

Appendix D
Environmental Data for Primary
Transmission Line Routes

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TABLE 4-1
ENVIRONMENTAL DATA FOR PRIMARY TRANSMISSION LINE ROUTES (SEGMENTS)

Evaluation Criteria	Segments												
	A	B	C	D	E	F	G	H	I	J	K	L	M
1. Length of alternative route (feet)	4,985	2,190	1,299	1,161	2,416	6,823	1,294	557	4,264	4,880	747	4,401	5,010
2. Length of alternative route (miles)	1	0	0	0	0	1	0	0	1	1	0	1	1
3. Number of habitable structures ^[1] within 300 feet of route centerline	20	24	10	1	15	60	2	4	3	8	0	1	4
4. Number of habitable structures ^[1] in previous criterion also within 300 feet of an existing transmission line	3	7	0	0	0	3	0	0	0	0	0	0	1
5. Length of route using existing transmission line easement ^[2]	0	0	0	0	0	0	0	0	0	0	0	0	0
6. Length of new ROW required for route ^[2]	4,985	2,190	1,299	1,161	2,416	6,823	1,294	557	4,264	4,880	747	4,401	5,010
7. Length of route proposed to underbuild existing distribution	0	2,190	914	0	0	1,065	0	0	0	0	0	0	3,061
8. Length of route not proposed to underbuild existing distribution	4,985	0	385	1,161	2,416	5,758	1,294	557	4,264	4,880	747	4,401	1,949
9. Length of route parallel to existing transmission line ROW	0	0	0	0	0	0	0	0	0	0	0	0	0
10. Length of route not utilizing/paralleling existing transmission line ROW	4,985	2,190	1,299	1,161	2,416	6,823	1,294	557	4,264	4,880	747	4,401	5,010
11. Length of route paralleling apparent property lines	2,396	0	0	0	1,164	4,891	0	487	0	1,018	0	4,363	0
12. Length of route parallel to other existing ROW (highway, pipeline, canals, etc.)	750	2,190	1,299	1,161	1,252	259	0	0	0	1,587	229	0	3,061
13. Length of route not parallel to other existing ROW (highway, pipeline, canals, etc.)	4,235	0	0	0	1,164	6,563	1,294	557	4,264	3,293	517	4,401	1,949
14. Percent of route parallel with apparent features, property lines, or an existing ROW	63%	100%	100%	100%	100%	75%	0%	87%	0%	53%	31%	99%	61%
15. Length of route across parks/recreational areas ^[3]	0	0	0	0	0	0	0	0	0	0	0	0	0
16. Number of additional parks/recreational areas ^[3] within 1,000 feet of route centerline	1	1	2	2	2	3	2	0	0	0	0	0	0
17. Length of route across residential areas	317	366	427	0	0	0	0	0	0	0	0	0	0
18. Length of route across commercial/industrial areas	0	1,824	0	0	0	189	0	0	0	0	0	0	2,831
19. Length of route across agricultural land/cropland	0	0	0	0	0	0	0	0	0	0	0	0	0
20. Length of route across pastureland	1,415	0	0	127	1,650	1,384	1,033	404	2,051	1,712	0	1,371	579
21. Length of route across mobile irrigated cropland or pastureland	0	0	0	0	0	0	0	0	0	0	0	0	0
22. Number of drainage easements/ditches crossed	0	0	0	0	0	0	0	0	0	0	0	0	0
23. Number of pipeline crossings	0	0	0	1	1	2	0	0	0	0	0	2	2
24. Number of transmission line crossings	0	0	0	0	0	0	0	0	0	0	0	0	0
25. Number of U.S. and state highway crossings	0	0	0	0	0	0	0	0	0	0	0	0	0
26. Number of F.M. road crossings	0	0	0	0	0	0	0	0	0	0	0	0	0
27. Number of county road crossings	0	0	0	0	0	0	0	0	0	0	0	0	0
28. Number of cemeteries within 1,000 feet of the route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0
29. Number of heliports within 5,000 feet of route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0
30. Number of private airstrips within 10,000 feet of route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0
31. Number of FAA-listed airfields within 20,000 feet of route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0
32. Number of commercial AM radio transmitters within 10,000 feet of route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0
33. Number of FM radio transmitters, microwave relay stations, and other electronic installations etc. within 2,000 feet of route centerline	0	1	0	1	0	1	1	0	0	0	0	2	2
34. Number of known hazardous waste sites within the ROW	0	0	0	0	0	0	0	0	0	0	0	0	0
35. Number of oil and gas wells within the ROW	0	0	0	0	0	0	0	0	0	0	0	0	0
Aesthetics													
36. Estimated length of route within foreground visual zone of U.S. and state highways ^[4]	0	476	110	0	395	0	1,254	557	2,978	4,880	747	1,310	4,645
37. Estimated length of route within foreground visual zone of FM and county roads ^[4]	0	0	0	0	0	0	0	0	0	0	0	0	0
38. Estimated length of route within foreground visual zone of park and recreational areas ^{[3][4]}	2,381	0	1,299	1,161	2,195	3,165	1,294	557	0	0	0	0	0
Ecology													
39. Length of route across upland woodlands	2,979	0	872	1,034	767	5,036	262	153	1,735	2,500	747	2,879	1,443
40. Length of route across bottomland/riparian woodlands	0	0	0	0	0	0	0	0	113	269	0	0	0
41. Length of route across potential wetlands	185	0	0	0	0	214	0	0	92	309	0	152	157
42. Length of route across known habitat of federal endangered/threatened species of plants or animals	0	0	0	0	0	0	0	0	0	0	0	0	0
43. Number of known state rare/unique plant locations within the ROW	0	0	0	0	0	0	0	0	0	0	0	0	0
44. Length of route across open water (lakes or ponds)	88	0	0	0	0	0	0	0	274	89	0	0	0
45. Number of stream crossings	1	0	0	0	0	1	0	0	1	1	0	0	0
46. Length of route parallel to streams within 100 feet	0	0	0	0	0	0	0	0	0	0	0	0	0
47. Length of route across 100-year floodplains	195	0	0	0	0	3,105	0	134	4,096	4,311	0	0	0
Cultural Resources													
48. Number of recorded historic or prehistoric sites crossed	0	0	0	0	0	0	0	0	0	0	0	0	0
49. Number of additional recorded historic or prehistoric sites within 1,000 of route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0
50. Number of National Register listed or determined-eligible sites crossed	0	0	0	0	0	0	0	0	0	0	0	0	0
51. Number of additional National Register listed or determined-eligible sites within 1,000 feet of route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0
52. Length of route across areas of high archaeological/historic site potential	0	0	0	0	0	2563	0	0	2843	3242	745	2316	2981

^[1] Single-family and multi-family dwellings and related structures, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, churches, hospitals, schools, or other structures normally inhabited by humans or intended to be inhabited by humans on a regular basis.

^[2] Within existing transmission line ROW and is not included in the parallel to existing transmission line category .

^[3] Park and recreation areas owned by a governmental body or an organized group, club, or church.

^[4] Half mile, unobstructed.

Note: All length measurements in feet. All linear measurements were obtained from aerial photography flown between December 2007-February 2008, with the exception of high probability areas for archaeological historical/resources which were measured from USGS Topographic Quadrangles using GIS software. The aerial photography was ortho-rectified to National Map Accuracy Standards of +/- 10 feet.

