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SOAH DOCKET NO. 473-23-21216 PUC DOCKET NO. 55067

APPLICATION OF ONCOR ELECTRIC	§	BEFORE THE STATE OFFICE
DELIVERY LLC TO AMEND ITS	§	
CERTIFICATE OF CONVENIENCE AND	§	
NECESSITY FOR THE RAMHORN	§	OF
HILL – DUNHAM 345 KV	§	
TRANSMSSION LINE IN DENTON AND	§	
WISE COUNTIES	§	ADMINISTRATIVE HEARINGS

ERRATA TO THE DIRECT TESTIMONY OF JOHN POOLE

The Staff (Staff) of the Public Utility Commission of Texas (Commission) files the following Errata to the Direct Testimony of John Poole, originally filed on August 14, 2023. The errata updates Mr. Poole's testimony to reflect Oncor Electric Delivery LLC's (Oncor) Notice of Errata filed on August 28, 2023, which updated cost estimates due to an error Oncor discovered in its cost calculations. A redlined and clean version of Mr. Poole's testimony is attached hereto.

Respectfully submitted,

PUBLIC UTILITY COMMISSION OF TEXAS LEGAL DIVISION

Marisa Lopez Wagley Division Director

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/s/ Anthony Kanalas

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SOAH DOCKET NO. 473-23-21216 PUC DOCKET NO. 55067 CERTIFICATE OF SERVICE

I certify that, unless otherwise ordered by the presiding officer, notice of the filing of this document was provided to all parties of record via electronic mail on August 28, 2023, in accordance with the Order Suspending Rules, issued in Project No. 50664.

<u>/s/ Anthony Kanalas</u> Anthony Kanalas

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APPLICATION OF ONCOR
ELECTRIC DELIVERY COMPANY
LLC TO AMEND ITS CERTIFICATE
OF CONVENIENCE AND NECESSITY
FOR THE RAMHORN HILL TO
DUNHAM 345 KV TRANSMISSION
LINE IN DENTON AND WISE
COUNTIES

BEFORE THE STATE OFFICE

OF

ADMINISTRATIVE HEARINGS



DIRECT TESTIMONY OF

JOHN POOLE, P.E.

INFRASTRUCTURE DIVISION

PUBLIC UTILITY COMMISSION OF TEXAS

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JP-1	Qualifications of John Poole
лр-2	List of Previous Testimony
JP-3	Letter from Texas Parks and Wildlife Department dated July 19, 2023
JP-4	Response of Oncor Electric Delivery Company LLC to Watkins' First Request for Information

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1	I.	STATEMENT OF QUALIFICATIONS
2		
3	Q.	Please state your name, occupation and business address.
4	Λ.	My name is John Poole. I am employed by the Public Utility Commission of Texas
5		(Commission) as an Engineer within the Infrastructure Division. My business
6		address is 1701 North Congress Avenue, Austin, Texas 78701.
7		
8	Q.	Please briefly outline your educational and professional background.
9	Α.	I have a Bachelor of Science degree in Electrical Engineering. I completed my
10		degree in December of 2014 and have been employed at the Commission since
11		February of 2015. A more detailed resume is provided in Attachment JP-1.
12		
13	Q.	Are you a registered professional engineer?
l 4	Λ.	Yes, I am a registered Professional Engineer in Texas. My member number
15		is 133982.
16		
17	Q.	Have you previously testified as an expert before the Commission?
18	Α.	Yes. A list of previous testimony is provided in Attachment JP-2.
19		
20	11.	SCOPE OF TESTIMONY
21		
22	Q.	What is the purpose of your testimony in this proceeding?
23	Α.	The purpose of my testimony is to present Commission Staff's recommendations

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1		concerning the application of Oncor Electric Delivery Company, LLC (Oncor) to
2		amend its Certificate of Convenience and Necessity (CCN) to construct a new
3		double-circuit 345 kilovolt (kV) transmission line to be built on triple-circuit
4		capable steel monopole structures. The structures will initially support two 345 -kV
5		circuits, with two conductors per phase, with a vacant position to accommodate an
6		additional 138-kV circuit in the future. The new transmission line will begin at the
7		proposed Oncor Ramhorn Hill Switch, to be located approximately 2 miles south of
8		the intersection of United States Highway ("US") 287 and State Highway 114 near
9		Rhome, Texas in Wise County, Texas. The transmission line will then extend 20 to
10		23 miles, depending on the route, in an easterly direction terminating at the proposed
11		Oncor Dunham Switch that will be located approximately 1.4 miles southeast of the
12		intersection of US 377 and Farm-to-Market 1171 in Flower Mound, Texas in Denton
13		County, Texas (Proposed Project). ¹
1 4		
15	Q.	What is the scope of your testimony?
16	Λ.	The scope of my testimony is to provide Commission Staff's recommendation
17		regarding the need for the project and regarding selection of routes from among the
18		proposed alternative routes presented by Oncor.
19		
20	Q.	What are the statutory requirements that a utility must meet to amend its CCN

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21

to construct a new transmission line?

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¹ Application of Oneor Electric Delivery LLC to Amend its Certificate of Convenience and Necessity for the Ramhorn Hill- Dunham 345-kV Transmission Line in Denton and Wise Counties at 4 (Jun. 8, 2023). (Application).

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				~
1	Λ.	Section 37.0	56(a) o	f the Public Utility Regulatory Act (PURA) ² states that the
2		Commission may approve an application for a CCN only if the Commission finds		
3		that the CCN	I is nec	essary for the service, accommodation, convenience, or safety
4		of the public.	Furthe	r, PURA provides that the Commission shall approve, deny, or
5		modify a re-	quest fo	or a CCN after considering the factors specified in PURA
6		§ 37.056(c),	which a	re as follows:
7		(1)	The a	dequacy of existing service;
8		(2)	The n	eed for additional service;
9		(3)	The e	ffect of granting the certificate on the recipient of the certificate
10			and a	ny electric utility serving the proximate area; and
11		(4)	Other	factors, such as:
12			(A)	Community values;
13			(B)	Recreational and park areas;
1 4			(C)	Historical and aesthetic values;
15			(D)	Environmental integrity;
16			(E)	the probable improvement of service or lowering of cost to
17				consumers in the area if the certificate is granted, including
18				any potential economic or reliability benefits associated with
19				dual fuel and fuel storage capabilities in areas outside the
20				ERCOT power region; and
21			(F)	To the extent applicable, the effect of granting the certificate
22				on the ability of this state to meet the goal established by

² Public Utility Regulatory Act, Tex. Util. Code Ann. §§ 11.001-66.016 (PURA).

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1		PURA § 39.904(a).
2		
3	Q.	Do the Commission's rules provide any instruction regarding routing
4		criteria?
5	Λ.	Yes. 16 Texas Administrative Code (TAC) § 25.101(b)(3)(B) requires that an
6		application for a new transmission line address the criteria in PURA § 37.056(c),
7		and that upon considering those criteria, engineering constraints and costs, the line
8		shall be routed to the extent reasonable to moderate the impact on the affected
9		community and landowners unless grid reliability and security dictate otherwise.
10		The following factors shall be considered in the selection of Oncor's proposed
11		alternative routes:
12		(i) Whether the routes parallel or utilize existing compatible rights-of-
13		way for electric facilities, including the use of vacant positions on
14		existing multiple-circuit transmission lines;
15		(ii) Whether the routes parallel or utilize other existing compatible
16		rights-of-way, including roads, highways, railroads, or telephone
17		utility rights-of-way;
18		(iii) Whether the routes parallel property lines or other natural or cultural
19		features; and
20		(iv) Whether the routes conform with the policy of prudent avoidance.
21		
22	Q.	What issues identified by the Commission must be addressed in this docket?
23	Α.	In the Order of Referral and Preliminary Order filed on June 9, 2023, the

DIRECT TESTIMONY OF JOHN POOLE, P.E. AUGU

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1	Commission identified the following issues that must be addressed:	
2	1. Is the applicant's application to amend its CCN adequate	? Does the
3	application contain an adequate number of reasonably d	ifferentiated
4	alternative routes to conduct a proper evaluation? In answering the	his question,
5	consideration must be given to the number of proposed alter	matives, the
6	locations of the proposed transmission line, and any associate	ed proposed
7	transmission facilities that influence the location of the line. Co	onsideration
8	may also be given to the facts and circumstances specific to the	e geographie
9	area under consideration and to any analysis and reasoned	justification
10	presented for a limited number of alternative routes. A limited	1 number of
11	alternative routes is not in itself a sufficient basis for finding an	application
12	inadequate when the facts and circumstances or a reasoned	justification
13	demonstrates a reasonable basis for presenting a limited	number of
14	alternatives. If an adequate number of routes is not prese	nted in the
15	application, the ALJ must allow the applicant to amend the app	lication and
16	to provide proper notice to affected landowners; however, if t	he applicant
17	chooses not to amend the application, then the ALJ may dism	iiss the case
18	without prejudice.	
19	2. Did the applicant provide notice of the application in accorda	nce with 16
20	TAC § 22.52(a)(1), (2), and (3)?	
21	3. Did the applicant provide notice of the public meeting in accorda	ance with 16
22	TAC § 22.52(a)(4)?	

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1	4.	What were the principal concerns expressed in the questionnaire responses
2		received at or after any public meetings held by the applicant regarding the
3		proposed transmission facilities?
4	5.	Taking into account the factors set out in the Public Utility Regulatory Act
5		(PURA) § 37.056(c), are the proposed transmission facilities necessary for
6		the service, accommodation, convenience, or safety of the public within the
7		meaning of PURA § 37.056(a)? In addition, please address the following
8		issues:
9		a. How do the proposed transmission facilities support the reliability
10		and adequacy of the interconnected transmission system?
11		b. Do the proposed transmission facilities facilitate robust wholesale
12		competition?
13		c. What recommendation, if any, has an independent organization, as
1 4		defined in PURA § 39.151, made regarding the proposed
15		transmission facilities?
16		d. Are the proposed transmission facilities needed to interconnect a new
17		transmission service customer?
18	6.	In considering the need for additional service under PURA § $37.056(c)(2)$
19		for a reliability transmission project, please address the historical load,
20		forecasted load growth, and additional load currently seeking
21		interconnection.
22	7.	Are the proposed transmission facilities the better option to meet this need
23		when compared to using distribution facilities? If the applicant is not subject

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1	te	o the unit	bundling rea	quirements c	of PURA § 3	39.051, are the proposed
2	tr	ansmissio	on facilities	the better opt	tion to meet th	e need when compared to
3	а	combina	tion of distr	ibution facili	ties, distribute	ed generation, and energy
4	el	fficiency?	? In answeri	ng this issue	, if the propo	sed transmission facilities
5	ir	nelude a	transmission	n line to ad	dress distribu	tion load growth, please
6	ao	ddress the	e following:			
7	a.	. The data	a used to ca	ilculate the a	pplicant' s loa	d-growth projections that
8	su	upport the	e need for a t	transmission-	line solution;	
9	b.	. The date	e, origin, and	relevance of	the data used	to calculate the applicant's
10	lc	oad-growt	th projection	15,		
11	c.	. The as	sumptions	made and re	elied on to g	generate the load-growth
12	р	rojections	s, including	but not limit	ed to the assu	med rates of load growth,
13	ť	ne factor	s (if any)	applied to	calculate fo	recasted loads for new
l 4	de	evelopme	ents in the r	need study a	rea, and adju	stments (if any) made to
15	fc	orecasted	loads to acc	count for cus	tomer load se	rved by any other electric
16	u	tilitics als	o providing	electric servi	ce within the a	pplicant's need study area;
17	d	. The lo	eation, desc	aribed in wr	iting and dep	bieted on a map, of the
18	b	oundaries	s of the nee	d study area	and all existi	ing transmission facilities
19	(i	including	proposed su	bstations or s	witching stati	ons) within the need study
20	a	rea used f	for the load-g	growth projec	etions;	
21	e.	. If includ	led in the ap	plicant' s loa	d-growth proj	ections, the nature, scope,
22	aı	nd locatio	on depicted o	on a map of th	ne following le	bads:
23		i.	the applicar	nt' s current c	onsumers,	

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PUC Docket No. 55067 Page 11 ii. the applicant's pending load request, and 1 2 iii. future development projects included in the applicant's load-3 growth projections; f. The location depicted on a map of the existing load center, the load center 4 5 including existing load and currently requested loads, and the load center 6 including existing load, currently requested loads, and the applicants' 7 projected load growth; g. The location and identity of any existing transmission lines, whether 8 9 inside or outside the need study area, that are as close as, or closer to, any load-serving substation proposed in this application compared to the existing 10 11 transmission line or substation used for the proposed interconnection or tap; 12 h. The location and identity of any existing substations with remaining transformer capacity, whether inside or outside the need study area, that are 13 as close as, or closer to, any load-serving substation proposed in this 14 15 application compared to the existing transmission line or substation used for 16 the proposed interconnection or tap; 17 i. If other utilities are providing distribution service within the applicant's need study area, the location and nature of the other utilities' distribution 18 facilities described in writing and depicted on a map; 19 j. An analysis of the feasibility, design, and cost effectiveness of a 20

distribution-voltage level alternative that uses the same point(s) of 21 22 interconnection or tap and endpoint(s) and that is routed along the same

DIRECT TESTIMONY OF JOHN POOLE, P.E.

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1		alternative routes as the transmission-level radial line that is requested to be
2		approved;
3		k. The applicant's planning study or other reports reflecting the nature and
4		scope of new-build distribution facilities or existing distribution-facility
5		upgrades necessary for projected load growth anticipated before the
6		projected load growth that is the basis for this application; and
7		1. A comparative cost analysis between all new-build distribution facilities
8		or existing distribution-facility upgrades and the proposed radial
9		transmission facilities that segregates the distribution-alternative costs to
10		support the pending load requests and specific future development loads
11		from general load growth in the need study area.
12	8.	Weighing the factors set forth in PURA § 37.056(e) and 16 TAC
13		§ 25.101(b)(3)(B), which proposed transmission-line route is the best
1 4		alternative?
15	9.	Are there alternative routes or configurations of facilities that would have a
16		less negative effect on landowners? What would be the incremental cost of
17		those routes or configurations of facilities?
18	10.	If alternative routes or configurations of facilities are considered because of
19		individual landowners' preferences, please address the following issues:
20		a. Have the affected landowners made adequate contributions to offset any
21		additional costs associated with the accommodations?
22		b. Have the accommodations to landowners diminished the electric
23		efficiency of the line or reliability?

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1	11.	Are the proposed (transmission facili	ities necessary to meet state or fede	ral
2		reliability standard	s?		
3	12.	What is the estim	nated cost of the	e proposed transmission facilities	to
4		consumers?			
5	13.	What is the estimat	ted congestion cos	t savings for consumers that may res	sult
6		from the proposed	transmission facili	ties considering both current and fut	ure
7		expected congestio	on levels and the	ability of the proposed transmiss.	ion
8		facilities to reduce	those congestion l	levels?	
9	14.	Are the best ma	anagement practi	ces for construction and operati	ing
10		transmission facili	ties that are stand	ard in the Commission's electric CO	CN
11		orders adequate? If	f not, what addition	nal practices should be required for	the
12		proposed transmiss	sion facilities?		
13	15.	For each additional	l practice proposed	l, please address the following:	
1 4		a. What is the addi	tional cost to desig	gn, construct, and operate the propos	sed
15		transmission facilit	ties, including the	cost to consumers?	
16		b. What benefit, if	any, will the prop	osed practice provide?	
17		e. What effect, if a	any, will the prope	osed practice have on the reliability	oſ
18		the transmission sy	/stem?		
19		d. What effect, if	any, will the pr	roposed practice have on the desig	gn,
20		construction, or op	eration of the prop	posed transmission facilities?	
21		e. What effect, if a	ny, will the propo	sed practice have on the expected d	ate
22		to energize the proj	posed transmission	n facilities?	

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1	16.	Did the Texas Parks and Wildlife Department provide any recommendations
2		or informational comments regarding this application in accordance with
3		section 12.0011(b) of the Texas Parks and Wildlife Code? If so, how should
4		the Commission respond through its order?
5	17.	What permits, licenses, plans, or permission will be required for construction
6		and operation of the proposed transmission facilities? If any alternative route
7		requires permission or an easement from a state or federal agency, please
8		address in detail the following:
9		a. What agency is involved, and what prior communication has the applicant
10		had with the agency regarding the proposed transmission facilities?
11		b. Has the agency granted the required permission or easement? If not, when
12		is a decision by the agency expected?
13		e. What contingencies are in place if the agency does not grant the required
14		permission or easement or if the process to obtain the required permission or
15		easement would materially affect the estimated cost, proposed design plans,
16		or anticipated timeline to construct the proposed transmission facilities?
17	18.	Is any part of the proposed transmission facilities located within the coastal
18		management program boundary as defined in 31 TAC $\$ 27.1(a)? If so, please
19		address the following issues:
20		a. Do the facilities comply with the goals and applicable policies of the
21		Coastal Management Program in accordance with 16 TAC § 25.102(a)?
22		b. Will the facilities have any direct and significant effects on any of the
23		applicable coastal natural resource areas specified in 31 TAC § 26.3(b)?

