



Control Number: 38230



Item Number: 866

Addendum StartPage: 0

SOAH DOCKET NO. 473-10-4398
DOCKET NO. 38230

RECEIVED
10-28-10 PM 2:55

APPLICATION OF LONE
STAR TRANSMISSION, LLC
FOR A CERTIFICATE OF
CONVENIENCE AND NECESSITY
FOR THE CENTRAL A TO CENTRAL
C TO SAM SWITCH/NAVARRO
PROPOSED CREZ TRANSMISSION
LINE

§
§
§
§
§
§
§
§

BEFORE THE STATE OFFICE OF
ADMINISTRATIVE HEARINGS

LONE STAR TRANSMISSION LLC'S
FIRST ERRATA AND THIRD SUPPLEMENT TO APPLICATION

TO THE HONORABLE LILO POMERLEAU AND PRATIBHA SHENOY,
ADMINISTRATIVE LAW JUDGES:

Lone Star Transmission, LLC ("Lone Star") respectfully submits its First Errata to its Application. In the course of reviewing its original CCN Application, submitted May 24, 2010, Lone Star has discovered errors that require revision. Additionally, to comply with the Commissioners' recently expressed expectations that utilities shall have evidence concerning each and every link of their application, Lone Star submits as a supplement tables with routing data for each link comprising its routes.

To the extent leave may be required (because the Applicant has given notice under PUC PROC. R. 22.52), Lone Star requests that the Administrative Law Judges ("ALJ") grant such leave as may be required to file its Third Supplement. This Supplement is appropriate because it is served upon all parties, is filed at least seven days before the hearing on the merits, and does not seek relief for which notice has not been provided.¹

I. ERRATA

Lone Star wishes to revise certain statements in its CCN Application and supporting Direct Testimony. Lone Star has already given notice of most of these changes through discovery responses or prior filings. Lone Star attaches errata pages reflecting these changes.

¹ PUC PROC. R. 22.76 (a)(1)

(1) At Question 4, at page 5, Lone Star stated that the original location for the Central C Substation was in northern Callahan County. In fact, the location was always in Shackelford County. Lone Star revises the sentence in question as follows:

In the CTO Study, Central C Substation was depicted in ~~northern Callahan~~southern Shackelford County.

(2) Lone Star has determined that David Turner, rather than Mark Van Dyne, will sponsor Attachment 8b (submitted as part of Lone Star's Second Supplement on June 24, 2010, to replace Attachment 8). Both their testimonies and Michael Grable's testimony are revised accordingly. Further, Mr. Van Dyne is designated as the sponsor of Lone Star's First Supplement to its CCN Application, which contained the approximately 74 maps showing property tract numbers, and associated indices, and the spreadsheets attached to this filing as Lone Star's Third Supplement.²

Grable Direct Testimony, p.5, l. 11-13:

Mr. Turner sponsors or co-sponsors Lone Star's response to Question Nos. 9, 10, 16, 23 and 27, and Attachment Nos. 3, 4 and 8b9-14 of the Application.

Grable Direct Testimony, p. 5, l. 16-19:

Mr. Van Dyne sponsors Burns & McDonnell's Environmental Assessment and Routing Study, in addition to Lone Star's response to Question Nos. 9, 15-17, 19-22, 24-27, Tables 1-6 and Attachments 1 and 6-78 to the Application.

Turner Direct Testimony, p. 3, l. 15-19:

In addition, I sponsor or co-sponsor Lone Star's response to Question Nos. 9, 10, 16, 23, and 27 and Attachments 3, 4, and 8b9-14 to the Application for a Certificate of Convenience and Necessity ("CCN") for the Central A to Central C to Sam Switch/Navarro Proposed CREZ Transmission Line, Docket No. 38230 ("Application").

Van Dyne Direct Testimony, p. 2, l. 18-20:

I sponsor or co-sponsor the responses to Question Nos. 9, 15-17, 19-22, 24-27, Table Nos. 1-6, and Attachment 1 and 6-78. I also sponsor the maps and indices filed with the Commission as Lone Star's First Supplement to Its Application for a Certificate

² Lone Star's First Supplement to Its Application for a Certificate of Convenience and Necessity, June 18, 2010.

of Convenience and Necessity, filed June 18, 2010, as well as Lone Star's Third Supplement, filed August 9, 2010.

(3) In Dan Mayers' Direct Testimony, Exh. DM-6, Mr. Mayers changes a mistakenly labeled row title.

In Row 20, in the column labeled "Scope," change the line item "*Other: CCN Application Costs*" to "*Other: Development Costs*".

(4) In Mr. Turner's Direct Testimony, he refers to Lone Star having conducted "deed research" to determine the identity and contact information for certain affected landowners that the relevant county tax rolls did not contain. Lone Star's research was broader in scope than deed research. Accordingly, that reference is corrected.

Turner Direct Testimony, p. 5, l. 8-9:

Landowners of record were determined by review of current county tax rolls and supplemented by additional~~deed~~ research, as necessary.

(5) Mr. Van Dyne's Direct Testimony references a potential U.S. Army Corps of Engineers ("USACE") requirement to obtain an Environmental Assessment for two proposed Lone Star transmission link segments. In fact, the USACE would only require the assessment for one such link. Mr. Van Dyne therefore revises that passage of his testimony.

Van Dyne Direct Testimony, p. 9, l. 9-13:

Based on correspondence with Whitney Lake USACE personnel, an Environmental Assessment would be required for the ~~shorter~~ crossings of USACE-owned land ~~by (Links XX2 and XX4)~~ and an Environmental Impact Statement ("EIS") would be required for the two longer crossings of the USACE-owned land (Route Links WW and TT2). Although Link XX4 crosses USACE-owned land, neither an EA nor an EIS would be required, according to the USACE.

(6) At the time Lone Star filed its Application, its ultimate parent's name was "FPL Group, Inc." It has changed its name to "NextEra Energy, Inc." Accordingly, Mr. Grable's Direct Testimony contains two changes to account for this name change. First,

his Exhibit MG-2, the organizational chart, reflects the new name. Then, the following portion of his testimony changes as well.

Grable Direct Testimony, p. 7, l. 3-11:

U.S. Transmission is a wholly-owned subsidiary of FPL Group Resources, LLC ("FPL Group Resources"), which is a direct, wholly-owned subsidiary of FPL Group Capital Inc ("FPL Group Capital"), which is wholly-owned by ~~FPL Group, Inc. ("FPL Group")~~. Lone Star expects that on or about May 24, 2010, the name of FPL Group will change to NextEra Energy, Inc.

II. THIRD SUPPLEMENT

At the July 30, 2010 Open Meeting, the Commissioners considered route adequacy matters for Docket No. 38140,³ another CREZ CCN case pending before SOAH. The Commissioners appeared to express their desire that they possess the ability to review routing factor information not only by proposed route but also by individual route link segment.

Accordingly, Lone Star supplements its CCN Application to submit the tables containing information on the routing factors (Tables C-1, C-2, and C-3 to the Environmental Assessment and Routing Study, Attachment 1 to the CCN Application) on an individual link basis. Those tables as filed presented this information only by route.

Lone Star has previously produced most of this information in discovery, in its response to Yellowbird Ranch RFI 2-6 (asking for the data for the Central C-Sam Switch links) and to the City of Abilene's RFI 1-1 (requesting for the Central A-Central C links).

³ *Application of Oncor Electric Delivery Company LLC to Amend a Certificate of Convenience and Necessity for the Riley-Krum 345-kV CREZ Transmission Line (Formerly Oklaunion To West Krum) in Archer, Clay, Cooke, Denton, Jack, Montague, Wichita, Wilbarger, and Wise Counties.*

III. CONCLUSION

Lone Star therefore requests that its First Errata and Third Supplement to its CCN Application be received for filing and that the record reflects these revisions.

Respectfully Submitted,



Chris Reeder
State Bar No. 16692300
S. Scott Shepherd
State Bar No. 24013498
Kathleen E. Magruder
State Bar No. 12827700
Marianne Carroll
State Bar No. 03888800
Brown McCarroll, L.L.P.
111 Congress Ave., Suite 1400
Austin, Texas 78701
512.479.1154 (Phone)
512.481.4868 (Fax)
creeder@mailbmc.com
sshepherd@mailbmc.com
kmagruder@mailbmc.com
mcarroll@mailbmc.com

For Service: LoneStarCCN@mailbmc.com

ATTORNEYS FOR LONE STAR
TRANSMISSION, LLC

CERTIFICATE OF SERVICE

It is hereby certified that notice of the filing of the foregoing has been sent to dk38230@soah.state.tx.us on this 9th day of August, 2010, consistent with Order No. 5.



Chris Reeder

Errata Pages

**Application For A Certificate of Convenience and Necessity For A Proposed Transmission Line
Pursuant To P.U.C. Subst. R. 25.174**

conductor as opposed to the 2-1433 ACSS/TW conductor specified in the CTO Study. In the CTO Study, Central C Substation was depicted in ~~northern Callahan~~ ^{southern Shackelford} County. Lone Star proposed the movement of Central C Substation approximately 20 miles northwest into southwestern Shackelford County in order to facilitate interconnections with existing facilities, reduce transmission line crossings, and reduce transmission line lengths for other CREZ-related projects. As noted by ERCOT, the depicted locations of new substations in the CTO Study were not intended to be definitive. A significant amount of flexibility was intentionally reserved to allow the TSPs, in developing the actual locations of the substations, to account for the siting considerations not addressed in the CTO Study, including land-use issues, site accessibility, and generation interconnection requests. ERCOT reviewed the locations of the substations submitted by Lone Star and determined the proposed location of the Central C Substation (West Shackelford) was a reasonable and cost-effective change to the location as shown in the CTO Study. ERCOT's January 26, 2010, correspondence with Lone Star on this matter is attached to Dan Mayer's testimony as Exhibit DM-3.