Route and Segment Combination and Substation Site

1: B-C-E-H-J-SS#1	9: F-G-H-J-SS#1	17: A-C-E-H-J-M-O-SS#2	25: F-G-H-I-L-O-SS#2	33: X-Z-B1-W-SS#2	41: S1-R1-L1-K1-G1-C1-SS#3
2: B-C-E-H-K-SS#1	10: F-G-H-K-SS#1	18: A-C-E-H-J-K-L-O-SS#2	26: R-T-V-SS#2	34: X-Z-A1-SS#3	42: S1-Q1-O1-P1-J1-L1-K1-G1-D1-W-SS#2
3: B-C-D-G-H-J-SS#1	11: B-C-E-H-J-M-O-SS#2	19: A-C-E-H-L-O-SS#2	27: R-T-U-B1-W-SS#2	35: H1-Y-Z-U-V-SS#2	43: S1-Q1-O1-P1-J1-L1-K1-G1-C1-SS#3
4: B-C-D-G-H-I-K-SS#1	12: B-C-E-H-J-K-L-O-SS#2	20: A-C-D-G-H-J-M-O-SS#2	28: R-T-U-A1-SS#3	36: H1-Y-Z-B1-W-SS#2	44: S1-Q1-O1-M1-K1-G1-D1-W-SS#2
5: A-C-E-H-J-SS#1	13: B-C-E-H-I-L-O-SS#2	21: A-C-D-G-H-J-K-L-O-SS#2	29: S-T-V-SS#2	37: H1-Y-Z-A1-SS#3	45: S1-Q1-O1-M1-K1-G1-C1-SS#3
6: A-C-E-H-I-K-SS#1	14: B-C-D-G-H-J-M-O-SS#2	22: A-C-D-G-H-I-L-O-SS#2	30: S-T-U-B1-W-SS#2	38: H1-I1-G1-D1-W-SS#2	
7: A-C-D-G-H-J-SS#1	15: B-C-D-G-H-J-K-L-O-SS#2	23: F-G-H-J-M-O-SS#2	31: S-T-U-A1-SS#3	39: H1-I1-G1-C1-SS#3	
8: A-C-D-G-H-I-K-SS#1	16: B-C-D-G-H-I-L-O-SS#2	24: F-G-H-J-K-L-O-SS#2	32: X-Z-U-V-SS#2	40: S1-R1-L1-K1-G1-D1-W-SS#2	

TABLE 4-1
ENVIRONMENTAL DATA FOR PRIMARY TRANSMISSION LINE ROUTES (SEGMENTS)

Evaluation Criteria														
Land Use	O	R	S	T	U	V	W	X	Y	Z	A1	B1	C1	
1. Length of alternative route (feet)	2,886	5,699	4,529	6,575	1,697	4,570	1,870	3,739	4,608	9,341	1,836	3,426	2,729	
2. Length of alternative route (miles)	1	1	1	1	0	1	0	1	1	2	0	1	1	
3. Number of habitable structures ^[1] within 300 feet of route centerline	1	23	18	64	5	0	0	31	70	180	7	11	3	
4. Number of habitable structures ^[1] in previous criterion also within 300 feet of an existing transmission line	1	2	14	65	0	0	0	2	0	0	0	0	0	
5. Length of route using existing transmission line easement ^[2]	0	0	0	0	0	0	0	0	0	0	0	0	0	
6. Length of new ROW required for route ^[2]	2,886	5,699	4,529	6,575	1,697	4,570	1,870	3,739	4,608	9,341	1,836	3,426	2,729	
7. Length of route proposed to underbuild existing distribution	0	0	0	0	1,697	0	854	3,739	0	2,765	0	2,926	0	
8. Length of route not proposed to underbuild existing distribution	2,886	5,699	4,529	6,575	0	4,570	1,017	0	4,608	6,575	1,836	500	2,729	
9. Length of route parallel to existing transmission line ROW	2,818	0	3,592	6,575	0	4,570	0	0	0	0	0	0	0	
10. Length of route not utilizing/paralleling existing transmission line ROW	67	5,699	937	0	1,697	0	1,870	3,739	4,608	9,341	1,836	3,426	2,729	
11. Length of route paralleling apparent property lines	67	3,645	0	0	1,461	0	0	0	4,481	0	483	0	2,729	
12. Length of route parallel to other existing ROW (highway, pipeline, canals, etc.)	0	0	261	0	0	0	854	3,739	0	6,838	1,245	2,926	0	
13. Length of route not parallel to other existing ROW (highway, pipeline, canals, etc.)	2,886	5,699	4,268	6,575	1,697	4,570	1,017	0	4,608	2,502	591	500	2,729	
14. Percent of route parallel with apparent features, property lines, or an existing ROW	100%	64%	85%	100%	86%	100%	46%	100%	97%	73%	94%	85%	100%	
15. Length of route across parks/recreational areas ^[3]	0	0	0	0	0	0	0	0	0	0	0	0	0	
16. Number of additional parks/recreational areas ^[3] within 1,000 feet of route centerline	0	0	1	1	1	0	0	1	1	4	1	1	0	
17. Length of route across residential areas	0	3,322	1,129	0	397	0	0	325	2,034	4,894	0	810	300	
18. Length of route across commercial/industrial areas	0	0	335	0	0	0	0	1,112	0	2,188	0	0	0	
19. Length of route across agricultural land/cropland	0	0	0	0	0	0	0	0	0	0	0	0	0	
20. Length of route across pastureland	1,925	382	2,400	2,745	0	1,188	0	2,302	2,334	731	758	709	1,003	
21. Length of route across mobile irrigated cropland or pastureland	0	0	0	0	0	0	0	0	0	0	0	0	0	
22. Number of drainage easements/ditches crossed	0	0	1	0	0	0	0	0	0	0	0	0	0	
23. Number of pipeline crossings	0	2	0	1	0	1	0	2	0	1	1	1	0	
24. Number of transmission line crossings	0	0	1	0	1	0	1	0	0	0	0	0	0	
25. Number of U.S. and state highway crossings	0	0	0	0	0	0	0	0	0	0	0	0	0	
26. Number of F.M. road crossings	0	0	0	0	0	0	0	0	1	0	0	0	0	
27. Number of county road crossings	0	0	0	0	0	0	0	0	0	0	0	0	0	
28. Number of cemeteries within 1,000 feet of the route centerline	0	2	1	1	0	0	0	0	0	0	0	0	0	
29. Number of heliports within 5,000 feet of route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0	
30. Number of private airstrips within 10,000 feet of route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0	
31. Number of FAA-listed airfields within 20,000 feet of route centerline	0	0	0	0	0	0	0	1	0	0	0	0	0	
32. Number of commercial AM radio transmitters within 10,000 feet of route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0	
33. Number of FM radio transmitters, microwave relay stations, and other electronic installations etc. within 2,000 feet of route centerline	3	3	1	1	0	1	1	0	1	0	0	1	1	
34. Number of known hazardous waste sites within the ROW	0	0	0	0	0	0	0	0	0	0	0	0	0	
35. Number of oil and gas wells within the ROW	0	0	0	0	0	0	0	0	0	0	0	0	0	
Aesthetics														
36. Estimated length of route within foreground visual zone of U.S. and state highways ^[4]	2,476	0	0	0	0	1,808	1,870	0	0	0	0	946	0	
37. Estimated length of route within foreground visual zone of FM and county roads ^[4]	0	0	0	0	0	0	0	0	2,734	0	0	0	0	
38. Estimated length of route within foreground visual zone of park and recreational areas ^{[3][4]}	0	109	0	0	609	0	0	880	3,071	7,814	1,836	2,347	0	
Ecology														
39. Length of route across upland woodlands	0	1,844	665	3,347	1,223	2,169	1,648	0	0	1,527	1,078	1,907	1,426	
40. Length of route across bottomland/riparian woodlands	0	0	0	0	0	0	0	0	0	0	0	0	0	
41. Length of route across potential wetlands	961	151	0	484	76	1,213	222	0	240	0	0	0	0	
42. Length of route across known habitat of federal endangered/threatened species of plants or animals	0	0	0	0	0	0	0	0	0	0	0	0	0	
43. Number of known state rare/unique plant locations within the ROW	0	0	0	0	0	0	0	0	0	0	0	0	0	
44. Length of route across open water (lakes or ponds)	0	0	0	0	0	0	0	0	0	0	0	0	0	
45. Number of stream crossings	0	0	0	0	0	0	0	0	0	1	0	0	0	
46. Length of route parallel to streams within 100 feet	0	0	0	0	0	0	0	0	0	0	1,243	0	0	
47. Length of route across 100-year floodplains	0	1,895	0	0	0	0	0	0	0	1,077	0	0	0	
Cultural Resources														
48. Number of recorded historic or prehistoric sites crossed	0	0	0	0	0	0	0	0	0	0	0	0	0	
49. Number of additional recorded historic or prehistoric sites within 1,000 of route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0	
50. Number of National Register listed or determined-eligible sites crossed	0	0	0	0	0	0	0	0	0	0	0	0	0	
51. Number of additional National Register listed or determined-eligible sites within 1,000 feet of route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0	
52. Length of route across areas of high archaeological/historic site potential	0	3567	20	0	20	0	20	0	0	0	0	0	0	

^[1] Single-family and multi-family dwellings and related structures, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, churches, hospitals, schools, or other structures normally inhabited by humans or intended to be inhabited by humans on a regular basis.

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^[3] Park and recreation areas owned by a governmental body or an organized group, club, or church.

^[4] Half mile, unobstructed.

Note: All length measurements in feet. All linear measurements were obtained from aerial photography flown between December 2007-February 2008, with the exception of high probability areas for archaeological historical/resources which were measured from USGS Topographic Quadrangles using GIS software. The aerial photography was ortho-rectified to National Map Accuracy Standards of +/- 10 feet.

