Control Number: 51023

Item Number: 438

Addendum StartPage: 0

SOAH DOCKET NO. 473-21-0247
PUC DOCKET NO. 51023

APPLICATION OF THE CITY OF SAN ANTONIO TO AMEND ITS CERTIFICATE OF CONVENIENCE AND NECESSITY FOR THE SCENIC LOOP 138-KV TRANSMISSION LINE IN BEXAR COUNTY	§ § § § § §	**BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS**

AMENDMENT TO CPS ENERGY'S APPLICATION

SOAH DOCKET NO. 473-21-0247
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APPLICATION OF THE CITY OF SAN ANTONIO TO AMEND ITS CERTIFICATE OF CONVENIENCE AND NECESSITY FOR THE SCENIC LOOP 138-KV TRANSMISSION LINE IN BEXAR COUNTY	§ § § § § §	**BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS**

AMENDMENT TO CPS ENERGY'S APPLICATION AND REQUEST FOR APPROVAL AND ADOPTION OF REVISED PROCEDURAL SCHEDULE

COMES NOW the City of San Antonio, acting by and through the City Public Service Board (CPS Energy) and files this Amendment to its Application to amend its Certificate of Convenience and Necessity (CCN) for the Proposed Scenic Loop 138-kV Transmission Line in Bexar County (Project). CPS Energy requests that this Amendment be found sufficient, consistent with SOAH Order Nos. 4 and 5, and that a revised procedural schedule be adopted in light of this Amendment. In support hereof, CPS Energy respectfully shows:

I. INTRODUCTION

On November 24, 2020, Toutant Ranch, Ltd., ASR Parks, LLC, Pinson Interests Ltd. LLP, and Crighton Development Co. (Developers) filed a Statement on Route Adequacy and Request for Approval of Proposed Agreed Amendments to CPS Energy's Application. On the same day, CPS Energy filed a response stating its support for the route changes requested by Developers. SOAH Order No. 4 granted Developers' motion and ordered CPS Energy to amend its application in accordance with the request by December 11, 2020.

At the route adequacy hearing held in this docket on December 10, 2020, CPS Energy announced that an additional amendment to the Application was necessary as a result of recent development occurring in proximity to Segment 26.

SOAH Order No. 5 extended the time period for CPS Energy to file the necessary amendments to the application to December 23, 2020, including changes necessary due to the home being constructed in the right-of-way under Segment 26. This Application Amendment is timely filed before December 23, 2020.

II. RELIEF REQUESTED

A. Sufficiency of Amendment and Adoption of Revised Schedule

CPS Energy files this Application Amendment consistent with SOAH Order Nos. 4 and 5. In making the changes reflected in this Application Amendment, CPS Energy has endeavored to comply with the requirements of the Administrative Law Judges (ALJs) and all applicable rules of the Public Utility Commission of Texas (Commission). CPS Energy has determined that, because (1) the changes to routing on Segments 42, 46, 48, and 49 occur entirely on property owned by the directly affected landowner, with the landowner's consent; and (2) the change to routing on Segment 26 affects only landowners who have previously received notice and/or are currently participating in this case, no additional notice is required beyond that already provided by CPS Energy. In light of this, CPS Energy requests that the ALJs find that the Application Amendment is materially sufficient and that no additional notice is required at this time.

Further, in light of the Application Amendment, CPS Energy has proposed revisions to the procedural schedule and an additional extension of the deadline for the Commission to issue a final order in this case that was filed in this docket on December 18, 2020. CPS Energy has not received any objections to that revised schedule. Therefore, CPS Energy also requests that the ALJs adopt the revised procedural schedule at the same time it finds the Application Amendment and notice sufficient. This will allow this case to proceed to hearing under the newly proposed schedule.

B. Revisions to Prefiled Testimony

Because of the Application Amendment, a limited number of changes are required to be made to the prefiled testimony of CPS Energy's witnesses in this case. The testimony of Ms. Lisa B. Meaux was previously admitted at the route adequacy hearing on December 10, 2020 as CPS Energy Exhibit 2 and, therefore, any revisions to her testimony are being addressed in this filing by submission of supplemental direct testimony (see Attachment 6). For CPS Energy's other witnesses, however, CPS Energy will provide errata to their prefiled testimony, making a small number of changes to the testimony to reflect the revisions contained in the Application Amendment. These changes are minor and will be made in writing prior to offering the testimony into evidence, unless the ALJs order otherwise.

III. DESCRIPTION OF APPLICATION AMENDMENT

A. Segment Modifications

1. Developers' Motion

In accordance with Developers' motion, the following changes to Segments 42, 46, 48, and 49 are reflected in this Application Amendment:

- The northern portion of Segment 42 was modified by shifting it to the north at the request of the landowner. To distinguish this segment from the original alignment of Segment 42 it was renamed as Segment 42a (see Figure 6-20 in Attachment 2; Attachment 4; and Sheet 3 Amended in Attachment 5).
- The eastern portion of Segment 46 was modified by shifting it to the south to better avoid a habitable structure and at the request of the landowner. To distinguish this segment from the original alignment of Segment 46 it was renamed as Segment 46a (see Figure 6-20 in Attachment 2; Attachment 4; and Sheet 3 Amended in Attachment 5).
- The eastern half of Segment 49 was modified by shifting it to the north at the request of the landowner. As a result of shifting Segments 49 and 42, the node between Segments 42, 48, and 49 was moved to the northwest, eliminating the need for Segment 48. To distinguish this segment from the original alignment of Segment 49 it was renamed as Segment 49a. Moving the node to the west also split Segment 46 causing the western portion of the segment to be relabeled as Segment 46b (see Figure 6-20 in Attachment 2; Attachment 4; and Sheet 2 Amended, Sheet 3 Amended, Sheet 5 Amended, and Sheet 6 Amended in Attachment 5).

2. Segment 26

As a result of recent development activities in the area of Segment 26, the following modification is being made to that segment:

- The western portion of Segment 26 was modified (creating Segment 26a) by shifting it to the east on the other side of the property line in order to avoid a habitable structure that was recently constructed in the direct path of the original alignment of Segment 26. As a result of shifting Segment 26, the node between Segments 26, 37, and 38 was moved to

the northeast, decreasing the length of Segment 37 and increasing the length of Segment 38 (see Figure 6-21 in Attachment 2 and Sheet 11 Amended in Attachment 5).[1]

The location of the Segments 26a, 42a, 46a, 46b, and 49a, as described above, are presented in Figure 2-3 Amended and Figure 2-4 Amended (included as part of Attachment 2), Attachment 4, and Attachment 5.

B. Newly Identified Habitable Structures

Field reconnaissance performed by POWER Engineers, Inc. (POWER) on December 7, 2020, identified a newly constructed habitable structure directly under the north-south portion where Segment 26 was originally proposed. This habitable structure is labeled as Map ID 198 (see Figure 6-21 in Attachment 2 and Sheet 11 Amended in Attachment 5). As a result of becoming aware of this newly constructed habitable structure, Segment 26 was shifted to the east and is now referred to as Segment 26a (see Figure 6-21 in Attachment 2 and Sheet 11 Amended in Attachment 5). Another newly constructed habitable structure, located to the south of Segment 26, was also identified and is labeled as Map ID 199 (see Figure 6-21 in Attachment 2 and Sheet 11 Amended in Attachment 5). Another existing structure to the east of Segment 26a was also identified as a habitable structure and is labeled as Map ID 197 (see Figure 6-21 in Attachment 2 and Sheet 11 Amended in Attachment 5). Structure 197 is more than 300 feet from Segment 26a, but should have been originally identified in the application due to its location approximately 239 feet from Segment 37.

CPS Energy and POWER were recently provided documentation supporting a determination that the previously identified Anaqua Springs Ranch guard house meets the Commission's definition of a "habitable structure." The Anaqua Springs Ranch guard house is now included in the habitable structure inventory. The guard house is located west of Segment 36 and is labeled as Map ID 200 (see Figure 4-1 Amended in Attachment 2 and Sheet 7 Amended in Attachment 5).

CPS Energy and POWER were recently provided information that a structure, located north of Segment 43, previously determined to be a non-habitable pool house, is an occupied

[1] Note that Segment 26a remains labeled "Segment 26" on Sheet 11 Amended in Attachment 5 to this filing. The location of Segment 26a is accurately depicted on Sheet 11 Amended.

guest house. The guest house is now included in the habitable structure inventory and is labeled as Map ID 201 (see Figure 4-1 Amended in Attachment 2 and Sheet 11 Amended in Attachment 5).

These five additional habitable structures are included in the amended data tables, amended inventory tables, and on amended figures as appropriate in Attachment 2.

C. Other Adjustments

In reviewing the *Scenic Loop 138 kV Transmission Line and Substation Project Environmental Assessment and Alternative Route Analysis Bexar County, Texas* (EA)[2] for this Application Amendment, the following additional adjustments are reflected in the *Scenic Loop 138 kV Transmission Line and Substation Project Environmental Assessment and Alternative Route Analysis AMENDMENT* (EA Amendment) included as Attachment 2 to this filing:

- Map ID 17 was identified as "Commercial" in the inventory tables. The description for this structure has been changed to "School" to avoid confusion regarding the use of this structure. This adjustment impacts Routes C1 and Y.
- Map ID 67 Single Family Residence was listed as having a distance of 148 feet from Segment 13 but should have been listed as having a distance of 232 feet from Segment 14. This adjustment impacts Routes C1, D1, E, G1, H, I1, J1, K, L, and M1.
- Map ID 105 Single Family Residence was listed as having a distance of 134 feet from Segment 32 but should have been listed as having a distance of 255 feet from Segment 20. This adjustment impacts Routes C1, D1, I1, J1, M1, Y, Z1, and AA1.
- Map ID 134 Single Family Residence was listed as having Segment 43 as the Nearest Alternative Route Segment but should have listed Segment 38. This adjustment impacts Routes L, Q1, and U1.
- Map ID 134 Single Family Residence was listed as having a distance of 269 feet from Segment 37 but should have been listed as having a distance of 218 feet from Segment 43. This adjustment impacts Route CC.

[2] The EA was included as Attachment 1 to the CPS Energy Application that was admitted into evidence on December 10, 2020, as CPS Energy Exhibit 1.

- Map ID 135 Single Family Residence was listed as having a distance of 171 feet from Segment 25 but should have been listed as having a distance of 260 feet from Segment 37. This adjustment impacts Route CC.
- Map ID 501 CellTex Site Services, Ltd. was listed as having a distance of 279 feet from Segment 32 but should have been listed as having a distance of 482 feet from Segment 36. This adjustment impacts Routes C1, D1, I1, J1, M1, Y, Z1, and AA1.
- Map ID 701 Heidemann Cemetery was listed as having a distance of 593 feet from Segment 36 but should have been listed as having a distance of 736 feet from Segment 31. This adjustment impacts Routes B1 and G1.
- Map ID 901 Heidemann Ranch Historic District was listed as having a distance of 50 feet from Segment 35 but should have been listed as having a distance of 98 feet from Segment 36. This adjustment impacts Routes C1, D1, I1, J1, M1, T1, Y, Z1, and AA1.
- The text and tables in Section 4.5.3 were revised to clarify distances and segments in proximity to some of the archeological sites recorded within 1,000 feet of various alternative routes.

IV. CONTENTS OF APPLICATION AMENDMENT

This filing consists of the following, with the first five attachments encompassing CPS Energy's amendment to its application in this proceeding, and the sixth attachment consisting of testimony supporting and explaining the amendment:

1. Attachment 1 – Application Amendment, presenting modifications described in Section III, above, to CPS Energy's application previously filed on July 22, 2020.

2. Attachment 2 – EA Amendment, prepared by POWER to document the changes to the information previously reported by POWER in the EA.

3. Attachment 3 – Application Attachment 3 Amended

4. Attachment 4 – Application Attachment 5 Amended showing the locations of Segments 26a, 42a, 46a, 46b, and 49a.

5. Attachment 5 – Application Attachment 6, Sheet 2 Amended showing the location of Segments 46b, and 49a; Sheet 3 Amended showing the location of Segments 42a and 46a;

Sheet 5 Amended showing the location of Segment 49a, Sheet 6 Amended, Sheet 7 showing habitable structure Map ID 200, and Sheet 11 Amended showing Segment 26a and habitable structures Map IDs 197, 198, 199, and 201.

6. Attachment 6 – Supplemental Direct Testimony of Lisa B. Meaux addressing the changes associated with the Application Amendment.

V. CONCLUSION

In accordance with the requirements of SOAH Order Nos. 4 and 5, CPS Energy respectfully submits this Application Amendment, and requests that the ALJs find it materially sufficient, determine that no additional notice is required, and adopt the revised proposed procedural schedule previously submitted by CPS Energy on December 18, 2020.

Respectfully submitted,

/s/ Kirk D. Rasmussen

Kirk D. Rasmussen
State Bar No. 24013374
Craig R. Bennett
State Bar No. 00793325
Jackson Walker LLP
100 Congress Avenue, Suite 1100
Austin, Texas 78701
(512) 236-2000
(512) 691-4427 (fax)
Email: krasmussen@jw.com
Email: cbennett@jw.com

ATTORNEYS FOR CPS ENERGY

CERTIFICATE OF SERVICE

I certify that a copy of this document was served on all parties of record on this date via the Commission's Interchange in accordance with SOAH Order No. 3.

/s/ Kirk D. Rasmussen
Kirk D. Rasmussen

Attachment 1

APPLICATION OF THE CITY OF SAN ANTONIO, ACTING BY AND THROUGH THE CITY PUBLIC SERVICE BOARD (CPS ENERGY) TO AMEND ITS CERTIFICATE OF CONVENIENCE AND NECESSITY FOR THE PROPOSED SCENIC LOOP 138-KV TRANSMISSION LINE PROJECT IN BEXAR COUNTY, TEXAS

DOCKET NO. 51023

AMENDMENT

APPLICATION OF THE CITY OF SAN ANTONIO, ACTING BY AND THROUGH THE CITY PUBLIC SERVICE BOARD (CPS ENERGY) TO AMEND ITS CERTIFICATE OF CONVENIENCE AND NECESSITY FOR THE PROPOSED SCENIC LOOP 138-KV TRANSMISSION LINE PROJECT IN BEXAR COUNTY, TEXAS

Amendment

By this filing, and as required by SOAH Order Nos. 4 and 5, CPS Energy supplements the application filed on July 22, 2020, by submitting the following amendments to the Application. Combined, the application filed on July 22, 2020, and this amendment, along with all referenced attachments, shall constitute the Application of CPS Energy in this matter. Changes to the original Application are shown in **Red**, **Bold**, **Underline**.

4. Project Description:

The new transmission line will be approximately **4.5** to 6.9 miles long, depending on the route selected. This change is applicable to Question No. 4 in the Application.

6. Right-of-way:

Approximately **4.5** to 6.9 miles of ROW will be required for the Proposed Project.

Approximately **9.0** to 13.8 miles of circuit will be required for the Proposed Project.

***

The percent of ROW acquired/donated/available for the Proposed Project at this time varies from 0 percent to approximately **54.29** percent. Routes **B1**, **D1**, **G1**, **I1**, **J1**, **M1**, **T1**, **Z1**, and **AA1**, which all use Segment **42a**, have approximately 2,059 feet of ROW available. The ROW available for use for these routes corresponds with an agreed landowner donation of approximately 2,059 feet of ROW for CPS Energy's use for a portion of Segment **42a**. **Routes G1, J1, and AA1 have an additional 12,905 feet, 12,075 feet, and 6,132 feet, respectively, of ROW available for CPS Energy's use, which corresponds to an agreed landowner donation for the modifications to Segment 49.** Please see the table below for the percent of ROW available for each of the routes listed.

Primary Alternative Route	Percent of Right-of-Way Available/Donated	Segments Utilizing Available/Donated Right-of-Way
B1	**6.30** percent	**42a**
D1	**7.48** percent	**42a**
G1	**54.29** percent	**42a, 46a, 49a**
I1	**7.75** percent	**42a**
J1	**50.97** percent	**36, 42a, 46a, 49a**
M1	**6.67** percent	**42a**
T1	**6.58** percent	**42a**
Z1	**8.61** percent	**42a**
AA1	**32.21** percent	**36, 42a, 46, 49a**

APPLICATION OF THE CITY OF SAN ANTONIO, ACTING BY AND THROUGH THE CITY PUBLIC SERVICE BOARD (CPS ENERGY) TO AMEND ITS CERTIFICATE OF CONVENIENCE AND NECESSITY FOR THE PROPOSED SCENIC LOOP 138-KV TRANSMISSION LINE PROJECT IN BEXAR COUNTY, TEXAS

9. Counties:

All of the **31** Primary Alternative Routes included in this Application would be constructed in Bexar County.

Please refer to Figures **2-3 Amended** and **4-1 Amended** in the **EA Amendment** for the location of Primary Alternative Route segments.

13. Estimated Costs:

***

*Please refer to **Attachment 3 Amended** to this Application for Transmission and Substation Facilities estimated costs for each alternative route presented in this Application.

17. Routing Study:

CPS Energy retained POWER Engineers, Inc. (POWER) to prepare the EA, included as Attachment 1 to the Application. **POWER also prepared the EA Amendment to address modifications to certain segments presented in the Application**. The objective of the EA and **EA Amendment** was to provide information in support of this Application in addressing the requirements of Public Utility Regulatory Act (PURA)[1] § 37.056(c)(4)(A)-(D), the PUC CCN Application form, and PUC Substantive Rule 25.101 (16 TAC § 25.101). By examining existing environmental conditions, including the human and natural resources that are located in the area of the Proposed Project, the EA and **EA Amendment** evaluates the environmental effects that could result from the construction, operation, and maintenance of the Proposed Project. The EA and **EA Amendment** will also be used in support of any additional local, state, or federal permitting activities that may be required for the Proposed Project.

***

Preliminary alternative route segments were identified by evaluation of the constraints mapped for the study area and then by identifying routing opportunity areas such as existing corridors and other linear features. Through application of the PUC's routing criteria, as described above, **49** primary alternative route segments were identified and developed into potentially viable alternative routes for comparative purposes. These primary alternative route segments were further evaluated based on information received from government agencies, the public meetings, and additional public input. Ultimately,

[1] Public Utility Regulatory Act, Tex. Util. Code §§ 11.001-66.016.

31 alternative routes were identified for comparison. These routes were evaluated using 48 land use and environmental criteria. Impacts were evaluated by POWER for each identified alternative route. Additional forward progressing alternative routes may also be formed by configuring the various segments proposed in this Application in different ways.

Specific discussion regarding selection of the study area, identification of constraints, the selection of potential preliminary alternative route segments, and the alternative route analysis is set forth in the EA in Sections 2.0, 3.0, 4.0, and 5.0 **and the EA Amendment**.

19. Routing Maps:

Figure 2-4 Amended of the EA Amendment, titled *Primary Alternative Segments with Environmental and Land Use Constraints*, produced at a scale of 1 inch = 1,000 feet, is provided **as part of the EA Amendment**. These maps were produced using a U.S. Geological Survey (USGS) topographic base. They depict the study area for the project, locations of radio transmitters and other electronic installations, airports/airstrips, parks and recreational areas, historical sites, environmentally sensitive areas and other constraints. The maps also contain the alternative routes for the project. For their protection, locations of archeological sites are not shown on the maps.

Figure 4-1 Amended of the EA Amendment, titled *Habitable Structures and Other Land Use Features in the Vicinity of the Primary Alternative Routes*, which consists of aerial photography produced at a scale of 1 inch = 1,000 feet, is provided **as part of the EA Amendment**. The aerial photo-based maps include parcel boundaries identified from a review of the tax appraisal district records and combined, as appropriate, to reflect instances where multiple parcels are owned by a single individual or group in the study area. The locations of all known habitable structures located within 300 feet of the centerline of primary alternative routes on properties directly affected by the project are also identified on **Figure 4-1 Amended**. The habitable structures and other land use features map (**Figure 4-1 Amended**) was produced using recent aerial photography (January 2019).

***

Attachment 5 Amended and **Attachment 6 Amended** to this Application include 18 maps (utilizing aerial photography) titled *Location of Directly Affected Parcels and Habitable Structures*, that identify directly affected properties, tract IDs, and the location of habitable structures (including labels) within at least 300 feet of the centerline of the transmission line alternatives and approximate parcel boundary lines (based on tax appraisal district records). These maps show the location of each proposed alternative route with each route segment identified, and the locations of all major public roads.

Attachment 8 to this Application is a list that cross-references each habitable structure, or group of habitable structures, and directly affected properties identified on the maps provided in **Attachment 6 Amended** with a list of tract IDs and corresponding landowner names and addresses. Landowner names and addresses were obtained by review of information obtained from the Bexar County Appraisal District.

21. Habitable structures:

The locations of habitable structures within 300 feet of the centerline of each route segment are listed and described with the approximate distance from the route segment centerline in Appendix C, Tables 4-6 through **4-36** of the **EA Amendment** and are shown on **Figure 4-1 Amended of the EA Amendment**. The total numbers of habitable structures for the **31** alternative routes are provided in the table below. Column two designates the number of habitable structures within 300 feet of the ROW centerline.

Alternative Route	Total number of habitable structures within 300 feet of the centerline
A	69
B1	**61**
C1	48
D1	43
E	60
F1	**12**
G1	52
H	61
I1	**43**
J1	**41**
K	**36**
L	**35**
M1	43
N1	**11**
O	29
P	**12**
Q1	**6**
R1	**7**
S	25
T1	34
U1	**6**
V	31
W	25
X1	**40**
Y	**39**
Z1	30
AA1	**30**
BB	**24**

CC	54
DD	32
EE	31

22. Electronic Installations:

There are no known commercial AM radio transmitters located within 10,000 feet of any of the 31 alternative routes. There are two known communication towers (FM radio transmitters, microwave towers, or other electronic communications towers) that are located within 2,000 feet of the alternative routes. A listing, description, and approximate distance from the centerline of each of the alternative routes are presented in Table 4-3 and in Appendix C, Tables 4-6 through 4-36 of the EA Amendment, and the locations of these electronic installations are shown on Figures 2-4 Amended and 4-1 Amended of the EA Amendment.

For additional information on electronic installations, see Section 3.2.4 of the EA and Section 4.2.4 of the EA Amendment. None of the alternative routes filed in this Application are anticipated to have any impact on the existing communication towers.

23. Airstrips:

POWER's review of federal and state aviation/airport maps and directories, aerial photo interpretation and reconnaissance surveys, as well as information received from the TxDOT Division of Aviation, identified no FAA registered heliports located within 5,000 feet of the centerline of any of the 31 alternative routes, one FAA registered public or military airport with a runway longer than 3,200 feet within 20,000 feet of the routes, and no FAA registered public or military airports with runways shorter than 3,200 feet within 10,000 feet of the routes. No private airstrips were identified within 10,000 feet of the centerline of any of the alternative routes. No private heliports were identified within 5,000 feet of the centerline of any of the alternative routes.

Each airport/airstrip/heliport is listed and described with the approximate distance from the centerline of each of the alternative routes in Appendix C, Tables 4-6 through 4-36 of the EA Amendment. These facilities are shown on Figures 2-4 Amended and 4-1 Amended of the EA Amendment.

For additional information on airports/airstrips, see Section 3.2.3 of the EA and Section 4.2.3 of the EA Amendment. No significant impacts to these airports/airstrips/heliports are anticipated from construction of the Proposed Project. Following approval of a route by the PUC, CPS Energy will make a final determination of the need for FAA notification, based on specific route location and structure design. The result of this notification, and any subsequent coordination with FAA, could include changes in the line design and/or potential requirements to mark and/or light the structures.

24. Irrigation Systems:

Based on POWER's review of aerial photography and field reconnaissance, none of the **31** alternative routes for the Proposed Project cross any known cropland or pastureland irrigated by traveling irrigation systems, either rolling or pivot type.

26. Parks and Recreation Areas:

POWER reviewed USGS topographic maps, TxDOT county highway maps, recent aerial photography, and field reconnaissance to identify parks and recreation areas within the study area. Based on this review, POWER identified no parks or recreation areas located within 1,000 feet of the centerline of any of the **31** alternative routes.