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1		19.	Are the circumstar	nees for this line such	h that the seven-year limit discussed
2			in section III of thi	is Order should be ch	anged?
3		20.	Will anything oc	eur during construe	tion that will preclude or limit a
4			generator from gen	nerating or delivering	g power or that will adversely affect
5			the reliability of th	ie ERCOT system?	
6		21.	If complete or parts	ial agreement of the p	arties is reached on a route that relies
7			on modifications t	o the route segments	as noticed in the application, please
8			address the follow	ing issues:	
9			a. Did the applicat	nt comply with the a	additional notice requirements of 16
10			TAC § 22.52(a)(2)) and (a)(3)(C)?	
11			b. Was written co	nsent obtained from	landowners directly affected by the
12			proposed modifica	itions to the route seg	ments?
13					
l 4	Q.	Which	h issues in this prod	ceeding have you ad	dressed in your testimony?
15	A.	I have	addressed the issue	es from the Order of	Referral and Preliminary Order and
16		the req	quirements of PUR/	X § 37.056 and 16 T/	AC § 25.101.
17					
18	Q.	If you	do not address a	n issue or position	in your testimony, should that be
19		interp	oreted as Staff supp	oorting any other pa	rty's position on that issue?
20	Λ.	No. Th	e fact that I do not a	ddress an issue in my	/ testimony should not be considered
21		as agre	eeing, endorsing, or	consenting to any po	sition taken by any other party in this
22		ргоссе	eding.		
23					

DIRECT TESTIMONY OF JOHN POOLE, P.E.

1	Q.	What have you relied upon or considered to reach your conclusions and make			
2		your recommendation?			
3	Α.	I have relied upon my review and analysis of the data contained in Oncor's			
4		application and the application's accompanying attachments, including the			
5		Environmental Assessment and Alternative Route Analysis (EA) prepared by Halff			
6		Associates, Inc. (Halff).3 I have also relied upon my review of the direct testimonies			
7		and statements of position filed in this proceeding by or on behalf of Oneor and the			
8		intervenors. I have also relied upon my review of the responses to requests for			
9		information, and the letters from the Texas Parks and Wildlife Department (TPWD)			
10		to Ms. Marisa Wagley, dated July 19, 2023.1			
11					
12					
13	Ш.	CONCLUSIONS AND RECOMMENDATIONS			
14					
15	Q.	Based on your evaluation of Oncor's application and other relevant material,			
16		what conclusions have you reached regarding the application and the Proposed			
17		Project?			
18		1. I conclude that the application is adequate and that Oncor's proposed			
19		alternative routes are adequate in number and geographic diversity.			
20		2. I conclude that the application complies with the notice requirements in 16			
21		TAC § 22.52(a).			

³ Application at Attachment 1.

⁴ Attachment JP-3.

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1	3.	I conclude that, taking into account the factors set out in PURA § $37.056(c)$,
2		the Proposed Project is necessary for the service, accommodation,
3		convenience and safety of the public.
4	4.	I conclude that the Proposed Project is the best option to meet the need when
5		compared with other alternatives.
6	5.	I conclude that Route 179-C is the best route when weighing, as a whole, the
7		factors set forth in PURA § 37.056(c)(4) and in 16 TAC § 25.101(b)(3)(B).
8	6.	I conclude that TPWD provided mitigation measures regarding the
9		application, and that the mitigation measures provided on pages 18 through
10		20 of my testimony, as well as mitigation measures mentioned in the
11		environmental concerns on pages 34 through 38 of my testimony, are
12		sufficient to address TPWD's mitigation recommendations. I also conclude
13		that Oncor has the resources and procedures in place in order to
l 4		accommodate the mitigation recommendations.
15		

16 Q. What recommendation do you have regarding Oncor's application?

17	Λ.	I recommend that the Commission approve Oncor's application to amend its CCN
18		in order to construct a new double-circuit 345-kV transmission line to be built on
19		triple-circuit capable steel monopole structures along with the proposed Oncor
20		Ramhorn Hill 345-kV Switch in Wise County and the proposed Oneor Dunham
21		Switch in Denton County. I also recommend that the Commission order Oncor to
22		construct the Proposed Project on Route 179-C (Segments A0, A4, B1, B61, B62,
23		C1, C21, C23, C7, E2, E1, E6, G1, G3, H41, H42, H8, I8, J3, K1, L5, L4, L3, L2,

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AUGUST 14, 2023

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1	MI, M	15, R2, R5, U3, V	3, V4, and Z). I fur	ther recommend that the Commission
2	include	e in its order appro	ving Oncor's applica	ntion the following paragraphs in order
3	to mitig	gate the impact of	the Proposed Projec	t:
4	1.	Oneor shall cond	uet surveys, if not al	ready completed, to identify pipelines
5		that could be affe	eted by the transmis	sion lines and coordinate with pipeline
6		owners in modeli	ng and analyzing po	tential hazards because of alternating-
7		current interferen	ce affecting pipeline	es being paralleled.
8	2.	If Oneor encount	ers any archeologie	al artifacts or other cultural resources
9		during project con	nstruction, work mu	st cease immediately in the vicinity of
10		the artifact or res	source, and the disc	every must be reported to the Texas
11		Historical Comm	ission. In that situati	on, Oncor must take action as directed
12		by the Texas Hist	torical Commission.	
13	3.	Oncor must follo	w the procedures to	protect raptors and migratory birds as
l 4		outlined in the l	following publication	ons: Reducing Avian Collisions with
15		Power Lines: Th	e State of the Art i	n 2012, Edison Electric Institute and
16		Avian Power L	ine Interaction Co	ommittee, Washington, D.C. 2012;
17		Suggested Practic	ces for Avian Protec	tion on Power Lines: The State of the
18		Art in 2006, Ec	lison Electric Insti	tute, Avian Power Line Interaction
19		Committee, and t	he California Energ	y Commission, Washington, D.C. and
20		Sacramento, CA	2006; and Avian Pre	etection Plan Guidelines, Avian Power
21		Line Interaction	Committee and Uni	ted States Fish and Wildlife Service,
22		April 2005. Once	or must take precauti	ons to avoid disturbing occupied nests
23		and take steps to	minimize the burd	en of construction on migratory birds

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16

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1		during the nesting	season of the migrate	ory bird species identified in the area
2		of construction.		
3	4.	Oncor must exercis	se extreme care to av	oid affecting non-targeted vegetation
4		or animal life whe	n using chemical he	rbicides to control vegetation within
5		rights-of-way. One	cor must ensure tha	t the use of chemical herbicides to
6		control vegetation	n within the rights	-of-way complies with rules and
7		guidelines establis	hed in the Federal In	secticide Fungicide and Rodenticide
8		Act and with Texa	s Department of Agr	iculture regulations.
9	5.	Oncor must minin	mize the amount of	f flora and fauna disturbed during
10		construction of th	e transmission line,	, except to the extent necessary to
11		establish appropria	ate right-of-way clea	arance for the transmission line. In
12		addition, Oncor m	ust revegetate, usin	g native species and must consider
13		landowner preferen	nees and wildlife ne	eds in doing so. Furthermore, to the
l 4		maximum extent	practical, Oncor r	nust avoid adverse environmental
15		influence on sens	sitive plant and ani	mal species and their habitats, as
16		identified by the Te	exas Parks and Wildl	ife Department and the United States
17		Fish and Wildlife S	Service.	
18	6.	Oncor must imple	ment erosion contro	ol measures as appropriate. Erosion
19		control measures :	may include inspect	ion of the right-of-way before and
20		during construction	on to identify cros	sion areas and implement special
21		precautions as de	termined necessary.	Oncor must return each affected
22		landowner's prope	rty to its original co	ontours and grades unless otherwise
23		agreed to by the la	ndowner or the land	owner's representative. Oncor is not

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PUC Docket No. 55067 Page 20 1 required to restore the original contours and grades where a different contour 2 or grade is necessary to ensure the safety or stability of the project's 3 structures or the safe operation and maintenance of the lines. 7. Oncor must use best management practices to minimize the potential 4 5 impacts to migratory birds and threatened or endangered species. 6 8. Oncor must cooperate with directly affected landowners to implement minor 7 deviations from the approved route to minimize the burden of the transmission line. Any minor deviations from the approved route must only 8 9 directly affect landowners who were sent notice of the transmission line in accordance with 16 TAC § 22.52(a)(3) and landowners that have agreed to 10 11 the minor deviation. 12 9. Oncor must report the transmission line approved by the Commission on its monthly construction progress reports before the start of construction to 13 14 reflect the final estimated cost and schedule in accordance with 16 TAC 15 § 25.83(b). In addition, Oncor must provide final construction costs, with 16 any necessary explanation for cost variance, after completion of construction 17 when all costs have been identified. 18 19 Q. Does your recommended route differ from the route that Oncor believes best

20

addresses the requirements of PURA and the Commission's rules?

Α. Yes. Oncor identified Route 179 as the route that best addresses the requirements of 21 22 PURA and the Commission's rules.5

⁵ Application at 24.

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SOAH Docket No. 473-23-21216 PUC Docket No. 55067 Page 21 1 2 IV. PROJECT JUSTIFICATION 3 DESCRIPTION OF THE PROJECT 4 А. 5 Q. Please describe the Proposed Project. 6 Α. The Proposed Project will consist of constructing a new double-circuit 345 kilovolt 7 (kV) transmission line to be built on triple-circuit capable steel monopole structures. The structures will initially support two 345-kV circuits, with two conductors per 8 9 phase, with a vacant position to accommodate an additional 138-kV circuit in the 10 future. The new transmission line will begin at the proposed Oneor Ramhorn Hill 11 Switch, to be located approximately 2 miles south of the intersection of United 12 States Highway ("US") 287 and State Highway 114 near Rhome, Texas in Wise 13 County, Texas. The transmission line will then extend 20 to 23 miles, depending on 14 the route, in an easterly direction terminating at the proposed Oncor Dunham Switch 15 that will be located approximately 1.4 miles southeast of the intersection of US 377 16 and Farm-to-Market 1171 in Flower Mound, Texas in Denton County, Texas.6 17 18 Q. Does Oncor's application contain a number of proposed alternative routes 19 sufficient to conduct a proper evaluation? 20 Yes. Λ. 21 22 Q. Is the Proposed Project located within the incorporated boundaries of any

⁶ Application at 4.

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1		municipality?
2	A.	Yes. Portions of all of the proposed alternative routes would be constructed within
3		the incorporated boundaries of the City of Flower Mound, Texas and the City of
4		Northlake, Texas.7 Additionally, portions of some routes will be constructed within
5		the incorporated boundaries of the City of Justin, Texas; the City of New Fairview,
6		Texas; the City of Rhome, Texas; and the City of Fort Worth, Texas.8
7		
8	В.	TEXAS COASTAL MANAGEMENT PROGRAM
9	Q.	Does any part of this project lie within the Texas Coastal Management
10		Program (TCMP) boundary?
11	Λ.	No. The study area is not located within the TCMP boundary.9
12		
13	С.	NEED FOR THE PROJECT
1 4	Q.	Could you briefly summarize the need for the project?
15	Α.	Yes. As stated in the application, the Proposed Project is needed to address
16		reliability issues in the Roanoke area. ¹⁰ The Roanoke area is located approximately
17		15 miles north of Fort Worth and is one of the highest growth areas in the Dallas-
18		Fort Worth Metroplex. ¹¹ The current power transfer and load-serving capabilities of
19		the transmission system in the Roanoke area are approaching their operating limits

 7 Application at 8.

⁸ Id.

⁹ *Id.*at 33.

¹⁰ *Id.* At 10-11.

¹¹ Id. at 10.

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1		at current demand levels.12 To address these issues, Oneor recommended the
2		Roanoke Area Upgrades Project to the ERCOT Regional Planning Group (RPG)
3		and ERCOT conducted its own independent review and confirmed the reliability
4		issues Oncor identified. ¹³
5		
6	Q.	Has an independent organization, as defined in PURA § 39.151, determined
7		that there is a need for the Proposed Project?
8	Λ.	Yes. ERCOT recommended the Proposed Project, as part of the Roanoke Area
9		Upgrades Project.14 The project was recommended as a Tier 1 transmission project
10		that is critical to the reliability of the ERCOT system pursuant to 16 TAC
11		§ 25.101(b)(3)(D) by the ERCOT Regional Planning Group. A copy of ERCOT's
12		independent review, dated July 19, 2022, is included with the application. ¹⁵
13		
14	Q.	Are the proposed facilities necessary for the service, accommodation,
15		convenience, or safety of the public within the meaning of PURA § 37.056(a)?
16	Λ.	Yes. In the ERCOT Independent Review of Oneor Roanoke Area Upgrades Project,
17		ERCOT determined that thermal overloads and low voltage issues were present
18		under some contingencies and they evaluated four different options to address those
19		issues.16 Three of those options were found to satisfy the reliability issues ERCOT

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¹² Application at 10.

¹³ Id.at 13.

¹⁴ *Id.* at 11.

¹⁵ *Id.* at Attachment 4.

¹⁶ Id., Attachment 4 at 9-11.

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1		identified and all three included the Proposed Project,17 and the second option was
2		found to best address those reliability issues. ¹⁸
3		
4	D.	PROJECT ALTERNATIVES
5	Q.	Did Oncor consider distribution and transmission alternatives to the Proposed
6		Project?
7	Λ.	ERCOT considered four different system improvement options to address the
8		reliability issues in the Roanoke area. ¹⁹ ERCOT eventually selected the second
9		option, which included the Proposed Project.20
10		
11	Q.	Do you agree that the Proposed Project is the best option when compared to
12		other alternatives?
13	Λ.	Yes. ERCOT carefully considered four different options but determined that the
14		three options that resolved the reliability issues included the Proposed Project. ²¹
15		
16	V.	ROUTING
17	А.	STAFF RECOMMENDATION
18	Q.	What routes do you recommend upon considering all factors, including the
19		factors in PURA § 37.056(c) and 16 TAC § 25.101(b)(3)(B)?
		¹⁷ Application, Attachment 4 at 12.
		¹⁷ Id., Attachment 4 at 22.

- ¹⁹ *Id.*, Attachment 4 at 11.
- ²⁰ *Id.*, Attachment 4 at 22.
- ²¹ *Id.*, Attachment 4 at 12 and 14.

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1	Λ.	Based on my analysis of all the factors that the Commission must consider under
2		PURA § 37.056 and 16 TAC § 25.101, I recommend that Route 179-C be approved
3		for the Proposed Project. The basis for my recommendation is discussed in more
4		detail in the remainder of my testimony.
5		
6	Q.	Which route did Oncor select as the route that best addresses the requirements
7		of PURA and the Commission's rules?
8	Λ.	Oncor identified Route 179 as the routes that they believe best address the
9		requirements of PURA and the Commission's rules.22
10		
11	В.	COMMUNITY VALUES
12	Q.	Has Oncor sought input from the local community regarding community
13		values?
1 4	Λ.	Yes. Oncor held public meetings as required by 16 TAC § 22.52(a)(4). The meetings
15		were held on December 7, 2022 and December 8, 2022 from 4:00pm to 7:00pm at
16		the Marriott Hotel & Golf Club Champions Circle in Fort Worth, Texas.23 Oncor
17		sent notice of the meeting to landowners owning property within 520 feet of each of
18		the preliminary alternative route segment centerlines.24 Oncor also posted notices of
19		the meeting in the Wise County Messenger on November 23, 2022 and in the Denton
20		Record Chronicle on November 26 and 27, 2022.25 A total of 172 individuals

²² Application at 24.

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²³ Id., Attachment 1 at Page 5-1.

²⁴ Id., Attachment 1 at Page 2-11.

²⁵ Id.

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1		attended the meetings and Oneor received 71 questionnai	re responses during the
2		meeting and Oncor received "many" questionnaires at a late	er date. ²⁶
3			
4	Q.	Did members of the community who attended the publi	c meeting or intervene
5		in this case express concerns about the Proposed Project	1?
6	A.	Overall the respondents indicated an "overwhelming" pre-	ference for maximizing
7		the distances relative to residences, schools, churches, and r	ecreational areas.27 Due
8		to the many questionnaires and other feedback received by	Oncor, Oncor grouped
9		these together by topic:	
10		1. Oncor received approximately 1,000 comments regarding	ng avoiding the Liberty
11		Christian School campus, which was crossed by preliminary	y Segment D2.28
12		2. Oncor received approximately 450 comments regardi	ng avoiding the Cross
13		Timbers Church, which was impacted by the preliminary Sector	egments D1-D4.29
1 4		3. Oncor received approximately 550 comments regarding	avoiding the Town of
15		Argyle, which was impacted by the preliminary Segments I	D1-D4. ³⁰
16		4. Oncor received approximately 300 comments regarding s	egments along Farm-to-
17		Market (FM) Road 407 in the Town of Northlake.31	
18		5. Oncor received approximately 60 comments regardi	ng segments near the

- ²⁶ Application, Attachment 1 at Page 5-1.
- ²⁷ Id.
- ²⁸ *Id.*. Attachment 1 at Pages 5-2 and 5-3.
- ²⁹ Id., Attachment 1 at Page 5-3.
- ³⁰ *Id.*, Attachment 1 at Page 5-4.
- ³¹ *Id.*, Attachment 1 at Pages 5-4 and 5-5.