5. Conductor and Structures:

Conductor Size and Type: 1590 kcmil 42/19 strand ACSS/TW "Falcon"

Number of conductors per phase: 2

Continuous Summer Static Current Rating (A): 5000 A

Continuous Summer Static Line Capacity at Operating Voltage (MVA): 2987 MVA/circuit

Continuous Summer Static Line Capacity at Design Voltage (MVA): 2987 MVA/circuit

Type and composition of Structures: Double-circuit spun concrete monopole, tubular steel or hybrid (concrete base with steel top) structures

Height of Typical Structures: 110 feet*

*This number represents the approximate height above natural grade, from the ground to the top of pole.

1 Optimization ("CTO") Study. Mr. Mayers sponsors Lone Star's responses to Question
2 Nos. 4-8, 11, 13, and 18, and Attachments 2 and 5 to the Application.

3 Mr. Aldo Portales, a NextEra Energy Resources employee and Assistant
4 Treasurer for Lone Star, testifies concerning Lone Star's intended method of financing
5 the Project. Mr. Portales sponsors Lone Star's response to Question No. 12 to the
6 Application.

7 Mr. David Turner is employed by Lone Star as Project Director. Mr. Turner will
8 testify about Lone Star's compliance with the Application notice requirements and
9 interactions with landowners and other affected individuals. He will also discuss the
10 commitments Lone Star will make to ensure the Project does not unduly affect
11 individuals, land use, the environment or the community. Mr. Turner sponsors or co-
12 sponsors Lone Star's response to Question Nos. 9, 10, 16, 23 and 27, and Attachment
13 8b
Nos. 3, 4 and 9-14 of the Application.

14 Finally, Mr. Mark Van Dyne of Burns & McDonnell will testify about the
15 development of Lone Star's preferred and alternative routes, as well as the associated
16 environmental, community values, and land use factors. Mr. Van Dyne sponsors Burns
17 & McDonnell's Environmental Assessment and Routing Study, in addition to Lone Star's
18 response to Question Nos. 9, 15-17, 19-22, 24-27, Tables 1-6 and Attachments 1 and 6-⁷~~8~~
19 to the Application.

20 **Q. WHY IS LONE STAR FILING THIS APPLICATION?**

21 A. Lone Star was chosen and assigned by the Commission in Docket No. 35665, which was
22 subsequently reaffirmed in Docket No. 37902, to build, own, operate, and maintain a
23 portion of the CREZ transmission facilities necessary to transmit power generated by

Lone Star: Comparison of Preferred Route Estimated Cost to CTO Estimate

Scope	Miles			\$'s/Mile		
	Lone Star Project Costs	CTO Estimate	Difference	Lone Star Project Costs	CTO Estimate	Difference
Central A to Central C Double Circuit (Line Construction)	\$126,200,000	\$141,000,000	-10%	\$1,400,000	\$1,880,000	-26%
Central C to Sam Switch Double Circuit (Line Construction)	\$275,400,000	\$278,240,000	-1%	\$1,470,000	\$1,880,000	-22%
Sam Switch to Navarro Single Circuit (Line Construction)	\$41,700,000	\$30,000,000	39%	\$1,250,000	\$1,500,000	-17%
50% Compensation on Central C to Navarro/Sam Switch	\$64,800,000	\$60,000,000	8%	Weighted Averages		
150 MVAR Reactive Compensation on Central C	\$3,800,000	\$4,500,000	-16%	\$1,425,723	\$1,848,724	-23%
Additional Reactive Equipment per ERCOT Study	\$4,700,000	\$0				
Subtotal: T-Line	\$516,600,000	\$513,740,000		310.9	243.0	
Navarro 345 kV station	\$34,200,000	\$30,000,000	14%			
Sam Switch 345 kV station	\$21,800,000	\$20,000,000	9%			
Central C (West Shackleford) 345 kV station	\$27,200,000	\$0				
Subtotal: Substations	\$83,200,000	\$50,000,000				
Other: ROW acquisition	\$51,000,000	\$0				
Other: GEN Application Costs Other Development Costs	\$34,900,000	\$0				
Other: Property Taxes	\$15,500,000	\$0				
Other: Estimated AFUDC	\$66,600,000	\$0				
Grand Total Including Other Costs	\$767,800,000	\$563,740,000				

1 No. 33978; and most recently the Twin Buttes to McCamey D Project, Docket
2 No. 37778.

3 **II. SUMMARY**

4 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

5 A. The purpose of my testimony is to address certain aspects of Lone Star's proposed
6 Central A to Central C to Sam Switch/Navarro 345 kV Transmission Line Project
7 ("Project"). In particular, I:

- 8 • Discuss Lone Star's compliance with the Commission's CREZ CCN notice
9 requirements;
- 10 • Discuss issues related to neighboring utilities and municipalities;
- 11 • Explain how Lone Star has interacted with landowners and other affected
12 individuals; and
- 13 • Discuss the commitments Lone Star will make to ensure the Project does not
14 unduly affect individuals, land use, the environment or the community.

15 In addition, I sponsor or co-sponsor Lone Star's response to Question Nos. 9, 10,
16 16, 23, and 27 and Attachments 3, 4, and ^{8b}~~9~~14 to the Application for a Certificate
17 of Convenience and Necessity ("CCN") for the Central A to Central C to Sam
18 Switch/Navarro Proposed CREZ Transmission Line, Docket No. 38230
19 ("Application"). The facts and statements set forth in the portions of the
20 Application that I sponsor are true and correct to the best of my knowledge.

1 Lone Star is also publishing notice in Livestock Weekly due to its large
2 circulation in the relevant counties and its in-depth coverage of the CREZ
3 proceedings. Publishers' affidavits attesting to the publication of Lone Star's
4 notice will be filed with the Commission as soon as available.

5 On the date Lone Star files this Application, Lone Star will mail written
6 notice of the Application in the form required by the Commission to each
7 landowner of record that would be directly affected, as defined by P.U.C. PROC.
8 R. 22.52(a)(3). Landowners of record were determined by review of current
9 county tax rolls and supplemented by ^{additional} ~~deed~~ research, as necessary.

10 On the date it files this Application, Lone Star will also mail written notice
11 of the Application to: (1) each county in which any portion of the requested
12 facilities will be located, including Scurry, Fisher, Jones, Mitchell, Taylor,
13 Callahan, Shackelford, Stephens, Eastland, Palo Pinto, Erath, Comanche,
14 Somervell, Johnson, Bosque, Hill and Navarro; (2) each municipality within five
15 miles of the requested facilities, including the cities of Roby, Snyder, Sweetwater,
16 Merkel, Trent, Lueders, Anson, Hawley, Abilene, Albany, Breckenridge, Moran,
17 Eastland, Dublin, Ranger, Putnam, De Leon, Carbon, Cisco, Gorman, Gordon,
18 Mingus, Strawn, Walnut Springs, Stephenville, Iredell, Meridian, Hico, Clifton,
19 Carl's Corner, Hillsboro, Morgan, Cleburne, Rio Vista, Blum, Covington, Itasca,
20 Gholson, Aquilla, Penelope, West, Abbott, Bynum, Whitney, Frost, Barry,
21 Blooming Grove, Malone, Hubbard, Dawson, Oak Valley, Richland, Retreat, and
22 Corsicana, Impact, and Tye; and (3) each neighboring utility providing the same
23 utility service within five miles of the requested facilities, including Oncor

1 32455, 34440, 37015, 37119, and 37956. I also testified orally in Docket Nos.
2 25179, 30168, 32455, 34440, and 37119. These all involved utility applications
3 for transmission line certificates of convenience and necessity ("CCN").