For more information on parks and recreational areas see Section 3.3 **of the EA** and Section 4.3 of the **EA Amendment**. No significant impacts to the use of the parks and recreation facilities located within the study area are anticipated from any of the alternative routes.

27. Historical and Archeological Sites:

POWER conducted a literature review and records search at the Texas Historical Commission and The Texas Archeological Research Laboratory at the University of Texas at Austin to identify known historical and archeological sites located within 1,000 feet of the centerline of each of the **31** alternative routes. For more information regarding site descriptions and the evaluation of the historical and archeological sites located within the study area, see Section 3.5 **of the EA** and Section 4.5 of the **EA Amendment**.

Based on POWER's review, 19 recorded archeological sites and three NRHP-listed resources are located within 1,000 feet of the centerline of one or more of the alternative routes. Five of the identified sites are within the potential ROW of an alternative route. These sites are listed and described with the approximate distance from the centerline for each of the alternative routes in Tables 4-4 and 4-5 and Appendix C, Tables 4-6 through **4-36** of the **EA Amendment**. For the protection of these sites, they are not shown on the routing maps.

APPLICATION OF THE CITY OF SAN ANTONIO, ACTING BY AND THROUGH THE CITY PUBLIC SERVICE BOARD (CPS ENERGY) TO AMEND ITS CERTIFICATE OF CONVENIENCE AND NECESSITY FOR THE PROPOSED SCENIC LOOP 138-KV TRANSMISSION LINE PROJECT IN BEXAR COUNTY, TEXAS

29. Environmental Impact:

The EA **and EA Amendment describe** the natural resources, cultural resources, land uses, and other sensitive areas that may occur within the study area. The EA **and EA Amendment also describe** how the Proposed Project may impact such resources. Specifically, the EA **and EA Amendment include** data obtained from TPWD, including the Texas Natural Diversity Database (TXNDD) and a list of Ecologically Significant Stream Segments (ESSS) in the study area.

Attachment 2

December 2020

CPS ENERGY

Scenic Loop 138 kV Transmission Line and Substation Project Environmental Assessment and Alternative Route Analysis AMENDMENT

Bexar County, Texas

PROJECT NUMBER:
156816

PROJECT CONTACT:
Lisa Barko Meaux
EMAIL:
lisa barko@powereng com
PHONE:
281-765-5507

POWER ENGINEERS

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Scenic Loop 138 kV Transmission Line and Substation Project

AMENDED

PREPARED FOR: *CPS ENERGY*

PREPARED BY: *POWER ENGINEERS, INC.*
HOUSTON, TEXAS

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TABLE OF CONTENTS

Note: The order that the amended figures and tables are introduced provide a convenient order for introduction, presentation, and explanation for this amendment; however, the figure numbers and table numbers correspond to the figure numbers and table numbers in the Environmental Assessment filed with the CCN Application.

ADDED FIGURES:

Figure 6-20 Addition of Segments 42a, 46a, 46b, and 49a. Removal of Segments 48 and 49 Following the CCN Filing

Figure 6-21 Modification of Segment 26 Following the CCN Filing

AMENDED FIGURES:

Figure 2-3 Amended Resulting Primary Alternative Segments Following the Open House Meeting

Figure 2-4 Amended Primary Alternative Routing Segments with Environmental and Land Use Constraints (Topographic Base Map with Constraints)(Appendix D)

Figure 4-1 Amended Habitable Structures and Other Land Use Features in the Vicinity of the Primary Alternative Routes (Aerial Photograph Base Map with CCN Inventory Items) (Appendix E)

AMENDED TABLES:

Table 2-1 Amended Alternative Substation and Route Composition and Length

Table 4-1 Amended Land Use and Environmental Data for Route Evaluation

Table 4-2 Amended Land Use and Environmental Data for Segment Evaluation

SECTION 4.0 AMENDED:

4.0 Environmental Impacts of the Alternative Routes – Amended

APPENDIX C AMENDED:

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1.0 INTRODUCTION

On December 4, 2020, the presiding Administrative Law Judges in Public Utility Commission of Texas (PUC or Commission) Docket No. 51023 ordered the City of San Antonio, acting by and through City Public Service Board (CPS Energy) to amend its application pending in that docket to address landowner requested modifications to four primary alternative route segments. Subsequent to the issuance of the order, CPS Energy and POWER Engineers, Inc. (POWER) determined that an adjustment was necessary to another primary alternative route segment as a result of recent development activities in the study area. This *Scenic Loop 138 kV Transmission Line and Substation Project Environmental Assessment and Alternative Route Analysis AMENDMENT* (EA Amendment) was prepared to document the changes to the information previously reported by POWER in the environmental assessment (EA), which is Attachment 1 to the CPS Energy application in PUC Docket No. 51023. This EA Amendment includes the following:

- The changes made to Segments 26, 42, 46, 48, and 49 (Figures 6-20 and 6-21).
- The location of Segments 26a, 42a, 46a, 46b, and 49a (Figure 2-3 Amended (11X17-inch) and Figure 2-4 Amended).
- The amended set of proposed alternative routes (Table 2-1 Amended).
- A description of five additional habitable structures included in the application (Section 2.2).
- Revision of Section 4.0 of the environmental assessment to account for the environmental impacts of the modified segments and routes. This revision of Section 4.0 is intended to **entirely** replace Section 4.0 in the environmental assessment originally filed with the application. Revised Section 4.0 presents the potential impacts of the 31 amended primary alternative routes.
- The amended land use and environmental data for route and segment evaluation (Table 4-1 Amended (route data) and Table 4-2 Amended (segment data)).
- The location of habitable structures and other land use features in the vicinity of the amended primary alternative routes (Figure 4-1 Amended).
- The habitable structures and other land use features in the vicinity of the amended primary alternative routes (Appendix C Amended Tables 4-6 through 4-36).

2.0 SEGMENT MODIFICATIONS AND NEWLY IDENTIFIED HABITABLE STRUCTURES

2.1 Segment Modifications

All of the 48 evaluation criteria presented in the EA were considered when evaluating the segment modifications.

The northern portion of Segment 42 was modified by shifting it to the north at the request of the landowner. To distinguish this segment from the original alignment of Segment 42 it was renamed as Segment 42a (Figure 6-20).

The eastern portion of Segment 46 was modified by shifting it to the south to better avoid a habitable structure and at the request of the landowner. To distinguish this segment from the original alignment of Segment 46 it was renamed as Segment 46a (Figure 6-20).

The eastern half of Segment 49 was modified by shifting it to the north at the request of the landowner. As a result of shifting Segments 49 and 42, the node between Segments 42, 48, and 49 was moved to the northwest, decreasing the length of Segment 49 and eliminating the need for Segment 48. To distinguish this segment from the original alignment of Segment 49 it was renamed as Segment 49a. Moving the node to the west also split Segment 46 causing the western portion of the segment to be relabeled as Segment 46b (Figure 6-20).

The western portion of Segment 26 was modified by shifting it to the east on the other side of the property line in order to avoid a habitable structure that was recently constructed in the direct path of the original alignment of Segment 26. As a result of shifting Segment 26, the node between Segments 26, 37, and 38 was moved to the northeast, decreasing the length of Segment 37 and increasing the length of Segment 38 (Figure 6-21).

The location of the amended primary alternative routing segments described above are presented in Figure 2-3 Amended (11X17) and also in Figure 2-4 Amended, a large plot topographic base map with the environmental and land use constraints.

2.2 Newly Identified Habitable Structures

Field reconnaissance performed by POWER on December 7, 2020 identified a newly constructed habitable structure directly under the north-south portion where Segment 26 was originally proposed. This habitable structure is labeled as Map ID 198 (see Figure 6-21). As a result of becoming aware of this newly constructed habitable structure, Segment 26 was shifted to the east and is now referred to as Segment 26a (see Figure 6-21). Another newly constructed habitable structure, located to the south of Segment 26, was also identified and is labeled as Map ID 199 (see Figure 6-21). Another existing structure to the east of Segment 26a was also identified as a habitable structure and is labeled as Map ID 197 (see Figure 6-21). Structure 197 is farther than 300 feet from Segment 26a, but should have been originally identified in the application due to its location 239 feet from Segment 37.

CPS Energy and POWER were recently provided documentation supporting a determination that the previously identified Anaqua Springs Ranch guard house meets the Commission's definition of a "habitable structure." The Anaqua Springs Ranch guard house is now included in the habitable structure inventory. The guard house is located west of Segment 36 and is labeled as Map ID 200 (see Figure 4-1 Amended).

CPS Energy and POWER were recently provided information that a structure, located north of Segment 43, previously determined to be a non-habitable pool house, is an occupied guest house. The guest house is now included in the habitable structure inventory and is labeled as Map ID 201 (see Figure 4-1 Amended).

These five additional habitable structures are included in the amended data tables, amended inventory tables, and on amended figures as appropriate.

3.0 PRIMARY ALTERNATIVE ROUTES

The environmental and land use criteria data collected for all of the primary alternative route segments were reviewed and used to develop the 31 amended primary alternative routes. The amended primary alternative segments and alternative substation sites comprising each of the 31 amended primary alternative routes are presented in Table 2-1 Amended. Of the 31 amended primary alternative routes presented in Table 2-1 Amended, five are modifications of existing application routes resulting from the changes to Segment 26 (Routes F1, N1, Q1, R1, and U1), eleven are modifications of existing application routes resulting from the changes to Segments 42, 46, 48, and 49 (Routes B1, C1, D1, G1, I1, J1, M1, T1,

X1, Z1, and AA1), and two are new routes from segment combinations utilizing Segments 46A and 46b (Route DD) and 46a and 49a (Route EE).

The 49 amended primary alternative segments and seven alternative substation sites included in the application for consideration by the PUC are depicted on Figure 2-3 Amended, Figure 2-4 Amended, and Figure 4-1 Amended.

Landowners who were listed on the Bexar County appraisal district tax rolls as owning property in July 2020 that were directly affected by each of the 49 amended primary alternative segments received formal notification regarding the project from CPS Energy at the time of the filing of the application with the PUC. Therefore, to the extent necessary, various additional alternative routes could be formulated by different combinations of the amended primary alternative segments.

4.0 ENVIRONMENTAL ASSESSMENT SECTION 4.0 AMENDED

Section 4.0 Amended (*4.0 Environmental Impacts of the Alternative Routes – Amended)* presents the potential impacts of the amended primary alternative routes. The amended land use and environmental data for route and segment evaluation is presented in Table 4-1 Amended (route data) and Table 4-2 Amended (segment data) and the locations of habitable structures and other land use features in the vicinity of the amended primary alternative routes are presented in Figure 4-1 Amended.

In summary, considering the distance to the project endpoints, the amount of area encompassed, and routing constraints and opportunities (densely developed areas, existing transmission facilities, and current land uses, etc.) the 31 amended primary alternative routes represent an adequate number of reasonable, viable, geographically varied alternative routes for an approximate four - to seven-mile project.

5.0 APPENDIX C AMENDED

Appendix C Amended includes Tables 4-6 through 4-36, which present the habitable structures and other land use features in the vicinity of the amended primary alternative routes. For convenience and completeness, all of the inventory tables in Appendix C have been included even if they were not amended.

AMENDMENT ATTACHMENTS

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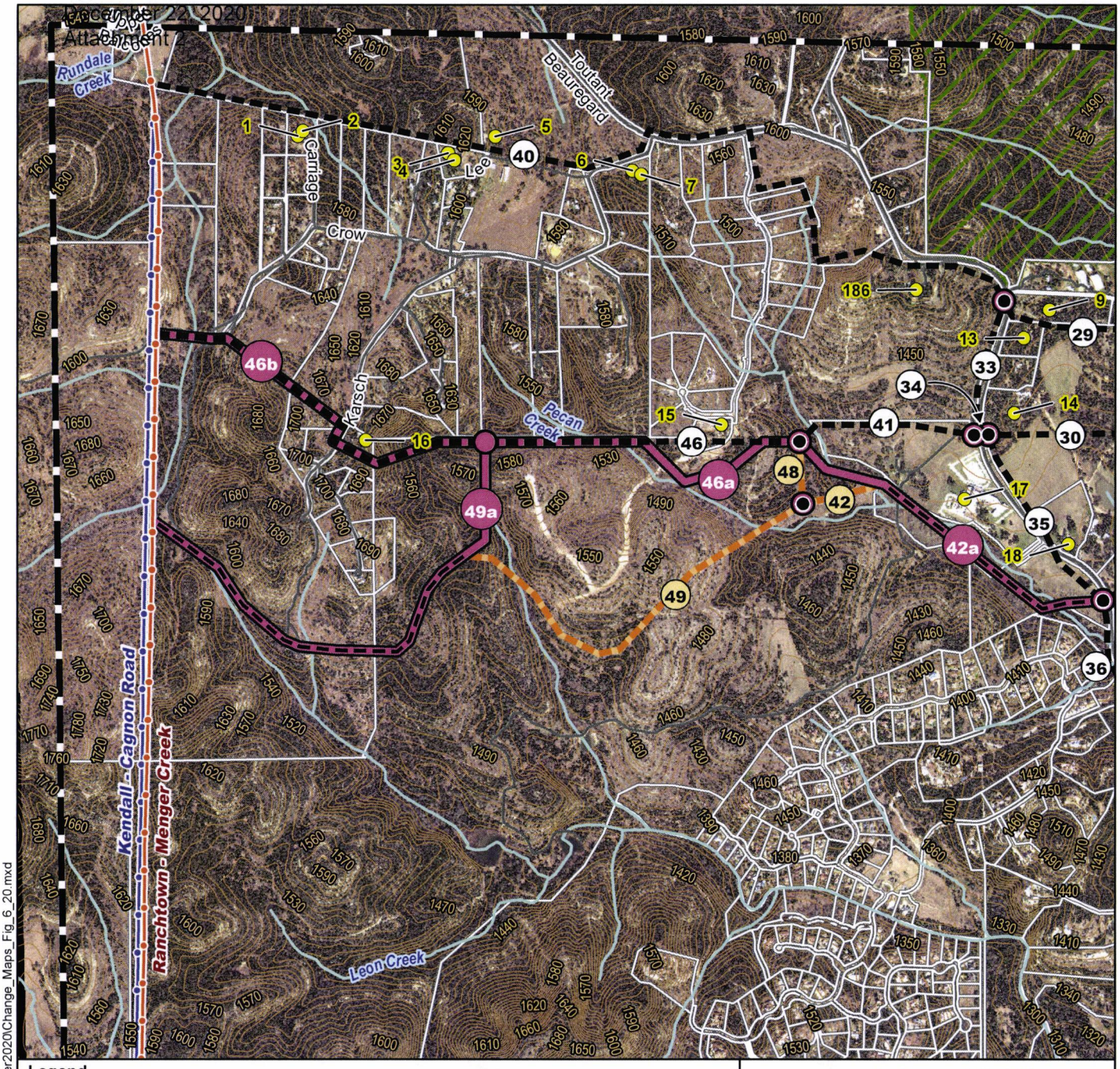

Legend

- Revised or New Alternative Route Segment
- Unchanged Portion of Primary Alternative Route Segment
- Primary Alternative Route Segment
- Revised or New Alternative Route Segment Node
- Unchanged Alternative Route Segment Node
- Removed Alternative Route Segment Node
- A — Revised Alternative Route Segment Label
- A — Primary Alternative Route Segment Label
- Removed Alternative Route Segment
- A — Removed Alternative Route Segment Label
- Habitable Structure within 300 Feet of a Primary Segment
- 138 kV Transmission Line
- 345 kV Transmission Line
- Parcel Boundary
- Local Road
- River or Stream
- 10 foot Contour
- Conservation Easement

12/22/2020

Scenic Loop 138 kV Transmission Line And Substation Project

Figure 6-20

Addition of Segments 42a, 46a, 46b, and 49a. Removal of Segments 48 and 49 Following the CCN Filing

cps ENERGY

POWER ENGINEERS

Feet
0 2,000 4,000

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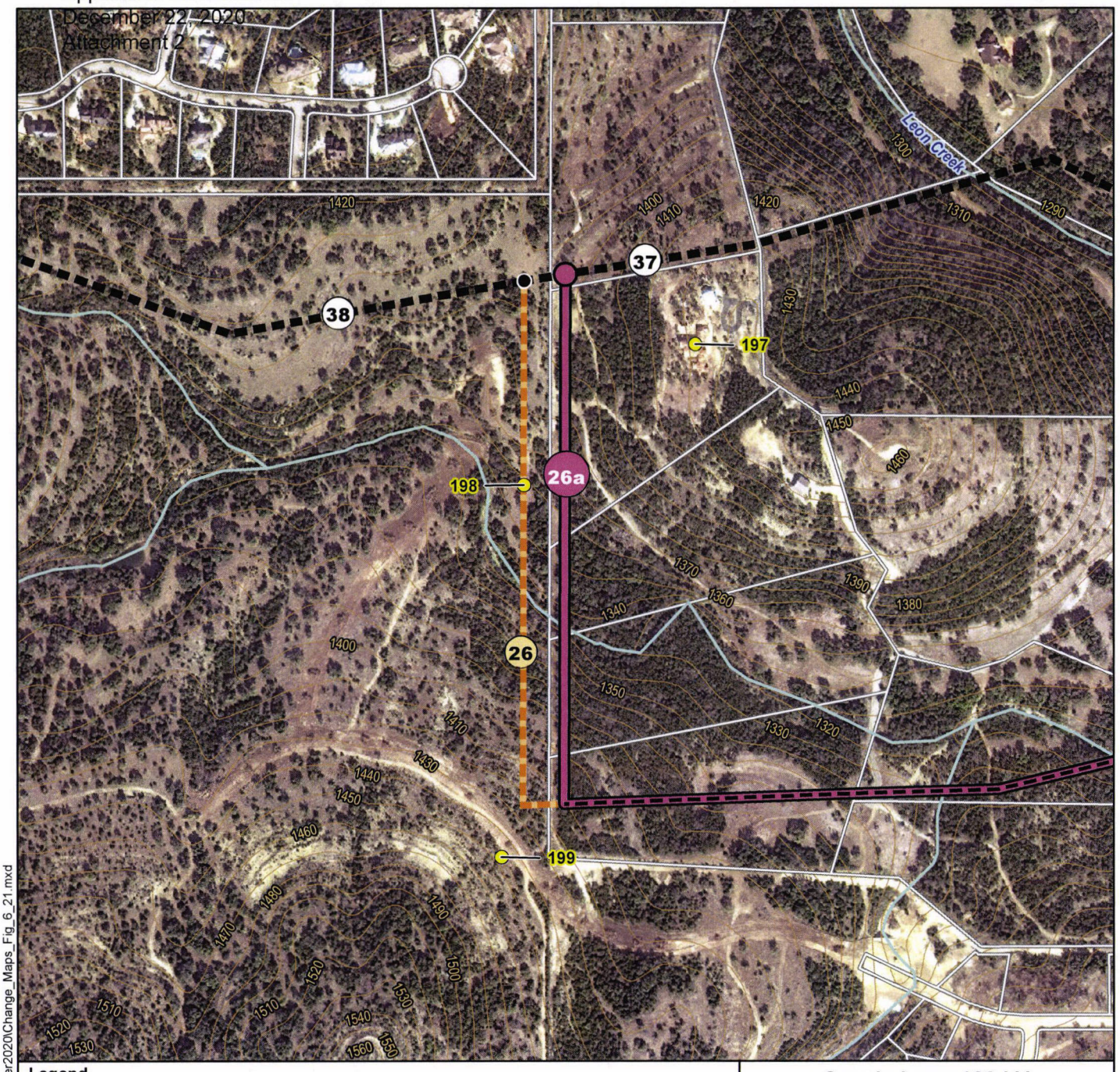

Legend

- Revised or New Alternative Route Segment
- Unchanged Portion of Preliminary Alternative Route Segment
- Primary Alternative Route Segment
- Revised or New Alternative Route Segment Node
- Unchanged Alternative Route Segment Node
- Removed Alternative Route Segment Node
- Revised Alternative Route Segment Label (A)
- Primary Alternative Route Segment Label (A)
- Removed Alternative Route Segment
- Removed Alternative Route Segment Label (A)
- Habitable Structure within 300 Feet of a Primary Segment
- Parcel Boundary
- River or Stream
- 10 foot Contour

12/22/2020

Scenic Loop 138 kV Transmission Line And Substation Project

Figure 6-21

Modification of Segment 26 Following the CCN Filing

cps ENERGY

POWER ENGINEERS

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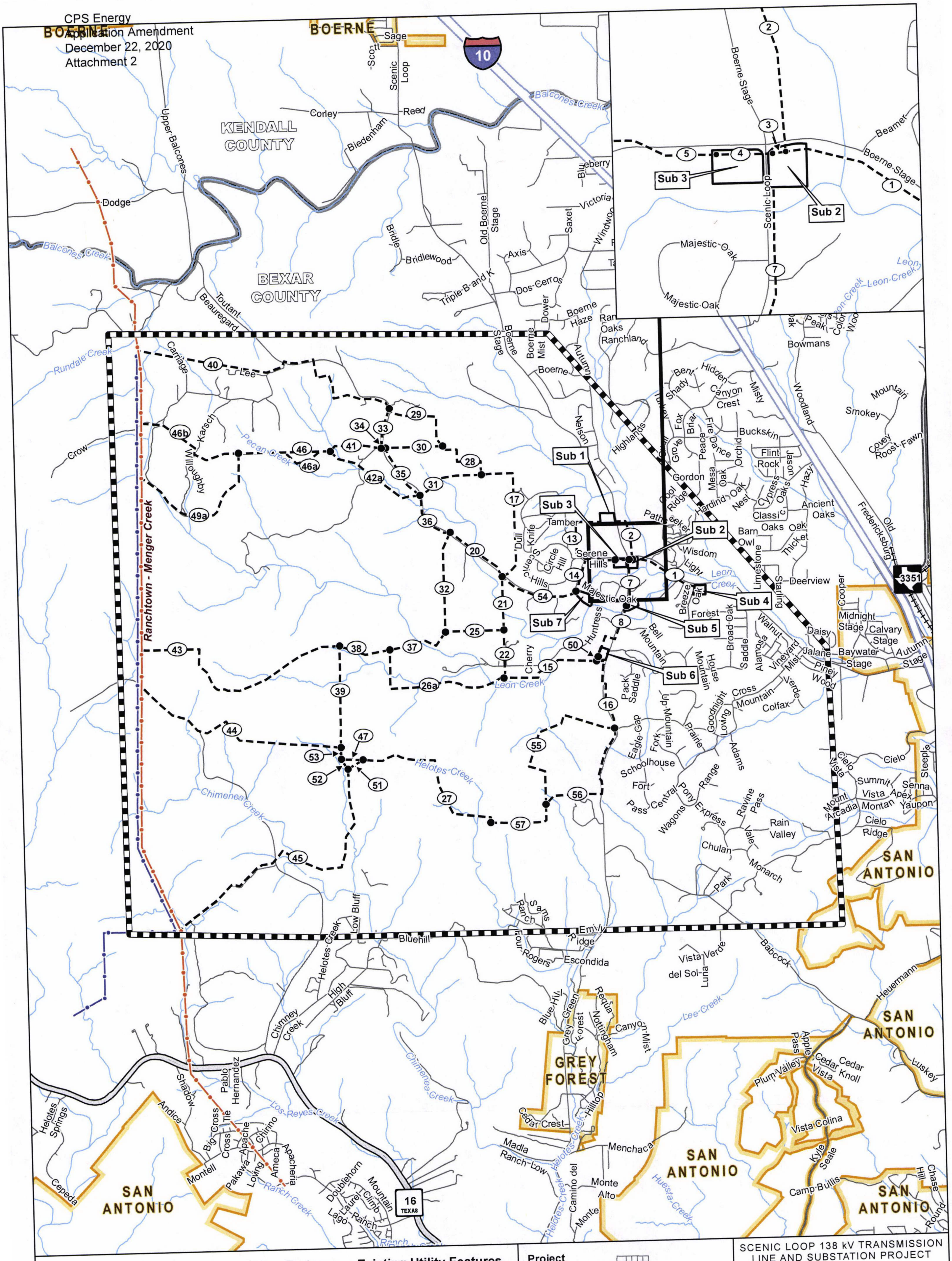
CPS Energy
Application Amendment
December 22, 2020
Attachment 2