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1	community of Canyon Falls, particularly Segment E5.32
2	6. Oncor received approximately 10 comments regarding the Trailwood Subdivision
3	located south of FM 1171, some recommended Segments C1-C2-C5-C7.33
4	7. Oncor received approximately 10 comments regarding the Legacy Ranch
5	Subdivision opposed to any route utilizing Segment J3.34
6	8. Oncor received approximately 20 comments regarding the Avery Ranch
7	Community regarding lines near their community and the Propwash Airport, north
8	of Segment M8 and Sam Reynolds Road.35
9	9. Oncor received approximately 60 comments regarding the Northwest Regional
10	Airport located 2500 feet south of FM 1171, south of Segments E6 and C6.36
11	Other comments regarding specific segments were made opposing Segments F2, F3,
12	and E8; in support of Segments A0 and A4; opposing Segments M5, M4, R1, R2,
13	R3, R6, and R5; opposing Segments T5, T4, T3, and T2; opposing Segments Q5,
l 4	Q2, and Q1; opposing Segment O7; opposing Segment G9; and opposition to
15	Segment D3's impact on oak trees.37
16	Other general comments concerned the possibility of the project utilizing United
17	States Army Corps of Engineers land south of FM 1171,38 a desire to keep the

- ³² Application, Attachment 1 at Page 5-5.
- ³³ Id.
- ³⁴ Id., Attachment 1 at Pages 5-5 and 5-6.
- ³⁵ Id., Attachment 1 at Page 5-6.
- ³⁶ Id., Attachment I at Pages 5-6 and 5-7.
- ³⁷ *Id.*, Attachment 1 at Pages 5-7, 5-8, and 5-10.
- ³⁸ *Id.*, Attachment 1 at Pages 5-8 and 5-9.

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1		Proposed Project as short as possible,39 compensation for loss of property values
2		resulting from the Proposed Project,40 aesthetic values,41 impacts on natural
3		resources, ¹² impacts on farming and ranching, ⁴³ and health and safety concerns. ⁴⁴
4		
5	Q.	In your opinion, would construction of the Proposed Project on Route 179-C
6		mitigate the concerns expressed by members of the community at the open
7		houses and in comments by intervenors?
8	Λ.	To some extent 179-C can mitigate these concerns. Route 179-C's centerline is
9		within 500 feet of 98 habitable structures which is tied for 4^{th} least of the proposed
10		alternative routes, 5 more than the route with the least habitable structures within
11		500 feet of its centerline Route 164.45 Route 179-C does not cross any parks or
12		recreational areas and has four parks or recreational areas within 1,000 feet of its
13		centerline, just one more than the routes with the fewest within 1,000 feet of their
14		centerline. ⁴⁶
15		In response to the specific routing concerns of the community, Route 179-C does
16		not use Segments D1-D4 and along FM Road 407. However, none of the routes in
17		the application use those preliminary segments as they were eliminated in response

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17

³⁹ Application, Attachment 1 at Page 5-9.

⁴⁰ Id.

⁴¹ *Id.*, Attachment 1 at Pages 5-9 and 5-10.

¹² *Id.*, Attachment 1 at Page 5-10.

¹³ Id., Attachment 1 at Pages 5-10 and 5-11.

⁴⁴ *Id.*, Attachment 1 at Page 5-11.

⁴⁵ Compare id., Attachment 1 at Appendix E (Table 7-2) with Attachment JP-4 Part 1 at 000019-20. ⁴⁶ Id.

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	-
1	to the feedback received in the community involvement process. ⁴⁷ Route 179-C
2	avoids using most of the segments around the Canyon Falls community, in particular
3	Segment E5.48 Route 179-C utilizes Segments C1, C7 and C21, C21 was part of the
4	preliminary Segment C2, which was split into Segments C21 and C22 in response
5	to the community involvement process.49 Route 179-C utilizes Segment L4 which
6	is 6,000 feet from the Propwash Airport, this is 4,000 feet farther than Segment M8
7	which it does not utilize.50 Route 179-C does utilize Segment E6 but not Segment
8	C6.51 Route 179-C does utilize Segment J3.52
9	In response to the other routing concerns by individuals, Route 179-C avoids
10	Segments F2, F3, E8, M4, R1, R3, R6, T5, T4, T3, T2, Q5, Q2, Q1, O7, G9, and D3
11	which were segments specifically opposed by commenters. Route 179-C also
12	utilizes both Segments A0 and A4 as requested by commenters. Route 179-C,
13	however, does utilize Segments M5, R2, and R5 which were segments specifically
14	opposed.53
15	In response to the general concerns, Route 179-C is the 29th shortest route of 84.
16	Route 179-C is 5,249 feet longer than the shortest route, Route 16, but 10,596 shorter

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³² Id.

⁵³ Id.

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⁴⁷ Application, Attachment 1 at Page 6-2.

⁴⁸ Attachment JP-4 Part 1 at 000019.

¹⁹ Attachment JP-4 Part 1 at 000019 and Application, Attachment 1 at Page 6-3.

⁵⁰ Attachment JP-4 Part 1 at 000019 and Application, Attachment 1 at Appendix F (Table 7-6).

⁵¹ Attachment JP-4 Part 1 at 000019.

	than the longest route, Route 216.54 Route 179-C crosses the 17th least amount of
	rangeland with 58,417 feet, 11,959 feet longer than the shortest length by Route 26
	and 17,901 feet shorter than the longest length by Route 187.55 However, Route 179-
	C crosses the 69th least amount of cropland and hay meadow land with 22,691 feet,
	10,344 feet longer than the shortest length by Route 164R and 13,540 feet shorter
	than the longest length by Route 69.56
	I will specifically address additional issues regarding recreational and park areas,
	historical values, aesthetic values, environmental integrity, engineering constraints,
	costs, moderation of impact on the affected community and landowners, and right-
	of-way later in my testimony.
Q.	Are property values and the impact on future or potential development factors
	that are considered by the Commission in a CCN proceeding under PURA
	§ 37.056(c)(4) or in 16 TAC § 25.101(b)(3)(B)?
Α.	No. PURA and the Commission's rules do not list these two issues as factors that
	are to be considered by the Commission in a CCN proceeding. However, these rules
	do require consideration of using or paralleling existing right-of-way, which may
	minimize concerns about the impact on property values or planned development.

³⁶ Id.

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 ³⁴ Compare Application, Attachment 1 at Exhibit E (Table 7-2) with Attachment JP-4 Part 1 at 000019.
 ³⁵ Id.

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1	Λ.	No.
2		
3	C.	RECREATIONAL AND PARK AREAS
4	Q.	Are any parks or recreational areas located within 1,000 feet of the centerline
5		of any of the proposed alternative routes or a substation site?
6	A.	Twenty parks and recreational areas are either crossed or within 1,000 feet of the
7		centerline of the proposed alternative routes.57 The number of parks or recreational
8		areas either crossed or within 1,000 feet of the centerline of the proposed alternative
9		routes ranges from 3 (Routes 29, 33, 36, 41, 42, 86, 207, 217, 218, and 29R) to 11
10		(Routes 117 and 119).58 Routes range from crossing no parks or recreational areas
11		(Routes 29, 33, 36, 41, 42, 43, 44, 54, 58, 71, 86, 87, 154, 175, 176, 178, 179, 184,
12		185, 207, 216, 221, 179-A, 179-B, 179-C, and 29R) to crossing 3,844 feet of parks
13		and recreational areas (Routes 92, 94, 96, 103, 108, 143, and 146).59 Route 179-C
14		crosses no parks or recreational areas, and has four parks and recreational areas
15		within 1,000 feet of its centerline. ⁶⁰
16		
17	D.	HISTORICAL VALUES
18	Q.	Are there possible impacts from the Proposed Project on archeological and

19

³⁷ Application at Attachment 16.

historical values, including known cultural resources crossed by any of the

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 $^{^{\}rm 58}$ /d., Attachment 1 at Exhibit E (Table 7-2) and Attachment JP-4 Part 3.

 $^{^{59}}$ Application, Attachment 1 at Exhibit E (Table 7-2) and Attachment JP-4 Part 1 at 000011, 000015 and 000019.

⁶⁰ Attachment JP-4 Part 1 at 000019.

1		proposed alternative routes or that are located within 1,000 feet of the
2		centerline of any of the proposed alternative routes?
3	Α.	There is a cemetery, the Dunham Cemetery, that is approximately 610 feet from
4		Segment A0, which is utilized by all the proposed alternative routes. ⁶¹ There is an
5		additional cemetery, the City of Justin Cemetery, that is approximately 100 feet from
6		Segment J4, which is utilized by Routes 1, 19, 65, 67, 68, 69, 72, 92, 94, 96, 103,
7		108, 142, 143, 146, 170, 191, 192, and 219.62 A historically significant area, Bishop
8		Park, is crossed by Segment J4, which is utilized by Routes 1, 19, 65, 67, 68, 69, 72,
9		92, 94, 96, 103, 108, 142, 143, 146, 170, 191, 192, and 219.63 Two recorded
10		archeological sites are within 1,000 feet of the centerline of the proposed alternative
11		routes. A former schoolhouse is crossed by Segment M1, which is utilized by Routes
12		3, 5, 13, 14, 15, 16, 18, 22, 23, 24, 25, 26, 28, 29, 36, 43, 44, 58, 61, 63, 70, 78, 87,
13		108, 116, 119, 130, 132, 137, 146, 164, 179, 199, 200, 179-A. 179-B, 179-C, 22R,
l 4		29R, 116R, 130R, 132R, and 164.64 A historic house is within 90 feet of the
15		centerline of Segment L2, which is utilized by Routes 3, 5, 10, 11, 13, 14, 15, 16,
16		18, 19, 22, 23, 24, 25, 26, 28, 29, 33, 36, 43, 44, 58, 61, 63, 70, 78, 87, 92, 108, 116,
17		117, 119, 130, 132, 137, 146, 154, 164, 170, 178, 179, 186, 187, 199, 200, 216, 179-
18		A, 179-B, 179-C, 22R, 29R, 116R, 130R, 132R, and 164R.65

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⁶⁴ Id.

⁶⁵ Id.

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⁶¹ Application, Attachment 1 at Page 7-26 and Attachment 7 Part 4, and Attachment JP-4 Part 1 at 000011, 000015, 000019 and 000036.

⁶² Id.

⁶³ Id.

		Page 33	
1		The proposed alternative routes have from one historic or archeological site within	
2		1,000 feet of its centerline (for Routes 41, 42, 54, 71, 86, 138, 175, 176, 184, 185,	
3		207, 217, 218, and 221) to five (for Route 108 and 146).66 Route 179-C's centerline	
4		is within 610 feet of the Dunham Cemetery on Segment A0, within 90 feet of a	
5		historic house on Segment L2, and crosses the former school house on Segment	
6		M1.67	
7		The length of the routes across areas of high archeological/historical site potential	
8		ranges from 28,161 feet for Route 186 to 64,206 feet for Route 28.68 Route 179-C	
9		crosses 56,753 feet of areas of high archeological/historical site potential.69	
10		If any further archeological or cultural resources are found during construction of	
11		the proposed transmission line, Oncor should immediately cease work in the vicinity	
12		of the archeological or cultural resources, and should immediately notify the Texas	
13		Historical Commission.	
l 4			
15	E.	AESTHETIC VALUES	
16	Q.	In your opinion, which of the proposed alternative routes would result in a	
17		negative impact on aesthetic values, and which portions of the study area will	
18		be affected?	
19	Λ.	In my opinion, all of the proposed alternative routes would result in a negative	

⁶⁸ Application, Attachment 1 at Exhibit E (Table 7-2) and Attachment 7 Part 4, and Attachment JP-4 Part 1 at 000012, 000016, and 000020 and Attachment JP-4 Part 3.

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⁶⁶ Application. Attachment 1 at Exhibit E (Table 7-2) and Attachment JP-4 Part 1 at 000011, 000015, and 000019 and Attachment JP-4 Part 3.

⁶⁷ Application, Attachment 1 at 7-24 and Attachment JP-4 Part 1 at 000019.

⁶⁹ Attachment JP-4 Part 1 at 000020.

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1		impact on aesthetic values, some routes more than others, depending on the visibility
2		from homes and public roadways. Temporary effects would include views of the
3		actual transmission line construction (e.g. assembly and erection of the structures)
4		and of any clearing of right-of-way. Permanent effects would involve the visibility
5		of the structures and the lines. I therefore conclude that aesthetic values would be
6		impacted throughout the study area, and that these temporary and permanent
7		negative aesthetic effects will occur on any proposed alternative routes approved by
8		the Commission.
9		
10	F.	ENVIRONMENTAL INTEGRITY
11	Q.	Please provide a general description of the area traversed by the proposed
11 12	Q.	Please provide a general description of the area traversed by the proposed alternative routes.
	Q . A.	
12	_	alternative routes.
12 13	_	alternative routes. The area traversed by the project is within the Grand Prairie Western Timbers
12 13 14	_	alternative routes. The area traversed by the project is within the Grand Prairie Western Timbers Physiographic Region. ⁷⁰ The Interior Coastal Plains consists of low stairstep hills
12 13 14 15	_	alternative routes. The area traversed by the project is within the Grand Prairie Western Timbers Physiographic Region. ⁷⁰ The Interior Coastal Plains consists of low stairstep hills with calcareous bedrock types to the east, and plains with sandier bedrock types to
12 13 14 15 16	_	alternative routes. The area traversed by the project is within the Grand Prairie Western Timbers Physiographic Region. ⁷⁰ The Interior Coastal Plains consists of low stairstep hills with calcareous bedrock types to the east, and plains with sandier bedrock types to the west. The study area primarily consists of the Fort Worth Limestone, which
12 13 14 15 16 17	_	alternative routes. The area traversed by the project is within the Grand Prairie Western Timbers Physiographic Region. ⁷⁰ The Interior Coastal Plains consists of low stairstep hills with calcareous bedrock types to the east, and plains with sandier bedrock types to the west. The study area primarily consists of the Fort Worth Limestone, which incorporates limestone and clay deposits, and Duck Creek Formation, which
12 13 14 15 16 17 18	_	alternative routes. The area traversed by the project is within the Grand Prairie Western Timbers Physiographic Region. ⁷⁰ The Interior Coastal Plains consists of low stairstep hills with calcareous bedrock types to the east, and plains with sandier bedrock types to the west. The study area primarily consists of the Fort Worth Limestone, which incorporates limestone and clay deposits, and Duck Creek Formation, which incorporates limestone aphanitic that is in part bioclastic and has pyrite nodules and

⁷⁰ Application, Attachment 1 at Page 3-1.
 ⁷¹ Id.

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1 **Proposed Project?** 2 A. I reviewed the information provided in the application and the EA, the direct testimonies and statements of position of the intervenors, responses to requests for 3 4 information, and the letters from TPWD to Ms. Marisa Wagley, dated July 19, 5 2023.72 6 7 Based on your review of the information identified above, in your opinion, will Q. the Proposed Project present a significant negative impact to environmental 8 9 integrity? 10 No. Transmission lines do not often create many long-term impacts on soils. Most Λ. 11 of those impacts will be during initial construction and would be crosion and soil 12 compaction; however, Oncor will employ erosion control during initial construction 13 including development of a Storm Water Pollution Prevention Plan to minimize 14 impacts.73 15 Primary impacts on vegetation would be the result of site preparation and clearing of existing woody vegetation in the right-of-way,74 further disturbances would then 16 occur during maintenance activities.75 Oncor will attempt to minimize adverse 17 18 impacts to vegetation and retain existing ground cover where possible, and to restore disturbed areas with native species where possible.76 The length of upland 19

- ⁷² Attachment JP-3.
- ⁷³ Application, Attachment 1 at Pages 7-1 and 7-2.
- ¹⁴ Id., Attachment 1 at Page 7-6.
- ⁷⁵ Id., Attachment 1 at Page 7-2.
- ⁷⁶ Id., Attachment 1 at Pages 7-6 and 7-7.

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1	woodlands along the right-of-way of the proposed routes ranges from 8,022 feet for
2	Route 217 to 15,125 feet for Route 26.77 The length of riparian areas along the right-
3	of-way of the proposed routes ranges from 4,579 feet for Route 187 to 15,690 feet
4	for Route 26.78 The length of upland woodlands along the right-of-way of Route
5	179-C is 11,311 feet and the length of riparian areas along the right-of-way of Route
6	179-C is 11,536 feet. ⁷⁹
7	While there are no federally listed endangered or threatened plant species known to
8	occur in Denton and Wise Counties, TPWD county lists of rare species and Natural
9	Diversity Database data suggest that the study area may contain rare plant species
10	that require special consideration.80 Oneor will avoid impacts to these rare plants,
11	following TPWD recommendation, should specimens be found.81 The estimated
12	number of known rare or unique plant locations within the right-of-way ranges from
13	zero for Routes 94, 96, 103, 108, 116, 117, 119, 130, 132, 137, 138, 142, 143, 146,
14	186, 187, 191, 192, 217, 218, 219, 116R, 130R, and 132R to four for Routes 33, 68,
15	69, 71, 175, 176, 178, 184, and 185.82 Route 176-C has one known rare or unique
16	plant location within its right-of-way.83

⁸³ Attachment JP-4 Part 1 at 000019.