Route and Segment Combination and Substation Site

1: B-C-E-H-J-SS#1	9: F-G-H-J-SS#1	17: A-C-E-H-J-M-O-SS#2	25: F-G-H-I-L-O-SS#2	33: X-Z-B1-W-SS#2	41: S1-R1-L1-K1-G1-C1-SS#3
2: B-C-E-H-K-SS#1	10: F-G-H-I-K-SS#1	18: A-C-E-H-J-K-L-O-SS#2	26: R-T-V-SS#2	34: X-Z-A1-SS#3	42: S1-Q1-O1-P1-J1-L1-K1-G1-D1-W-SS#2
3: B-C-D-G-H-J-SS#1	11: B-C-E-H-J-M-O-SS#2	19: A-C-E-H-L-O-SS#2	27: R-T-U-B1-W-SS#2	35: H1-Y-Z-U-V-SS#2	43: S1-Q1-O1-P1-J1-L1-K1-G1-C1-SS#3
4: B-C-D-G-H-I-K-SS#1	12: B-C-E-H-J-K-L-O-SS#2	20: A-C-D-G-H-J-M-O-SS#2	28: R-T-U-A1-SS#3	36: H1-Y-Z-B1-W-SS#2	44: S1-Q1-O1-M1-K1-G1-D1-W-SS#2
5: A-C-E-H-J-SS#1	13: B-C-E-H-I-L-O-SS#2	21: A-C-D-G-H-J-K-L-O-SS#2	29: S-T-V-SS#2	37: H1-Y-Z-A1-SS#3	45: S1-Q1-O1-M1-K1-G1-C1-SS#3
6: A-C-E-H-I-K-SS#1	14: B-C-D-G-H-J-M-O-SS#2	22: A-C-D-G-H-I-L-O-SS#2	30: S-T-U-B1-W-SS#2	38: H1-I1-G1-D1-W-SS#2	
7: A-C-D-G-H-J-SS#1	15: B-C-D-G-H-J-K-L-O-SS#2	23: F-G-H-J-M-O-SS#2	31: S-T-U-A1-SS#3	39: H1-I1-G1-C1-SS#3	
8: A-C-D-G-H-I-K-SS#1	16: B-C-D-G-H-I-L-O-SS#2	24: F-G-H-J-K-L-O-SS#2	32: X-Z-U-V-SS#2	40: S1-R1-L1-K1-G1-D1-W-SS#2	

TABLE 4-1
ENVIRONMENTAL DATA FOR PRIMARY TRANSMISSION LINE ROUTES (SEGMENTS)

Evaluation Criteria													
Land Use	D1	G1	H1	I1	J1	K1	L1	M1	O1	P1	Q1	R1	S1
1. Length of alternative route (feet)	1,399	2,574	6,341	12,899	926	2,961	1,420	3,480	1,604	1,720	4,744	9,034	4,718
2. Length of alternative route (miles)	0	0	1	2	0	1	0	1	0	0	1	2	1
3. Number of habitable structures ^[1] within 300 feet of route centerline	0	0	66	124	16	15	26	22	16	10	37	112	61
4. Number of habitable structures ^[1] in previous criterion also within 300 feet of an existing transmission line	0	0	1	0	0	0	0	0	0	0	0	0	10
5. Length of route using existing transmission line easement ^[2]	0	0	0	0	0	0	0	0	0	0	0	0	0
6. Length of new ROW required for route ^[2]	1,399	2,574	6,341	12,899	926	2,961	1,420	3,480	1,604	1,720	4,744	9,034	4,718
7. Length of route proposed to underbuild existing distribution	0	0	6,341	11,742	0	2,782	920	3,480	337	0	3,430	4,680	2,483
8. Length of route not proposed to underbuild existing distribution	1,399	2,574	0	1,157	926	178	500	0	1,268	1,720	1,314	4,354	2,234
9. Length of route parallel to existing transmission line ROW	0	0	0	0	0	0	0	0	0	0	0	0	0
10. Length of route not utilizing/paralleling existing transmission line ROW	1,399	2,574	6,341	12,899	926	2,961	1,420	3,480	1,604	1,720	4,744	9,034	4,718
11. Length of route paralleling apparent property lines	1,399	2,574	0	0	426	0	0	0	0	1,720	0	0	1,234
12. Length of route parallel to other existing ROW (highway, pipeline, canals, etc.)	0	0	6,341	12,399	0	2,782	920	3,480	1,604	0	4,244	8,725	2,483
13. Length of route not parallel to other existing ROW (highway, pipeline, canals, etc.)	1,399	2,574	0	500	926	178	500	0	0	1,720	500	309	2,234
14. Percent of route parallel with apparent features, property lines, or an existing ROW	100%	100%	100%	96%	46%	94%	65%	100%	100%	100%	89%	97%	79%
15. Length of route across parks/recreational areas ^[3]	0	0	0	0	0	0	0	0	0	0	0	0	0
16. Number of additional parks/recreational areas ^[3] within 1,000 feet of route centerline	0	0	0	0	0	0	0	0	0	0	1	1	2
17. Length of route across residential areas	0	0	0	1,170	100	0	673	0	301	0	943	1,396	418
18. Length of route across commercial/industrial areas	0	0	3,562	8,876	588	1,405	747	1,162	271	0	873	1,428	1,561
19. Length of route across agricultural land/cropland	0	0	0	0	0	0	0	0	0	0	0	2,416	0
20. Length of route across pastureland	0	0	1,823	1,343	238	0	0	0	1,032	458	2,288	3,235	0
21. Length of route across mobile irrigated cropland or pastureland	0	0	0	0	0	0	0	0	0	0	0	0	0
22. Number of drainage easements/ditches crossed	1	0	0	0	0	0	0	1	0	0	1	1	0
23. Number of pipeline crossings	0	0	1	1	0	0	0	0	0	0	0	0	0
24. Number of transmission line crossings	0	0	0	0	0	0	0	0	0	0	0	0	0
25. Number of U.S. and state highway crossings	0	0	0	0	0	0	0	0	0	0	0	0	0
26. Number of F.M. road crossings	0	0	0	1	0	1	0	0	0	0	0	0	0
27. Number of county road crossings	0	0	0	0	0	0	0	0	0	0	0	0	0
28. Number of cemeteries within 1,000 feet of the route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0
29. Number of heliports within 5,000 feet of route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0
30. Number of private airstrips within 10,000 feet of route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0
31. Number of FAA-listed airfields within 20,000 feet of route centerline	0	0	1	0	0	0	0	0	0	0	0	0	0
32. Number of commercial AM radio transmitters within 10,000 feet of route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0
33. Number of FM radio transmitters, microwave relay stations, and other electronic installations etc. within 2,000 feet of route centerline	1	1	0	1	0	0	0	0	0	0	3	0	1
34. Number of known hazardous waste sites within the ROW	0	0	0	0	0	0	0	0	0	0	0	0	0
35. Number of oil and gas wells within the ROW	0	0	0	0	0	0	0	0	0	0	0	0	0
Aesthetics													
36. Estimated length of route within foreground visual zone of U.S. and state highways ^[4]	213	155	0	617	0	375	0	0	0	0	0	0	0
37. Estimated length of route within foreground visual zone of FM and county roads ^[4]	0	652	6,341	12,899	926	2,961	786	566	0	695	0	1,062	0
38. Estimated length of route within foreground visual zone of park and recreational areas ^{[3][4]}	0	0	0	0	0	0	0	0	0	0	2,461	2,679	3,320
Ecology													
39. Length of route across upland woodlands	1,399	1,896	770	1,510	0	1,556	0	2,318	0	1,262	640	558	2,391
40. Length of route across bottomland/riparian woodlands	0	0	0	0	0	0	0	0	0	0	0	0	0
41. Length of route across potential wetlands	0	677	187	0	0	0	0	0	0	0	0	0	348
42. Length of route across known habitat of federal endangered/threatened species of plants or animals	0	0	0	0	0	0	0	0	0	0	0	0	0
43. Number of known state rare/unique plant locations within the ROW	0	0	0	0	0	0	0	0	0	0	0	0	0
44. Length of route across open water (lakes or ponds)	0	0	0	0	0	0	0	0	0	0	0	0	0
45. Number of stream crossings	1	0	0	1	0	0	0	1	0	0	1	1	1
46. Length of route parallel to streams within 100 feet	0	0	0	0	0	0	0	0	0	0	0	3,592	0
47. Length of route across 100-year floodplains	0	1,349	0	175	0	0	0	894	0	0	112	446	293
Cultural Resources													
48. Number of recorded historic or prehistoric sites crossed	0	0	0	0	0	0	0	0	0	0	0	0	0
49. Number of additional recorded historic or prehistoric sites within 1,000 of route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0
50. Number of National Register listed or determined-eligible sites crossed	0	0	0	0	0	0	0	0	0	0	0	0	0
51. Number of additional National Register listed or determined-eligible sites within 1,000 feet of route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0
52. Length of route across areas of high archaeological/historic site potential	22	0	0	0	0	0	0	225	0	0	409	214	1439

^[1] Single-family and multi-family dwellings and related structures, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, churches, hospitals, schools, or other structures normally inhabited by humans or intended to be inhabited by humans on a regular basis.