Project Components

- Study Area Boundary
- Primary Segment, Node, & Label
- Proposed Substation Site

Administrative Features

- City Limits
- County Boundary

Transportation Features

- Interstate Highway
- State Highway
- FM Road
- Local Road
- Railroad

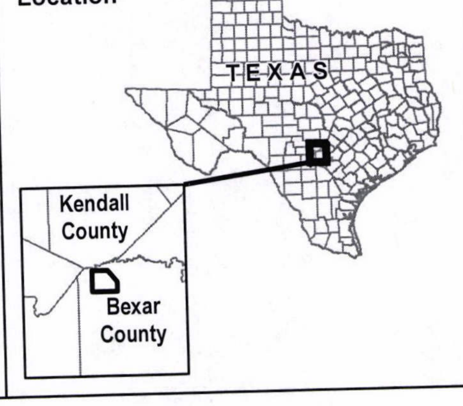
Surface Waters

- River / Stream

Existing Utility Features

- 138 kV Transmission Line
- 345 kV Transmission Line

Project Location



SCENIC LOOP 138 kV TRANSMISSION LINE AND SUBSTATION PROJECT

Figure 2-3 Amended
Primary Alternative Segments

0 4,000 8,000
Feet

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POWER ENGINEERS
000937
Date: 12/21/2020

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Appendix D

Figure 2-4 AMENDED
Primary Alternative Segments with Environmental and Land Use Constraints (Topographic Base Map With Constraints)

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TABLE 2-1 AMENDED ALTERNATIVE SUBSTATION AND ROUTE COMPOSITION AND LENGTH

PRIMARY ALTERNATIVE ROUTES	ALTERNATIVE SUBSTATION AND ROUTE SEGMENT COMPOSITION	TOTAL LENGTH IN MILES
A	Sub 1 – 13-14-54-17-28-29-40	6.66
B1	Sub 1 – 13-14-54-17-31-42a-46a-46b	6.19
C1	Sub 1 – 2-3-4-5-14-54-20-36-35-34-41-46a-46b	5.77
D1	Sub 2 – 4-5-14-54-20-36-42a-46a-46b	5.22
E	Sub 2 – 4-5-14-54-17-28-30-34-33-40	6.62
F1	Sub 2 – 7-8-50-15-26a-38-43	5.66
G1	Sub 3 – 5-14-54-17-31-42a-46a-49a	6.20
H	Sub 3 – 5-14-54-17-28-29-40	6.32
I1	Sub 3 – 5-14-54-20-36-42a-46-46b	5.03
J1	Sub 3 – 5-14-54-20-36-42a-46a-49a	5.46
K	Sub 3 – 5-14-54-21-25-37-38-43	5.29
L	Sub 3 – 5-14-54-21-25-37-38-39-53-52-45	6.91
M1	Sub 4 – 1-3-4-5-14-54-20-36-42a-46a-46b	5.85
N1	Sub 5 – 8-50-15-26a-38-43	5.33
O	Sub 5 – 8-50-16-56-57-27-47-53-44	6.83
P	Sub 6 – 50-15-22-25-37-38-43	4.89
Q1	Sub 6 – 50-15-26a-38-39-44	5.56
R1	Sub 6 – 50-15-26a-38-43	4.76
S	Sub 6 – 50-16-56-57-27-51-45	6.73
T1	Sub 6 – 50-15-22-25-32-36-42a-46a-46b	5.93
U1	Sub 6 – 50-15-26a-38-39-53-52-45	6.36
V	Sub 6 – 50-16-55-57-27-47-53-44	6.60
W	Sub 6 – 50-16-56-57-27-47-53-44	6.25
X1	Sub 7 – 54-17-28-30-34-41-46a-46b	5.34
Y	Sub 7 – 54-20-36-35-34-33-40	5.23
Z1	Sub 7 – 54-20-36-42a-46a-46b	4.53
AA1	Sub 7 – 54-20-36-42a-46-49a	4.82
BB	Sub 7 – 54-21-25-37-38-43	4.73
CC	Sub 7 - 54-20-32-37-38-43	5.23
DD	Sub 7 – 54-20-36-35-34-41-46a-46b	4.64
EE	Sub 7 – 54-20-36-35-34-41-46a-49a	4.99

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Table 4-1 Amended
Environmental and Land Use Data For Route Evaluation
Scenic Loop

Evaluation Criteria	Land Use	A	B1	C1	D1	E	F1	G1	H	I1	J1	K	L	M1	N1	O	P	Q1
1	Length of alternative route (miles)	6.66	6.19	5.77	5 22	6.62	5 66	6.20	6.32	5.03	5.46	5.29	6.91	5.85	5.33	6.83	4.89	5.56
2	Number of habitable structures[1] within 300 feet of the route centerline	69	61	48	43	60	12	52	61	43	41	36	35	43	11	29	12	6
3	Length of ROW using existing transmission line ROW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Length of ROW parallel and adjacent to existing transmission line ROW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Length of ROW parallel to other existing ROW (roadways, railways, canals, etc.)	1.79	1.00	2 43	2.13	2.45	1.48	1.35	1.89	2 01	2.26	1.86	2.21	2.76	1.15	2.91	0.85	1.39
6	Length of ROW parallel and adjacent to apparent property lines[2]	3.71	3.19	1.39	1.49	2.54	2.49	1.96	3.20	1 58	0.78	1.85	2.18	1.49	2 49	1.30	2.62	2.44
7	Sum of evaluation criteria 4, 5, and 6	5.50	4.19	3.82	3.62	4.99	3.97	3.31	5 09	3.59	3.04	3.71	4.38	4.25	3.64	4.21	3.47	3.83
8	Percent of evaluation criteria 4, 5, and 6	83%	68%	66%	69%	75%	70%	53%	80%	71%	56%	70%	63%	73%	68%	62%	71%	69%
9	Length of ROW across parks/recreational areas[3]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Number of additional parks/recreational areas[3] within 1,000 feet of ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Length of ROW across cropland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Length of ROW across pasture/rangeland	0.61	0.76	1.69	0 77	0.69	0 89	0.65	0.50	0.67	0.67	0.51	0.38	1.09	0 71	0.42	0.36	0.24
13	Length of ROW across land irrigated by traveling systems (rolling or pivot type)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Length of route across conservation easements and/or mitigation banks (Special Management Area)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Length of route across gravel pits, mines, or quarries	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Length of ROW parallel and adjacent to pipelines[4]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Number of pipeline crossings[4]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Number of transmission line crossings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	Number of IH, US and state highway crossings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Number of FM or RM road crossings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Number of cemeteries within 1,000 feet of the ROW centerline and substation site	0	1	1	1	0	1	1	0	1	1	0	0	1	1	0	1	1
22	Number of FAA registered airports[5] with at least one runway more than 3,200 feet in length located within 20,000 feet of ROW centerline and substation site	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
23	Number of FAA registered airports[5] having no runway more than 3,200 feet in length located within 10,000 feet of ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Number of private airstrips within 10,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Number of heliports within 5,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Number of commercial AM radio transmitters within 10,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Number of FM radio transmitters, microwave towers, and other electronic installations within 2,000 feet of ROW centerline and substation site	0	0	1	1	0	0	0	0	1	1	0	0	1	0	1	0	0
28	Number of identifiable existing water wells within 200 feet of the ROW centerline and substation site	6	4	2	3	3	1	4	5	3	3	3	3	4	1	2	1	1
29	Number of oil and gas wells within 200 feet of the ROW centerline (including dry or plugged wells) and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aesthetics																		
30	Estimated length of ROW within foreground visual zone[6] of IH, US and state highways	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	Estimated length of ROW within foreground visual zone[6] of FM/RM roads	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	Estimated length of ROW within foreground visual zone[6][7] of parks/recreational areas[3]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ecology																		
33	Length of ROW across upland woodlands/brushlands	5 27	5 06	3.48	3.94	5.24	4.70	5.10	5.03	3.86	4.20	4.40	6.14	4.24	4.56	6 24	4.42	5.27
34	Length of ROW across bottomland/riparian woodlands	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	Length of ROW across NWI mapped wetlands	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	Length of ROW across critical habitat of federally listed endangered or threatened species	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	Area of ROW across golden-cheeked warbler modeled habitat designated as 3-Moderate High and 4-High Quality (acres)[8]	13 88	13.68	10.74	11 12	12 29	19.03	12.78	12 29	8 92	11 81	25.08	14.38	11.12	19.03	2.95	25.11	5.52
38	Area of ROW across golden-cheeked warbler modeled habitat designated as 1-Low and 2-Moderate Low Quality (acres)[8]	18 21	17.55	12.08	12 17	15.74	15 04	18.59	16 46	12.93	14 95	11.65	21.28	12.17	13.33	16.59	12.04	17.59
39	Length of ROW across open water (lakes, ponds)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0 00	0 00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40	Number of stream and river crossings	3	6	6	8	3	10	7	3	8	9	4	8	10	9	10	4	11
41	Length of ROW parallel (within 100 feet) to streams or rivers	0.07	0.10	0.00	0.10	0.07	0.15	0.17	0 07	0.10	0.17	0.26	0.20	0.10	0.15	0.24	0.15	0.21
42	Length of ROW across Edwards Aquifer Contributing Zone	6.66	6.19	5.77	5.22	6.62	5.66	6.20	6.32	5.03	5.46	5.29	6.91	5.85	5.33	6.83	4.89	5.56
43	Length of ROW across FEMA mapped 100-year floodplain	0.13	0.78	0.55	1.03	0 13	0.25	0.75	0 13	1 03	1.00	0.17	0.42	1.49	0.23	0.07	0.09	0.16
Cultural Resources																		
44	Number of recorded cultural resource sites crossed by ROW	0	0	0	0	0	2	0	0	0	0	0	0	0	2	1	1	2
45	Number of additional recorded cultural resource sites within 1,000 feet of ROW centerline	0	2	2	2	2	12	2	0	2	2	0	0	2	12	1	10	12
46	Number of NRHP listed properties crossed by ROW	0	0	0	0	0	1	0	0	0	0	1	1	0	1	1	1	1
47	Number of additional NRHP listed properties within 1,000 feet of ROW centerline	1	2	1	1	1	0	2	1	1	1	0	0	1	0	0	0	0
48	Length of ROW across areas of high archeological site potential	1.73	2 94	2.89	3.14	1 49	3.10	2 84	1 44	3 24	3 27	2 40	4.55	3.76	2.84	2.94	2.49	3.13

[1] Single-family and multi-family dwellings, and related structures, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, churches, hospitals, nursing homes, schools, or other structures normally inhabited by humans or intended to be inhabited by humans on a daily or regular basis within 300 feet of the centerline of a transmission project of 230-kV or less

[2] Apparent property boundaries created by existing roads, highways, or railroad ROWs are not "double-counted" in the length of ROW parallel to apparent property boundaries criteria

[3] Defined as parks and recreational areas owned by a governmental body or an organized group, club, or church within 1,000 feet of the centerline of the project

[4] Only steel pipelines six inches and greater in diameter carrying hydrocarbons were quantified in the pipeline crossing and paralleling calculations

[5] As listed in the Chart Supplement South Central US (FAA 2019b formerly known as the Airport/Facility Directory South Central US) and FAA 2019a

[6] One-half mile, unobstructed Lengths of ROW within the visual foreground zone of interstates, US and state highway criteria are not "double-counted" in the length of ROW within the visual foreground zone of FM roads criteria

[7] One-half mile, unobstructed Lengths of ROW within the visual foreground zone of parks/recreational areas may overlap with the total length of ROW within the visual foreground zone of interstates, US and state highway criteria and/or with the total length of ROW within the visual foreground zone of FM roads criteria

[8] From Model C by Diamond et al. 2010

All length measurements are shown in miles unless noted otherwise

Table 4-1 Amended
Environmental and Land Use Data For Route Evaluation
Scenic Loop

Evaluation Criteria	Land Use	R1	S	T1	U1	V	W	X1	Y	Z1	AA1	BB	CC	DD	EE
1	Length of alternative route (miles)	4.76	6.73	5 93	6.36	6 60	6.25	5 34	5.23	4 53	4.82	4.73	5.23	4.64	4.99
2	Number of habitable structures[1] within 300 feet of the route centerline	7	25	34	6	31	25	40	39	30	30	24	54	32	31
3	Length of ROW using existing transmission line ROW	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Length of ROW parallel and adjacent to existing transmission line ROW	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Length of ROW parallel to other existing ROW (roadways, railways, canals, etc.)	0.85	2.57	0.51	1.20	2 60	2.60	0 79	3.01	1.60	1.85	1.45	1.94	1.88	2.13
6	Length of ROW parallel and adjacent to apparent property lines[2]	2.21	0.74	3.96	2.54	2 21	1.03	2.67	1.26	1.49	0.87	1.85	1.90	1.39	0.68
7	Sum of evaluation criteria 4, 5, and 6	3.06	3.31	4.46	3.74	4 82	3.63	3.46	4.27	3.09	2.72	3.30	3.84	3.27	2.81
8	Percent of evaluation criteria 4, 5, and 6	64%	49%	75%	59%	73%	58%	65%	82%	68%	56%	70%	73%	70%	56%
9	Length of ROW across parks/recreational areas[3]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Number of additional parks/recreational areas[3] within 1,000 feet of ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Length of ROW across cropland	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Length of ROW across pasture/rangeland	0.36	0.08	0.28	0.24	0.00	0.08	0.59	0.93	0.54	0.54	0.37	0.62	1.05	1.05
13	Length of ROW across land irrigated by traveling systems (rolling or pivot type)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Length of route across conservation easements and/or mitigation banks (Special Management Area)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Length of route across gravel pits, mines, or quarries	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Length of ROW parallel and adjacent to pipelines[4]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Number of pipeline crossings[4]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Number of transmission line crossings	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	Number of IH, US and state highway crossings	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Number of FM or RM road crossings	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Number of cemeteries within 1,000 feet of the ROW centerline and substation site	1	0	2	1	0	0	0	1	1	1	0	0	1	1
22	Number of FAA registered airports[5] with at least one runway more than 3,200 feet in length located within 20,000 feet of ROW centerline and substation site	1	1	1	1	1	1	1	1	1	1	1	1	1	1
23	Number of FAA registered airports[5] having no runway more than 3,200 feet in length located within 10,000 feet of ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Number of private airstrips within 10,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Number of heliports within 5,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Number of commercial AM radio transmitters within 10,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Number of FM radio transmitters, microwave towers, and other electronic installations within 2,000 feet of ROW centerline and substation site	0	1	1	0	1	1	0	1	1	1	0	1	1	1
28	Number of identifiable existing water wells within 200 feet of the ROW centerline and substation site	1	2	3	1	0	2	2	1	2	2	2	2	1	1
29	Number of oil and gas wells within 200 feet of the ROW centerline (including dry or plugged wells) and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aesthetics															
30	Estimated length of ROW within foreground visual zone[6] of IH, US and state highways	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	Estimated length of ROW within foreground visual zone[6] of FM/RM roads	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	Estimated length of ROW within foreground visual zone[6][7] of parks/recreational areas[3]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ecology															
33	Length of ROW across upland woodlands/brushlands	4.35	6.51	5.46	6.07	6 52	6 03	4.25	3 76	3.60	3.81	4.08	4.27	3.12	3.40
34	Length of ROW across bottomland/riparian woodlands	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	Length of ROW across NWI mapped wetlands	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	Length of ROW across critical habitat of federally listed endangered or threatened species	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	Area of ROW across golden-cheeked warbler modeled habitat designated as 3-Moderate High and 4-High Quality (acres)[8]	19 03	4.77	20.39	8.31	4 28	2 95	11.92	11.12	11.12	9.6	25.08	23.82	10 74	11 43
38	Area of ROW across golden-cheeked warbler modeled habitat designated as 1-Low and 2-Moderate Low Quality (acres)[8]	13.33	18.57	15.87	22.81	18.34	16 59	13.18	12 34	11.02	14.56	10 50	11.35	10 93	13.72
39	Length of ROW across open water (lakes, ponds)	0.00	0 00	0.00	0.00	0.00	0 00	0.00	0.00	0.00	0 00	0.00	0.00	0.00	0.00
40	Number of stream and river crossings	8	10	8	12	9	9	3	6	8	9	4	4	6	7
41	Length of ROW parallel (within 100 feet) to streams or rivers	0.15	0.11	0.10	0.08	0 24	0 24	0.00	0.07	0.10	0.17	0.26	0.15	0.00	0.08
42	Length of ROW across Edwards Aquifer Contributing Zone	4 76	6.73	5.93	6.36	6 60	6.25	5.34	5.23	4.53	4 82	4 73	5.23	4.64	4.99
43	Length of ROW across FEMA mapped 100-year floodplain	0.16	0.24	0.97	0.40	0 00	0.00	0.03	0.38	1.03	1.00	0.17	0 15	0 28	0.25
Cultural Resources															
44	Number of recorded cultural resource sites crossed by ROW	2	1	1	2	1	1	0	0	0	0	0	0	0	0
45	Number of additional recorded cultural resource sites within 1,000 feet of ROW centerline	12	1	12	12	0	1	2	2	2	2	0	0	2	2
46	Number of NRHP listed properties crossed by ROW	1	1	0	1	1	1	0	0	0	0	1	1	0	0
47	Number of additional NRHP listed properties within 1,000 feet of ROW centerline	0	0	1	0	0	0	1	2	1	1	0	0	1	1
48	Length of ROW across areas of high archeological site potential	2 65	4.07	3.72	4.77	2 85	2 75	1.44	2.26	3 01	3.35	2.33	2.80	2.34	2.52

[1] Single-family and multi-family dwellings, and related structures, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, churches, hospitals, nursing homes, schools, or other structures normally inhabited by humans or intended to be inhabited by humans on a daily or regular basis within 300 feet of the centerline of a transmission project of 230-kV or less

[2] Apparent property boundaries created by existing roads, highways, or railroad ROWs are not "double-counted" in the length of ROW parallel to apparent property boundaries criteria

[3] Defined as parks and recreational areas owned by a governmental body or an organized group, club, or church within 1,000 feet of the centerline of the project

[4] Only steel pipelines six inches and greater in diameter carrying hydrocarbons were quantified in the pipeline crossing and paralleling calculations

[5] As listed in the Chart Supplement South Central US (FAA 2019b formerly known as the Airport/Facility Directory South Central US) and FAA 2019a

[6] One-half mile, unobstructed Lengths of ROW within the visual foreground zone of interstates, US and state highway criteria are not "double-counted" in the length of ROW within the visual foreground zone of FM roads criteria

[7] One-half mile, unobstructed Lengths of ROW within the visual foreground zone of parks/recreational areas may overlap with the total length of ROW within the visual foreground zone of interstates, US and state highway criteria and/or with the total length of ROW within the visual foreground zone of FM roads criteria

[8] From Model C by Diamond et al 2010

All length measurements are shown in miles unless noted otherwise

Table 4-2 Amended
Environmental and Land Use Data For Segment Evaluation
Scenic Loop

Evaluation Criteria	Land Use	1	2	3	4	5	7	8	13	14	15	16	17	20	21	22	25	26a	27	28	29	30
1	Length of alternative route (miles)	0.60	0.43	0.03	0 12	0.25	0.33	0.58	0.60	0 31	0.87	0.69	1.22	0.59	0.46	0.41	0.50	1.34	1 51	0.56	0 70	0.49
2	Number of habitable structures[1] within 300 feet of the route centerline	0	3	0	2	1	1	4	12	12	3	6	20	10	0	4	2	2	0	0	3	1
3	Length of ROW using existing transmission line ROW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Length of ROW parallel and adjacent to existing transmission line ROW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Length of ROW parallel to other existing ROW (roadways, railways, canals, etc.)	0.60	0.00	0.03	0 12	0.18	0.33	0.30	0.08	0.23	0.00	0.51	0.00	0.49	0.00	0 00	0 00	0 00	0 40	0.00	0.00	0 09
6	Length of ROW parallel and adjacent to apparent property lines[2]	0.00	0.00	0.00	0.00	0 00	0 00	0.27	0 52	0.00	0.65	0.18	0.92	0.00	0.33	0.41	0.49	0 88	0 21	0.36	0.66	0.00
7	Sum of evaluation criteria 4, 5, and 6	0.60	0.00	0.03	0.12	0 18	0 33	0 58	0 60	0.23	0 65	0 69	0.92	0.49	0.33	0.41	0.49	0 88	0 60	0.36	0.66	0.09
8	Percent of evaluation criteria 4, 5, and 6	100%	0%	100%	100%	70%	100%	100%	100%	74%	75%	100%	75%	82%	72%	100%	97%	65%	40%	64%	94%	19%
9	Length of ROW across parks/recreational areas[3]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Number of additional parks/recreational areas[3] within 1,000 feet of ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Length of ROW across cropland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Length of ROW across pasture/rangeland	0 29	0.39	0.03	0.09	0.00	0.18	0.35	0.11	0.13	0 24	0.00	0 07	0.25	0 00	0.00	0.00	0.00	0.00	0.00	0 03	0.12
13	Length of ROW across land irrigated by traveling systems (rolling or pivot type)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Length of route across conservation easements and/or mitigation banks (Special Management Area)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Length of route across gravel pits, mines, or quarries	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Length of ROW parallel and adjacent to pipelines[4]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Number of pipeline crossings[4]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Number of transmission line crossings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	Number of IH, US and state highway crossings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Number of FM or RM road crossings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Number of cemeteries within 1,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
22	Number of FAA registered airports[5] with at least one runway more than 3,200 feet in length located within 20,000 feet of ROW centerline and substation site	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1
23	Number of FAA registered airports[5] having no runway more than 3,200 feet in length located within 10,000 feet of ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Number of private airstrips within 10,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Number of heliports within 5,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Number of commercial AM radio transmitters within 10,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Number of FM radio transmitters, microwave towers, and other electronic installations within 2,000 feet of ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0
28	Number of identifiable existing water wells within 200 feet of the ROW centerline and substation site	2	0	0	0	1	0	0	2	1	0	0	1	0	0	0	1	1	0	0	2	0
29	Number of oil and gas wells within 200 feet of the ROW centerline (including dry or plugged wells) and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aesthetics																						
30	Estimated length of ROW within foreground visual zone[6] of IH, US and state highways	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	Estimated length of ROW within foreground visual zone[6] of FM/RM roads	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	Estimated length of ROW within foreground visual zone[6][7] of parks/recreational areas[3]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ecology																						
33	Length of ROW across upland woodlands/brushlands	0.30	0.01	0.00	0.02	0.23	0.14	0.21	0.47	0 10	0.60	0.62	1.13	0.30	0.46	0.39	0.50	1.33	1.51	0.35	0.54	0.37
34	Length of ROW across bottomland/riparian woodlands	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	Length of ROW across NWI mapped wetlands	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	Length of ROW across critical habitat of federally listed endangered or threatened species	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	Area of ROW across golden-cheeked warbler modeled habitat designated as 3 Moderate High and 4-High Quality (acres)[8]	0	0	0	0	0	0	0	1.59	0	0.71	0	0.45	0	1.90	1 22	3 54	2.17	1.08	0.72	0	0
38	Area of ROW across golden-cheeked warbler modeled habitat designated as 1-Low and 2-Moderate Low Quality (acres)[8]	0	0	0	0	0.62	1.71	0	2.36	0.54	3.62	2.00	5.55	2 56	3.04	1.22	0.72	4.53	1.36	2.04	0.80	0.08
39	Length of ROW across open water (lakes, ponds)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	Number of stream and river crossings	2	0	0	0	0	1	1	0	0	1	0	0	1	1	0	0	5	4	0	0	0
41	Length of ROW parallel (within 100 feet) to streams or rivers	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.11	0.00	0.00	0.00	0.07	0.00	0.00	0.00
42	Length of ROW across Edwards Aquifer Contributing Zone	0.60	0 43	0.03	0.12	0.25	0.33	0.58	0.60	0.31	0 87	0 69	1 22	0 59	0.46	0 41	0.50	1.34	1.51	0.56	0.70	0.49
43	Length of ROW across FEMA mapped 100-year floodplain	0.46	0.27	0.00	0.00	0.00	0.02	0.07	0 00	0 00	0.04	0 00	0.00	0.10	0.13	0.00	0.00	0.11	0.00	0.00	0.00	0.00
Cultural Resources																						
44	Number of recorded cultural resource sites crossed by ROW	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0
45	Number of additional recorded cultural resource sites within 1,000 feet of ROW centerline	0	0	0	0	0	0	0	0	0	10	0	0	0	0	3	0	5	0	0	0	2
46	Number of NRHP listed properties crossed by ROW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47	Number of additional NRHP listed properties within 1,000 feet of ROW centerline	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1
48	Length of ROW across areas of high archeological site potential	0.60	0 39	0 03	0.05	0	0.26	0.20	0.29	0.08	0.65	0	0 17	0 59	0.46	0 26	0 18	1.01	1.07	0.18	0 00	0.00

