



AltaLink Management Ltd.

**South and West of Edmonton Area Transmission Development
Cooking Lake, Saunders Lake, Wabamun and
Leduc Developments**

July 15, 2016

Alberta Utilities Commission

Decision 20924-D01-2016

AltaLink Management Ltd.

South and West of Edmonton Area Transmission Development

Cooking Lake, Saunders Lake, Wabamun and Leduc Developments

Proceeding 20924

Applications 20924-A001 and 20924-A003 to 20924-A016

July 15, 2016

Published by the:

Alberta Utilities Commission

Fifth Avenue Place, Fourth Floor, 425 First Street S.W.

Calgary, Alberta

T2P 3L8

Telephone: 403-592-8845

Fax: 403-592-4406

Website: www.auc.ab.ca

Contents

1	Decision summary	1
2	Legislative scheme	2
2.1	The process for new transmission development in Alberta	2
2.2	Public interest	3
3	Background	4
3.1	South and West of Edmonton Area Transmission System Reinforcement needs identification document approval	4
3.2	Interventions	4
3.3	Hearing	4
3.4	Participants in the proceeding	5
4	Wabamun, Leduc and telecommunications developments	6
4.1	Wabamun development	6
4.2	Leduc development	6
4.3	Telecommunications development	7
4.4	Commission findings	7
5	Saunders Lake development	7
5.1	Views of the interveners	11
5.2	Commission findings	11
6	Cooking Lake development	12
6.1	Project description	12
6.2	Consultation	13
6.2.1	Commission findings	14
6.3	Route development	15
6.3.1	Views of AltaLink	15
6.3.2	Views of the interveners	17
6.3.3	Commission findings	18
6.4	Right-of-way, construction workspace and access trails	19
6.4.1	Views of AltaLink	19
6.4.2	Views of the interveners	21
6.4.3	Commission findings	21
6.5	Property impacts	21
6.5.1	Proximity to residences	21
6.5.1.1	Views of AltaLink	21
6.5.1.2	Views of the interveners	23
6.5.1.3	Commission findings	24
6.5.2	Property value	25
6.5.2.1	Commission findings	31
6.5.3	Visual impacts and tree clearing	34
6.5.3.1	Views of AltaLink	34
6.5.3.2	Views of the interveners	36
6.5.3.3	Commission findings	39
6.5.4	Existing disturbances, future development and road widening	40
6.5.4.1	Views of AltaLink	40

6.5.4.2	Views of the interveners	42
6.5.4.3	Commission findings.....	45
6.6	Environmental impacts.....	46
6.6.1	Views of AltaLink.....	46
6.6.2	Views of the interveners	49
6.6.3	Commission findings	52
6.7	Cost	55
6.7.1	Views of AltaLink.....	55
6.7.2	Views of the interveners	55
6.7.3	Commission findings	56
6.8	Cooking Lake Cemetery	56
6.8.1	Views of AltaLink.....	56
6.8.2	Views of the interveners	57
6.8.3	Commission findings	58
6.9	Electric and magnetic fields (EMF).....	59
6.9.1	Commission findings	60
6.10	Noise	60
6.10.1	Commission findings	61
6.11	Safety.....	62
6.11.1	Views of AltaLink.....	62
6.11.2	Views of interveners.....	62
6.11.3	Commission findings	63
6.12	Approved route.....	64
6.13	Proposed route variations.....	65
6.13.1	Commission findings	66
7	Findings.....	67
8	Decision	67
Appendix A – Proceeding participants		69
Appendix B – Oral hearing – registered appearances.....		72
Appendix C – Cooking Lake Alternate Route Resisters (CLARR) group members		74

List of figures

Figure 1 - Saunders Lake 289S Substation Proposed Locations (not to scale)	8
Figure 2 - Proposed Cooking Lake Transmission Line Routes	13

AltaLink Management Ltd.
South and West of Edmonton Area Transmission Development Decision 20924-D01-2016
Cooking Lake, Saunders Lake, Wabamun and Leduc Developments Proceeding 20924

1 Decision summary

1. In this decision, the Commission must decide whether to approve transmission facility applications from AltaLink Management Ltd. (AltaLink) for five developments needed to reinforce the 138-kilovolt (kV) and 240-kV transmission system in the Leduc, Strathcona, and Parkland County areas (south, east and west of Edmonton). The five developments proposed by AltaLink are:

- The Cooking Lake development: a new, 24-kilometre, 138-kV transmission line located east of Edmonton for which AltaLink proposed a preferred and alternate route and alterations to an existing substation.
- The Saunders Lake development: a new substation and short connecting transmission lines located east of Leduc for which AltaLink proposed a preferred and alternate substation site.
- The Wabamun development: opening a circuit breaker at an existing substation.
- The Leduc development: altering an existing substation within the existing fenced area.
- The telecommunications development: upgrades to AltaLink's telecommunications system to support the other proposed developments.

2. Further details of the facilities proposed in the applications, pursuant to sections 14, 15, 18, 19 and 21 of the *Hydro and Electric Energy Act*, are provided in sections 4, 5 and 6 of this decision.

3. The applications were considered in a public hearing in Edmonton. The primary focus of the hearing was the proposed Cooking Lake development. AltaLink's preferred route was opposed by a group of interveners called the Cooking Lake Opposition Group (CLOG) and Strathcona County. AltaLink's alternate route was opposed by two intervener groups, the Cooking Lake Alternate Route Resisters (CLARR) and the Leduc and Strathcona County Concerned Residents Group (LSCCR), as well as Leduc County. The main issues raised with respect to the Cooking Lake development related to the impacts of the proposed routes on adjacent properties, property values and the environment.