^[2] Within existing transmission line ROW and is not included in the parallel to existing transmission line category.

^[3] Park and recreation areas owned by a governmental body or an organized group, club, or church.

^[4] Half mile, unobstructed.

Note: All length measurements in feet. All linear measurements were obtained from aerial photography flown between December 2007-February 2008, with the exception of high probability areas for archaeological historical/resources which were measured from USGS Topographic Quadrangles using GIS software. The aerial photography was ortho-rectified to National Map Accuracy Standards of +/- 10 feet.

Route and Segment Combination and Substation Site

1: B-C-E-H-J-SS#1	9: F-G-H-J-SS#1	17: A-C-E-H-J-M-O-SS#2	25: F-G-H-L-O-SS#2	33: X-Z-B1-W-SS#2	41: S1-R1-L1-K1-G1-C1-SS#3
2: B-C-E-H-K-SS#1	10: F-G-H-K-SS#1	18: A-C-E-H-K-L-O-SS#2	26: R-T-V-SS#2	34: X-Z-A1-SS#3	42: S1-Q1-O1-P1-J1-L1-K1-G1-D1-W-SS#2
3: B-C-D-G-H-J-SS#1	11: B-C-E-H-J-M-O-SS#2	19: A-C-E-H-L-O-SS#2	27: R-T-U-B1-W-SS#2	35: H1-Y-Z-U-V-SS#2	43: S1-Q1-O1-P1-J1-L1-K1-G1-C1-SS#3
4: B-C-D-G-H-K-SS#1	12: B-C-E-H-J-K-L-O-SS#2	20: A-C-D-G-H-J-M-O-SS#2	28: R-T-U-A1-SS#3	36: H1-Y-Z-B1-W-SS#2	44: S1-Q1-O1-M1-K1-G1-D1-W-SS#2
5: A-C-E-H-J-SS#1	13: B-C-E-H-L-O-SS#2	21: A-C-D-G-H-J-K-L-O-SS#2	29: S-T-V-SS#2	37: H1-Y-Z-A1-SS#3	45: S1-Q1-O1-M1-K1-G1-C1-SS#3
6: A-C-E-H-K-SS#1	14: B-C-D-G-H-J-M-O-SS#2	22: A-C-D-G-H-L-O-SS#2	30: S-T-U-B1-W-SS#2	38: H1-I1-G1-D1-W-SS#2	
7: A-C-D-G-H-J-SS#1	15: B-C-D-G-H-J-K-L-O-SS#2	23: F-G-H-J-M-O-SS#2	31: S-T-U-A1-SS#3	39: H1-I1-G1-C1-SS#3	
8: A-C-D-G-H-K-SS#1	16: B-C-D-G-H-L-O-SS#2	24: F-G-H-K-L-O-SS#2	32: X-Z-U-V-SS#2	40: S1-R1-L1-K1-G1-D1-W-SS#2	

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TABLE 4-2
ENVIRONMENTAL DATA FOR PRIMARY TRANSMISSION LINE ROUTES

Evaluation Criteria	Routes												
	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Length of alternative route (feet)	11,342	11,473	11,381	11,512	14,137	14,268	14,176	14,307	13,554	13,685	19,238	19,375	18,013
2. Length of alternative route (miles)	2.1	2.2	2.2	2.2	2.7	2.7	2.7	2.7	2.6	2.6	3.6	3.7	3.4
3. Number of habitable structures ^[1] within 300 feet of route centerline	49	44	38	33	45	40	34	29	69	64	54	51	46
4. Number of habitable structures ^[1] in previous criterion also within 300 feet of an existing transmission line	7	7	7	7	3	3	3	3	3	3	9	8	8
5. Length of route using existing transmission line easement ^[2]	0	0	0	0	0	0	0	0	0	0	0	0	0
6. Length of new ROW required for route ^[2]	11,342	11,473	11,381	11,512	14,137	14,268	14,176	14,307	13,554	13,685	19,238	19,375	18,013
7. Length of route proposed to underbuild existing distribution	3,104	3,104	3,104	3,104	914	914	914	914	1,065	1,065	6,165	3,104	3,104
8. Length of route not proposed to underbuild existing distribution	8,238	8,369	8,277	8,408	13,224	13,355	13,263	13,393	12,489	12,620	13,073	16,271	14,909
9. Length of route parallel to existing transmission line ROW	0	0	0	0	0	0	0	0	0	0	2,818	2,818	2,818
10. Length of route not utilizing/paralleling existing transmission line ROW	11,342	11,473	11,381	11,512	14,137	14,268	14,176	14,307	13,554	13,685	16,420	16,557	15,194
11. Length of route paralleling apparent property lines	2,669	1,651	1,505	487	5,065	4,046	3,901	2,882	6,396	5,378	2,736	7,100	6,082
12. Length of route parallel to other existing ROW (highway, pipeline, canals, etc.)	6,328	4,971	6,237	4,880	4,888	3,531	4,797	3,439	1,846	489	9,389	6,558	4,742
13. Length of route not parallel to other existing ROW (highway, pipeline, canals, etc.)	5,014	6,502	5,144	6,633	9,249	10,737	9,379	10,868	11,707	13,196	9,849	12,818	13,271
14. Percent of route parallel with apparent features, property lines, or an existing ROW	79%	58%	68%	47%	70%	53%	61%	44%	61%	43%	78%	85%	76%
15. Length of route across parks/recreational areas ^[3]	0	0	0	0	0	0	0	0	0	0	0	0	0
16. Number of additional parks/recreational areas ^[3] within 1,000 feet of route centerline	2	2	2	2	2	2	2	2	3	3	2	2	2
17. Length of route across residential areas	793	793	793	793	744	744	744	744	0	0	793	793	793
18. Length of route across commercial/industrial areas	1,824	1,824	1,824	1,824	0	0	0	0	189	189	4,655	1,824	1,824
19. Length of route across agricultural land/cropland	0	0	0	0	0	0	0	0	0	0	0	0	0
20. Length of route across pastureland	3,766	4,105	3,275	3,614	5,181	5,520	4,691	5,030	4,533	4,871	6,270	7,061	7,400
21. Length of route across mobile irrigated cropland or pastureland	0	0	0	0	0	0	0	0	0	0	0	0	0
22. Number of drainage easements/ditches crossed	0	0	0	0	0	0	0	0	0	0	0	0	0
23. Number of pipeline crossings	1	1	1	1	1	1	1	1	2	2	3	3	3
24. Number of transmission line crossings	0	0	0	0	0	0	0	0	0	0	0	0	0
25. Number of U.S. and state highway crossings	0	0	0	0	0	0	0	0	0	0	0	0	0
26. Number of F.M. road crossings	0	0	0	0	0	0	0	0	0	0	0	0	0
27. Number of county road crossings	0	0	0	0	0	0	0	0	0	0	0	0	0
28. Number of cemeteries within 1,000 feet of the route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0
29. Number of heliports within 5,000 feet of route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0
30. Number of private airstrips within 10,000 feet of route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0
31. Number of FAA-listed airfields within 20,000 feet of route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0
32. Number of commercial AM radio transmitters within 10,000 feet of route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0
33. Number of FM radio transmitters, microwave relay stations, and other electronic installations etc. within 2,000 feet of route centerline	1	1	2	2	0	0	1	1	1	1	4	4	4
34. Number of known hazardous waste sites within the ROW	0	0	0	0	0	0	0	0	0	0	0	0	0
35. Number of oil and gas wells within the ROW	0	0	0	0	0	0	0	0	0	0	0	0	0
Aesthetics													
36. Estimated length of route within foreground visual zone of U.S. and state highways ^[4]	6,418	5,263	7,277	6,122	5,942	4,787	6,801	5,646	6,691	5,536	13,539	10,950	8,302
37. Estimated length of route within foreground visual zone of FM and county roads ^[4]	0	0	0	0	0	0	0	0	0	0	0	0	0
38. Estimated length of route within foreground visual zone of park and recreational areas ^{[3][4]}	4,051	4,051	4,311	4,311	6,433	6,433	6,693	6,693	5,016	5,016	4,051	4,051	4,051
Ecology													
39. Length of route across upland woodlands	4,292	4,273	4,821	4,802	7,271	7,252	7,800	7,781	7,951	7,932	5,735	7,917	6,405
40. Length of route across bottomland/riparian woodlands	269	113	269	113	269	113	269	113	269	113	269	269	113
41. Length of route across potential wetlands	309	92	309	92	495	277	495	277	523	306	1,427	1,422	1,204
42. Length of route across known habitat of federal endangered/threatened species of plants or animals	0	0	0	0	0	0	0	0	0	0	0	0	0
43. Number of known state rare/unique plant locations within the ROW	0	0	0	0	0	0	0	0	0	0	0	0	0
44. Length of route across open water (lakes or ponds)	89	274	89	274	177	362	177	362	89	274	89	89	274
45. Number of stream crossings	1	1	1	1	2	2	2	2	2	2	1	1	1
46. Length of route parallel to streams within 100 feet	0	0	0	0	0	0	0	0	0	0	0	0	0
47. Length of route across 100-year floodplains	4,445	4,230	4,445	4,230	4,641	4,426	4,641	4,426	7,550	7,336	4,445	4,445	4,230
Cultural Resources													
48. Number of recorded historic or prehistoric sites crossed	0	0	0	0	0	0	0	0	0	0	0	0	0
49. Number of additional recorded historic or prehistoric sites within 1,000 of route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0
50. Number of National Register listed or determined-eligible sites crossed	0	0	0	0	0	0	0	0	0	0	0	0	0
51. Number of additional National Register listed or determined-eligible sites within 1,000 feet of route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0
52. Length of route across areas of high archaeological/historic site potential	3,242	3,588	3,242	3,588	3,242	3,588	3,242	3,588	5,805	6,152	6,223	6,303	5,159