[1] Single-family and multi-family dwellings, and related structures, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, churches, hospitals, nursing homes, schools, or other structures normally inhabited by humans or intended to be inhabited by humans on a daily or regular basis within 300 feet of the centerline of a transmission project of 230-kV or less

[2] Apparent property boundaries created by existing roads, highways, or railroad ROWs are not "double-counted" in the length of ROW parallel to apparent property boundaries criteria

[3] Defined as parks and recreational areas owned by a governmental body or an organized group, club, or church within 1,000 feet of the centerline of the project

[4] Only steel pipelines six inches and greater in diameter carrying hydrocarbons were quantified in the pipeline crossing and paralleling calculations

[5] As listed in the Chart Supplement South Central US (FAA 2019b formerly known as the Airport/Facility Directory South Central US) and FAA 2019a

[6] One-half mile, unobstructed. Lengths of ROW within the visual foreground zone of interstates, US and state highway criteria are not "double-counted" in the length of ROW within the visual foreground zone of FM roads criteria

[7] One-half mile, unobstructed Lengths of ROW within the visual foreground zone of parks/recreational areas may overlap with the total length of ROW within the visual foreground zone of interstates, US and state highway criteria and/or with the total length of ROW within the visual foreground zone of FM roads criteria

[8] From Model C by Diamond et al 2010

All length measurements are shown in miles unless noted otherwise

CPS Energy
Application Amendment
December 22, 2020
Attachment 2

Table 4-2 Amended
Environmental and Land Use Data For Segment Evaluation
Scenic Loop

Evaluation Criteria	Land Use	31	32	33	34	35	36	37	38	39	40	41	42a	43	44	45	46	46a	46b	47	49a	50
1	Length of alternative route (miles)	0.59	0.87	0.35	0.04	0.52	0.47	0.56	0.45	0.87	2.57	0.46	0.91	2.05	1 98	2.59	0.79	0.86	0.99	0.19	1.35	0 04
2	Number of habitable structures[1] within 300 feet of the route centerline	2	24	0	0	2	1	2	1	1	7	0	0	2	0	0	1	0	1	0	0	0
3	Length of ROW using existing transmission line ROW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Length of ROW parallel and adjacent to existing transmission line ROW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Length of ROW parallel to other existing ROW (roadways, railways, canals, etc.)	0.00	0 00	0.35	0.00	0.28	0 42	0.00	0.00	0.00	0.88	0.00	0.00	0.85	1.39	1.20	0.00	0.00	0.09	0.00	0 34	0.00
6	Length of ROW parallel and adjacent to apparent property lines[2]	0.26	0.87	0.00	0.00	0.00	0.00	0.38	0.00	0.87	1.26	0.24	0.34	0.65	0.00	0.00	0.52	0.42	0.73	0.19	0 02	0.04
7	Sum of evaluation criteria 4, 5, and 6	0.26	0.87	0.35	0.00	0.28	0.42	0.38	0	0.87	2.13	0.24	0.34	1.50	1.39	1.20	0.52	0.42	0.82	0.19	0.36	0.04
8	Percent of evaluation criteria 4, 5, and 6	43%	100%	100%	0%	54%	89%	68%	0%	100%	83%	52%	37%	73%	70%	46%	65%	49%	83%	100%	27%	100%
9	Length of ROW across parks/recreational areas[3]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Number of additional parks/recreational areas[3] within 1,000 feet of ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Length of ROW across cropland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Length of ROW across pasture/rangeland	0 16	0 00	0.00	0.00	0 40	0 00	0 00	0 00	0.00	0.02	0 14	0.04	0.12	0.00	0 00	0.00	0 00	0.00	0.00	0 00	0.00
13	Length of ROW across land irrigated by traveling systems (rolling or pivot type)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Length of route across conservation easements and/or mitigation banks (Special Management Area)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Length of route across gravel pits, mines, or quarries	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Length of ROW parallel and adjacent to pipelines[4]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Number of pipeline crossings[4]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Number of transmission line crossings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	Number of IH, US and state highway crossings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Number of FM or RM road crossings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Number of cemeteries within 1,000 feet of the ROW centerline and substation site	1	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
22	Number of FAA registered airports[5] with at least one runway more than 3,200 feet in length located within 20,000 feet of ROW centerline and substation site	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	0	1	1
23	Number of FAA registered airports[5] having no runway more than 3,200 feet in length located within 10,000 feet of ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Number of private airstrips within 10,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Number of heliports within 5,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Number of commercial AM radio transmitters within 10,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Number of FM radio transmitters, microwave towers, and other electronic installations within 2,000 feet of ROW centerline and substation site	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	Number of identifiable existing water wells within 200 feet of the ROW centerline and substation site	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
29	Number of oil and gas wells within 200 feet of the ROW centerline (including dry or plugged wells) and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aesthetics																						
30	Estimated length of ROW within foreground visual zone[6] of IH, US and state highways	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	Estimated length of ROW within foreground visual zone[6] of FM/RM roads	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	Estimated length of ROW within foreground visual zone[6][7] of parks/recreational areas[3]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ecology																						
33	Length of ROW across upland woodlands/brushlands	0.42	0 86	0.35	0.02	0.06	0.36	0.55	0 42	0.87	2.46	0.31	0.87	1.93	1.98	2 59	0.79	0 86	0.99	0.19	1.26	0 04
34	Length of ROW across bottomland/riparian woodlands	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	Length of ROW across NWI mapped wetlands	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	Length of ROW across critical habitat of federally listed endangered or threatened species	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	Area of ROW across golden-cheeked warbler modeled habitat designated as 3 Moderate High and 4-High Quality (acres)[8]	0.52	3 99	0	0	0	0	3.69	1 26	0	11.12	1.27	1.65	14.89	1 38	3.58	4 23	6 43	3 22	0.08	3.92	0
38	Area of ROW across golden-cheeked warbler modeled habitat designated as 1-Low and 2-Moderate Low Quality (acres)[8]	3.38	2.21	0	0	0.16	2.71	1.40	1.03	2.82	6.90	0.90	1.14	4.12	5 66	9.25	3 51	2 74	1 89	0 89	4.67	0.23
39	Length of ROW across open water (lakes, ponds)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.003	0	0	0	0	0	0
40	Number of stream and river crossings	1	0	0	0	0	2	1	0	2	3	1	3	2	3	4	1	1	1	0	2	0
41	Length of ROW parallel (within 100 feet) to streams or rivers	0.00	0.00	0 00	0.00	0.00	0.00	0.00	0 04	0.00	0.07	0.00	0.10	0.11	0.17	0 04	0.00	0.00	0.00	0.00	0.08	0
42	Length of ROW across Edwards Aquifer Contributing Zone	0 59	0.87	0.35	0 04	0.52	0.47	0.56	0 45	0.87	2.57	0.46	0.91	2.05	1.98	2 59	0.79	0.86	0.99	0.19	1.35	0.04
43	Length of ROW across FEMA mapped 100-year floodplain	0.00	0.00	0.00	0.00	0.00	0.15	0.05	0.00	0.00	0.13	0.00	0.75	0.00	0.00	0.24	0.00	0.00	0 03	0.00	0.00	0
Cultural Resources																						
44	Number of recorded cultural resource sites crossed by ROW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45	Number of additional recorded cultural resource sites within 1,000 feet of ROW centerline	0	0	2	2	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0
46	Number of NRHP listed properties crossed by ROW	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0
47	Number of additional NRHP listed properties within 1,000 feet of ROW centerline	2	0	1	0	1	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0
48	Length of ROW across areas of high archeological site potential	0.47	0 51	0.00	0.00	0.19	0.47	0.45	0 42	0.31	0.72	0.05	0.91	0.54	0.71	2.17	0.52	0.36	0.38	0.19	0.57	0.00

[1] Single-family and multi-family dwellings, and related structures, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, churches, hospitals, nursing homes, schools, or other structures normally inhabited by humans or intended to be inhabited by humans on a daily or regular basis within 300 feet of the centerline of a transmission project of 230-kV or less

[2] Apparent property boundaries created by existing roads, highways, or railroad ROWs are not "double-counted" in the length of ROW parallel to apparent property boundaries criteria

[3] Defined as parks and recreational areas owned by a governmental body or an organized group, club, or church within 1,000 feet of the centerline of the project

[4] Only steel pipelines six inches and greater in diameter carrying hydrocarbons were quantified in the pipeline crossing and paralleling calculations

[5] As listed in the Chart Supplement South Central US (FAA 2019b formerly known as the Airport/Facility Directory South Central US) and FAA 2019a

[6] One-half mile, unobstructed Lengths of ROW within the visual foreground zone of interstates, US and state highway criteria are not "double-counted" in the length of ROW within the visual foreground zone of FM roads criteria

[7] One-half mile, unobstructed. Lengths of ROW within the visual foreground zone of parks/recreational areas may overlap with the total length of ROW within the visual foreground zone of interstates, US and state highway criteria and/or with the total length of ROW within the visual foreground zone of FM roads criteria

[8] From Model C by Diamond et al. 2010

All length measurements are shown in miles unless noted otherwise

Table 4-2 Amended
Environmental and Land Use Data For Segment Evaluation
Scenic Loop

Evaluation Criteria		51	52	53	54	55	56	57
Land Use								
1	Length of alternative route (miles)	0.15	0.10	0 10	0.70	1.47	1.13	0.62
2	Number of habitable structures[1] within 300 feet of the route centerline	0	0	0	18	19	13	9
3	Length of ROW using existing transmission line ROW	0	0	0	0	0	0	0
4	Length of ROW parallel and adjacent to existing transmission line ROW	0	0	0	0	0	0	0
5	Length of ROW parallel to other existing ROW (roadways, railways, canals, etc.)	0.15	0.00	0 00	0.60	0.00	0 00	0 31
6	Length of ROW parallel and adjacent to apparent property lines[2]	0.00	0.00	0 10	0.00	1.19	0 00	0.31
7	Sum of evaluation criteria 4, 5, and 6	0.15	0 00	0.10	0.60	1.19	0.00	0.62
8	Percent of evaluation criteria 4, 5, and 6	100%	0%	100%	86%	81%	0%	100%
9	Length of ROW across parks/recreational areas[3]	0	0	0	0	0	0	0
10	Number of additional parks/recreational areas[3] within 1,000 feet of ROW centerline and substation site	0	0	0	0	0	0	0
11	Length of ROW across cropland	0	0	0	0	0	0	0
12	Length of ROW across pasture/rangeland	0 00	0.00	0.00	0.25	0 00	0.08	0.00
13	Length of ROW across land irrigated by traveling systems (rolling or pivot type)	0	0	0	0	0	0	0
14	Length of route across conservation easements and/or mitigation banks (Special Management Area)	0	0	0	0	0	0	0
15	Length of route across gravel pits, mines, or quarries	0	0	0	0	0	0	0
16	Length of ROW parallel and adjacent to pipelines[4]	0	0	0	0	0	0	0
17	Number of pipeline crossings[4]	0	0	0	0	0	0	0
18	Number of transmission line crossings	0	0	0	0	0	0	0
19	Number of IH, US and state highway crossings	0	0	0	0	0	0	0
20	Number of FM or RM road crossings	0	0	0	0	0	0	0
21	Number of cemeteries within 1,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0
22	Number of FAA registered airports[5] with at least one runway more than 3,200 feet in length located within 20,000 feet of ROW centerline and substation site	0	0	0	1	0	0	0
23	Number of FAA registered airports[5] having no runway more than 3,200 feet in length located within 10,000 feet of ROW centerline and substation site	0	0	0	0	0	0	0
24	Number of private airstrips within 10,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0
25	Number of heliports within 5,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0
26	Number of commercial AM radio transmitters within 10,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0
27	Number of FM radio transmitters, microwave towers, and other electronic installations within 2,000 feet of ROW centerline and substation site	0	0	0	0	1	1	0
28	Number of identifiable existing water wells within 200 feet of the ROW centerline and substation site	0	0	0	1	0	2	0
29	Number of oil and gas wells within 200 feet of the ROW centerline (including dry or plugged wells) and substation site	0	0	0	0	0	0	0
Aesthetics								
30	Estimated length of ROW within foreground visual zone[6] of IH, US and state highways	0	0	0	0	0	0	0
31	Estimated length of ROW within foreground visual zone[6] of FM/RM roads	0	0	0	0	0	0	0
32	Estimated length of ROW within foreground visual zone[6][7] of parks/recreational areas[3]	0	0	0	0	0	0	0
Ecology								
33	Length of ROW across upland woodlands/brushlands	0.15	0.10	0.10	0.22	1.47	0.98	0.61
34	Length of ROW across bottomland/riparian woodlands	0	0	0	0.00	0.00	0 00	0 00
35	Length of ROW across NWI mapped wetlands	0	0	0	0	0	0	0
36	Length of ROW across critical habitat of federally listed endangered or threatened species	0	0	0	0	0	0	0
37	Area of ROW across golden-cheeked warbler modeled habitat designated as 3 Moderate High and 4-High Quality (acres)[8]	0	0.31	0.38	0	1.40	0 06	0 05
38	Area of ROW across golden-cheeked warbler modeled habitat designated as 1-Low and 2-Moderate Low Quality (acres)[8]	0.10	1.02	0.95	0.29	4.90	3 15	2 91
39	Length of ROW across open water (lakes, ponds)	0	0	0	0	0	0	0
40	Number of stream and river crossings	0	0	0	0	2	2	0
41	Length of ROW parallel (within 100 feet) to streams or rivers	0	0	0	0	0	0	0
42	Length of ROW across Edwards Aquifer Contributing Zone	0.15	0.10	0.10	0.70	1.47	1 13	0 62
43	Length of ROW across FEMA mapped 100-year floodplain	0	0	0	0	0	0	0
Cultural Resources								
44	Number of recorded cultural resource sites crossed by ROW	0	0	0	0	1	1	0
45	Number of additional recorded cultural resource sites within 1,000 feet of ROW centerline	0	0	0	0	0	1	0
46	Number of NRHP listed properties crossed by ROW	0	0	0	0	0	0	0
47	Number of additional NRHP listed properties within 1,000 feet of ROW centerline	0	0	0	0	0	0	0
48	Length of ROW across areas of high archeological site potential	0 15	0.10	0 10	0 28	0 58	0.48	0.20

[1] Single-family and multi-family dwellings, and related structures, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, churches, hospitals, nursing homes, schools, or other structures normally inhabited by humans or intended to be inhabited by humans on a daily or regular basis within 300 feet of the centerline of a transmission project of 230-kV or less

[2] Apparent property boundaries created by existing roads, highways, or railroad ROWs are not "double-counted" in the length of ROW parallel to apparent property boundaries criteria

[3] Defined as parks and recreational areas owned by a governmental body or an organized group, club, or church within 1,000 feet of the centerline of the project

[4] Only steel pipelines six inches and greater in diameter carrying hydrocarbons were quantified in the pipeline crossing and paralleling calculations

[5] As listed in the Chart Supplement South Central US (FAA 2019b formerly known as the Airport/Facility Directory South Central US) and FAA 2019a

[6] One-half mile, unobstructed Lengths of ROW within the visual foreground zone of interstates, US and state highway criteria are not "double-counted" in the length of ROW within the visual foreground zone of FM roads criteria

[7] One-half mile, unobstructed Lengths of ROW within the visual foreground zone of parks/recreational areas may overlap with the total length of ROW within the visual foreground zone of interstates, US and state highway criteria and/or with the total length of ROW within the visual foreground zone of FM roads criteria

[8] From Model C by Diamond et al 2010

All length measurements are shown in miles unless noted otherwise

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4.0 ENVIRONMENTAL IMPACTS OF THE ALTERNATIVE ROUTES – AMENDED

This revision of Section 4.0 **entirely** replaces Section 4.0 in the environmental assessment originally filed with the application.

4.0 ENVIRONMENTAL IMPACTS OF THE ALTERNATIVE ROUTES - AMENDED

Potential impacts of the project that could occur from, and are unique to, the construction and operation of a transmission line are discussed separately in this section of the EA. Evaluation of the potential impacts of the alternative routes identified in Section 3.0 was conducted by tabulating the data for each of the 48 evaluation criteria in Table 2-2 for each alternative routing segment and each primary alternative route. The data tabulation for land use and environmental criteria for each alternative route are presented in Table 4-1 Amended and for each segment in Table 4-2 Amended.

4.1 Impacts on Natural Resources/Environmental Integrity

4.1.1 Impacts on Physiography and Geology

Construction of the proposed transmission line is not anticipated to have any significant adverse effects on the physiographic or geologic features and resources of the area. Erection of the pole structures proposed for the project will require the excavation and/or minor disturbance of small quantities of near-surface materials, but should have no measurable impacts on the geologic resources or features along any of the alternative routes.

None of the alternative routes occur near the locations of the three documented caves within the study area, with the closest cave (Some Monk Chanted Evening Cave) being approximately 0.73 mile from Segment 56 in Alternative Routes O, S, and W. No impacts to these features are anticipated to occur from the project. Due to the potential of karst occurrence generally within the study area a site-specific karst survey will be conducted for the PUC approved route in accordance with the USFWS, Section 10(a)(1)(A) Scientific Permit Requirements for Conducting Presence/Absence Surveys for Endangered Karst Invertebrates in Central Texas. Surveys will include a review of available existing information on regional caves, soils, historical land use practices, topography, and geology of the project area and vicinity, a pedestrian survey to identify karst features, and the description and assessment of identified features. The pedestrian survey will be conducted by walking transects, no more than 50 feet apart. The scope of this survey will not include an evaluation of the structural development or subgrade extent of the biological content (i.e., presence/absence of endangered cave invertebrate species) of potential karst features. Surface karst features may indicate the potential presence of suitable habitat for federally listed, endangered cave invertebrates, and a Section 10(a)(1)(A) permit would be required to further investigate a feature to determine the presence of suitable habitat.

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Table 4-1 Amended
Environmental and Land Use Data For Route Evaluation
Scenic Loop

Evaluation Criteria		A	B1	C1	D1	E	F1	G1	H	I1	J1	K	L	M1	N1	O	P	Q1
Land Use																		
1	Length of alternative route (miles)	6.66	6.19	5.77	5.22	6.62	5.66	6.20	6.32	5.03	5 46	5 29	6.91	5.85	5.33	6.83	4.89	5.56
2	Number of habitable structures[1] within 300 feet of the route centerline	69	61	48	43	60	12	52	61	43	41	36	35	43	11	29	12	6
3	Length of ROW using existing transmission line ROW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Length of ROW parallel and adjacent to existing transmission line ROW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Length of ROW parallel to other existing ROW (roadways, railways, canals, etc)	1.79	1.00	2.43	2 13	2.45	1.48	1.35	1.89	2.01	2 26	1.86	2 21	2.76	1 15	2.91	0 85	1.39
6	Length of ROW parallel and adjacent to apparent property lines[2]	3.71	3.19	1.39	1.49	2 54	2 49	1.96	3.20	1.58	0 78	1.85	2.18	1.49	2.49	1.30	2.62	2.44
7	Sum of evaluation criteria 4, 5, and 6	5.50	4.19	3.82	3.62	4 99	3 97	3.31	5.09	3.59	3.04	3.71	4.38	4.25	3.64	4.21	3.47	3.83
8	Percent of evaluation criteria 4, 5, and 6	83%	68%	66%	69%	75%	70%	53%	80%	71%	56%	70%	63%	73%	68%	62%	71%	69%
9	Length of ROW across parks/recreational areas[3]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Number of additional parks/recreational areas[3] within 1,000 feet of ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Length of ROW across cropland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Length of ROW across pasture/rangeland	0.61	0.76	1.69	0.77	0.69	0.89	0 65	0 50	0.67	0.67	0.51	0.38	1 09	0.71	0.42	0 36	0.24
13	Length of ROW across land irrigated by traveling systems (rolling or pivot type)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Length of route across conservation easements and/or mitigation banks (Special Management Area)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Length of route across gravel pits, mines, or quarries	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Length of ROW parallel and adjacent to pipelines[4]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Number of pipeline crossings[4]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Number of transmission line crossings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	Number of IH, US and state highway crossings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Number of FM or RM road crossings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Number of cemeteries within 1,000 feet of the ROW centerline and substation site	0	1	1	1	0	1	1	0	1	1	0	0	1	1	0	1	1
22	Number of FAA registered airports[5] with at least one runway more than 3,200 feet in length located within 20,000 feet of ROW centerline and substation site	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
23	Number of FAA registered airports[5] having no runway more than 3,200 feet in length located within 10,000 feet of ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Number of private airstrips within 10,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Number of heliports within 5,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Number of commercial AM radio transmitters within 10,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Number of FM radio transmitters, microwave towers, and other electronic installations within 2,000 feet of ROW centerline and substation site	0	0	1	1	0	0	0	0	1	1	0	0	1	0	1	0	0
28	Number of identifiable existing water wells within 200 feet of the ROW centerline and substation site	6	4	2	3	3	1	4	5	3	3	3	3	4	1	2	1	1
29	Number of oil and gas wells within 200 feet of the ROW centerline (including dry or plugged wells) and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aesthetics																		
30	Estimated length of ROW within foreground visual zone[6] of IH, US and state highways	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	Estimated length of ROW within foreground visual zone[6] of FM/RM roads	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	Estimated length of ROW within foreground visual zone[6][7] of parks/recreational areas[3]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ecology																		
33	Length of ROW across upland woodlands/brushlands	5.27	5.06	3 48	3.94	5.24	4.70	5.10	5.03	3.86	4.20	4.40	6.14	4.24	4 56	6 24	4.42	5.27
34	Length of ROW across bottomland/riparian woodlands	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	Length of ROW across NWI mapped wetlands	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	Length of ROW across critical habitat of federally listed endangered or threatened species	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	Area of ROW across golden-cheeked warbler modeled habitat designated as 3-Moderate High and 4-High Quality (acres)[8]	13 88	13.68	10.74	11.12	12.29	19.03	12 78	12.29	8.92	11.81	25.08	14.38	11 12	19 03	2.95	25.11	5.52
38	Area of ROW across golden-cheeked warbler modeled habitat designated as 1-Low and 2-Moderate Low Quality (acres)[8]	18 21	17.55	12.08	12.17	15.74	15.04	18.59	16.46	12.93	14 95	11.65	21 28	12.17	13.33	16.59	12.04	17 59
39	Length of ROW across open water (lakes, ponds)	0.00	0 00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0 00	0.00	0.00	0.00	0.00	0.00
40	Number of stream and river crossings	3	6	6	8	3	10	7	3	8	9	4	8	10	9	10	4	11
41	Length of ROW parallel (within 100 feet) to streams or rivers	0.07	0 10	0.00	0.10	0.07	0 15	0.17	0.07	0.10	0.17	0.26	0.20	0 10	0.15	0.24	0.15	0.21
42	Length of ROW across Edwards Aquifer Contributing Zone	6.66	6.19	5.77	5 22	6.62	5.66	6.20	6.32	5.03	5.46	5.29	6 91	5.85	5 33	6.83	4.89	5.56
43	Length of ROW across FEMA mapped 100-year floodplain	0 13	0.78	0.55	1.03	0.13	0 25	0.75	0.13	1.03	1 00	0 17	0.42	1.49	0 23	0.07	0.09	0.16
Cultural Resources																		
44	Number of recorded cultural resource sites crossed by ROW	0	0	0	0	0	2	0	0	0	0	0	0	0	2	1	1	2
45	Number of additional recorded cultural resource sites within 1,000 feet of ROW centerline	0	2	2	2	2	12	2	0	2	2	0	0	2	12	1	10	12
46	Number of NRHP listed properties crossed by ROW	0	0	0	0	0	1	0	0	0	0	1	1	0	1	1	1	1
47	Number of additional NRHP listed properties within 1,000 feet of ROW centerline	1	2	1	1	1	0	2	1	1	1	0	0	1	0	0	0	0
48	Length of ROW across areas of high archeological site potential	1.73	2.94	2.89	3.14	1.49	3 10	2.84	1.44	3.24	3 27	2.40	4.55	3.76	2.84	2.94	2.49	3.13

