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

DOCKET NO. 58126

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

May 29, 2025

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 Border Switch – Clearfork Switch 345 kilovolt ("kV") Transmission Line Project (the "Proposed Transmission Line Project").

3.	**Person to Contact:**	Christine Williams
	Title/Position:	Regulatory Senior Project Manager
	Phone Number:	(214) 486-5841
	Mailing Address:	1616 Woodall Rodgers Fwy, Suite 6A-014 Dallas, Texas 75202
	Email Address:	Christine.Williams@oncor.com
3a.	**Alternate Contact:**	Thomas Yamin
	Title/Position:	Director of Regulatory, Transmission & Planning
	Phone Number:	(214) 486-3512
	Mailing Address:	1616 Woodall Rodgers Fwy, Suite 6B-005 Dallas, Texas 75202
	Email Address:	Thomas.Yamin@oncor.com

3b.	**Legal Counsel:**	Jaren A. Taylor Winston Skinner
	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 wskinner@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:	Border Switch – Clearfork 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 part of the Delaware Basin Stage 5 transmission upgrades recommended by the Electric Reliability Council of Texas ("ERCOT") in the Delaware Basin Load Integration Study Report ("Delaware Basin Study") and the Permian Basin Reliability Plan approved by the Public Utility Commission of Texas ("PUC" or "Commission") on October 5, 2024. The Proposed Transmission Line Project includes a component of the local project that the Electric Reliability Council of Texas, Inc. ("ERCOT") designated as local project L2 in its

Permian Basin Reliability Plan Study Report ("Permian Basin Reliability Study"), which is included as Attachment No. 8.[1] ERCOT's Delaware Basin Study is included as Attachment No. 4 to this application. Both studies are further discussed in Oncor's response to Question No. 14 herein.

The Proposed Transmission Line Project consists of a new, double-circuit 345 kV transmission line to be built on double-circuit steel lattice tower structures, between Oncor's planned Border Switch in Loving County and Oncor's existing Clearfork Switch in Andrews County, Texas. Oncor's planned Border Switch will be located approximately 6 miles south of the Texas-New Mexico border and 7 miles southeast of the intersection of Ranch-to-Market ("RM") 652 and County Road ("CR") 300. Oncor's existing Clearfork Switch is located approximately 2 miles southwest of the intersection of State Highway ("SH") 115 and Farm-to-Market Road ("FM") 181.

The length of the Proposed Transmission Line Project is approximately 58.2 to 77.4 miles, depending on which route is selected by the Public Utility Commission of Texas ("PUC" or "Commission"). The total estimated cost of the Proposed Transmission Line Project is approximately $268,481,000 to $362,900,000, depending on the route the Commission selects. This cost estimate includes estimated station costs totaling $43,794,000 associated with: (1) adding two new terminals at the planned 345 kV Border Switch into which the Proposed Transmission Line Project will terminate; (2) rebuilding the existing 345 kV switchyard at Clearfork to accommodate line terminals rated at 5,000 amperes; and (3) re-terminating the existing transmission lines connected to Clearfork.

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 Lattice Towers
Height of Typical Structures:	90-140 feet*
Estimated Maximum Height of Structures:	180 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.

[1] The Permian Basin Reliability Plan lists the Proposed Transmission Line Project as Upgrade L2B under Project ID L2 with the following description: "[l]oop the Stage 5 upgrade of new Clearfork – Drill Hole 345-kV double-circuit line into the new Border 345-kV substation."

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.

Oncor selected the double-circuit 345 kV self-supporting steel lattice tower structures for numerous reasons including costs, technical specifications, structure footprint, right-of-way ("ROW") requirements, the specific characteristics of the study area, and other engineering-related reasons. This structure type has typically been Oncor's standard for new single- and double-circuit 345 kV construction and was affirmed for this project. However, due to the number of high-voltage projects projected for construction in the Delaware Basin and Permian Basin regions and constraints on material availability, Oncor will evaluate which structure type that will be used on a project-by-project basis for future projects.

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

A dimensional drawing of the typical 345 kV tangent structure is shown in Figure 1-2, page 1-5, of the *Environmental Assessment and Alternative Route Analysis for the Planned Border Switch to Clearfork Switch 345 kV Transmission Line Project in Andrews, Ector, Loving, and Winkler Counties, Texas* ("Environmental Assessment and Routing Study"), prepared by Burns & McDonnell Engineering Company, Inc. ("Burns & McDonnell") and included as Attachment No. 1.

Design criteria will comply with applicable statutes, the appropriate edition of the National Electrical Safety Code ("NESC"), and Oncor's standard design practices.

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.

	Proposed Transmission Line Project
Miles of Right-of-Way:	Approximately 58.2 to 77.4 miles
Miles of Circuit:	Approximately 116.4 to 154.8 miles
Width of Right-of-Way:	Approximately 160 feet
Percent of Right-of-Way Acquired:	0%

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 located in portions of Andrews, Ector, Loving, and Winkler Counties, Texas. The topography of the study area is relatively flat. The only incorporated municipality within the study area is the city of Kermit, located along the study area's southern boundary in Winkler County. The unincorporated community of Notrees is located in the southeastern quadrant of the study area along SH 302. The sparsely populated study area is dominated by large sprawling tracts of land used primarily for oil and gas production and livestock grazing.

The limited residential and urban development in the study area is concentrated in and surrounding the city of Kermit. Commercial development in the study area is primarily associated with oil and gas operations. Oil and gas wells and pipelines are prevalent and distributed throughout the entire study area. Two of the other major mineral resources extracted within the study area are sand (industrial) and potash (fertilizer). The road network in the western portion of the study area is generally sparse and consists primarily of private road access to individual well locations and well facilities. The road network in the eastern portion of the study area is better developed although still limited, featuring a handful of state highways running north and east out of Kermit.

Specific discussion regarding natural, human, and cultural resources in the study area is set forth in Sections 3.1 through 3.8, pages 3-1 through 3-46, of the Environmental Assessment and Routing Study, included as Attachment No. 1.

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.

Border Switch

The planned Border Switch will be an Oncor-owned 345/138 kV switching station located approximately 6 miles south of the Texas-New Mexico border and 7 miles southeast of the intersection of RM 652 and CR 300 in Loving County, Texas. The Border Switch is planned to be in operation prior to the energization of the Proposed Transmission Line Project. The dimensions of the Border Switch will be approximately 1,180 feet by 720 feet and will not be changed by the Proposed Transmission Line Project.

Construction of the planned Border 345 kV switchyard is included in the Border Switch – Quarry Field Switch 345 kV Transmission Line Project, which is pending Commission approval in Docket No. 57837. The Border 345 kV switchyard will initially be constructed as an 8-breaker, 345 kV breaker-and-a-half bus arrangement with two 345/138 kV autotransformers and two 37.5 MVAR reactors on the tertiary winding of

each autotransformer. Relay panels, a SCADA system, and controls for the 345 kV switchyard equipment will be housed in a dedicated control center. The Drill Hole Switch to Border Switch 345 kV Transmission Line Project, pending approval in Commission Docket No. 58050, will bring the Border 345 kV switchyard to a 10-breaker, 345 kV breaker-and-a-half configuration.

The Proposed Transmission Line Project includes the construction of an additional two 345 kV terminals and related controls within the Border 345 kV switchyard, which are necessary for terminating the new transmission line. These new terminals will bring the Border 345 kV switchyard to a 12-breaker, 345 kV breaker-and-a-half configuration. 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 and additional details regarding the layout of the planned Border 345 kV switchyard are illustrated in Attachment No. 2-A.

Clearfork Switch

The existing Clearfork Switch is an Oncor-owned 345/138 kV switching station located approximately 2 miles southwest of the intersection of SH 115 and FM 181. The dimensions of the Clearfork Switch are approximately 500 feet by 335 feet. The existing 345 kV switchyard includes a 6-breaker, ring-bus arrangement with terminals rated at 3,000 amperes. Four of the six existing terminals are occupied by transmission lines.

The existing Clearfork 345 kV switchyard will be reconstructed as part of the Proposed Transmission Line Project to accommodate new transmission lines contemplated by the Delaware Basin Stage 5 Project and to increase the ratings of the switchyard's terminals to 5,000 amperes. As part of the reconstruction, all existing lines connecting to the existing Clearfork 345 kV switchyard will be re-terminated into the reconstructed switchyard. The footprint of the reconstructed Clearfork Switch 345 kV switchyard will be expanded to 926 feet by 568 feet.

The reconstructed 345 kV switchyard will initially feature a 13-breaker, 345 kV breaker-and-a-half bus arrangement. Relay panels, a SCADA system, and controls for the 345 kV switchyard equipment will be housed in a dedicated control center. Ultimately, the layout can be expanded to accommodate additional 345 kV terminals with a 18-breaker, 345 kV breaker-and-a-half bus arrangement.

The dimensions and additional details regarding the layout of the existing Clearfork Switch and the reconstructed Clearfork 345 kV switchyard are illustrated in Attachment No. 2-B.

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.

Not Applicable.

8. **Estimated Schedule:**

Estimated Dates of:	**Start**[1]	**Completion**[1]
Right-of-way and Land Acquisition	11/2025	11/2026
Engineering and Design	11/2025	10/2026
Material and Equipment Procurement	11/2025	4/2027
Construction of Facilities	4/2027	6/2028
Energize Facilities	-	6/2028

[1] Estimated schedule is based on a 180-day CCN process and numerous other factors. The estimated construction schedule should not in any way be considered a representation, promise, or guarantee.

9. **Counties:**

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

All of the proposed alternative routes are located within Andrews, Loving, and Winkler Counties.

10. **Municipalities:**

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

The proposed alternative routes will not traverse any municipality's corporate limits or extraterritorial jurisdiction.

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. To the extent necessary or applicable, evidence of consent for service in this area is publicly available and previously filed in Commission Docket Nos. 24 and 53.

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.

Please see the estimated transmission line and station costs on the following page.

[*The remainder of this page is intentionally left blank.*]

	Transmission Facilities[1]	Station Facilities		
		Border Switch[2]	Clearfork Switch[3]	Clearfork Transmission Line Re-terminations[4]
Right-of-way and Land Acquisition	*	$ -	$ -	$ -
Engineering and Design (Utility)	*	$ 164,000	$ 765,000	$ 80,000
Engineering and Design (Contract)	*	$ 185,000	$ 680,000	$ 510,000
Procurement of Material and Equipment (including stores)	*	$ 2,080,000	$ 15,535,000	$ 2,054,200
Construction of Facilities (Utility)	*	$ -	$ -	$ -
Construction of Facilities (Contract)	*	$ 1,777,000	$ 15,751,000	$ 4,213,000
Other (all costs not included in the above categories)	*	$ -	$ -	$ -
Estimated Total Cost	*	$ 4,206,000	$ 32,731,000	$ 6,857,000

[1] Refer to Attachment No. 3 for cost estimates for each alternative route presented in this application.
[2] Cost estimates concerning the Border Switch include the facilities outlined in the response to Question No. 7 above.
[3] Cost estimates concerning the Clearfork Switch include the facilities outlined in the response to Question No. 7 above.
[4] Cost estimates for existing 345 kV transmission line re-terminations at the reconstructed Clearfork 345 kV switchyard.

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.

Background

The Proposed Transmission Line Project is a component of the Delaware Basin Stage 5 transmission upgrades ("Delaware Basin Stage 5 Project") as identified by ERCOT in the 2019 Delaware Basin Load Integration Study ("Delaware Basin Study"), which is provided as Attachment No. 4. It is also a component of local project L2, as identified by ERCOT in the Permian Basin Reliability Plan Study and addendum ("Permian Basin Reliability Plan") in 2024 and approved by the Commission on October 5, 2024. A copy of the Permian Basin Reliability Plan is included as Attachment No. 8.

The Delaware Basin is the westernmost sub-basin of the Permian Basin, which covers most of ERCOT's West/Far West weather zones. The Delaware Basin and surrounding areas are experiencing rapid load growth driven primarily by oil and gas development and related economic expansion. The existing and planned transmission system in this area is insufficient to reliably serve the projected demand. As part of the ERCOT-endorsed Delaware Basin Stage 5 Project and the Permian Basin Reliability Plan, the Proposed Transmission Line Project will: (1) resolve reliability violations under North American Electric Reliability Corporation ("NERC") and ERCOT planning criteria; (2) provide a new import path to increase transfer capability into the Delaware Basin area; and (3) increase local load-serving capabilities in the Delaware Basin and Permian Basin. ERCOT confirmed the need for the Delaware Basin Stage 5 Project in the Delaware Basin Study in 2019, the Permian Basin Load Interconnection Study in 2021, the 2023 Regional Transmission Plan ("RTP"), the Permian Basin Reliability Plan in 2024, and most recently, in ERCOT's independent review of the Delaware Basin Stage 5 Project in May 2025. ERCOT's independent review is provided as Attachment No. 7.

ERCOT's Far West Weather Zone, and the Delaware Basin in particular, has recently experienced the fastest growth in peak electric demand on the ERCOT system. The table below shows the aggregated 5-year historical and forecasted load across all ERCOT transmission service providers in Culberson, Jeff Davis, Loving, Pecos, Reeves, Ward, and Winkler Counties, which make up the Delaware Basin area. As these tables show, electric demand in the Delaware Basin tripled from 2020-2024 and is projected to increase approximately 260% from 2024 levels over the next five years.

YEAR	2020	2021	2022	2023	2024
LOAD (MW)	1,308	1,573	2,072	2,310	3,877

Table 1: 5-Year Historical Load Growth

YEAR	2025	2026	2027	2028	2029
LOAD (MW)	6,838	7,554	9,234	9,708	10,236

Table 2: 5-Year Projected Load Growth

Delaware Basin Study

In 2019, ERCOT conducted the Delaware Basin Study to identify reliability needs and cost-effective transmission upgrades that will be needed as electric demand in the Delaware Basin continues to rise. The Delaware Basin Study used the 2024 West/Far West summer peak case from the 2018 RTP as the starting case. To establish the study case, ERCOT updated load levels to match the February 2019 Steady State Working Group ("SSWG") 2024 summer peak case, then added expected load additions and planned generation and transmission upgrades. ERCOT observed voltage instability under N-0 (system intact) conditions in the study case, indicating that a new import path was needed to serve the 2024 projected load.

ERCOT developed ten import path options for evaluation under N-1 (loss of a single element) contingency analysis. This analysis studied each option's performance under NERC Category P1 (loss of a generator, transmission circuit, transformer, or shunt device), P2-1 (opening of a line section without a fault), and P7 (loss of two adjacent circuits on a common structure) contingency scenarios. This evaluation showed that five alternatives—options 4, 5, 6, 9, and 10—were capable of serving the projected Delaware Basin load without voltage instability.

When evaluated for N-1-1 (sequential loss of two elements) contingencies, including G-1+N-1 (loss of a generator followed by a transmission line) and X-1+N-1 (loss of a transformer followed by a transmission line), all five of these options experienced potential voltage collapse. To address these issues, ERCOT modified four of the remaining options to create 12 modified import options for additional N-1-1 analysis.

Of the 12 modified import options, only four—options 4b, 4c, 6f, and 6g—addressed all reliability violations under G-1+N-1 and X-1+N-1 conditions. ERCOT short-listed these options for further evaluation, including a power transfer analysis, congestion analysis, and cost-estimate comparison. ERCOT selected Option 6g as its preferred solution because it was capable of serving the projected load up to 5,422 MW, provided slightly more production cost savings, and had the lowest estimated costs among the short-listed alternatives.

ERCOT created a five-stage roadmap for the Delaware Basin transmission upgrades, with the need for each stage triggered by the Delaware Basin reaching a specified level of demand. The four transmission upgrades that comprise Option 6g were designated stages 1-4, and ERCOT identified a new Faraday-Lamesa-Clearfork-Riverton 345 kV double-circuit transmission line as a new import path, which was designated a Stage 5 upgrade, with a load trigger of 5,422 MW. The Faraday-Lamesa-Clearfork-Riverton 345 kV transmission line was Option 4 of the initial import path options that ERCOT evaluated and was also a component of modified options 4a, 4b, 4c, 4g, 5f, and 6f.

The following table summarizes the five stages of the Delaware Basin upgrade roadmap, as recommended in the Delaware Basin Study.

Stage	Estimated Delaware Basin Load Level (MW)	Upgrade Element	Estimated Upgrade Cost ($M)	Trigger
1	3,052	Add a second circuit on the existing Big Hill - Bakersfield 345-kV line	69	Import Needs
2	4,022	A new Bearkat - North McCamey - Sand Lake double circuit 345-kV line	371	Import Needs
3	4,582	A new Riverton - Owl Hills single circuit 345-kV line	41	Culberson Loop Needs
4	5,032	Riverton - Sand Lake 138-kV to 345-kV conversion and a new Riverton - Sand Lake 138-kV line	56	Culberson Loop Needs
5	5,422	A new Faraday - Lamesa - Clearfork - Riverton double circuit 345-kV line	444	Import Needs

Table 3: Delaware Basin Study Upgrade Roadmap

ERCOT's 2023 Regional Transmission Plan

In December 2023, ERCOT posted the 2023 RTP, which reaffirmed the need for the Delaware Basin Stage 5 Project. ERCOT observed that increased electrification of oil and gas operations, in addition to the general increase in oil and gas-related activities, was expected to increase electric demand in the Far West Weather Zone by approximately 1.3 gigawatts beyond previous forecasts. ERCOT identified the need for the Delaware Basin Stage 5 Project beginning in 2026 to resolve observed reliability violations. A copy of the 2023 RTP is included as Attachment No. 5.

Oncor's RPG Project Submittal

ERCOT's 2024 SSWG case projected a 2025 summer peak load of 5,513.6 MW in the Delaware Basin, exceeding the 5,422 MW demand trigger for the Delaware Basin Stage 5 Project. In May 2024, Oncor submitted the Delaware Basin Stage 5 Project to ERCOT's Regional Planning Group ("RPG"). A copy of Oncor's submittal is provided

as Attachment No. 6. Oncor's submittal recommended substituting the Drill Hole Switch for Riverton Switch as the ultimate endpoint for the Delaware Basin Stage 5 Project, due to space limitations at Riverton Switch. It also recommended routing the Clearfork-Drill Hole 345 kV transmission line near Oncor's planned Border Switch to facilitate a future interconnection and provide an additional 345 kV injection point to further support load growth in the area.