^[1] Single-family and multi-family dwellings and related structures, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, churches, hospitals, schools, or other structures normally inhabited by humans or intended to be inhabited by humans on a regular basis.

^[2] Within existing transmission line ROW and is not included in the parallel to existing transmission line category.

^[3] Park and recreation areas owned by a governmental body or an organized group, club, or church.

^[4] Half mile, unobstructed.

Note: All length measurements in feet. All linear measurements were obtained from aerial photography flown between December 2007-February 2008, with the exception of high probability areas for archaeological historical/resources which were measured from USGS Topographic Quadrangles using GIS software. The aerial photography was ortho-rectified to National Map Accuracy Standards of +/- 10 feet.

Route and Segment Combination and Substation Site

1: B-C-E-H-J-SS#1	9: F-G-H-J-SS#1	17: A-C-E-H-J-M-O-SS#2	25: F-G-H-L-O-SS#2	33: X-Z-B1-W-SS#2	41: S1-R1-L1-K1-G1-C1-SS#3
2: B-C-E-H-K-SS#1	10: F-G-H-K-SS#1	18: A-C-E-H-K-L-O-SS#2	26: R-T-V-SS#2	34: X-Z-A1-SS#3	42: S1-Q1-O1-P1-J1-L1-K1-G1-D1-W-SS#2
3: B-C-D-G-H-J-SS#1	11: B-C-E-H-J-M-O-SS#2	19: A-C-E-H-L-O-SS#2	27: R-T-U-B1-W-SS#2	35: H1-Y-Z-U-V-SS#2	43: S1-Q1-O1-P1-J1-L1-K1-G1-C1-SS#3
4: B-C-D-G-H-K-SS#1	12: B-C-E-H-J-K-L-O-SS#2	20: A-C-D-G-H-J-M-O-SS#2	28: R-T-U-A1-SS#3	36: H1-Y-Z-B1-W-SS#2	44: S1-Q1-O1-M1-K1-G1-D1-W-SS#2
5: A-C-E-H-J-SS#1	13: B-C-E-H-L-O-SS#2	21: A-C-D-G-H-J-K-L-O-SS#2	29: S-T-V-SS#2	37: H1-Y-Z-A1-SS#3	45: S1-Q1-O1-M1-K1-G1-C1-SS#3
6: A-C-E-H-K-SS#1	14: B-C-D-G-H-J-M-O-SS#2	22: A-C-D-G-H-L-O-SS#2	30: S-T-U-B1-W-SS#2	38: H1-I1-G1-D1-W-SS#2	
7: A-C-D-G-H-J-SS#1	15: B-C-D-G-H-J-K-L-O-SS#2	23: F-G-H-J-M-O-SS#2	31: S-T-U-A1-SS#3	39: H1-I1-G1-C1-SS#3	
8: A-C-D-G-H-K-SS#1	16: B-C-D-G-H-L-O-SS#2	24: F-G-H-K-L-O-SS#2	32: X-Z-U-V-SS#2	40: S1-R1-L1-K1-G1-D1-W-SS#2	