⁷⁷ Application. Attachment 1 at Exhibit E (Table 7-2) and Attachment JP-4 Part 1 at 000011, 000015, and 000019 and Attachment JP-3 Part 3.

⁷⁸ Id.

⁷⁹ Attachment JP-4 Part 1.

⁸⁰ Application, Attachment 1 at Pages 7-7 and 7-8.

⁸¹ Id., Attachment 1 at Page 7-8.

 $^{^{82}}$ /d., Attachment 1 at Exhibit E (Table 7-2) and Attachment JP-4 Part 1 at 000011, 000015, and 000019 and Part 3.

1		The length across potential wetlands ranges from Routes 36, 41, 42, 43, 44, 58, 71,
2		86, 87, 137, 138, 175, 176, 179, 184, 185, 207, 179-A, 179-B, and 179-C, which do
3		not cross any wetlands at all, to Routes 92 and 218 which cross 849 feet of potential
4		wetlands.84 Oneor will attempt to span wetland areas whenever possible and use
5		crosion controls mitigation measures to minimize impacts to aquatic systems should
6		a route be selected which crosses wetland areas.85
7		While federally listed threatened or endangered species may occur within the study
8		area, there are no designated critical habitat for any federally listed threatened or
9		endangered species along any of the proposed alternative routes.86
10		However, construction of some of the proposed alternative routes could, at some
11		locations, present a negative impact on the environment, particularly in sensitive
12		areas such as wetlands, riparian areas, and woodlands.
13		
1 4	Q.	In your opinion, how would construction of the Proposed Project on Route 179-
15		C compare from an environmental perspective to construction on the other
16		routes?
17	Λ.	Route 179-C has 11,311 feet of its length across upland woodlands, which is 3,289
18		feet longer than the shortest length of Route 217 and 4,379 feet shorter than the

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 $^{^{84}}$ Application. Attachment 1 at Exhibit E (Table 7-2) and Attachment JP-4 Part 1 at 000011, 000015, and 000019 and Part 3.

⁸⁵ Application, Attachment 1 at Page 7-11.

⁸⁶ Id., Attachment 1 at Pages 7-12 and 7-13. See also, id. at Exhibit E (Table 7-2) and Attachment JP-4 Part 1 at 000011, 000015, 000019 and Part 3.

	SOAH	Docket No. 473-23-21216 PUC Docket No. 55067 Page 38
1		longest length of Route 26.87 The length of riparian areas along the right-of-way of
2		Route 179-C is 11,536 feet, which is 6,957 feet longer than the shortest length of
3		Route 187 and 4,182 feet shorter than the longest length of Route 28.88 Route 179-
4		C crosses no potential wetlands, but does have one location of known rare or unique
5		plants within its right-of-way, while some routes have none. ⁸⁹ In its letter dated July
6		19, 2023 TPWD selected Route 137 as the route having the least potential impact
7		on environmental integrity. ⁹⁰
8		
9	Q.	Do you conclude that Route 179-C is acceptable from an environmental and
10		land use perspective?
11	Λ.	Yes, however I do not think any of the routes in this project are unacceptable from
12		an environmental and land use perspective. I conclude that Route 179-C is
13		acceptable from this perspective.
1 4		
15	G.	ENGINEERING CONSTRAINTS
16	Q.	Are there any possible engineering constraints associated with this project?
17	Λ.	There are no specific engineering constraints that are not present in a usual
18		transmission line project. In my opinion, all of the possible constraints can be
19		adequately addressed by using design and construction practices and techniques that

⁸⁷ Compare Application, Attachment 1 at Exhibit E (Table 7-2) and Attachment JP-4 Part 1 at 000011 and 000015 and Part 3 with Attachment JP-4 Part 1 at 000019.

⁸⁸ Id.

⁸⁹ Id.

⁹⁰ Attachment JP-3 at 5.

	SOAH	Docket No. 473-23-21216 PUC Docket No. 55067 Page 39
1		are usual and customary in the electric utility industry.
2		
3	Q.	Are there any special circumstances in this project that would warrant an
4		extension beyond the seven-year limit for the energization of the lines?
5	Λ.	No, Oneor has not described any special circumstances that would merit an
6		extension of this limit for this project.
7		
8	H.	COSTS
9	Q.	What are Oncor's estimated costs of constructing the Proposed Project on each
10		of the proposed alternative routes?
11	Λ.	Oncor's Notice of Errata Attachment 2 and Attachment 5 Attachment 3 of the
12		application and Attachment JP-4 list Oncor's revised estimated costs of constructing
13		each proposed alternative route. The table below shows the total estimated cost for
l 4		each of the routes from least expensive to the most expensive. Each listed cost
15		includes \$33,510,000 for the proposed Oncor Ramhorn Hill Switch and \$41,348,000
16		for the proposed Oneor Dunham Switch.91
17		Route Estimated Cost of the Route and Substation Upgrades

Route	Estimated Cost of the Route and Substation Upgrades
<u>9629</u>	<u>\$243,190,000.00</u> <u>\$239,439,000.00</u>
<u>29</u> 191	<u>\$243,658,000.00</u> <u>\$241,023,000.00</u>
<u>29R</u> 96	<u>\$243,667,000.00</u> \$241,684,000.00
<u>191</u> 29R	<u>\$244,540,000.00</u> <u>\$241,866,000.00</u>
<u>1</u> 4	<u>\$244,559,000.00</u>
<u>143</u> 103	<u>\$244,567,000.00 \$242,803,000.00</u>
<u>142</u> 143	<u>\$244.882.000.00</u>
<u>103192</u>	<u>\$245,568,000.00</u> <u>\$242,990,000.00</u>
<u>21942</u>	<u>\$245,607,000.00</u> <u>\$243,168,000.00</u>
<u>42</u> 142	\$246,319,000.00 \$243,265,000.00

⁹¹ Application at 9.

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<u>67</u> 65	\$246,507,000.00 \$243,433,000.00
<u>192</u> 94	<u>\$246,507,000.00</u> <u>\$244,025,000.00</u>
<u>6572</u>	<u>\$246,584,000.00</u> <u>\$244,192,000.00</u>
94219	\$246,790,000.00 \$244,428,000.00
7267	<u>\$247,343,000.00</u> \$244,890,000.00
3619	\$248,199,000.00 \$246,198,000.00
14636	\$248,449,000.00 \$247,084,000.00
86146	<u>\$249,102,000.00</u> \$247,208,000.00
1668	\$249,296,000.00 \$247,292,000.00
1986	\$249,691,000.00 \$247,596,000.00
68179 C	\$249,930,000.00 \$247,602,000.00
179-C41	\$251,143,000.00 <u>\$248,257,000.00</u>
4116	\$251,408,000.00 \$248,672,000.00
<u>13179</u>	\$251,950,000.00 \$250,066,000.00
207-179-A	\$252,014,000.00 \$250,269,000.00
15207	\$253,312,000.00 \$250,508,000.00
21743	\$253,476,000.00 \$251,326,000.00
179217	\$253,607,000,00 \$252,451,000.00
179-A130R	\$253,810,000.00\$252,548,000.00
21815	\$254,235,000.00 \$252,688,000.00
<u>69</u> 43	\$254,368,000.00 \$252,781,000.00
130R69	\$254.520.000.00 \$253,103,000.00
61248	\$254,657,000.00 \$253,210,000.00
43179-B	\$254,898,000.00 \$253,360,000.00
20061	<u>\$254,991,000.00</u> \$253,542,000.00
14130	<u>\$255,042,000.00</u> \$254,031,000.00
1844	<u>\$255,233,000.00</u> <u>\$254,143,000.00</u>
10825	\$255,690,000.00 \$254,337,000.00
130200	\$256,003,000.00 \$254,370,000.00
7814	<u>\$256,095,000,00</u> <u>\$254,421,000.00</u>
44108	\$256,260,000.00 \$254,449,000.00
2518	\$256,454,000.00 \$254,612,000.00
179-B78	\$256,901,000,00 \$255,474,000,00
54138	\$256,933,000.00 \$255,710,000.00
170170	<u>\$256,973,000.00</u> <u>\$255,732,000.00</u>
22187	\$257,073,000.00 \$255,880,000.00
199221	<u>\$257,645,000.00</u> <u>\$256,048,000.00</u>
<u>87</u> 54	<u>\$257,681,000.00</u> \$256,096,000.00
2626	<u>\$258,420,000.00</u> <u>\$256,303,000.00</u>
13822R	<u>\$258,663,000.00</u> \$256,732,000.00
132R23	\$258,732,000.00\$256,991,000.00
22R199	\$258,849,000.00 \$257,024,000.00
<u>22</u> 71	<u>\$258,908,000.00</u> <u>\$257,336,000.00</u>
23132R	<u>\$259,108,000.00</u> <u>\$257,471,000.00</u>
7163	\$260,101,000.00 \$258,137,000.00

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13222	\$260,222,000.00 \$258,284,000.00
2424	\$260,470,000.00 \$258,353,000.00
137137	\$260,544,000.00 \$258,572,000.00
10186	\$260,584,000.00 \$258,836,000.00
176132	\$261,383,000.00 \$258,961,000.00
17510	\$261,846,000.00 \$259,469,000.00
186176	\$262,393,000.00 \$260,358,000.00
11116R	\$262.551,000.00 \$260,682,000.00
116R175	\$262,654,000.00 \$260,821,000.00
5858	\$263,418,000.00 \$261,067,000.00
11611	\$264,160,000.00 \$261,436,000.00
33116	\$264,792,000.00 \$262,188,000.00
9233	\$265,263,000.00 \$262,393,000.00
185185	\$265,694,000.00 \$262,510,000.00
6392	\$265,831,000.00 \$262,844,000.00
187-184	\$266,612,000.00 \$263,596,000.00
184187	\$266,780,000.00 \$265,371,000.00
178178	\$272.074.000.00 \$268.517.000.00
16470	\$272,722,000.00 \$270,086,000.00
164R164R	\$272.924,000.00 \$270,807,000.00
70164	\$273,627,000.00 \$272,098,000.00
154154	\$274,317,000.00 \$273,076,000.00
216216	\$278,954,000.00 \$276,982,000.00
2828	\$282,150,000.00 \$281,526,000.00
55	\$283,528,000.00 \$283,528,000.00
33	\$287,544,000.00 \$287,544,000.00
119119	\$301,618,000.00 \$299,849,000.00
117117	\$313,460,000.00 \$312,281,000.00

Yes. All the less expensive routes have more habitable structures within 500 feet of

1

2

3

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7 A.

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	SOAHI	H Docket No. 473-23-21216 PUC Docket Page 42	t No. 55067
1		their centerlines than Route 179-C.92 Route 179-C makes better use	of compatible
2		right-of-way as a percentage of its total length than Routes 142, 10	8, 65, 19, 192,
3		42, 86, 96, 191, 143, 68, 146, 219, 1, 72, and 67.93 Route 179-C	is shorter than
4		Routes 103, 94, 219, 65, 1, 191, 192, 72, 29R, 67, 19, 29, 68, 142, 1	43, and 146.94
5		Routes <u>16.</u> 142, 1, 19, 65, 67, 68, 72, 191, 192, 219, 94, 96, 103, 14	13, and 146 all
6		cross parks and recreational areas while Route 179-C does not. 95	
7			
8	Q.	Do Oncor's estimated costs of constructing the Proposed Project	appear to be
9		reasonable?	
10	Λ.	After reviewing Oncor's estimates, the estimated costs for the propo	sed alternative
11		routes are about what I would expect for a double-circuit 345-kV	, triple-circuit
12		capable, monopole project in this terrain. However, the reasonablene	ess of the final
13		installed cost of the completed project will be determined at a futu	re date in the
1 4		course of a transmission cost-of-service proceeding.	
15			
16	T.	MODERATION OF IMPACT ON THE AFFECTED COMM	UNITY AND
17		LANDOWNERS	
18	Q.	Do the Commission's rules address routing alternatives intended	l to moderate

 $^{^{92}}$ Compare Attachment JP-4 Part 1 at 000019 with Application, Attachment 1 at Exhibit E (Table 7-2) and Attachment JP-4 Part 3.

 $^{^{93}}$ Compare Attachment JP-4 Part 1 at 000019 with Application, Attachment 1 at Exhibit E (Table 7-2).

 $^{^{84}}$ Compare Attachment JP-4 Part 1 at 000019 with Application, Attachment 1 at Exhibit E (Table 7-2) and Attachment JP-4 Part 3.

 $^{^{85}}$ Compare Attachment JP-4 Part 1 at 000019 with Application, Attachment 1 at Exhibit E (Table 7-2).

	SOЛН	Docket No. 473-23-21216 PUC Docket No. 55067 Page 43
1		the impact on landowners?
2	Α.	Yes. Under 16 TAC § 25.101(b)(3)(B), "the line shall be routed to the extent
3		reasonable to moderate the impact on the affected community and landowners
4		unless grid reliability and security dictate otherwise."
5		
6	Q.	Subsequent to filing their application, has Oncor made or proposed any routing
7		adjustments to accommodate landowners?
8	Λ.	While new routing segments have been introduced, none of been included in any
9		proposed routes at the time of my testimony, as they cannot be utilized until the
10		requestor provides proof of written consent by directly affected landowners.96 Oncor
11		has introduced Routes 179-A, 179-B, 179-C, 22R, 29R, 116R, 130R, 132R, and
12		164R in response to a request for information request by intervenor Edgar Brent
13		Watkins and Mary Ann Livengood.97
1 4		
15	Q.	Has Oncor proposed any specific means by which it will moderate the impact
16		of the Proposed Project on landowners or the affected community other than
17		adherence to the Commission's orders, the use of good utility practices,
18		acquisition of and adherence to the terms of all required permits, and what you
19		have discussed above?
20	Λ.	No, not to my knowledge.
21		

⁹⁶ Attachment JP-4 Part 1 at 000023.

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⁹⁷ See Attachment JP-4 Part 1.

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J.	RIGHT-OF-WAY
Q.	Do the Commission's rules address routing along existing corridors?
Α.	Yes. The following factors are to be considered under 16 TAC § $25.101(b)(3)(B)$:
	(i) whether the routes utilize existing compatible rights-of-way, including the
	use of vacant positions on existing multiple-circuit transmission lines;
	(ii) whether the routes parallel existing compatible rights-of-way;
	(iii) whether the routes parallel property lines or other natural or cultural features;
	and
	(iv) whether the routes conform with the policy of prudent avoidance.
1.	USE AND PARALLELING OF EXISTING, COMPATIBLE RIGHT-OF-
	WAY (INCLUDING APPARENT PROPERTY BOUNDARIES)
Q.	Describe how Oncor proposes to parallel or utilize compatible rights-of-way
	for the Proposed Project.
Α.	Each proposed alternative route parallels apparent property boundaries and parallels
	or utilizes existing compatible rights-of-way. The percentage of Route 179-C's
	length that parallels or utilizes existing compatible right-of-way and apparent
	property boundaries is approximately 23.25% of its length. The table below
	summarizes the overall length, the length parallel to compatible rights-of-way or to
	property boundaries, and the total percentage of parallel rights-of-way used by the
	proposed alternative routes. Existing pipeline rights-of-way are not listed as
	compatible rights-of-way under 16 TAC § 25.101(b)(3)(B).
	Q. A. I. Q.

Route Length (Feet)	Length Parallel to Right- of-Way (Feet)	Percentage
---------------------	--	------------

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117	119,593	47,414	39.65%
116R	118,307	44,465	37.58%
63	107,230	38,148	35.58%
132R	118,016	41,734	35.36%
130R	116,821	40,541	34.70%
154	119,463	40,543	33.94%
11	108,190	36,675	33.90%
116	119,030	40,204	33.78%
15	105,547	34,920	33.08%
61	106,109	34,948	32.94%
78	106,044	34,900	32.91%
10	107,966	35,263	32.66%
137	111,599	36,161	32.40%
164R	114,759	36,646	31.93%
13	108,924	34,587	31.75%
119	118,138	37,496	31.74%
3	108,960	34,445	31.61%
132	118,739	37,473	31.56%
184	117,406	36,732	31.29%
24	106,244	33,131	31.18%
130	117,544	36,281	30.87%
187	115,987	35,068	30.23%
23	109,621	32,798	29.92%
22R	109,621	32,798	29.92%
178	119,040	35,525	29.84%
199	110,007	32,658	29.69%
186	114,792	33,876	29.51%
216	120,969	35,590	29.42%
92	119,760	35,211	29.40%
71	116,232	34,121	29.36%
29R	113,597	32,501	28.61%
138	111,258	31,809	28.59%
18	111,183	31,685	28.50%
16	105,124	29,931	28.47%
33	116,619	32,991	28.29%

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164	115,482	32,385	28.04%
26	106,045	29,554	27.87%
28	110,319	30,367	27.53%
5	108,537	29,455	27.14%
70	117,115	31,498	26.89%
14	111,501	29,931	26.84%
25	105,821	28,141	26.59%
179-A	114,174	30,322	26.56%
200	106,206	28,002	26.37%
175	117,796	30,635	26.01%
36	108,375	28,120	25.95%
185	117,146	30,321	25.88%
22	110,345	28,537	25.86%
29	114,320	28,240	24.70%
170	116,686	28,046	24.04%
218	111,817	26,298	23.52%
94	111,175	25,989	23.38%
179-C	110,373	25,665	23.25%
142	116,653	27,048	23.19%
103	110,806	25,646	23.14%
69	118,810	27,400	23.06%
217	112,061	25,480	22.74%
179	114,898	26,061	22.68%
108	118,176	26,791	22.67%
65	111,587	25,198	22.58%
54	111,219	25,023	22.50%
19	114,265	25,511	22.33%
44	106,411	23,690	22.26%
192	112,247	24,786	22.08%
41	110,686	24,374	22.02%
42	108,034	23,769	22.00%
179-B	116,750	25,665	21.98%
			31 (100/
86	108,531	23,749	21.88%
86 43	108,531 109,788	23,749 23,357	21.88%

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	-		
176	118,808	25,145	21.16%
87	110,285	23,337	21.16%
191	112,023	23,374	20.87%
58	107,108	21,901	20.45%
143	116,661	23,724	20.34%
68	115,997	23,326	20.11%
207	109,117	21,840	20.02%
146	118,637	23,131	19.50%
219	111,226	20,193	18.15%
1	111,751	20,181	18.06%
72	112,248	20,161	17.96%
67	113,673	20,376	17.93%
221	111,588	19,253	17.25%
	· · ·		

1

As the chart shows, Route 179-C is the 28th shortest route and has the 53rd highest
percentage of compatible right-of-way compared to the other proposed alternative
routes.