Oncor's RPG submittal detailed the results of Oncor's steady-state, dynamic, and short-circuit analyses. Oncor's steady-state analysis observed low-voltage violations at several load-serving substations and thermal overloading on 345 kV and 138 kV transmission lines under multiple NERC and ERCOT contingency scenarios. Oncor's dynamic analysis showed that its proposed solution would cause no adverse effects on the transmission system, and Oncor's short-circuit study showed no overdutied breakers in the project area. Consistent with the Delaware Basin Study and Oncor's recommended modifications, Oncor's recommended solution included the following components:

1. Expand the existing Lamesa Switch, including a 13-breaker, 138 kV breaker-and-a-half bus arrangement and a 9-breaker, 345 kV breaker-and-a-half bus arrangement with two 600 MVA, 345/138 kV autotransformers. All terminal and associated equipment will meet or exceed 5,000 A for 345 kV and 3,200 A for 138 kV;
2. Construct a new Clearfork Switch – Lamesa Switch 345 kV double-circuit transmission line using a normal and emergency rating of at least 2,988 MVA, which will require new ROW, approximately 77.0 miles;
3. Construct a new Lamesa Switch – Faraday Switch 345 kV double-circuit transmission line using a normal and emergency rating of at least 2,988 MVA, which will require new ROW, approximately 38.0 miles;
4. Establish a new Pivot 138/69 kV Switch in the current Welch Tap location, which will include:
    a. Relocating one of the existing Lamesa 138/69 kV autotransformers and three of the existing Lamesa 69 kV breakers to the new Pivot 138/69 kV Switch; and
    b. Rebuilding and converting the existing Lamesa Switch – Welch Tap 69 kV transmission line to 138 kV operation using a normal and emergency rating of at least 614 MVA, approximately 2.0 miles;
5. Rebuild the existing Clearfork 345 kV Switch by installing thirteen 5,000 A, 345 kV circuit breakers in a breaker-and-a-half bus arrangement;
6. Install two 5,000 A, 345 kV circuit breakers in a breaker-and-a-half bus arrangement at the planned Drill Hole 345 kV Switch; and

7. Construct a new Clearfork Switch – Drill Hole Switch 345 kV double-circuit transmission line using a normal and emergency rating of at least 2,988 MVA, which will require new ROW, approximately 105.0 miles.

The Proposed Transmission Line Project, in combination with Oncor's Drill Hole Switch – Border Switch 345 kV Transmission Line Project, pending approval in Commission Docket No. 58050, will include two of the components included in Oncor's recommended solution: (i) rebuild the existing Clearfork 345 kV Switch and (ii) construct a new Clearfork Switch – Drill Hole Switch 345 kV transmission line.

Permian Basin Reliability Plan

ERCOT filed the Permian Basin Reliability Plan on July 25, 2024 and modified it by addendum on September 11, 2024, in Project No. 55718. In the Permian Basin Reliability Plan, ERCOT re-confirmed the need for the Delaware Basin Stage 5 Project, as modified by Oncor's project submittal. The Permian Basin Reliability Plan substituted Drill Hole Switch for Riverton Switch and added Oncor's Border Switch as an intermediate endpoint between Clearfork Switch and Drill Hole Switch, consistent with Oncor's recommendations. Specifically, the Permian Basin Reliability Plan includes local project L2, which consists of the following upgrades:[2]

A. Establish a new Border 345/138-kV substation and install two new 345/138-kV transformers;
B. Loop the Stage 5 upgrade of new Clearfork – Drill Hole 345-kV double-circuit line into the new Border 345-kV substation; and
C. Add a new Border – Quarry Field 345-kV double-circuit line.

The Proposed Transmission Line Project, in combination with Oncor's Drill Hole Switch – Border Switch 345 kV Transmission Line Project, pending approval in Commission Docket No. 58050, will loop the Clearfork – Drill Hole 345 kV segment of the Delaware Basin Stage 5 Upgrade through Oncor's planned Border Switch, as described in the Permian Basin Reliability Plan under Upgrade L2B. The Border Switch is being established in connection with Oncor's Border Switch-Quarry Field Switch 345 kV transmission line project, which is pending approval in Docket No. 57837.[3]

The Commission approved the Permian Basin Reliability Plan in its Order Approving the Reliability Plan for the Permian Basin Region ("Order of Approval") on October 5,

[2] The specific Upgrade ID for the Proposed Transmission Line Project was established in PUC Project No. 57152, in ERCOT's Report Identifying Transmission Service Providers Responsible for Implementing the Permian Basin Reliability Plan, Attachment A, which was filed on October 18, 2024.

[3] Note, Oncor does not include Upgrades L2A or L2C in this CCN Application because Oncor's CCN application for the Border – Quarry Field 345 kV transmission line project satisfies ERCOT's recommendations for Upgrades L2A and L2C. Thus, Oncor has already sought approval for Upgrades L2A and L2C, and any costs associated with Upgrades L2A and L2C are not included in Oncor's cost estimates for the Proposed Transmission Line Project.

2024, in Project No. 55718. The Order of Approval, which is included as Attachment No. 9, approved Oncor and other transmission service providers to begin preparing CCN applications for the common local projects identified in the Permian Basin Reliability Plan, including the Proposed Transmission Line Project. The Order of Approval requires a CCN proceeding to establish that each project meets all applicable legal requirements for a CCN.

ERCOT's Independent Review

On May 16, 2025, ERCOT published its independent review of the Delaware Basin Stage 5 Project, which confirms the continuing need for project and identifies Oncor's proposed solution as the preferred solution to meet that need. A copy of the independent review report is included as Attachment No. 7.

ERCOT evaluated the need for the Delaware Basin Stage 5 Project using the study results from the Delaware Basin Study and the 2023 RTP final case. The 2029 Summer Peak was selected for the long-term outlook, and ERCOT updated transmission, generation, and loads to account for planned additions through 2029. The study options were evaluated using a steady-state analysis, off-peak maintenance outage evaluation, and a long-term load serving capability assessment.

ERCOT's steady-state analysis confirmed that the Delaware Basin Stage 5 Project, as proposed in Oncor's RPG submittal, resolves all reliability violations under various P1, P2-1, P3, P6-2, and P7 contingency conditions. ERCOT's planned maintenance outage evaluation identified no reliability issues. The long-term load-serving capability analysis showed that Oncor's proposed solution will increase long-term load-serving capability by approximately 380 MW. Based on information provided by Oncor, ERCOT estimated that the Delaware Basin Stage 5 Project will include approximately 220 miles of new transmission line requiring a CCN, with an estimated cost of approximately $855.3 million (excluding CCN and land acquisition costs). ERCOT recommended the Delaware Basin Stage 5 Project, as modified by Oncor's RPG submittal, with a projected in-service date of December 2029.

ERCOT's steady-state analysis confirmed that the Delaware Basin Stage 5 Project, as proposed in Oncor's RPG submittal, resolves all reliability violations under various P1, P2-1, P3, P6-2, and P7 contingency conditions. ERCOT's planned maintenance outage evaluation identified no reliability issues. The long-term load-serving capability analysis showed that Oncor's proposed solution will increase long-term load-serving capability by approximately 380 MW. Based on information provided by Oncor, ERCOT estimated that the Delaware Basin Stage 5 Project will include approximately 220 miles of new transmission line requiring a CCN, with an estimated cost of approximately $855.3 million (excluding CCN and land acquisition costs). ERCOT recommended the

Delaware Basin Stage 5 Project, as modified by Oncor's RPG submittal, with a projected in-service date of December 2029.

ERCOT's Technical Advisory Committee and Board of Directors plan to review the findings of the independent review and potentially endorse Oncor's proposed solution for the Delaware Basin Stage 5 Project, including the Proposed Transmission Line Project, in the May-June 2025 timeframe. Oncor will promptly supplement this Application with any endorsement from ERCOT's Board of Directors when it becomes available.

The Proposed Transmission Line Project, as part of the Delaware Basin Stage 5 Project and the Permian Basin Reliability Plan, is needed to provide additional import capacity, increase load-serving capabilities, and address reliability criteria violations in the Delaware Basin and Permian Basin. This area lacks the transmission facilities necessary to reliably serve the substantial, ongoing load growth it is experiencing. Without the Proposed Transmission Line Project and other Delaware Basin Stage 5 upgrades, transmission capacity will soon be insufficient to serve the continuing oil and gas development, which will result in reliability violations including low voltages and thermal overloads.

Ultimately, the Proposed Transmission Line Project will result in system improvements that include: (1) additional import capacity to the Delaware Basin region; (2) additional load-serving capability for customers in the Delaware Basin; (3) increased operational flexibility for Oncor and other TSPs serving the area; and (4) a more integrated 345 kV transmission system, which will enhance system stability. These improvements will help to support future oil and gas development and related economic expansion in the Delaware Basin and Permian Basin.

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.

Through both the Delaware Basin Study and the Permian Basin Reliability Study, ERCOT conducted robust evaluations of potential alternatives to the Proposed Transmission Line Project. Those evaluations included close coordination with stakeholders, including substantial review and input from Oncor and other Transmission Service Providers ("TSPs").

As described in response to Question No. 14 above, ERCOT's Delaware Basin Study evaluation began with a reliability analysis of 10 alternative import paths. The following table lists the initial alternatives that ERCOT studied:

Delaware Basin Study Initial Import Options	Estimated New ROW (miles)	Cost Estimates ($M)
Option 1: add a second circuit on the existing Big Hill - Bakersfield - North McCamey - Odessa 345-kV line and a new North McCamey - Megan double circuit 345-kV line	78	311
Option 2: a new Faraday - Lamesa - Clearfork - Riverton single circuit 345-kV line	193	380
Option 3: a new Bearkat - North McCamey - Megan single circuit 345-kV line	149	278
Option 4: a new Faraday - Lamesa - Clearfork - Riverton double circuit 345-kV line	193	444
Option 5: a new Bearkat - North McCamey - Megan double circuit 345-kV line	149	343
Option 6: a new Bearkat - North McCamey - Sand Lake double circuit 345-kV circuit	164	371
Option 7: a new Red Creek - North McCamey - Megan double circuit 345-kV circuit	216	490
Option 8: a new 1,200 MW HVDC line (VSC) from Abernathy to Riverton	240	906
Option 9: a new 1,200 MW HVDC line (VSC) from Howard Road to Bakersfield and a new double circuit 345-kV line from North McCamey to Megan	380	2,119
Option 10: a new single circuit 765-kV line from Howard Road to Bakersfield, two new 765/345-kV transformers at both Howard Road and Bakersfield stations, and a new double circuit 345-kV line from North McCamey to Megan	380	2,014

Table 4: Delaware Basin Study Initial Import Path Options

Based on the results of ERCOT's initial reliability analysis, ERCOT created twelve modified import options by combining initial options 4, 5, 6, and 9 with components of the other six initial options. The following table lists the modified import path options:

Delaware Basin Study Modified Import Options	Estimated New ROW (miles)	Cost Estimates ($M)
Option 4a: a new Faraday - Lamesa - Clearfork - Riverton double circuit 345-kV line, and add a second circuit on the existing Big Hill - Bakersfield - North McCamey -Odessa 345-kV line	193	573

Option 4b: a new Faraday - Lamesa - Clearfork - Riverton double circuit 345-kV line, add a second circuit on the existing Big Hill - Bakersfield 345-kV line, and a new North McCamey - Megan double circuit 345-kV line	271	695
Option 4c: a new Faraday - Lamesa - Clearfork - Riverton double circuit 345-kV line and a new Bearkat - North McCamey - Megan single circuit 345-kV line	342	722
Option 4g: a new Faraday - Lamesa - Clearfork - Riverton double circuit 345-kV line, add a second circuit on the existing Big Hill - Bakersfield 345-kV line, convert the Sand Lake - Riverton 138-kV to 345-kV, and add a new 138-kV line from Sand Lake to Riverton	193	569
Option 5d: a new Bearkat - North McCamey - Megan double circuit 345-kV line, and a new Clearfork - Riverton double circuit 345-kV line	231	525
Option 5e: a new Bearkat - North McCamey - Megan double circuit 345-kV line, add a second circuit on the existing Big Hill - Bakersfield 345-kV line, and a new Clearfork - Riverton double circuit 345-kV line	231	594
Option 5f: a new Bearkat - North McCamey - Megan double circuit 345-kV line, and a new Faraday - Lamesa - Clearfork - Riverton single circuit 345-kV line	342	723
Option 6a: a new Bearkat - North McCamey - Sand Lake double circuit 345-kV line, and add a second circuit on the existing Big Hill - Bakersfield - North McCamey - Odessa 345-kV line	164	440
Option 6e: a new Bearkat - North McCamey - Sand Lake double circuit 345-kV line, add a second circuit on the existing the Big Hill - Bakersfield 345-kV line, and a new Clearfork - Riverton double circuit 345-kV line	246	622
Option 6f: a new Bearkat - North McCamey - Sand Lake double circuit 345-kV line, and a new Faraday - Lamesa - Clearfork - Riverton single 345-kV line	357	751
Option 6g: a new Bearkat - North McCamey - Sand Lake double circuit 345-kV line, add a second circuit on the existing Big Hill - kV line, convert the Sand Lake - Riverton 138-kV to 345-kV, and add a new 138-kV line from Sand Lake to Riverton	164	496
Option 9e: add a new 1,200 MW HVDC line (VSC) from Howard Road to Bakersfield, a new North McCamey - Megan double circuit 345-kV line, add a second circuit on the existing Big Hill - Bakersfield 345-kV line, and a new Clearfork - Riverton double circuit 345-kV line	462	2,370

Table 5: Delaware Basin Study Modified Import Options

A new Faraday-Lamesa-Clearfork-Riverton 345 kV double circuit transmission line was one of the 10 initial import options ERCOT evaluated and was also a component of modified import options 4a, 4b, 4c, 4g, 5f, and 6f. ERCOT short-listed options 4b, 4c,

and 6f, alongside option 6g, for further evaluation, including a power transfer analysis, congestion analysis, and comparison of estimated costs.

All three short-listed options that included the Faraday-Lamesa-Clearfork-Riverton 345 kV transmission line outperformed option 6g in the power transfer analysis, providing between 210 and 290 MW of additional transfer capability. The congestion analysis found no significant difference in production cost savings between the four options, with option 6g providing between $400,000 and $3.1 million in additional savings. The estimated cost comparison favored option 6g, which was between $135 million and $255 million less costly than any other short-listed option.

ERCOT selected option 6g as its preferred solution for an initial import path based on its lower estimated cost and marginally greater production cost savings. Because option 6g only increased import capabilities in the Delaware Basin up to 5,422 MW, ERCOT also concluded that a second new import path would be needed when the load when the Delaware Basin reached 5,422 MW. ERCOT's preferred solution for the second import path was a new Faraday-Lamesa-Clearfork-Riverton 345 kV double-circuit transmission line, which was designated Stage 5 in ERCOT's roadmap.

Oncor's Delaware Basin Stage 5 Project submittal recommended the Drill Hole Switch as an alternative to the Riverton Switch as the westernmost endpoint for the Stage 5 upgrades. Oncor made this recommendation because: (1) physical-space limitations at Riverton Switch prevented further expansion; (2) terminating the 345 kV line from Clearfork at Drill Hole Switch will create a networked connection with the Delaware Basin Stage 3 project, the Drill Hole-Riverton 345 kV transmission line; and (3) establishing a 345 kV switchyard at Drill Hole Switch and terminating the 345 kV line from Clearfork Switch into Drill Hole Switch will create a new 345 kV injection point to support future load growth. In the Permian Basin Reliability Plan, ERCOT adopted Oncor's recommendations to terminate the Delaware Basin Stage 5 Project at Drill Hole Switch and loop the Clearfork-Drill Hole segment of the Delaware Basin Stage 5 Project through the Border Switch.

ERCOT's independent review of the Delaware Basin Stage 5 Project included an alternatives analysis that compared Oncor's proposed solution to one other proposed solution. The other option ERCOT evaluated included the following upgrades:

1. Expand the existing Faraday 345-kV substation to accommodate the new Faraday Switch - Clearfork Switch 345-kV double-circuit transmission line and loop in the existing Long Draw – Scurry 345-kV transmission line;
2. Construct a new Faraday Switch – Clearfork Switch 345-kV double-circuit line using a normal and emergency rating of at least 2988 MVA, which will require new ROW, approximately 105.0 miles;

3. Expansion of the existing Long Draw 138-kV substation and the existing Lamesa 138-kV substation to accommodate the new Long Draw – Lamesa 138-kV transmission line;
4. Expand the existing Lamesa Switch, including a 13-breaker 138-kV breaker-and-a-half bus arrangement, with all terminal and associated equipment to meet or exceed 3200 A for 138-kV;
5. Construct a new Long Draw Switch – Lamesa Switch 138-kV transmission line using a normal and emergency rating of at least 614 MVA, which will require new ROW, approximately 22.0 miles;
6. Establish a new Pivot 138/69-kV Switch in the current Welch Tap location, which will include:
    i. Relocating one of the existing Lamesa 138/69-kV autotransformers and three of the existing Lamesa 69-kV breakers to the new Pivot 138/69-kV Switch; and
    ii. Rebuilding and converting the existing Lamesa Switch – Welch Tap 69-kV transmission line to 138-kV operation using a normal and emergency rating of at least 614 MVA, approximately 2.0 miles;
7. Rebuild the existing Clearfork 345-kV Switch by installing thirteen 5000 A, 345-kV circuit breakers in a breaker-and-a-half bus arrangement;
8. Install two 5000 A, 345-kV circuit breakers in a breaker-and-a-half bus arrangement at the planned Drill Hole 345-kV Switch; and
9. Construct a new Clearfork Switch – Drill Hole Switch 345-kV double-circuit transmission line using a normal and emergency rating of at least 2988 MVA, which will require new ROW, approximately 105.0 miles.

Accordingly, both alternatives ERCOT evaluated in its Independent Review included the same, common components relating to the Proposed Transmission Line Project. ERCOT conducted a steady-state load flow analysis for the study base case according to the NERC TPL-001-5.1 and ERCOT planning criteria to evaluate the proposed options. Both options resolved all N-1, G-1+N-1, and X-1+N-1 contingencies with no unsolved power flow contingencies. ERCOT then evaluated the long-term load-serving capability of both alternatives under N-1 contingency conditions, adjusting the load up in the Lamesa area and down outside of the Far West weather zone to balance power.

ERCOT's evaluation demonstrated that Oncor's proposed solution is $16,000,000 less expensive and requires 12 fewer CCN miles than the alternative. The planned maintenance outage analysis showed that neither alternative would result in any violations. Accordingly, ERCOT identified Oncor's proposed solution as its preferred alternative. ERCOT's Technical Advisory Committee and Board of Directors plan to review ERCOT's independent review, in the May-June 2025 timeframe. Oncor will

supplement its application with the ERCOT Board's decision relating to the Proposed Transmission Line Project promptly once it becomes available.

ERCOT included the Delaware Basin Stage 5 Project, and thus the Proposed Transmission Line Project, in the base cases for the Permian Basin Study as part of the local projects contemplated in Project ID L2. ERCOT recommended Project ID L2, including the Proposed Transmission Line Project, in its finalized Permian Basin Reliability Plan. The Commission's Order of Approval requires Oncor to submit a CCN application for the applicable upgrades identified in the Permian Basin Reliability Plan, including the Proposed Transmission Line Project. Therefore, following multiple, robust alternatives evaluations conducted by ERCOT over several years, Oncor itself did not evaluate additional alternatives to the Proposed Transmission Line Project.

