

Appendix E
Environmental Data for Primary Alternative Route Segment
Evaluation

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Environmental Data for Primary Alternative Route Segment Evaluation

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**Environmental Data for Primary Alternative Route Segment Evaluation
Cooks Point 138-kV Transmission Line Project**

	A	A1	A2	A3	A4	B	B2	B3	C2	C3	D2	D3	E
1. Length of alternative route segment	0.1	4.3	0.6	0.4	0.2	0.3	2.5	0.2	1.7	1.7	2.0	0.7	0.6
2. Length of alternative route segment parallel and adjacent to existing transmission lines	0.1	0.0	0.0	0.0	0.0	0.3	0.0	0.0	1.6	0.0	0.0	0.0	0.1
3. Length of alternative route segment parallel and adjacent to existing public roads/highways	0.0	2.7	0.0	0.4	0.2	0.0	1.4	0.0	0.0	1.7	1.8	0.0	0.1
4. Length of alternative route segment parallel and adjacent to railroads	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5. Length of alternative route segment parallel to apparent property boundaries	0.0	1.2	0.0	0.0	0.0	0.0	0.5	0.2	0.0	0.0	0.0	0.7	0.3
6. Total length of alternative route segment parallel to existing corridors (including apparent property boundaries)	0.1	3.9	0.0	0.4	0.2	0.3	2.0	0.2	1.6	1.7	1.8	0.7	0.5
7. Percent of alternative route segment parallel to existing corridors (including apparent property boundaries)	100	91	0	88	100	100	77	90	96	100	87	100	83
8. Length of alternative route segment across parks/recreational areas ¹	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9. Number of pipelines crossed by the alternative route segment ²	0	4	0	1	0	0	0	0	1	3	4	1	0
10. Length of alternative route segment parallel and adjacent to existing pipelines ²	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0
11. Length of alternative route segment through commercial/industrial areas	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1
12. Length of alternative route segment across agricultural pastureland ³	0.1	2.3	0.2	0.2	0.0	0.3	1.6	0.2	1.3	1.0	0.9	0.3	0.2
13. Length of alternative route segment across agricultural cropland and orchards ³	0.0	0.6	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.3	0.0	0.0
14. Length of alternative route segment 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	0.0	0.0	0.0	0.0
15. Length of alternative route segment across upland forest ⁴	0.0	0.7	0.4	0.0	0.0	0.0	0.2	0.0	0.1	0.4	0.3	0.4	0.0
16. Length of alternative route segment across riparian woodland ⁵	0.0	0.1	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.0
17. Length of alternative route segment across emergent wetlands ⁵	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18. Length of alternative route segment across forested scrub/shrub wetlands ⁵	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
19. Length of alternative route segment across 100-year floodplains	0.0	0.2	0.0	0.0	0.0	0.0	1.1	0.0	0.2	0.0	0.1	0.0	0.0
20. Number of streams crossed by the alternative route segment	0	6	0	1	0	0	5	0	4	2	3	1	0
21. Length of alternative route segment parallel to rivers, creeks, and streams (within 100 ft)	0.0	0.1	0.1	0.1	0.0	0.0	0.4	0.0	0.1	0.2	0.0	0.0	0.0
22. Number of known rare/unique plant locations within the ROW	0	0	0	0	0	0	0	0	0	0	0	0	0
23. Length of alternative route segment through potential endangered or threatened species habitat ⁶	0.0	0.2	0.3	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0
24. Length of alternative route segment across areas of low prehistoric and historic archaeological site potential	0.0	0.5	0.1	0.0	0.0	0.0	0.2	0.1	0.0	0.2	0.2	0.0	0.0
25. Length of alternative route segment across areas of moderate prehistoric and historic archaeological site potential	0.0	3.6	0.6	0.1	0.0	0.0	1.8	0.1	1.6	1.0	1.8	0.7	0.0
26. Length of alternative route segment across areas of high prehistoric and historic archaeological site potential	0.1	0.2	0.0	0.4	0.2	0.3	0.6	0.0	0.0	0.6	0.0	0.0	0.5
27. Length of alternative route segment across open water (lakes, ponds) ⁷	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
28. Number of U.S. or State Highways crossed by the alternative route segment	0	0	0	1	0	0	0	0	0	0	0	0	1
29. Number of FM roads, county roads, or other street crossed by the alternative route segment	0	2	0	1	1	0	1	0	2	1	4	0	0
30. Length of alternative route segment within foreground visual zone of park/recreational areas (1/2 mile unobstructed) (no double count)	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31. Length of alternative route segment within foreground visual zone of State and U.S. Highways (1/2 mile unobstructed) (no double count)	0.1	1.4	0.0	0.4	0.2	0.3	1.0	0.0	0.0	1.7	0.0	0.0	0.6