4. Only two parties objected to the Saunders Lake development application and no one objected to the Wabamun development, the Leduc development, or the telecommunications upgrades.

5. The Commission has determined that approval of the preferred location for the Saunders Lake 289S Substation is in the public interest because it would result in lower overall impact. The description of the Saunders Lake development and the Commission's reasons for this decision are provided in Section 5 of this report.

6. The Commission has decided to approve the preferred route for the Cooking Lake development because it is satisfied that the preferred route has less impact than the alternate route. In particular, the Commission found that approval of the preferred route would have less impact on the properties and property owners adjacent to it than would the alternate route. A description of the Cooking Lake development and the Commission's reasons for this decision are provided in Section 6 of this report.

7. The Commission has also decided to approve the Wabamun and Leduc development applications and one of the two telecommunications upgrades.¹ These facilities are responsive to the need identified by the Alberta Electric System Operator (AESO) and are not expected to have adverse economic, social or environmental impacts.

8. In reaching the determinations set out in this decision, the Commission has considered all relevant materials comprising the record of this proceeding, including the evidence, argument, and reply argument provided by each party. Accordingly, references in this decision to specific parts of the record are intended to assist the reader in understanding the Commission's reasoning relating to a particular matter and should not be taken as an indication that the Commission did not consider all relevant portions of the record with respect to that matter.

2 Legislative scheme

2.1 The process for new transmission development in Alberta

9. New transmission facilities that do not meet the definition of critical transmission infrastructure² require two separate approvals from the AUC: an approval of the need for expansion or enhancement to the Alberta Interconnected Electric System pursuant to Section 34 of the *Electric Utilities Act*, and a permit to construct and licence to operate a transmission facility pursuant to sections 14 and 15 of the *Hydro and Electric Energy Act*.

10. The AESO, in its capacity as the independent system operator established under the *Electric Utilities Act*, is responsible for preparing a needs identification document and filing an application for approval of the needs identification document with the Commission pursuant to Section 34 of the *Electric Utilities Act*.

11. Facility applications are prepared by the transmission facility owner assigned by the AESO. The transmission facility owner files the facility application with the Commission for consideration. The Commission may approve or deny the application, or approve the application subject to terms or conditions. AltaLink is the transmission facility owner of the service area surrounding Edmonton.

¹ See paragraph 40.

² *Electric Utilities Act*, Section 1(1)(f.1).

2.2 Public interest

12. When considering an application for transmission facilities, the Commission must consider whether the proposed transmission facilities are in the public interest having regard to the social and economic effects of the transmission facilities and the effects of the transmission facilities on the environment in accordance with Section 17 of the *Alberta Utilities Commission Act*.

13. In interpreting the term “public interest”, the Commission is guided by Decision 2009-028,³ which states:

The Commission recognizes that there is no universal definition of what comprises the “public interest” and that its meaning cannot be derived from strictly objective measures. The Commission acknowledges that the ultimate determination of whether a particular project is in the “public interest” will largely be dictated by the circumstances of each transmission facility application.

In the Commission’s view, assessment of the public interest requires it to balance the benefits associated with upgrades to the transmission system with the associated impacts, having regard to the legislative framework for transmission development in Alberta. This exercise necessarily requires the Commission to weigh impacts that will be experienced on a provincial basis, such as improved system performance, reliability, and access with specific routing impacts upon those individuals or families that reside or own land along a proposed transmission route as well as other users of the land that may be affected. This approach is consistent with the EUB’s historical position that the public interest standard will generally be met by an activity that benefits the segment of the public to which the legislation is aimed, while at the same time minimizing, or mitigating to an acceptable degree, the potential adverse impacts on more discrete parts of the community.

...

When assessing whether AltaLink’s proposed route is in the public interest, the Commission must weigh the benefits described above with the site specific impacts that will be experienced by landowners and residents along the proposed route as well as others that may be impacted. The Commission understands that these impacts are real and may be significant. Transmission towers are large structures that may obscure scenery, impact agricultural operations, and may have an influence on land use and development plans. The Commission expects transmission facility owners to take all reasonable steps to avoid such impacts but acknowledges that despite the use of sound routing and planning practices such impacts are sometimes truly unavoidable given the nature of transmission lines. Where such impacts are truly unavoidable, the Commission expects that the Applicant would explore all reasonable steps to mitigate those impacts.⁴

³ Decision 2009-028: AltaLink Management Ltd. Transmission Line from Pincher Creek to Lethbridge, Proceeding 19, Application 1521942, March 10, 2009.

⁴ Decision 2009-028, paragraphs 32, 33 and 35. The reference in this quote to the EUB is to the Alberta Energy and Utilities Board (predecessor to the AUC).

3 Background

3.1 South and West of Edmonton Area Transmission System Reinforcement needs identification document approval

14. The AESO filed Application 1609123-1 on December 14, 2012, requesting approval of its needs identification document for the South and West of Edmonton Area Transmission System Reinforcement. The AESO submitted that the developments were needed to meet forecasted load and generation growth in the south and west of Edmonton area and to prevent violations of transmission reliability criteria.

15. The Commission held a public hearing for the needs identification document application on March 3, 2014 in Edmonton, Alberta. The need for the proposed upgrades was approved by the Commission on May 5, 2014 in Decision 2014-126⁵ and Needs Identification Document Approval U2014-183⁶ was granted.

3.2 Interventions

16. The AUC issued a notice of applications for the developments in Proceeding 20924 on October 29, 2015.⁷ The notice was mailed directly to all landowners, residents, and occupants within 800 metres of the proposed developments and government agencies, industry and other interested parties. The notice was also published on the AUC's website and in local newspapers.