Distribution alternatives, voltage upgrades, conductor bundling, and additional transformers are not feasible alternatives because they would not address the need for a broader transmission buildout in the Delaware Basin and Permian Basin regions nor would they provide the reliability-enhancing and load-serving capabilities of the Proposed Transmission Line Project. The Proposed Transmission Line Project is an essential component of ERCOT's larger plan for transmission improvements in this area that is specifically designed to address the rapidly increasing electric demand and provide new import paths on the transmission system.

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. 10. A map of the transmission system in the proximate area of the Proposed Transmission Line Project is included as Attachment No. 11. This map includes 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. A map outlining the study area can be found in Figures 3-1A and 3-1B of the Environmental Assessment and Routing Study (Appendix F), included as Attachment No. 1.

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 and Routing Study. The objective of the Environmental Assessment and Routing Study is to provide information in support of this Application in addressing the requirements of Texas Utilities Code § 37.056(c)(4)(A)-(D), the Commission's CCN Application form, and 16 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 and Routing Study appraises the environmental effects of construction, operation, and maintenance of the Proposed Transmission Line Project. The Environmental Assessment and Routing Study 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, the need for the project, engineering and design requirements, construction practices, and ROW requirements for the Proposed Transmission Line Project.

After considering environmental and geographical data, Burns & McDonnell defined a study area that encompassed the provided endpoints with a sufficient area to identify a diverse set of potential routing alternatives. Refer to Section 3.0 of the Environmental Assessment and Routing Study, included as Attachment No. 1, for a discussion of the study area. Routing constraints were identified after collection of area data from many sources (*e.g.*, governmental agencies, evaluation of aerial photography) and consideration of the criteria established in Texas Utilities Code § 37.056(c)(4)(A)-(D), the Commission's CCN Application form, and 16 TAC § 25.101.

Potential line segments were identified by evaluating the constraints mapped within the study area and then developing potential pathways, such as existing corridors and other linear features where constraints were minimal. Corridors were identified and developed into potentially viable routes. Potential impacts to both the human and natural environment were evaluated by Burns & McDonnell for each identified preliminary alternative route.

Oncor then evaluated the alternative routes and selected Route 1422 as the route that best addresses the requirements of Texas Utilities Code § 37.056(c)(4)(A)-(D) and 16 TAC § 25.101.

Specific discussion regarding delineation of the study area, identification of constraints, selection of potential line segments, and alternative route analysis is set forth in the

Environmental Assessment and Routing Study, included as Attachment No. 1. Specific discussion regarding the evaluation and selection of routes filed with this Application and the route that Oncor believes best complies with the requirements of Texas Utilities Code and the Commission's Substantive Rules is contained in an office memorandum from Alex L. Bonnette (included as Attachment No. 12).

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.

Oncor hosted one public participation meeting in accordance with 16 TAC § 22.52. The meeting was attended by personnel from Oncor, Burns & McDonnell, and Halff Associates, Inc. ("Halff") – the property abstractor Oncor engaged for this project. The public participation meeting was held on February 13, 2025, from 5:00 p.m. to 7:00 p.m., at Poor Daddy's Smokehouse in Kermit, Texas.

Oncor mailed a total of 309 individual written notices of the meeting to owners of property crossed by or within 500 feet of the centerline of the preliminary alternative route links for the Proposed Transmission Line Project in accordance with 16 TAC § 22.52. Given the accuracy limitations of appraisal district data and aerial photography, notice to property owners was intentionally over-inclusive and was provided to owners of properties within 520 feet of preliminary alternative route centerlines. Notice for the public participation meeting was published on January 30, 2025, in both the *Pecos Enterprise* and *The Monahans News*, newspapers of general circulation in Loving County and Winkler County, respectively. Notice for the meeting was also published on January 31, 2025, in the *Andrews County News*, a newspaper of general circulation in Andrews County. Oncor also provided notice of the public meeting to the Department of Defense ("DoD") Military Aviation and Installation Assurance Siting Clearinghouse (formerly the Siting Clearinghouse) in accordance with 16 TAC § 22.52(a)(4). Oncor also provided courtesy notice of the public meeting to identified pipeline companies within the project area and select federal, state, and local agencies.

The public meeting was designed to solicit input from residents, landowners, public officials, and other interested parties concerning the Proposed Transmission Line Project. The objectives of the meeting included: gathering information about the values and concerns of the public and community leaders; promoting an understanding of the Proposed Transmission Line Project, including the purpose, need, and potential benefits and impacts; and providing information to the public regarding the CCN certification process and the anticipated schedule.

The meeting was configured in an informal information station format rather than a formal speaker/audience format, with each station devoted to a particular aspect of the project or routing process and staffed with representatives from Oncor, Burns & McDonnell, and/or Halff. Each station had exhibits, maps, illustrations, aerial photography, and/or other information describing certain project details and subject matter information. At the outset, attendees were encouraged to visit each station in order of presentation so the entire process could be explained in the general sequence of project development. Oncor has found this meeting format valuable due to the freedom it allows attendees. For example, this meeting format allows attendees to determine how much time to allocate toward engaging with particular project aspects based on each attendee's concerns or priorities. Additionally, individual discussions allow for and encourage more interaction from attendees who otherwise might be hesitant to participate in a more formal setting.

Six individuals signed in as attendees at the public participation meeting. Of the six people that signed in, four submitted questionnaires the evening of the meeting. One additional questionnaire was received by Oncor from an individual after the meeting. Following the public participation meeting, Oncor had additional direct contact with one pipeline representative relating to the project.

Additional discussion concerning the public involvement program and specific information regarding the public participation meeting may be found in Section 2.5, pages 2-8 through 2-10, and Section 5.0, pages 5-1 and 5-2, of the Environmental Assessment and Routing Study included as Attachment No. 1. A representative copy of the notices that were provided to property owners and published in the county newspaper, as well as a copy of the questionnaire provided to meeting attendees, are included in Appendix B of the Environmental Assessment and Routing Study.

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 = 4,000 feet map is included as Figures 3-1A and 3-1B in Appendix F of the Environmental Assessment and Routing Study included as Attachment No. 1. This base

map includes sufficient cultural and natural features to identify the location of all routes in the field. Figures 3-1A and 3-1B delineate the study area, routing constraints, and all routes and route links considered in the selection of routes. This map also depicts the approximate locations of electronic installations (such as radio transmitters), airstrips, irrigated pasture or cropland, parks and recreational areas, historical sites, and environmentally sensitive areas (such as wetlands) if any. For the protection of archeological sites, these sites are not mapped on Figures 3-1A and 3-1B. Figures 3-1A and 3-1B in Appendix F also identify existing transmission 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.

Figures 3-1A and 3-1B in Appendix F of the Environmental Assessment and Routing Study, included as Attachment No. 1, depict on an aerial photograph, as applicable: (1) the location of each link that is used in the alternative routes filed in this Application, with each link identified; (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 any link used in the alternative routes; and (4) the boundaries (approximate or estimated according to best available county tax information) of all properties directly affected by any link used in an alternative 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. 13 includes a table that cross-references each habitable structure and directly affected property identified in Figures 3-1A and 3-1B in Appendix F of the Environmental Assessment and Routing Study; the cross-reference table includes corresponding landowner names and addresses. Refer to the table provided in response to Question No. 21 below, which cross references each directly affected habitable structure with the applicable alternative route link(s) and route(s).

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 this Application and prior to beginning construction, if necessary:

1. Texas Department of Transportation ("TxDOT") permit(s) for crossing a state-maintained roadway, if any.
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 ("USACE") 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 ("USFWS") 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 ("GLO") miscellaneous easement(s) will be obtained, as necessary, for crossing riverbeds, navigable streams, or other properties involving State of Texas 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.

A listing of all habitable structures located within 520 feet of each proposed link centerline comprising the alternative routes filed in this Application, along with a general description of each habitable structure and its distance from the centerline of the link and the associated alternative routes, is provided in the table below.

Figures 3-1A and 3-1B in Appendix F of the Environmental Assessment and Routing Study depict the locations of all known habitable structures directly affected by the links used in the proposed alternative routes.

Habitable Structures[a] Within 520 Feet[b] of Alternative Links

Habitable Structure ID[c]	Distance From Link (Feet)	Direction From Link[d]	Description	Link	Routes
1	453	South	Field office	B5	2457, 2585, 3652
2	154	West	Field office	F6	1118, 1263, 1548, 1550, 1552, 1555, 1574, 1575, 2457, 3210, 3624, 3625, 3648
3	281	North	Kinder Morgan main office	G6	1385, 1386, 1387, 1388, 1391
4	481	North	Kinder Morgan office	G6	1385, 1386, 1387, 1388, 1391
5	250	North	Kinder Morgan office	G6	1385, 1386, 1387, 1388, 1391
6	466	North	Kinder Morgan industrial building	G6	1385, 1386, 1387, 1388, 1391
7	301	North	Workshop	G9	1454, 1520, 1528, 1533, 1535, 2585
8	512	Northwest	Atlas warehouse	H6	1118, 1263, 1454, 1533, 1535, 1548, 1550, 1552, 1555, 2457, 2585, 3210, 3624, 3625
9	331	North	Single-family residence	M2	515, 1040

(a) 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.
(b) Due to the potential horizontal inaccuracies of the aerial photography and data utilized, all habitable structures within 520 feet have been identified.
(c) All habitable structures are located on Figures 3-1A and 3-1B (Appendix F).
(d) Direction represents the direction of travel from the nearest point of the identified link to the habitable structure.

Please refer to Section 3.7.1, page 3-31; Section 7.7.1 and Table 7-4, pages 7-15 and 7-16; and Tables 7-2 and 7-3, Appendix E, of the Environmental Assessment and Routing Study, included as Attachment No. 1.

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 centerline of any of the alternative route links, and there are no known FM radio transmitters located within 2,000 feet of the centerline of any of the alternative route links.

Seven other communication towers are located within 2,000 feet of the centerline of the alternative route links. These towers are depicted on Figures 3-1A and 3-1B in Appendix F of the Environmental Assessment and Routing Study included as Attachment No. 1. General descriptions of the towers and their distances from the centerlines of the proposed alternative route links are provided in the table below.

Communication Towers Within 2,000 Feet of Alternative Links

Map ID[a]	Distance From Link (Feet)	Direction From Link[b]	Ownership	Link	Routes
Tower 1	505	South	ConocoPhillips Communications Inc.	B5	2457, 2585, 3652
Tower 2	1,759	North	Oryx Delaware Oil Transport LLC	B5	2457, 2585, 3652
Tower 3	1,965	North	Isaac Diaz	F6	1118, 1263, 1548, 1550, 1552, 1555, 1574, 1575, 2457, 3210, 3624, 3625, 3648
Tower 4	951	Northwest	HARI OM LLC	F6	1118, 1263, 1548, 1550, 1552, 1555, 1574, 1575, 2457, 3210, 3624, 3625, 3648
Tower 5	1,724	East	KWES Television, LLC	I5	1528, 1548, 1574, 1575, 3648
Tower 6	469	Northwest	American Towers LLC	I4	1118, 1263, 1454, 1533, 1535, 1550, 1552, 1555, 2457, 2585, 3210, 3624, 3625

Map ID[a]	Distance From Link (Feet)	Direction From Link[b]	Ownership	Link	Routes
Tower 7	1,578	South	Hilcorp Energy Company / Apache Corporation	L6	516, 518, 1385, 1387, 1423, 1424, 3502, 3624, 3654

Sources: USDHS, (2024), Antenna Search (2025).

(a) All communication towers are located on Figures 3-1A and 3-1B.

(b) Direction represents the direction of travel from the nearest point of the identified link to the communication tower.

Please refer to Section 3.7.7, page 3-37; Section 7.7.6 and Table 7-5, pages 7-19 and 7-20; and Tables 7-2 and 7-3, Appendix E, of the Environmental Assessment and Routing Study, included as Attachment No. 1.

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 photo interpretation, and reconnaissance surveys identified: (1) no FAA-registered airport with a runway greater than 3,200 feet in length within 20,000 feet of the proposed routes; (2) no FAA-registered airport without a runway greater than 3,200 feet in length within 10,000 feet of the proposed routes; and (3) no heliport within 5,000 feet of the proposed routes.

Historical USGS topographic maps show a private landing strip located within 10,000 feet of multiple route links. Recent aerial photography indicates that portions of the landing strip have not been maintained, and the landing strip is likely no longer in use. Because some features of the airstrip remain, it is still recorded in Tables 7-2 and 7-3 in Appendix E of the Environmental Assessment and Routing Study included as Attachment No. 1 and in the table below.

Private Landing Strips Within 10,000 Feet of Alternative Links/Routes

Facility Name	Description	Distance From Link (feet)	Direction From Link[a]	Link	Routes
N/A	Private landing strip	9,240	South	A7	2457, 2585, 3652
		7,137	Southwest	B3 and B6	3210
		3,199	South	A8	3502, 3624, 3625, 3648

(a) Direction represents the direction of travel from the nearest point of the identified link to the landing strip.

Please refer to Section 3.7.6, pages 3-35 through 3-37; Section 7.7.5, pages 7-18 and 7-19; and Tables 7-2 and 7-3 in Appendix E of the Environmental Assessment and Routing Study included as Attachment No. 1.

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.

Results of aerial photography interpretation and field reconnaissance surveys did not identify any agricultural land irrigated by traveling irrigation systems (rolling or pivot type) that will be traversed by any of the alternative routes of the Proposed Transmission Line Project.

Please refer to Section 3.7.3, pages 3-32 and 3-33; Section 7.7.3, page 7-17; and Tables 7-2 and 7-3, Appendix E, of the Environmental Assessment and Routing Study, included as Attachment No. 1.

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 link descriptions, maps, and a table of the link composition of alternative filed routes, 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. 14. The names and addresses of the directly affected landowners to whom notice will be mailed via first-class mail are included in Attachment No. 13. The list of owners of directly affected land in Attachment No. 13 consists of landowner data obtained via the tax office and the appraisal district for Andrews, Loving, and Winkler Counties. This list includes all properties within 520 feet (as mentioned in Oncor's response to Question 18 herein) of the centerline of all filed routes that will be provided notice of this application filing, irrespective of whether a habitable structure is located on such properties. Oncor is intentionally over-inclusive in mailing written notice of this application to landowners.

Notice to landowners includes notice to owners of property(ies) adjacent to the reconstructed Clearfork Switch and/or directly across a highway, road, or street that is adjacent to the reconstructed Clearfork Switch, consistent with Texas Utilities Code § 37.054(c).

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

A representative copy of the written notice, with attached route link descriptions, maps, and a table of the link composition of alternative filed routes, that will be provided to other utilities located within five miles of the Proposed Transmission Line Project is included as Attachment No. 15. The following utilities will be provided the requisite notice on or before the application filing date, as required by Commission rules:

Texas New Mexico Power

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 link descriptions, maps, and a table of the link composition of alternative filed routes, that will be provided to county authorities is included as Attachment No. 15. The following county authorities will be provided the requisite notice on or before the application filing date, as required by Commission rules:

Loving County, County Judge
Loving County, County Commissioners – Precincts 1, 2, 3, and 4
Winkler County, County Judge
Winkler County, County Commissioners – Precincts 1, 2, 3, and 4
Andrews County, County Judge

Andrews County, County Commissioners – Precincts 1, 2, 3, and 4
City of Kermit, Mayor
City of Kermit, Mayor Pro-Tem District 1
City of Kermit, City Council Districts 2, 3, 4, and 5

A representative copy of the written notice, with attached route link descriptions, maps, and a table of the link composition of alternative filed routes, that will be provided to the DoD Military Aviation and Installation 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. 15.

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 filing will be published in the *Pecos Enterprise*, a newspaper of general circulation in Loving County, *The Monahans News*, a newspaper of general circulation in Winkler County, and the *Andrews County News*, a newspaper of general circulation in Andrews County. A representative copy of the general public notice to be published is included as Attachment No. 16.

Proof of publication will be provided in the form of publishers' affidavits and tear sheets following publication of this notice.

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.

A copy of this 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 link descriptions, maps, and a table of the link composition of alternative filed routes, that will be provided to OPUC is included as Attachment No. 15.

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.

A review of federal, state, and local websites and maps, as well as a field reconnaissance survey, identified no parks or recreational areas owned by a government body or an organized group, club, or church located within 1,000 feet of the centerline of any alternative route for the Proposed Transmission Line Project.

Please refer to Section 3.7.2, page 3-32; Section 7.7.2, page 7-16; and Tables 7-2 and 7-3 in Appendix E of the Environmental Assessment and Routing Study included as Attachment No. 1.

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 Texas Archaeological Sites Atlas were conducted to locate known cultural resources within 1,000 feet of any alternative route centerline for the proposed project. THC records indicated no National Register of Historic Places ("NRHP") listings, State Antiquities Landmarks ("SALs"), or cemeteries recorded within 1,000 feet of the proposed route centerline. THC records indicated twenty-two known archeological sites within 1,000 feet of the centerline of one or more alternative route links for the Proposed Transmission Line Project, as shown in the table below.

Cultural Resource Sites Within 1,000 Feet of Alternative Route Links

Cultural Resource Site ID	Distance From Link (feet)[1]	Direction From Link	Link	Routes
41LV26	--	North	B1	294, 505, 514, 515, 516, 517, 518, 520, 525, 1040, 1042

41AD57	--	North	L5	294, 505, 517, 520, 1042, 1118, 1263, 1356, 1386, 1388, 1422, 1425, 1427, 1454, 1520, 1533, 1535, 1550, 1552, 1574, 2457, 2585, 3210, 3625, 3650, 3651, 3652, 3653
41AD58	--	North	L5	294, 505, 517, 520, 1042, 1118, 1263, 1356, 1386, 1388, 1422, 1425, 1427, 1454, 1520, 1533, 1535, 1550, 1552, 1574, 2457, 2585, 3210, 3625, 3650, 3651, 3652, 3653
41WK126	--	North	F5	1454, 1520, 1528, 1533, 1535, 2585, 3502
41WK82	--	North	E1	294, 1385, 1386, 1387, 1388, 1391, 1422, 1423, 1424, 1425, 1427, 3650, 3651, 3653, 3654
41WK56	--	Northwest	I4	1118, 1263, 1454, 1533, 1535, 1550, 1552, 1555, 2457, 2585, 3210, 3624, 3625
41WK64	--	Northwest	I4	1118, 1263, 1454, 1533, 1535, 1550, 1552, 1555, 2457, 2585, 3210, 3624, 3625
41WK66	--	Northwest	I4	1118, 1263, 1454, 1533, 1535, 1550, 1552, 1555, 2457, 2585, 3210, 3624, 3625
41WK65	--	Northwest	I4	1118, 1263, 1454, 1533, 1535, 1550, 1552, 1555, 2457, 2585, 3210, 3624, 3625
41AD22	--	East	K7	525, 1391, 1528, 1548, 1555, 1575, 3648
41LV191	--	East	A4	2457, 2585, 3502, 3624, 3625, 3648, 3652
41LV95	--	N/A	B5	2457, 2585, 3652
41LV105	--	N/A	B5	2457, 2585, 3652

41LV60	--	South	B5	2457, 2585, 3652
41LV96	--	South	B5	2457, 2585, 3652
41LV12	--	South	B5	2457, 2585, 3652
41AD38	--	South	J5	294, 505, 517, 518, 1042, 1356, 1422, 1423, 3650, 3653
41WK73	--	South	I3	1548
41WK75	--	South	I4	1548
41AD32	--	East	K7	525, 1391, 1528, 1548, 1555, 1575, 3648
41WK7	--	East	I5	1528, 1548, 1574, 1575, 3648
41AD41	--	East	J4	514, 515, 516, 1040, 3654

SOURCES: THC, 2024a

[1] The distance to link for archeological sites is not provided to remain consistent with Texas Archeological Research Laboratory requirements regarding public access to this information for the protection of these sites.