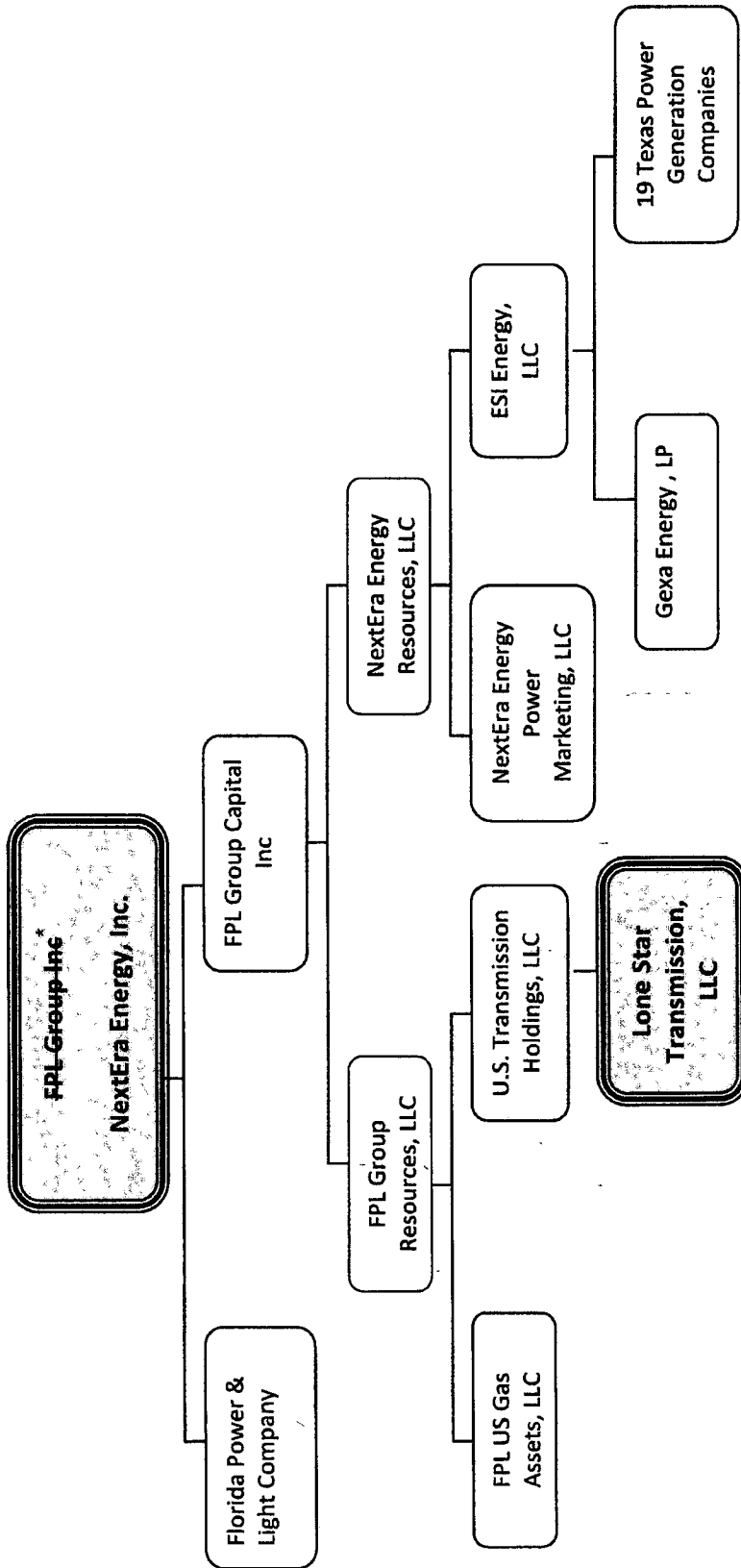
4
5 **II. PURPOSE OF TESTIMONY**

6 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

7 A. The purpose of my testimony is to introduce, support, and sponsor the
8 Environmental Assessment and Alternative Route Analysis for Lone Star
9 Transmission, LLC's Proposed Central A to Central C to Sam Switch to Navarro
10 345 kV Transmission Line Project ("Environmental Assessment and Routing
11 Study") prepared by Burns & McDonnell at the request of Lone Star
12 Transmission, LLC ("Lone Star"). The Environmental Assessment and Routing
13 Study is included as Attachment No. 1 to Lone Star's Application for a Certificate
14 of Convenience and Necessity for the Central A to Central C to Sam
15 Switch/Navarro Proposed CREZ Transmission Line, Docket No. 38230
16 ("Application"), and was filed simultaneously with the filing of my Direct
17 Testimony in this docket.

18 **Q. DO YOU SPONSOR ANY RESPONSE TO QUESTIONS IN OR**
19 **ATTACHMENTS TO THE CCN APPLICATION?**

20 A. Yes. I sponsor or co-sponsor the responses to Question Nos. 9, 15-17, 19-22, 24-
21 27, Table Nos. 1-6, and Attachment 1 and 6-78. I also sponsor the maps and
22 indices filed with the Commission as Lone Star's First Supplement to Its
23 Application for a Certificate of Convenience and Necessity, filed June 18, 2010,
24 as well as Lone Star's Third Supplement, filed August 9, 2010. The facts and
25 statements set forth in the portions of the Application that I sponsor are true and
26 correct to the best of my knowledge.



*On or about May 24, 2010, the name of FPL Group, Inc. will change to NextEra Energy, Inc.

4438040.1
57809.1

1 **Q. DOES LONE STAR HAVE A TEXAS OFFICE?**

2 A. Yes. Lone Star's office is at 301 Congress Avenue, Suite 1850, Austin, TX 78701.

3 **Q. PLEASE DESCRIBE LONE STAR'S FORM OF BUSINESS ORGANIZATION**
4 **AND ITS ORGANIZATIONAL STRUCTURE IN RELATION TO ITS**
5 **AFFILIATES.**

6 A. Lone Star is a Delaware limited liability company and a wholly-owned subsidiary of U.S.
7 Transmission Holdings, LLC ("U.S. Transmission"). U.S. Transmission is a wholly-
8 owned subsidiary of FPL Group Resources, LLC ("FPL Group Resources"), which is a
9 direct, wholly-owned subsidiary of FPL Group Capital Inc ("FPL Group Capital"), which
10 is wholly-owned by ~~FPL Group, Inc. ("FPL Group"). Lone Star expects that on or about~~
11 ~~May 24, 2010, the name of FPL Group will change to~~ NextEra Energy, Inc. A depiction
12 of this organizational structure is attached as Exhibit MG-2. The Commission approved
13 Lone Star's and its affiliates' organizational relationships in Docket No. 36890. Lone
14 Star has been selected by the Commission as a transmission provider under a plan
15 adopted by the Commission pursuant to PURA § 39.904 and has previously provided to
16 the Commission (in Project No. 37913) a detailed plan regarding the offices, personnel,
17 and other resources Lone Star will have in this state to ensure the provision of continuous
18 and adequate transmission service. Accordingly, under PURA § 37.051(f), Lone Star is
19 deemed to have met the CCN requirements set forth in PURA § 37.051(e).

20 **Q. DOES LONE STAR CURRENTLY HAVE A UTILITY AFFILIATE IN TEXAS?**

21 A. No. However, Florida Power & Light Company ("FPL"), a rate-regulated public utility
22 in the State of Florida, is also wholly owned by Lone Star's ultimate parent company,
23 FPL Group. When FPL was formed in 1925, it had 76,000 electric and gas customer

Third Supplement Pages

IN MILES

Environmental Data For Alternative Route Evaluation
Central A - Central C Segment of the Transmission Line Project

	A	B	C	D	E	F	G	H	I	J	K	L
1. Length of alternative route	50.5	29.8	26.7	6.3	19.2	37.3	41.9	7.7	13.9	24.3	2.9	29.0
2. Length of route parallel and adjacent to existing transmission lines	0.0	0.0	21.9	6.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	14.2
3. Length of route parallel and adjacent to existing public roads/highways	20.7	12.8	4.0	0.0	9.2	3.2	10.9	0.7	6.2	1.8	0.0	3.2
4. Length of route parallel and adjacent to existing pipelines	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
5. Length of route parallel and adjacent to railroads	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.2
6. Length of route parallel to apparent property boundaries	35.8	24.4	6.6	0.0	13.9	12.7	19.4	6.6	12.2	11.5	2.3	8.0
7. Total length of route parallel to existing corridors (including apparent property boundaries)	35.8	25.2	26.4	6.3	14.5	13.1	20.5	6.6	12.2	11.5	2.3	21.4
8. Number of habitable structures within 500 ft of the route centerline	14	10	4	2	7	10	6	2	4	13	0	17
9. Number of route across parks/recreational areas ²	0.0	0.0	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 or recreational areas within 1,000 ft of the route centerline	0	0	0	0	0	0	0	0	0	0	0	0
11. Length of route through commercial/industrial areas	0	0	0	0	0	0	0	0	0	0	0	0
12. Length of route through agricultural pastureland	20.3	12.1	8.4	2.9	6.3	17.0	17.0	6.6	5.2	13.2	0.5	16.3
13. Length of route across agricultural cropland	21.8	15.1	16.7	3.0	10.2	15.4	20.2	0.7	6.8	6.0	2.1	9.9
14. Length of route across agricultural land with mobile irrigation systems	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
15. Length of route across upland woodland	6.9	2.1	0.9	0.3	1.9	3.8	3.9	0.4	1.4	4.6	0.0	1.8
16. Length of route across bottomland forest, including forested wetlands	0.73	0.11	0.22	0.00	0.35	0.40	0.26	0.00	0.17	0.00	0.00	0.32
17. Length of route across emergent wetlands	0.13	0.14	0.25	0.05	0.25	0.58	0.39	0.00	0.33	0.29	0.17	0.23
18. Number of streams/rivers crossed by the route	43	26	22	7	31	64	61	1	25	23	0	43
19. Length of streams parallel to routes (within 100 ft)	1.0	0.2	0.6	0.1	0.4	1.4	1.2	0.0	0.6	0.8	0.0	0.7
20. Number of known rare/unique plant locations within the ROW	0	0	0	0	0	0	0	0	0	0	0	0
21. Length of route through known habitat of endangered or threatened species	0	0	0	0	0	0	0	0	0	0	0	0
22. Number of recorded cultural resource sites crossed by the route	0	0	0	0	2	8	0	3	0	1	0	3
23. Number of additional recorded cultural resource sites within 1,000 ft of the route centerline	0	0	0	0	0	0	0	0	0	0	0	0
24. Length of route across areas of high prehistoric and historic archaeological site potential	6.8	3.0	2.9	0.8	2.7	7.6	11.7	0.1	2.0	3.4	0.0	4.6
25. Number of FAA-registered airstrips > 3,200 ft long within 20,000 ft of the route centerline	0	0	0	0	0	0	0	0	0	0	0	0
26. Number of FAA-registered airstrips < 3,200 ft long within 10,000 ft of the route centerline	0	0	0	0	0	0	0	0	0	0	0	0
27. Number of private airstrips (non-FAA registered) within 10,000 ft of the route centerline	0	0	0	0	0	0	0	0	0	0	0	0
28. Number of heliports within 5,000 ft of the route centerline	0	0	0	0	0	0	0	0	0	0	0	0
29. Length of route across open water (lakes, ponds)	0.02	0.00	0.11	0.00	0.08	0.03	0.06	0.00	0.01	0.09	0.00	0.09
30. Number of commercial AM radio transmitters within 10,000 ft of route centerline	0	0	0	0	0	0	0	0	0	0	0	0
31. Number of FM radio transmitters, microwave relay stations, and other electronic installations within 2,000 ft	0	2	0	0	0	0	1	0	0	1	0	0
32. Number of U.S. or State Highways crossed by the route	5	1	1	0	1	1	5	1	0	1	0	1
33. Number of farm-to-market (F-M) county roads, or other streets crossed by the route	29	16	16	5	11	23	23	2	12	9	2	16
34. Length of route within foreground visual zone of park/recreational areas (1/2 mile)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35. Length of route within foreground visual zone of State or U.S. Highways (1/2 mile)	19.0	1.1	1.2	0.0	1.1	1.0	10.6	0.8	0.0	1.1	0.0	1.3