5

6	Q.	Could you briefly discuss the routes that are shorter and utilize a higher
7		percentage of compatible right-of-way and why Route 179-C is still preferred?
8	Λ.	Yes. Route 179-C has less habitable structures within 500 feet of its centerline and
9		is less expensive than Routes 44, 58, 207, 43, 87, 117, 116R, 63, 132R, 130R, 154,
10		11, 116, 15, 61, 78, 10, 137, 13, 119, 3, 132, 184, 24, 130, 187, 23, 22R, 178, 199,
11		186, 216, 92, 71, 138, 18 , 16 , 33, 26, 28, 5, 70, 14, 25, 179-A, 200, 175, 185, 22,
12		170, and 218. ⁹⁸ Route 179-C is less expensive and shorter than Routes 164 and

⁹⁸ Compare Attachment JP-4 Part 1 at 000019 and <u>Oneor's Notice of Errata at Attachment 5</u> 24 with
Application, Attachment 1 at Exhibit E (Table 7-2) and Oneor's Notice of Errata at Attachment 2 and
Attachment 5Attachment 3 and Attachment JP-4 Part 1 at 000013 and 000015, Part 2, and Part 3.

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SOAH	Docket No. 473-23-21216 PUC Docket No. 55067 Page 48
	164R.99 Route 179-C has fewer habitable structures within 500 feet of its centerline
	and is shorter than Routes 29R, 36, 29, and 94.100 Routes 22R, 10, 11, 13, 14, 15,
	16, 18, 22, 23, 24, 25, 26, 61, 63, 78, 199, 200, 130R, 132R, 130, 132, 137, 138,
	116, 116R, 28, 3, 5, 164, 164R, 117, 119, 70, 186, 187, 218, 170, and 92 cross parks
	and recreational areas while Route 179-C does not.101 Route 16 has more habitable
	structures within 500 feet of its centerline than Route 179-C.102
2.	PARALLELING OF NATURAL OR CULTURAL FEATURES
Q.	Describe how Oncor proposes to parallel natural or cultural features for the
	Proposed Project.
Λ.	None of the proposed alternative routes parallel natural or cultural features.
К.	PRUDENT AVOIDANCE
Q.	Define prudent avoidance.
Α.	Prudent avoidance is defined by 16 TAC § $25.101(a)(6)$ as follows: "The limiting
	of exposures to electric and magnetic fields that can be avoided with reasonable
	investments of money and effort."
	2. Q. Л. К. Q.

⁹⁹ Compare Attachment JP-4 Part 1 at 000019 and <u>Oncor's Notice of Errata at Attachment 524 with</u>		Formatted: Font: 10 pt
Application, Attachment 1 at Exhibit E (Table 7-2), Oncor's Notice of Errata at Attachment 2 and Attachment	······	Formatted: Font: 10 pt
<u>5. Attachment 3</u> and Attachment JP-4-Part 2 and Part 3.	1	Formatted: Font: 10 pt
¹⁰⁰ Compare Attachment JP-4 Part 1 at 000019 with Application, Attachment 1 at Exhibit E (Table	Ì	Formatted: Font: 10 pt
7-2) and Attachment JP-4 Part 3.		
¹⁰¹ Id.	/	Formatted: Font: 10 pt, Italic
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¹⁰² Id.,

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AUGUST 14, 2023

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1	Q.	How can exposure to electric and magnetic fields be limited when routing
2		transmission lines?
3	Α.	Primarily by proposing alternative routes that would minimize, to the extent
4		reasonable, the number of habitable structures located in close proximity to the
5		routes.
6		
7	Q.	How many habitable structures are located in close proximity to each of the
8		proposed alternative routes?
9	Α.	The table below ranks the number of habitable structures that are within 500 feet of
10		the centerline of the proposed alternative routes in this project.

11

Route	Number of habitable structures
164	93
164R	96
179	97
179-С	98
179-В	98
179-A	100
175	108
176	110
184	112
185	112
29	131
5	132
28	133
29R	134
154	145
178	145
71	146
3	151
36	155
42	158
86	158
207	160
41	168

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1	185
65	188
72	188
	188
<u>14</u> 16	
	191
61	191
13	193
18	193
200	193
199	195
22	197
43	197
87	197
25	198
23	200
146	200
22R	200
26	202
116	203
130	204
132	204
119	205
116R	206
130R	207
132R	207
15	210
78	210
44	214
24	217
63	217
143	220
221	220
58	221
142	223
218	226
137	228
138	231
69	234
68	240
67	240
216	252 261
117	261
70	266
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170	282
103	287
96	290
217	293
94	294
92	319
19	320
219	327
10	348
11	352
186	364
187	364
191	396
192	400

1 There are 98 habitable structures that are within 500 feet of the centerline of Route 2 179-C which is tied for the 4th least of any route. 3 Could you briefly discuss the routes with an equal or fewer number of impacted 4 Q. 5 habitable structures and why Route 179-C is still preferred? Yes. Routes 179, 179-B, 164R, and 164 are all longer and more expensive than 6 Λ. 7 Route 179-C.¹⁰³ Route 179-C makes better use of compatible right-of-way as a 8 percentage of its total length than Routes 179 and 179-B. Routes 164 and 164R cross

- 9 park and recreational areas while Route 179-C does not.¹⁰⁴
- 10

11

Q. Do you conclude that Oncor's proposed alternative routes have minimized, to

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¹⁰⁴ Compare Attachment JP-4 Part 1 at 000019 with Application, Attachment 1 at Exhibit E (Table 7-2) and Attachment JP-4 Part 3.

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¹⁰³ Compare Attachment JP-4 Part 1 at 000019 and <u>Oncor's Notice of Errata at Attachment 5-24</u> with Application, Attachment 1 at Exhibit E (Table 7-2) and <u>Oncor's Notice of Errata at Attachment 2 and</u> <u>Attachment 5</u>, Attachment 3 and Attachment JP-4 Part 1 at 000015-and 000017, Part 2, and Part 3.

	SOAH	Docket No. 473-23-21216 PUC Docket No. 55067 Page 52
1		the extent reasonable, the number of habitable structures located in close
2		proximity to the routes?
3	A.	Oncor has designed its proposed segments in such a way as to minimize, to the
4		extent reasonable, the number of habitable structures located in close proximity to
5		the routes. However, some routes perform better in this area than others.
6		
7	VI.	CONCLUSION
8	Q.	In your opinion, is any one of the proposed alternative routes better than <u>all</u> of
9		the other routes in <u>all</u> respects?
10	Λ.	No.
11		
12	Q.	If no proposed alternative route is better than all of the others in all respects,
13		why have you recommended Route 179-C instead of the other proposed
1 4		alternative routes?
15	A.	In summary, after analyzing all the factors that the Commission must consider under
16		PURA § 37.056 and 16 TAC § 25.101, I conclude that Route 179-C best meets the
17		criteria of PURA and the Commission's rules because:
18		(1) Route 179-C is the <u>22nd</u> 21* -least expensive proposed route at Formatted: Superscript
19		251,143,000.00247,602,000.00, a $7,485,000.008,163,000.00$ or
20		3.273.41% difference from the least expensive route;
21		(2) Route 179-C is the 29 th shortest route at 110,373 feet, a 5,249 feet or 5%
22		difference from the shortest route;
23		(3) Route 179-C is tied for the 4 th least amount of habitable structures within

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1		500 feet of its centerline with 98, five more than the route with the least
2		number of habitable structures;
3		(4) Route 179-C has none of its length across parks or recreation areas; and
4		(5) Route 179-C has none of its length across potential wetlands.
5		Route 179-C, like all of the proposed alternative routes, has some advantages and
6		some disadvantages as I have discussed in my testimony. However, I consider Route
7		179-C overall to have the most advantages and to be superior to the other proposed
8		alternative routes.
9		
10	Q.	Does this conclude your testimony?
11	Λ.	Yes

DIRECT TESTIMONY OF JOHN POOLE, P.E.

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APPLICATION OF ONCOR ELECTRIC DELIVERY COMPANY LLC TO AMEND ITS CERTIFICATE OF CONVENIENCE AND NECESSITY FOR THE RAMHORN HILL TO DUNHAM 345 KV TRANSMISSION LINE IN DENTON AND WISE COUNTIES

BEFORE THE STATE OFFICE

OF

ADMINISTRATIVE HEARINGS



DIRECT TESTIMONY OF

JOHN POOLE, P.E.

INFRASTRUCTURE DIVISION

PUBLIC UTILITY COMMISSION OF TEXAS

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ATTACHMENTS

JP-1	Qualifications of John Poole
JP-2	List of Previous Testimony
JP-3	Letter from Texas Parks and Wildlife Department dated July 19, 2023
JP-4	Response of Oncor Electric Delivery Company LLC to Watkins' First Request for Information

1	I.	STATEMENT OF QUALIFICATIONS
2		
3	Q.	Please state your name, occupation and business address.
4	А.	My name is John Poole. I am employed by the Public Utility Commission of Texas
5		(Commission) as an Engineer within the Infrastructure Division. My business
6		address is 1701 North Congress Avenue, Austin, Texas 78701.
7		
8	Q.	Please briefly outline your educational and professional background.
9	Α.	I have a Bachelor of Science degree in Electrical Engineering. I completed my
10		degree in December of 2014 and have been employed at the Commission since
11		February of 2015. A more detailed resume is provided in Attachment JP-1.
12		
13	Q.	Are you a registered professional engineer?
14	Α.	Yes, I am a registered Professional Engineer in Texas. My member number
15		is 133982.
16		
17	Q.	Have you previously testified as an expert before the Commission?
18	Α.	Yes. A list of previous testimony is provided in Attachment JP-2.
19		
20	II.	SCOPE OF TESTIMONY
21		
22	Q.	What is the purpose of your testimony in this proceeding?
23	Α.	The purpose of my testimony is to present Commission Staff's recommendations

1		concerning the application of Oncor Electric Delivery Company, LLC (Oncor) to
2		amend its Certificate of Convenience and Necessity (CCN) to construct a new
3		double-circuit 345 kilovolt (kV) transmission line to be built on triple-circuit
4		capable steel monopole structures. The structures will initially support two 345-kV
5		circuits, with two conductors per phase, with a vacant position to accommodate an
6		additional 138-kV circuit in the future. The new transmission line will begin at the
7		proposed Oncor Ramhorn Hill Switch, to be located approximately 2 miles south of
8		the intersection of United States Highway ("US") 287 and State Highway 114 near
9		Rhome, Texas in Wise County, Texas. The transmission line will then extend 20 to
10		23 miles, depending on the route, in an easterly direction terminating at the proposed
11		Oncor Dunham Switch that will be located approximately 1.4 miles southeast of the
12		intersection of US 377 and Farm-to-Market 1171 in Flower Mound, Texas in Denton
13		County, Texas (Proposed Project).1
14		
15	Q.	What is the scope of your testimony?
16	A.	The scope of my testimony is to provide Commission Staff's recommendation
17		regarding the need for the project and regarding selection of routes from among the
18		proposed alternative routes presented by Oncor.
19		
20	Q.	What are the statutory requirements that a utility must meet to amend its CCN
21		to construct a new transmission line?

¹ Application of Oncor Electric Delivery LLC to Amend its Certificate of Convenience and Necessity for the Ramhorn Hill- Dunham 345-kV Transmission Line in Denton and Wise Counties at 4 (Jun. 8, 2023). (Application).

1	A.	Section 37.0:	56(a) of	f the Public Utility Regulatory Act (PURA) ² states that the
2		Commission	may ap	prove an application for a CCN only if the Commission finds
3		that the CCN	is nece	essary for the service, accommodation, convenience, or safety
4		of the public.	Further	r, PURA provides that the Commission shall approve, deny, or
5		modify a rec	juest fo	or a CCN after considering the factors specified in PURA
6		§ 37.056(c), v	which a	re as follows:
7		(1)	The a	dequacy of existing service;
8		(2)	The n	eed for additional service;
9		(3)	The ef	ffect of granting the certificate on the recipient of the certificate
10			and a	ny electric utility serving the proximate area; and
11		(4)	Other	factors, such as:
12			(A)	Community values;
13			(B)	Recreational and park areas;
14			(C)	Historical and aesthetic values;
15			(D)	Environmental integrity;
16			(E)	the probable improvement of service or lowering of cost to
17				consumers in the area if the certificate is granted, including
18				any potential economic or reliability benefits associated with
19				dual fuel and fuel storage capabilities in areas outside the
20				ERCOT power region; and
21			(F)	To the extent applicable, the effect of granting the certificate
22				on the ability of this state to meet the goal established by

 $^{^{2}\,}$ Public Utility Regulatory Act, Tex. Util. Code Ann. \$\$ 11.001-66.016 (PURA).

		~
1		PURA § 39.904(a).
2		
3	Q.	Do the Commission's rules provide any instruction regarding routing
4		criteria?
5	Α.	Yes. 16 Texas Administrative Code (TAC) § 25.101(b)(3)(B) requires that an
6		application for a new transmission line address the criteria in PURA § 37.056(c),
7		and that upon considering those criteria, engineering constraints and costs, the line
8		shall be routed to the extent reasonable to moderate the impact on the affected
9		community and landowners unless grid reliability and security dictate otherwise.
10		The following factors shall be considered in the selection of Oncor's proposed
11		alternative routes:
12		(i) Whether the routes parallel or utilize existing compatible rights-of-
13		way for electric facilities, including the use of vacant positions on
14		existing multiple-circuit transmission lines;
15		(ii) Whether the routes parallel or utilize other existing compatible
16		rights-of-way, including roads, highways, railroads, or telephone
17		utility rights-of-way;
18		(iii) Whether the routes parallel property lines or other natural or cultural
19		features; and
20		(iv) Whether the routes conform with the policy of prudent avoidance.
21		
22	Q.	What issues identified by the Commission must be addressed in this docket?
23	A.	In the Order of Referral and Preliminary Order filed on June 9, 2023, the

- 1 Commission identified the following issues that must be addressed:
- 2 1. Is the applicant's application to amend its CCN adequate? Does the 3 application contain an adequate number of reasonably differentiated alternative routes to conduct a proper evaluation? In answering this question, 4 5 consideration must be given to the number of proposed alternatives, the 6 locations of the proposed transmission line, and any associated proposed transmission facilities that influence the location of the line. Consideration 7 8 may also be given to the facts and circumstances specific to the geographic 9 area under consideration and to any analysis and reasoned justification 10 presented for a limited number of alternative routes. A limited number of 11 alternative routes is not in itself a sufficient basis for finding an application 12 inadequate when the facts and circumstances or a reasoned justification 13 demonstrates a reasonable basis for presenting a limited number of 14 alternatives. If an adequate number of routes is not presented in the 15 application, the ALJ must allow the applicant to amend the application and to provide proper notice to affected landowners; however, if the applicant 16 17 chooses not to amend the application, then the ALJ may dismiss the case 18 without prejudice. 19 2. Did the applicant provide notice of the application in accordance with 16
- 20 TAC § 22.52(a)(1), (2), and (3)?
- 21 3. Did the applicant provide notice of the public meeting in accordance with 16
 22 TAC § 22.52(a)(4)?