Note: All length measurements in miles. All linear measurements were obtained from aerial photography flown in October 2017.

¹ Defined as parks and recreational areas owned by a governmental body or an organized group, club, or church.

² Only pipelines six inches and greater carrying petrochemicals were quantified in the pipeline crossing and parallel calculations.

³ Delineated from evaluation of EMST data, aerial photography, and site reconnaissance observations.

⁴ Delineated from canopy cover analysis and inspection of aerial photography.

⁵ Riparian woodlands were delineated from evaluation of EMST data; forested/shrub wetlands were delineated based on NWI mapping of Palustrine Forested or Scrub/Shrub; and emergent wetlands were delineated based on NWI mapping of Palustrine Emergent. The jurisdictional status of these wetland systems (in reference to Section 404 of the Clean Water Act) is not known as the study area was not delineated in accordance with USACE's 1987 Wetland Delineation Manual.

⁶ Delineated for federally endangered Houston Toad.

⁷ Open water was determined based on areas mapped as open water by the NHD.

**Environmental Data for Primary Alternative Route Segment Evaluation
Cooks Point 138-kV Transmission Line Project**

	E1	E2	E3	F	F1	F2	F3	G1	G2	G3	H1	H3
1. Length of alternative route segment	4.5	2.1	0.6	6.4	1.8	2.5	0.9	0.7	3.1	0.4	1.6	0.2
2. Length of alternative route segment parallel and adjacent to existing transmission lines	0.0	0.0	0.0	6.2	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0
3. Length of alternative route segment parallel and adjacent to existing public roads/highways	0.0	1.2	0.0	0.0	1.7	1.9	0.0	0.0	0.2	0.0	0.0	0.1
4. Length of alternative route segment parallel and adjacent to railroads	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5. Length of alternative route segment parallel to apparent property boundaries	3.7	0.3	0.2	0.0	0.0	0.1	0.8	0.0	2.8	0.4	1.3	0.0
6. Total length of alternative route segment parallel to existing corridors (including apparent property boundaries)	3.7	1.6	0.2	6.2	1.7	2.0	0.8	0.6	3.0	0.4	1.3	0.1
7. Percent of alternative route segment parallel to existing corridors (including apparent property boundaries)	82	75	28	97	94	83	89	81	95	93	80	78
8. Length of alternative route segment across parks/recreational areas ¹	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9. Number of pipelines crossed by the alternative route segment ²	0	3	0	10	0	0	1	0	0	0	0	1
10. Length of alternative route segment parallel and adjacent to existing pipelines 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