Notes: All length measurements are in feet. All linear measurements were obtained from aerial photography flown on May 19, 2009 and ortho-rectified to National Map Accuracy Standards of +/- 30 feet.

IN MILES

Environmental Data For Alternative Route Evaluation
Central C - Sam Switch Segment of the Transmission Line Project

	AA	BB	CC	DD1	DD2	EE	FF	GG
1. Length of alternative route	48.8	5.8	43.9	0.8	7.9	74.6	66.9	5.1
2. Length of route parallel and adjacent to existing transmission lines	4.1	0.0	0.0	0.0	0.0	8.2	0.0	4.7
3. Length of route parallel and adjacent to existing public roads/highways	2.8	0.9	4.0	0.8	1.5	3.1	7.7	0.0
4. Length of route parallel and adjacent to existing pipelines	2.2	0.0	0.0	0.0	0.0	30.0	37.6	0.0
5. Length of route parallel and adjacent to railroads	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6. Length of route parallel to apparent property boundaries	24.9	2.3	27.3	0.1	2.0	21.7	21.6	0.0
7. Total length of route parallel to existing corridors (including apparent property boundaries)	29.9	2.3	28.5	0.8	7.2	57.0	59.1	4.7
8. Number of habitable structures* within 500 ft of the route centerline	12	0	15	0	1	35	37	3
9. Length of route across parks/recreational areas*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10. Number of additional parks or recreational areas within 1,000 ft of the route centerline	0	0	0	0	0	0	0	0
11. Length of route through commercial/industrial areas	0	0	0	0	0	0	0	0
12. Length of route across agricultural pastureland	34.1	5.8	31.1	0.8	7.7	41.5	31.3	1.4
13. Length of route across agricultural cropland	2.1	0.0	3.1	0.0	0.0	9.8	20.0	0.4
14. Length of route across agricultural land with mobile irrigation systems	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.0
15. Length of route across upland woodland	12.4	0.0	9.5	0.0	0.1	21.3	12.6	3.3
16. Length of route across bottomland forest, including forested wetlands	0.00	0.00	0.00	0.00	0.00	0.62	1.02	0.00
17. Length of route across emergent wetlands	0.05	0.00	0.03	0.00	0.06	0.32	0.89	0.00
18. Number of streams crossed by the route	119	14	89	4	14	141	105	5
19. Length of the streams parallel to routes (within 100 ft)	2.2	0.2	1.6	0.1	0.3	3.2	2.8	0.0
20. Number of known rare/unique plant locations within the ROW	0	0	0	0	0	0	0	0
21. Length of route through known habitat of endangered or threatened species	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22. Number of recorded cultural resource sites crossed by the route	2	0	0	0	0	2	0	0
23. Number of additional recorded cultural resource sites within 1,000 ft of the route centerline	7.7	1.2	5.2	0.2	0.7	7.8	7.4	0.3
24. Length of route across areas of high prehistoric and historic archaeological site potential	2	0	0	0	0	2	2	0
25. Number of FAA-registered airstrips > 3,200 ft long within 20,000 ft of the route centerline	1	0	0	0	0	0	0	0
26. Number of FAA-registered airstrips < 3,200 ft long within 10,000 ft of the route centerline	1	0	0	0	0	0	0	0
27. Number of private airstrips (non-FAA registered) within 10,000 ft of the route centerline	0	0	0	0	0	0	0	0
28. Number of heliports within 5,000 ft of the route centerline	0	0	0	0	0	0	0	0
29. Length of route across open water (lakes, ponds)	0.12	0.00	0.04	0.05	0.00	0.22	0.30	0.05
30. Number of commercial AM radio transmitters within 10,000 ft of route centerline	0	0	0	0	0	0	0	0
31. Number of FM radio transmitters, microwave relay stations, and other electronic installations within 2,000 ft	1	0	0	0	0	4	3	1
32. Number of U.S. or State Highways crossed by the route	4	1	3	0	1	5	5	0
33. Number of farm-to-market (F.M.), county roads, or other streets crossed by the route	15	0	16	0	1	30	41	1
34. Length of route within foreground visual zone of park/recreational areas (1/2 mile)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35. Length of route within foreground visual zone of State or U.S. Highways (1/2 mile)	4.2	1.0	3.2	0.0	0.6	11.3	7.7	0.0

Note: All length measurements are in feet. All linear measurements were obtained from aerial photography flown on May 19, 2009 and orthorectified to National Map Accuracy Standards of +/- 30 feet.

* Structures normally inhabited by humans or intended to be inhabited by on a daily or regular basis. Habitable structures include but are not limited to single-family and multi-family dwellings and related structures, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, churches, hospitals, nursing homes, and schools.

* Defined as park or recreational areas owned by a governmental body or an organized group, club, or church.

Environmental Data For Alternative Route Evaluation
Central C - Sam Switch Segment of the Transmission Line Project

	HH	II	JJ	KK1	KK2	KK3	KK4	LL
1. Length of alternative route	35.6	29.2	3.1	27.2	11.1	4.4	5.7	24.9
2. Length of route parallel and adjacent to existing transmission lines	12.7	0.0	2.4	0.0	0.0	0.0	0.0	10.5
3. Length of route parallel and adjacent to existing public roads/highways	3.0	0.0	0.0	0.3	0.4	0.0	0.0	1.8
4. Length of route parallel and adjacent to existing pipelines	12.8	8.7	0.0	0.0	0.0	0.0	0.0	0.0
5. Length of route parallel and adjacent to railroads	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6. Length of route parallel to apparent property boundaries	9.1	3.1	0.2	1.4	3.3	3.5	0.0	7.7
7. Total length of route parallel to existing corridors (including apparent property boundaries)	34.1	10.5	2.6	1.4	3.4	3.5	0.0	16.7
8. Number of habitable structures ¹ within 500 ft of the route centerline	17	8	3	8	12	1	0	31
9. Length of route across parks/recreational areas ²	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10. Number of additional parks or recreational areas within 1,000 ft of the route centerline	0	0	0	0	0	0	0	0
11. Length of route through commercial/industrial areas	0	0	0	0	0	0	0	0
12. Length of route across agricultural pastureland	14.6	9.1	0.8	16.2	3.7	2.5	3.6	10.8
13. Length of route across agricultural cropland	4.2	3.0	0.7	2.1	1.2	0.0	0.6	8.2
14. Length of route across agricultural land with mobile irrigation systems	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
15. Length of route across upland woodland	15.7	16.5	1.5	8.7	5.5	1.6	1.3	5.1
16. Length of route across bottomland forest, including forested wetlands	0.59	0.20	0.00	0.15	0.30	0.19	0.01	0.43
17. Length of route across emergent wetlands	0.18	0.05	0.00	0.00	0.35	0.03	0.07	0.07
18. Number of streams crossed by the route	76	61	10	53	28	5	10	35
19. Length of the streams parallel to routes (within 100 ft)	2.0	1.7	0.5	1.8	1.3	0.2	0.1	0.9
20. Number of known rare/unique plant locations within the ROW	0	0	0	0	0	0	1	0
21. Length of route through known habitat of endangered or threatened species	0.0	12.0	0.0	1.5	0.0	0.0	0.0	0.0
22. Number of recorded cultural resource sites crossed by the route	3	0	1	0	0	0	0	2
23. Number of additional recorded cultural resource sites within 1,000 ft of the route centerline	5	0	0	1	2	0	0	0
24. Length of route across areas of high prehistoric and historic archaeological site potential	7.9	3.2	0.6	6.8	2.9	0.7	1.0	1.8
25. Number of FAA-registered airstrips > 3,200 ft long within 20,000 ft of the route centerline	1	1	0	1	0	1	0	1
26. Number of FAA-registered airstrips < 3,200 ft long within 10,000 ft of the route centerline	1	2	0	0	0	0	0	1
27. Number of private airstrips (non-FAA registered) within 10,000 ft of the route centerline	1	0	0	0	1	0	0	0
28. Number of heliports within 5,000 ft of the route centerline	1	0	0	0	0	0	0	0
29. Length of route across open water (lakes, ponds)	0.20	0.16	0.00	0.01	0.02	0.02	0.04	0.07
30. Number of commercial AM radio transmitters within 10,000 ft of route centerline	0	0	0	0	0	0	0	0
31. Number of FM radio transmitters, microwave relay stations, and other electronic installations within 2,000 ft	0	2	0	0	1	0	0	2
32. Number of U.S. or State Highways crossed by the route	2	2	1	2	1	0	1	4
33. Number of farm-to-market (F-M), county roads, or other streets crossed by the route	20	8	3	10	8	1	4	16
34. Length of route within foreground visual zone of park/recreational areas (1/2 mile)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35. Length of route within foreground visual zone of State or U.S. Highways (1/2 mile)	2.1	2.1	1.8	2.2	1.1	0.5	0.5	4.6