1	4.	What were the principal concerns expressed in the questionnaire responses
2		received at or after any public meetings held by the applicant regarding the
3		proposed transmission facilities?
4	5.	Taking into account the factors set out in the Public Utility Regulatory Act
5		(PURA) § 37.056(c), are the proposed transmission facilities necessary for
6		the service, accommodation, convenience, or safety of the public within the
7		meaning of PURA § 37.056(a)? In addition, please address the following
8		issues:
9		a. How do the proposed transmission facilities support the reliability
10		and adequacy of the interconnected transmission system?
11		b. Do the proposed transmission facilities facilitate robust wholesale
12		competition?
13		c. What recommendation, if any, has an independent organization, as
14		defined in PURA § 39.151, made regarding the proposed
15		transmission facilities?
16		d. Are the proposed transmission facilities needed to interconnect a new
17		transmission service customer?
18	6.	In considering the need for additional service under PURA § 37.056(c)(2)
19		for a reliability transmission project, please address the historical load,
20		forecasted load growth, and additional load currently seeking
21		interconnection.
22	7.	Are the proposed transmission facilities the better option to meet this need
23		when compared to using distribution facilities? If the applicant is not subject

1 to the unbundling requirements of PURA § 39.051, are the proposed 2 transmission facilities the better option to meet the need when compared to 3 a combination of distribution facilities, distributed generation, and energy 4 efficiency? In answering this issue, if the proposed transmission facilities 5 include a transmission line to address distribution load growth, please 6 address the following:

- a. The data used to calculate the applicant' s load-growth projections that
 support the need for a transmission-line solution;
- 9 b. The date, origin, and relevance of the data used to calculate the applicant's
 10 load-growth projections;
- c. The assumptions made and relied on to generate the load-growth 11 12 projections, including but not limited to the assumed rates of load growth, the factors (if any) applied to calculate forecasted loads for new 13 developments in the need study area, and adjustments (if any) made to 14 15 forecasted loads to account for customer load served by any other electric 16 utilities also providing electric service within the applicant's need study area; 17 d. The location, described in writing and depicted on a map, of the 18 boundaries of the need study area and all existing transmission facilities 19 (including proposed substations or switching stations) within the need study 20area used for the load-growth projections;
- e. If included in the applicant's load-growth projections, the nature, scope,
 and location depicted on a map of the following loads:
- 23

i. the applicant's current consumers,

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1 ii. the applicant's pending load request, and 2 iii. future development projects included in the applicant's load-3 growth projections; f. The location depicted on a map of the existing load center, the load center 4 5 including existing load and currently requested loads, and the load center including existing load, currently requested loads, and the applicants' 6 projected load growth; 7 g. The location and identity of any existing transmission lines, whether 8 9 inside or outside the need study area, that are as close as, or closer to, any 10 load-serving substation proposed in this application compared to the existing 11 transmission line or substation used for the proposed interconnection or tap; 12 h. The location and identity of any existing substations with remaining transformer capacity, whether inside or outside the need study area, that are 13 14 as close as, or closer to, any load-serving substation proposed in this 15 application compared to the existing transmission line or substation used for 16 the proposed interconnection or tap; 17 i. If other utilities are providing distribution service within the applicant's 18 need study area, the location and nature of the other utilities' distribution 19 facilities described in writing and depicted on a map; 20j. An analysis of the feasibility, design, and cost effectiveness of a 21 distribution-voltage level alternative that uses the same point(s) of 22 interconnection or tap and endpoint(s) and that is routed along the same

alternative routes as the transmission-level radial line that is requested to be
 approved;

k. The applicant's planning study or other reports reflecting the nature and
scope of new-build distribution facilities or existing distribution-facility
upgrades necessary for projected load growth anticipated before the
projected load growth that is the basis for this application; and

1. A comparative cost analysis between all new-build distribution facilities
or existing distribution-facility upgrades and the proposed radial
transmission facilities that segregates the distribution-alternative costs to
support the pending load requests and specific future development loads
from general load growth in the need study area.

- 8. Weighing the factors set forth in PURA § 37.056(c) and 16 TAC
 § 25.101(b)(3)(B), which proposed transmission-line route is the best
 alternative?
- Are there alternative routes or configurations of facilities that would have a
 less negative effect on landowners? What would be the incremental cost of
 those routes or configurations of facilities?
- 18 10. If alternative routes or configurations of facilities are considered because of
 individual landowners' preferences, please address the following issues:
- a. Have the affected landowners made adequate contributions to offset anyadditional costs associated with the accommodations?
- b. Have the accommodations to landowners diminished the electricefficiency of the line or reliability?

- 111.Are the proposed transmission facilities necessary to meet state or federal2reliability standards?
- 3 12. What is the estimated cost of the proposed transmission facilities to 4 consumers?
- 5 13. What is the estimated congestion cost savings for consumers that may result 6 from the proposed transmission facilities considering both current and future 7 expected congestion levels and the ability of the proposed transmission 8 facilities to reduce those congestion levels?
- 9 14. Are the best management practices for construction and operating 10 transmission facilities that are standard in the Commission's electric CCN 11 orders adequate? If not, what additional practices should be required for the 12 proposed transmission facilities?
- 13 15. For each additional practice proposed, please address the following:
- a. What is the additional cost to design, construct, and operate the proposed
 transmission facilities, including the cost to consumers?
- 16 b. What benefit, if any, will the proposed practice provide?
- 17 c. What effect, if any, will the proposed practice have on the reliability of18 the transmission system?
- d. What effect, if any, will the proposed practice have on the design,
 construction, or operation of the proposed transmission facilities?
- e. What effect, if any, will the proposed practice have on the expected dateto energize the proposed transmission facilities?

1	16.	Did the Texas Parks and Wildlife Department provide any recommendations
2		or informational comments regarding this application in accordance with
3		section 12.0011(b) of the Texas Parks and Wildlife Code? If so, how should
4		the Commission respond through its order?
5	17.	What permits, licenses, plans, or permission will be required for construction
6		and operation of the proposed transmission facilities? If any alternative route
7		requires permission or an easement from a state or federal agency, please
8		address in detail the following:
9		a. What agency is involved, and what prior communication has the applicant
10		had with the agency regarding the proposed transmission facilities?
11		b. Has the agency granted the required permission or easement? If not, when
12		is a decision by the agency expected?
13		c. What contingencies are in place if the agency does not grant the required
14		permission or easement or if the process to obtain the required permission or
15		easement would materially affect the estimated cost, proposed design plans,
16		or anticipated timeline to construct the proposed transmission facilities?
17	18.	Is any part of the proposed transmission facilities located within the coastal
18		management program boundary as defined in 31 TAC § 27.1(a)? If so, please
19		address the following issues:
20		a. Do the facilities comply with the goals and applicable policies of the
21		Coastal Management Program in accordance with 16 TAC § 25.102(a)?
22		b. Will the facilities have any direct and significant effects on any of the
23		applicable coastal natural resource areas specified in 31 TAC § 26.3(b)?

1		19. Are the circumstances for this line such that the seven-year limit discussed
2		in section III of this Order should be changed?
3		20. Will anything occur during construction that will preclude or limit a
4		generator from generating or delivering power or that will adversely affect
5		the reliability of the ERCOT system?
6		21. If complete or partial agreement of the parties is reached on a route that relies
7		on modifications to the route segments as noticed in the application, please
8		address the following issues:
9		a. Did the applicant comply with the additional notice requirements of 16
10		TAC § 22.52(a)(2) and (a)(3)(C)?
11		b. Was written consent obtained from landowners directly affected by the
12		proposed modifications to the route segments?
13		
14	Q.	Which issues in this proceeding have you addressed in your testimony?
15	Α.	I have addressed the issues from the Order of Referral and Preliminary Order and
16		the requirements of PURA § 37.056 and 16 TAC § 25.101.
17		
18	Q.	If you do not address an issue or position in your testimony, should that be
19		interpreted as Staff supporting any other party's position on that issue?
20	Α.	No. The fact that I do not address an issue in my testimony should not be considered
21		as agreeing, endorsing, or consenting to any position taken by any other party in this
22		proceeding.
23		

1 0. What have you relied upon or considered to reach your conclusions and make 2 your recommendation? I have relied upon my review and analysis of the data contained in Oncor's 3 Α. 4 application and the application's accompanying attachments, including the 5 Environmental Assessment and Alternative Route Analysis (EA) prepared by Halff Associates, Inc. (Halff).³ I have also relied upon my review of the direct testimonies 6 7 and statements of position filed in this proceeding by or on behalf of Oncor and the 8 intervenors. I have also relied upon my review of the responses to requests for 9 information, and the letters from the Texas Parks and Wildlife Department (TPWD) 10 to Ms. Marisa Wagley, dated July 19, 2023.⁴ 11 12 13 III. CONCLUSIONS AND RECOMMENDATIONS 14 15 Based on your evaluation of Oncor's application and other relevant material, Q. 16 what conclusions have you reached regarding the application and the Proposed **Project?** 17 18 1. I conclude that the application is adequate and that Oncor's proposed 19 alternative routes are adequate in number and geographic diversity. 20 2. I conclude that the application complies with the notice requirements in 16 21 TAC § 22.52(a).

³ Application at Attachment 1.

Attachment JP-3.

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- I conclude that, taking into account the factors set out in PURA § 37.056(c),
 the Proposed Project is necessary for the service, accommodation,
 convenience and safety of the public.
- 4 4. I conclude that the Proposed Project is the best option to meet the need when
 5 compared with other alternatives.
- 5. I conclude that Route 179-C is the best route when weighing, as a whole, the
 factors set forth in PURA § 37.056(c)(4) and in 16 TAC § 25.101(b)(3)(B).
- 6. I conclude that TPWD provided mitigation measures regarding the application, and that the mitigation measures provided on pages 18 through 20 of my testimony, as well as mitigation measures mentioned in the environmental concerns on pages 34 through 38 of my testimony, are sufficient to address TPWD's mitigation recommendations. I also conclude that Oncor has the resources and procedures in place in order to accommodate the mitigation recommendations.
- 15
- 16

Q. What recommendation do you have regarding Oncor's application?

A. I recommend that the Commission approve Oncor's application to amend its CCN
in order to construct a new double-circuit 345-kV transmission line to be built on
triple-circuit capable steel monopole structures along with the proposed Oncor
Ramhorn Hill 345-kV Switch in Wise County and the proposed Oncor Dunham
Switch in Denton County. I also recommend that the Commission order Oncor to
construct the Proposed Project on Route 179-C (Segments A0, A4, B1, B61, B62,
C1, C21, C23, C7, E2, E1, E6, G1, G3, H41, H42, H8, I8, J3, K1, L5, L4, L3, L2,

7

- M1, M5, R2, R5, U3, V3, V4, and Z). I further recommend that the Commission
 include in its order approving Oncor's application the following paragraphs in order
 to mitigate the impact of the Proposed Project:
 Oncor shall conduct surveys, if not already completed, to identify pipelines
 that could be affected by the transmission lines and coordinate with pipeline
 owners in modeling and analyzing potential hazards because of alternating
 - current interference affecting pipelines being paralleled.
- 8 2. If Oncor encounters any archeological artifacts or other cultural resources 9 during project construction, work must cease immediately in the vicinity of 10 the artifact or resource, and the discovery must be reported to the Texas 11 Historical Commission. In that situation, Oncor must take action as directed 12 by the Texas Historical Commission.
- 3. Oncor must follow the procedures to protect raptors and migratory birds as 13 14 outlined in the following publications: Reducing Avian Collisions with 15 Power Lines: The State of the Art in 2012, Edison Electric Institute and 16 Avian Power Line Interaction Committee, Washington, D.C. 2012; Suggested Practices for Avian Protection on Power Lines: The State of the 17 18 Art in 2006, Edison Electric Institute, Avian Power Line Interaction 19 Committee, and the California Energy Commission, Washington, D.C. and 20 Sacramento, CA 2006; and Avian Protection Plan Guidelines, Avian Power 21 Line Interaction Committee and United States Fish and Wildlife Service, 22 April 2005. Oncor must take precautions to avoid disturbing occupied nests 23 and take steps to minimize the burden of construction on migratory birds

1

2

Page 19

during the nesting season of the migratory bird species identified in the area of construction.

- 4. Oncor must exercise extreme care to avoid affecting non-targeted vegetation
 or animal life when using chemical herbicides to control vegetation within
 rights-of-way. Oncor must ensure that the use of chemical herbicides to
 control vegetation within the rights-of-way complies with rules and
 guidelines established in the Federal Insecticide Fungicide and Rodenticide
 Act and with Texas Department of Agriculture regulations.
- 9 5. Oncor must minimize the amount of flora and fauna disturbed during 10 construction of the transmission line, except to the extent necessary to establish appropriate right-of-way clearance for the transmission line. In 11 12 addition, Oncor must revegetate, using native species and must consider landowner preferences and wildlife needs in doing so. Furthermore, to the 13 14 maximum extent practical, Oncor must avoid adverse environmental 15 influence on sensitive plant and animal species and their habitats, as 16 identified by the Texas Parks and Wildlife Department and the United States 17 Fish and Wildlife Service.
- 6. Oncor must implement erosion control measures as appropriate. Erosion control measures may include inspection of the right-of-way before and during construction to identify erosion areas and implement special precautions as determined necessary. Oncor must return each affected landowner's property to its original contours and grades unless otherwise agreed to by the landowner or the landowner's representative. Oncor is not

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1	required to restore the original contours and grades where a different contour
2	or grade is necessary to ensure the safety or stability of the project's
3	structures or the safe operation and maintenance of the lines.

- 4 7. Oncor must use best management practices to minimize the potential
 5 impacts to migratory birds and threatened or endangered species.
- 8. Oncor must cooperate with directly affected landowners to implement minor
 deviations from the approved route to minimize the burden of the
 transmission line. Any minor deviations from the approved route must only
 directly affect landowners who were sent notice of the transmission line in
 accordance with 16 TAC § 22.52(a)(3) and landowners that have agreed to
 the minor deviation.
- 9. Oncor must report the transmission line approved by the Commission on its
 monthly construction progress reports before the start of construction to
 reflect the final estimated cost and schedule in accordance with 16 TAC
 § 25.83(b). In addition, Oncor must provide final construction costs, with
 any necessary explanation for cost variance, after completion of construction
 when all costs have been identified.
- 18

19Q.Does your recommended route differ from the route that Oncor believes best20addresses the requirements of PURA and the Commission's rules?

- 21 A. Yes. Oncor identified Route 179 as the route that best addresses the requirements of
- 22 PURA and the Commission's rules.⁵

⁵ Application at 24.

1 2 IV. **PROJECT JUSTIFICATION** 3 **DESCRIPTION OF THE PROJECT** 4 A. 5 О. Please describe the Proposed Project. 6 The Proposed Project will consist of constructing a new double-circuit 345 kilovolt Α. 7 (kV) transmission line to be built on triple-circuit capable steel monopole structures. The structures will initially support two 345-kV circuits, with two conductors per 8 9 phase, with a vacant position to accommodate an additional 138-kV circuit in the 10 future. The new transmission line will begin at the proposed Oncor Ramhorn Hill 11 Switch, to be located approximately 2 miles south of the intersection of United 12 States Highway ("US") 287 and State Highway 114 near Rhome, Texas in Wise 13 County, Texas. The transmission line will then extend 20 to 23 miles, depending on 14 the route, in an easterly direction terminating at the proposed Oncor Dunham Switch 15 that will be located approximately 1.4 miles southeast of the intersection of US 377 16 and Farm-to-Market 1171 in Flower Mound, Texas in Denton County, Texas.⁶ 17 18 Does Oncor's application contain a number of proposed alternative routes **Q**. sufficient to conduct a proper evaluation? 19 20A. Yes. 21 22 Q. Is the Proposed Project located within the incorporated boundaries of any

⁶ Application at 4.

1		municipality?
2	A.	Yes. Portions of all of the proposed alternative routes would be constructed within
3		the incorporated boundaries of the City of Flower Mound, Texas and the City of
4		Northlake, Texas.7 Additionally, portions of some routes will be constructed within
5		the incorporated boundaries of the City of Justin, Texas; the City of New Fairview,
6		Texas; the City of Rhome, Texas; and the City of Fort Worth, Texas.8
7		
8	В.	TEXAS COASTAL MANAGEMENT PROGRAM
9	Q.	Does any part of this project lie within the Texas Coastal Management
10		Program (TCMP) boundary?
11	Α.	No. The study area is not located within the TCMP boundary.9
12		
13	C.	NEED FOR THE PROJECT
14	Q.	Could you briefly summarize the need for the project?
15	Α.	Yes. As stated in the application, the Proposed Project is needed to address
16		reliability issues in the Roanoke area. ¹⁰ The Roanoke area is located approximately
17		15 miles north of Fort Worth and is one of the highest growth areas in the Dallas-
18		Fort Worth Metroplex. ¹¹ The current power transfer and load-serving capabilities of
19		the transmission system in the Roanoke area are approaching their operating limits

⁷ Application at 8.

⁸ Id.

⁹ *Id*.at 33.

¹⁰ *Id.* At 10-11.

¹¹ Id. at 10.

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1		at current demand levels.12 To address these issues, Oncor recommended the
2		Roanoke Area Upgrades Project to the ERCOT Regional Planning Group (RPG)
3		and ERCOT conducted its own independent review and confirmed the reliability
4		issues Oncor identified. ¹³
5		
6	Q.	Has an independent organization, as defined in PURA § 39.151, determined
7		that there is a need for the Proposed Project?
8	A.	Yes. ERCOT recommended the Proposed Project, as part of the Roanoke Area
9		Upgrades Project. ¹⁴ The project was recommended as a Tier 1 transmission project
10		that is critical to the reliability of the ERCOT system pursuant to 16 TAC
11		§ 25.101(b)(3)(D) by the ERCOT Regional Planning Group. A copy of ERCOT's
12		independent review, dated July 19, 2022, is included with the application. ¹⁵
13		
14	Q.	Are the proposed facilities necessary for the service, accommodation,
15		convenience, or safety of the public within the meaning of PURA § 37.056(a)?
16	А.	Yes. In the ERCOT Independent Review of Oncor Roanoke Area Upgrades Project,
17		ERCOT determined that thermal overloads and low voltage issues were present
18		under some contingencies and they evaluated four different options to address those
19		issues. ¹⁶ Three of those options were found to satisfy the reliability issues ERCOT

- ¹² Application at 10.
- ¹³ *Id.*at 13.
- ¹⁴ *Id.* at 11.
- ¹⁵ *Id.* at Attachment 4.
- ¹⁶ *Id.*, Attachment 4 at 9-11.