TABLE 4-2
ENVIRONMENTAL DATA FOR PRIMARY TRANSMISSION LINE ROUTES

Evaluation Criteria													
Land Use	14	15	16	17	18	19	20	21	22	23	24	25	26
1. Length of alternative route (feet)	19,277	19,414	18,052	17,048	22,170	20,808	22,072	22,209	20,847	21,450	21,587	20,224	16,845
2. Length of alternative route (miles)	3.7	3.7	3.4	3.2	4.2	3.9	4.2	4.2	3.9	4.1	4.1	3.8	3.2
3. Number of habitable structures ^[1] within 300 feet of route centerline	43	40	35	50	47	42	39	36	31	74	71	66	85
4. Number of habitable structures ^[1] in previous criterion also within 300 feet of an existing transmission line	9	8	8	5	4	4	5	4	4	5	4	4	66
5. Length of route using existing transmission line easement ^[2]	0	0	0	0	0	0	0	0	0	0	0	0	0
6. Length of new ROW required for route ^[2]	19,277	19,414	18,052	17,048	22,170	20,808	22,072	22,209	20,847	21,450	21,587	20,224	16,845
7. Length of route proposed to underbuild existing distribution	6,165	3,104	3,104	3,975	914	914	3,975	914	914	4,126	1,065	1,065	0
8. Length of route not proposed to underbuild existing distribution	13,112	16,310	14,948	13,073	21,257	19,894	18,098	21,296	19,933	17,324	20,522	19,160	16,845
9. Length of route parallel to existing transmission line ROW	2,818	2,818	2,818	2,818	2,818	2,818	2,818	2,818	2,818	2,818	2,818	2,818	11,145
10. Length of route not utilizing/paralleling existing transmission line ROW	16,459	16,596	15,233	14,229	19,352	17,989	19,254	19,391	18,028	18,631	18,768	17,406	5,699
11. Length of route paralleling apparent property lines	1,572	5,936	4,917	2,736	9,495	8,477	3,968	8,331	7,313	6,463	10,827	9,808	3,645
12. Length of route parallel to other existing ROW (highway, pipeline, canals, etc.)	9,298	6,467	4,650	7,199	5,118	3,301	7,858	5,026	3,210	4,907	2,076	259	0
13. Length of route not parallel to other existing ROW (highway, pipeline, canals, etc.)	9,979	12,948	13,402	9,849	17,053	17,507	14,214	17,183	17,637	16,542	19,511	19,965	16,845
14. Percent of route parallel with apparent features, property lines, or an existing ROW	71%	78%	69%	75%	79%	70%	66%	73%	64%	66%	73%	64%	88%
15. Length of route across parks/recreational areas ^[3]	0	0	0	0	0	0	0	0	0	0	0	0	0
16. Number of additional parks/recreational areas ^[3] within 1,000 feet of route centerline	2	2	2	2	2	2	2	2	2	3	3	3	1
17. Length of route across residential areas	793	793	793	427	744	744	744	744	744	0	0	0	3,322
18. Length of route across commercial/industrial areas	4,655	1,824	1,824	2,831	0	0	2,831	0	0	3,020	189	189	0
19. Length of route across agricultural land/cropland	0	0	0	0	0	0	0	0	0	0	0	0	0
20. Length of route across pastureland	5,780	6,571	6,910	6,270	8,476	8,815	7,195	7,986	8,325	7,037	7,828	8,167	4,315
21. Length of route across mobile irrigated cropland or pastureland	0	0	0	0	0	0	0	0	0	0	0	0	0
22. Number of drainage easements/ditches crossed	0	0	0	0	0	0	0	0	0	0	0	0	0
23. Number of pipeline crossings	3	3	3	3	3	3	3	3	3	4	4	4	4
24. Number of transmission line crossings	0	0	0	0	0	0	0	0	0	0	0	0	0
25. Number of U.S. and state highway crossings	0	0	0	0	0	0	0	0	0	0	0	0	0
26. Number of F.M. road crossings	0	0	0	0	0	0	0	0	0	0	0	0	0
27. Number of county road crossings	0	0	0	0	0	0	0	0	0	0	0	0	0
28. Number of cemeteries within 1,000 feet of the route centerline	0	0	0	0	0	0	0	0	0	0	0	0	2
29. Number of heliports within 5,000 feet of route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0
30. Number of private airstrips within 10,000 feet of route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0
31. Number of FAA-listed airfields within 20,000 feet of route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0
32. Number of commercial AM radio transmitters within 10,000 feet of route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0
33. Number of FM radio transmitters, microwave relay stations, and other electronic installations etc. within 2,000 feet of route centerline	5	5	5	3	3	3	4	4	4	4	4	4	4
34. Number of known hazardous waste sites within the ROW	0	0	0	0	0	0	0	0	0	0	0	0	0
35. Number of oil and gas wells within the ROW	0	0	0	0	0	0	0	0	0	0	0	0	0
Aesthetics													
36. Estimated length of route within foreground visual zone of U.S. and state highways ^[4]	14,398	11,809	9,161	13,063	10,474	7,826	13,922	11,333	8,685	13,812	11,223	8,575	1,808
37. Estimated length of route within foreground visual zone of FM and county roads ^[4]	0	0	0	0	0	0	0	0	0	0	0	0	0
38. Estimated length of route within foreground visual zone of park and recreational areas ^{[3][4]}	4,311	4,311	4,311	4,051	6,433	6,433	6,693	6,693	6,693	5,016	5,016	5,016	109
Ecology													
39. Length of route across upland woodlands	6,264	8,446	6,934	5,735	10,896	9,384	9,243	11,425	9,913	9,394	11,576	10,064	7,360
40. Length of route across bottomland/riparian woodlands	269	269	113	269	269	113	269	269	113	269	269	113	0
41. Length of route across potential wetlands	1,427	1,422	1,204	1,427	1,607	1,390	1,612	1,607	1,390	1,641	1,635	1,418	1,849
42. Length of route across known habitat of federal endangered/threatened species of plants or animals	0	0	0	0	0	0	0	0	0	0	0	0	0
43. Number of known state rare/unique plant locations within the ROW	0	0	0	0	0	0	0	0	0	0	0	0	0
44. Length of route across open water (lakes or ponds)	89	89	274	89	177	362	177	362	89	89	274	0	0
45. Number of stream crossings	1	1	1	1	2	2	2	2	2	2	2	2	0
46. Length of route parallel to streams within 100 feet	0	0	0	0	0	0	0	0	0	0	0	0	0
47. Length of route across 100-year floodplains	4,445	4,445	4,230	4,445	4,641	4,426	4,641	4,641	4,426	7,550	7,550	7,336	1,895
Cultural Resources													
48. Number of recorded historic or prehistoric sites crossed	0	0	0	0	0	0	0	0	0	0	0	0	0
49. Number of additional recorded historic or prehistoric sites within 1,000 of route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0
50. Number of National Register listed or determined-eligible sites crossed	0	0	0	0	0	0	0	0	0	0	0	0	0
51. Number of additional National Register listed or determined-eligible sites within 1,000 feet of route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0
52. Length of route across areas of high archaeological/historic site potential	6,223	6,303	5,159	6,223	6,303	5159	6223	6303	5159	8786	8866	7722	3567

^[1] Single-family and multi-family dwellings and related structures, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, churches, hospitals, schools, or other structures normally inhabited by humans or intended to be inhabited by humans on a regular basis.

^[2] Within existing transmission line ROW and is not included in the parallel to existing transmission line category.

^[3] Park and recreation areas owned by a governmental body or an organized group, club, or church.

^[4] Half mile, unobstructed.

Note: All length measurements in feet. All linear measurements were obtained from aerial photography flown between December 2007-February 2008, with the exception of high probability areas for archaeological historical/resources which were measured from USGS Topographic Quadrangles using GIS software. The aerial photography was ortho-rectified to National Map Accuracy Standards of +/- 10 feet.

Route and Segment Combination and Substation Site

1: B-C-E-H-J-SS#1	9: F-G-H-J-SS#1	17: A-C-E-H-J-M-O-SS#2	25: F-G-H-I-L-O-SS#2	33: X-Z-B1-W-SS#2	41: S1-R1-L1-K1-G1-C1-SS#3
2: B-C-E-H-K-SS#1	10: F-G-H-I-K-SS#1	18: A-C-E-H-J-K-L-O-SS#2	26: R-T-V-SS#2	34: X-Z-A1-SS#3	42: S1-Q1-O1-P1-J1-L1-K1-G1-D1-W-SS#2
3: B-C-D-G-H-J-SS#1	11: B-C-E-H-J-M-O-SS#2	19: A-C-E-H-L-O-SS#2	27: R-T-U-B1-W-SS#2	35: H1-Y-Z-U-V-SS#2	43: S1-Q1-O1-P1-J1-L1-K1-G1-C1-SS#3
4: B-C-D-G-H-I-K-SS#1	12: B-C-E-H-J-K-L-O-SS#2	20: A-C-D-G-H-J-M-O-SS#2	28: R-T-U-A1-SS#3	36: H1-Y-Z-B1-W-SS#2	44: S1-Q1-O1-M1-K1-G1-D1-W-SS#2
5: A-C-E-H-J-SS#1	13: B-C-E-H-I-L-O-SS#2	21: A-C-D-G-H-J-K-L-O-SS#2	29: S-T-V-SS#2	37: H1-Y-Z-A1-SS#3	45: S1-Q1-O1-M1-K1-G1-C1-SS#3
6: A-C-E-H-I-K-SS#1	14: B-C-D-G-H-J-M-O-SS#2	22: A-C-D-G-H-I-L-O-SS#2	30: S-T-U-B1-W-SS#2	38: H1-I1-G1-D1-W-SS#2	
7: A-C-D-G-H-J-SS#1	15: B-C-D-G-H-J-K-L-O-SS#2	23: F-G-H-J-M-O-SS#2	31: S-T-U-A1-SS#3	39: H1-I1-G1-C1-SS#3	
8: A-C-D-G-H-I-K-SS#1	16: B-C-D-G-H-I-L-O-SS#2	24: F-G-H-J-K-L-O-SS#2	32: X-Z-U-V-SS#2	40: S1-R1-L1-K1-G1-D1-W-SS#2	