Note: All length measurements are in feet. All linear measurements were obtained from aerial photography flown on May 19, 2009 and ortho-rectified to National Map Accuracy Standards of +/- 30 feet.

¹ Structures normally inhabited by humans or intended to be inhabited by on a daily or regular basis. Habitable structures include but are not limited to single-family and multi-family dwellings and related structures, mobile homes, apartment buildings, commercial buildings, industrial structures, business structures, churches, hospitals, nursing homes, and schools.

² Defined as park or recreational areas owned by a governmental body or an organized group, club, or church.

Environmental Data For Alternative Route Evaluation
Central C - Sam Switch Segment of the Transmission Line Project

	MM	NN1	NN2	NN3	OO	PP	QQ	RR
1. Length of alternative route	25.7	13.0	1.0	3.1	8.3	0.4	11.5	43.6
2. Length of route parallel and adjacent to existing transmission lines	0.0	12.9	1.0	3.1	0.3	0.0	0.0	0.0
3. Length of route parallel and adjacent to existing public roads/highways	0.9	0.0	0.0	0.0	0.8	0.0	0.0	12.2
4. Length of route parallel and adjacent to existing pipelines	15.2	0.0	0.0	0.0	0.0	0.4	9.0	0.0
5. Length of route parallel and adjacent to railroads	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6. Length of route parallel to apparent property boundaries	4.4	0.0	0.0	0.0	4.2	0.0	0.0	26.6
7. Total length of route parallel to existing corridors (including apparent property boundaries)	19.4	12.9	1.0	3.1	4.7	0.3	8.8	28.3
8. Number of habitable structures* within 500 ft of the route centerline	20	15	0	1	9	1	6	34
9. Length of route across parks/recreational areas*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10. Number of additional parks or recreational areas within 1,000 ft of the route centerline	0	0	0	0	0	0	0	0
11. Length of route through commercial/industrial areas	0	0	0	0	0	0	0	0
12. Length of route across agricultural pastureland	13.6	8.1	0.8	2.9	3.0	0.3	9.3	17.6
13. Length of route across agricultural cropland	6.4	1.9	0.0	0.0	2.8	0.0	0.7	7.7
14. Length of route across agricultural land with mobile irrigation systems	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
15. Length of route across upland woodland	5.4	2.6	0.2	0.2	2.3	0.1	0.8	17.4
16. Length of route across bottomland forest, including forested wetlands	0.19	0.00	0.00	0.00	0.10	0.00	0.03	0.17
17. Length of route across emergent wetlands	0.03	0.27	0.00	0.03	0.02	0.00	0.30	0.44
18. Number of streams crossed by the route	49	20	4	7	24	0	18	46
19. Length of the streams parallel to routes (within 100 ft)	0.8	0.5	0.2	0.1	1.1	0.0	0.4	1.3
20. Number of known rare/unique plant locations within the ROW	0	0	0	0	0	0	0	0
21. Length of route through known habitat of endangered or threatened species	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.7
22. Number of recorded cultural resource sites crossed by the route	0	1	0	0	0	0	0	0
23. Number of additional recorded cultural resource sites within 1,000 ft of the route centerline	1	1	0	0	0	0	0	0
24. Length of route across areas of high prehistoric and historic archaeological site potential	3.1	1.0	0.2	0.2	1.1	0.0	0.9	4.2
25. Number of FAA-registered airstrips > 3,200 ft long within 10,000 ft of the route centerline	0	0	0	0	0	0	0	0
26. Number of FAA-registered airstrips < 3,200 ft long within 10,000 ft of the route centerline	0	0	0	0	0	0	0	0
27. Number of private airstrips (non-FAA registered) within 10,000 ft of the route centerline	1	1	0	0	0	0	0	0
28. Number of heliports within 5,000 ft of the route centerline	0	2	0	0	0	0	0	0
29. Length of route across open water (lakes, ponds)	0.06	0.02	0.00	0.06	0.03	0.00	0.31	0.19
30. Number of commercial AM radio transmitters within 10,000 ft of route centerline	0	0	0	0	0	0	0	0
31. Number of FM radio transmitters, microwave relay stations, and other electronic installations within 2,000 ft	1	1	0	0	0	0	0	0
32. Number of U.S. or State Highways crossed by the route	2	1	0	0	0	0	1	4
33. Number of farm-to-market (F.M.) county roads, or other streets crossed by the route	23	9	0	2	6	1	9	25
34. Length of route within foreground visual zone of park/recreational areas (1/2 mile)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35. Length of route within foreground visual zone of State or U.S. Highways (1/2 mile)	2.4	1.0	0.0	0.0	0.0	0.2	0.9	4.4

Note: All length measurements are in feet. All linear measurements were obtained from aerial photography flown on May 19, 2009 and ortho-rectified to National Map Accuracy Standards of +/- 30 feet.

* Structures normally inhabited by humans or intended to be inhabited by on a daily or regular basis. Habitable structures include but are not limited to single-family and multi-family dwellings and related structures, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, churches, hospitals, nursing homes, and schools.

* Defined as park or recreational areas owned by a governmental body or an organized group, club, or church.

Environmental Data For Alternative Route Evaluation
Central C - Sam Switch Segment of the Transmission Line Project

	SS	TT1	TT2	TT3	UU1	UU2	VV1	VV2
1. Length of alternative route	2.5	1.0	29.1	13.1	1.0	12.6	19.7	1.2
2. Length of route parallel and adjacent to existing transmission lines	2.5	0.0	0.0	0.0	1.0	12.2	0.0	0.0
3. Length of route parallel and adjacent to existing public roads/highways	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0
4. Length of route parallel and adjacent to existing pipelines	0.0	1.0	20.9	10.9	0.0	0.0	4.9	1.2
5. Length of route parallel and adjacent to railroads	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6. Length of route parallel to apparent property boundaries	0.0	0.0	4.0	0.3	0.0	0.3	7.4	0.0
7. Total length of route parallel to existing corridors (including apparent property boundaries)	2.5	1.0	24.6	10.7	1.0	12.0	11.8	1.2
8. Number of habitable structures* within 500 ft of the route centerline	1	1	32	17	1	7	11	0
9. Length of route across parks/recreational areas*	0.0	0.0	1.8	0.0	0.0	0.0	0.8	0.0
10. Number of additional parks or recreational areas within 1,000 ft of the route centerline	0	0	0	0	0	0	0	0
11. Length of route through commercial/industrial areas	0	0	0	0	0	0	0	0
12. Length of route across agricultural pastureland	1.9	0.8	17.4	4.1	0.5	7.7	10.6	0.7
13. Length of route across agricultural cropland	0.4	0.2	4.1	6.5	0.5	1.8	2.5	0.3
14. Length of route across agricultural land with mobile irrigation systems	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15. Length of route across upland woodland	0.0	0.0	6.1	1.9	0.0	2.6	6.2	0.2
16. Length of route across bottomland forest, including forested wetlands	0.00	0.00	0.44	0.08	0.00	0.10	0.17	0.00
17. Length of route across emergent wetlands	0.00	0.00	0.72	0.31	0.00	0.09	0.05	0.00
18. Number of streams crossed by the route	2	1	41	22	1	23	28	2
19. Length of the streams parallel to routes (within 100 ft)	0.0	0.0	0.7	0.5	0.0	0.7	0.6	0.0
20. Number of known rare/unique plant locations within the ROW	0	0	0	0	0	0	0	0
21. Length of route through known habitat of endangered or threatened species	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22. Number of recorded cultural resource sites crossed by the route	0	0	0	0	0	0	1	0
23. Number of additional recorded cultural resource sites within 1,000 ft of the route centerline	0.2	0.1	2.5	1.3	0.0	1.1	2.5	0.2
24. Length of route across areas of high prehistoric and historic archaeological site potential	1	0	0	2	0	0	0	0
25. Number of FAA-registered airstrips > 3,200 ft long within 20,000 ft of the route centerline	0	0	0	0	0	0	0	0
26. Number of FAA-registered airstrips < 3,200 ft long within 10,000 ft of the route centerline	0	0	0	0	0	0	0	0
27. Number of private airstrips (non-FAA registered) within 10,000 ft of the route centerline	0	0	1	0	0	0	0	0
28. Number of heliports within 5,000 ft of the route centerline	0	0	0	0	0	0	0	0
29. Length of route across open water (lakes, ponds)	0.16	0.00	0.09	0.09	0.00	0.27	0.00	0.00
30. Number of commercial AM radio transmitters within 10,000 ft of route centerline	0	0	0	1	0	0	0	0
31. Number of FM radio transmitters, microwave relay stations, and other electronic installations within 2,000 ft	0	0	2	2	0	0	0	0
32. Number of U.S. or State Highways crossed by the route	0	0	2	4	0	2	0	1
33. Number of farm-to-market (F.M.) county roads, or other streets crossed by the route	2	1	26	19	1	6	12	0
34. Length of route within foreground visual zone of park/recreational areas (1/2 mile)	0.0	0.0	3.5	0.0	0.0	0.0	3.4	0.0
35. Length of route within foreground visual zone of State or U.S. Highways (1/2 mile)	0.0	0.5	2.1	3.9	0.5	1.6	0.3	0.8