17. The Commission held two public information sessions on November 30 and December 1, 2015, to inform parties how to participate in the proceeding.

18. The Commission received 79 statements of intent to participate (SIPs) from individuals, families, companies, and landowner groups in response to the notice of applications.⁸ All but two of the SIPs related to the proposed Cooking Lake transmission line. The two other SIPs related to the proposed Saunders Lake development. The Commission received no interventions regarding the Wabamun or Leduc developments or the telecommunications upgrades.

3.3 Hearing

19. The Commission issued a notice of hearing for the proceeding on January 19, 2016.⁹ The hearing commenced on April 25, 2016 in Edmonton, Alberta before a Commission panel comprised of Panel Chair Tudor Beattie, QC, and Commission members Neil Jamieson and Bill Lyttle, and continued for five days until April 29, 2016.

⁵ Decision 2014-126: Alberta Electric System Operator – Needs Identification Document Application: South and West of Edmonton Area Transmission System Reinforcement, Proceeding 2303, Application 1609123-1, May 5, 2014.

⁶ Needs Identification Document Approval U2014-183, Proceeding 2303, Application 1609123-1, May 5, 2014.

⁷ Exhibit 20924-X0062.

⁸ This number of statements does not include multiple submissions from the same party and, because some group members filed individual statements while others did not, is not indicative of the number of persons who registered to participate in the hearing.

⁹ Exhibit 20924-X0190.

20. The proceeding concluded with written final arguments filed by all parties on May 17, 2016 and written reply arguments filed by all parties on May 27, 2016. The Commission considers June 8, 2016, to be the date of the close of the record for this proceeding as this is the date the last correspondence regarding the proceeding was received.

3.4 Participants in the proceeding

21. A list of all registered parties in this proceeding, including those who did not appear in person at the hearing, is provided in Appendix A to this decision.

22. A complete list of hearing participants is attached to this decision in Appendix B.

23. The following is a brief introduction to the persons, groups, and organizations who participated in the public hearing.

24. The Cooking Lake Opposition Group (CLOG) was comprised of 44 families who are landowners along the preferred route of the proposed Cooking Lake transmission line. All members of CLOG are listed in Appendix A to the decision. Seven members of CLOG appeared at the hearing and gave evidence. These seven members are listed in Appendix B to this decision.

25. The CLOG group retained four experts who provided reports and appeared at the hearing: Mr. Robert Berrien, of Berrien Associates Ltd., an expert on transmission line routing; Mr. James Farquharson of FDI Acoustics Inc., an expert on noise, noise impacts and noise impact assessments; Mr. Pat Woodlock, of HarrisonBowker Real Estate Appraisers Ltd., a property valuation expert; and Mr. Cliff Wallis, of Cottonwood Consultants Ltd., an environmental expert.

26. The preferred route of the proposed Cooking Lake transmission line traverses lands in Strathcona County and the county participated in the proceeding. Four staff members appeared and gave evidence on behalf of Strathcona County representing the energy exploration, environmental planning, design and surveys and land management services areas: Ms. Lori Mills, Ms. Jocelyn Thrasher-Haug, Mr. Richard Dekker, and Ms. Paula Laplante.

27. Mr. Brian Eaton appeared with the Strathcona County panel and gave evidence on behalf of the Friends of Elk Island Society which was concerned about the Beaver Hills Moraine area traversed by the preferred route of the proposed Cooking Lake transmission line.

28. Mr. Glenn Ferguson and Mr. John Heitman also appeared with the Strathcona County panel and gave evidence on behalf of the Cooking Lake Cemetery Company which owns land adjacent to the preferred route of the proposed Cooking Lake transmission line.

29. Mr. Barry Deveney, whose land is located adjacent to the preferred route of the proposed Cooking Lake transmission line, registered to participate at the hearing and gave a brief oral statement.

30. The Cooking Lake Alternate Route Resisters group (CLARR) was comprised of 79 families who are landowners along the alternate route of the proposed Cooking Lake transmission line. A list of all members of CLARR is provided in Appendix C to the decision, as not all members submitted statements of intent to participate. Twenty-six members of CLARR

appeared at the hearing and gave evidence. These 26 members are listed in Appendix B to this decision.

31. The CLARR group retained one expert, Mr. Ryan Archer of Gettel Appraisals Ltd., a property valuation expert, who provided reports and appeared at the hearing.

32. The Leduc and Strathcona County Concerned Residents group (LSCCR) was comprised of 11 families who are landowners along the alternate route of the proposed Cooking Lake transmission line. All members of LSCCR are listed in Appendix A to the decision. Two members of LSCCR, Ms. Louise Olsen and Ms. Lorrell Yendall, appeared at the hearing and gave evidence on behalf of themselves and other group members.

33. The alternate route and alternate variant route of the proposed Cooking Lake transmission line traverses lands in Leduc County and the county participated in the hearing. Two experts appeared and gave evidence on behalf of Leduc County: Mr. Armin Preiksaitis, of ParioPlan Inc., a land use planning and development expert; and Mr. Sean Willis, of Bunt & Associates, a civil engineer and transportation planning expert.

34. Mr. Mohamed Bhanji, whose land is located adjacent to the proposed Saunders Lake 289S Substation, appeared at the hearing and cross-examined AltaLink on the proposed Saunders Lake development.

4 Wabamun, Leduc and telecommunications developments

4.1 Wabamun development

35. The Wabamun 19S Substation is an existing substation located in the southwest quarter of Section 11, Township 53, Range 4, west of the Fifth Meridian.¹⁰

36. The Wabamun development proposed to alter the Wabamun 19S Substation by opening the 69-kV line breaker for Transmission Line 133L in order to operate Transmission Line 133L between the substation and existing Transmission Line 234L. The proposed in-service date for the Wabamun development was December 2017.