Please refer to Section 3.8, pages 3-37 through 3-46; Section 7.8, pages 7-20 through 7-23; and Tables 7-2 and 7-3 in Appendix E of the Environmental Assessment and Routing Study included as Attachment No. 1.

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 and Routing Study 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 this application, including the Environmental Assessment and Routing Study, will be provided to the Texas Parks and Wildlife Department ("TPWD") for review within seven days following the filing of the application for the Proposed Transmission Line Project. Please refer to Attachment No. 18 for a copy of the transmittal letter with which the application will be sent to the 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.

Attachment No. 20 is the sworn affidavit of Christine Williams, an Oncor Project Manager, who is a qualified individual authorized by Oncor 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 and Alternative Route Analysis

Attachment No. 2-A: Preliminary Layout - Border Switch with the Proposed Transmission Line Project Connection

Attachment No. 2-B: Preliminary Layout - Clearfork Switch with the Proposed Transmission Line Project Connection

Attachment No. 3:	Cost Estimates
Attachment No. 4:	ERCOT's Delaware Basin Load Integration Study Report (December 2019)
Attachment No. 5:	ERCOT's Regional Transmission Plan (December 2023)
Attachment No. 6:	ERCOT RPG Submittal for Oncor's Delaware Basin Stage 5 Project (May 2, 2024)
Attachment No. 7:	ERCOT's Independent Review of the Combined Delaware Basin Stage 5 Project and Alternative (May 16, 2025)
Attachment No. 8:	ERCOT's Permian Basin Reliability Plan Study Report (July 25, 2024) and Addendum (September 11, 2024)
Attachment No. 9:	Commission Order Approving the Reliability Plan for the Permian Basin Region (October 5, 2024)
Attachment No. 10:	Schematic of Transmission System in Proximate Area of Project
Attachment No. 11:	Transmission System Map in Project Area
Attachment No. 12:	Routing Memorandum of Alex L. Bonnette, P.E.
Attachment No. 13:	List of Directly Affected Landowners for Notice and Pipeline Owners, Operators, and Associations for Courtesy Notice
Attachment No. 14:	Copy of Notice to Directly Affected Landowners
Attachment No. 15:	Copy of Notice to Utilities, Counties, OPUC, Municipalities, and Department of Defense Military Aviation and Installation Siting Clearinghouse
Attachment No. 16:	Copy of Newspaper/Public Notice
Attachment No. 17:	Copy of Courtesy Notice to Pipeline Owners, Operators, and Associations
Attachment No. 18:	Transmittal Letter to TPWD
Attachment No. 19:	Oncor-North Texas Utility Designation Letter
Attachment No. 20:	Affidavit

BURNS McDONNELL

Environmental Assessment and Alternative Route Analysis

ONCOR

Oncor Electric Delivery Company LLC

Border Switch to Clearfork Switch
345 kV Transmission Line Project
in Andrews, Ector, Loving, and Winkler Counties, Texas

May 2025

ATTACHMENT NO. 1

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LIST OF TABLES

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LIST OF FIGURES

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LIST OF ACRONYMS AND 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.
CCN	Certificate of Convenience and Necessity
CFR	Code of Federal Regulations
CPA	Texas Comptroller of Public Accounts
CR	County Road
Cropland CROS	Cropland Collaborative Research Outcomes System
CWA	Clean Water Act
DoD	Department of Defense
DOE	Department of Energy
EA	Environmental Assessment and Alternative Routing Analysis
e.g.	exempli gratia (for example)
EMST	Ecological Mapping Systems of Texas
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
ESRI	Environmental Systems Research Institute, Inc.
et al.	and others
etc.	et cetera
FAA	Federal Aviation Administration
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Agency

Abbreviation	Term/Phrase/Name
FIRM	Flood Insurance Rate Map
FM	Farm-to-Market Road
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
i.e.	id est (that is)
IPaC	Information for Planning and Consultation
ISD	Independent School District
kV	Kilovolt
LEPC	Lesser Prairie-Chicken
MBTA	Migratory Bird Treaty Act
msl	Mean Sea Level
NAIP	National Agriculture Imagery Program
NAS	National Audubon Society
NASS	National Agricultural Statistics Service
NCED	National Conservation Easement Database
NDD	TPWD Natural Diversity Database
NESC	National Electrical Safety Code
NHL	National Historic Landmark
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places

Abbreviation	Term/Phrase/Name
NWI	National Wetlands Inventory
NWP	Nationwide Permit
Oncor	Oncor Electric Delivery Company LLC
OTHM	Official Texas Historical Marker
PADUS	Protected Areas Database of the United States
PALM	Potential Archeological Liability Map
PCN	pre-construction notification
Proposed Project	Border Switch to Clearfork Switch 345 kV Transmission Line Project
PUCT	Public Utility Commission of Texas
PURA	Public Utility Regulatory Act
ROW	Right-of-Way
RRC	Railroad Commission of Texas
RTHL	Recorded Texas Historic Landmark
SAL	State Antiquities Landmark
SCS	Soil Conservation Service
SGCN	Species of Greatest Conservation Need
SGP CHAT	Southern Great Plains Crucial Habitat Assessment Tool
SH	State Highway
spp.	Species
ssp.	subspecies
SWAP	State Wildlife Action Plan
SWCD	Soil and Water Conservation District
SWPPP	Storm Water Pollution Prevention Plan
TAC	Texas Administrative Code
TALT	Texas Agricultural Land Trust
TCEQ	Texas Commission on Environmental Quality
TEA	Texas Education Agency

Abbreviation	Term/Phrase/Name
THC	Texas Historical Commission
THTP	Texas Heritage Trails Program
TLC	Texas Land Conservancy
TLTC	Texas Land Trust Council
TNC	The Nature Conservancy
TNMR	Texas-New Mexico Railway
TPWD	Texas Parks and Wildlife Department
TWDB	Texas Water Development Board
TxDOT	Texas Department of Transportation
TXNDD	Texas Natural Diversity Database
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
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VHF	Very High Frequency
VORTAC	VHF Omnidirectional Range/Tactical Air Navigation
WOTUS	Waters of the U.S.
3DHP	USGS 3D National Hydrography Program

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1.0 PROJECT DESCRIPTION

1.1 Scope of the Project

Oncor Electric Delivery Company LLC (Oncor) proposes to construct a double-circuit 345 kilovolt (kV) transmission line between Oncor's planned Border Switch in Loving County, Texas, and Oncor's existing Clearfork Switch in Andrews County, Texas (Proposed Project). The planned Border Switch will be located approximately 6.0 miles south of the Texas-New Mexico border, and the existing Clearfork Switch is located approximately 2.0 miles southwest of the intersection of State Highway (SH) 115 and Farm-to-Market Road (FM) 181. **Figure 1-1** shows the Proposed Project location; the Study Area is described in **Section 2.1** and shown on **Figure 2-1**. The Proposed Project will be approximately 58 to 91 miles in length.

Oncor retained Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) to prepare an Environmental Assessment (EA) and Alternative Route Analysis report 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 Rules Section 22.52(a)(4), PUCT Substantive Rules 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 routing study.

The following sections include a description of the Proposed Project **(Section 1.0)**, an explanation of the methodology used to select alternative routes **(Section 2.0)**, a description of the existing environmental and social conditions in the study area **(Section 3.0)**, and a description of the preliminary alternative route links that were developed by this process **(Section 4.0)**. This document further includes a description of the public involvement program **(Section 5.0)** and a discussion of modifications to preliminary alternative route links and finalization of the proposed links following public involvement **(Section 6.0)**. An evaluation of expected environmental impacts is presented in **(Section 7.0)**, followed by a list of report preparers **(Section 8.0)** and bibliographical references used in preparing this report **(Section 9.0)**. The appendices include copies of agency correspondence **(Appendix A)**, public participation meeting

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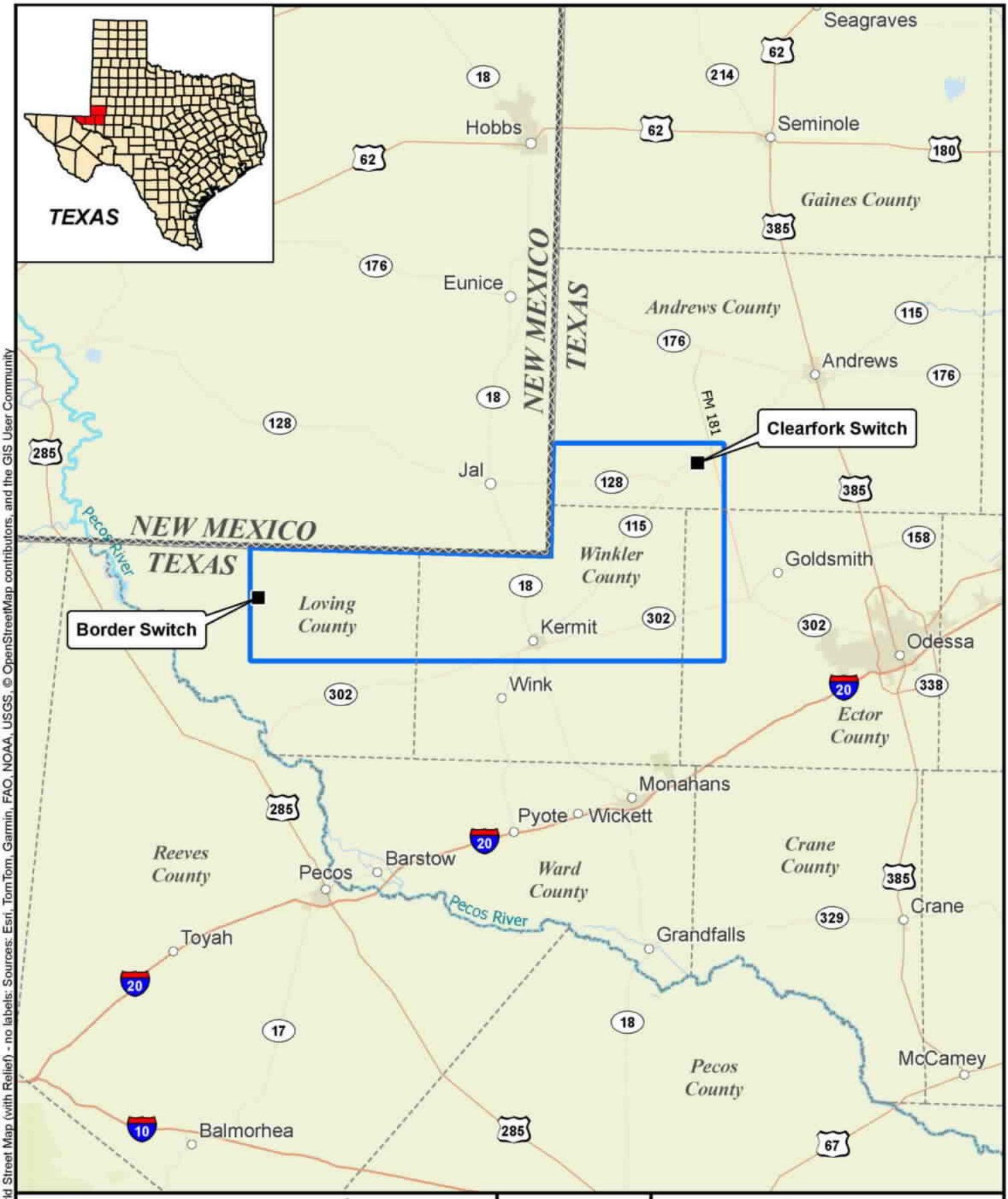


ONCOR

BURNS McDONNELL

Figure 1-1
Project Location
Border Switch to Clearfork Switch
345 kV Transmission Line Project
Oncor Electric Delivery Company LLC
Andrews, Ector, Loving, and Winkler Counties, Texas

Issued: 5/5/2025

information (**Appendix B**), preliminary route modifications (**Appendix C**), link composition of proposed alternative routes (**Appendix D**), proposed alternative route environmental data by alternative route and by link (**Appendix E**), and environmental and land use constraints maps (**Appendix F**).

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 anticipates the use of self-supporting, double-circuit, lattice steel towers (**Figure 1-2**). Design criteria will comply with applicable statutes, the appropriate edition of the National Electrical Safety Code (NESC), and Oncor's standard design practices. Oncor's typical structure height is anticipated to be 90 to 140 feet with a maximum height of 180 feet, but 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

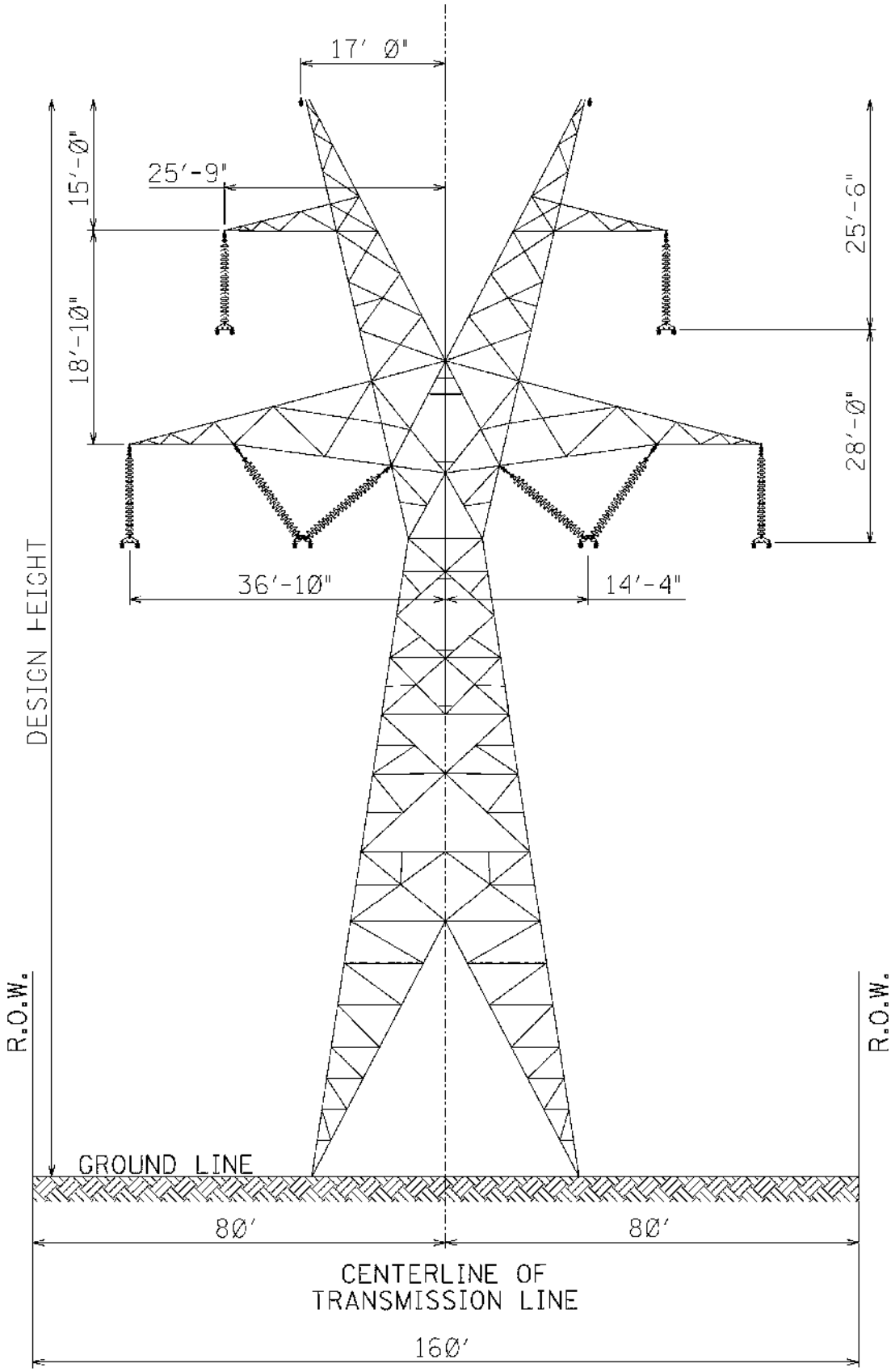
The proposed ROW width for the Proposed Project will be approximately 160 feet in most circumstances. The ROW normally extends an equal distance on either side of the transmission line centerline. Additional ROW may be required at line angles, dead ends, or for terrain-related constraints. Reduced ROW may also be required in certain constrained areas.

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 Support Structure Assembly and Erection

The foundation for each lattice steel tower will be completed before erecting the structure. Four holes will be augered into the ground (i.e., one hole per tower footing) at each tower location. The holes will be filled with steel-reinforced concrete to form piers to hold the structure securely in place. Stub angles for



NOT TO SCALE

*345 kV double-circuit lattice steel tower graphic provided by Oncor.
All distances are approximate.

Figure 1-2
Typical Oncor 345 kV Tangent Double-Circuit Lattice Steel Tower
Border Switch to Clearfork Switch
345 kV Transmission Line Project

Issued: 5/5/2025

anchoring the tower will be embedded at the center of the concrete foundations. Depth and diameter of the foundation will vary depending on the design of the structure specific to that location.

Each lattice steel tower will be assembled on the ground near its designed location. Tower assemblies will then be lifted by crane and aligned with and attached to foundation stub angles with structure arms oriented perpendicular to the transmission line centerline. For angle structures, towers will be set with structure arms oriented on the angle bisector.

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 continues until the transmission line construction is complete. All construction equipment will be removed after construction is completed. All temporary culverts and construction-related environmental controls previously installed will be removed once construction is completed.