Note: All length measurements are in feet. All linear measurements were obtained from aerial photography flown on May 19, 2009 and ortho-rectified to National Map Accuracy Standards of +/- 30 feet.

* Structures normally inhabited by humans or intended to be inhabited by on a daily or regular basis. Habitable structures include but are not limited to single-family and multi-family dwellings and related structures, mobile homes, apartment buildings, commercial buildings, industrial structures, business structures, churches, hospitals nursing homes, and schools.

* Defined as park or recreational areas owned by a governmental body or an organized group, club, or church.

Environmental Data For Alternative Route Evaluation
Central C - Sam Switch Segment of the Transmission Line Project

	WW	XX1	XX2	XX3	XX4	XX5	YY1	YY2
1. Length of alternative route	21.2	2.6	1.6	3.9	0.6	2.9	2.2	1.6
2. Length of route parallel and adjacent to existing transmission lines	0.0	2.6	1.6	3.9	0.6	2.9	0.0	0.0
3. Length of route parallel and adjacent to existing public roads/highways	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4. Length of route parallel and adjacent to existing pipelines	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5. Length of route parallel and adjacent to railroads	6.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6. Length of route parallel to apparent property boundaries	3.5	0.0	0.1	0.9	0.0	0.0	1.3	0.6
7. Total length of route parallel to existing corridors (including apparent property boundaries)	7.8	2.6	1.6	3.8	0.6	2.9	1.3	0.6
8. Number of habitable structures* within 500 ft of the route centerline	13	0	0	9	0	0	0	0
9. Length of route across parks/recreational areas ²	3.0	0.2	0.3	0.0	0.1	0.1	0.0	0.0
10. Number of additional parks or recreational areas within 1,000 ft of the route centerline	0	0	0	0	0	0	0	0
11. Length of route through commercial/industrial areas	0	0	0	0	0	0	0	0
12. Length of route across agricultural pastureland	10.2	0.5	0.3	1.3	0.2	1.1	0.8	0.4
13. Length of route across agricultural cropland	1.9	0.4	0.4	0.0	0.3	0.0	0.0	0.3
14. Length of route across agricultural land with mobile irrigation systems	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15. Length of route across upland woodland	7.2	1.6	0.9	2.5	0.1	1.6	1.4	0.9
16. Length of route across bottomland forest, including forested wetlands	1.30	0.03	0.00	0.08	0.00	0.15	0.00	0.00
17. Length of route across emergent wetlands	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18. Number of streams crossed by the route	42	5	2	6	1	5	2	1
19. Length of the streams parallel to routes (within 100 ft)	0.8	0.0	0.0	0.1	0.0	0.0	0.1	0.0
20. Number of known rare/unique plant locations within the ROW	0	0	0	0	0	0	0	0
21. Length of route through known habitat of endangered or threatened species	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22. Number of recorded cultural resource sites crossed by the route	0	0	0	0	0	0	0	0
23. Number of additional recorded cultural resource sites within 1,000 ft of the route centerline	4	0	0	0	0	0	0	0
24. Length of route across areas of high prehistoric and historic archaeological site potential	4.0	0.2	0.2	0.3	0.1	0.3	0.1	0.0
25. Number of FAA-registered airstrips > 3,200 ft long within 20,000 ft of the route centerline	0	0	0	0	0	0	0	0
26. Number of FAA-registered airstrips < 3,200 ft long within 10,000 ft of the route centerline	1	0	0	0	0	0	0	0
27. Number of private airstrips (non-FAA registered) within 10,000 ft of the route centerline	0	0	0	0	0	0	0	0
28. Number of heliports within 5,000 ft of the route centerline	1	0	0	0	0	0	0	0
29. Length of route across open water (lakes, ponds)	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30. Number of commercial AM radio transmitters within 10,000 ft of route centerline	0	0	0	0	0	0	0	0
31. Number of FM radio transmitters, microwave relay stations, and other electronic installations within 2,000 ft	0	0	0	0	0	0	0	0
32. Number of U.S. or State Highways crossed by the route	2	0	0	0	0	0	0	0
33. Number of farm-to-market (F-M), county roads, or other streets crossed by the route	11	2	1	3	0	1	0	1
34. Length of route within foreground visual zone of park/recreational areas (1/2 mile)	6.6	2.4	1.3	0.9	0.6	1.8	0.0	1.0
35. Length of route within foreground visual zone of State or U.S. Highways (1/2 mile)	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Note: All length measurements are in feet. All linear measurements were obtained from aerial photography flown on May 19, 2009 and ortho-rectified to National Map Accuracy Standards of +/- 30 feet.

* Structures normally inhabited by humans or intended to be inhabited by on a daily or regular basis. Habitable structures include but are not limited to single-family and multi-family dwellings and related structures, mobile homes, apartment buildings, commercial buildings, industrial structures, business structures, churches, hospitals, nursing homes, and schools

² Defined as park or recreational areas owned by a governmental body or an organized group, club, or church.

Environmental Data For Alternative Route Evaluation
Central C - Sam Switch Segment of the Transmission Line Project

	YY3	YY4	YY5	ZZ	AB1	AB2	BC	CD1
1. Length of alternative route	3.9	0.4	3.0	5.9	5.2	14.9	7.5	10.1
2. Length of route parallel and adjacent to existing transmission lines	0.0	0.0	0.1	5.5	0.0	0.0	7.5	6.7
3. Length of route parallel and adjacent to existing public roads/highways	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.3
4. Length of route parallel and adjacent to existing pipelines	0.0	0.0	0.0	0.0	4.7	12.2	0.0	0.0
5. Length of route parallel and adjacent to railroads	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6. Length of route parallel to apparent property boundaries	2.0	0.0	0.1	5.5	4.7	12.2	7.5	7.9
7. Total length of route parallel to existing corridors (including apparent property boundaries)	12	0	0	1	4	14	1	11
8. Number of habitable structures* within 500 ft of the route centerline	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0
9. Length of route across parks/recreational areas*	0	0	0	0	0	0	0	1
10. Number of additional parks or recreational areas within 1,000 ft of the route centerline	0	0	0	0	0	0	0	0
11. Length of route through commercial/industrial areas	2.7	0.1	1.5	3.2	2.6	2.9	5.1	5.4
12. Length of route across agricultural pastureland	0.3	0.2	0.0	1.0	1.7	8.8	2.1	1.7
13. Length of route across agricultural cropland	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14. Length of route across agricultural land with mobile irrigation systems	0.9	0.2	1.3	1.7	0.8	2.1	0.1	2.6
15. Length of route across upland woodland	0.00	0.00	0.21	0.00	0.00	0.25	0.00	0.10
16. Length of route across bottomland forest, including forested wetlands	0.00	0.00	0.00	0.00	0.00	0.78	0.26	0.24
17. Length of route across emergent wetlands	3	3	3	9	5	28	12	13
18. Number of streams crossed by the route	0.0	0.0	0.0	0.4	0.0	0.4	0.1	0.3
19. Length of the streams parallel to routes (within 100 ft)	0	0	0	0	0	0	0	0
20. Number of known rare/unique plant locations within the ROW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21. Length of route through known habitat of endangered or threatened species	0	0	0	0	0	0	0	0
22. Number of recorded cultural resource sites crossed by the route	0	0	0	1	0	0	0	0
23. Number of additional recorded cultural resource sites within 1,000 ft of the route centerline	0.2	0.2	0.2	0.7	0.5	2.3	0.8	1.3
24. Length of route across areas of high prehistoric and historic archaeological site potential	0	0	0	0	0	1	0	0
25. Number of FAA-registered airstrips > 3,200 ft long within 20,000 ft of the route centerline	0	0	0	1	0	0	1	0
26. Number of FAA-registered airstrips < 3,200 ft long within 10,000 ft of the route centerline	0	0	0	0	0	0	0	0
27. Number of private airstrips (non-FAA registered) within 10,000 ft of the route centerline	0	0	0	0	0	0	0	0
28. Number of heliports within 5,000 ft of the route centerline	0.00	0.00	0.00	0.00	0.02	0.04	0.00	0.02
29. Length of route across open water (lakes, ponds)	0	0	0	0	0	0	0	0
30. Number of commercial AM radio transmitters within 10,000 ft of route centerline	0	0	0	0	0	0	0	0
31. Number of FM radio transmitters, microwave relay stations, and other electronic installations within 2,000 ft	0	0	0	0	0	0	0	2
32. Number of U.S. or State Highways crossed by the route	0	0	0	1	0	6	0	0
33. Number of farm-to-market (F.M.), county roads, or other streets crossed by the route	4	0	1	3	5	14	5	9
34. Length of route within foreground visual zone of park/recreational areas (1/2 mile)	0.5	0.4	1.9	3.2	0.0	0.0	0.0	1.0
35. Length of route within foreground visual zone of State or U.S. Highways (1/2 mile)	0.0	0.0	0.0	2.7	0.0	5.2	0.0	0.0

Note: All length measurements are in feet. All linear measurements were obtained from aerial photography flown on May 19, 2009 and ortho-rectified to National Map Accuracy Standards of +/- 30 feet.