4.2 Leduc development

37. The Leduc 325S Substation is an existing substation located in the northwest quarter of Section 21, Township 49, Range 24, west of the Fourth Meridian.¹¹

38. The Leduc development proposed to alter the Leduc 325S Substation by adding one 138-kV 27-megavolt-ampere (MVA) capacitor bank and one 138-kV circuit breaker within the existing fenced substation area on AltaLink-owned land. The proposed in-service date for the Leduc development was July 1, 2017.

¹⁰ Substation Permit and Licence U2011-268, Proceeding 1345, Application 1607501-1, August 26, 2011.

¹¹ Substation Permit and Licence U2012-374, Proceeding 2056, Application 1608722-1, September 19, 2012.

4.3 Telecommunications development

39. To support the proposed developments, the protection and controls in the south and west of Edmonton area were also proposed to be altered as follows:

- Camrose 9285R Radio Site: addition of a new antenna to the existing telecommunications tower. The radio site is located in the northwest quarter of Section 6, Township 47, Range 19, west of the Fourth Meridian.
- Bardo 197S Substation:¹² addition of a new steel telecommunications tower (50 metres in height) in the northeast corner of the existing substation fenced area and salvage of the existing wood telecommunications tower currently located south of the existing fenced area. The substation is located in the southwest quarter of Section 5, Township 50, Range 19, west of the Fourth Meridian. The proposed in-service date for the Bardo development was December 2017.

4.4 Commission findings

40. The Commission finds that the proposed Camrose telecommunications upgrade was superseded by an application in a subsequent proceeding which proposed to replace the existing telecommunications tower. A decision regarding the telecommunications equipment at the Camrose 9285R Radio Site will be made by the Commission in Proceeding 21319.

41. AltaLink has provided information respecting the nature, extent, land ownership, cost, and potential environmental impacts of the Wabamun and Leduc developments and the Bardo telecommunications upgrade as well as the participant involvement program it undertook to notify potentially affected persons.

42. The Commission finds that there are no outstanding technical or environmental concerns associated with the Wabamun and Leduc developments and the Bardo telecommunications upgrade, nor are there any outstanding public or industry concerns. The Commission finds that the facility applications comply with the information requirements prescribed in Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations and Hydro Developments* and are consistent with the needs identified in the AESO's needs identification document application.

43. Based on the information provided, the Commission finds that there will be no adverse economic, social or environmental impacts caused by the proposed Wabamun and Leduc developments and the Bardo telecommunications upgrade. The Commission finds the proposed Wabamun and Leduc developments and the Bardo telecommunications upgrade to be in the public interest pursuant to Section 17 of the *Alberta Utilities Commission Act*.

5 Saunders Lake development

44. The Saunders Lake development consisted of the following elements:

- Construction of a new 240/138-kV substation (Saunders Lake 289S Substation), near the existing Nisku 149S Substation.

¹² Substation Licence U2002-377, Application 1274771, August 1, 2002.

- Construction of two new double-circuit 240-kV transmission line segments to connect the new substation to existing transmission lines 910L and 914L.
- Construction of a new double-circuit 138-kV transmission line from the new substation to the existing Nisku 149S Substation, to be designated Transmission Line 454L/455L.
- Alterations to existing 138-kV transmission lines 780L and 858L¹³ and other minor alterations as further described in the applications.

45. AltaLink applied for a preferred and an alternate location for the substation site. The preferred site for the substation was in the northwest quarter of Section 7, Township 50, Range 24, west of the Fourth Meridian. The alternate site for the substation was in the northeast quarter of Section 7, Township 50, Range 24, west of the Fourth Meridian. The routes of the connecting transmission lines and segments to be constructed and salvage varied depending on the location of the proposed substation. The proposed locations are shown in Figure 1.

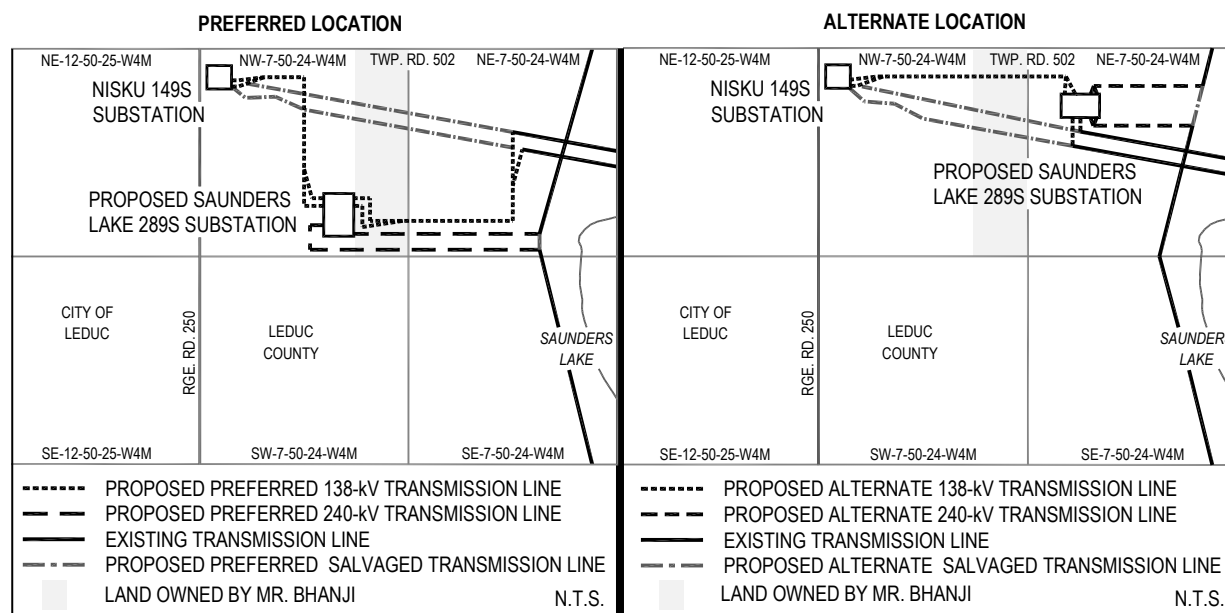


Figure 1 - Saunders Lake 289S Substation Proposed Locations (not to scale)