11. Length of alternative route segment through commercial/industrial areas	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12. Length of alternative route segment across agricultural pastureland ³	1.6	1.0	0.4	4.2	1.3	0.5	0.6	0.5	0.8	0.4	1.1	0.2
13. Length of alternative route segment across agricultural cropland and orchards ³	0.1	0.0	0.0	0.3	0.0	1.9	0.0	0.1	0.1	0.0	0.1	0.0
14. Length of alternative route segment 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	0.0	0.0	0.0
15. Length of alternative route segment across upland forest ⁴	2.5	0.9	0.0	1.6	0.0	0.0	0.2	0.0	2.1	0.0	0.4	0.0
16. Length of alternative route segment across riparian woodland ⁵	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17. Length of alternative route segment across emergent wetlands ⁵	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18. Length of alternative route segment across forested scrub/shrub wetlands ⁵	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19. Length of alternative route segment across 100-year floodplains	0.3	0.0	0.0	1.5	0.2	0.1	0.1	0.0	0.8	0.0	0.1	0.0
20. Number of streams crossed by the alternative route segment	3	1	3	11	2	1	7	0	3	1	2	0
21. Length of alternative route segment parallel to rivers, creeks, and streams (within 100 ft)	0.0	0.0	0.1	0.2	0.1	0.0	0.2	0.0	0.0	0.0	0.0	0.0
22. Number of known rare/unique plant locations within the ROW	0	0	0	0	1	0	0	0	0	0	0	0
23. Length of alternative route segment through potential endangered or threatened species habitat ⁶	2.2	0.2	0.1	0.1	0.0	0.0	0.0	0.0	1.2	0.0	0.1	0.0
24. Length of alternative route segment across areas of low prehistoric and historic archaeological site potential	1.7	0.4	0.0	2.0	0.0	0.2	0.1	0.3	1.2	0.0	0.2	0.0
25. Length of alternative route segment across areas of moderate prehistoric and historic archaeological site potential	2.3	1.7	0.6	3.2	0.0	0.1	0.9	0.4	1.6	0.4	1.3	0.2
26. Length of alternative route segment across areas of high prehistoric and historic archaeological site potential	0.4	0.0	0.0	1.2	1.8	2.2	0.0	0.0	0.3	0.0	0.1	0.0
27. Length of alternative route segment across open water (lakes, ponds) ⁷	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28. Number of U.S. or State Highways crossed by the alternative route segment	1	0	0	0	1	1	0	0	0	0	1	0
29. Number of FM roads, county roads, or other street crossed by the alternative route segment	2	4	0	1	1	2	0	4	2	1	2	0
30. Length of alternative route segment within foreground visual zone of park/recreational areas (1/2 mile unobstructed) (no double count)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31. Length of alternative route segment within foreground visual zone of State and U.S. Highways (1/2 mile unobstructed) (no double count)	0.9	0.0	0.3	2.2	1.8	2.5	0.6	0.7	0.5	0.4	1.6	0.2