[1] Single-family and multi-family dwellings, and related structures, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, churches, hospitals, nursing homes, schools, or other structures normally inhabited by humans or intended to be inhabited by humans on a daily or regular basis within 300 feet of the centerline of a transmission project of 230-kV or less

[2] Apparent property boundaries created by existing roads, highways, or railroad ROWs are not "double-counted" in the length of ROW parallel to apparent property boundaries criteria

[3] Defined as parks and recreational areas owned by a governmental body or an organized group, club, or church within 1,000 feet of the centerline of the project

[4] Only steel pipelines six inches and greater in diameter carrying hydrocarbons were quantified in the pipeline crossing and paralleling calculations

[5] As listed in the Chart Supplement South Central US (FAA 2019b formerly known as the Airport/Facility Directory South Central US) and FAA 2019a

[6] One-half mile, unobstructed Lengths of ROW within the visual foreground zone of interstates, US and state highway criteria are not "double-counted" in the length of ROW within the visual foreground zone of FM roads criteria

[7] One-half mile, unobstructed Lengths of ROW within the visual foreground zone of parks/recreational areas may overlap with the total length of ROW within the visual foreground zone of interstates, US and state highway criteria and/or with the total length of ROW within the visual foreground zone of FM roads criteria

[8] From Model C by Diamond et al 2010

All length measurements are shown in miles unless noted otherwise

Table 4-1 Amended
Environmental and Land Use Data For Route Evaluation
Scenic Loop

Evaluation Criteria		R1	S	T1	U1	V	W	X1	Y	Z1	AA1	BB	CC	DD	EE
Land Use															
1	Length of alternative route (miles)	4.76	6.73	5.93	6 36	6.60	6.25	5.34	5.23	4.53	4.82	4.73	5.23	4.64	4.99
2	Number of habitable structures[1] within 300 feet of the route centerline	7	25	34	6	31	25	40	39	30	30	24	54	32	31
3	Length of ROW using existing transmission line ROW	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Length of ROW parallel and adjacent to existing transmission line ROW	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Length of ROW parallel to other existing ROW (roadways, railways, canals, etc)	0.85	2.57	0.51	1 20	2 60	2.60	0.79	3.01	1.60	1.85	1.45	1.94	1.88	2.13
6	Length of ROW parallel and adjacent to apparent property lines[2]	2.21	0.74	3.96	2.54	2 21	1.03	2 67	1.26	1.49	0.87	1 85	1.90	1 39	0 68
7	Sum of evaluation criteria 4, 5, and 6	3.06	3.31	4 46	3.74	4.82	3.63	3.46	4.27	3.09	2.72	3 30	3.84	3.27	2.81
8	Percent of evaluation criteria 4, 5, and 6	64%	49%	75%	59%	73%	58%	65%	82%	68%	56%	70%	73%	70%	56%
9	Length of ROW across parks/recreational areas[3]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Number of additional parks/recreational areas[3] within 1,000 feet of ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Length of ROW across cropland	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Length of ROW across pasture/rangeland	0.36	0.08	0.28	0.24	0.00	0.08	0.59	0 93	0 54	0.54	0.37	0 62	1.05	1.05
13	Length of ROW across land irrigated by traveling systems (rolling or pivot type)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Length of route across conservation easements and/or mitigation banks (Special Management Area)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Length of route across gravel pits, mines, or quarries	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Length of ROW parallel and adjacent to pipelines[4]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Number of pipeline crossings[4]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Number of transmission line crossings	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	Number of IH, US and state highway crossings	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Number of FM or RM road crossings	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Number of cemeteries within 1,000 feet of the ROW centerline and substation site	1	0	2	1	0	0	0	1	1	1	0	0	1	1
22	Number of FAA registered airports[5] with at least one runway more than 3,200 feet in length located within 20,000 feet of ROW centerline and substation site	1	1	1	1	1	1	1	1	1	1	1	1	1	1
23	Number of FAA registered airports[5] having no runway more than 3,200 feet in length located within 10,000 feet of ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Number of private airstrips within 10,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Number of heliports within 5,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Number of commercial AM radio transmitters within 10,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Number of FM radio transmitters, microwave towers, and other electronic installations within 2,000 feet of ROW centerline and substation site	0	1	1	0	1	1	0	1	1	1	0	1	1	1
28	Number of identifiable existing water wells within 200 feet of the ROW centerline and substation site	1	2	3	1	0	2	2	1	2	2	2	2	1	1
29	Number of oil and gas wells within 200 feet of the ROW centerline (including dry or plugged wells) and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aesthetics															
30	Estimated length of ROW within foreground visual zone[6] of IH, US and state highways	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	Estimated length of ROW within foreground visual zone[6] of FM/RM roads	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	Estimated length of ROW within foreground visual zone[6][7] of parks/recreational areas[3]	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ecology															
33	Length of ROW across upland woodlands/brushlands	4 35	6.51	5.46	6.07	6 52	6.03	4.25	3.76	3.60	3.81	4.08	4.27	3.12	3 40
34	Length of ROW across bottomland/riparian woodlands	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	Length of ROW across NWI mapped wetlands	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	Length of ROW across critical habitat of federally listed endangered or threatened species	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	Area of ROW across golden-cheeked warbler modeled habitat designated as 3-Moderate High and 4-High Quality (acres)[8]	19 03	4.77	20.39	8.31	4.28	2.95	11.92	11.12	11.12	9.6	25.08	23.82	10.74	11.43
38	Area of ROW across golden-cheeked warbler modeled habitat designated as 1-Low and 2-Moderate Low Quality (acres)[8]	13.33	18.57	15.87	22.81	18.34	16.59	13.18	12 34	11.02	14.56	10.50	11.35	10 93	13.72
39	Length of ROW across open water (lakes, ponds)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0 00	0.00	0.00	0.00	0.00	0 00	0.00
40	Number of stream and river crossings	8	10	8	12	9	9	3	6	8	9	4	4	6	7
41	Length of ROW parallel (within 100 feet) to streams or rivers	0.15	0.11	0.10	0 08	0.24	0.24	0.00	0.07	0 10	0.17	0.26	0.15	0 00	0.08
42	Length of ROW across Edwards Aquifer Contributing Zone	4.76	6.73	5.93	6.36	6 60	6.25	5.34	5.23	4.53	4.82	4.73	5.23	4 64	4 99
43	Length of ROW across FEMA mapped 100-year floodplain	0.16	0.24	0 97	0 40	0 00	0.00	0.03	0.38	1.03	1 00	0.17	0.15	0 28	0.25
Cultural Resources															
44	Number of recorded cultural resource sites crossed by ROW	2	1	1	2	1	1	0	0	0	0	0	0	0	0
45	Number of additional recorded cultural resource sites within 1,000 feet of ROW centerline	12	1	12	12	0	1	2	2	2	2	0	0	2	2
46	Number of NRHP listed properties crossed by ROW	1	1	0	1	1	1	0	0	0	0	1	1	0	0
47	Number of additional NRHP listed properties within 1,000 feet of ROW centerline	0	0	1	0	0	0	1	2	1	1	0	0	1	1
48	Length of ROW across areas of high archeological site potential	2.65	4.07	3.72	4.77	2.85	2.75	1 44	2 26	3 01	3.35	2 33	2.80	2.34	2 52

[1] Single-family and multi-family dwellings, and related structures, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, churches, hospitals, nursing homes, schools, or other structures normally inhabited by humans or intended to be inhabited by humans on a daily or regular basis within 300 feet of the centerline of a transmission project of 230-kV or less

[2] Apparent property boundaries created by existing roads, highways, or railroad ROWs are not "double-counted" in the length of ROW parallel to apparent property boundaries criteria

[3] Defined as parks and recreational areas owned by a governmental body or an organized group, club, or church within 1,000 feet of the centerline of the project

[4] Only steel pipelines six inches and greater in diameter carrying hydrocarbons were quantified in the pipeline crossing and paralleling calculations

[5] As listed in the Chart Supplement South Central US (FAA 2019b formerly known as the Airport/Facility Directory South Central US) and FAA 2019a

[6] One-half mile, unobstructed Lengths of ROW within the visual foreground zone of interstates, US and state highway criteria are not "double-counted" in the length of ROW within the visual foreground zone of FM roads criteria

[7] One-half mile, unobstructed Lengths of ROW within the visual foreground zone of parks/recreational areas may overlap with the total length of ROW within the visual foreground zone of interstates, US and state highway criteria and/or with the total length of ROW within the visual foreground zone of FM roads criteria

[8] From Model C by Diamond et al. 2010

All length measurements are shown in miles unless noted otherwise

Table 4-2 Amended
Environmental and Land Use Data For Segment Evaluation
Scenic Loop

Evaluation Criteria		1	2	3	4	5	7	8	13	14	15	16	17	20	21	22	25	26a	27	28	29	30
Land Use																						
1	Length of alternative route (miles)	0.60	0.43	0.03	0.12	0.25	0.33	0.58	0.60	0.31	0.87	0.69	1.22	0.59	0.46	0 41	0.50	1.34	1 51	0 56	0.70	0.49
2	Number of habitable structures[1] within 300 feet of the route centerline	0	3	0	2	1	1	4	12	12	3	6	20	10	0	4	2	2	0	0	3	1
3	Length of ROW using existing transmission line ROW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Length of ROW parallel and adjacent to existing transmission line ROW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Length of ROW parallel to other existing ROW (roadways, railways, canals, etc.)	0.60	0 00	0.03	0.12	0.18	0.33	0 30	0 08	0.23	0.00	0.51	0.00	0 49	0.00	0.00	0 00	0 00	0.40	0.00	0.00	0.09
6	Length of ROW parallel and adjacent to apparent property lines[2]	0.00	0.00	0 00	0.00	0.00	0.00	0 27	0.52	0.00	0 65	0.18	0.92	0.00	0.33	0 41	0.49	0 88	0.21	0.36	0.66	0.00
7	Sum of evaluation criteria 4, 5, and 6	0.60	0.00	0 03	0.12	0.18	0.33	0 58	0.60	0.23	0 65	0.69	0.92	0.49	0.33	0 41	0.49	0.88	0.60	0.36	0.66	0.09
8	Percent of evaluation criteria 4, 5, and 6	100%	0%	100%	100%	70%	100%	100%	100%	74%	75%	100%	75%	82%	72%	100%	97%	65%	40%	64%	94%	19%
9	Length of ROW across parks/recreational areas[3]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Number of additional parks/recreational areas[3] within 1,000 feet of ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Length of ROW across cropland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Length of ROW across pasture/rangeland	0.29	0.39	0.03	0.09	0.00	0.18	0.35	0.11	0.13	0.24	0 00	0.07	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0 03	0.12
13	Length of ROW across land irrigated by traveling systems (rolling or pivot type)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Length of route across conservation easements and/or mitigation banks (Special Management Area)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Length of route across gravel pits, mines, or quarries	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Length of ROW parallel and adjacent to pipelines[4]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Number of pipeline crossings[4]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Number of transmission line crossings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	Number of IH, US and state highway crossings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Number of FM or RM road crossings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Number of cemeteries within 1,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
22	Number of FAA registered airports[5] with at least one runway more than 3,200 feet in length located within 20,000 feet of ROW centerline and substation site	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1
23	Number of FAA registered airports[5] having no runway more than 3,200 feet in length located within 10,000 feet of ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Number of private airstrips within 10,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Number of heliports within 5,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Number of commercial AM radio transmitters within 10,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Number of FM radio transmitters, microwave towers, and other electronic installations within 2,000 feet of ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0
28	Number of identifiable existing water wells within 200 feet of the ROW centerline and substation site	2	0	0	0	1	0	0	2	1	0	0	1	0	0	0	1	1	0	0	2	0
29	Number of oil and gas wells within 200 feet of the ROW centerline (including dry or plugged wells) and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aesthetics																						
30	Estimated length of ROW within foreground visual zone[6] of IH, US and state highways	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	Estimated length of ROW within foreground visual zone[6] of FM/RM roads	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	Estimated length of ROW within foreground visual zone[6][7] of parks/recreational areas[3]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ecology																						
33	Length of ROW across upland woodlands/brushlands	0 30	0.01	0.00	0 02	0.23	0.14	0.21	0.47	0.10	0.60	0.62	1.13	0.30	0 46	0.39	0.50	1.33	1.51	0.35	0.54	0 37
34	Length of ROW across bottomland/riparian woodlands	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	Length of ROW across NWI mapped wetlands	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	Length of ROW across critical habitat of federally listed endangered or threatened species	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	Area of ROW across golden-cheeked warbler modeled habitat designated as 3 Moderate High and 4-High Quality (acres)[8]	0	0	0	0	0	0	0	1.59	0	0.71	0	0.45	0	1.90	1.22	3.54	2.17	1.08	0.72	0	0
38	Area of ROW across golden-cheeked warbler modeled habitat designated as 1-Low and 2-Moderate Low Quality (acres)[8]	0	0	0	0	0 62	1 71	0	2.36	0.54	3 62	2.00	5.55	2.56	3.04	1 22	0.72	4 53	1 36	2.04	0.80	0.08
39	Length of ROW across open water (lakes, ponds)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	Number of stream and river crossings	2	0	0	0	0	1	1	0	0	1	0	0	1	1	0	0	5	4	0	0	0
41	Length of ROW parallel (within 100 feet) to streams or rivers	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.11	0 00	0 00	0.00	0 07	0.00	0.00	0.00
42	Length of ROW across Edwards Aquifer Contributing Zone	0.60	0.43	0.03	0.12	0.25	0 33	0.58	0.60	0.31	0 87	0 69	1.22	0.59	0.46	0.41	0 50	1.34	1 51	0.56	0.70	0.49
43	Length of ROW across FEMA mapped 100-year floodplain	0.46	0.27	0.00	0.00	0.00	0.02	0.07	0.00	0.00	0.04	0.00	0.00	0.10	0.13	0.00	0.00	0.11	0.00	0.00	0 00	0.00
Cultural Resources																						
44	Number of recorded cultural resource sites crossed by ROW	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0
45	Number of additional recorded cultural resource sites within 1,000 feet of ROW centerline	0	0	0	0	0	0	0	0	0	10	0	0	0	0	3	0	5	0	0	0	2
46	Number of NRHP listed properties crossed by ROW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
47	Number of additional NRHP listed properties within 1,000 feet of ROW centerline	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	1
48	Length of ROW across areas of high archeological site potential	0.60	0 39	0 03	0.05	0	0 26	0.20	0.29	0.08	0.65	0	0 17	0.59	0.46	0.26	0 18	1.01	1.07	0 18	0.00	0.00

[1] Single-family and multi-family dwellings, and related structures, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, churches, hospitals, nursing homes, schools, or other structures normally inhabited by humans or intended to be inhabited by humans on a daily or regular basis within 300 feet of the centerline of a transmission project of 230-kV or less

[2] Apparent property boundaries created by existing roads, highways, or railroad ROWs are not "double-counted" in the length of ROW parallel to apparent property boundaries criteria

[3] Defined as parks and recreational areas owned by a governmental body or an organized group, club, or church within 1,000 feet of the centerline of the project

[4] Only steel pipelines six inches and greater in diameter carrying hydrocarbons were quantified in the pipeline crossing and paralleling calculations

[5] As listed in the Chart Supplement South Central US (FAA 2019b formerly known as the Airport/Facility Directory South Central US) and FAA 2019a

[6] One-half mile, unobstructed Lengths of ROW within the visual foreground zone of interstates, US and state highway criteria are not "double-counted" in the length of ROW within the visual foreground zone of FM roads criteria

[7] One-half mile, unobstructed Lengths of ROW within the visual foreground zone of parks/recreational areas may overlap with the total length of ROW within the visual foreground zone of interstates, US and state highway criteria and/or with the total length of ROW within the visual foreground zone of FM roads criteria

[8] From Model C by Diamond et al 2010

All length measurements are shown in miles unless noted otherwise

Table 4-2 Amended
Environmental and Land Use Data For Segment Evaluation
Scenic Loop

Evaluation Criteria	Land Use	31	32	33	34	35	36	37	38	39	40	41	42a	43	44	45	46	46a	46b	47	49a	50
1	Length of alternative route (miles)	0.59	0.87	0.35	0.04	0.52	0.47	0.56	0.45	0.87	2 57	0.46	0.91	2.05	1.98	2.59	0 79	0.86	0 99	0.19	1 35	0.04
2	Number of habitable structures[1] within 300 feet of the route centerline	2	24	0	0	2	1	2	1	1	7	0	0	2	0	0	1	0	1	0	0	0
3	Length of ROW using existing transmission line ROW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Length of ROW parallel and adjacent to existing transmission line ROW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Length of ROW parallel to other existing ROW (roadways, railways, canals, etc.)	0.00	0.00	0 35	0.00	0.28	0.42	0.00	0.00	0.00	0.88	0.00	0.00	0.85	1.39	1.20	0.00	0.00	0.09	0.00	0.34	0.00
6	Length of ROW parallel and adjacent to apparent property lines[2]	0 26	0.87	0 00	0 00	0.00	0.00	0.38	0.00	0 87	1.26	0.24	0.34	0.65	0.00	0.00	0 52	0.42	0.73	0.19	0.02	0.04
7	Sum of evaluation criteria 4, 5, and 6	0.26	0.87	0.35	0 00	0.28	0.42	0.38	0	0 87	2.13	0.24	0 34	1.50	1.39	1.20	0 52	0.42	0 82	0.19	0.36	0.04
8	Percent of evaluation criteria 4, 5, and 6	43%	100%	100%	0%	54%	89%	68%	0%	100%	83%	52%	37%	73%	70%	46%	65%	49%	83%	100%	27%	100%
9	Length of ROW across parks/recreational areas[3]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Number of additional parks/recreational areas[3] within 1,000 feet of ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Length of ROW across cropland	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Length of ROW across pasture/rangeland	0 16	0 00	0.00	0 00	0 40	0.00	0.00	0 00	0.00	0 02	0 14	0.04	0 12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0 00
13	Length of ROW across land irrigated by traveling systems (rolling or pivot type)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Length of route across conservation easements and/or mitigation banks (Special Management Area)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Length of route across gravel pits, mines, or quarries	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Length of ROW parallel and adjacent to pipelines[4]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Number of pipeline crossings[4]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Number of transmission line crossings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	Number of IH, US and state highway crossings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Number of FM or RM road crossings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Number of cemeteries within 1,000 feet of the ROW centerline and substation site	1	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
22	Number of FAA registered airports[5] with at least one runway more than 3,200 feet in length located within 20,000 feet of ROW centerline and substation site	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1	1	1	0	1	1
23	Number of FAA registered airports[5] having no runway more than 3,200 feet in length located within 10,000 feet of ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Number of private airstrips within 10,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Number of heliports within 5,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Number of commercial AM radio transmitters within 10,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Number of FM radio transmitters, microwave towers, and other electronic installations within 2,000 feet of ROW centerline and substation site	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	Number of identifiable existing water wells within 200 feet of the ROW centerline and substation site	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
29	Number of oil and gas wells within 200 feet of the ROW centerline (including dry or plugged wells) and substation site	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aesthetics																						
30	Estimated length of ROW within foreground visual zone[6] of IH, US and state highways	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	Estimated length of ROW within foreground visual zone[6] of FM/RM roads	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	Estimated length of ROW within foreground visual zone[6][7] of parks/recreational areas[3]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ecology																						
33	Length of ROW across upland woodlands/brushlands	0.42	0 86	0.35	0 02	0.06	0.36	0 55	0 42	0.87	2.46	0.31	0.87	1.93	1.98	2 59	0.79	0.86	0.99	0.19	1.26	0.04
34	Length of ROW across bottomland/riparian woodlands	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	Length of ROW across NWI mapped wetlands	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	Length of ROW across critical habitat of federally listed endangered or threatened species	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	Area of ROW across golden-cheeked warbler modeled habitat designated as 3 Moderate High and 4-High Quality (acres)[8]	0.52	3.99	0	0	0	0	3.69	1.26	0	11.12	1.27	1.65	14.89	1.38	3.58	4 23	6.43	3.22	0.08	3.92	0
38	Area of ROW across golden-cheeked warbler modeled habitat designated as 1-Low and 2-Moderate Low Quality (acres)[8]	3.38	2 21	0	0	0 16	2.71	1.40	1.03	2.82	6.90	0.90	1.14	4 12	5.66	9.25	3 51	2.74	1.89	0.89	4.67	0.23
39	Length of ROW across open water (lakes, ponds)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.003	0	0	0	0	0	0
40	Number of stream and river crossings	1	0	0	0	0	2	1	0	2	3	1	3	2	3	4	1	1	1	0	2	0
41	Length of ROW parallel (within 100 feet) to streams or rivers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.07	0.00	0.10	0.11	0.17	0.04	0.00	0.00	0.00	0.00	0.08	0
42	Length of ROW across Edwards Aquifer Contributing Zone	0.59	0.87	0.35	0.04	0.52	0.47	0.56	0 45	0 87	2.57	0.46	0.91	2.05	1.98	2.59	0.79	0.86	0.99	0.19	1.35	0 04
43	Length of ROW across FEMA mapped 100-year floodplain	0.00	0.00	0.00	0.00	0.00	0.15	0.05	0.00	0 00	0.13	0.00	0.75	0.00	0.00	0.24	0.00	0.00	0.03	0.00	0.00	0
Cultural Resources																						
44	Number of recorded cultural resource sites crossed by ROW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45	Number of additional recorded cultural resource sites within 1,000 feet of ROW centerline	0	0	2	2	2	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0
46	Number of NRHP listed properties crossed by ROW	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0
47	Number of additional NRHP listed properties within 1,000 feet of ROW centerline	2	0	1	0	1	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0
48	Length of ROW across areas of high archeological site potential	0 47	0.51	0.00	0.00	0.19	0.47	0.45	0 42	0.31	0.72	0.05	0.91	0 54	0.71	2.17	0.52	0 36	0.38	0.19	0.57	0.00

[1] Single-family and multi-family dwellings, and related structures, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, churches, hospitals, nursing homes, schools, or other structures normally inhabited by humans or intended to be inhabited by humans on a daily or regular basis within 300 feet of the centerline of a transmission project of 230-kV or less

[2] Apparent property boundaries created by existing roads, highways, or railroad ROWs are not "double-counted" in the length of ROW parallel to apparent property boundaries criteria

[3] Defined as parks and recreational areas owned by a governmental body or an organized group, club, or church within 1,000 feet of the centerline of the project

[4] Only steel pipelines six inches and greater in diameter carrying hydrocarbons were quantified in the pipeline crossing and paralleling calculations

[5] As listed in the Chart Supplement South Central US (FAA 2019b formerly known as the Airport/Facility Directory South Central US) and FAA 2019a

[6] One-half mile, unobstructed Lengths of ROW within the visual foreground zone of interstates, US and state highway criteria are not "double-counted" in the length of ROW within the visual foreground zone of FM roads criteria

[7] One-half mile, unobstructed Lengths of ROW within the visual foreground zone of parks/recreational areas may overlap with the total length of ROW within the visual foreground zone of interstates, US and state highway criteria and/or with the total length of ROW within the visual foreground zone of FM roads criteria

[8] From Model C by Diamond et al 2010

All length measurements are shown in miles unless noted otherwise

Table 4-2 Amended
Environmental and Land Use Data For Segment Evaluation
Scenic Loop