2.0 ROUTE SELECTION METHODOLOGY

The objective of this study is to identify and evaluate alternative transmission line routes for the Proposed Project. Throughout this report, the terms "environment" and "environmental" include both the human and the natural environment. Burns & McDonnell utilized a comprehensive transmission line routing methodology to identify and evaluate alternative transmission line routes. Potential routes were identified and evaluated in accordance with Section 37.056(c)(4)(A)-(D) of the Texas Utilities Code, PUCT Substantive Rules Section 25.101 (including the PUCT policy of prudent avoidance), PUCT Procedural Rules Section 22.52(a)(4), and the PUCT CCN Application Form for a Proposed Transmission Line.

The following subsections provide a description of the route selection methodology, including study area delineation; data collection; reconnaissance surveys; constraints mapping; identification of preliminary alternative route links; public involvement program; modification of preliminary alternative route links following field review and public input; and evaluation of the alternative routes.

2.1 Study Area Delineation

The first step in the development of the alternative route links was to define a study area. This area needed to encompass the project endpoints (i.e., planned Border Switch and the existing Clearfork Switch) and include an area large enough to investigate and identify a reasonable number of geographically diverse, forward-progressing alternative routes. 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 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 resources features and constraints were considered as the project boundaries were developed. Burns & McDonnell reviewed recent aerial imagery (2021–2023 Environmental Systems Research Institute, Inc. (ESRI) World Imagery; 2024 U.S. Department of Agriculture [USDA] National Agriculture Imagery Program [NAIP]; 2020 and 2022 Bing; and 2023–2024 Google Earth) and U.S. Geological Survey (USGS) topographic maps (USGS, 1961-1971) to refine the project boundaries. This effort resulted in the establishment of an L-shaped study area approximately 55 miles west to east, 12 miles north to south at its shortest, 25 miles north to south at its longest, encompassing an area of approximately 934 square miles in portions of Andrews, Ector, Loving, and Winkler Counties, Texas (**Figure 2-1**).

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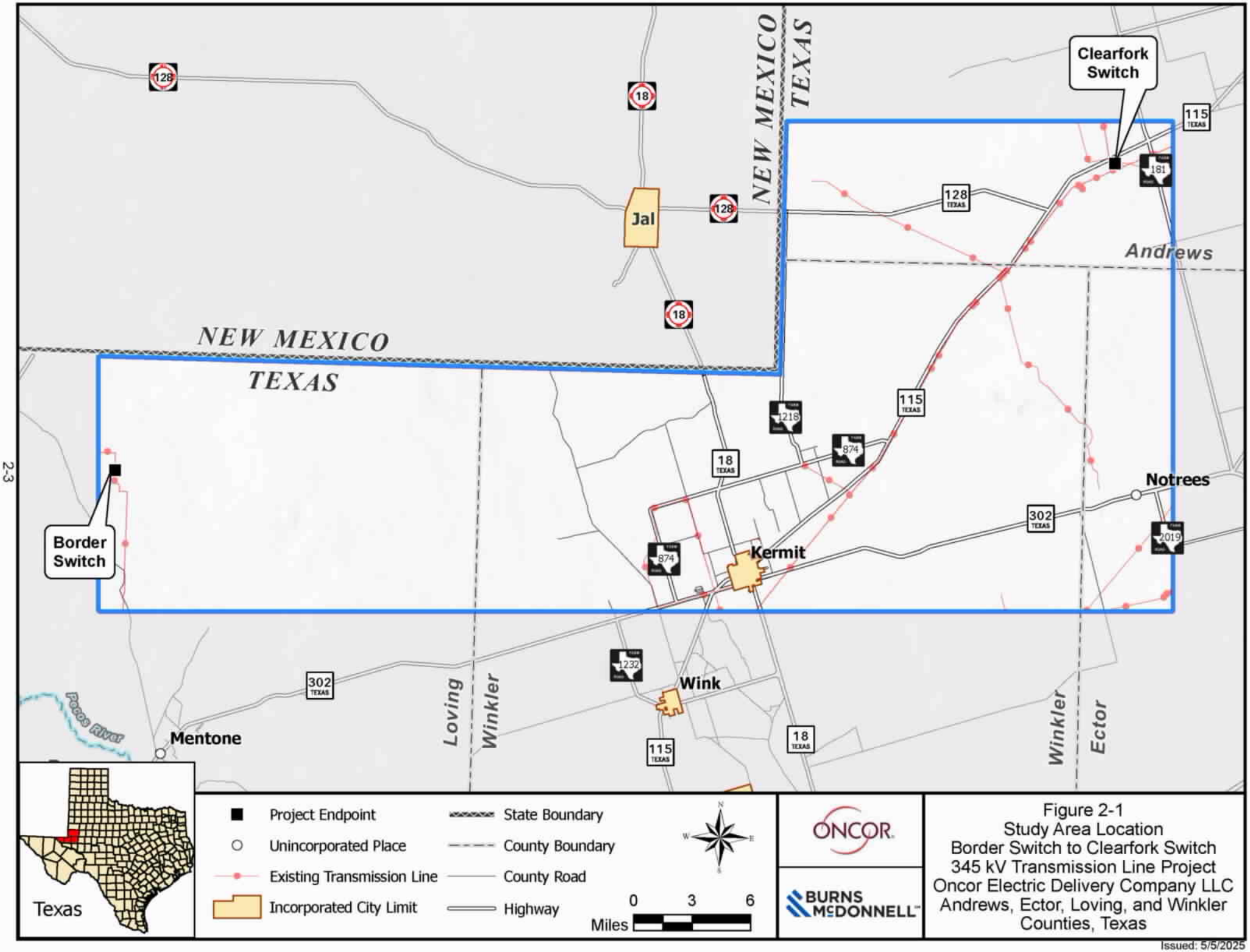

Figure 2-1
Study Area Location
Border Switch to Clearfork Switch
345 kV Transmission Line Project
Oncor Electric Delivery Company LLC
Andrews, Ector, Loving, and Winkler
Counties, Texas

Issued: 5/5/2025

2.2 Data Collection

Data used by Burns & McDonnell in the development and evaluation of the alternative route links was drawn from a variety of sources, including:

- published literature (documents, reports, maps, aerial photography, etc.);
- information from local, state and federal agencies;
- site-specific studies or investigations performed by others;
- recent aerial imagery
    - ESRI World Imagery, November 2021–June 2023;
    - USDA NAIP, 2024;
    - Bing Imagery, March 2020 and February 2022;
    - Google Earth Imagery, February 2023–June 2024;
- 7.5-minute U.S. Geological Survey (USGS) topographic maps (1961–1971);
- 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) maintained by the Texas Historical Commission (THC); and
- ground reconnaissance surveys.

Ground reconnaissance of the Proposed Project and computer-based evaluation of digital aerial imagery were utilized for both refinement and evaluation of alternative route links. The data collection effort, although concentrated in the early stages of the Project, continued up to the point of final development of alternative routes. Results of the various data collection activities are included in several sections of this report: solicitation of information from local, state, and federal officials and agencies (**Section 2.2.1**); file/record review (**Sections 3.0** and **7.0**); visual reconnaissance surveys (**Sections 3.0** and **7.0**); and public involvement (**Section 5.0**).

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 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 November 4, 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) – Obstruction Evaluation Group, 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) – Albuquerque District and Fort Worth District
- U.S. Department of Defense (DoD), Military Aviation and Installation Assurance Siting Clearinghouse
- U.S. Environmental Protection Agency (EPA) – Region 6
- U.S. Fish and Wildlife Service (USFWS) – Austin Ecological Services Field Office

State Agencies

- Railroad Commission of Texas (RRC)
- Texas Commission on Environmental Quality (TCEQ) – Region 6 and Region 7
- Texas Department of Transportation (TxDOT) – Aviation Division, Environmental Affairs Division, and Odessa District
- Texas General Land Office (GLO)
- Texas Historical Commission (THC)
- Texas Parks and Wildlife Department (TPWD) – Executive Director and Wildlife Habitat Assessment Program
- Texas Water Development Board (TWDB)

County Agencies/Officials

- County Judges (Andrews, Ector, Loving, and Winkler Counties)
- County Commissioners (Precincts 1 through 4—Andrews, Ector, Loving, and Winkler Counties)
- County Historical Commissions (Andrews, Loving, and Winkler Counties)

Local Agencies/Officials

- City of Kermit Mayor
- City of Kermit Public Works
- Farm Service Agency (Gaines [serving Andrews], Ector-Crane-Midland, and Reeves-Loving-Ward-Winkler Counties)
- Soil and Water Conservation Districts (SWCD) (Andrews SWCD #246, Upper Pecos SWCD #213, and Sandhills SWCD #241)
- School Districts (Andrews Independent School District (ISD), Ector County ISD, Kermit ISD, and Wink-Loving ISD)

Additional Contacts

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

2.2.2 Reconnaissance Surveys

Burns & McDonnell conducted ground reconnaissance surveys of the study area in November 2024 and in February 2025 and reviewed video recorded during a helicopter survey of the preliminary links flown in March 2025 to develop and confirm the findings of the above-mentioned research and data collection activities and to identify existing conditions or constraints that may not have been previously noted. Results from the field investigations were also utilized to assist in the alternative route link selection process. Ground reconnaissance surveys were conducted from public roads and public ROW located within the study area. Reconnaissance survey information was noted in the field and geographically referenced to digital aerial imagery base maps. Ground reconnaissance of the study area, the helicopter video, and computer-based evaluation of digital aerial imagery were utilized for both refinement and evaluation of alternative route links.

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 **7.0** 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 were used to identify and select potential preliminary alternative route links within the study area. Constraints are land use or natural features that may affect or be affected by the siting of a transmission line. The goal of this approach is to identify areas where constraints are absent or fewer, or those areas with a lower likelihood of containing existing natural or human resources that could be negatively affected by a transmission line. For linear projects, crossing over or near certain constraints is often unavoidable. In these instances, special considerations or mitigation measures may be used, though no law or regulation exists that would otherwise prohibit the proximity of a transmission line.

The geographic location of environmentally sensitive and other restrictive areas within the study area were located and considered during alternative route delineation. These constraints were mapped onto an aerial base map (**Figures 3-1A** and **3-1B**, **Appendix F**) created using ESRI World Imagery (November 2021–June 2023), USDA NAIP (2024), and Bing imagery (2020 and 2022).

2.4 Identification of Preliminary Alternative Route Links

Upon completion of initial data collection activities and the constraint mapping process, the next step was to identify preliminary alternative route links to connect the Proposed Project endpoints. Utilizing the information described above, Burns & McDonnell identified numerous preliminary route links, which were examined in the field in November 2024 and presented to Oncor for review and comment. As noted previously, preliminary alternative route links were identified in accordance with Section 37.056(c)(4)(A)-(D) of the Texas Utilities Code and PUCT Substantive Rule Section 25.101, including the PUCT policy of prudent avoidance.

The intent was to identify an adequate number of geographically diverse alternative routes, which were environmentally acceptable considering such factors as community values; park and recreational areas; historical and aesthetic values; vegetation, wildlife, and water resources; environmental quality; length of route parallel to or utilizing existing compatible corridors; length of route parallel to apparent property boundaries; and the PUCT policy of prudent avoidance. Pipelines were not considered as existing compatible corridors. In addition, Oncor provided engineering guidance relating to paralleling existing compatible corridors in the study area and setback guidelines for oil and gas wells and other features.

These preliminary links were presented at an in-person public participation meeting in Kermit, Texas, on February 13, 2025 (see **Section 2.5**, below). A more detailed discussion of the development of alternative routes is presented in **Section 4.0**.

2.5 Public Involvement Program

The various data collection activities utilized in the development of a constraints map and in the ultimate selection of preliminary alternative route links were presented at a public participation meeting held within the study area at the Poor Daddy's Smokehouse, 123 N. Mulberry St., Kermit, Texas, on February 13, 2025, from 5:00 to 7:00 pm.

The purpose of the public participation meeting was to:

- Solicit comments from residents, landowners, public officials, and other interested parties concerning the Proposed Project, preliminary alternative routes, and the overall transmission line routing process;
- Promote a better understanding of the Proposed Project, including need, purpose, potential benefits, potential impacts, and the CCN certification process;
- Inform the public regarding the routing process, Project schedule, and the decision-making process; and
- Identify the values and concerns of the public and community leaders.

Oncor sent written notice of the public participation meeting by first class mail on February 5, 2025, to 307 landowners located within 520 feet of the preliminary route links. Additionally, 21 city and county agencies and officials, 5 state/federal agencies and officials, the DoD, and 46 pipeline operators were notified by mail of the meeting. A copy of the notice mailed in February 2025 is included in **Appendix B**. In addition, a public notice announcing the location, time, and purpose of the meeting was published in several local newspapers on January 30 and 31, 2025. The newspapers in which the public meeting notice was published, and the dates of publication are shown in **Table 2-1**. A copy of the notice can be found in **Appendix B**.

Table 2-1: List of Newspapers for Public Notice of Open-House Meeting

Newspaper	Circulation Area (County)	Publication Date
Pecos Enterprise	Loving	Thursday, January 30, 2025
The Monahans News	Winkler	Thursday, January 30, 2025
Andrews County News	Andrews	Friday, January 31, 2025

At the public participation meeting, Oncor and Burns & McDonnell set up information stations in the meeting room. Each station was devoted to a particular aspect of the Proposed Project and was staffed by representatives of Oncor, Burns & McDonnell, and Oncor's property ownership abstractor—Halff Associates, Inc. (Halff). Each station had maps, illustrations, photographs, and/or text explaining each topic. A GIS computer station was also available that provided an opportunity for attendees to view enlargements of their properties and enter information. Interested attendees were encouraged to visit each station in order so that the entire process and general Project development sequence could be explained clearly. The open-house or information-station format is advantageous because it allows attendees to receive information in a more relaxed manner and allows them to focus on issues of their particular interest and ask specific questions. Furthermore, the one-on-one discussions with Oncor, Burns & McDonnell, and Halff representatives encouraged more interaction from those citizens who might be hesitant to speak out in a speaker-audience forum.

Upon entering, visitors were asked to sign in and were handed information that included an explanation of the Proposed Project, a map of preliminary alternative route links, drawings of Oncor's proposed typical transmission towers, a flow chart that detailed the CCN certification process for new transmission lines, a copy of Section 37.056(c)(4)(A-D) of the Texas Utilities Code, a copy of the Landowner's Bill of Rights, answers to frequently asked questions, and a questionnaire. The questionnaire solicited comments on the Proposed Project, as well as an evaluation of the information presented at the public participation meeting. Copies of the information packet and questionnaire can be found in **Appendix B**.

Burns & McDonnell reviewed and evaluated the responses to the questionnaire that were submitted at the public participation meeting or that were received by Oncor after the meeting. Attendee comments were considered and factored into the overall evaluation of the alternative routes. Based on comments received and information provided by landowners attending the meetings, Burns & McDonnell and Oncor considered modifications to several preliminary alternative route links. More information regarding the

public participation meeting and an analysis of the completed questionnaires is provided in **Section 5.0** of this document.

2.6 Adjustments of Alternative Route Links Following the Public Participation Meeting

Following the public participation meeting, Burns & McDonnell and Oncor performed additional reviews to look at areas discussed during the meeting, evaluated the public comments, and considered revisions to the preliminary route links. In response to public comments and additional engineering review, including review of the North Texas Helicopters, Inc. March 2025 helicopter flight video, the Project team deleted and modified links to avoid various constraints and reduce potential impacts to the greatest extent practicable. This modified route link network is further described and discussed in **Section 6.0**.

2.7 Evaluation of the Alternative Routes

Once modifications to the preliminary link network were incorporated, possible alternative route combinations were calculated and then evaluated in detail. The analysis of the alternative routes presented in **Section 7.0** involved the inventory and tabulation of data related to multiple environmental and land use evaluation factors. Many of these factors relate to natural and man-made features that would be crossed by an alternative route (e.g., number of stream crossings, length across cropland, etc.). Some of the evaluation factors include features that are counted or measured if an alternative route link would be within a specified distance of a feature (e.g., habitable structures, airports, or communication towers). Other factors include the length of an alternative route that runs parallel to and/or utilizes existing compatible corridors, such as electric transmission lines and public roads. The number or amount of each factor was determined primarily by reviewing recent aerial imagery, including recently flown aerial imagery within a Geographic Information System (GIS) mapping program, the North Texas Helicopters, Inc. March 2025 helicopter flight video, and, where possible, verified by visual observations during field reconnaissance.

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 that identifies the locations of environmentally sensitive areas and other land use constraints, all of which are mapped on an aerial imagery base map (USDA NAIP, 2024) and shown on **Figures 3-1A** and **3-1B** in **Appendix F**.

The overall impact of the alternative routes presented in this report has been greatly reduced by avoiding, to the greatest extent practicable, such constraints as residential development, community facilities, oil and gas facilities, cemeteries, historic and archeological sites, wetland areas, parks, churches, and schools, and by paralleling existing compatible ROW (including transmission lines and roadways) and paralleling apparent property lines. The information obtained and reviewed in completing the routing study, and the environmental and land use constraints depicted in the constraints maps, are described in detail in the following sections.

3.2 Physiography and Geology

As shown on **Figure 3-2**, all the study area counties (including the study area) are located within the High Plains Physiographic Province (Bureau of Economic Geology [BEG], 1996). In Texas, the High Plains is divided into (from north to south) the Central High Plains, the Canadian Breaks, and the Southern High Plains. The study area is located within the Southern High Plains, which occur westward from the boundary between the Texas Panhandle and New Mexico, north to the Canadian Breaks, east to the North Central Plains, and south to the Edwards Plateau and Basin and Range Provinces.