Note: All length measurements in miles. All linear measurements were obtained from aerial photography flown in October 2017.

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**Environmental Data for Primary Alternative Route Segment Evaluation
Cooks Point 138-kV Transmission Line Project**

	I1	I2	I3	J1	J3	K	K1	K2	L	L1	L2	L3
1. Length of alternative route segment	0.3	0.7	1.0	2.7	0.3	3.7	1.6	0.7	1.6	1.2	0.2	0.8
2. Length of alternative route segment parallel and adjacent to existing transmission lines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.2	0.2
3. Length of alternative route segment parallel and adjacent to existing public roads/highways	0.0	0.7	0.0	0.2	0.3	0.7	0.0	0.0	1.0	0.0	0.0	0.0
4. Length of alternative route segment parallel and adjacent to railroads	0.3	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0
5. Length of alternative route segment parallel to apparent property boundaries	0.0	0.0	0.9	2.4	0.0	2.4	0.0	0.7	0.4	0.0	0.0	0.3
6. Total length of alternative route segment parallel to existing corridors (including apparent property boundaries)	0.3	0.7	0.9	2.6	0.3	3.1	1.6	0.7	1.5	1.1	0.2	0.6
7. Percent of alternative route segment parallel to existing corridors (including apparent property boundaries)	100	100	88	97	100	84	100	100	90	89	100	67
8. Length of alternative route segment across parks/recreational areas ¹	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9. Number of pipelines crossed by the alternative route segment ²	0	0	0	1	0	0	1	0	0	0	0	0
10. Length of alternative route segment parallel and adjacent to existing pipelines 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
11. Length of alternative route segment through commercial/industrial areas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12. Length of alternative route segment across agricultural pastureland ³	0.1	0.4	0.1	2.0	0.3	2.4	1.4	0.7	1.1	0.4	0.0	0.4
13. Length of alternative route segment across agricultural cropland and orchards ³	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.2	0.0
14. Length of alternative route segment 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	0.0	0.0	0.0
15. Length of alternative route segment across upland forest ⁴	0.1	0.2	0.7	0.3	0.0	1.1	0.1	0.0	0.0	0.0	0.0	0.1
16. Length of alternative route segment across riparian woodland ⁵	0.0	0.0	0.1	0.3	0.0	0.1	0.0	0.0	0.2	0.3	0.0	0.0
17. Length of alternative route segment across emergent wetlands ⁵	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18. Length of alternative route segment across forested scrub/shrub wetlands ⁵	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19. Length of alternative route segment across 100-year floodplains	0.0	0.0	0.3	0.3	0.0	0.3	0.8	0.2	0.0	0.6	0.0	0.1
20. Number of streams crossed by the alternative route segment	0	0	3	6	0	3	3	1	3	10	0	1
21. Length of alternative route segment parallel to rivers, creeks, and streams (within 100 ft)	0.0	0.0	0.1	0.4	0.0	0.2	0.1	0.1	0.3	0.5	0.0	0.0
22. Number of known rare/unique plant locations within the ROW	0	0	0	0	0	0	0	0	0	0	0	0
23. Length of alternative route segment through potential endangered or threatened species habitat ⁶	0.0	0.0	0.3	0.1	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0
24. Length of alternative route segment across areas of low prehistoric and historic archaeological site potential	0.2	0.4	0.0	0.6	0.0	0.7	0.2	0.0	0.0	0.0	0.1	0.0
25. Length of alternative route segment across areas of moderate prehistoric and historic archaeological site potential	0.0	0.3	1.0	2.1	0.0	2.4	0.9	0.4	0.3	1.1	0.1	0.3
26. Length of alternative route segment across areas of high prehistoric and historic archaeological site potential	0.0	0.0	0.0	0.0	0.3	0.6	0.5	0.4	1.3	0.1	0.0	0.5
27. Length of alternative route segment across open water (lakes, ponds) ⁷	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
28. Number of U.S. or State Highways crossed by the alternative route segment	0	0	1	0	0	1	0	0	0	0	0	0
29. Number of FM roads, county roads, or other street crossed by the alternative route segment	0	3	0	2	0	0	0	0	2	0	0	0
30. Length of alternative route segment within foreground visual zone of park/recreational areas (1/2 mile unobstructed) (no double count)	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
31. Length of alternative route segment within foreground visual zone of State and U.S. Highways (1/2 mile unobstructed) (no double count)	0.0	0.7	0.7	1.5	0.3	2.5	0.1	0.5	1.6	0.6	0.0	0.7

Note: All length measurements in miles. All linear measurements were obtained from aerial photography flown in October 2017.

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³ Delineated from evaluation of EMST data, aerial photography, and site reconnaissance observations.

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⁵ Riparian woodlands were delineated from evaluation of EMST data; forested/shrub wetlands were delineated based on NWI mapping of Palustrine Forested or Scrub/Shrub; and emergent wetlands were delineated based on NWI mapping of Palustrine Emergent. The jurisdictional status of these wetland systems (in reference to Section 404 of the Clean Water Act) is not known as the study area was not delineated in accordance with USACE's 1987 Wetland Delineation Manual.

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**Environmental Data for Primary Alternative Route Segment Evaluation
Cooks Point 138-kV Transmission Line Project**