Evaluation Criteria		51	52	53	54	55	56	57
Land Use								
1	Length of alternative route (miles)	0.15	0.10	0.10	0 70	1.47	1 13	0.62
2	Number of habitable structures[1] within 300 feet of the route centerline	0	0	0	18	19	13	9
3	Length of ROW using existing transmission line ROW	0	0	0	0	0	0	0
4	Length of ROW parallel and adjacent to existing transmission line ROW	0	0	0	0	0	0	0
5	Length of ROW parallel to other existing ROW (roadways, railways, canals, etc.)	0 15	0 00	0.00	0 60	0.00	0.00	0.31
6	Length of ROW parallel and adjacent to apparent property lines[2]	0.00	0 00	0.10	0.00	1 19	0.00	0.31
7	Sum of evaluation criteria 4, 5, and 6	0.15	0.00	0.10	0 60	1 19	0.00	0.62
8	Percent of evaluation criteria 4, 5, and 6	100%	0%	100%	86%	81%	0%	100%
9	Length of ROW across parks/recreational areas[3]	0	0	0	0	0	0	0
10	Number of additional parks/recreational areas[3] within 1,000 feet of ROW centerline and substation site	0	0	0	0	0	0	0
11	Length of ROW across cropland	0	0	0	0	0	0	0
12	Length of ROW across pasture/rangeland	0.00	0 00	0.00	0.25	0.00	0.08	0.00
13	Length of ROW across land irrigated by traveling systems (rolling or pivot type)	0	0	0	0	0	0	0
14	Length of route across conservation easements and/or mitigation banks (Special Management Area)	0	0	0	0	0	0	0
15	Length of route across gravel pits, mines, or quarries	0	0	0	0	0	0	0
16	Length of ROW parallel and adjacent to pipelines[4]	0	0	0	0	0	0	0
17	Number of pipeline crossings[4]	0	0	0	0	0	0	0
18	Number of transmission line crossings	0	0	0	0	0	0	0
19	Number of IH, US and state highway crossings	0	0	0	0	0	0	0
20	Number of FM or RM road crossings	0	0	0	0	0	0	0
21	Number of cemeteries within 1,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0
22	Number of FAA registered airports[5] with at least one runway more than 3,200 feet in length located within 20,000 feet of ROW centerline and substation site	0	0	0	1	0	0	0
23	Number of FAA registered airports[5] having no runway more than 3,200 feet in length located within 10,000 feet of ROW centerline and substation site	0	0	0	0	0	0	0
24	Number of private airstrips within 10,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0
25	Number of heliports within 5,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0
26	Number of commercial AM radio transmitters within 10,000 feet of the ROW centerline and substation site	0	0	0	0	0	0	0
27	Number of FM radio transmitters, microwave towers, and other electronic installations within 2,000 feet of ROW centerline and substation site	0	0	0	0	1	1	0
28	Number of identifiable existing water wells within 200 feet of the ROW centerline and substation site	0	0	0	1	0	2	0
29	Number of oil and gas wells within 200 feet of the ROW centerline (including dry or plugged wells) and substation site	0	0	0	0	0	0	0
Aesthetics								
30	Estimated length of ROW within foreground visual zone[6] of IH, US and state highways	0	0	0	0	0	0	0
31	Estimated length of ROW within foreground visual zone[6] of FM/RM roads	0	0	0	0	0	0	0
32	Estimated length of ROW within foreground visual zone[6][7] of parks/recreational areas[3]	0	0	0	0	0	0	0
Ecology								
33	Length of ROW across upland woodlands/brushlands	0.15	0.10	0.10	0.22	1.47	0 98	0 61
34	Length of ROW across bottomland/riparian woodlands	0	0	0	0.00	0.00	0.00	0.00
35	Length of ROW across NWI mapped wetlands	0	0	0	0	0	0	0
36	Length of ROW across critical habitat of federally listed endangered or threatened species	0	0	0	0	0	0	0
37	Area of ROW across golden-cheeked warbler modeled habitat designated as 3 Moderate High and 4-High Quality (acres)[8]	0	0 31	0.38	0	1 40	0.06	0.05
38	Area of ROW across golden-cheeked warbler modeled habitat designated as 1-Low and 2-Moderate Low Quality (acres)[8]	0 10	1 02	0.95	0.29	4.90	3.15	2.91
39	Length of ROW across open water (lakes, ponds)	0	0	0	0	0	0	0
40	Number of stream and river crossings	0	0	0	0	2	2	0
41	Length of ROW parallel (within 100 feet) to streams or rivers	0	0	0	0	0	0	0
42	Length of ROW across Edwards Aquifer Contributing Zone	0.15	0.10	0.10	0 70	1.47	1.13	0.62
43	Length of ROW across FEMA mapped 100-year floodplain	0	0	0	0	0	0	0
Cultural Resources								
44	Number of recorded cultural resource sites crossed by ROW	0	0	0	0	1	1	0
45	Number of additional recorded cultural resource sites within 1,000 feet of ROW centerline	0	0	0	0	0	1	0
46	Number of NRHP listed properties crossed by ROW	0	0	0	0	0	0	0
47	Number of additional NRHP listed properties within 1,000 feet of ROW centerline	0	0	0	0	0	0	0
48	Length of ROW across areas of high archeological site potential	0.15	0 10	0.10	0.28	0 58	0.48	0.20

[1] Single-family and multi-family dwellings, and related structures, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, churches, hospitals, nursing homes, schools, or other structures normally inhabited by humans or intended to be inhabited by humans on a daily or regular basis within 300 feet of the centerline of a transmission project of 230-kV or less

[2] Apparent property boundaries created by existing roads, highways, or railroad ROWs are not "double-counted" in the length of ROW parallel to apparent property boundaries criteria

[3] Defined as parks and recreational areas owned by a governmental body or an organized group, club, or church within 1,000 feet of the centerline of the project

[4] Only steel pipelines six inches and greater in diameter carrying hydrocarbons were quantified in the pipeline crossing and paralleling calculations

[5] As listed in the Chart Supplement South Central US (FAA 2019b formerly known as the Airport/Facility Directory South Central US) and FAA 2019a

[6] One-half mile, unobstructed Lengths of ROW within the visual foreground zone of interstates, US and state highway criteria are not "double-counted" in the length of ROW within the visual foreground zone of FM roads criteria

[7] One-half mile, unobstructed. Lengths of ROW within the visual foreground zone of parks/recreational areas may overlap with the total length of ROW within the visual foreground zone of interstates, US and state highway criteria and/or with the total length of ROW within the visual foreground zone of FM roads criteria

[8] From Model C by Diamond et al 2010

All length measurements are shown in miles unless noted otherwise

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4.1.2 Impacts on Soils

Potential impacts to soils from the construction, operation, and maintenance of electric transmission lines include erosion and compaction. Such impacts can be avoided by CPS Energy's implementation of appropriate mitigative measures during construction. No conversion of prime farmland soils is anticipated because of the project.

The highest risk for soil erosion and compaction is associated with the clearing and construction phases of the project. In accordance with CPS Energy standard construction specifications, woody vegetation will be cleared within the ROW, as necessary to achieve the conductor to ground clearances of the transmission line. Areas with vegetation removed will have the highest potential for soil erosion and the movement of heavy equipment down the cleared ROW creates the greatest potential for soil compaction. Prior to construction, CPS Energy will develop a SWPPP to minimize potential impacts associated with soil erosion, compaction, and off-ROW sedimentation. Implementation of this plan will incorporate temporary and permanent best management practices to minimize soil erosion on the ROW during rainfall events. The SWPPP will also establish the criteria for mitigating soil compaction and re-vegetation to maintain soil stabilization during the construction and post construction phases. The native herbaceous layer of vegetation will be maintained, to the extent practical, during construction. Denuded areas will be seeded and/or further stabilized with the implementation of permanent soil berms or interceptor slopes to stabilize disturbed areas and minimize soil erosion potential. The ROW will be inspected during and post construction to identify potential high erosion areas and that best management practices are implemented and maintained.

The potential for erosion and compaction will be minimized by CPS Energy's development and implementation of a SWPPP for the project. The magnitude of potential soil impacts is considered equivalent for all of the alternative routes.

4.1.3 Impacts on Surface Water

All of the alternative routes cross surface waters within the study area. CPS Energy proposes to span all surface waters crossed by any of the alternative routes and construct any structures outside of the ordinary high-water marks for any surface waters. CPS Energy will limit the removal of woody vegetation as necessary to meet the necessary conductor to ground clearances. The shorter understory and herbaceous layers of vegetation will remain, where allowable, and best management practices will be implemented in accordance with the SWPPP for the project to reduce the potential for sedimentation into surface waters.

Since CPS Energy intends to span all surface waters and a SWPPP plan will be implemented during construction, no significant impacts to surface waters are anticipated for any of the alternative routes. The lengths of each alternative route crossing open water (lakes, ponds), number of streams and rivers crossed by each of the alternative routes, and lengths paralleling (within 100 feet) streams or rivers are provided in Table 4-1 Amended.

None of the alternative routes cross open water. The number of stream and river crossings for the alternative routes range from three for Alternative Routes A, E, H, and X1, to 12 for Alternative Route U1. The length of each alternative route parallel (within 100 feet) to streams or rivers ranges from zero (0) mile for Alternative Routes C1, X1, and DD, to approximately 0.26 mile for Alternative Routes K and BB. These calculations are based on the NHD and since the dataset's inception the hydrology of some stream features may have been altered by construction of drainage ditches, impoundments, and residential areas.

4.1.4 Impacts on Ground Water

All alternative routes occur entirely within the Edwards Aquifer Contributing Zone. Due to the project's location within the Edwards Aquifer Contributing Zone, CPS Energy will consult with the TCEQ Edwards Aquifer Protection Program to ensure compliance with program requirements. The construction, operation, and maintenance of the project are not anticipated to adversely affect groundwater resources within the study area.

During construction activities, a potential impact for groundwater resources is related to fuel and/or other chemical spills. Avoidance and minimization measures of potential contamination of water resources will be identified in the SWPPP. CPS Energy will take all necessary precautions to avoid the occurrence of these spills. If an unauthorized discharge occurs during construction, CPS Energy will comply with TCEQ and EAA notification requirements.

4.1.5 Impacts on Floodplains

The construction of any of the alternative routes is not anticipated to impact the overall function of a floodplain within the study area, or adversely affect adjacent or downstream properties. Engineering design should alleviate the potential of construction activities to adversely impact flood channels and proper structure placement will minimize any flow impedance during a major flood event. Typically, the

small footprint of pole structures as proposed for the project does not significantly alter the flow of water within a floodplain.

The length of each alternative route ROW across mapped 100-year floodplains ranges from approximately zero (0) mile for Alternative Routes V and W, to approximately 1.49 miles for Alternative Route M1. CPS Energy will coordinate with the Bexar County floodplain administrator as necessary to acquire any necessary permits.

4.1.6 Impacts on Wetlands

None of the alternative routes cross NWI mapped wetlands. No NWI mapped wetlands were identified within the study area; however, unmapped wetlands still have the potential to occur within the study area. Removal of vegetation in wetlands increases the potential for erosion and sedimentation, which can be detrimental to downstream plant communities and aquatic life. Wetland areas also provide habitat to a number of species and are often used as migration corridors for wildlife. Mitigation measures with best management practices will be implemented, as appropriate, in identified areas of wetland potential during construction activities to further avoid and minimize impacts to those areas. CPS Energy proposes to implement best management practices as a component of their SWPPP to prevent off ROW sedimentation and degradation of potential wetland areas. With the use of these avoidance and minimization measures, none of the alternative routes are anticipated to have a significant impact on potential wetlands.

The temporary and/or permanent placement of fill material within jurisdictional waterways and wetlands may require a permit from the USACE under Section 404 of the CWA. If necessary, CPS Energy will coordinate with the USACE – Fort Worth District prior to clearing and construction to ensure compliance with Section 404 of the CWA.

4.1.7 Impacts on Coastal Natural Resources Areas

The study area is not located within the CMZ boundary as defined by 31 TAC § 503.1, which excludes the Project from CMP conditions.

4.1.8 Impacts on Vegetation

Potential impacts to vegetation will result from clearing the ROW of woody vegetation and/or mowing/clearing of herbaceous vegetation. These activities facilitate ROW access for structure construction, line stringing, and future maintenance activities of the proposed transmission line.

Impacts to vegetation will generally be limited to the transmission ROW. Additional clearing might be necessary in temporary easements outside of the ROW to facilitate the construction of the transmission line. The clearing activities will be completed while minimizing the impacts to existing groundcover vegetation when practical. Future ROW maintenance activities might include periodic mowing and/or herbicide applications to maintain an herbaceous vegetation layer within the ROW.

Clearing trees and shrubs from woodland areas typically generates a degree of habitat fragmentation. The magnitude of habitat fragmentation was minimized to the extent possible during the routing process by paralleling existing linear features such as roadways. During the route development process, consideration was given to avoid wooded areas and/or to maximize the length of the routes parallel to existing linear features. Vegetation clearing will occur only where necessary to provide access, workspace, and future maintenance access to the ROW.

The lengths of each alternative route crossing upland woodlands/brushlands and bottomland/riparian woodlands are provided in Table 4-1 Amended. None of the alternative routes cross bottomland/riparian woodlands. The length of each alternative route ROW across upland woodlands/brushlands ranges from approximately 3.12 miles for Alternative Route DD, to approximately 6.52 miles for Alternative Route V.

4.1.9 Impacts on Wildlife

The primary impacts of construction activities on wildlife species are typically associated with temporary disturbances from construction activities, and with the removal of vegetation (habitat modification). Increased noise and equipment movement during construction might temporarily displace mobile wildlife species from the immediate workspace area. These impacts are considered short-term and normal wildlife movements would be expected to resume after construction is completed. Potential long-term impacts include those resulting from habitat modifications and/or fragmentation. All the alternative routes cross areas of upland woodlands/brushlands, which can represent the highest degree of habitat fragmentation by converting the area within the ROW to an herbaceous habitat. During the routing process, POWER

attempted to minimize potential woodland habitat fragmentation by paralleling existing linear features and avoiding paralleling streams to the extent feasible.

Construction activities might impact small, immobile, or fossorial (living underground) animal species through incidental impacts or from the alteration of local habitats. Incidental impacts of these species might occur due to equipment or vehicular movement on the ROW by direct impact or due to the compaction of the soil if the species is fossorial. Potential impacts of this type are not typically considered significant and are not likely to have an adverse effect on any species population dynamics.

If ROW clearing occurs during bird nesting seasons, potential impacts could occur within the ROW area related to bird eggs and/or nestlings. Increases in noise and equipment activity levels during construction could also potentially disturb breeding or other activities of species nesting in areas immediately adjacent to the ROW. If ROW clearing activities are necessary during the migratory bird nesting season (March 15 to September 15), CPS Energy will comply with state (Texas Parks and Wildlife Code Chapter 64) and federal (MBTA) regulations regarding avian species by having a qualified biologist conduct surveys for active nests prior to vegetation clearing.

Transmission lines can also present additional hazards to birds due to electrocutions and/or collisions. Measures will be implemented to minimize this risk with transmission line engineering designs. The electrocution risk to birds will not be significant since the engineering design distance between conductors, conductor to structure, or conductor to ground wire for the proposed transmission line is greater than the wingspan of any bird typically within the area (i.e., greater than eight feet). The risk for avian collisions with the shield wire can be minimized by installing bird flight diverters or other marking devices on the line within determined high bird use areas.

4.1.10 Impacts on Aquatic Resources

Potential impacts to aquatic resources would include potential effects of erosion, siltation, and sedimentation. Vegetation clearing of the ROW might result in increased suspended solids entering surface waters traversed by the project. Increases in suspended solids might adversely affect aquatic organisms that require relatively clear water for foraging and/or reproduction. Physical aquatic habitat loss or alteration could result wherever riparian vegetation is removed and at temporary crossings required for access. Increased levels of siltation or sedimentation might also potentially impact downstream areas primarily affecting filter feeding benthic and other aquatic invertebrates. Implementation of a SWPPP utilizing best management practices will minimize these potential impacts.

No significant adverse impacts are anticipated to any aquatic habitats crossed or located adjacent to the ROW for any of the alternative routes.

Construction of the project is not anticipated to have significant impacts to wildlife and aquatic resources within the study area. Direct impacts would be associated with the loss of woodland/brushland habitat, which is reflected in the vegetation analysis discussed above. Habitat fragmentation was minimized for all the alternative routes within woodland areas by paralleling existing linear features to the extent feasible. While highly mobile animals might temporarily be displaced from habitats near the ROW during the construction phase, normal movement patterns should return after project construction is complete. Implementation of a SWPPP utilizing best management practices will minimize potential impacts to aquatic habitats.

4.1.11 Impacts to Threatened and Endangered Species

In order to determine potential impacts to threatened or endangered species, POWER utilized available information for the species under review. Known occurrence data from TXNDD for the study area and project scoping comments from TPWD were reviewed. A USFWS IPaC consultation, TPWD county listings, and USFWS designated critical habitat locations were included in the review.

The TXNDD data provides a data record of state-listed, rare, and federally threatened/endangered species and rare vegetation communities that have been documented within a given area. The absence of species within the TXNDD database is not a substitute for a species-specific field survey. Prior to construction, a field survey will be completed of the PUC approved route to determine if suitable habitat for threatened and endangered species is present. Additional consultation with USFWS and TPWD might be required if suitable habitat is observed during field surveys.

Threatened and Endangered Plant Species

Texas wild-rice is not anticipated to occur within the study area due to lack of potential suitable habitat. The Bracted twistflower is a candidate species that may occur within the study area if suitable habitat is available. Federally-listed and candidate plant species are only afforded federal protection from take if they are located on federal lands and/or federal funding or actions are associated with the project. If necessary, CPS Energy will coordinate with the USFWS regarding the Bracted twistflower. Construction of the proposed transmission line is not anticipated to have any adverse effects on federally-listed threatened or endangered plant species.

Threatened and Endangered Animal Species

Review of the TPWD (2019b) and USFWS (2020) data identified 40 animal species that are federally- and/or state-listed or have candidate status, for Bexar County (see Table 3-6 in Section 3.1.10). None of the alternative routes cross critical habitat for the Madla Cave meshweaver or Karst Zone 1. Of the 31 alternative routes, Alternative Routes A, B1, C1, D1, DD, E, H, I1, M1, T1, X1, Y, and Z1 are entirely located within Karst Zone 5. Alternative Routes AA1, EE, G1, and J1 are primarily located within Karst Zone 5, except for approximately 650 feet of the west end of each route, which occurs in Karst Zone 3. Approximately 40 to 50 percent of Alternative Routes F1, K, N1, P, BB, and CC occur within Karst Zone 5, with their remaining portions occurring within a matrix of Karst Zones 2, 3, and 4. Approximately 25 to 35 percent of Alternate Routes L, Q1, R1 and U1 occur within Karst Zone 5, with their remaining portions occurring within a matrix of Karst Zones 2, 3, and 4. Alternative Routes S, V, and W are mostly located within a matrix of Karst Zones 2, 3, and 4, except for approximately 0.25 mile of the east end of each route, which occurs in Karst Zone 5. Alternative Route O is mostly located within a matrix of Karst Zones 2, 3, and 4, except for approximately 0.80 mile of the east end of the route, which occurs in Karst Zone 5 (refer to page 3-21 for a description of each karst zone). A field survey for potential suitable habitat for federally protected species will be completed after PUC approval of an alternative route.

Federally-Listed and Candidate Species

As indicated in Table 4-1 Amended, none of the alternative route lengths cross critical habitat of federally-listed endangered or threatened species.

The study area is located outside of the recognized/known distributions of the San Marcos salamander, Texas blind salamander, Braken Bat Cave meshweaver, Cokendolpher Cave harvestman, Government Canyon Bat Cave meshweaver, Government Canyon Bat Cave spider, Robber Baron Cave meshweaver, Peck's Cave amphipod, fountain darter, sharpnose shiner, smalleye shiner, Comal Springs dryopid beetle, Comal Springs riffle beetle, golden orb, Guadalupe orb, Texas fatmucket, and Texas pimpleback. The interior least tern and piping plover are not anticipated to occur within the study area due to the lack of potential suitable habitat. No impacts to these species are anticipated to occur from the project.

The Madla Cave meshweaver, the two unnamed beetles (*Rhadine exilis* and *Rhadine infernalis*), and the Helotes mold beetle may occur within the study area if suitable cave/karst habitat is present and available. CPS Energy will conduct a site-specific karst survey pursuant to USFWS protocols prior to construction to avoid potential impacts to cave-obligate species.

The whooping crane may pass through and potentially occur temporarily within the study area as a rare transient during migration if suitable foraging habitat is available. The project is not anticipated to have any adverse impacts to whooping crane nesting habitat.

The golden-cheeked warbler may occur within the study area if potential suitable habitat is available. Using the Model C habitat model developed by Diamond et al. (2010), the approximate area of proposed ROW across potential golden-cheeked warbler habitat for each alternative route was tabulated in Table 4-1 Amended. This modeled habitat indicates only the probability of suitable golden-cheeked warbler habitat and does not indicate the presence of golden-cheeked warblers. For the data tabulation, mapped areas designated with a value of **3** and **4** were combined, as these represent the highest quality of potential suitable habitat. Mapped areas designated with a value of **1** and **2** were combined, as these represent the lowest quality of potential suitable habitat. As described in Section 3.1.11, during the data analysis POWER biologists further evaluated habitat alteration using 2019 aerial imagery and modified the Diamond Model C habitat data.

The area of ROW across golden-cheeked warbler modeled habitat designated as **3**-Moderate High Quality and **4**-High Quality ranges from 2.95 acres for Alternative Routes O and W, to 25.11 acres for Alternative Route P. The area of ROW across golden-cheeked warbler modeled habitat designated as **1**-Low Quality and **2**-Moderate Low Quality ranges from 10.50 acres for Alternative Route BB, to 22.81 acres for Alternative Route U1.

A field survey for potential suitable habitat for federally protected species will be completed after PUC approval of an alternative route. CPS Energy will consult with the USFWS regarding avoidance measures and mitigation if suitable habitat for the Madla Cave meshweaver, two unnamed beetles (*Rhadine exilis* and *Rhadine infernalis*), Helotes mold beetle, whooping crane, or golden-cheeked warbler is observed during the survey of the PUC approved route. If suitable habitat for the golden-cheeked warbler is identified during field surveys of the PUC approved route, CPS Energy may contact the City of San Antonio to enroll in the Southern Edwards Plateau Habitat Conservation Plan in order to achieve compliance with the ESA.

State-Listed Species

The wood stork and Cagle's map turtle are not anticipated to occur within the study area due to the lack of potential suitable habitat. The project is not anticipated to have adverse impacts to these species.

The bald eagle may occur within the study area if suitable habitat is available. Bald eagles and their nests are protected under the MBTA and BGEPA. Nests are protected if they have been used within the previous five nesting seasons. If nests are identified or individuals are observed during the field survey of the PUC approved route, CPS Energy will further coordinate with the TPWD and USFWS to determine avoidance or mitigation measures.

The reddish egret, tropical parula, white-faced ibis, and zone-tailed hawk may occur within the study area if suitable habitat is available. CPS Energy proposes to conduct ROW clearing activities in compliance with state (Texas Parks and Wildlife Code Chapter 64) and federal (MBTA) regulations regarding avian species and appoint a qualified biologist to conduct surveys for active nests prior to vegetation clearing.

The Cascade Caverns salamander, Texas salamander, toothless blindcat, and widemouth blindcat may occur within the study area if suitable aquatic habitat is available. CPS Energy proposes to span all surface waters crossed by the PUC approved route and implement a SWPPP to prevent sedimentation into surface waters.

The Mexican treefrog, Texas horned lizard, and Texas tortoise, as well as the American black bear and white-nosed coati may occur within the study area if suitable habitat is available. If present, species may be susceptible to minor temporary disturbance during construction efforts, but the project is not anticipated to result in significant adverse impacts to these species' populations.

CPS Energy proposes to conduct a site-specific karst survey prior to construction to avoid potential impacts to cave-obligate species and implement best management practices within their SWPPP to minimize impacts to aquatic species. A field survey for potential suitable habitat for state and federal protected species will be completed after PUC approval of a route for the project. Additional consultation with TPWD and the USFWS for avoidance and mitigation measures may be required if suitable habitat is observed during the field survey of the PUC approved route.