* Structures normally inhabited by humans or intended to be inhabited by on a daily or regular basis. Habitable structures include but are not limited to single-family and multi-family dwellings and related structures, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, churches, hospitals, nursing homes, and schools.

* Defined as park or recreational areas owned by a governmental body or an organized group, club, or church

Environmental Data For Alternative Route Evaluation
Central C - Sam Switch Segment of the Transmission Line Project

	CD2	DE	EF	FG	GH	HI	IJ1	IJ2
1. Length of alternative route	1.2	11.4	8.5	23.4	14.1	11.6	0.6	3.5
2. Length of route parallel and adjacent to existing transmission lines	0.0	0.0	0.0	1.1	0.0	9.2	0.0	0.0
3. Length of route parallel and adjacent to existing public roads/highways	0.0	0.9	0.2	1.6	1.6	0.0	0.0	2.1
4. Length of route parallel and adjacent to existing pipelines	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.0
5. Length of route parallel and adjacent to railroads	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6. Length of route parallel to apparent property boundaries	0.0	6.7	7.2	10.7	5.7	0.0	0.8	2.7
7. Total length of route parallel to existing corridors (including apparent property boundaries)	0.0	6.7	7.2	12.0	5.8	11.5	0.6	2.7
8. Number of habitable structures* within 500 ft of the route centerline	1	3	24	12	6	5	0	0
9. Length of route across parks/recreational areas*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10. Number of additional parks or recreational areas within 1,000 ft of the route centerline	0	0	0	0	0	0	0	0
11. Length of route through commercial/industrial areas	0.5	9.2	2.2	7.5	2.6	3.1	0.4	2.8
12. Length of route across agricultural pastureland	0.0	0.9	3.6	11.9	9.4	7.2	0.0	0.0
13. Length of route across agricultural cropland	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
14. Length of route across agricultural land with mobile irrigation systems	0.7	0.9	2.3	3.1	1.6	0.5	0.1	0.6
15. Length of route across upland woodland	0.00	0.07	0.06	0.25	0.24	0.27	0.00	0.00
16. Length of route across bottomland forest, including forested wetlands	0.05	0.21	0.08	0.22	0.14	0.44	0.10	0.08
17. Length of route across emergent wetlands	0	16	11	22	22	12	2	7
18. Number of streams crossed by the route	0.0	0.1	0.3	0.2	0.7	0.1	0.0	0.1
19. Length of the streams parallel to routes (within 100 ft)	0	0	0	0	0	0	0	0
20. Number of known rare/unique plant locations within the ROW	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0
21. Length of route through known habitat of endangered or threatened species	0	0	2	1	0	0	0	0
22. Number of recorded cultural resource sites crossed by the route	0	0	1	0	0	0	0	0
23. Number of additional recorded cultural resource sites within 1,000 ft of the route centerline	0.0	0.9	1.2	1.5	1.9	1.6	0.1	0.3
24. Length of route across areas of high prehistoric and historic archaeological site potential	0	0	0	0	0	0	0	0
25. Number of FAA-registered airstrips > 3,200 ft long within 20,000 ft of the route centerline	0	1	0	2	1	0	0	0
26. Number of FAA-registered airstrips < 3,200 ft long within 10,000 ft of the route centerline	0	0	0	0	0	0	0	0
27. Number of private airstrips (non-FAA registered) within 10,000 ft of the route centerline	0	0	0	0	0	0	0	0
28. Number of heliports within 5,000 ft of the route centerline	0	0	0	0	0	0	0	0
29. Length of route across open water (lakes, ponds)	0.00	0.00	0.08	0.10	0.06	0.03	0.00	0.00
30. Number of commercial AM radio transmitters within 10,000 ft of route centerline	0	0	0	0	0	0	0	0
31. Number of FM radio transmitters, microwave relay stations, and other electronic installations within 2,000 ft	0	0	0	0	0	1	0	0
32. Number of U.S. or State Highways crossed by the route	0	0	0	1	1	2	0	0
33. Number of farm-to-market (F-M), county roads, or other streets crossed by the route	2	4	7	19	14	12	0	2
34. Length of route within foreground visual zone of park/recreational areas (1/2 mile)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35. Length of route within foreground visual zone of State or U.S. Highways (1/2 mile)	0.0	0.0	0.0	1.4	1.0	2.5	0.0	0.0

Note: All length measurements are in feet. All linear measurements were obtained from aerial photography flown on May 19, 2009 and ortho-rectified to National Map Accuracy Standards of +/- 30 feet.

* Structures normally inhabited by humans or intended to be inhabited by on a daily or regular basis. Habitable structures include but are not limited to single-family and multi-family dwellings and related structures, mobile homes, apartment buildings, commercial buildings, industrial structures, business structures, churches, hospitals, nursing homes, and schools.

* Defined as park or recreational areas owned by a governmental body or an organized group, club, or church.

Environmental Data For Alternative Route Evaluation
Central C - Sam Switch Segment of the Transmission Line Project

	JK	KL	LM	MN	OP	PQ	QR	RS
1. Length of alternative route	0.9	0.8	0.2	0.2	6.2	17.1	4.9	0.3
2. Length of route parallel and adjacent to existing transmission lines	0.0	0.0	0.0	0.0	4.8	9.0	0.0	0.0
3. Length of route parallel and adjacent to existing public roads/highways	0.7	0.0	0.0	0.0	0.0	3.2	3.3	0.2
4. Length of route parallel and adjacent to existing pipelines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5. Length of route parallel and adjacent to railroads	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6. Length of route parallel to apparent property boundaries	0.9	0.7	0.0	0.0	0.9	6.9	3.5	0.2
7. Total length of route parallel to existing corridors (including apparent property boundaries)	0.9	0.7	0.0	0.0	5.7	15.3	4.0	0.2
8. Number of habitable structures* within 500 ft of the route centerline	1	0	0	0	15	45	6	0
9. Length of route across parks/recreational areas ²	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10. Number of additional parks or recreational areas within 1,000 ft of the route centerline	0	0	0	0	0	0	0	0
11. Length of route through commercial/industrial areas	0	0	0	0	0	0	0	0
12. Length of route across agricultural pastureland	0.5	0.0	0.0	0.1	2.6	7.4	2.6	0.1
13. Length of route across agricultural cropland	0.0	0.0	0.2	0.0	1.4	5.1	0.5	0.2
14. Length of route across agricultural land with mobile irrigation systems	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15. Length of route across upland woodland	0.4	0.8	0.0	0.1	2.2	3.7	1.6	0.0
16. Length of route across bottomland forest, including forested wetlands	0.00	0.00	0.00	0.00	0.00	0.44	0.09	0.00
17. Length of route across emergent wetlands	0.00	0.00	0.00	0.00	0.02	0.24	0.07	0.00
18. Number of streams crossed by the route	0	1	0	0	7	28	6	0
19. Length of the streams parallel to routes (within 100 ft)	0.0	0.0	0.0	0.0	0.4	0.6	0.1	0.0
20. Number of known rare/unique plant locations within the ROW	0	0	0	0	0	0	1	0
21. Length of route through known habitat of endangered or threatened species	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22. Number of recorded cultural resource sites crossed by the route	0	0	0	0	1	1	0	0
23. Number of additional recorded cultural resource sites within 1,000 ft of the route centerline	0	0	0	0	0	1	0	0
24. Length of route across areas of high prehistoric and historic archaeological site potential	0.0	0.1	0.0	0.1	0.7	2.6	0.5	0.0
25. Number of FAA-registered airstrips > 3,200 ft long within 20,000 ft of the route centerline	0	0	0	0	0	1	0	0
26. Number of FAA-registered airstrips < 3,200 ft long within 10,000 ft of the route centerline	0	0	0	0	0	0	0	0
27. Number of private airstrips (non-FAA registered) within 10,000 ft of the route centerline	0	0	0	0	1	0	0	0
28. Number of heliports within 5,000 ft of the route centerline	0	0	0	0	0	0	0	0
29. Length of route across open water (lakes, ponds)	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.00
30. Number of commercial AM radio transmitters within 10,000 ft of route centerline	0	0	0	0	0	0	0	0
31. Number of FM radio transmitters, microwave relay stations, and other electronic installations within 2,000 ft	0	0	0	0	0	1	1	0
32. Number of U.S. or State Highways crossed by the route	0	0	0	0	0	1	0	0
33. Number of farm-to-market (F.M.), county roads, or other streets crossed by the route	0	0	0	0	3	11	1	0
34. Length of route within foreground visual zone of park/recreational areas (1/2 mile)	0.1	0.7	0.2	0.2	0.0	0.0	0.0	0.0
35. Length of route within foreground visual zone of State or U.S. Highways (1/2 mile)	0.0	0.0	0.0	0.0	0.0	1.1	4.9	0.3

Note: All length measurements are in feet. All linear measurements were obtained from aerial photography flown on May 19, 2009 and ortho-rectified to National Map Accuracy Standards of +/- 30 feet.