	M	M1	M3	N	N2	N3	O	O2	O3	P	P2	P3
1. Length of alternative route segment	1.2	2.9	1.0	1.8	1.0	1.1	2.1	1.4	1.4	4.1	0.5	0.5
2. Length of alternative route segment parallel and adjacent to existing transmission lines	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3. Length of alternative route segment parallel and adjacent to existing public roads/highways	0.0	0.0	0.0	1.5	0.8	0.6	0.5	1.3	0.0	0.4	0.4	0.5
4. Length of alternative route segment parallel and adjacent to railroads	0.0	0.5	1.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0	0.0
5. Length of alternative route segment parallel to apparent property boundaries	1.1	1.4	0.0	0.0	0.2	0.5	1.4	0.0	1.3	0.0	0.0	0.0
6. Total length of alternative route segment parallel to existing corridors (including apparent property boundaries)	1.1	2.3	1.0	1.5	0.9	1.1	2.0	1.3	1.3	3.8	0.4	0.5
7. Percent of alternative route segment parallel to existing corridors (including apparent property boundaries)	94	81	100	83	93	100	95	93	91	93	73	100
8. Length of alternative route segment across parks/recreational areas ¹	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9. Number of pipelines crossed by the alternative route segment ²	0	0	0	0	0	0	0	2	0	0	0	0
10. Length of alternative route segment parallel and adjacent to existing pipelines 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
11. Length of alternative route segment through commercial/industrial areas	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12. Length of alternative route segment across agricultural pastureland ³	1.1	1.6	0.3	1.2	0.5	0.3	1.4	0.1	0.6	1.8	0.3	0.1
13. Length of alternative route segment across agricultural cropland and orchards ³	0.0	0.6	0.0	0.4	0.1	0.0	0.6	1.2	0.0	0.2	0.0	0.0
14. Length of alternative route segment 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	0.0	0.0	0.0
15. Length of alternative route segment across upland forest ⁴	0.0	0.4	0.1	0.0	0.3	0.7	0.0	0.0	0.6	1.6	0.0	0.4
16. Length of alternative route segment across riparian woodland ⁵	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
17. Length of alternative route segment across emergent wetlands ⁵	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18. Length of alternative route segment across forested scrub/shrub wetlands ⁵	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0
19. Length of alternative route segment across 100-year floodplains	0.0	0.3	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.6	0.0	0.0
20. Number of streams crossed by the alternative route segment	0	2	1	2	2	4	1	0	0	6	1	0
21. Length of alternative route segment parallel to rivers, creeks, and streams (within 100 ft)	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.2	0.0	0.0
22. Number of known rare/unique plant locations within the ROW	0	0	0	0	0	0	0	0	0	0	0	0
23. Length of alternative route segment through potential endangered or threatened species habitat ⁶	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.0	0.3	0.1	0.0	0.1
24. Length of alternative route segment across areas of low prehistoric and historic archaeological site potential	0.3	1.4	0.2	0.0	0.1	0.3	0.9	0.6	0.9	0.3	0.0	0.4
25. Length of alternative route segment across areas of moderate prehistoric and historic archaeological site potential	0.6	1.2	0.8	0.0	0.9	0.4	0.9	0.8	0.4	3.5	0.0	0.2
26. Length of alternative route segment across areas of high prehistoric and historic archaeological site potential	0.3	0.3	0.1	1.8	0.0	0.4	0.3	0.0	0.0	0.3	0.5	0.0
27. Length of alternative route segment across open water (lakes, ponds) ⁷	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28. Number of U.S. or State Highways crossed by the alternative route segment	1	0	0	0	0	0	0	0	1	0	1	0
29. Number of FM roads, county roads, or other street crossed by the alternative route segment	0	1	1	2	1	0	1	2	1	6	0	1
30. Length of alternative route segment within foreground visual zone of park/recreational areas (1/2 mile unobstructed) (no double count)	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31. Length of alternative route segment within foreground visual zone of State and U.S. Highways (1/2 mile unobstructed) (no double count)	0.6	2.2	0.6	1.8	1.0	0.7	0.5	0.5	0.6	2.4	0.5	0.5

Note: All length measurements in miles. All linear measurements were obtained from aerial photography flown in October 2017.

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³ Delineated from evaluation of EMST data, aerial photography, and site reconnaissance observations.

⁴ Delineated from canopy cover analysis and inspection of aerial photography.

⁵ Riparian woodlands were delineated from evaluation of EMST data; forested/shrub wetlands were delineated based on NWI mapping of Palustrine Forested or Scrub/Shrub; and emergent wetlands were delineated based on NWI mapping of Palustrine Emergent. The jurisdictional status of these wetland systems (in reference to Section 404 of the Clean Water Act) is not known as the study area was not delineated in accordance with USACE's 1987 Wetland Delineation Manual.

⁶ Delineated for federally endangered Houston Toad.

⁷ Open water was determined based on areas mapped as open water by the NHD.

