, Oncor employs erosion control measures during the clearing and construction process, where appropriate. Where existing land cover includes woody vegetation within the ROW, much of this vegetation is removed to provide adequate space for construction activities and to minimize corridor maintenance and line operational problems. In these

areas, only the leaf litter and a small amount of herbaceous vegetation remains, and both are temporarily disturbed by the necessary movement of heavy equipment.

Construction of the Proposed Project will require minimal amounts of clearing in areas that have already been cleared, such as pastures, existing roads, transmission lines, pipeline ROW, and areas across the Morgan Creek Power Plant. The most important factor in controlling soil erosion associated with construction activity is to revegetate areas as soon as practical following construction. Natural succession would revegetate most of the ROW. Impacts from soil erosion caused by construction activity can be minimized by the implementation of best management practices (BMPs) designed in the Storm Water Pollution Prevention Plan (SWPPP), if required.

4.2.2 Prime Farmland

Prime farmland soils, as defined by the NRCS, are soils that are best suited for producing food, feed, forage, or fiber crops. The USDA recognizes the importance and vulnerability of prime farmlands throughout the nation and encourages the wise use and conservation of these soils where possible. The Proposed Project does not cross any prime farmland soils; however, the project does cross cropland. In addition to construction-related impacts described above, the major impact of the project on soils would be the physical occupation of small areas by the actual support structures. Although cropland is crossed by the Proposed Project, most of the ROW would be available for agricultural use once construction of the transmission line is completed. Therefore, the Proposed Project will not have any significant effect on prime farmland soils.

4.3 Impact on Water Resources

4.3.1 Surface Water and Floodplains

Construction and operation of the Proposed Project would have minimal adverse impact on the surface water resources of the area. Potential impacts from any major construction project include short-term disturbances resulting from construction activities, which would result primarily from increased siltation from erosion and decreased water quality from accidental spillage of petroleum and other chemical products. Oncor will implement industry-standard BMPs during construction for proper control and handling of any petroleum or other chemical products. Additionally, activities such as clearing of vegetation may temporarily increase local stormwater runoff volumes and sediment loading. Potential impacts would be avoided whenever possible by spanning surface waters, if present, diverting construction traffic around water resources via existing roads, and eliminating unnecessary clearing of vegetation. This may eliminate the necessity of constructing temporary low-water crossings that may

result in erosion, siltation, and disturbance of streams and their biota. If a spanned stream is dry at the time of construction, some bank and streambed alterations may be necessary to facilitate crossing. Such activities will be conducted according to USACE regulations and the SWPPP, if required.

Although impacts would be avoided to the extent practical, some unavoidable impacts could occur. Because approximately 91 percent of the Proposed Project parallels existing ROW, these impacts would be minimized. Impacts could be further minimized by reducing vegetation removal around surface water features and minimizing ground disturbance. The use of erosion control measures, if required, and BMPs regarding the use of chemicals, would also minimize potential impacts. As such, impacts occurring from construction of the Proposed Project would be short term and minor because of the relatively small area that would be disturbed at any given time; the short duration of the construction activities; the preservation of vegetation adjacent to surface water features, where practical; and the implementation by Oncor of BMPs designated in the SWPPP, if required, to control runoff from construction areas.

Activities associated with electrical transmission facilities in jurisdictional wetlands are regulated by the USACE under the CWA. Generally, transmission lines are designed to span stream or wetland crossings in most instances, thereby avoiding the need for a Section 404 permit. The Proposed Project crosses approximately 379 feet of NWI-mapped wetlands, which Oncor anticipates being spanned. Additionally, the Proposed Project crosses three streams identified by the 3DHP database—Morgan Creek, an unnamed tributary to Morgan Creek, and an unnamed stream. These streams will be spanned.

In response to Burns & McDonnell's solicitation for information, the USACE Fort Worth District stated that the Proposed Project has been assigned Project Number SWF-2024-00415. Further correspondence from the agency noted that the proposed construction activities may be authorized by general permit, such as NWP 57 for Electric Utility Line and Telecommunications Activities. The USACE also noted that a Delineation Report would be required if WOTUS, including wetlands, would be impacted by the project (**Section 2.2.1** and **Appendix A**). If necessary, Oncor will coordinate with the USACE prior to construction to ensure compliance with Section 404 of the CWA to avoid, minimize, or mitigate unavoidable impacts on WOTUS, including wetlands. Consistent with the TPWD's response to Burns & McDonnell's solicitation, the location of the Proposed Project minimizes impacts on waterways, associated floodplains, riparian corridors, and wetlands by minimizing fragmentation and utilizing/paralleling existing disturbed corridors, where feasibly available (**Appendix A**).