The Southern High Plains of Texas form a nearly flat plateau ranging from 2,200 to 3,800 feet in elevation above mean sea level (msl). This area has also historically been referred to as the Llano Estacado, or palisaded plains. This plateau is underlain by extensive stream deposits of sand and gravel, which form the Ogallala Aquifer (BEG, 1996). The relatively flat surface of this region is abundantly pitted by sinks and depressions (playas) that were formed by processes causing the carbonation of limestone beds and deflation by wind of the remaining insoluble particles. Many of these dissolution-deflation depressions are aligned in parallel or perpendicular sets, indicating underlying joint fracturing within the Ogallala Formation. On the surface, windblown sands and silts form thick, rich soils and caliche. Numerous playa lakes are scattered across the predominantly treeless plains. Drainage on the High Plains is dominated by widespread, small, intermittent streams. At its eastern boundary, a westward-retreating escarpment occurs, capped by hard caliche. Study area elevations range from a high of

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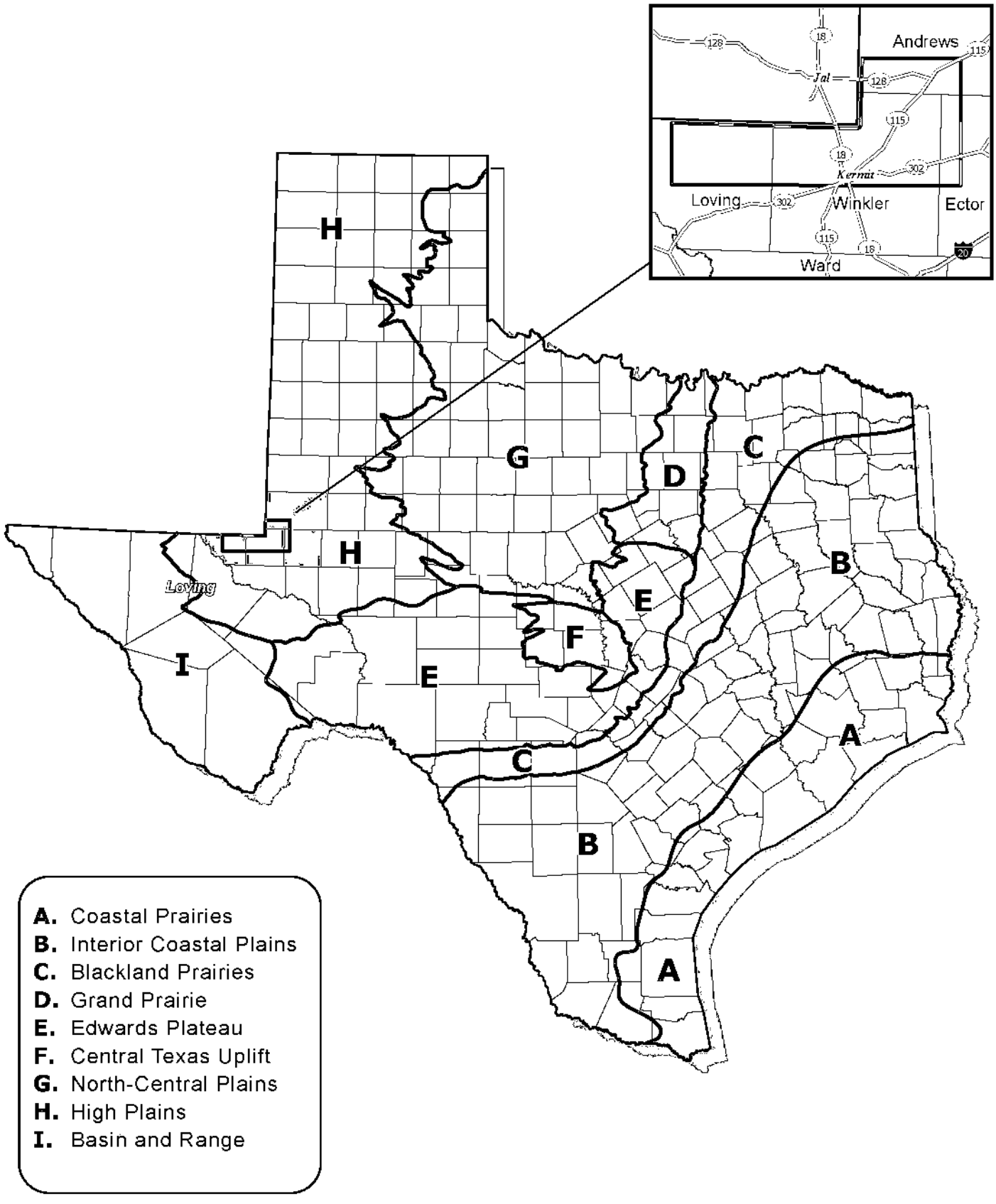

Figure 3-2
Location of the Study Area
in Relation to the
Physiographic Provinces of Texas
Border Switch to Clearfork Switch
345 kV Transmission Line Project

Source: BEG (1996)

Issued: 5/5/2025

approximately 3,406 feet above msl in the northeastern portion of the study area to a low of 2,792 feet above msl in the southwestern portion of the study area.

According to BEG (1976a, 1976b), the study area includes the following geologic units (from youngest to oldest): Quaternary-age Alluvium (Qal), Windblown Sand (Qsd, Qs, and Qsu), Playa Deposits (Qp), Caliche, Alluvium and other Quarternary deposits, Pond Deposits, and Windblown Cover Sand, Tertiary-age Ogallala Formation, Cretaceous-age Fredericksburg Group and Antlers Sand, and Triassic-age Dockum Group undivided.

Alluvium includes low terrace deposits along streams and sandy silts on pediments locally modified by sheetwash action. Windblown sand is composed of sand and silt in sheets (Qs), locally includes cover sand; dunes and dune ridges (Qsd); and sand sheets, dunes, and dune ridges undivided (Qsu). Playa deposits contain clay and silt, sandy, light to dark gray, in shallow depressions. Caliche is stripped of covering materials, is mapped separately with several ages, and has a thickness of up to 35 feet. Alluvium and other Quarternary deposits are intimately associated with alluvium and Quarternary deposits undivided in dissected areas. Pond deposits consist of gastropod-bearing sandy, silt and silty clay which is gray to light gray, deposited in ponds and shallow swales, and locally may include Tahoka deposits. Windblown cover sand consists of fine- to medium-grained quartz; is silty, calcareous, with massive, grayish red caliche nodules; and has a thickness of 20 feet.

The Tertiary-age Ogallala Formation consists of fluviatile sand, silt, clay, and gravel capped by caliche. The formation has a maximum thickness of up to 100 feet, contains silt and clay with caliche nodules, but fossil plants and vertebrates are scarce. The Cretaceous-age Fredericksburg Group undivided consists of limestone, dolomite, chert, and minor marl with an exposed thickness of 50 feet. Antlers Sand is medium grained, partially loosely consolidated and partially cemented by opal, with lenses of quartz gravel common and an outcrop thickness of 6 to 10 feet.

The Triassic-aged Dockum Group undivided has a maximum thickness of 300 feet and consists of shale, sandstone, and siltstone. No reported geologic faults are located within the study area or in the immediate vicinity of the study area.

Two major mineral resources are mapped as occurring within the study area. One major mineral resource, sand (industrial), is mapped as occurring throughout Loving County, western to central and northeastern Winkler County, northwestern Ector County, and western Andrews County within the study area (BEG, 1979). It is composed of quartz-rich sandstone with a minor amount of minerals, is moderately to well sorted, and very fine to medium grained. A second major mineral resource, potash, is mapped as

occurring in eastern Loving County to western Winkler County within the study area. This resource is a generalized subsurface occurrence of potash-rich minerals (sylvite, carnallite, langbeinite) found in Permian-age evaporite beds and used for fertilizer. Additionally, the USGS Mineral Data Resource System shows mineral operations within the study area, which include one silica and six sand quarries in northeastern Winkler County (USGS, 2011). Several additional active mineral quarries or mines occur within the study area that were observed during field reconnaissance and while reviewing USGS topographic maps.

Mapped energy resources within the study area include numerous oil and gas deposits (BEG, 1976c). According to RRC data, 9,646 pipelines intersect the study area and 13,136 oil and gas wells are documented as occurring within the study area (RRC, 2024).

3.3 Soils

The study area is located within northeastern Loving County, northern Winkler County, northwestern Ector County, and southwestern Andrews County. The General Soil Map of Andrews County (Soil Conservation Service [SCS], 1972), Ector County (SCS, 1977), and Loving and Winkler Counties (NRCS, 1999) were referenced for the following descriptions of the soil map units/associations within the study area.

3.3.1 Soil Associations

The NRCS defines a soil association as "a group of soils geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit." A soil association typically consists of one or more major soils, for which it is named, and some minor soils. Soils making up one unit can also occur in other units in a different pattern. According to the General Soil Map and the Soil Surveys of study area counties, 21 general soil map units/associations occur within the study area.

- Blakeney-Sharvana-Kinco: nearly level and gently undulating, very shallow to very deep, loamy soils on upland plains and ridges;
- Conger-Tencee-Upton: very shallow and shallow, nearly level to hilly, loamy and gravelly soils over indurated caliche;
- Coyansa-Los Tanos: gently sloping to undulating, very shallow to moderately deep, very gravelly and loamy soils on ridges, knolls, and footslopes;
- Faskin-Douro: nearly level and gently undulating, very shallow to very deep, loamy soils over gypsiferous sediments on upland plains, knolls, and basins;
- Holloman-Monahans-Reeves: nearly level, very deep, loamy soils on upland plains and basins;

- Ima-Potter-Portales: deep to very shallow, moderately rapidly permeable to moderately permeable fine sands, loams, and clay loams;
- Jalmar-Penwell: deep, moderately permeable to rapidly permeable fine sands;
- Kimbrough-Slaughter-Stegall: very shallow to moderately deep, moderately permeable to moderately slowly permeable loams and clay loams;
- Kimbrough-Stegall: very shallow to moderately deep, nearly level to gently sloping, loamy soils over indurated caliche;
- Monahans-Turnkey-Pajarito: nearly level, very deep, loamy soils on upland plains and basins;
- Paisano-Kinco: nearly level to hilly, very shallow to very deep, very gravelly and loamy soils on upland plains, ridges, and escarpments;
- Penwell-Dune Land: gently undulating and hummocky, very deep, sandy soils and active sand dunes on upland plains;
- Penwell-Elgee-Pyote: gently undulating, very deep, sandy soils on upland plains;
- Ratliff: deep and moderately deep, moderately permeable to moderately rapidly permeable fine sands and loamy fine sands;
- Ratliff-Faskin-Douro: nearly level, moderately deep to very deep, loamy soils on upland plains
- Ratliff-Holloman-Reakor: very shallow to deep, nearly level to gently sloping, loamy soils over calcium carbonate or gypsum;
- Splotter-Mentone: nearly level and gently undulating, very shallow to very deep, loamy soils on upland plains, ridges, and playas;
- Tencee-Mentone-Delnorte: gently undulating to rolling, very shallow to very deep, gravelly and loamy soils on upland plains, ridges, and playas;
- Triomas-Wickett: deep and moderately deep, moderately permeable to moderately rapidly permeable fine sands and loamy fine sands;
- Wickett-Kinco-Triomas: moderately deep and deep, nearly level to gently undulating, sandy soils;
- Wickett-Pyote-Sharvana: gently undulating, shallow to very deep, sandy soils on upland plains and ridges.

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 (2024), no soils in the study area are considered prime farmland; however, approximately 135 acres are considered prime farmland if irrigated. Loving County encompasses approximately 432,752 acres, Winkler County encompasses approximately 537,401 acres, and Ector County encompasses approximately 576,119 acres, none of which are considered prime farmland soils. Andrews County encompasses approximately 963,362 acres, with approximately 8,510 acres included as prime farmland, if irrigated.

3.4 Water Resources

3.4.1 Surface Water and Floodplains

For surface water planning purposes, most of the study area lies within the Rio Grande Basin, which has a total drainage area of 182,215 square miles, of which 88,968 square miles are in the U.S., and 49,387 square miles are in Texas. It is the largest basin by area within Texas, but only the ninth largest by annual flow volume (TWDB, 1997, 2007).

A small area in the northeastern portion of the study area in Andrews and Ector Counties 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, of which 39,428 square miles are within Texas. The Colorado River, the second-longest river in Texas, 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 (USGS, 2024a), mapped streams within the study area include Monument Draw, Cheyenne Draw, and Rudd Draw. In addition, numerous small waterbodies and unnamed streams are scattered throughout the study area. Average rainfall within the study area ranges from approximately 10 to 15 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).

At the time of this report, FEMA has not conducted detailed countywide floodplain analyses for Loving, Andrews, or Winkler Counties, outside of the city of Kermit, which has a flood study but no 100-year floodplains. FEMA has conducted detailed countywide floodplain analyses for Ector County (FEMA, 1987). 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 several streams, water bodies, 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 majority of the study area is the Pecos Valley Aquifer, a major aquifer covering 6,829 square miles beneath 12 counties in Far West Texas. The water-bearing sediments include alluvial and windblown deposits in the Pecos River Valley with a thickness of alluvial fill reaching 1,500 feet, and a freshwater saturated thickness averaging approximately 250 feet. The aquifer is characterized by high levels of chloride and sulfate in excess of secondary drinking standards, resulting from previous oil field activities (TWDB, 2007).

Additional minor aquifers within the study area include the Dockum, Rustler, and Capitan Reef Complex Aquifers. The Dockum Aquifer, which underlies the majority of the study area, 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).

The Rustler Aquifer, which underlies the western portion of the study area in Loving County, contains an outcrop of 309 square miles and a subsurface area of 4,860 square miles, beneath seven counties in Texas. The water is used primarily for irrigation, livestock, and water-flooding operations in oil-producing areas.

The Capitan Reef Complex Aquifer, which underlies the central portion of Winkler County within the study area, contains an area of 1,842 square miles, beneath eight counties in Texas. The aquifer is composed of 2,360 feet of massive, cavernous dolomite and limestone, and the water is used primarily for oil reservoir flooding in Ward and Winkler Counties.

3.5 Ecology

3.5.1 Vegetation

3.5.1.1 Terrestrial Vegetation

As shown on **Figure 3-3**, all Loving County and portions of Winkler, Ector, and Andrews Counties are located in the Trans-Pecos Vegetational Area. Portions of Winkler, Ector, and Andrews Counties are also located within the High Plains Vegetational Area, delineated by Gould et al. (1960) and characterized by Hatch et al. (1990). Most of the study area lies within the Trans-Pecos Vegetational Area, which is traversed by the eastern chain of the Rocky Mountains into the Basin and Range Physiographic Province and has ecosystems typical of the southwestern U.S. The original vegetation ranged from desert grassland and desert shrub on lower slopes and elevations, through juniper and pine at mid elevations, to pine and forest vegetation on the higher slopes of the mountains. Poisonous plants present considerable problems in this harsh environment. More than 95 percent of the area remains as rangeland, and with irrigation, various crops are grown including cotton, alfalfa, sorghum, cantaloupe, sugar beets, grapes, and vegetables (Hatch et al., 1990). The High Plains Vegetational Area is the southern extension of the North America Great Plains and is separated from the Rolling Plains to the east by the Llano Estacado Escarpment. Topographically, the High Plains Vegetational Area is a relatively level plateau characterized by shallow, surface depressional playa lakes, which individually can encompass up to 40 acres. These ephemeral waterbodies are periodically filled by seasonal precipitation.

The historic vegetation of the High Plains region is described as predominantly mixed prairie and shortgrass prairie with tallgrass prairie occurring on deep, sandy soils. Typical native vegetation occurring on clay and clay loam sites include blue grama (*Bouteloua gracilis*), buffalograss (*Buchloe dactyloides*), and galleta (*Hillaria jamesii*), which are the principal plant species encountered in this region prior to widespread agricultural development. Historically, sandy loam soils of the region supported little bluestem (*Schizachyrium scoparium*), western wheatgrass (*Elytrigia smithii*), sideoats grama (*Bouteloua curtipendula*), and sand dropseed (*Sporobolus cryptandrus*). While the High Plains area in general was characteristically treeless and brush free, today, sand sagebrush (*Artemisia filifolia*), honey mesquite (*Prosopis glandulosa*), pricklypear (*Opuntia* spp.), and yucca (*Yucca* spp.) have invaded many sandy and

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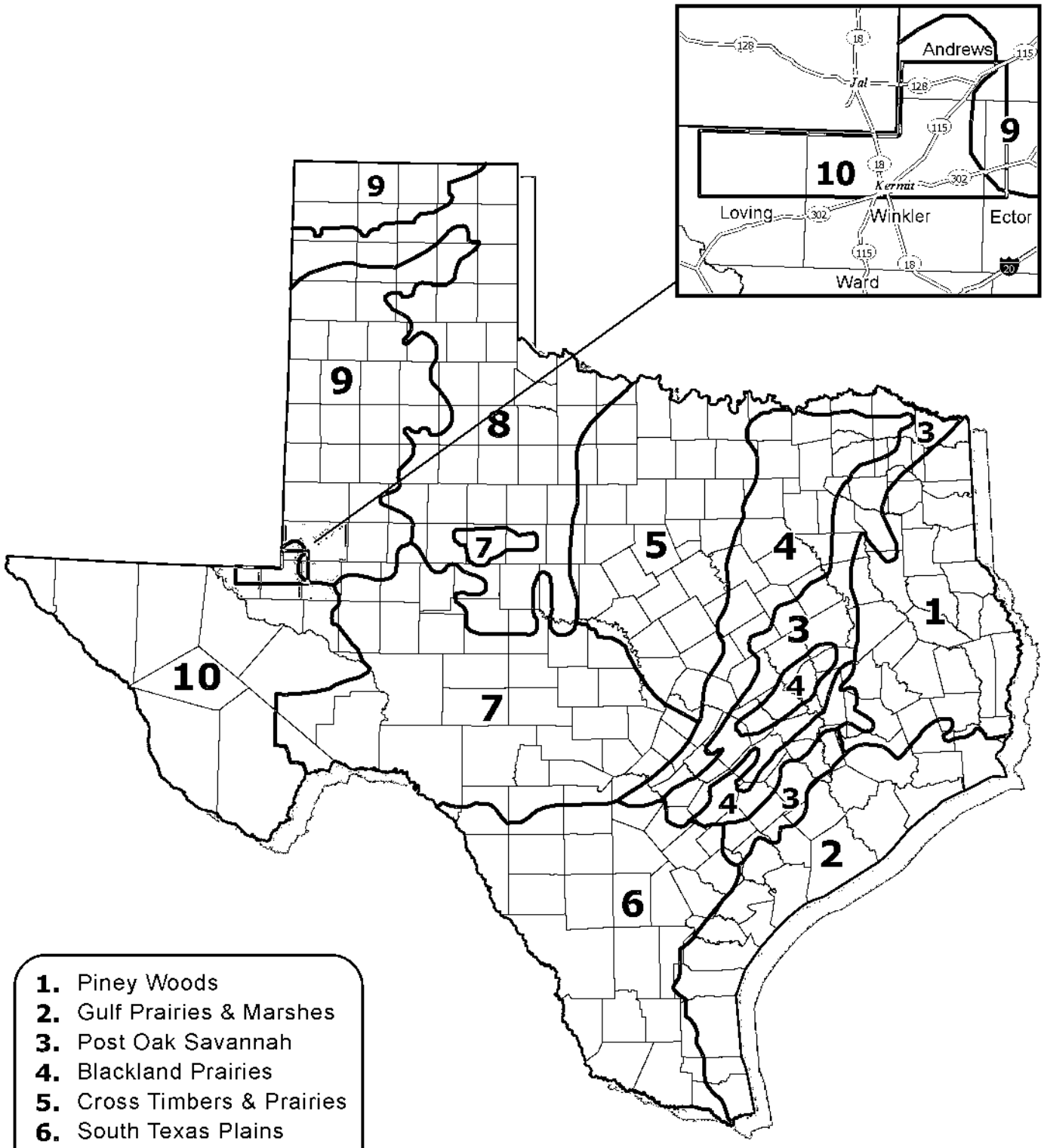

Study Area

NORTH

100 50 0 100

Miles

ONCOR

BURNS McDONNELL

Figure 3-3
Location of the Study Area
in Relation to the
Vegetational Areas of Texas
Border Switch to Clearfork Switch
345 kV Transmission Line Project

Source: Hatch et al (1990)

Issued: 5/5/2025

sandy loam sites (Hatch et al., 1990). Currently, most of the High Plains contains irrigated cropland. Major crops produced in the High Plains include cotton, corn, sorghum, wheat, vegetables, and sugar beets. According to the TPWD EMST (TPWD, 2024b), vegetation cover types in the study area, by percentage, are as follows:

- Trans-Pecos: Sandy Desert Grassland: (approximately 23.0 percent);
- Native Invasive: Mesquite Shrubland (approximately 21.2 percent);
- High Plains: Sand Prairie (approximately 14.3 percent);
- High Plains: Sandhill Shinnery Duneland (approximately 11.4 percent);
- High Plains: Sand Shinnery Shrubland (approximately 10.9 percent);
- Trans-Pecos: Mixed Desert Shrubland (approximately 7.1 percent);
- High Plains: Active Sand Dunes (approximately 2.9 percent);
- Trans-Pecos: Creosotebush Scrub (approximately 2.0 percent);
- Rolling Plains: Mixedgrass Prairie (approximately 1.6 percent);
- High Plains: Sandy Deciduous Shrubland (approximately 0.8 percent); and
- Trans-Pecos: Hill and Foothill Grassland (approximately 0.7 percent).