46. The substation fenced area was proposed to be 145 by 100 metres for both the preferred and alternate site. The overall size of the substation site at the preferred location was proposed to be 400 metres by 200 metres whereas the overall size of the substation site at the alternate location would be twice as wide at 400 metres by 400 metres.¹⁴

47. The proposed in-service date for the Saunders Lake development was December 31, 2017 for the preferred location and December 2018 for the alternate location.

¹³ Including salvage of segments of the lines.

¹⁴ As per site plans 289S-STP2 and 289S-STP3 in Exhibit 20924-X0004.

48. AltaLink submitted that upon completion of the proposed development, the Saunders Lake 289S Substation would include the following major equipment:

- two 240/138-kV 240/320/400-MVA transformers
- six 240-kV circuit breakers
- six 138-kV circuit breakers

49. AltaLink's participant involvement program for the Saunders Lake development consisted of three rounds of notification and consultation with landowners, the City of Leduc and Leduc County. AltaLink mailed project-specific information packages to all stakeholders within 1,000 metres of the proposed development, consulted with 25 landowners and a land banking organization adjacent to the proposed development, and hosted a public open house during each of the first two rounds.

50. AltaLink stated that it considered a number of factors in determining the siting of the substation. This included proximity to existing facilities, substation size, proximity to residences, municipal and land use plans, environmental factors, and stakeholder feedback.

51. AltaLink stated that the preferred site is located on cultivated land and is adjacent to an existing industrial development. AltaLink had been granted an option to purchase the land required for the preferred site. The preferred location had one residence within 150 metres and eight residences within 800 metres of the site. AltaLink stated that the preferred site was adjacent to 9th Avenue for access, allowed room for future expansion, allowed for the consolidation of the new proposed transmission line segments in a corridor, and avoided conflicting with any future road widening projects along Township Road 502.

52. AltaLink stated that the alternate site was located on forage land and was adjacent to Township Road 502. The alternate location had three residences within 150 metres and 16 residences within 800 metres of the site. The alternate site was closer to the existing 240-kV lines, had the shortest amount of transmission line length, had more room for future expansion, and the least amount of dead-end structures. However, the land for the alternate site was owned by more than 300 landowners and the property management company did not have a power of attorney to sell the parcel without landowner authorization. AltaLink did not believe that it would be possible to negotiate access to the property and thus it expected it would likely have to seek recourse through a Surface Rights Board proceeding for a right-of-entry order, which it expected would take at least 12 months to acquire.¹⁵

53. Noise impact assessments were conducted for the proposed substation for both the preferred and alternate locations.¹⁶ The assessments predicted that the Saunders Lake 289S Substation would meet the Rule 012: *Noise Control* permissible sound levels at the nearest dwellings, provided that mitigation measures were installed. The recommended mitigation measures included low-noise equipment selection for each transformer at the proposed Saunders Lake 289S Substation and a retrofit of low-noise cooling fans for both transformers at the existing Nisku 149S Substation.¹⁷ In response to a review of the assessments by CLOG's

¹⁵ Exhibit 20924-X0002, Application, paragraphs 166, 513 and 516.

¹⁶ Fully legible noise impact assessments were submitted by AltaLink in response to an AUC information request. See Exhibit 20924-X0162, PDF pages 118 and 165.

¹⁷ Exhibit 20924-X0162, AML IR Responses to AUC, PDF pages 132, 133, 178, and 179.

noise expert, AltaLink submitted revised noise impact assessment results¹⁸ that used “more accurate ground absorption values”.¹⁹ The revised assessments predicted sound levels that remained in compliance with Rule 012.

54. The estimated cost for the Saunders Lake development at the preferred substation location was \$113.1 million. The estimated cost for the Saunders Lake development at the alternate substation location was \$110.6 million.^{20 21} However, AltaLink stated that if the Commission were to approve the alternate location, the anticipated schedule delay for a Surface Rights Board proceeding, would result in incremental escalation and project carrying costs.²²

55. AltaLink stated that the preferred substation site had the lower overall impact because it located the substation on land that was available for purchase, had two less residences within 150 metres and eight less residences within 800 metres, allowed for future development opportunities adjacent to Township Road 502, and was expected to have an earlier in-service date which would likely result in a lower cost in the end as compared to the alternate site.

56. AltaLink retained CH2M Environmental Consultants (CH2M)²³ to prepare a regional setting report²⁴ and an environmental evaluation report²⁵ for the proposed Saunders Lake development. The environmental evaluation concluded that the alternate substation site and associated transmission lines would have lower potential environmental impacts than the preferred substation site due to shorter line lengths of the connecting transmission lines and less disturbance of wetlands and potential wildlife habitat. However, the report noted that the alternate substation site had a larger overall footprint than the preferred site and the alternate site had more wetland habitat within the substation site as compared to the preferred site which had no wetland habitat.