As noted in **Section 3.4.1** (Surface Water and Floodplains), no TPWD-identified, ecologically significant stream segments were found in the study area; therefore, no impacts on ecologically significant stream

segments are expected. From a water resources perspective, the Proposed Project should have no significant impact on surface water due to the line spanning the three streams.

FEMA has conducted detailed floodplain analyses for Mitchell County (FEMA, 1985). The Proposed Project crosses approximately 867 feet of delineated 100-year floodplains. Proposed construction could result in locating some transmission line structures within floodplains, particularly in the vicinity of Lake Colorado City. These structures would be designed and constructed so as not to impede the flow of any waterway or create any hazard during flooding. Construction activities within floodplains would be limited to the proposed ROW, and significant efforts would be made to locate structures outside of flood channels. Also, if structures are to be located within floodplains, Oncor would coordinate in advance with the appropriate county floodplain administrator. The Proposed Project should have no significant impact on the function of the floodplains.

4.3.2 Groundwater/Aquifers

No significant impacts on groundwater are expected to occur from the construction and operation of the Proposed Project. The amount of recharge area that would be disturbed by construction is minimal when compared with the total amount of recharge area available for the aquifer systems in the region. Additionally, if accidental spillage of fuel, lubricants, or other petroleum products from normal operation of heavy equipment during construction activities occurred, any groundwater contamination would be unlikely. Any accidental spills would be promptly handled in accordance with state and federal regulations. Oncor will take necessary precautions to avoid and minimize the occurrence of such spills.

4.4 Impact on Ecosystems

4.4.1 Vegetation

4.4.1.1 Terrestrial Vegetation

Impacts on vegetation resulting from the construction and operation of transmission lines are primarily associated with the removal of existing vegetation within the ROW. The amount of vegetation cleared from the transmission line ROW is dependent upon the type of vegetation present and whether the ROW is completely new or involves widening existing ROW. For example, the greatest amount of vegetation clearing occurs in wooded areas, whereas cropland and grassland require little to no removal of vegetation. In its September 12, 2024, response letter, the TPWD (2024l) recommended that the removal of native vegetation during construction be minimized to the extent feasible. Consistent with project-specific recommendations in TPWD's response letter regarding prevention of habitat fragmentation, the

Proposed Project parallels existing transmission line and other compatible ROW for approximately 20,210 feet, or approximately 91 percent of its total length (TPWD, 2024l).

Pastureland/rangeland (e.g., grasses, other herbaceous vegetation, and some woody vegetation) occurs throughout the study area. Minimal clearing would be necessary for construction throughout the areas of pastureland/rangeland. Vegetation community types along the Proposed Project were verified during the field reconnaissance. The Proposed Project crosses approximately 8,438 feet of pastureland/rangeland.

Construction of the Proposed Project would be performed in such a way as to minimize adverse impacts on vegetation and to retain existing ground cover when practical. Where necessary, soil conservation practices will be undertaken to protect local vegetation and ensure successful revegetation for areas disturbed during construction. Erosion would be controlled as required by procedures set forth in the SWPPP, if necessary.

4.4.1.2 Aquatic/Hydric Vegetation

Removal of vegetation in wetland areas increases the potential for erosion and sedimentation, which can be detrimental to downstream aquatic life and plant communities. Any placement of fill material within WOTUS would represent a permit action that may require notification to the USACE. Potential wetlands near the Proposed Project may or may not be considered jurisdictional wetlands by the USACE. Delineation of wetlands, if required, would include detailed, site-specific examination of vegetation, hydrology, and soils. Precautions would be taken throughout the construction process to avoid and minimize impacts on wetlands. Depending on the size and vegetation type (shrub/scrub or herbaceous), these areas can be spanned in many instances, although they cannot always be avoided by construction equipment. Implementation of approved BMPs for construction and minimization of erosion in disturbed areas would help dissipate the flow of runoff. After construction is complete, impacted herbaceous wetlands are likely to recover relatively quickly.

Sensitive plant communities, such as those found along riparian corridors and in wetlands, can often be spanned without the need for clearing. Potential impacts on sensitive plant communities by the Proposed Project are expected to be minor. Typically, the main considerations regarding potential impacts on sensitive plant communities include the length across wetland areas and open water, and the length of ROW paralleling (within 100 feet) streams. The Proposed Project crosses Morgan Creek, an unnamed tributary to Morgan Creek, and another unnamed stream. According to USFWS NWI maps, it also crosses approximately 379 feet of NWI-mapped potential wetlands, including open water. In addition, it parallels approximately 148 feet of streams within 100 feet.