4.2 Impacts on Human Resources/Community Values

4.2.1 Impacts on Land Use

The magnitude of potential impacts to land use resulting from the construction of a transmission line is determined by the amount of land (land use type) temporarily or permanently displaced by the actual ROW and by the compatibility of the facility with adjacent land uses. During construction, temporary

impacts to land uses within the ROW might occur due to the movement of workers, equipment, and materials through the area. Construction noise and dust, as well as temporary disruptions of traffic flow, might also temporarily affect local residents and businesses in the area immediately adjacent the ROW. Coordination between CPS Energy, their respective contractors, and landowners regarding ROW access and construction scheduling should minimize these disruptions.

The evaluation criteria used to compare potential land use impacts include overall alternative route length, route length parallel to existing linear features (including apparent property boundaries), route proximity to habitable structures, route proximity to park and recreational areas, and route length across various land use types. An analysis of the existing land use within and adjacent to the proposed ROW is required to evaluate the potential impacts.

Alternative Route Length

The length of an alternative route can be an indicator of the relative magnitude of land use impacts. Generally, all other things being equal, the shorter the route, the less land is crossed, which usually results in the least amount of potential impacts. The total lengths of the alternative routes vary from approximately 4.53 miles for Alternative Route Z1, to approximately 6.91 miles for Alternative Route L. The differences in route lengths reflect the direct or indirect pathway of each alternative route between the project endpoints. The length of the alternative routes may also reflect the effort to parallel existing transmission lines, other existing linear features and apparent property boundaries, and the geographic diversity of the alternative routes. The approximate lengths for each of the alternative routes are presented in Table 4-1 Amended.

Compatible ROW

PUC Substantive Rule 25.101(b)(3)(B) requires that an applicant for a CCN, and ultimately the PUC, consider whether new transmission line routes are within existing compatible ROWs and/or are parallel to existing compatible ROWs, apparent property lines, or other natural or cultural features. Criteria were used to evaluate the use of existing transmission line ROW, length parallel and adjacent to existing transmission line ROW, length of route parallel to other existing linear ROWs, and length of ROW parallel and adjacent to apparent property lines. It should also be noted that if a segment parallels more than one existing linear corridor it was only tabulated once (e.g., a segment that parallels both an apparent property line and a roadway will only be tabulated as paralleling the roadway).

None of the alternative routes utilize or parallel existing transmission line ROW. The two existing transmission lines within the study area run perpendicular to the direction of the project and is the tap point for the project.

The alternative routes with lengths parallel to other existing ROW (roadways, railways, canals, etc.) range from approximately 0.51 mile for Alternative Route T1, to approximately 3.01 miles for Alternative Route Y. The lengths of ROW parallel to other existing ROW for each of the alternative routes are presented in Table 4-1 Amended.

All of the alternative routes have lengths of ROW parallel and adjacent to apparent property lines to the extent feasible in the absence of other existing linear features. The length of alternative routes parallel and adjacent to apparent property lines ranges from approximately 0.68 mile for Alternative Route EE, to approximately 3.96 miles for Alternative Route T1. The lengths paralleling apparent property boundaries for each of the alternative routes are presented in Table 4-1 Amended.

Typically, a more representative account for the consideration of whether new transmission line routes are parallel to existing compatible ROWs, apparent property lines, or other natural or cultural features is demonstrated with the percentage of each total route length parallel to any of these existing linear features. These percentages can be calculated for each alternative route by adding up the total length parallel to existing transmission lines, other existing ROW, and apparent property lines and then dividing the result by the total length of the alternative route. All of the alternative routes parallel existing linear features for some portion of their lengths. The percentage of the alternative routes paralleling existing linear features ranges from 49 percent for Alternative Route S, to 83 percent for Alternative Route A.

Developed and Residential Areas

Typically, one of the most important measures of potential land use impacts is the number of habitable structures located in the vicinity of each alternative route. Based on direction provided by the PUC, habitable structure identification is included with the CCN application. POWER determined the number of habitable structures located within 300 feet of the centerline of each alternative route and the distance from the centerline through the use of GIS software, interpretation of aerial photography, and verification during reconnaissance surveys.

Due to the nature of the study area, all 31 of the alternative routes have habitable structures located within 300 feet of their centerlines. Alternative Routes Q1 and U1 have the least number of habitable structures

located within 300 feet of their centerline at six each. Alternative Route A has the most habitable structures located within 300 feet of its centerline at 69.

Amended Tables 4-6 through 4-36 present detailed information on habitable structures. The number of habitable structures located within 300 feet of each of the alternative route centerlines are presented in Table 4-1 Amended. All known habitable structure locations are shown on Figure 4-1 Amended located in Appendix E (map pocket) of the EA Amendment.

Lands with Conservation Easements

As discussed in Section 3.2.1, there are four known conservation easements within the study area collectively known as the Bandera Pass Easement. POWER initially identified an alternative route segment across the southern boundary of the Bandera Pass Easement. As noted in Section 3.0, the Army has a third party interest in the Bandera Pass Easement. The correspondence from the Army included in Appendix A clearly states that the Army will oppose CPS Energy obtaining an easement across the Bandera Pass Easements. Because CPS Energy will not be able to obtain an easement across the conservation easements where the Army holds an interest, alternative route segments across that property have been removed. Thus, none of the alternative routes cross the Bandera Pass Easement. The project will have no significant impact on the Bandera Pass Easement or any other lands with conservation easements that may be designated during the pendency of the project. Further, CPS Energy will coordinate with landowners during transmission line construction and operation for continued operation of any ongoing or existing land management activities.

4.2.2 Impacts on Agriculture

Impacts to agricultural land uses can generally be ranked by degree of potential impact, with the least potential impact occurring in areas where cultivation is not the primary use (pastureland/rangeland), followed by cultivated croplands, which have a higher degree of potential impact. Most existing agricultural land uses may be resumed within the ROW following construction.

None of the alternative routes cross any length of cropland. The project will have no significant impact on cropland.

Thirty of the 31 alternative routes cross some length of pastureland/rangeland; however, because the ROW for this project will not be fenced or otherwise separated from adjacent lands, there will be no

significant long-term displacement of farming or grazing activities. Alternative route lengths crossing pastureland areas range from approximately zero (0) mile for Alternative Route V, to approximately 1.69 miles for Alternative Route C1.

None of the alternative routes cross lands with known mobile irrigation systems (rolling or pivot type). The lengths of each of the alternative routes crossing cropland, pastureland/rangeland, and land with known mobile irrigation systems are presented in Table 4-1 Amended.

4.2.3 Impacts on Transportation/Aviation Features

Transportation Features

Potential impacts to transportation could include temporary disruption of traffic or conflicts with future proposed roadways and/or utility improvements. Traffic disruptions would include those associated with the movement of equipment and materials to the ROW, and slightly increased traffic flow and/or periodic congestion during the construction phase of the project. In the rural portions of the study area, these impacts are typically considered minor, temporary, and short-term. In the urban portions of the study area, the temporary impacts to traffic flow can be significant during construction; however, none of the alternative routes are located in areas that are considered as urban. CPS Energy will coordinate with the agencies in control of the affected roadways to address these traffic flow impacts. As mentioned in Section 3.2.3, there were no state roadway projects within the study area.

None of the alternative routes cross US Hwys or SHs. Additionally, none of the alternative routes cross any FM roads.

Aviation Facilities

According to FAA regulations, Title 14 CFR Part 77, the construction of a transmission line requires FAA notification if tower structure heights exceed the height of an imaginary surface extending outward and upward at a slope of 100:1 for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of a public or military airport having at least one runway longer than 3,200 feet. The FAA also requires notification if tower structure heights exceed a 50:1 slope for a horizontal distance of 10,000 feet from the nearest runway of a public or military airport where no runway is longer than 3,200 feet in length, and if tower structure heights exceed a 25:1 slope for a horizontal distance of 5,000 feet for heliports.

There is one public FAA registered airport with at least one runway longer than 3,200 feet located within 20,000 feet of the ROW centerline for all 31 of the alternative routes (the Boerne Stage Field Airport). The nearest segment to Boerne Stage Field Airport (Figure 4-1 Amended Map ID 301) is Segment 29, at approximately 7,210 feet from the airport. The estimated runway length at Boerne Stage Field Airport is 5,000 feet and the 50:1 slope is not expected to be exceeded by the proposed pole heights for the project. There are no FAA registered airports having no runway longer than 3,200 feet located within 10,000 feet of any of the alternative routes. Although there may be PELAs designated within the study area, there are no known heliports within 5,000 feet of the ROW centerline for any of the alternative routes.

Following PUC approval of a route for the proposed transmission line, CPS Energy will make a final determination of the need for FAA notification, based on specific route location and structure design of the approved route. The result of this notification, and any subsequent coordination with the FAA, could include changes in the line design and/or potential requirements to mark the conductors and/or light the structures.

There are also no known private airstrips located within 10,000 feet of the ROW centerline of any of the alternative routes.

Amended Tables 4-6 through 4-36 present detailed information on airports, airstrips, and heliports. The number of airports, airstrips, and heliports for each of the alternative routes are presented in Table 4-1 Amended. The distance for each airport/airstrip from the nearest route was measured using GIS software and aerial photography interpretation. All known airport/airstrip locations are shown on Figures 2-4 Amended and 4-1 Amended located in Appendix D and E (map pockets) of the EA Amendment. None of the alternative routes are anticipated to have a significant impact on aviation activities within the study area.

4.2.4 Impacts on Communication Towers

None of the alternative routes are anticipated to have a significant impact on electronic communication facilities or operations in the study area. All known facilities, including fifth generation (5G), licensed with the FCC have been identified. No commercial AM radio transmitters were identified within 10,000 feet of the ROW centerline for any of the alternative routes. However, there is one other electronic communication facility located within 2,000 feet of each of the ROW centerlines for Alternative Routes C1, D1, I1, J1, M1, O, S, T1, V, W, Y, Z1, AA1, CC, DD, and EE.

Amended Tables 4-3 and 4-36 present detailed information on the electronic communication facilities. The number of other communication facilities located within 2,000 feet of the alternative routes is presented in Table 4-1 Amended. The distance to the electronic communication facilities from the closest segment was measured using GIS software and aerial photograph interpretation (see Table 4-3). The communication facilities' locations are shown on Figures 2-4 Amended and 4-1 Amended located in Appendix D and E (map pockets) of the EA Amendment.

TABLE 4-3 ELECTRONIC COMMUNICATION FACILITIES

FIGURE 4-1 AMENDED MAP ID	TOWER TYPE	NEAREST SEGMENT	DISTANCE FROM NEAREST SEGMENTS (FEET)*
501	CellTex Site Services, Ltd.	32	279
502	Global Tower, LLC	16	521

*POWER aerial photo and USGS interpretation; FCC 2019.

4.2.5 Impacts on Utility Features

Utility features include existing electrical transmission lines, distribution lines, water wells, pipelines, and oil and gas wells. Numerous water wells were identified within the study area and were mapped and avoided to the extent practicable. The number of identifiable existing water wells within 200 feet of the ROW centerline and substation sites range from zero (0) for Alternative Route V, to six for Alternative Route A. None of the water wells located within 200 feet of the alternative routes are public supply water wells. If these utility features are crossed by or are in close vicinity to the alternative route centerline approved by the PUC, CPS Energy will coordinate with the appropriate entities to obtain necessary permits or permission as required. The number of known water wells within 200 feet of each of the alternative route is presented in Table 4-1 Amended.

Two existing electric transmission lines were identified within the study area, the Ranchtown to Menger Creek 138 kV transmission line and the Kendall to Cagnon Road 345 kV transmission line. All of the alternative routes connect into but do not cross the Ranchtown to Menger Creek 138 kV transmission line.

No oil and gas wells and associated treatment facilities or pipelines were identified within the study area. Thus, the project will have no impacts on oil and gas wells and associated treatment facilities or pipelines. Further, if any unknown oil and gas wells and associated treatment facilities or pipelines are discovered

during construction, CPS Energy will notify and coordinate with pipeline companies as necessary during transmission line construction and operation.

None of the alternative routes cross or parallel known oil or gas pipelines or are within 200 feet of any oil and gas wells. Additionally, none of the alternative routes cross gravel pits, mines, or quarries.

4.2.6 Impacts on Socioeconomics

Construction and operation of the project is not anticipated to result in a significant change in the population or employment rate within the study area. For this project, some short-term employment would be generated. CPS Energy normally uses contract labor supervised by each entity's respective employees during the clearing and construction phases of transmission line projects. Construction workers for the project would likely commute to the work site on a daily or weekly basis instead of permanently relocating to the area. The temporary workforce increase would likely result in an increase in local retail sales due to purchases of lodging, food, fuel, and other merchandise for the duration of construction activities. No additional CPS Energy staff will be required for line operations and maintenance.

4.2.7 Impacts on Community Values

Adverse effects upon community values are defined as aspects of the project that would significantly and negatively alter the use, enjoyment, or intrinsic value attached to an important area or resource by a community. This definition assumes that community concerns are applicable to this specific project's location and characteristics, and do not include objections to electric transmission lines in general.

Potential impacts to community resources can be classified into direct and indirect effects. Direct effects are those that would occur if the location and construction of a transmission line and stations result in the removal or loss of public access to a valued resource. Indirect effects are those that would result from a loss in the enjoyment or use of a resource due to the characteristics (primarily aesthetic) of the proposed transmission line, structures, or ROW.

4.3 Impacts on Parks and Recreation Areas

Potential impacts to parks or recreation areas include the disruption or preemption of recreation activities. No parks or recreational areas meeting the definition set forth in the PUC application were identified within the study area.

Thus, no significant impacts to the use of parks and recreation facilities are anticipated from any of the alternative routes. Also, no adverse impacts are anticipated for any of the fishing or hunting areas from any of the alternative routes.

None of the alternative routes cross or are located within 1,000 feet of any parks and recreation facilities.

4.4 Impacts on Aesthetic Values

Aesthetic impacts, or impacts to visual resources, exist when the ROW, lines, and/or structures of a transmission line system create an intrusion into, or substantially alter the character of the existing view. The significance of the impact is directly related to the quality of the view, in the case of natural scenic areas, or to the importance of the existing setting in the use and/or enjoyment of an area, in the case of valued community resources and recreational areas.

Construction of the project could have both temporary and permanent aesthetic impacts. Temporary impacts would include views of the actual assembly and erection of the tower structures. If wooded areas are cleared, the brush and wood debris could have an additional negative temporary impact on the local visual environment. Permanent impacts from the project would involve the views of the cleared ROW, tower structures, and lines from public viewpoints, including roadways, recreational areas, and scenic overlooks.

The study area is located with the Texas Hill Country; however, no designated landscapes protected from legislation or most forms of development exist within the study area. Potential visibility impacts were evaluated by estimating the length of each alternative route that would fall within the foreground visual zones (one-half mile with unobstructed views) of major highways, FM roads, and parks or recreational areas. The alternative route lengths within the foreground visual zone of US highways, state highways, FM roads, and parks or recreational areas were tabulated and are discussed below.

None of the alternative routes have any portion of the routes located within the foreground visual zone of IHs, US Hwys, and SHs. None of the alternative routes have any portion of the routes located within the foreground visual zone of FM roads. Also, none of the alternative routes have any portion of the routes located within the foreground visual zone of parks or recreational areas.

Overall, the character of the study area maintains a suburban feel characteristic of the Texas Hill Country region. The residential and commercial developments within the study area have already impacted the aesthetic quality within the region from public viewpoints. The construction of any of the alternative routes is not anticipated to significantly impact the aesthetic quality of the landscape.

4.5 Impacts on Historical (Cultural Resources) Values

Methods for identifying, evaluating, and mitigating impacts to cultural resources have been established for federal projects or permitting actions, primarily for purposes of compliance with the National Historic Preservation Act (NHPA). Similar methods are often used when considering cultural resources affected by state-regulated undertakings. In either case, this process generally involves identification of significant (i.e., national- or state-designated) cultural resources within a project area, determining the potential impacts of the project on those resources, and implementing measures to avoid, minimize, or mitigate those impacts.

Impacts associated with the construction, operation, and maintenance of transmission lines can affect cultural resources either directly or indirectly. Construction activities associated with any proposed project can adversely impact cultural resources if those activities alter the integrity of key characteristics that contribute to a property's significance as defined by the standards of the NRHP or the Antiquities Code of Texas. These characteristics might include location, design, setting, materials, workmanship, feeling, or association for architectural and engineering resources or archeological information potential for archeological resources.

4.5.1 Direct Impacts

Typically, direct impacts could be caused by the actual construction of the line or through increased vehicular and pedestrian traffic and excavation for towers during the construction phase. If construction is required near historic structures, landscapes, or districts, proper mitigation and avoidance measures will avoid adversely impacting such features during construction of a transmission line. Additionally, an increase in vehicular and/or pedestrian traffic might damage surficial or shallowly buried sites. Excavation for transmission structures could impact shallow or deeply buried archeological sites. Direct impacts might also include isolation of a historic resource from or alteration of its surrounding environment.

4.5.2 Indirect Impacts

Indirect impacts include those affects caused by the project that are farther removed in distance or that occur later in time but are reasonably foreseeable. These indirect impacts might include introduction of visual or audible elements that are out of character with the resource or its setting. Indirect impacts might also occur as a result of alterations in the pattern of land use, changes in population density, accelerated growth rates, or increased pedestrian or vehicular traffic. Absent best management practices, proper mitigation, and avoidance measures, historic buildings, structures, landscapes, and districts are among the types of resources that could be adversely impacted by the indirect impact of a transmission line.

The preferred form of mitigation for direct and indirect impacts to cultural resources is avoidance through project modifications. Additional mitigation measures for direct impacts might include implementing a program for data recovery excavations if an archeological site cannot be avoided. Indirect impacts on historical properties and landscapes can be lessened through careful design and landscaping considerations, such as using vegetation screens or berms if practicable. Additionally, relocation might be possible for some historic structures.

4.5.3 Summary of Cultural Resource Impacts

The distance of each recorded site located within 1,000 feet from the nearest routing segment and alternative route was measured using GIS software and aerial photography interpretation (see Amended Tables 4-6 through 4-36). A review of the THSA and TASA (THC 2019b) records and NPS data (NPS 2019d) described in Section 3.5, indicated that 17 archeological sites and three NRHP-listed resources are recorded within 1,000 feet of the alternative routes (Amended Tables 4-4 and 4-5). These resources are discussed below. The Heidemann Cemetery is recorded approximately 593 feet from Alternative Routes C1, D1, I1, J1, M1, T1, Y, Z1, AA1, DD and EE; and approximately 736 feet from Alternative Routes B1 and G1. The cemetery is a contributing element of the NRHP-listed Heidemann Ranch Historic District. The Huntress Lane Cemetery, a cemetery reported by a landowner, is approximately 128 feet from Alternative Routes F1, N1, P, Q1, R1, T1, and U1.

TABLE 4-4 AMENDED ARCHEOLOGICAL SITES RECORDED WITHIN 1,000 FEET OF THE ALTERNATIVE ROUTE CENTERLINES

SITE TRINOMIAL	DISTANCE IN FEET FROM CENTERLINE	PRIMARY ALTERNATIVE ROUTE(S)
41BX75	**0**	**F1, N1, Q1, R1, U1**
	352	P, T1
41BX76	163	F1, N1, Q1, R1, U1
	582	P, T1
41BX77	172	F1, N1, Q1, R1, U1
41BX78	**50**	**F1, N1, Q1, R1, U1**
41BX80	627	F1, N1, Q1, R1, U1
41BX81	323	P, T1
	414	F1, N1, Q1, R1, U1
41BX82	241	P, T1
	340	F1, N1, Q1, R1, U1
41BX83	115	P, T1
	226	F1, N1, Q1, R1, U1
41BX84	836	F1, N1, Q1, R1, U1
	955	P, T1
41BX85	798	F1, N1, Q1, R1, U1
	896	P, T1
41BX86	**12**	**P, T1**
	106	F1, N1, Q1, R1, U1
41BX87	259	F1, N1, P, Q1, R1, T1, U1
41BX88	444	F1, N1, P, Q1, R1, T1, U1
41BX89	675	F1, N1, P, Q1, R1, T1, U1
41BX1923	266	C1, Y, DD, EE
	329	B1, D1, G1, I1, J1, M1, T1, Z1, AA1
	814	E, X1
41BX1924	86	B1, D1, G1, I1, J1, M1, T1, Z1, AA1
	150	C1, X1, DD, EE
	817	E, Y
41BX2176	**0**	**V**
41BX2177	**44**	**O, S, W**
41BX2178	72	O, S, W

Note. Bold entries will be crossed by 100-foot-wide ROW.

TABLE 4-5 AMENDED NRHP-LISTED RESOURCES RECORDED WITHIN 1,000 FEET OF THE ALTERNATIVE ROUTE CENTERLINES

RESOURCES NAME	NRHP NUMBER	DISTANCE IN FEET FROM CENTERLINE	PRIMARY ALTERNATIVE ROUTE(S)
Heidemann Ranch	11000423	50	B1, G1
		98	C1, D1, I1, J1, M1, T1, Y, Z1, AA1, DD, EE
R.L. White Ranch	**08000474**	**0**	**F1, K, L, N1, O, P, Q1, R1, S, U1, V, W, BB, CC**
Maverick-Altgelt Ranch and Fenstermaker-Fromme Farm	79002915	50	A, B1, E, G1, H, X1
		142	Y

Note. Bold entries will be crossed by 100-foot-wide ROW.

Of the 19 archeological sites recorded within 1,000 feet of the alternative routes, five are crossed by the alternative routes. Alternative Routes F1, N1, Q1, R1, and U1 cross archeological sites 41BX75 and 41BX78. Sites 41BX75 and 41BX78 are campsites with burned rock, bifaces and debitage. Site 41BX78 is mapped as a point approximately 50 feet from the alternative route centerlines but is described as a large site. The sites have not been formally assessed for listing on the NRHP, although the site recorders recommended additional work at the sites. Alternative Routes P and T1 cross site 41BX86, a campsite with Pedernales, Frio, and Castroville projectile points, bifaces, burned rock, and debitage that has not been formally assessed for listing on the NRHP. Alternate Route V crosses archeological Site 41BX2176. Site 41BX2176 is the remains of the Sebastien Chapa farmstead, a multicomponent historic site with the remains of a small, collapsed dry-stacked limestone structure dating to the 1800s, a mid-1900s house and garage, and stone walls, a pool, dams on a nearby stream, and multiple pile and scatters of domestic and agricultural implements. The collapsed stone structure is approximately 70 feet from the alternative route centerlines. The site has not been formally assessed for listing on the NRHP, but the recorders of the site recommend that is ineligible for listing on the NRHP. Alternative Routes O, S, and W cross site 41BX2177 and 41BX178, and are approximately 44 feet and 72 feet from 41BW2178. Sites 41BX2177 and 41BX2178 are scatters of historic artifacts deemed by the recorders to be ineligible for listing on the NRHP. Historic structures were observed near 41BX2178. Neither site has been evaluated for listing on the NRHP.

Alternative Routes B1, D1, G1, I1, J1, M1, T1, Z1, and AA1 are approximately 329 feet and 86 feet from archeological sites 41BX1923 and 41BX1924, respectively. Site 41BX1923 is a prehistoric campsite with a widely dispersed scatter of burned rocks. The site has not been formally evaluated for listing on the NRHP, but the recorders recommend that the shallowly buried and surficial scatter of burned rock is not eligible for listing on the NRHP. Site 41BX1924 is multicomponent site with the remains of ten structures, including a house, barn, long barn and animal pen, a cistern and associated artifact scatters, all dating to the early to mid-1900s. A concentration of burned rock and ash, potentially a prehistoric hearth,

structures, including a house, barn, long barn and animal pen, a cistern and associated artifact scatters, all dating to the early to mid-1900s. A concentration of burned rock and ash, potentially a prehistoric hearth, was also observed at the site. The site has not been formally assessed for listing on the NRHP. Additionally. Alternative Routes C, Y, DD, and EE are approximately 266 feet from site 41BX1923, and Alterative Routes E and X1 are approximately 814 feet from the site. Alternative Routes C1, X1, DD, and EE are approximately 150 feet and Alternative Routes E and Y are approximately 817 feet from site 41BX1924.