The remaining 4.1 percent consists of 26 additional vegetation cover types (TPWD, 2024b).

Trans-Pecos: Sandy Desert Grassland. This grassland or steppe occurs on sandy plains throughout the Trans-Pecos and into the arid southern portions of the High Plains. The herbaceous layer is often dominated by grasses such as black grama (*Bouteloua eriopoda*), mesa dropseed (*Sporobolus flexuosus*), sand dropseed, sand muhly (*Muhlenbergia arenicola*), alkali sacaton (*Sporobolus airoides*), common sandbur (*Cenchrus spinifex*), and purple threeawn (*Aristida purpurea*). Species such as honey mesquite, soaptree yucca (*Yucca elata*), plains yucca (*Yucca campestris*), Torrey's yucca (*Yucca torreyi*), and creosotebush (*Larrea tridentata*) may occur as a scattered woody component. The non-native species Lehmann lovegrass (*Eragrostis lehmanniana*) and Mediterranean lovegrass (*Eragrostis barrelieri*) are frequently found in this system.

Native Invasive: Mesquite Shrubland. Honey mesquite 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 (*Pleuraphis mutica*) 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.

High Plains: Sand Prairie is mapped on soils that range from deep sand to shallower sandy loams under a variety of management regimes, and hence are quite variable. Common grasses include sand dropseed, sandbur (*Cenchrus* sp.), giant dropseed (*Sporobolus giganteus*), sand bluestem (*Andropogon hallii*), silver bluestem (*Bothriochloa saccharoides*), little bluestem, thin paspalum (*Paspalum setaceum*), and field brome (*Bromus arvensis*). Havard oak (*Quercus havardii*), honey mesquite, and sand sagebrush are common woody components.

High Plains: Sandhill Shinnery Duneland. Shrubland on deep sand or sandhill sites where Havard oak is the dominant or at least makes up a significant portion of the cover. Other shrub species are also commonly encountered.

High Plains: Sand Shinnery Shrubland. Shrublands of sandy substrates but not on deep sand or sandhills, though these sites may be nearby. Havard oak is typically dominant, but other shrub species are commonly encountered.

Trans Pecos: Mixed Desert Shrubland occurs on moderate slopes, usually in hills and low mountains rather than alluvial or colluvial desert basins. Shrub diversity is often relatively high, and common components include mariola (*Parthenium incanum*), creosotebush, whitethorn acacia (*Vachellia constricta*), skeleton-leaf golden eye (*Viguiera stenoloba*), honey mesquite, catclaw acacia (*Senegalia greggii*), Torrey's yucca, lechuguilla (*Agave lechuguilla*), sotol (*Dasylirion* spp.), and ocotillo (*Fouquieria splendens*).

High Plains: Active Sand Dunes. Areas on deep sand and sandhill site types lacking significant vegetative cover.

Trans-Pecos: Creosotebush Scrub occurs on flats or gently rolling landscapes over gravelly colluvial or alluvial soils. Creosotebush is often the clear, often monotypic dominant, and diversity may be low. Other woody species may include honey mesquite, mariola, catclaw acacia, and whitethorn acacia. Common succulents include Torrey's yucca, lechuguilla, Christmas cactus or tasajillo (*Cylindropuntia leptocaulis*), and Engelmann pricklypear. Bush muhly (*Muhlenbergia porteri*), fluffgrass (*Dasyochloa pulchella*),

burrograss (*Scleropogon brevifolius*), white tridens (*Tridens albescens*), threeawns (*Aristida* spp.), and chino grama (*Bouteloua ramosa*) are common grasses.

Rolling Plains: Mixedgrass Prairie. This mapped 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, 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 (*Sorghastrum nutans*) and big bluestem (*Andropogon gerardii*) in locally well-watered areas.

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 oak, though it is often present. Sand sage and honey mesquite are common dominants, and the understory cover varies from significant herbaceous cover to sparsely vegetated.

Trans Pecos: Hill and Foothill Grassland occurs over gravelly or rocky, generally sloping soils that are not continuous and thus support a mixture of grasses, shrubs, and succulents. Important grasses include sideoats grama, black grama, chino grama (*Bouteloua ramosa*), tanglehead (*Heteropogon contortus*), threeawns (*Aristida* spp.), bush muhly, Arizona cottontop (*Digitaria californica*), and fluffgrass. Common shrubs include ocotillo, creosotebush, mariola, skeleton-leaf golden eye, and whitethorn acacia, while common succulents include Torrey's yucca, lechuguilla, Texas sacahuista (*Nolina texana*), Engelman pricklypear, and other *Opuntia* and *Echinocereus* species.

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 (10 to 15 inches annually). Pastureland/rangeland dominates the study area in areas that have not been utilized for recreation; however, native grasslands are lacking, and overgrazing has allowed less-desirable introduced species to proliferate.

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.

3.5.1.4.1 Federally Listed Plant Species

Available information from IPaC (USFWS, 2025), TPWD (2024c), and TXNDD (TPWD, 2024d) was reviewed to identify endangered or threatened plant species of potential occurrence within the study area. Currently, 36 plant species are listed by the USFWS as endangered or threatened species in Texas (USFWS, 2024a). The USFWS (2025) and TPWD (2024c) county lists of endangered and threatened species indicate that no federally listed plant species occur in the study area counties.

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 one state-listed plant species, dune umbrella-sedge (*Cyperus onerosus*), may occur in Andrews and Winkler Counties within the study area.

The dune umbrella-sedge is endemic to the Pleistocene sand sheet in Trans-Pecos Texas in Andrews, Ward, and Winkler Counties. It is a yellowish-green perennial, approximately 8 to 22 inches tall, that is found in moist to wet sand in swales and other depressions among active or partially stabilized sand dunes (Poole et. al., 2007). TPWD (2024d) shows documented records of the dune umbrella-sedge in the study area, and it is expected to occur in appropriate habitat within the Andrews and Winkler Counties portions of the study area.

3.5.1.4.3 Plant Species of Greatest Conservation Need

The TPWD State Wildlife Action Plan (SWAP) identifies Species of Greatest Conservation Need (SGCN), which helps identify where they live, what threatens their survival, and what actions can be taken to mitigate threats. Six plant species are provided and designated as SGCN within the study area counties (**Table 3-1**) (TPWD, 2024c), and although these species are not provided protection under the ESA or state laws, they may be provided protection under the Migratory Bird Treaty Act (MBTA) or additional laws.

Table 3-1: Plant Species of Greatest Conservation Need for the Study Area Counties[a]

Common Name	Scientific Name[a]	Status	Potential for Occurrence in the Study Area
		TPWD	
Plants			
Bigelow's desert grass	*Blepharidachne bigelovii*	SGCN	Yes
Cory's ephedra	*Ephedra coryi*	SGCN	Yes
Dune unicorn-plant	*Proboscidea sabulosa*	SGCN	Yes
Hinckley's spreadwing	*Eurytaenia hinckleyi*	SGCN	Yes
Neglected sunflower	*Helianthus neglectus*	SGCN	Yes
Sticky tansy aster	*Xanthisma viscidum*	SGCN	Yes

(a) According to TPWD (2024c, 2024d).

3.5.1.4.4 Sensitive Plant Communities

No sensitive plant communities have been specifically identified by either the USFWS or TPWD as occurring within the study area (USFWS, 2025; 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**, Winkler, Ector and Andrews Counties (including most of the study area) occur within the Kansan Biotic Province, while Loving County (including the western portion of the study area) occurs within the Chihuahuan 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 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.

The Chihuahuan Biotic Province in Texas includes all Trans-Pecos Texas except the Guadalupe Mountains of northern Culberson County and has a greater diversity of physiographic features than any other province in the state. The mammalian fauna is the richest of any biotic province in the state and 14 species in Texas are limited to this province. The mammal species in the basin deserts and grasslands are in many cases different from the species of nearby mountains. Additionally, more lizard species are found in the Chihuahuan Biotic Province than any other province in Texas (Blair, 1950).

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 water habitats to some extent. Shrubland habitat is dominated by woody vegetation but is

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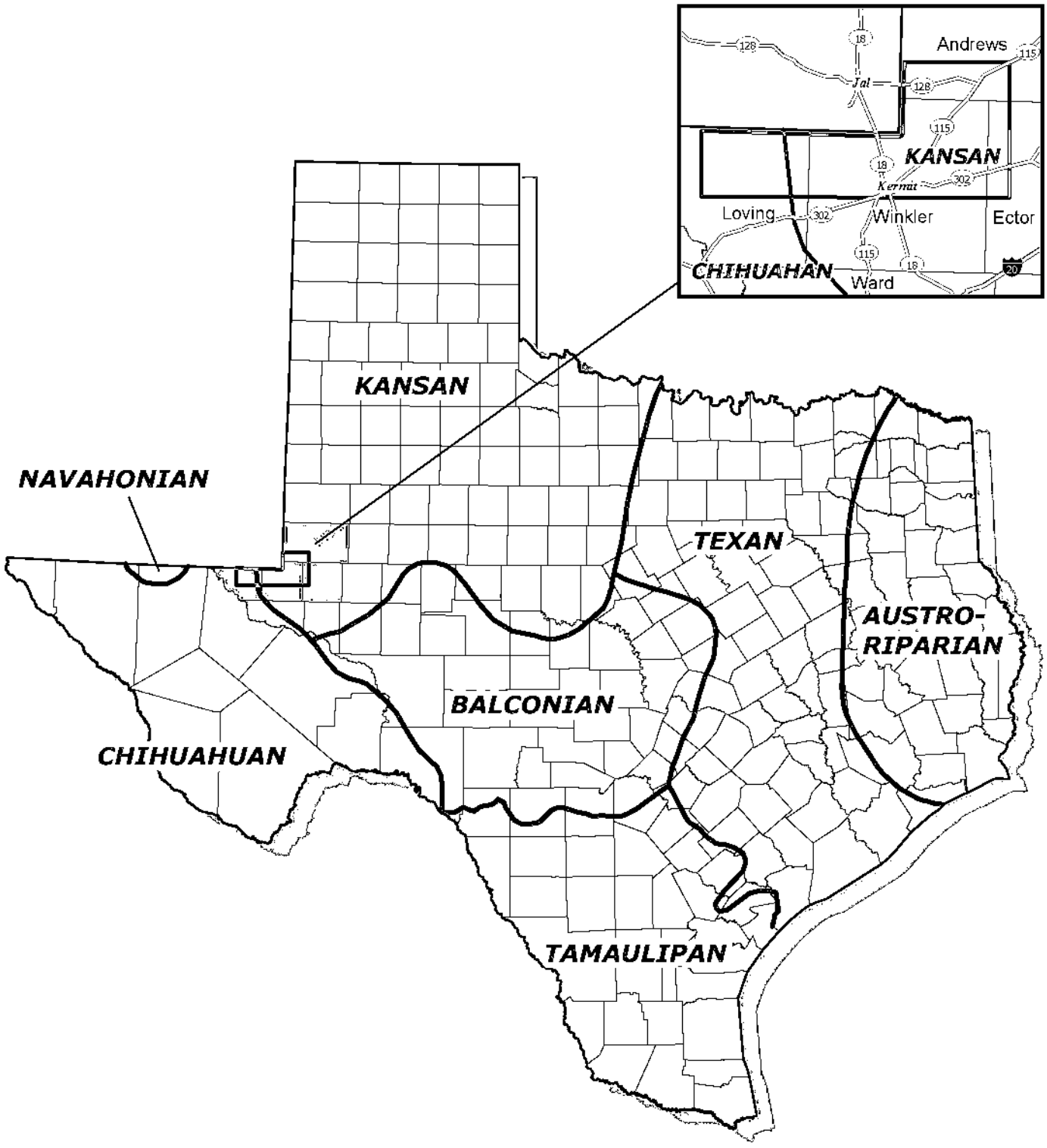

Study Area

NORTH

100 50 0 100

Miles

ONCOR

BURNS McDONNELL

Figure 3-4
Location of the Study Area
in Relation to the
Biotic Provinces of Texas
Border Switch to Clearfork Switch
345 kV Transmission Line Project

Source: Blair (1950)

Issued: 5/5/2025

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.

3.5.2.1.1 Amphibians and Reptiles

Amphibian and reptile species of potential occurrence in the study area include numerous frogs and toads, including the Couch's spadefoot (*Scaphiopus couchii*), Great Plains toad (*Anaxyrus cognatus*), plains leopard frog (*Lithobates blairi*), and Texas toad (*Anaxyrus speciosus*). Lizards of potential occurrence in the study area include the Chihuahuan greater earless lizard (*Cophosaurus texanus scitulus*), common spotted whiptail (*Aspidoscelis gularis*), Great Plains skink (*Pleistiodon obsoletus*), and twin-spotted spiny lizard (*Sceloporus bimaculosus*). Numerous snakes have the potential to occur in the study area, including the checkered gartersnake (*Thamnophis marcianus*), desert kingsnake (*Lampropeltis splendida*), plains hog-nosed snake (*Heterodon nasicus*), western coachwhip (*Coluber flagellum testaceus*), and western diamond-backed rattlesnake (*Crotalus atrox*). Turtles of potential occurrence include the plains box turtle (*Terrapene ornata ornata*), red-eared slider (*Trachemys scripta elegans*), and yellow mud turtle (*Kinosternon flavescens*) (Werler and Dixon, 2000; Dixon, 2013).

3.5.2.1.2 Birds

Avian species of potential occurrence in the study area include many year-round residents, migrants/summer residents, migrants/winter residents, and true migrants. A resident regularly occurs in the same general area throughout the year and breeds in that area. A summer resident likely breeds in the area but may include species that do not, while a winter resident occurs during the winter season but does not breed in the area. A true migrant occurs as a transient passing through the area either in spring or fall or both.

Year-round residents may include the great blue heron (*Ardea herodias*), great horned owl (*Bubo virginianus*), killdeer (*Charadrius vociferus*), northern cardinal (*Cardinalis cardinalis*), northern mockingbird (*Mimus polyglottos*), red-tailed hawk (*Buteo jamaicensis*), and rock pigeon (*Columba livia*). Migrants/summer residents may include the black-chinned hummingbird (*Archilochus alexandri*), Bullock's oriole (*Icterus bullockii*), western cattle-egret (*Ardea ibis*), cliff swallow (*Petrochelidon pyrrhonota*), painted bunting (*Passerina ciris*), scissor-tailed flycatcher (*Tyrannus forficatus*), and turkey vulture (*Cathartes aura*). Migrants/winter residents may include the Canada goose (*Branta canadensis*), cedar waxwing (*Bombycilla cedrorum*), green-winged teal (*Anas crecca*), northern harrier (*Circus*

hudsonius), northern pintail (*Anas acuta*), savannah sparrow (*Passerculus sandwichensis*), and yellow-rumped warbler (*Setophaga coronata*). True migrants may include Franklin's gull (*Leucophaeus pipixcan*) and upland sandpiper (*Bartramia longicauda*) (Lockwood and Freeman, 2014).

3.5.2.1.3 Mammals

Common mammals that may occur in the study area include bats such as the Brazilian free-tailed bat (*Tadarida brasiliensis*) and American parastrelle (*Parastrellus hesperus*), carnivores such as the bobcat (*Lynx rufus*), coyote (*Canis latrans*), and northern racoon (*Procyon lotor*), rodents such as the hispid cotton rat (*Sigmodon hispidus*), North American deermouse (*Peromyscus maniculatus*), and yellow-faced pocket gopher (*Cratogeomys castanops*), and lagomorphs such as the black-tailed jackrabbit (*Lepus californicus*), and eastern cottontail (*Sylvilagus floridanus*) (Schmidly and Bradley, 2016).

3.5.2.2 Fish and Aquatic Wildlife

Aquatic habitats occurring within the study area are limited due to the ephemeral nature of these features and include several ponds. Fish species that may occur in the study area and surrounding 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 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 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. Loving and Winkler Counties fall within the Trans Pecos, Mountains and Basins Ecological Region, while Andrews and Ector Counties fall within the High Plains Ecological Region. During the 2022–2023 hunting season, an estimated 1,701 mule deer and 4,247 white-tailed deer were harvested within the High Plains Ecological Region. During the same period, an estimated 3,190 mule deer and 15,382 white-tailed deer were harvested within the Trans Pecos, Mountains and Basins Ecological Region (Purvis, 2023).

The study area provides habitat for a variety of economically and recreationally important upland game birds, including the mourning dove (*Zenaida macroura*), white-winged dove (*Zenaida asiatica*), Eurasian collared-dove (*Streptopelia decaocto*), and scaled quail (*Callipepla squamata*). During the 2019–2020 hunting season, an estimated 177,364 mourning dove, 51,657 white-winged dove, 73,426 Eurasian collared-dove, and 1,336 scaled quail were harvested within the High Plains Ecological Region (Purvis, 2020). During the same period, 58,904 mourning dove, 15,137 white-winged dove, 11,132 Eurasian collared-dove (*Streptopelia decaocto*), and 2,863 scaled quail were harvested within the Trans Pecos, Mountains and Basins Ecological Region (Purvis, 2020).

3.5.2.3.2 Fisheries/Aquatic Resources

Recreational fishing opportunities are limited within the study area, with very few if any perennial waterbodies within the study area. While some small ponds and streams may be 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 and its vicinity 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 study area 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**, 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 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 Endangered Species Act (ESA) (USFWS, 1973).