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1		identified and all three included the Proposed Project, 17 and the second option was
2		found to best address those reliability issues. ¹⁸
3		
4	D.	PROJECT ALTERNATIVES
5	Q.	Did Oncor consider distribution and transmission alternatives to the Proposed
6		Project?
7	Α.	ERCOT considered four different system improvement options to address the
8		reliability issues in the Roanoke area. ¹⁹ ERCOT eventually selected the second
9		option, which included the Proposed Project. ²⁰
10		
11	Q.	Do you agree that the Proposed Project is the best option when compared to
12		other alternatives?
13	Α.	Yes. ERCOT carefully considered four different options but determined that the
14		three options that resolved the reliability issues included the Proposed Project. ²¹
15		
16	V.	ROUTING
17	A.	STAFF RECOMMENDATION
18	Q.	What routes do you recommend upon considering all factors, including the
19		factors in PURA § 37.056(c) and 16 TAC § 25.101(b)(3)(B)?

- ¹⁸ *Id.*, Attachment 4 at 22.
- ¹⁹ *Id.*, Attachment 4 at 11.
- ²⁰ Id., Attachment 4 at 22.
- ²¹ *Id.*, Attachment 4 at 12 and 14.

¹⁷ Application, Attachment 4 at 12,

1	A.	Based on my analysis of all the factors that the Commission must consider under
2		PURA § 37.056 and 16 TAC § 25.101, I recommend that Route 179-C be approved
3		for the Proposed Project. The basis for my recommendation is discussed in more
4		detail in the remainder of my testimony.
5		
6	Q.	Which route did Oncor select as the route that best addresses the requirements
7		of PURA and the Commission's rules?
8	Α.	Oncor identified Route 179 as the routes that they believe best address the
9		requirements of PURA and the Commission's rules.22
10		
11	В.	COMMUNITY VALUES
11 12	В. Q.	COMMUNITY VALUES Has Oncor sought input from the local community regarding community
12		Has Oncor sought input from the local community regarding community
12 13	Q.	Has Oncor sought input from the local community regarding community values?
12 13 14	Q.	Has Oncor sought input from the local community regarding community values? Yes. Oncor held public meetings as required by 16 TAC § 22.52(a)(4). The meetings
12 13 14 15	Q.	Has Oncor sought input from the local community regarding community values? Yes. Oncor held public meetings as required by 16 TAC § 22.52(a)(4). The meetings were held on December 7, 2022 and December 8, 2022 from 4:00pm to 7:00pm at
12 13 14 15 16	Q.	Has Oncor sought input from the local community regarding community values? Yes. Oncor held public meetings as required by 16 TAC § 22.52(a)(4). The meetings were held on December 7, 2022 and December 8, 2022 from 4:00pm to 7:00pm at the Marriott Hotel & Golf Club Champions Circle in Fort Worth, Texas. ²³ Oncor
12 13 14 15 16 17	Q.	Has Oncor sought input from the local community regarding community values? Yes. Oncor held public meetings as required by 16 TAC § 22.52(a)(4). The meetings were held on December 7, 2022 and December 8, 2022 from 4:00pm to 7:00pm at the Marriott Hotel & Golf Club Champions Circle in Fort Worth, Texas. ²³ Oncor sent notice of the meeting to landowners owning property within 520 feet of each of
12 13 14 15 16 17 18	Q.	Has Oncor sought input from the local community regarding community values? Yes. Oncor held public meetings as required by 16 TAC § 22.52(a)(4). The meetings were held on December 7, 2022 and December 8, 2022 from 4:00pm to 7:00pm at the Marriott Hotel & Golf Club Champions Circle in Fort Worth, Texas. ²³ Oncor sent notice of the meeting to landowners owning property within 520 feet of each of the preliminary alternative route segment centerlines. ²⁴ Oncor also posted notices of

- ²³ *Id.*, Attachment 1 at Page 5-1.
- ²⁴ Id., Attachment 1 at Page 2-11.
- ²⁵ Id.

²² Application at 24.

1		attended the meetings and Oncor received 71 questionnaire responses during the
2		meeting and Oncor received "many" questionnaires at a later date.26
3		
4	Q.	Did members of the community who attended the public meeting or intervene
5		in this case express concerns about the Proposed Project?
6	A.	Overall the respondents indicated an "overwhelming" preference for maximizing
7		the distances relative to residences, schools, churches, and recreational areas. ²⁷ Due
8		to the many questionnaires and other feedback received by Oncor, Oncor grouped
9		these together by topic:
10		1. Oncor received approximately 1,000 comments regarding avoiding the Liberty
11		Christian School campus, which was crossed by preliminary Segment D2.28
12		2. Oncor received approximately 450 comments regarding avoiding the Cross
13		Timbers Church, which was impacted by the preliminary Segments D1-D4.29
14		3. Oncor received approximately 550 comments regarding avoiding the Town of
15		Argyle, which was impacted by the preliminary Segments D1-D4.30
16		4. Oncor received approximately 300 comments regarding segments along Farm-to-
17		Market (FM) Road 407 in the Town of Northlake. ³¹
18		5. Oncor received approximately 60 comments regarding segments near the

²⁷ Id.

- ²⁸ *Id.*, Attachment 1 at Pages 5-2 and 5-3.
- ²⁹ *Id.*, Attachment 1 at Page 5-3.
- ³⁰ *Id.*, Attachment 1 at Page 5-4.
- ³¹ *Id.*, Attachment 1 at Pages 5-4 and 5-5.

²⁶ Application, Attachment 1 at Page 5-1.

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1	community of Canyon Falls, particularly Segment E5.32
2	6. Oncor received approximately 10 comments regarding the Trailwood Subdivision
3	located south of FM 1171, some recommended Segments C1-C2-C5-C7.33
4	7. Oncor received approximately 10 comments regarding the Legacy Ranch
5	Subdivision opposed to any route utilizing Segment J3.34
6	8. Oncor received approximately 20 comments regarding the Avery Ranch
7	Community regarding lines near their community and the Propwash Airport, north
8	of Segment M8 and Sam Reynolds Road.35
9	9. Oncor received approximately 60 comments regarding the Northwest Regional
10	Airport located 2500 feet south of FM 1171, south of Segments E6 and C6.36
11	Other comments regarding specific segments were made opposing Segments F2, F3,
12	and E8; in support of Segments A0 and A4; opposing Segments M5, M4, R1, R2,
13	R3, R6, and R5; opposing Segments T5, T4, T3, and T2; opposing Segments Q5,
14	Q2, and Q1; opposing Segment O7; opposing Segment G9; and opposition to
15	Segment D3's impact on oak trees. ³⁷
16	Other general comments concerned the possibility of the project utilizing United
17	States Army Corps of Engineers land south of FM 1171,38 a desire to keep the

- ³³ Id.
- ³⁴ Id., Attachment 1 at Pages 5-5 and 5-6.
- ³⁵ Id., Attachment 1 at Page 5-6.
- ³⁶ *Id.*, Attachment 1 at Pages 5-6 and 5-7.
- ³⁷ *Id.*, Attachment 1 at Pages 5-7, 5-8, and 5-10.
- ³⁸ *Id.*, Attachment 1 at Pages 5-8 and 5-9.

³² Application, Attachment 1 at Page 5-5.

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Proposed Project as short as possible,³⁹ compensation for loss of property values 1 resulting from the Proposed Project,⁴⁰ aesthetic values,⁴¹ impacts on natural 2 resources.⁴² impacts on farming and ranching.⁴³ and health and safety concerns.⁴⁴ 3 4 5 In your opinion, would construction of the Proposed Project on Route 179-C Q. 6 mitigate the concerns expressed by members of the community at the open 7 houses and in comments by intervenors? To some extent 179-C can mitigate these concerns. Route 179-C's centerline is 8 A. within 500 feet of 98 habitable structures which is tied for 4th least of the proposed 9 10 alternative routes, 5 more than the route with the least habitable structures within 500 feet of its centerline Route 164.45 Route 179-C does not cross any parks or 11 12 recreational areas and has four parks or recreational areas within 1,000 feet of its 13 centerline, just one more than the routes with the fewest within 1,000 feet of their centerline.46 14 In response to the specific routing concerns of the community, Route 179-C does 15

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17

16

- ⁴¹ Id., Attachment 1 at Pages 5-9 and 5-10.
- ⁴² Id., Attachment 1 at Page 5-10.
- ⁴³ *Id.*, Attachment 1 at Pages 5-10 and 5-11.
- ⁴⁴ *Id.*, Attachment 1 at Page 5-11.
- ⁴⁵ Compare id., Attachment 1 at Appendix E (Table 7-2) with Attachment JP-4 Part 1 at 000019-20.
 ⁴⁶ Id.

not use Segments D1-D4 and along FM Road 407. However, none of the routes in

the application use those preliminary segments as they were eliminated in response

³⁹ Application, Attachment 1 at Page 5-9.

⁴⁰ Id.

1	to the feedback received in the community involvement process.47 Route 179-C
2	avoids using most of the segments around the Canyon Falls community, in particular
3	Segment E5.48 Route 179-C utilizes Segments C1, C7 and C21. C21 was part of the
4	preliminary Segment C2, which was split into Segments C21 and C22 in response
5	to the community involvement process.49 Route 179-C utilizes Segment L4 which
6	is 6,000 feet from the Propwash Airport, this is 4,000 feet farther than Segment M8
7	which it does not utilize.50 Route 179-C does utilize Segment E6 but not Segment
8	C6. ⁵¹ Route 179-C does utilize Segment J3. ⁵²
9	In response to the other routing concerns by individuals, Route 179-C avoids
10	Segments F2, F3, E8, M4, R1, R3, R6, T5, T4, T3, T2, Q5, Q2, Q1, O7, G9, and D3
11	which were segments specifically opposed by commenters. Route 179-C also
12	utilizes both Segments A0 and A4 as requested by commenters. Route 179-C,
13	however, does utilize Segments M5, R2, and R5 which were segments specifically
14	opposed.53
15	In response to the general concerns, Route 179-C is the 29th shortest route of 84.
16	Route 179-C is 5,249 feet longer than the shortest route, Route 16, but 10,596 shorter

⁴⁷ Application, Attachment 1 at Page 6-2.

- ⁴⁹ Attachment JP-4 Part 1 at 000019 and Application, Attachment 1 at Page 6-3.
- ⁵⁰ Attachment JP-4 Part 1 at 000019 and Application, Attachment 1 at Appendix F (Table 7-6).
- ⁵¹ Attachment JP-4 Part 1 at 000019.
- ⁵² Id.
- ⁵³ Id.

⁴⁸ Attachment JP-4 Part 1 at 000019.

than the longest route, Route 216.54 Route 179-C crosses the 17th least amount of 1 2 rangeland with 58,417 feet, 11,959 feet longer than the shortest length by Route 26 3 and 17,901 feet shorter than the longest length by Route 187,55 However, Route 179-C crosses the 69th least amount of cropland and hay meadow land with 22,691 feet, 4 5 10,344 feet longer than the shortest length by Route 164R and 13,540 feet shorter 6 than the longest length by Route 69.56 7 I will specifically address additional issues regarding recreational and park areas, 8 historical values, aesthetic values, environmental integrity, engineering constraints, 9 costs, moderation of impact on the affected community and landowners, and right-10 of-way later in my testimony. 11 12 Are property values and the impact on future or potential development factors Q. 13 that are considered by the Commission in a CCN proceeding under PURA 14 § 37.056(c)(4) or in 16 TAC § 25.101(b)(3)(B)? 15 No. PURA and the Commission's rules do not list these two issues as factors that Α, 16 are to be considered by the Commission in a CCN proceeding. However, these rules 17 do require consideration of using or paralleling existing right-of-way, which may 18 minimize concerns about the impact on property values or planned development. 19 20 О. Are there any routes that did not receive specific opposition from intervenors?

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⁵⁶ Id.

⁵⁴ Compare Application, Attachment 1 at Exhibit E (Table 7-2) with Attachment JP-4 Part 1 at 000019.

⁵⁵ Id.

1	Α.	No.
2		
3	C.	RECREATIONAL AND PARK AREAS
4	Q.	Are any parks or recreational areas located within 1,000 feet of the centerline
5		of any of the proposed alternative routes or a substation site?
6	Α.	Twenty parks and recreational areas are either crossed or within 1,000 feet of the
7		centerline of the proposed alternative routes.57 The number of parks or recreational
8		areas either crossed or within 1,000 feet of the centerline of the proposed alternative
9		routes ranges from 3 (Routes 29, 33, 36, 41, 42, 86, 207, 217, 218, and 29R) to 11
10		(Routes 117 and 119).58 Routes range from crossing no parks or recreational areas
11		(Routes 29, 33, 36, 41, 42, 43, 44, 54, 58, 71, 86, 87, 154, 175, 176, 178, 179, 184,
12		185, 207, 216, 221, 179-A, 179-B, 179-C, and 29R) to crossing 3,844 feet of parks
13		and recreational areas (Routes 92, 94, 96, 103, 108, 143, and 146).59 Route 179-C
14		crosses no parks or recreational areas, and has four parks and recreational areas
15		within 1,000 feet of its centerline. ⁶⁰
16		

17 D. HISTORICAL VALUES

Q. Are there possible impacts from the Proposed Project on archeological and
 historical values, including known cultural resources crossed by any of the

⁵⁷ Application at Attachment 16.

⁵⁸ *Id.*, Attachment 1 at Exhibit E (Table 7-2) and Attachment JP-4 Part 3.

 $^{^{59}}$ Application, Attachment 1 at Exhibit E (Table 7-2) and Attachment JP-4 Part 1 at 000011, 000015 and 000019.

⁶⁰ Attachment JP-4 Part 1 at 000019.

1	proposed alternative routes or that are located within 1,000 feet of the
2	centerline of any of the proposed alternative routes?

3 There is a cemetery, the Dunham Cemetery, that is approximately 610 feet from Α. 4 Segment A0, which is utilized by all the proposed alternative routes.⁶¹ There is an 5 additional cemetery, the City of Justin Cemetery, that is approximately 100 feet from 6 Segment J4, which is utilized by Routes 1, 19, 65, 67, 68, 69, 72, 92, 94, 96, 103, 7 108, 142, 143, 146, 170, 191, 192, and 219.62 A historically significant area, Bishop 8 Park, is crossed by Segment J4, which is utilized by Routes 1, 19, 65, 67, 68, 69, 72, 92, 94, 96, 103, 108, 142, 143, 146, 170, 191, 192, and 219,63 Two recorded 9 10 archeological sites are within 1,000 feet of the centerline of the proposed alternative 11 routes. A former schoolhouse is crossed by Segment M1, which is utilized by Routes 12 3, 5, 13, 14, 15, 16, 18, 22, 23, 24, 25, 26, 28, 29, 36, 43, 44, 58, 61, 63, 70, 78, 87, 13 108, 116, 119, 130, 132, 137, 146, 164, 179, 199, 200, 179-A. 179-B, 179-C, 22R, 14 29R, 116R, 130R, 132R, and 164.64 A historic house is within 90 feet of the 15 centerline of Segment L2, which is utilized by Routes 3, 5, 10, 11, 13, 14, 15, 16, 16 18, 19, 22, 23, 24, 25, 26, 28, 29, 33, 36, 43, 44, 58, 61, 63, 70, 78, 87, 92, 108, 116, 17 117, 119, 130, 132, 137, 146, 154, 164, 170, 178, 179, 186, 187, 199, 200, 216, 179-18 A, 179-B, 179-C, 22R, 29R, 116R, 130R, 132R, and 164R.65

⁶² Id.

⁶³ Id.

⁶⁴ Id.

⁶⁵ Id.

⁶¹ Application, Attachment 1 at Page 7-26 and Attachment 7 Part 4, and Attachment JP-4 Part 1 at 000011, 000015, 000019 and 000036.

1		The proposed alternative routes have from one historic or archeological site within
2		1,000 feet of its centerline (for Routes 41, 42, 54, 71, 86, 138, 175, 176, 184, 185,
3		207, 217, 218, and 221) to five (for Route 108 and 146).66 Route 179-C's centerline
4		is within 610 feet of the Dunham Cemetery on Segment A0, within 90 feet of a
5		historic house on Segment L2, and crosses the former school house on Segment
6		$M1.^{67}$
7		The length of the routes across areas of high archeological/historical site potential
8		ranges from 28,161 feet for Route 186 to 64,206 feet for Route 28.68 Route 179-C
9		crosses 56,753 feet of areas of high archeological/historical site potential.69
10		If any further archeological or cultural resources are found during construction of
11		the proposed transmission line, Oncor should immediately cease work in the vicinity
12		of the archeological or cultural resources, and should immediately notify the Texas
13		Historical Commission.
14		
15	E.	AESTHETIC VALUES
16	Q.	In your opinion, which of the proposed alternative routes would result in a
17		negative impact on aesthetic values, and which portions of the study area will

18 be affected?