57. CH2M stated that with the implementation of mitigation measures proposed in AltaLink’s Environmental Specifications and Requirements document,²⁶ both options were environmentally satisfactory. CH2M concluded that potential environmental impacts associated with the proposed development would be reduced provided the proposed mitigation measures were implemented.

58. The Saunders Lake development applications also requested approval to connect the altered transmission lines 910L and 914L to the portions of these lines owned by TransAlta Corporation (TransAlta). AltaLink also applied, on behalf of TransAlta, to amend TransAlta’s existing licences for the lines to reflect the change of the termination from the Ellerslie 89S Substation to the Saunders Lake 289S Substation. No changes were proposed to TransAlta’s assets.

¹⁸ Exhibit 20924-X0418, AML Reply Evidence - Appendix 12 Revised NIA tables.

¹⁹ Exhibit 20924-X0538, AML SWED Argument, paragraph 94.

²⁰ Exhibit 20924-X0417, AML Reply Evidence - Appendix 11 Revised cost tables, PDF page 5.

²¹ The estimated cost for the alternate location, assuming the same schedule as the preferred, was \$109.7 million as per Exhibit 20924-X0417, PDF page 6.

²² Exhibit 20924-X0002, Application, paragraph 829.

²³ Previously named Tera Environmental Consultants.

²⁴ Exhibit 20924-X0041, Application Appendix M-2, PDF page 125.

²⁵ Exhibit 20924-X0042, Application Appendix M-3, PDF page 70.

²⁶ Exhibit 20924-X0041, Application Appendix M-1, PDF page 24.

5.1 Views of the interveners

59. The Commission received objections from two parties with respect to the proposed Saunders Lake development.

60. Cathton Investments Ltd. (Cathton) is the developer of the Leduc Business Park which is southwest of both proposed substation sites. Cathton has also entered into an agreement to purchase the land in the southwest quarter of Section 7, Township 50, Range 24, west of the Fourth Meridian which is adjacent to the preferred substation site. Its intention for future development of its lands is for industrial development. Cathton stated that its main concern was that the physical footprint of the area impacted by AltaLink's proposed development be minimized since "future adjacent development would likely be sterilized".²⁷ Cathton argued that the Commission should approve the alternate substation site since it had a smaller physical footprint than the preferred site and "more efficiently utilizes affected lands".

61. Mr. Bhanji is a landowner whose property is located in between the two proposed substation locations and traversed by the connecting transmission lines.²⁸ Mr. Bhanji submitted a statement of intent to participate and cross-examined the AltaLink witness panel at the hearing. Mr. Bhanji was concerned with land fragmentation and his ability for future development on the land. He stated that he wanted AltaLink to buy the land it would need since he would be limited in his use of that land.²⁹

62. AltaLink stated that regardless of which site was approved by the Commission it would require easements to facilitate connecting the transmission lines.

63. Mr. James Farquharson, CLOG's noise expert, commented on the noise impact assessments for the Saunders Lake development even though none of the CLOG members lived near the proposed sites for the new substation. Mr. Farquharson was concerned that the land absorption values used in the original noise modelling were too optimistic and that a value representative of less porous ground should have been used.

5.2 Commission findings

64. The Commission finds that the proposed facilities at both the preferred and alternate substation locations are consistent with the need identified in the AESO's needs identification document application. The Commission finds that the facility applications comply with the information requirements prescribed in Rule 007 and there are no outstanding technical or environmental concerns associated with the proposed development.

65. The Commission finds that the values used in the modelling for the revised noise impact assessments submitted by AltaLink, including the revised ground absorption values, were reasonable and the assessments fulfill the requirements of Rule 012. The Commission accepts that the Saunders Lake development at either the preferred or alternate substation locations is not expected to exceed the permissible sound level provided the recommended mitigation measures are implemented. The Commission expects AltaLink to select and install low-noise equipment for each transformer at the Saunders Lake 289S Substation and retrofit the cooling fans for both transformers at the existing Nisku 149S Substation with low-noise cooling fans.

²⁷ Exhibit 20924-X0218, Cathton Investments Ltd. - Intervenors' written evidence, paragraph 4.

²⁸ Mr. Bhanji's land is the east half of the east half of NW-7-50-24-W4M and is shown in grey on Figure 1.

²⁹ Transcript, Volume 1, pages 33 and 34.

66. The Commission finds that substation and transmission line development does not prohibit industrial development on adjacent lands. The existing Nisku 149S Substation, located just west of the proposed Saunders Lake 289S Substation, is currently adjacent to industrial development and further industrial development is occurring in close proximity.

67. The physical footprint of the preferred substation location is not larger than the alternate location as suggested by Cathton and the Commission finds that the smaller area required for the substation site at the preferred location actually better mitigates Cathton's concern of minimizing the physical footprint of the proposed development.

68. The Commission accepts that the anticipated schedule delay for a Surface Rights Board proceeding to gain access to the alternate substation location would result in incremental escalation and project carrying costs and finds that these costs would result in the alternate substation location cost being higher than the preferred substation location cost in the end.

69. Although the alternate substation site is favoured from an environmental perspective, the Commission finds that the preferred substation site will have the lower overall impact since it has a smaller footprint, the land for the site is available, the cost will be less, and with the implementation of the mitigation measures proposed in AltaLink's Environmental Specifications and Requirements document, it was found to be environmentally satisfactory.

70. The Commission finds the proposed Saunders Lake development, at the preferred substation location, to be in the public interest pursuant to Section 17 of the *Alberta Utilities Commission Act*.

71. The Commission approves connection of the altered transmission lines 910L and 914L to TransAlta's transmission lines 910L and 914L.