TABLE 4-2
ENVIRONMENTAL DATA FOR PRIMARY TRANSMISSION LINE ROUTES

Evaluation Criteria													
Land Use	27	28	29	30	31	32	33	34	35	36	37	38	39
1. Length of alternative route (feet)	19,268	15,808	15,675	18,098	14,637	19,347	18,377	14,916	26,557	25,587	22,126	25,083	24,543
2. Length of alternative route (miles)	3.6	3.0	3.0	3.4	2.8	3.7	3.5	2.8	5.0	4.8	4.2	4.8	4.6
3. Number of habitable structures ^[1] within 300 feet of route centerline	98	94	80	93	89	206	212	208	301	307	303	182	185
4. Number of habitable structures ^[1] in previous criterion also within 300 feet of an existing transmission line	66	66	77	77	77	2	2	2	1	1	1	1	1
5. Length of route using existing transmission line easement ^[2]	0	0	0	0	0	0	0	0	0	0	0	0	0
6. Length of new ROW required for route ^[2]	19,268	15,808	15,675	18,098	14,637	19,347	18,377	14,916	26,557	25,587	22,126	25,083	24,543
7. Length of route proposed to underbuild existing distribution	5,477	1,697	0	5,477	1,697	8,202	10,285	6,505	10,803	12,887	9,107	18,937	18,083
8. Length of route not proposed to underbuild existing distribution	13,792	14,111	15,675	12,621	12,941	11,145	8,092	8,411	15,753	12,700	13,020	6,146	6,460
9. Length of route parallel to existing transmission line ROW	6,575	6,575	14,738	10,168	10,168	4,570	0	0	4,570	0	0	0	0
10. Length of route not utilizing/paralleling existing transmission line ROW	12,693	9,232	937	7,931	4,470	14,777	18,377	14,916	21,987	25,587	22,126	25,083	24,543
11. Length of route paralleling apparent property lines	5,106	5,589	0	1,461	1,945	1,461	0	483	5,943	4,481	4,964	3,972	5,302
12. Length of route parallel to other existing ROW (highway, pipeline, canals, etc.)	3,780	1,245	261	4,041	1,506	10,578	14,358	11,822	13,179	16,959	14,424	19,594	18,741
13. Length of route not parallel to other existing ROW (highway, pipeline, canals, etc.)	15,488	14,563	15,413	14,057	13,132	8,769	4,019	3,094	13,377	8,628	7,702	5,489	5,802
14. Percent of route parallel with apparent features, property lines, or an existing ROW	80%	85%	96%	87%	93%	86%	78%	82%	89%	84%	88%	94%	98%
15. Length of route across parks/recreational areas ^[3]	0	0	0	0	0	0	0	0	0	0	0	0	0
16. Number of additional parks/recreational areas ^[3] within 1,000 feet of route centerline	2	2	2	3	3	4	4	4	4	4	4	0	0
17. Length of route across residential areas	4,529	3,719	1,129	2,336	1,526	5,616	6,029	5,219	7,326	7,738	6,928	1,170	1,470
18. Length of route across commercial/industrial areas	0	0	335	335	335	3,300	3,300	3,300	5,750	5,750	5,750	12,438	12,438
19. Length of route across agricultural land/cropland	0	0	0	0	0	0	0	0	0	0	0	0	0
20. Length of route across pastureland	3,836	3,885	6,333	5,855	5,904	4,222	3,743	3,792	6,076	5,598	5,647	3,166	4,169
21. Length of route across mobile irrigated cropland or pastureland	0	0	0	0	0	0	0	0	0	0	0	0	0
22. Number of drainage easements/ditches crossed	0	0	1	1	1	0	0	0	0	0	0	1	0
23. Number of pipeline crossings	4	4	2	2	2	4	4	4	3	3	3	2	2
24. Number of transmission line crossings	2	1	1	3	2	1	1	0	1	1	0	1	0
25. Number of U.S. and state highway crossings	0	0	0	0	0	0	0	0	0	0	0	0	0
26. Number of F.M. road crossings	0	0	0	0	0	0	0	0	1	1	1	1	1
27. Number of county road crossings	0	0	0	0	0	0	0	0	0	0	0	0	0
28. Number of cemeteries within 1,000 feet of the route centerline	2	2	2	2	2	0	0	0	0	0	0	0	0
29. Number of heliports within 5,000 feet of route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0
30. Number of private airstrips within 10,000 feet of route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0
31. Number of FAA-listed airfields within 20,000 feet of route centerline	0	0	0	0	0	1	1	1	1	1	1	1	1
32. Number of commercial AM radio transmitters within 10,000 feet of route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0
33. Number of FM radio transmitters, microwave relay stations, and other electronic installations etc. within 2,000 feet of route centerline	4	3	2	2	1	1	1	0	2	2	1	2	2
34. Number of known hazardous waste sites within the ROW	0	0	0	0	0	0	0	0	0	0	0	0	0
35. Number of oil and gas wells within the ROW	0	0	0	0	0	0	0	0	0	0	0	0	0
Aesthetics													
36. Estimated length of route within foreground visual zone of U.S. and state highways ^[4]	2,817	0	1,808	2,817	0	1,808	2,817	0	1,808	2,817	0	2,856	772
37. Estimated length of route within foreground visual zone of FM and county roads ^[4]	0	0	0	0	0	0	0	0	9,075	9,075	9,075	19,893	19,893
38. Estimated length of route within foreground visual zone of park and recreational areas ^{[3][4]}	3,064	2,554	0	2,956	2,445	9,303	11,041	10,530	11,494	13,232	12,721	0	0
Ecology													
39. Length of route across upland woodlands	9,969	7,492	6,180	8,789	6,312	4,919	5,083	2,605	5,689	5,853	3,375	7,223	5,602
40. Length of route across bottomland/riparian woodlands	0	0	0	0	0	0	0	0	0	0	0	0	0
41. Length of route across potential wetlands	934	712	1,697	783	560	1,289	222	0	1,716	649	426	1,086	864
42. Length of route across known habitat of federal endangered/threatened species of plants or animals	0	0	0	0	0	0	0	0	0	0	0	0	0
43. Number of known state rare/unique plant locations within the ROW	0	0	0	0	0	0	0	0	0	0	0	0	0
44. Length of route across open water (lakes or ponds)	0	0	0	0	0	0	0	0	0	0	0	0	0
45. Number of stream crossings	0	0	0	0	0	1	1	1	1	1	1	2	1
46. Length of route parallel to streams within 100 feet	0	1,243	0	0	1,243	0	0	1,243	0	0	1,243	0	0
47. Length of route across 100-year floodplains	1,895	1,895	0	0	0	1,077	1,077	1,077	1,077	1,077	1,077	1,525	1,525
Cultural Resources													
48. Number of recorded historic or prehistoric sites crossed	0	0	0	0	0	0	0	0	0	0	0	0	0
49. Number of additional recorded historic or prehistoric sites within 1,000 of route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0
50. Number of National Register listed or determined-eligible sites crossed	0	0	0	0	0	0	0	0	0	0	0	0	0
51. Number of additional National Register listed or determined-eligible sites within 1,000 feet of route centerline	0	0	0	0	0	0	0	0	0	0	0	0	0
52. Length of route across areas of high archaeological/historic site potential	3608	3588	20	60	41	20	20	0	20	20	0	42	0

^[1] Single-family and multi-family dwellings and related structures, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, churches, hospitals, schools, or other structures normally inhabited by humans or intended to be inhabited by humans on a regular basis.

^[2] Within existing transmission line ROW and is not included in the parallel to existing transmission line category.

^[3] Park and recreation areas owned by a governmental body or an organized group, club, or church.

^[4] Half mile, unobstructed.

Note: All length measurements in feet. All linear measurements were obtained from aerial photography flown between December 2007-February 2008, with the exception of high probability areas for archaeological historical/resources which were measured from USGS Topographic Quadrangles using GIS software. The aerial photography was ortho-rectified to National Map Accuracy Standards of +/- 10 feet.

Route and Segment Combination and Substation Site

1: B-C-E-H-J-SS#1	9: F-G-H-J-SS#1	17: A-C-E-H-J-M-O-SS#2	25: F-G-H-L-O-SS#2	33: X-Z-B1-W-SS#2	41: S1-R1-L1-K1-G1-C1-SS#3
2: B-C-E-H-K-SS#1	10: F-G-H-K-SS#1	18: A-C-E-H-K-L-O-SS#2	26: R-T-V-SS#2	34: X-Z-A1-SS#3	42: S1-Q1-O1-P1-J1-L1-K1-G1-D1-W-SS#2
3: B-C-D-G-H-J-SS#1	11: B-C-E-H-J-M-O-SS#2	19: A-C-E-H-L-O-SS#2	27: R-T-U-B1-W-SS#2	35: H1-Y-Z-U-V-SS#2	43: S1-Q1-O1-P1-J1-L1-K1-G1-C1-SS#3
4: B-C-D-G-H-K-SS#1	12: B-C-E-H-J-K-L-O-SS#2	20: A-C-D-G-H-J-M-O-SS#2	28: R-T-U-A1-SS#3	36: H1-Y-Z-B1-W-SS#2	44: S1-Q1-O1-M1-K1-G1-D1-W-SS#2
5: A-C-E-H-J-SS#1	13: B-C-E-H-L-O-SS#2	21: A-C-D-G-H-J-K-L-O-SS#2	29: S-T-V-SS#2	37: H1-Y-Z-A1-SS#3	45: S1-Q1-O1-M1-K1-G1-C1-SS#3
6: A-C-E-H-K-SS#1	14: B-C-D-G-H-J-M-O-SS#2	22: A-C-D-G-H-L-O-SS#2	30: S-T-U-B1-W-SS#2	38: H1-I1-G1-D1-W-SS#2	
7: A-C-D-G-H-J-SS#1	15: B-C-D-G-H-J-K-L-O-SS#2	23: F-G-H-J-M-O-SS#2	31: S-T-U-A1-SS#3	39: H1-I1-G1-C1-SS#3	
8: A-C-D-G-H-K-SS#1	16: B-C-D-G-H-L-O-SS#2	24: F-G-H-K-L-O-SS#2	32: X-Z-U-V-SS#2	40: S1-R1-L1-K1-G1-D1-W-SS#2	