Alternative Routes F1, N1, P, Q1, R1, T1, and U1 are within 1,000 feet of, but do not cross, sites 41BX76, 41BX77, 41BX80, 41BX81, 41BX82, 41BX83, 41BX84, 41BX85, 41BX86, 41BX87, 41BX88, and 41BX89. Additionally, Alternative Routes P and T1 are within 1,000 feet of site 41BX75, 41BX76, 41BX81, 41BX82, 41BX83, 41BX84, 41BX85, 41BX87, 41BX88, and41BX89; and Alternate Routes F1, N1, Q1, R1, and U1 are within 1,000 feet of 41BX76, 41BX77, 41BX80, 41BX81, 41BX82, 41BX83, 41BX84, 41BX85, 41BX86, 41BX87, 41BX88, and 41BX89. Sites 41BX87 and 41BX88 are lithic scatters and the remaining sites are campsites. None of these prehistoric sites within 1,000 feet of the alternate routes have been formally assessed for listing on the NRHP. However, as mentioned above, additional work has been recommended for site 41BX75.

Portions of Alternative Routes F1, K, L, N1, O, P, Q1, R1, S, U1, V, W, BB, and CC cross the NRHP-listed R.L. White Ranch. These routes extend less than 105 feet into the eastern boundary of the 3,500-acre NRHP boundary, connecting into an existing transmission line running generally north to south along the NRHP border. The ranch was developed by Ryall Luther White beginning in 1926 and used for entertainment purposes. Twenty-five contributing resources and five noncontributing resources are listed in the NRHP (2008) nomination form. Divided into three groups: the principal guest and residential compound; agricultural features including barns fields, and sheds; and engineering/water retention features. All three concentrations of the resources are over one mile from the alternative routes. No adverse impacts to known elements of the district are anticipated due to the distance between contributing elements and the alternative route centerlines.

The centerlines for Alternative Routes B1 and G1 and Alternative Routes C1, D1, I1, J1, M1, T1, Y, Z1, AA1, DD, and EE are approximately 50 feet and 98 feet from the NRHP-listed Heidemann Ranch District, respectively. The Heidemann Ranch was purchased in 1856 by William Heidemann (NRHP 2011). Twelve contributing elements, including the Heidemann Cemetery, and one non-contributing element are listed in the district nomination form. Of these, the well house, garage, and outhouse are

nearest to the alternative route centerlines, at approximately 86 feet, 188 feet, and 216 feet, respectively. The 1937 house is approximately 280 feet from the nearest route centerlines. The log house and three surrounding structures, all dating to the 1860s, are over 500 feet from the proposed centerlines. No adverse impacts to known elements of the district are anticipated due to the distance between contributing elements and the alternative route centerlines.

Alternative Routes A, B1, E, G1, H, and X1 are approximately 50 feet and Alternative Route Y is approximately 142 feet from the Maverick-Altgelt Ranch and Fenstermaker-Fromme Farm Historic District. The district consists of two separate but adjoining areas: the Maverick-Altgelt Ranch headquarters, outbuildings and lands, including the George Obert site; and the Fenstermaker-Fromme Farm structures and lands, plus three prehistoric and four historic archeological sites. The nearest component, archeological site 41BX498, the mapped location of the Obert Cemetery, is over 2,000 feet from the alternative route centerlines. No adverse impacts to known elements of the district are anticipated due to the distance between contributing elements and the alternative centerlines.

No systematic cultural resource surveys have been conducted along the alternative routes. Thus, the potential for undiscovered cultural resources does exist along all alternative routes. To assess this potential, a review of geological, soils, and topographical maps was undertaken by a professional archeologist to identify areas along the alternative routes where unrecorded prehistoric archeological resources have a higher probability to occur. These HPAs for prehistoric archeological sites were identified near unnamed streams in the study area and adjacent to closed depressions that may have held fresh water. To facilitate the data evaluation and alternative route comparison, each HPA was mapped using GIS and the length of each alternative route crossing these areas was tabulated. Historic HPA were mapped near previously recorded historic sites and NRHP properties, and near structures depicted on historic topographic maps.

All of the alternative routes cross HPAs for cultural resources. Alternative Routes H, X1, E, and A cross the least amount of HPA, with approximately 1.44, 1.44, 1.49, and 1.73 miles, respectively. Alternative Routes U1 and L cross the most HPA, with approximately 4.77 and 4.55 miles of HPA crossed, respectively. Table 4-1 Amended shows the amount of HPA crossed by each route.

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Appendix C - Amended

Habitable Structures and Other Land Use Features in the Vicinity of the Primary Alternative Routes

(For convenience and completeness, all of the inventory tables in Appendix C have been included even if they were not corrected or amended.)

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Appendix C Amended

Table 4-6 Habitable Structures and Other Land Use Features in the Vicinity of the Primary Alternative Route A

Segment Combinations: Sub 1 – 13-14-54-17-28-29-40

Map Number	Structure or Feature	Approximate Distance from Route Centerline[1] (feet)	Nearest Alternative Route Segment[2]
1	Single Family Residence	267	40
2	Single Family Residence	220	40
3	Single Family Residence	141	40
4	Single Family Residence	194	40
5	Single Family Residence	128	40
6	Single Family Residence	187	40
7	Single Family Residence	290	40
9	Single Family Residence	167	29
10	Single Family Residence	197	29
13	Single Family Residence	164	29
23	Single Family Residence	191	17
24	Single Family Residence	94	17
25	Single Family Residence	97	17
26	Single Family Residence	84	17
27	Single Family Residence	70	17
28	Single Family Residence	147	17
29	Single Family Residence	170	17
30	Single Family Residence	238	17
31	Single Family Residence	273	17
32	Single Family Residence	233	17
33	Single Family Residence	195	17
34	Single Family Residence	189	17
35	Single Family Residence	189	17
36	Single Family Residence	142	17
37	Single Family Residence	146	17
38	Single Family Residence	152	17
39	Single Family Residence	235	17
40	Single Family Residence	297	17
41	Single Family Residence	158	17
42	Single Family Residence	305	17
59	Single Family Residence	227	13
60	Single Family Residence	263	13
61	Single Family Residence	285	13
62	Single Family Residence	241	13
63	Single Family Residence	190	13
64	Single Family Residence	144	13
65	Single Family Residence	104	13
66	Single Family Residence	187	13
67	Single Family Residence	148	13

Table 4-6 Habitable Structures and Other Land Use Features in the Vicinity of the Primary Alternative Route A

Segment Combinations: Sub 1 – 13-14-54-17-28-29-40

Map Number	Structure or Feature	Approximate Distance from Route Centerline[1] (feet)	Nearest Alternative Route Segment[2]
68	Single Family Residence	304	13
69	Single Family Residence	208	14
70	Single Family Residence	206	14
71	Single Family Residence	251	14
72	Single Family Residence	204	14
73	Single Family Residence	244	14
74	Single Family Residence	228	14
75	Single Family Residence	230	14
76	Single Family Residence	260	14
77	Single Family Residence	267	14
78	Single Family Residence	169	14
79	Single Family Residence	215	54
80	Single Family Residence	202	54
81	Single Family Residence	82	54
82	Single Family Residence	251	54
83	Single Family Residence	207	54
84	Single Family Residence	214	54
85	Single Family Residence	158	54
86	Single Family Residence	162	54
87	Single Family Residence	300	54
88	Single Family Residence	122	54
89	Single Family Residence	134	54
90	Single Family Residence	284	54
91	Single Family Residence	223	54
92	Single Family Residence	264	54
93	Single Family Residence	200	54
94	Single Family Residence	224	54
95	Single Family Residence	279	54
178	Single Family Residence	213	54
186	Single Family Residence	288	40
301	Boerne Stage Field	7,210	29
--	Boerne Stage Maverick-Altgelt Ranch and Fenstermaker-Fromme Farm National Register Historic District	50	28

[1] Due to the potential horizontal inaccuracies of the aerial photography and data utilized, all habitable structures within 310' have been identified.

[2] Nearest Alternate Route Segment to sensitive cultural resource sites are not provided for protection of the sites.

Table 4-7 Amended Habitable Structures and Other Land Use Features in the Vicinity of the Primary Alternative Route B1

Segment Combinations: Sub 1 – 13-14-54-17-31-42a-46a-46b

Map Number	Structure or Feature	Approximate Distance from Route Centerline[1] (feet)	Nearest Alternative Route Segment[2]
16	Single Family Residence	162	46b
19	Single Family Residence	274	31
20	Single Family Residence	296	31
23	Single Family Residence	191	17
24	Single Family Residence	94	17
25	Single Family Residence	97	17
26	Single Family Residence	84	17
27	Single Family Residence	70	17
28	Single Family Residence	147	17
29	Single Family Residence	170	17
30	Single Family Residence	238	17
31	Single Family Residence	273	17
32	Single Family Residence	233	17
33	Single Family Residence	195	17
34	Single Family Residence	189	17
35	Single Family Residence	189	17
36	Single Family Residence	142	17
37	Single Family Residence	146	17
38	Single Family Residence	152	17
39	Single Family Residence	235	17
40	Single Family Residence	297	17
41	Single Family Residence	158	17
42	Single Family Residence	305	17
59	Single Family Residence	227	13
60	Single Family Residence	263	13
61	Single Family Residence	285	13
62	Single Family Residence	241	13
63	Single Family Residence	190	13
64	Single Family Residence	144	13
65	Single Family Residence	104	13
66	Single Family Residence	187	13
67	Single Family Residence	148	13
68	Single Family Residence	304	13
69	Single Family Residence	208	14
70	Single Family Residence	206	14
71	Single Family Residence	251	14
72	Single Family Residence	204	14
73	Single Family Residence	244	14
74	Single Family Residence	228	14

Table 4-7 Amended Habitable Structures and Other Land Use Features in the Vicinity of the Primary Alternative Route B1

Segment Combinations: Sub 1 – 13-14-54-17-31-42a-46a-46b

Map Number	Structure or Feature	Approximate Distance from Route Centerline[1] (feet)	Nearest Alternative Route Segment[2]
75	Single Family Residence	230	14
76	Single Family Residence	260	14
77	Single Family Residence	267	14
78	Single Family Residence	169	14
79	Single Family Residence	215	54
80	Single Family Residence	202	54
81	Single Family Residence	82	54
82	Single Family Residence	251	54
83	Single Family Residence	207	54
84	Single Family Residence	214	54
85	Single Family Residence	158	54
86	Single Family Residence	162	54
87	Single Family Residence	300	54
88	Single Family Residence	122	54
89	Single Family Residence	134	54
90	Single Family Residence	284	54
91	Single Family Residence	223	54
92	Single Family Residence	264	54
93	Single Family Residence	200	54
94	Single Family Residence	224	54
95	Single Family Residence	279	54
178	Single Family Residence	213	54
301	Boerne Stage Field	9,494	17
701	Heidemann Cemetery	736	31
901	Heidemann Ranch Historic District	50	31
--	Boerne Stage Maverick-Altgelt Ranch and Fenstermaker-Fromme Farm National Register Historic District	50	17
--	41BX1923	329	--
--	41BX1924	86	--

[1] Due to the potential horizontal inaccuracies of the aerial photography and data utilized, all habitable structures within 310' have been identified.

[2] Nearest Alternate Route Segment to sensitive cultural resource sites are not provided for protection of the sites.

Table 4-8 Amended Habitable Structures and Other Land Use Features in the Vicinity of the Primary Alternative Route C1

Segment Combinations: Sub 1 – 2-3-4-5-14-54-20-36-35-34-41-46a-46b

Map Number	Structure or Feature	Approximate Distance from Route Centerline[1] (feet)	Nearest Alternative Route Segment[2]
16	Single Family Residence	162	46b
17	School	214	35
18	Single Family Residence	162	35
51	Single Family Residence	194	2
52	Single Family Residence	307	2
53	Single Family Residence	137	2
55	Commercial	304	4
58	Single Family Residence	229	5
67	Single Family Residence	232	14
69	Single Family Residence	208	14
70	Single Family Residence	206	14
71	Single Family Residence	251	14
72	Single Family Residence	204	14
73	Single Family Residence	244	14
74	Single Family Residence	228	14
75	Single Family Residence	230	14
76	Single Family Residence	260	14
77	Single Family Residence	267	14
78	Single Family Residence	169	14
79	Single Family Residence	215	54
80	Single Family Residence	202	54
81	Single Family Residence	82	54
82	Single Family Residence	251	54
83	Single Family Residence	207	54
84	Single Family Residence	214	54
85	Single Family Residence	158	54
86	Single Family Residence	162	54
87	Single Family Residence	300	54
88	Single Family Residence	122	54
89	Single Family Residence	134	54
90	Single Family Residence	284	54
91	Single Family Residence	223	54
92	Single Family Residence	264	54
93	Single Family Residence	200	54
94	Single Family Residence	224	54
95	Single Family Residence	279	54
96	Single Family Residence	280	20
97	Single Family Residence	195	20
98	Single Family Residence	241	20

Table 4-8 Amended Habitable Structures and Other Land Use Features in the Vicinity of the Primary Alternative Route C1

Segment Combinations: Sub 1 – 2-3-4-5-14-54-20-36-35-34-41-46a-46b

Map Number	Structure or Feature	Approximate Distance from Route Centerline[1] (feet)	Nearest Alternative Route Segment[2]
99	Single Family Residence	241	20
100	Single Family Residence	244	20
101	Single Family Residence	265	20
102	Single Family Residence	266	20
103	Single Family Residence	263	20
104	Single Family Residence	211	20
105	Single Family Residence	255	20
178	Single Family Residence	213	54
200	Commercial-Guard House	227	36
301	Boerne Stage Field	9,429	34
501	CellTex Site Services, Ltd.	482	36
701	Heidemann Cemetery	593	36
901	Heidemann Ranch Historic District	98	36
--	41BX1923	266	--
--	41BX1924	150	--

[1] Due to the potential horizontal inaccuracies of the aerial photography and data utilized, all habitable structures within 310' have been identified.

[2] Nearest Alternate Route Segment to sensitive cultural resource sites are not provided for protection of the sites.

Table 4-9 Amended Habitable Structures and Other Land Use Features in the Vicinity of the Primary Alternative Route D1

Segment Combinations: Sub 2 – 4-5-14-54-20-36-42a-46a-46b

Map Number	Structure or Feature	Approximate Distance from Route Centerline[1] (feet)	Nearest Alternative Route Segment[2]
16	Single Family Residence	162	46b
55	Commercial	304	4
58	Single Family Residence	229	5
67	Single Family Residence	232	14
69	Single Family Residence	208	14
70	Single Family Residence	206	14
71	Single Family Residence	251	14
72	Single Family Residence	204	14
73	Single Family Residence	244	14
74	Single Family Residence	228	14
75	Single Family Residence	230	14
76	Single Family Residence	260	14
77	Single Family Residence	267	14
78	Single Family Residence	169	14
79	Single Family Residence	215	54
80	Single Family Residence	202	54
81	Single Family Residence	82	54
82	Single Family Residence	251	54
83	Single Family Residence	207	54
84	Single Family Residence	214	54
85	Single Family Residence	158	54
86	Single Family Residence	162	54
87	Single Family Residence	300	54
88	Single Family Residence	122	54
89	Single Family Residence	134	54
90	Single Family Residence	284	54
91	Single Family Residence	223	54
92	Single Family Residence	264	54
93	Single Family Residence	200	54
94	Single Family Residence	224	54
95	Single Family Residence	279	54
96	Single Family Residence	280	20
97	Single Family Residence	195	20
98	Single Family Residence	241	20
99	Single Family Residence	241	20
100	Single Family Residence	244	20
101	Single Family Residence	265	20
102	Single Family Residence	266	20
103	Single Family Residence	263	20

Table 4-9 Amended Habitable Structures and Other Land Use Features in the Vicinity of the Primary Alternative Route D1

Segment Combinations: Sub 2 – 4-5-14-54-20-36-42a-46a-46b

Map Number	Structure or Feature	Approximate Distance from Route Centerline[1] (feet)	Nearest Alternative Route Segment[2]
104	Single Family Residence	211	20
105	Single Family Residence	255	20
178	Single Family Residence	213	54
200	Commercial-Guard House	227	36
301	Boerne Stage Field	10,720	42a
501	CellTex Site Services, Ltd.	482	36
701	Heidemann Cemetery	593	36
901	Heidemann Ranch Historic District	98	36
--	41BX1923	329	--
--	41BX1924	86	--

[1] Due to the potential horizontal inaccuracies of the aerial photography and data utilized, all habitable structures within 310' have been identified.

[2] Nearest Alternate Route Segment to sensitive cultural resource sites are not provided for protection of the sites

Table 4-10 Amended Habitable Structures and Other Land Use Features in the Vicinity of the Primary Alternative Route E

Segment Combinations: Sub 2 – 4-5-14-54-17-28-30-34-33-40

Map Number	Structure or Feature	Approximate Distance from Route Centerline[1] (feet)	Nearest Alternative Route Segment[2]
1	Single Family Residence	267	40
2	Single Family Residence	220	40
3	Single Family Residence	141	40
4	Single Family Residence	194	40
5	Single Family Residence	128	40
6	Single Family Residence	187	40
7	Single Family Residence	290	40
14	Single Family Residence	238	30
23	Single Family Residence	191	17
24	Single Family Residence	94	17
25	Single Family Residence	97	17
26	Single Family Residence	84	17
27	Single Family Residence	70	17
28	Single Family Residence	147	17
29	Single Family Residence	170	17
30	Single Family Residence	238	17
31	Single Family Residence	273	17
32	Single Family Residence	233	17
33	Single Family Residence	195	17
34	Single Family Residence	189	17
35	Single Family Residence	189	17
36	Single Family Residence	142	17
37	Single Family Residence	146	17
38	Single Family Residence	152	17
39	Single Family Residence	235	17
40	Single Family Residence	297	17
41	Single Family Residence	158	17
42	Single Family Residence	305	17
55	Commercial	304	4
58	Single Family Residence	229	5
67	Single Family Residence	232	14
69	Single Family Residence	208	14
70	Single Family Residence	206	14
71	Single Family Residence	251	14
72	Single Family Residence	204	14
73	Single Family Residence	244	14
74	Single Family Residence	228	14
75	Single Family Residence	230	14
76	Single Family Residence	260	14

Table 4-10 Amended Habitable Structures and Other Land Use Features in the Vicinity of the Primary Alternative Route E

Segment Combinations: Sub 2 – 4-5-14-54-17-28-30-34-33-40

Map Number	Structure or Feature	Approximate Distance from Route Centerline[1] (feet)	Nearest Alternative Route Segment[2]
77	Single Family Residence	267	14
78	Single Family Residence	169	14
79	Single Family Residence	215	54
80	Single Family Residence	202	54
81	Single Family Residence	82	54
82	Single Family Residence	251	54
83	Single Family Residence	207	54
84	Single Family Residence	214	54
85	Single Family Residence	158	54
86	Single Family Residence	162	54
87	Single Family Residence	300	54
88	Single Family Residence	122	54
89	Single Family Residence	134	54
90	Single Family Residence	284	54
91	Single Family Residence	223	54
92	Single Family Residence	264	54
93	Single Family Residence	200	54
94	Single Family Residence	224	54
95	Single Family Residence	279	54
178	Single Family Residence	213	54
186	Single Family Residence	288	40
301	Boerne Stage Field	7,677	40
--	Boerne Stage Maverick-Altgelt Ranch and Fenstermaker-Fromme Farm National Register Historic District	50	28
--	41BX1923	814	--
--	41BX1924	817	--

[1] Due to the potential horizontal inaccuracies of the aerial photography and data utilized, all habitable structures within 310' have been identified.

[2] Nearest Alternate Route Segment to sensitive cultural resource sites are not provided for protection of the sites.

Table 4-11 Amended Habitable Structures and Other Land Use Features in the Vicinity of the Primary Alternative Route F1

Segment Combinations: Sub 2 – 7-8-50-15-26a-38-43

Map Number	Structure or Feature	Approximate Distance from Route Centerline[1] (feet)	Nearest Alternative Route Segment[2]
57	Single Family Residence	267	7
134	Single Family Residence	218	43
139	Single Family Residence	283	8
140	Single Family Residence	171	8
141	Single Family Residence	193	8
142	Single Family Residence	304	8
143	Single Family Residence	222	15
146	Single Family Residence	155	15
147	Single Family Residence	208	15
198	Single Family Residence	69	26a
199	Single Family Residence	291	26a
201	Single Family Residence	280	43
301	Boerne Stage Field	15,279	7
702	Huntress Lane Cemetery	128	15
902	R.L. White Ranch Historic District	0	43
--	41BX75	0	--
--	41BX76	163	--
--	41BX77	172	--
--	41BX78	50	--
--	41BX80	627	--
--	41BX81	414	--
--	41BX82	340	--
--	41BX83	226	--
--	41BX84	836	--
--	41BX85	798	--
--	41BX86	106	--
--	41BX87	259	--
--	41BX88	444	--
--	41BX89	675	--

[1] Due to the potential horizontal inaccuracies of the aerial photography and data utilized, all habitable structures within 310' have been identified.

[2] Nearest Alternate Route Segment to sensitive cultural resource sites are not provided for protection of the sites.

Table 4-12 Amended Habitable Structures and Other Land Use Features in the Vicinity of the Primary Alternative Route G1

Segment Combinations: Sub 3 – 5-14-54-17-31-42a-46a-49a

Map Number	Structure or Feature	Approximate Distance from Route Centerline[1] (feet)	Nearest Alternative Route Segment[2]
19	Single Family Residence	274	31
20	Single Family Residence	296	31
23	Single Family Residence	191	17
24	Single Family Residence	94	17
25	Single Family Residence	97	17
26	Single Family Residence	84	17
27	Single Family Residence	70	17
28	Single Family Residence	147	17
29	Single Family Residence	170	17
30	Single Family Residence	238	17
31	Single Family Residence	273	17
32	Single Family Residence	233	17
33	Single Family Residence	195	17
34	Single Family Residence	189	17
35	Single Family Residence	189	17
36	Single Family Residence	142	17
37	Single Family Residence	146	17
38	Single Family Residence	152	17
39	Single Family Residence	235	17
40	Single Family Residence	297	17
41	Single Family Residence	158	17
42	Single Family Residence	305	17
58	Single Family Residence	229	5
67	Single Family Residence	232	14
69	Single Family Residence	208	14
70	Single Family Residence	206	14
71	Single Family Residence	251	14
72	Single Family Residence	204	14
73	Single Family Residence	244	14
74	Single Family Residence	228	14
75	Single Family Residence	230	14
76	Single Family Residence	260	14
77	Single Family Residence	267	14
78	Single Family Residence	169	14
79	Single Family Residence	215	54
80	Single Family Residence	202	54
81	Single Family Residence	82	54
82	Single Family Residence	251	54
83	Single Family Residence	207	54

Table 4-12 Amended Habitable Structures and Other Land Use Features in the Vicinity of the Primary Alternative Route G1

Segment Combinations: Sub 3 – 5-14-54-17-31-42a-46a-49a

Map Number	Structure or Feature	Approximate Distance from Route Centerline[1] (feet)	Nearest Alternative Route Segment[2]
84	Single Family Residence	214	54
85	Single Family Residence	158	54
86	Single Family Residence	162	54
87	Single Family Residence	300	54
88	Single Family Residence	122	54
89	Single Family Residence	134	54
90	Single Family Residence	284	54
91	Single Family Residence	223	54
92	Single Family Residence	264	54
93	Single Family Residence	200	54
94	Single Family Residence	224	54
95	Single Family Residence	279	54
178	Single Family Residence	213	54
301	Boerne Stage Field	9,494	17
701	Heidemann Cemetery	736	31
901	Heidemann Ranch Historic District	50	31
--	Boerne Stage Maverick-Altgelt Ranch and Fenstermaker-Fromme Farm National Register Historic District	50	17
--	41BX1923	329	--
--	41BX1924	86	--

[1] Due to the potential horizontal inaccuracies of the aerial photography and data utilized, all habitable structures within 310' have been identified.

[2] Nearest Alternate Route Segment to sensitive cultural resource sites are not provided for protection of the sites.