**Environmental Data for Primary Alternative Route Segment Evaluation
Cooks Point 138-kV Transmission Line Project**

	Q	Q2	Q3	R2	R3	S1	S2	S3	T	T1	T2	T3	U
1. Length of alternative route segment	2.1	0.8	0.7	1.7	1.3	0.8	0.6	3.9	2.8	0.5	0.6	7.7	3.6
2. Length of alternative route segment parallel and adjacent to existing transmission lines	0.0	0.7	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	3.6
3. Length of alternative route segment parallel and adjacent to existing public roads/highways	0.0	0.0	0.0	0.5	0.9	0.4	0.0	0.1	2.6	0.0	0.6	3.0	0.0
4. Length of alternative route segment parallel and adjacent to railroads	2.1	0.0	0.0	0.1	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0
5. Length of alternative route segment parallel to apparent property boundaries	0.0	0.0	0.4	1.1	0.3	0.1	0.6	0.6	0.0	0.3	0.0	3.9	0.0
6. Total length of alternative route segment parallel to existing corridors (including apparent property boundaries)	2.1	0.7	0.4	1.6	1.2	0.5	0.6	3.6	2.6	0.3	0.6	6.9	3.6
7. Percent of alternative route segment parallel to existing corridors (including apparent property boundaries)	100	88	48	96	96	71	100	92	93	64	100	90	100
8. Length of alternative route segment across parks/recreational areas ¹	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9. Number of pipelines crossed by the alternative route segment ²	0	1	0	1	0	0	1	0	0	0	0	6	6
10. Length of alternative route segment parallel and adjacent to existing pipelines ²	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
11. Length of alternative route segment through commercial/industrial areas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12. Length of alternative route segment across agricultural pastureland ³	1.6	0.4	0.7	1.2	0.6	0.3	0.5	2.3	2.1	0.3	0.6	5.3	2.6
13. Length of alternative route segment across agricultural cropland and orchards ³	0.0	0.3	0.0	0.2	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.2	0.5
14. Length of alternative route segment 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	0.0	0.0	0.0	0.0
15. Length of alternative route segment across upland forest ⁴	0.4	0.0	0.0	0.3	0.6	0.4	0.0	1.0	0.1	0.0	0.0	1.6	0.2
16. Length of alternative route segment across riparian woodland ⁵	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
17. Length of alternative route segment across emergent wetlands ⁵	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18. Length of alternative route segment across forested scrub/shrub wetlands ⁵	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19. Length of alternative route segment across 100-year floodplains	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.3	0.2	0.0	0.0	0.5	1.5
20. Number of streams crossed by the alternative route segment	0	2	0	3	1	0	0	11	5	1	1	10	12
21. Length of alternative route segment parallel to rivers, creeks, and streams (within 100 ft)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.3	0.2
22. Number of known rare/unique plant locations within the ROW	0	0	0	0	0	0	0	0	1	0	0	0	0
23. Length of alternative route segment through potential endangered or threatened species habitat ⁶	0.1	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.6	0.1
24. Length of alternative route segment across areas of low prehistoric and historic archaeological site potential	0.6	0.2	0.0	0.3	0.0	0.0	0.1	0.7	0.0	0.1	0.0	2.5	0.0
25. Length of alternative route segment across areas of moderate prehistoric and historic archaeological site potential	1.5	0.7	0.0	1.1	1.2	0.7	0.3	3.1	0.0	0.5	0.0	4.5	2.5
26. Length of alternative route segment across areas of high prehistoric and historic archaeological site potential	0.0	0.0	0.7	0.2	0.1	0.0	0.2	0.1	2.8	0.0	0.6	0.7	1.2
27. Length of alternative route segment across open water (lakes, ponds) ⁷	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28. Number of U.S. or State Highways crossed by the alternative route segment	0	0	1	0	0	0	0	0	2	0	0	0	1
29. Number of FM roads, county roads, or other street crossed by the alternative route segment	1	1	1	0	0	1	0	5	1	1	0	6	1
30. Length of alternative route segment within foreground visual zone of park/recreational areas (1/2 mile unobstructed) (no double count)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.3	0.0	0.0	0.0
31. Length of alternative route segment within foreground visual zone of State and U.S. Highways (1/2 mile unobstructed) (no double count)	0.0	0.1	0.7	0.0	0.7	0.1	0.5	2.4	2.8	0.4	0.6	3.0	2.4

Note: All length measurements in miles. All linear measurements were obtained from aerial photography flown in October 2017.

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⁶ Delineated for federally endangered Houston Toad.

⁷ Open water was determined based on areas mapped as open water by the NHD.