TABLE 4-2
ENVIRONMENTAL DATA FOR PRIMARY TRANSMISSION LINE ROUTES

Evaluation Criteria		40	41	42	43	44	45
1.	Length of alternative route (feet)	23,974	23,434	23,935	23,394	23,349	22,809
2.	Length of alternative route (miles)	4.5	4.4	4.5	4.4	4.4	4.3
3.	Number of habitable structures ^[1] within 300 feet of route centerline	206	209	159	162	140	143
4.	Number of habitable structures ^[1] in previous criterion also within 300 feet of an existing transmission line	10	10	10	10	10	10
5.	Length of route using existing transmission line easement ^[2]	0	0	0	0	0	0
6.	Length of new ROW required for route ^[2]	23,974	23,434	23,935	23,394	23,349	22,809
7.	Length of route proposed to underbuild existing distribution	11,719	10,865	10,806	9,952	13,366	12,512
8.	Length of route not proposed to underbuild existing distribution	12,255	12,569	13,129	13,443	9,983	10,296
9.	Length of route parallel to existing transmission line ROW	0	0	0	0	0	0
10.	Length of route not utilizing/paralleling existing transmission line ROW	23,974	23,434	23,935	23,394	23,349	22,809
11.	Length of route paralleling apparent property lines	5,206	6,537	7,353	8,683	5,206	6,537
12.	Length of route parallel to other existing ROW (highway, pipeline, canals, etc.)	15,764	14,910	12,887	12,033	15,447	14,594
13.	Length of route not parallel to other existing ROW (highway, pipeline, canals, etc.)	8,211	8,524	11,048	11,361	7,902	8,215
14.	Percent of route parallel with apparent features, property lines, or an existing ROW	87%	92%	85%	89%	88%	93%
15.	Length of route across parks/recreational areas ^[3]	0	0	0	0	0	0
16.	Number of additional parks/recreational areas ^[3] within 1,000 feet of route centerline	2	2	2	2	2	2
17.	Length of route across residential areas	2,487	2,787	2,435	2,735	1,662	1,962
18.	Length of route across commercial/industrial areas	5,141	5,141	5,445	5,445	5,272	5,272
19.	Length of route across agricultural land/cropland	2,416	2,416	0	0	0	0
20.	Length of route across pastureland	3,235	4,238	4,016	5,019	3,320	4,323
21.	Length of route across mobile irrigated cropland or pastureland	0	0	0	0	0	0
22.	Number of drainage easements/ditches crossed	2	1	2	1	3	2
23.	Number of pipeline crossings	0	0	0	0	0	0
24.	Number of transmission line crossings	1	0	1	0	1	0
25.	Number of U.S. and state highway crossings	0	0	0	0	0	0
26.	Number of F.M. road crossings	1	1	1	1	1	1
27.	Number of county road crossings	0	0	0	0	0	0
28.	Number of cemeteries within 1,000 feet of the route centerline	0	0	0	0	0	0
29.	Number of heliports within 5,000 feet of route centerline	0	0	0	0	0	0
30.	Number of private airstrips within 10,000 feet of route centerline	0	0	0	0	0	0
31.	Number of FAA-listed airfields within 20,000 feet of route centerline	0	0	0	0	0	0
32.	Number of commercial AM radio transmitters within 10,000 feet of route centerline	0	0	0	0	0	0
33.	Number of FM radio transmitters, microwave relay stations, and other electronic installations etc. within 2,000 feet of route centerline	2	2	5	5	5	5
34.	Number of known hazardous waste sites within the ROW	0	0	0	0	0	0
35.	Number of oil and gas wells within the ROW	0	0	0	0	0	0
Aesthetics							
36.	Estimated length of route within foreground visual zone of U.S. and state highways ^[4]	2,614	530	2,614	530	2,614	530
37.	Estimated length of route within foreground visual zone of FM and county roads ^[4]	5,460	5,460	6,020	6,020	4,178	4,178
38.	Estimated length of route within foreground visual zone of park and recreational areas ^[3] ^[4]	5,999	5,999	5,781	5,781	5,781	5,781
Ecology							
39.	Length of route across upland woodlands	9,448	7,827	10,791	9,170	11,848	10,227
40.	Length of route across bottomland/riparian woodlands	0	0	0	0	0	0
41.	Length of route across potential wetlands	1,248	1,026	1,248	1,026	1,248	1,026
42.	Length of route across known habitat of federal endangered/threatened species of plants or animals	0	0	0	0	0	0
43.	Number of known state rare/unique plant locations within the ROW	0	0	0	0	0	0
44.	Length of route across open water (lakes or ponds)	0	0	0	0	0	0
45.	Number of stream crossings	3	2	3	2	4	3
46.	Length of route parallel to streams within 100 feet	3,592	3,592	0	0	0	0
47.	Length of route across 100-year floodplains	2,088	2,088	1,755	1,755	2,649	2,649
Cultural Resources							
48.	Number of recorded historic or prehistoric sites crossed	0	0	0	0	0	0
49.	Number of additional recorded historic or prehistoric sites within 1,000 of route centerline	0	0	0	0	0	0
50.	Number of National Register listed or determined-eligible sites crossed	0	0	0	0	0	0
51.	Number of additional National Register listed or determined-eligible sites within 1,000 feet of route centerline	0	0	0	0	0	0
52.	Length of route across areas of high archaeological/historic site potential	1695	1653	1890	1849	2116	2074

^[1] Single-family and multi-family dwellings and related structures, mobile homes, apartment buildings, commercial structures, industrial structures, business structures, churches, hospitals, schools, or other structures normally inhabited by humans or intended to be inhabited by humans on a regular basis.

^[2] Within existing transmission line ROW and is not included in the parallel to existing transmission line category .

^[3] Park and recreation areas owned by a governmental body or an organized group, club, or church.

^[4] Half mile, unobstructed.

Note: All length measurements in feet. All linear measurements were obtained from aerial photography flown between December 2007-February 2008, with the exception of high probability areas for archaeological historical/resources which were measured from USGS Topographic Quadrangles using GIS software. The aerial photography was ortho-rectified to National Map Accuracy Standards of +/- 10 feet.

Route and Segment Combination and Substation Site

1: B-C-E-H-J-SS#1	9: F-G-H-J-SS#1	17: A-C-E-H-J-M-O-SS#2	25: F-G-H-I-L-O-SS#2	33: X-Z-B1-W-SS#2	41: S1-R1-L1-K1-G1-C1-SS#3
2: B-C-E-H-I-K-SS#1	10: F-G-H-I-K-SS#1	18: A-C-E-H-J-K-L-O-SS#2	26: R-T-V-SS#2	34: X-Z-A1-SS#3	42: S1-Q1-O1-P1-J1-L1-K1-G1-D1-W-SS#2
3: B-C-D-G-H-J-SS#1	11: B-C-E-H-J-M-O-SS#2	19: A-C-E-H-I-L-O-SS#2	27: R-T-U-B1-W-SS#2	35: H1-Y-Z-U-V-SS#2	43: S1-Q1-O1-P1-J1-L1-K1-G1-C1-SS#3
4: B-C-D-G-H-I-K-SS#1	12: B-C-E-H-J-K-L-O-SS#2	20: A-C-D-G-H-J-M-O-SS#2	28: R-T-U-A1-SS#3	36: H1-Y-Z-B1-W-SS#2	44: S1-Q1-O1-M1-K1-G1-D1-W-SS#2
5: A-C-E-H-J-SS#1	13: B-C-E-H-I-L-O-SS#2	21: A-C-D-G-H-J-K-L-O-SS#2	29: S-T-V-SS#2	37: H1-Y-Z-A1-SS#3	45: S1-Q1-O1-M1-K1-G1-C1-SS#3
6: A-C-E-H-I-K-SS#1	14: B-C-D-G-H-J-M-O-SS#2	22: A-C-D-G-H-I-L-O-SS#2	30: S-T-U-B1-W-SS#2	38: H1-I1-G1-D1-W-SS#2	
7: A-C-D-G-H-J-SS#1	15: B-C-D-G-H-J-K-L-O-SS#2	23: F-G-H-J-M-O-SS#2	31: S-T-U-A1-SS#3	39: H1-I1-G1-C1-SS#3	
8: A-C-D-G-H-I-K-SS#1	16: B-C-D-G-H-I-L-O-SS#2	24: F-G-H-J-K-L-O-SS#2	32: X-Z-U-V-SS#2	40: S1-R1-L1-K1-G1-D1-W-SS#2	