3.5.2.4.1 Federally Listed Fish and Wildlife Species

The USFWS (2025) and TPWD (2024c) county lists of endangered and threatened species indicate that eight federally listed endangered/threatened, or candidate fish and wildlife species may occur in the study area counties (**Table 3-2**). 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 Bald and Golden Eagle Protection Act (BGEPA).

Table 3-2: Federally Listed Fish and Wildlife Species for the Study Area Counties[a]

Common Name[b]	Scientific Name[b]	Status	Potential for Occurrence in the Study Area
		USFWS	
Birds			
Bald eagle	*Haliaeetus leucocephalus*	Delisted	Yes[c]
Lesser prairie-chicken[d]	*Tympanuchus pallidicinctus*	Endangered	No[c]
Northern aplomado falcon	*Falco femoralis septentrionalis*	Endangered	Yes[c]
Piping plover	*Charadrius melodus*	Threatened	Yes[c]
Red knot	*Calidris canutus rufa*	Threatened	Yes[c]
Western yellow-billed cuckoo[d]	*Coccyzus americanus occidentalis*	Threatened	No[c]
Insects			
Monarch butterfly	*Danaus plexippus*	Proposed Threatened	Yes[c]
Mollusks			
Texas hornshell[d]	*Popenaias popeii*	Endangered	No[c]
Reptiles			
Dunes sagebrush lizard	*Sceloporus arenicolus*	Endangered	Yes

(a) According to USFWS (2025) and TPWD (2024c, 2024d).
(b) Nomenclature follows Schmidly et al. (2024), Chesser et al. (2024), USFWS (2025), and TPWD (2024c).
(c) Only expected to occur as a migrant, transient, or rare vagrant within the study area.
(d) Not listed by USFWS (2025) as occurring in the study area.

The TPWD (2024c) county lists for the study area show the yellow-billed cuckoo to be federally listed as threatened. However, the USFWS lists the yellow-billed cuckoo in six Texas counties but does not list it for any of the study area counties. Additionally, the TPWD (2024c) county list for Loving County shows

the Texas hornshell to be federally listed as endangered. However, the USFWS lists the Texas hornshell in 15 Texas counties but does not list it for any of the study area counties.

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) and eBird (2024), 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 lesser prairie-chicken (LEPC) is a medium-sized grayish-brown grouse that requires large tracts of relatively intact native grasslands and prairies to thrive. The species has one of the smallest population sizes and most restricted distributions of North American grouse and currently occurs in five states within the southern Great Plains, including southeastern Colorado, southwestern Kansas, southeastern New Mexico, the northwestern counties of Oklahoma, and the northeastern and southwestern portions of the Texas Panhandle (Hagan and Giesen, 2020). In Texas, the species currently occurs in two disjunct populations in the Panhandle. The population in the eastern Panhandle ranges from Lipscomb County south to Collingsworth County, while the population on the western South Plains extends from Bailey County southward to Gaines and northern Andrews Counties (Lockwood and Freeman, 2014). Human activities, such as incompatible grazing management and conversion of native rangelands to cropland, energy development, tree encroachment, and recurrent droughts have significantly reduced the population. No areas within the study area have been identified by the Southern Great Plains Crucial Habitat Assessment Tool (SGP CHAT, 2024) as being within the estimated occupied range of the lesser prairie-chicken. According to TPWD (2024d) no documented records of the LEPC lie within the study area, and the LEPC is not expected to occur within the study area.

The northern aplomado falcon is a small raptor that inhabits coastal prairies, desert grasslands, and open woodlands, where it nests on stick platforms constructed on yuccas, tree branches, and utility poles, often using abandoned raptor or corvid nests (Keddy-Hector, 2000). The species ranges from South America, north to the southwestern U.S. Aplomado falcons historically occurred in coastal grasslands in south

Texas and desert grasslands in parts of the Southwest, but populations declined during the mid-twentieth century, resulting in extirpation from the U.S. Since then, various conservation groups have been successful in reintroducing the species at more than a dozen sites along the Texas Gulf Coast from Matagorda County to Cameron County. Since 1985, these efforts have led to the release of over 100 captive-reared aplomado falcons at selected sites on the central Texas coast, in the Lower Rio Grande Valley and the Trans-Pecos. This species is now a rare resident along the Coastal Prairies from western Matagorda County southward, including associated barrier islands (Lockwood and Freeman, 2014). TPWD (2024d) and eBird (2024) show no documented records of the northern aplomado falcon in the study area, and although unlikely, the species may occasionally traverse the study area as a migrant or vagrant.

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 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 western yellow-billed cuckoo is a medium-sized brown bird that breeds in riparian habitat and associated drainages, and deciduous woodlands with dense willow and cottonwood stands. Status applies only to western populations beyond the Pecos River Drainage, which have suffered major declines in the 20th century due to habitat loss and fragmentation, local extinctions, and low colonization rates (Laymon and Halterman, 1987). No documented records exist from the study area (TPWD, 2024c; eBird, 2024),

and the species is not expected to occur within the study area due to the general absence of suitable habitat.

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, 2024b; TPWD, 2024e). The monarch butterfly may be found within the study area during migration but would not likely be found outside this period.

The Texas hornshell is a freshwater mussel that most often occurs in crevices, undercut riverbanks, travertine shelves, and the base of small boulders, where small-grained material gathers and provides suitable substrata for anchoring (Carman, 2007). Historically, populations of this species in Texas existed in the Rio Grande and Pecos Rivers. While individuals have been found more recently in additional areas in southwestern Texas, no documented records of this species exist in the study area (TPWD, 2024c). The Texas hornshell would not be expected to occur within the study area due to a lack of suitable habitat.

The dunes sagebrush lizard, a small light brown spiny lizard, is a rare species found only in the shinnery oak and sand dune ecosystems in extreme southeast New Mexico and west Texas. The lizard occurs in approximately 4 percent of lands that make up the 86,000 square mile Permian Basin (USFWS, 2024c). The lizard is active from April through October, with mating occurring from May to early June and reproducing only once or twice per season. Currently, no method exists to restore shinnery oak sand dunes, so once development degrades or removes habitat, it is considered lost in perpetuity for the species (USFWS, 2024d). TPWD (2024d) shows documented records of the dunes sagebrush lizard in the study area, and it is expected to occur as a resident in appropriate habitat in the eastern portion of the study area.

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. Nine species are protected at the state level and designated as endangered or threatened within the study area counties (**Table 3-3**). They are the state-endangered lesser prairie-chicken, northern aplomado falcon, Texas hornshell, and dunes sagebrush lizard, and the state-threatened piping plover, red knot, white-faced ibis (*Plegadis chihi*), Pecos pupfish (*Cyprinodon pecosensis*), and Texas horned lizard (*Phrynosoma cornutum*). The lesser prairie-chicken, northern aplomado falcon, piping plover, red knot, Texas hornshell, and dunes sagebrush lizard were previously discussed in **Section 3.5.2.4.1**, above.

Table 3-3:State-Listed Fish and Wildlife Species for the Study Area Counties[a]

Common Name[b]	Scientific Name[b]	Status	Potential for Occurrence in the Study Area
		TPWD	
Birds			
Lesser prairie-chicken	*Tympanuchus pallidicinctus*	Endangered	No[c]
Northern aplomado falcon[d]	*Falco femoralis septentrionalis*	Endangered	Yes[c]
Piping plover[d]	*Charadrius melodus*	Threatened	Yes[c]
Red knot[d]	*Calidris canutus rufa*	Threatened	Yes[c]
White-faced ibis	*Plegadis chihi*	Threatened	Yes[c]
Fish			
Pecos pupfish	*Cyprinodon pecosensis*	Threatened	No
Mollusks			
Texas hornshell	*Popenaias popeii*	Endangered	No
Reptiles			
Dunes sagebrush lizard	*Sceloporus arenicolus*	Endangered	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.
(d) Not listed by TPWD (2024c, 2024d) as occurring in any of the study area counties.

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). This 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 not been documented within the study area (eBird, 2024), but although unlikely, the species may occasionally occur within the study area.

The Pecos pupfish, a resident of the Pecos River, prefers mineralized eutrophic waters (TPWD, 2009). Currently, this species is known only from Salt Creek in Reeves County and several gravel pits in Pecos County (TPWD, 2009). Due to this species' restricted range and a lack of suitable habitat, it is unlikely to 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, iNaturalist (2024) shows documented records within the study area for this species. The Texas horned lizard may occur in suitable habitat within the study area.

3.5.2.4.3 Fish and Wildlife Species of Greatest Conservation Need

The TPWD SWAP identifies SGCN, which helps identify where they live, what threatens their survival, and what actions can be taken to mitigate threats. Thirty-eight fish and wildlife species are provided and designated as SGCN within the study area counties (**Table 3-4**) (TPWD, 2024c); and although these species are not provided protection under the ESA or state laws, they may be provided protection under the MBTA or additional laws.

Table 3-4: Fish and Wildlife Species of Greatest Conservation Need for the Study Area Counties[a]

Common Name	Scientific Name[a]	Status	Potential for Occurrence in the Study Area
		TPWD	
Amphibians			
Woodhouse's toad	*Anaxyrus woodhousii*	SGCN	Yes

Table 3-4: Fish and Wildlife Species of Greatest Conservation Need for the Study Area Counties[a] (Continued)

Birds			
Baird's sparrow	*Centronyx bairdii*	SGCN	Yes[b]
Bank swallow	*Riparia riparia*	SGCN	Yes[b]
Brewer's blackbird	*Euphagus cyanocephalus*	SGCN	Yes[b]
Cactus wren	*Campylorhynchus brunneicapillus*	SGCN	Yes
Chestnut-collared longspur	*Calcarius ornatus*	SGCN	Yes[b]
Common nighthawk	*Chordeiles minor*	SGCN	Yes[b]
Franklin's gull	*Leucophaeus pipixcan*	SGCN	Yes[b]
Golden eagle	*Aquila chrysaetos*	SGCN	Yes[b]
Lark bunting	*Calamospiza melanocorys*	SGCN	Yes
Loggerhead shrike	*Lanius ludovicianus*	SGCN	Yes
Mountain plover	*Charadrius montanus*	SGCN	Yes[b]
Northern bobwhite	*Colinus virginianus*	SGCN	Yes
Pyrrhuloxia	*Cardinalis sinuatus*	SGCN	Yes
Sanderling	*Calidris alba*	SGCN	Yes[b]
Scaled quail	*Callipepla squamata*	SGCN	Yes
Snowy plover	*Charadrius nivosus*	SGCN	Yes[b]
Western burrowing owl	*Athene cunicularia hypugaea*	SGCN	Yes
Willet	*Tringa semipalmata*	SGCN	Yes[b]
Wilson's warbler	*Cardellina pusilla*	SGCN	Yes[b]
Insects			
Monahans lined june beetle	*Polyphylla monahansensis*	SGCN	Yes
No accepted common name	*Polyphylla pottsorum*	SGCN	Yes
No accepted common name	*Trigonoscutoides texanus*	SGCN	Yes
Mammals			
Big free-tailed bat	*Nyctinomops macrotis*	SGCN	Yes
Black-tailed prairie dog	*Cynomys ludovicianus*	SGCN	Yes
Cave myotis bat	*Myotis velifer*	SGCN	Yes[b]
Greater western mastiff bat	*Eumops perotis californicus*	SGCN	Yes[b]
Hoary bat	*Lasiurus cinereus*	SGCN	Yes
Hooded skunk	*Mephitis macroura*	SGCN	Yes
Jones's pocket gopher	*Geomys knoxjonesi*	SGCN	Yes
Kit fox	*Vulpes macrotis*	SGCN	Yes
Mountain lion	*Puma concolor*	SGCN	Yes
Pale Townsend's big-eared bat	*Corynorhinus townsendii pallescens*	SGCN	Yes[b]

Table 3-4: Fish and Wildlife Species of Greatest Conservation Need for the Study Area Counties[a] (Continued)

Pronghorn	*Antilocapra americana*	SGCN	Yes
Western pipistrelle	*Parastrellus hesperus*	SGCN	Yes
Reptiles			
Plateau spot-tailed earless lizard	*Holbrookia lacerata*	SGCN	No
Western box turtle	*Terrapene ornata*	SGCN	Yes
Western massasauga	*Sistrurus tergeminus*	SGCN	Yes

(a) According to TPWD (2024c, 2024d).
(b) Only expected to occur as a migrant, transient, or rare vagrant 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 recreational 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)** and hosted a public participation meeting in the study area (see **Sections 2.5** and **5.0**, and **Appendix B)** to identify and collect information regarding community values and community resources. The above-listed values and resources important to the local community are discussed in the appropriate sections of this document.

3.7 Land Use

The study area is located in portions of Andrews, Ector, Loving, and Winkler Counties in west Texas, and encompasses approximately 934 square miles. The only incorporated municipality within the study area is the city of Kermit, located along the study area's southern boundary in Winkler County. The unincorporated community of Notrees is located in the southeastern quadrant of the study area along SH 302. 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. According to NASS, approximately 95.4 percent of the study area is classified as rangeland (92.1 percent shrubland and 3.3 percent grassland/pastureland), 4.2 percent is classified as developed, 0.4 percent is classified as cropland, and less than 1 percent is classified as open water (USDA, 2023).

Burns & McDonnell solicited information from county officials and other regional entities/officials as mentioned in **Section 2.2.1**. Burns & McDonnell also solicited information from school districts and various state and federal agencies regarding environmental and/or land use constraints within the study area. Copies of all written responses received are contained in **Appendix A**, and information received is noted in appropriate discussions in **Section 3.0** and/or **Section 7.0** of this report, relevant to resource-specific comments made by the agency (e.g., NRCS regarding soils and TPWD regarding wildlife).

3.7.1 Urban/Residential Areas

The sparsely populated study area is dominated by large sprawling tracts of land used primarily for oil and gas production and livestock grazing. Residential and urban development is concentrated in and surrounding the city of Kermit. A few residences and small businesses are also present in proximity to the unincorporated community of Notrees. Isolated residences, ranch headquarters, and farmsteads are scattered throughout the study area.

The study area is served by four school districts: Andrews ISD, Ector County ISD, Kermit ISD, and Wink-Loving ISD. Three Kermit ISD school campuses and other facilities are located within the city of Kermit, including Kermit Elementary, Kermit Junior High, and Kermit High School (Texas Education Agency [TEA], 2024a; TEA, 2024b).

3.7.2 Recreational Areas

A review of various federal, state, and local databases and maps, an internet search, and field reconnaissance were used to identify parks and recreational areas in the study area. No federal or state park/ recreational area is located in the study area. Additionally, no federal or state wildlife refuge or management area, or national forestland or grassland is located in the study area (TPWD, 2024f; National Park Service [NPS], 2025).

The Winkler County Golf Course is located approximately 6.0 miles west of the Kermit city limit, near the southern boundary of the study area. Six small municipal parks and recreational facilities maintained by the city of Kermit within their municipal boundary include Boy Scout Park, Birtcell Park ("Kermit the Frog Park"), Plaza Park, Vest Park, Walton Park, and Winkler County Park. In addition, Kermit ISD maintains athletic fields and venues at its school campuses as well as the Walton Field/Stadium, all of which are located within the city of Kermit.

No TPWD public hunting lands are located within the study area (TPWD, 2025a), and no TPWD Great Texas Wildlife Trails driving trails or sites of interest are located in the study area (TPWD 2025b). Furthermore, no conservation easements were identified in the study area (USGS, 2024b; National Conservation Easement Database [NCED], 2025; Texas Land Conservancy [TLC], 2025). Recreational activities, such as hunting and fishing, might occur on private properties throughout the study area but are not considered to be open to the public.

3.7.3 Agriculture

Agriculture remains a significant land use and economic contributor within the study area. According to NASS geospatial data and interactive maps, approximately 95 percent of the total study area is classified as rangeland, and approximately 0.5 percent is classified as cropland. Cotton is listed as the leading crop item planted in the study area, followed by peanuts and winter wheat (USDA, 2023).

Review and comparison of the 2017 and 2022 Census of Agriculture indicate that the land in farms within the study area counties is primarily rangeland/pastureland, however the data also show that the amount of land in farms decreased during the 5-year period. Data indicate that livestock accounts for a significantly greater portion of total agricultural sales in Ector, Loving, and Winkler Counties, which comprise the majority of the study area. Cattle is identified as the primary livestock in Andrews, Ector, and Winkler Counties; the primary livestock for Loving County was not disclosed. (USDA, 2017, 2022b).

Table 3-5 provides the percent change of the total market value of agricultural products sold (crop and livestock items) and the total land in farms for each county in the study area between 2017 and 2022.

Table 3-5: Percent Change of Total Market Value of Agricultural Products Sold and Land in Farms for Study Area Counties

County/ State		Year		Percent Change
		2017	2022	
Andrews	Market Value ($)	10,615,000	9,742,000	-8
	Land in Farms (acres)	886,765	879,802	-1
Ector	Market Value ($)	3,382,000	3,822,000	+13
	Land in Farms (acres)	557,889	417,245	-25
Loving	Market Value ($)	(D)[a]	1,547,000	(D)[a]
	Land in Farms (acres)	468,140	424,193	-9
Winkler	Market Value ($)	3,424,000	1,799,000	-47
	Land in Farms (acres)	489,230	365,973	-25
Texas	Market Value ($)	24,924,041,000	32,166,561,000	+29
	Land in Farms (acres)	127,036,184	125,471,325	-1

Source: USDA (2017, 2022b).
(a) D = withheld to avoid disclosing data for individual farms.

3.7.4 Industry

The oil and gas industry, historically the major contributor to the region's economy, has greatly influenced and defined the area's history and land use. Oil and gas wells and pipelines are prevalent and distributed throughout the entire study area. A review of USGS topographic maps identified 13 named oil and gas fields located throughout the study area. According to the RRC, 13,136 wells and 9,646 pipelines are recorded within the study area (RRC, 2024). Newly constructed well and pipeline facilities not shown on aerial imagery or in the RRC database were noted during field reconnaissance and review of the North Texas Helicopters, Inc. March 2025 helicopter flight video. The construction, development, and preparation of oil and gas facilities and ancillary systems are occurring rapidly throughout the study area. This land use constraint is dynamic and subject to change depending on the date of observation.

Two renewable energy generation facilities were identified in the southeastern portion of the study area (see **Figure 3-1B** in **Appendix F**). The Notrees Wind Development, owned and operated by Duke Energy, began operating in 2009 (U.S. Department of Energy [DOE], 2015; USGS, 2025). The Phoebe Solar Project, owned and operated by Innergex Renewable Energy, began operating in 2019 (Innergex, 2019; Texas Comptroller of Public Accounts (CPA), 2023).

Several large-scale mining plants are located within the deep sand deposits of Winkler County in the eastern portion of the study area. Large volumes of sand are mined and shipped to support the fracking operations associated with oil and gas production throughout the region. Nine large sand mines are