**Environmental Data for Primary Alternative Route Segment Evaluation
Cooks Point 138-kV Transmission Line Project**

	U1	U2	U3	V	V1	V2	V3	W	W1	W2	W3	X	X2	X3
1. Length of alternative route segment	2.3	0.5	4.5	0.3	2.2	1.3	4.2	2.6	0.1	0.1	3.1	1.1	3.0	8.9
2. Length of alternative route segment parallel and adjacent to existing transmission lines	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3. Length of alternative route segment parallel and adjacent to existing public roads/highways	2.2	0.0	0.0	0.0	0.2	0.0	1.0	2.1	0.1	0.1	0.3	1.0	0.5	0.0
4. Length of alternative route segment parallel and adjacent to railroads	0.0	0.0	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
5. Length of alternative route segment parallel to apparent property boundaries	0.0	0.5	0.0	0.3	1.4	0.0	1.7	0.5	0.0	0.0	1.2	0.0	2.0	7.4
6. Total length of alternative route segment parallel to existing corridors (including apparent property boundaries)	2.2	0.5	4.4	0.3	1.6	1.3	2.7	2.6	0.1	0.1	2.4	1.0	2.4	7.4
7. Percent of alternative route segment parallel to existing corridors (including apparent property boundaries)	97	91	99	98	71	100	65	98	100	84	79	96	80	83
8. Length of alternative route segment across parks/recreational areas ¹	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9. Number of pipelines crossed by the alternative route segment ²	1	1	5	0	0	1	12	2	1	1	0	1	0	0
10. Length of alternative route segment parallel and adjacent to existing pipelines ²	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.1	0.0	0.0
11. Length of alternative route segment through commercial/industrial areas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12. Length of alternative route segment across agricultural pastureland ³	1.3	0.2	2.0	0.3	1.6	0.2	2.2	1.3	0.1	0.0	2.4	0.7	1.0	1.4
13. Length of alternative route segment across agricultural cropland and orchards ³	0.2	0.0	0.0	0.0	0.3	0.8	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.4
14. Length of alternative route segment 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	0.0	0.0	0.0	0.0	0.0
15. Length of alternative route segment across upland forest ⁴	0.0	0.0	2.1	0.0	0.1	0.1	1.6	0.9	0.0	0.0	0.2	0.2	1.9	3.7
16. Length of alternative route segment across riparian woodland ⁵	0.0	0.2	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2
17. Length of alternative route segment across emergent wetlands ⁵	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18. Length of alternative route segment across forested scrub/shrub wetlands ⁵	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
19. Length of alternative route segment across 100-year floodplains	0.2	0.2	0.8	0.1	0.1	0.1	0.1	0.8	0.0	0.0	0.8	0.0	0.1	0.4
20. Number of streams crossed by the alternative route segment	5	7	7	1	3	2	7	3	0	0	2	0	4	10
21. Length of alternative route segment parallel to rivers, creeks, and streams (within 100 ft)	0.1	0.3	0.1	0.1	0.1	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.2
22. Number of known rare/unique plant locations within the ROW	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23. Length of alternative route segment through potential endangered or threatened species habitat ⁶	0.0	0.0	0.3	0.0	0.1	0.0	0.5	0.4	0.0	0.0	0.1	0.2	0.8	2.6
24. Length of alternative route segment across areas of low prehistoric and historic archaeological site potential	0.3	0.0	1.2	0.0	0.3	0.0	0.2	0.2	0.1	0.0	1.8	0.2	0.3	4.0
25. Length of alternative route segment across areas of moderate prehistoric and historic archaeological site potential	1.9	0.2	2.5	0.3	1.8	1.3	3.9	1.8	0.0	0.1	0.6	0.9	2.6	4.9
26. Length of alternative route segment across areas of high prehistoric and historic archaeological site potential	0.2	0.4	0.8	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.7	0.0	0.1	0.0
27. Length of alternative route segment across open water (lakes, ponds) ⁷	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
28. Number of U.S. or State Highways crossed by the alternative route segment	0	1	0	0	0	0	0	0	0	0	1	0	0	0
29. Number of FM roads, county roads, or other street crossed by the alternative route segment	2	0	0	1	3	0	5	1	0	1	1	1	2	3
30. Length of alternative route segment within foreground visual zone of park/recreational areas (1/2 mile unobstructed) (no double count)	0.0	0.4	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31. Length of alternative route segment within foreground visual zone of State and U.S. Highways (1/2 mile unobstructed) (no double count)	1.4	0.5	1.1	0.0	1.5	1.3	2.7	0.0	0.0	0.1	1.0	0.0	1.1	1.3

Note: All length measurements in miles. All linear measurements were obtained from aerial photography flown in October 2017.