* Structures normally inhabited by humans or intended to be inhabited by on a daily or regular basis. Habitable structures include but are not limited to single-family and multi-family dwellings and related structures, mobile homes, apartment buildings, commercial buildings, industrial structures, business structures, churches, hospitals, nursing homes, and schools.

² Defined as park or recreational areas owned by a governmental body or an organized group, club, or church.

Environmental Data For Alternative Route Evaluation
Central C - Sam Switch Segment of the Transmission Line Project

	ST	TU
1. Length of alternative route	9.5	0.7
2. Length of route parallel and adjacent to existing transmission lines	0.0	0.0
3. Length of route parallel and adjacent to existing public roads/highways	1.0	0.7
4. Length of route parallel and adjacent to existing pipelines	0.0	0.0
5. Length of route parallel and adjacent to railroads	0.0	0.0
6. Length of route parallel to apparent property boundaries	3.5	0.7
7. Total length of route parallel to existing corridors (including apparent property boundaries)	3.5	0.7
8. Number of habitable structures ¹ within 500 ft of the route centerline	13	0
9. Length of route across parks/recreational areas ²	0.0	0.0
10. Number of additional parks or recreational areas within 1,000 ft of the route centerline	0	0
11. Length of route through commercial/industrial areas	0	0
12. Length of route across agricultural pastureland	7.3	0.7
13. Length of route across agricultural cropland	0.5	0.0
14. Length of route across agricultural land with mobile irrigation systems	0.0	0.0
15. Length of route across upland woodland	1.0	0.0
16. Length of route across bottomland forest, including forested wetlands	0.08	0.00
17. Length of route across emergent wetlands	0.33	0.00
18. Number of streams crossed by the route	8	0
19. Length of the streams parallel to routes (within 100 ft)	0.2	0.0
20. Number of known rare/unique plant locations within the ROW	0	0
21. Length of route through known habitat of endangered or threatened species	0.0	0.0
22. Number of recorded cultural resource sites crossed by the route	0	0
23. Number of additional recorded cultural resource sites within 1,000 ft of the route centerline	0	0
24. Length of route across areas of high prehistoric and historic archaeological site potential	0.5	0.0
25. Number of FAA-registered airstrips > 3,200 ft long within 20,000 ft of the route centerline	0	0
26. Number of FAA-registered airstrips < 3,200 ft long within 10,000 ft of the route centerline	0	0
27. Number of private airstrips (non-FAA registered) within 10,000 ft of the route centerline	1	0
28. Number of heliports within 5,000 ft of the route centerline	2	0
29. Length of route across open water (lakes, ponds)	0.00	0.00
30. Number of commercial AM radio transmitters within 10,000 ft of route centerline	0	0
31. Number of FM radio transmitters, microwave relay stations, and other electronic installations within 2,000 ft	0	0
32. Number of U.S. or State Highways crossed by the route	1	0
33. Number of farm-to-market (F.M.) county roads, or other streets crossed by the route	1	0
34. Length of route within foreground visual zone of park/recreational areas (1/2 mile)	4	0
35. Length of route within foreground visual zone of State or U.S. Highways (1/2 mile)	0.0	0.0
Note: All length measurements are in feet. All linear measurements were obtained from aerial photography flown on May 19, 2009 and ortho-rectified to National Map Accuracy Standards of +/- 30 feet.	1.2	0.0

¹ Structures normally inhabited by humans or intended to be inhabited by on a daily or regular basis. Habitable structures include but are not limited to single-family and multi-family dwellings and related structures, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, churches, hospitals, nursing homes, and schools.

² Defined as park or recreational areas owned by a governmental body or an organized group, club, or church.

IN MILES

Environmental Data For Alternative Route Evaluation
Sam Switch - Navarro Segment of the Transmission Line Project

	AAA	BBB	CCC	DDD	EEE	FFF	GGG	HHH	III
1. Length of alternative route	0.3	30.3	5.5	6.5	15.2	27.5	7.0	13.1	7.5
2. Length of route parallel and adjacent to existing transmission lines	0.2	2.6	2.3	0.5	0.0	19.9	0.0	3.4	6.4
3. Length of route parallel and adjacent to existing public roads/highways	0.0	2.4	1.1	1.9	4.0	0.0	0.5	0.7	0.7
4. Length of route parallel and adjacent to existing pipelines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5. Length of route parallel and adjacent to railroads	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6. Length of route parallel to apparent property boundaries	0.0	10.0	2.6	3.0	7.9	2.3	4.1	2.8	0.6
7. Total length of route parallel to existing corridors (including apparent property boundaries)	0.2	12.6	4.9	3.5	8.0	22.1	4.1	6.1	7.1
8. Number of habitable structures ¹ within 500 ft of the route centerline	0	15	3	0	9	8	6	11	2
9. Length of route across parks/recreational areas ²	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10. Number of additional parks or recreational areas within 1,000 ft of the route centerline	0	1	0	0	1	0	0	0	0
11. Length of route through commercial/industrial areas	0	0	0	0	0	0	0	0	0
12. Length of route across agricultural pastureland	0.0	9.9	0.6	1.7	5.4	16.0	3.5	6.6	4.8
13. Length of route across agricultural cropland	0.3	14.3	3.9	4.5	7.3	6.0	1.9	3.0	1.1
14. Length of route across agricultural land with mobile irrigation systems	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15. Length of route across upland woodland	0.0	4.3	0.8	0.1	1.8	3.7	1.2	2.8	1.0
16. Length of route across bottomland forest, including forested wetlands	0.00	1.05	0.25	0.23	0.44	0.53	0.34	0.39	0.28
17. Length of route across emergent wetlands	0.00	0.31	0.00	0.07	0.18	0.87	0.18	0.14	0.22
18. Number of streams crossed by the route	0	44	10	14	20	45	17	20	18
19. Length of the streams parallel to routes (within 100 ft)	0	0.98	0.32	0.60	0.36	0.98	0.23	0.25	1.58
20. Number of known rare/unique plant locations within the ROW	0	0	0	0	0	0	0	0	0
21. Length of route through known habitat of endangered or threatened species	0	0	0	0	0	0	0	0	0
22. Number of recorded cultural resource sites crossed by the route	0	1	1	0	0	0	1	0	0
23. Number of additional recorded cultural resource sites within 1,000 ft of the route centerline	0.0	3.7	0.5	1.0	1.1	3.0	0.7	1.1	1.8
24. Length of route across areas of high prehistoric and historic archaeological site potential	0	0	0	0	0	0	0	0	0
25. Number of FAA-registered airstrips > 3,200 ft long within 20,000 ft of the route centerline	0	1	1	1	0	1	0	1	0
26. Number of FAA-registered airstrips < 3,200 ft long within 10,000 ft of the route centerline	0	0	0	0	0	0	0	0	0
27. Number of private airstrips (non-FAA registered) within 10,000 ft of the route centerline	0	0	0	0	0	0	0	0	0
28. Number of heliports within 5,000 ft of the route centerline	0	0	0	0	0	0	0	0	0
29. Length of route across open water (lakes, ponds)	0.00	0.36	0.00	0.02	0.00	0.30	0.02	0.16	0.07
30. Number of commercial AM radio transmitters within 10,000 ft of route centerline	0	0	0	0	0	0	0	0	0
31. Number of FM radio transmitters, microwave relay stations, and other electronic installations within 2,000 ft	0	0	0	0	0	0	0	0	0
32. Number of U.S. or State Highways crossed by the route	0	1	0	0	1	2	0	1	1
33. Number of farm-to-market (F.M.) county roads, or other streets crossed by the route	0	30	4	5	14	14	4	8	3
34. Length of route within foreground visual zone of park/recreational areas (1/2 mile)	0.0	1.5	0.0	0.0	3.9	0.0	0.0	0.0	0.0
35. Length of route within foreground visual zone of State or U.S. Highways (1/2 mile)	0.0	1.2	0.0	0.0	1.1	3.6	0.0	1.1	1.1

Note: All length measurements are in feet. All linear measurements were obtained from aerial photography flown on May 19, 2008 and ortho-rectified to National Map Accuracy Standards of +/- 30 feet.

¹ Structures normally inhabited by humans or intended to be inhabited by on a daily or regular basis. Habitable structures include but are not limited to single-family and multi-family dwellings and related structures, mobile homes, apartment buildings, commercial structures, business structures, churches, hospitals, nursing homes, and schools.

² Defined as park or recreational areas owned by a governmental body or an organized group, club, or church.