19

A. In my opinion, all of the proposed alternative routes would result in a negative

⁶⁶ Application, Attachment 1 at Exhibit E (Table 7-2) and Attachment JP-4 Part 1 at 000011, 000015, and 000019 and Attachment JP-4 Part 3.

⁶⁷ Application, Attachment 1 at 7-24 and Attachment JP-4 Part 1 at 000019.

⁶⁸ Application, Attachment 1 at Exhibit E (Table 7-2) and Attachment 7 Part 4, and Attachment JP-4 Part 1 at 000012, 000016, and 000020 and Attachment JP-4 Part 3.

⁶⁹ Attachment JP-4 Part 1 at 000020.

1 impact on aesthetic values, some routes more than others, depending on the visibility 2 from homes and public roadways. Temporary effects would include views of the 3 actual transmission line construction (e.g. assembly and erection of the structures) and of any clearing of right-of-way. Permanent effects would involve the visibility 4 5 of the structures and the lines. I therefore conclude that aesthetic values would be 6 impacted throughout the study area, and that these temporary and permanent 7 negative aesthetic effects will occur on any proposed alternative routes approved by 8 the Commission. 9 10 F. ENVIRONMENTAL INTEGRITY 11 Please provide a general description of the area traversed by the proposed 0. 12 alternative routes.

A. The area traversed by the project is within the Grand Prairie Western Timbers Physiographic Region.⁷⁰ The Interior Coastal Plains consists of low stairstep hills with calcareous bedrock types to the east, and plains with sandier bedrock types to the west. The study area primarily consists of the Fort Worth Limestone, which incorporates limestone and clay deposits, and Duck Creek Formation, which incorporates limestone aphanitic that is in part bioclastic and has pyrite nodules and forms topographic benches.⁷¹

- 20
- 21

Q. What was involved in your analysis of the environmental impact of the

⁷¹ Id.

⁷⁰ Application, Attachment 1 at Page 3-1,

1		Proposed Project?
2	А.	I reviewed the information provided in the application and the EA, the direct
3		testimonies and statements of position of the intervenors, responses to requests for
4		information, and the letters from TPWD to Ms. Marisa Wagley, dated July 19,
5		2023.72
6		
7	Q.	Based on your review of the information identified above, in your opinion, will
8		the Proposed Project present a significant negative impact to environmental
9		integrity?
10	A.	No. Transmission lines do not often create many long-term impacts on soils. Most
11		of those impacts will be during initial construction and would be erosion and soil
12		compaction; however, Oncor will employ erosion control during initial construction
13		including development of a Storm Water Pollution Prevention Plan to minimize
14		impacts. ⁷³
15		Primary impacts on vegetation would be the result of site preparation and clearing
16		of existing woody vegetation in the right-of-way,74 further disturbances would then
17		occur during maintenance activities.75 Oncor will attempt to minimize adverse
18		impacts to vegetation and retain existing ground cover where possible, and to restore
19		disturbed areas with native species where possible.76 The length of upland

⁷² Attachment JP-3.

⁷³ Application, Attachment 1 at Pages 7-1 and 7-2.

⁷⁴ *Id.*, Attachment 1 at Page 7-6.

⁷⁵ *Id.*, Attachment 1 at Page 7-2.

⁷⁶ *Id.*, Attachment 1 at Pages 7-6 and 7-7.

DIRECT TESTIMONY OF JOHN POOLE, P.E.

	-
1	woodlands along the right-of-way of the proposed routes ranges from 8,022 feet for
2	Route 217 to 15,125 feet for Route 26.77 The length of riparian areas along the right-
3	of-way of the proposed routes ranges from 4,579 feet for Route 187 to 15,690 feet
4	for Route 26.78 The length of upland woodlands along the right-of-way of Route
5	179-C is 11,311 feet and the length of riparian areas along the right-of-way of Route
6	179-C is 11,536 feet. ⁷⁹
7	While there are no federally listed endangered or threatened plant species known to
8	occur in Denton and Wise Counties, TPWD county lists of rare species and Natural
9	Diversity Database data suggest that the study area may contain rare plant species
10	that require special consideration. ⁸⁰ Oncor will avoid impacts to these rare plants,
11	following TPWD recommendation, should specimens be found.81 The estimated
12	number of known rare or unique plant locations within the right-of-way ranges from
13	zero for Routes 94, 96, 103, 108, 116, 117, 119, 130, 132, 137, 138, 142, 143, 146,
14	186, 187, 191, 192, 217, 218, 219, 116R, 130R, and 132R to four for Routes 33, 68,
15	69, 71, 175, 176, 178, 184, and 185.82 Route 176-C has one known rare or unique
16	plant location within its right-of-way.83

⁸⁰ Application, Attachment 1 at Pages 7-7 and 7-8.

⁸¹ *Id.*, Attachment 1 at Page 7-8.

⁸³ Attachment JP-4 Part 1 at 000019.

⁷⁷ Application, Attachment 1 at Exhibit E (Table 7-2) and Attachment JP-4 Part 1 at 000011, 000015, and 000019 and Attachment JP-3 Part 3.

⁷⁸ Id.

⁷⁹ Attachment JP-4 Part 1.

 $^{^{82}}$ Id., Attachment 1 at Exhibit E (Table 7-2) and Attachment JP-4 Part 1 at 000011, 000015, and 000019 and Part 3.

		-
1		The length across potential wetlands ranges from Routes 36, 41, 42, 43, 44, 58, 71,
2		86, 87, 137, 138, 175, 176, 179, 184, 185, 207, 179-A, 179-B, and 179-C, which do
3		not cross any wetlands at all, to Routes 92 and 218 which cross 849 feet of potential
4		wetlands.84 Oncor will attempt to span wetland areas whenever possible and use
5		erosion controls mitigation measures to minimize impacts to aquatic systems should
6		a route be selected which crosses wetland areas.85
7		While federally listed threatened or endangered species may occur within the study
8		area, there are no designated critical habitat for any federally listed threatened or
9		endangered species along any of the proposed alternative routes.86
10		However, construction of some of the proposed alternative routes could, at some
11		locations, present a negative impact on the environment, particularly in sensitive
12		areas such as wetlands, riparian areas, and woodlands.
13		
14	Q.	In your opinion, how would construction of the Proposed Project on Route 179-
15		C compare from an environmental perspective to construction on the other
16		routes?

- Route 179-C has 11,311 feet of its length across upland woodlands, which is 3,289 17 A. feet longer than the shortest length of Route 217 and 4,379 feet shorter than the
- 18

⁸⁴ Application, Attachment 1 at Exhibit E (Table 7-2) and Attachment JP-4 Part 1 at 000011, 000015, and 000019 and Part 3.

⁸⁵ Application, Attachment 1 at Page 7-11.

⁸⁶ *Id.*, Attachment 1 at Pages 7-12 and 7-13. *See also, id.* at Exhibit E (Table 7-2) and Attachment JP-4 Part 1 at 000011, 000015, 000019 and Part 3.

		-
1		longest length of Route 26.87 The length of riparian areas along the right-of-way of
2		Route 179-C is 11,536 feet, which is 6,957 feet longer than the shortest length of
3		Route 187 and 4,182 feet shorter than the longest length of Route 28.88 Route 179-
4		C crosses no potential wetlands, but does have one location of known rare or unique
5		plants within its right-of-way, while some routes have none. ⁸⁹ In its letter dated July
6		19, 2023 TPWD selected Route 137 as the route having the least potential impact
7		on environmental integrity.90
8		
9	Q.	Do you conclude that Route 179-C is acceptable from an environmental and
10		land use perspective?
11	A.	Yes, however I do not think any of the routes in this project are unacceptable from
12		an environmental and land use perspective. I conclude that Route 179-C is
13		acceptable from this perspective.
14		
15	G.	ENGINEERING CONSTRAINTS
16	Q.	Are there any possible engineering constraints associated with this project?
17	Α.	There are no specific engineering constraints that are not present in a usual
18		transmission line project. In my opinion, all of the possible constraints can be
19		adequately addressed by using design and construction practices and techniques that

⁸⁷ Compare Application, Attachment 1 at Exhibit E (Table 7-2) and Attachment JP-4 Part 1 at 000011 and 000015 and Part 3 *with* Attachment JP-4 Part 1 at 000019.

⁸⁸ Id.

⁸⁹ Id.

⁹⁰ Attachment JP-3 at 5.

1		are usual and customary in the electric utility industry.			
2					
3	Q.	Are there any special circumstances in this project that would warrant an			
4		extension beyond the seven-year limit for the energization of the lines?			
5	Α.	No, Oncor has not described any special circumstances that would merit an			
6		extension of this limit for this project.			
7					
8	Н.	COSTS			
9	Q.	What are Oncor's estimated costs of constructing the Proposed Project on each			
10		of the proposed alternative routes?			
11	A.	Oncor's Notice of Errata Attachment 2 and Attachment 5 list Oncor's revised			
12		estimated costs of constructing each proposed alternative route. The table below			
13		shows the total estimated cost for each of the routes from least expensive to the most			
14		expensive. Each listed cost includes \$33,510,000 for the proposed Oncor Ramhorn			
		Hill Switch and \$41,348,000 for the proposed Oncor Dunham Switch.91			
15		Hill Switch and \$41,348,000 for the proposed Oncor Dunham Switch. ⁹¹			
15 16		Hill Switch and \$41,348,000 for the proposed Oncor Dunham Switch. ⁹¹ Route Estimated Cost of the Route and Substation Upgrades			

Route	Estimated Cost of the Route and Substation Upgrades
96	\$243,190,000.00
29	\$243,658,000.00
29R	\$243,667,000.00
191	\$244,540,000.00
1	\$244,559,000.00
143	\$244,567,000.00
142	\$244,882,000.00
103	\$245,568,000.00
219	\$245,607,000.00
42	\$246,319,000.00
67	\$246,507,000.00
192	\$246,507,000.00

⁹¹ Application at 9.

65	£246 584 000 00
	\$246,584,000.00
94	\$246,790,000.00
72	\$247,343,000.00
36	\$248,199,000.00
146	\$248,449,000.00
86	\$249,102,000.00
16	\$249,296,000.00
19	\$249,691,000.00
68	\$249,930,000.00
179-C	\$251,143,000.00
41	\$251,408,000.00
13	\$251,950,000.00
207	\$252,014,000.00
15	\$253,312,000.00
217	\$253,476,000.00
179	\$253,607,000.00
179-A	\$253,810,000.00
218	\$254,235,000.00
69	\$254,368,000.00
130R	\$254,520,000.00
61	\$254,657,000.00
43	\$254,898,000.00
200	\$254,991,000.00
14	\$255,042,000.00
18	\$255,233,000.00
108	\$255,690,000.00
130	\$256,003,000.00
78	\$256,095,000.00
44	\$256,260,000.00
25	\$256,454,000.00
17 9-В	\$256,901,000.00
54	\$256,933,000.00
170	\$256,973,000.00
221	\$257,073,000.00
199	\$257,645,000.00
87	\$257,681,000.00
26	\$258,420,000.00
138	\$258,663,000.00
132R	\$258,732,000.00
22R	\$258,849,000.00
22	\$258,908,000.00
23	\$259,108,000.00
71	\$260,101,000.00
132	\$260,222,000.00
24	\$260,470,000.00
	· · ·

137	\$260,544,000.00
10	\$260,584,000.00
176	\$261,383,000.00
175	\$261,846,000.00
186	\$262,393,000.00
11	\$262,551,000.00
116R	\$262,654,000.00
58	\$263,418,000.00
116	\$264,160,000.00
33	\$264,792,000.00
92	\$265,263,000.00
185	\$265,694,000.00
63	\$265,831,000.00
187	\$266,612,000.00
184	\$266,780,000.00
178	\$272,074,000.00
164	\$272,722,000.00
164R	\$272,924,000.00
70	\$273,627,000.00
154	\$274,317,000.00
216	\$278,954,000.00
28	\$282,150,000.00
5	\$283,528,000.00
3	\$287,544,000.00
119	\$301,618,000.00
117	\$313,460,000.00

1

2	As the table illustrates, Route 179-C is the 22 nd least expensive proposed alternative
3	route.
4	

6

Q.

5

- C is still preferred?
- 7 A. Yes. All the less expensive routes have more habitable structures within 500 feet of
- 8

their centerlines than Route 179-C.92 Route 179-C makes better use of compatible

Could you briefly discuss the routes that are less expensive and why Route 179-

⁹² Compare Attachment JP-4 Part 1 at 000019 with Application, Attachment 1 at Exhibit E (Table 7-2) and Attachment JP-4 Part 3.

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1		right-of-way as a percentage of its total length than Routes 142, 103, 65, 19, 192,
2		42, 86, 96, 191, 143, 68, 146, 219, 1, 72, and 67.93 Route 179-C is shorter than
3		Routes 103, 94, 219, 65, 1, 191, 192, 72, 29R, 67, 19, 29, 68, 142, 143, and 146.94
4		Routes 16, 142, 1, 19, 65, 67, 68, 72, 191, 192, 219, 94, 96, 103, 143, and 146 all
5		cross parks and recreational areas while Route 179-C does not.95
6		
7	Q.	Do Oncor's estimated costs of constructing the Proposed Project appear to be
8		reasonable?
9	Α.	After reviewing Oncor's estimates, the estimated costs for the proposed alternative
10		routes are about what I would expect for a double-circuit 345-kV, triple-circuit
11		capable, monopole project in this terrain. However, the reasonableness of the final
12		installed cost of the completed project will be determined at a future date in the
13		course of a transmission cost-of-service proceeding.
14		
15	I.	MODERATION OF IMPACT ON THE AFFECTED COMMUNITY AND
16		LANDOWNERS
17	Q.	Do the Commission's rules address routing alternatives intended to moderate
18		the impact on landowners?
19	Α.	Yes. Under 16 TAC § 25.101(b)(3)(B), "the line shall be routed to the extent

⁹³ Compare Attachment JP-4 Part 1 at 000019 with Application, Attachment 1 at Exhibit E (Table 7-2).

 94 Compare Attachment JP-4 Part 1 at 000019 with Application, Attachment 1 at Exhibit E (Table 7-2) and Attachment JP-4 Part 3.

⁹⁵ Compare Attachment JP-4 Part 1 at 000019 with Application, Attachment 1 at Exhibit E (Table 7-2).

DIRECT TESTIMONY OF JOHN POOLE, P.E.

Page 43 1 reasonable to moderate the impact on the affected community and landowners 2 unless grid reliability and security dictate otherwise." 3 4 Q. Subsequent to filing their application, has Oncor made or proposed any routing 5 adjustments to accommodate landowners? 6 While new routing segments have been introduced, none of been included in any Α. 7 proposed routes at the time of my testimony, as they cannot be utilized until the requestor provides proof of written consent by directly affected landowners.⁹⁶ Oncor 8 9 has introduced Routes 179-A, 179-B, 179-C, 22R, 29R, 116R, 130R, 132R, and 10 164R in response to a request for information request by intervenor Edgar Brent Watkins and Mary Ann Livengood.97 11 12 13 Has Oncor proposed any specific means by which it will moderate the impact Q. 14 of the Proposed Project on landowners or the affected community other than 15 adherence to the Commission's orders, the use of good utility practices, 16 acquisition of and adherence to the terms of all required permits, and what you 17 have discussed above? 18 No, not to my knowledge. Α. 19 20 J. **RIGHT-OF-WAY**

21 Q. Do the Commission's rules address routing along existing corridors?

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⁹⁶ Attachment JP-4 Part 1 at 000023.

⁹⁷ See Attachment JP-4 Part 1.

1	Α.	Yes. The following factors are to be considered under 16 TAC § 25.101(b)(3)(B):				
2		(i) whether the routes utilize existing compatible rights-of-way, including the				
3		use of vacant positions on existing multiple-circuit transmission lines;				
4		(ii) whether the routes parallel existing compatible rights-of-way;				
5		(iii) whether the routes parallel property lines or other natural or cultural features;				
6		and				
7		(iv) whether the routes conform with the policy of prudent avoidance.				
8						
9	1.	USE AND PARALLELING OF EXISTING, COMPATIBLE RIGHT-OF-				
10		WAY (INCLUDING APPARENT PROPERTY BOUNDARIES)				
11	Q.	Describe how Oncor proposes to parallel or utilize compatible rights-of-way				
12		for the Proposed Project.				
13	Α.	Each proposed alternative route parallels apparent property boundaries and parallels				
14		or utilizes existing compatible rights-of-way. The percentage of Route 179-C's				
15		length that parallels or utilizes existing compatible right-of-way and apparent				
16		property boundaries is approximately 23.25% of its length. The table below				
17		summarizes the overall length, the length parallel to compatible rights-of-way or to				
18		property boundaries, and the total percentage of parallel rights-of-way used by the				
19		proposed alternative routes. Existing pipeline rights-of-way are not listed as				
20		compatible rights-of-way under 16 TAC § 25.101(b)(3)(B).				
		Longth Dangliel to Dight				

Route	Length (Feet)	Length Parallel to Right- of-Way (Feet)	Percentage
117	119,593	47,414	39.65%
116 R	118,307	44,465	37.58%
63	107,230	38,148	35.58%