6 Cooking Lake development

6.1 Project description

72. The Cooking Lake development consisted of the following elements:

- Construction of approximately 24 kilometres of new, double-circuit 138-kV transmission line, on single pole structures, between the existing Cooking Lake 522S Substation and a tap point on the existing 138-kV Transmission Line 780L, southeast of Edmonton.
- Alteration of the existing Cooking Lake 522S Substation. The alteration would consist of the addition of two new circuit breakers and expansion of the substation's fenced area to the south by three metres and to the east by 13 metres, on AltaLink-owned land.

73. The transmission line applications identified a preferred route, an alternate route and a variant to the alternate route.³⁰ The preferred route was approximately 24.2 kilometres while the alternate route was approximately 23.1 kilometres. The preferred and alternate routes are shown on the map below.

³⁰ The variant on the alternate route affects approximately one kilometre of the 23 kilometre line. For simplicity, the alternate route and variant for the alternate route will be referred to as "the alternate route" in this decision.

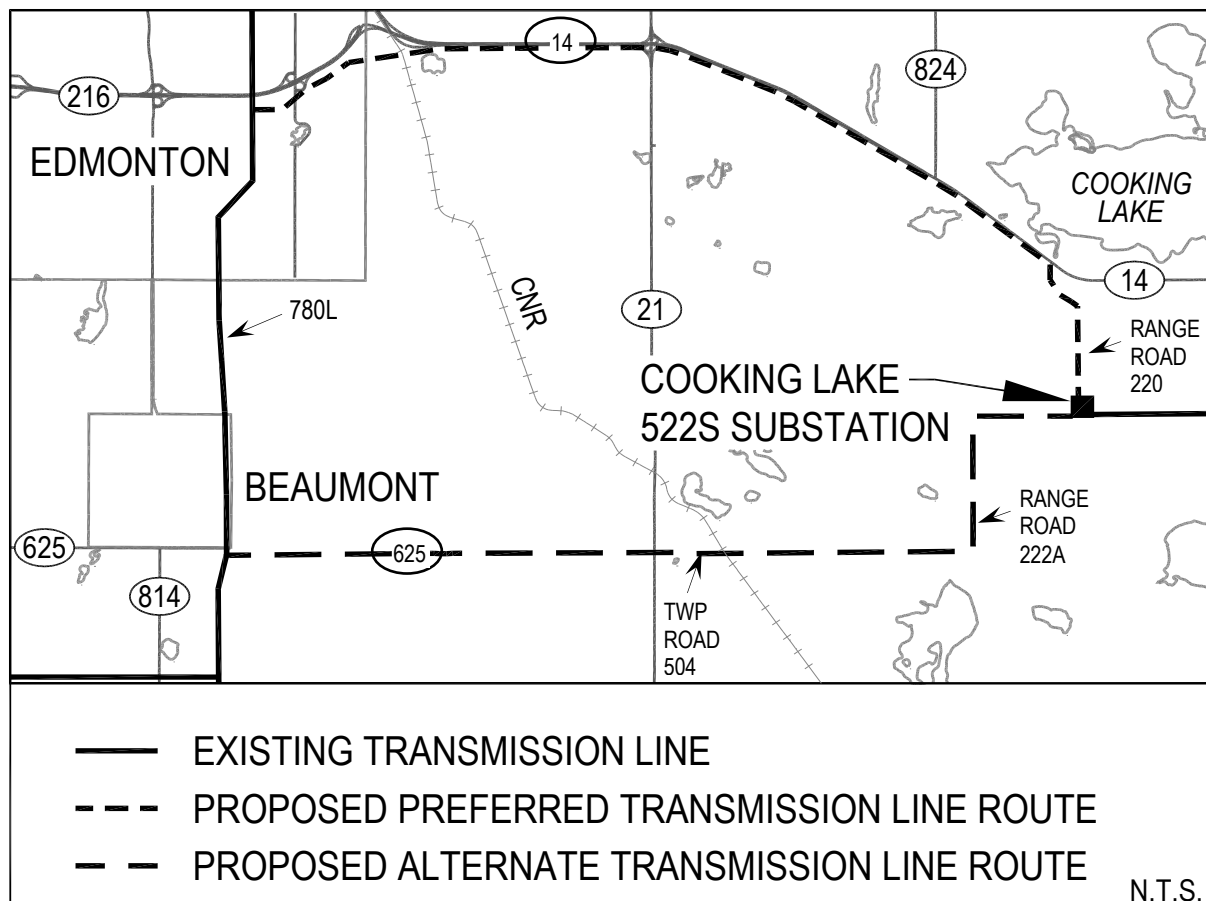


Figure 2 - Proposed Cooking Lake Transmission Line Routes

74. AltaLink also applied for approval of transmission line rights-of-way, construction workspaces and permanent access trails along both routes.

75. AltaLink proposed September 21, 2017, as the in-service date for the proposed preferred Cooking Lake development.

6.2 Consultation

76. The AUC prescribes consultation requirements for applicants in Rule 007. The participant involvement program includes both a public notification and a personal consultation component. Rule 007 states that for transmission line and substation developments, the applicant must notify all occupants, residents and landowners within 800 metres of the edge of the proposed right-of-way of the transmission line and substation site.

77. AltaLink stated that it conducted a comprehensive participant involvement program for the proposed development in accordance with Appendix A of Rule 007. The program included project-specific notification packages that were sent to over 2,500 landowners, stakeholders, occupants and residents within 800 metres of the proposed facilities, and government agencies and departments and industry stakeholders. As part of its program development, AltaLink undertook land title searches and then searched for updates thereafter. The program for the Cooking Lake development also included three rounds of consultation with landowners,

occupants, and residents of land with facilities proposed on, or directly adjacent to, their properties as well as four public open houses.