Activities associated with electrical transmission facilities in jurisdictional wetlands are regulated by the USACE under the CWA. The USACE responded to an August 19, 2024, solicitation via email on September 9, 2024, stating that the Proposed Project has been assigned Project Number SWF-2024-00415 and that a regulatory project manager had been assigned. The letter noted that the proposed construction activities may be authorized by general permit, such as NWP 57 for Electric Utility Line and Telecommunications Activities (**Appendix A**).

As previously noted in **Section 4.3.1** (Surface Water and Floodplains), if necessary, Oncor will coordinate with the USACE prior to construction to ensure compliance with Section 404 of the CWA to avoid, minimize, or mitigate unavoidable impacts on WOTUS, including wetlands. Therefore, the Proposed Project is unlikely to have any significant impact on aquatic/hydric vegetation.

4.4.1.3 Commercially or Recreationally Important Vegetation

Commercially important vegetation, including forage and row crops, occur within the proposed ROW. As stated in **Section 4.2.2** (Prime Farmland), cropland is crossed by the Proposed Project; however, most of the ROW within cropland would be available for agricultural use once construction of the transmission line is completed. Therefore, the Proposed Project will have no significant effect on commercially or recreationally important vegetation.

4.4.1.4 Endangered and Threatened Plant Species

One endangered plant species, the federally listed Texas poppy-mallow, may occur in Mitchell County. Two recent records exist approximately 4 miles northeast and 5 miles southeast of the study area (TPWD, 2024d; iNaturalist, 2024). This perennial species may be adversely affected by the Proposed Project if present in suitable habitat. If suitable habitat is present, Oncor will take necessary precautions to avoid and minimize disturbance, if any, during construction.

4.4.2 Fish and Wildlife

No federally determined critical habitat has been designated in the study area for any endangered or threatened species. Therefore, the Proposed Project would not impact critical habitat.

4.4.2.1 Terrestrial Wildlife

The potential impacts of transmission lines on wildlife include short-term effects resulting from physical disturbance during construction, as well as long-term effects resulting from habitat modification, fragmentation, or loss. The net effect from transmission line construction on local wildlife is typically minor. The following section provides a general discussion of the potential effects of transmission line

construction and operation on terrestrial wildlife, followed by a discussion of the possible impact of the Proposed Project.

Any required clearing or other construction-related activities could directly and/or indirectly affect most animals that reside within or traverse the proposed ROW. Heavy machinery may adversely affect smaller, low-mobility species, particularly amphibians, reptiles, and small mammals.

If construction occurs during the breeding season (generally spring to fall), construction activities may adversely affect the young of some species. Heavy machinery may cause soil compaction, which may adversely affect fossorial animals (i.e., those that live underground). Mobile species (e.g., birds and larger mammals) may avoid initial clearing and construction activities and move into adjacent areas outside the proposed ROW. Construction activities may temporarily deprive some animals of cover and, therefore, potentially subject them to increased natural predation. Wildlife in the immediate area may experience a slight loss of browse or forage material during construction. However, the prevalence of similar habitats in adjacent areas and vegetation succession in the proposed ROW following construction would minimize these effects.

The increased noise and activity levels during construction could potentially disturb the daily activities (e.g., breeding and foraging) of species inhabiting the areas adjacent to the proposed ROW. Dust and gaseous emissions should have only minimal effects on wildlife. Although construction activities may disrupt the normal behavior of many wildlife species, little, if any, permanent damage to these populations should result. Periodic clearing along the proposed ROW, while producing temporary negative impacts on wildlife, can improve the habitat for ecotonal or edge species through the increased production of small shrubs, perennial forbs, and grasses.

Transmission line structures will be designed in compliance with the Avian Power Line Interaction Committee (APLIC) standards, as defined in *Reducing Avian Collisions with Power Lines: The State-of-the-Art in 2012* (APLIC, 2012). As such, the danger of electrocution to birds from the Proposed Project is anticipated to be insignificant because the distance between conductors, or between conductor and ground wire, on 345 kV transmission lines is greater than the wingspan of any bird in the area (i.e., greater than 8 feet). Also, it is Oncor's standard practice to install devices at appropriate locations to deter bird landings on the insulator between the conductor and structure. This standard practice is consistent with agency-recognized guidelines for minimizing bird collision risks (APLIC, 2006; 2012).

The transmission line (both structures and wires) could present a hazard to flying birds, particularly when flying through a migratory pathway or stopover site (National Audubon Society [NAS], 2020). Collision