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**Environmental Data for Primary Alternative Route Segment Evaluation
Cooks Point 138-kV Transmission Line Project**

	Y	Y1	Y2	Y3	Z	Z1	Z2	Z3
1. Length of alternative route segment	0.1	0.6	2.0	0.4	1.8	1.8	1.5	0.3
2. Length of alternative route segment parallel and adjacent to existing transmission lines	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
3. Length of alternative route segment parallel and adjacent to existing public roads/highways	0.0	0.0	1.1	0.4	0.0	0.7	1.2	0.0
4. Length of alternative route segment parallel and adjacent to railroads	0.1	0.0	0.0	0.0	1.8	0.0	0.0	0.0
5. Length of alternative route segment parallel to apparent property boundaries	0.0	0.4	0.2	0.0	0.0	0.6	0.2	0.0
6. Total length of alternative route segment parallel to existing corridors (including apparent property boundaries)	0.1	0.4	1.3	0.4	1.8	1.3	1.3	0.1
7. Percent of alternative route segment parallel to existing corridors (including apparent property boundaries)	100	62	63	100	100	71	91	43
8. Length of alternative route segment across parks/recreational areas ¹	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9. Number of pipelines crossed by the alternative route segment ²	0	0	1	0	0	0	4	0
10. Length of alternative route segment parallel and adjacent to existing pipelines ²	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
11. Length of alternative route segment through commercial/industrial areas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12. Length of alternative route segment across agricultural pastureland ³	0.1	0.3	1.6	0.3	0.8	1.2	1.2	0.1
13. Length of alternative route segment across agricultural cropland and orchards ³	0.0	0.0	0.1	0.0	0.0	0.3	0.1	0.0
14. Length of alternative route segment 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 alternative route segment across upland forest ⁴	0.0	0.2	0.2	0.1	0.2	0.2	0.0	0.1
16. Length of alternative route segment across riparian woodland ⁵	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
17. Length of alternative route segment across emergent wetlands ⁵	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18. Length of alternative route segment across forested scrub/shrub wetlands ⁵	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19. Length of alternative route segment across 100-year floodplains	0.0	0.0	0.0	0.0	0.3	0.1	0.1	0.0
20. Number of streams crossed by the alternative route segment	0	1	2	0	4	1	2	0
21. Length of alternative route segment parallel to rivers, creeks, and streams (within 100 ft)	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
22. Number of known rare/unique plant locations within the ROW	0	0	0	0	0	0	0	0
23. Length of alternative route segment through potential endangered or threatened species habitat ⁶	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0
24. Length of alternative route segment across areas of low prehistoric and historic archaeological site potential	0.0	0.1	0.5	0.0	0.0	0.1	0.0	0.0
25. Length of alternative route segment across areas of moderate prehistoric and historic archaeological site potential	0.1	0.4	1.6	0.1	1.6	1.7	0.0	0.0
26. Length of alternative route segment across areas of high prehistoric and historic archaeological site potential	0.0	0.1	0.0	0.3	0.1	0.1	1.5	0.3
27. Length of alternative route segment across open water (lakes, ponds) ⁷	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28. Number of U.S. or State Highways crossed by the alternative route segment	0	0	0	0	0	0	0	1
29. Number of FM roads, county roads, or other street crossed by the alternative route segment	1	0	0	0	0	3	1	0
30. Length of alternative route segment within foreground visual zone of park/recreational areas (1/2 mile unobstructed) (no double count)	0.0	0.6	0.0	0.0	0.0	0.0	1.0	0.0
31. Length of alternative route segment within foreground visual zone of State and U.S. Highways (1/2 mile unobstructed) (no double count)	0.0	0.0	0.0	0.4	0.0	1.3	1.5	0.3

Note: All length measurements in miles. All linear measurements were obtained from aerial photography flown in October 2017.

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