78. AltaLink stated that its participant involvement program effectively garnered information that was used to determine routing and avoid or mitigate the potential impacts of the project. For example, during consultation, a landowner located in the southeast quarter of Section 13, Township 51, Range 22, west of the Fourth Meridian expressed concerns regarding AltaLink's proposed route on his property. Due to the landowner's irregular land parcel shape, he stated the only place for future development potential would be in the centre of his parcel due to municipal setbacks. After consulting with the Public Lands division of Alberta Environment and Parks, AltaLink adjusted the route to mitigate impacts on the landowner.

79. A number of members of CLOG were concerned that the consultation undertaken by AltaLink was inadequate or did not appropriately address the concerns of members. The Frigon family felt that AltaLink did not take their concerns seriously and the Bourgeois family felt AltaLink's intention was to go ahead with the project regardless of landholder concerns. Some members of CLOG, for example the Chorneys and the Gundersons, expressed concern that AltaLink did not consult with them about the proposed development. Other members, such as Mr. Darryl Kublik and Mr. and Mrs. Wayne and Kimberley Pashak felt that AltaLink did not consider suggested alternate routing options. Mr. Don Blyth alleged that not everyone along Highway 14 had been consulted by AltaLink.

80. A number of members of CLARR were also concerned about AltaLink's participant involvement program. CLARR asserted that consultation was not complete in accordance with Rule 007, as many members were not consulted about routing decisions and last minute changes.

81. AltaLink stated that it notified all residences within 1,000 metres of the centre line of the proposed transmission line routes. AltaLink confirmed that every landowner directly adjacent to Highway 14, on both the north and south sides, had consulted with AltaLink at least once throughout the program and AltaLink had endeavoured to consult with stakeholders with a proposed route on or directly adjacent to their land in each round of consultation. AltaLink stated that it would have consulted with landowners who are not directly adjacent to the proposed developments if a consultation had been requested.

6.2.1 Commission findings

82. The Commission finds that AltaLink's participant involvement program was consistent with the requirements of Rule 007. The Commission commented on its public consultation requirements and expectations in Decision 2011-436:³¹

283. The Commission also finds that the individual concerns raised by interveners do not necessarily mean that the applicants failed to meet the prescribed public consultation requirements provided in AUC Rule 007. To some degree, consultation is an extension and enhancement of the requirement to notify parties that may be directly and adversely affected by the Commission's decision on an application. In the Commission's view, effective consultation achieves three purposes. First, it allows parties to understand the nature of a proposed project. Second, it allows the applicant and the intervener to identify

³¹ Decision 2011-436, AltaLink Management Ltd. and EPCOR Distribution & Transmission Inc., Heartland Transmission Project, November 1, 2011.

areas of concern. Third, it provides a reasonable opportunity for the parties to engage in meaningful dialogue and discussion with the goal of eliminating or mitigating to an acceptable degree the affected parties concerns about the project. If done well, a consultation program will improve the application and help to resolve disputes between the applicant and affected parties outside of the context of the hearing room.

284. The Commission acknowledges that even a very effective consultation program may not resolve all intervener concerns. This is not the fault of the applicant or the intervener; it merely reflects the fact that the parties do not agree. With this in mind, the Commission will consider a consultation program to be effective if it meets AUC Rule 007 requirements and has allowed interveners to understand the project and its implications for them, and to meaningfully convey to the applicant their legitimate concerns about the project.³²

83. It is evident from the record that AltaLink began its participant involvement program early in its application development, attempted to provide potentially affected parties with sufficient information to understand the proposed developments and its potential implications, and provided sufficient opportunity for parties to express concerns about the proposed development.

84. The Commission is satisfied that AltaLink was reasonably responsive to concerns expressed by stakeholders with respect to the proposed routes.

6.3 Route development

6.3.1 Views of AltaLink

85. For the Cooking Lake development, AltaLink analyzed the entire study area between the Cooking Lake 522S Substation and existing Transmission Line 780L to identify lowest impact routes.

86. AltaLink stated that its route determination took into account a number of factors including residential, visual, agricultural and environmental impacts as well as costs, electrical considerations and special constraints such as airstrips or AM transmitters. AltaLink explained that paralleling existing linear features and development was also an important factor in its route determination process. AltaLink asserted that road allowances are publicly owned and have been established for the development of roads, gas, electric, and communications infrastructure and create a network of existing and potential corridors for linear infrastructure. AltaLink stated that routing within road allowances can also mitigate costs associated with transmission line planning, easements, access, construction, future maintenance, and land acquisition.

87. The study area evaluation revealed high residential densities and various constraints in the study area. Based on this analysis, AltaLink concluded that there were no continuous, constraint-free grid segments that could be used to form a complete route. In order to develop full potential routes, AltaLink re-evaluated the potential constraints and reconsidered routing in proximity to high avoidance areas.

88. AltaLink considered a number of different transmission line routes including paralleling existing Transmission Line 874L and paralleling an Enbridge pipeline corridor but they were

³² Decision 2011-436, paragraphs 283 and 284.

removed from consideration due to constructability and siting and technical constraints. AltaLink also considered a route along Township Road 510, which was the most direct route between the Cooking Lake 522S Substation and existing Transmission Line 780L. However, this route was removed from consideration due to reliability issues and a future road expansion.

89. AltaLink responded to concerns expressed by the LSCCR regarding the early elimination of the Township Road 510 route; it explained that the cost of using the route would be more expensive than the alternate route because the upgrading and widening of Township Road 510 was a near-term plan, whereas the Highway 625 expansion was not planned until 2050. AltaLink stated that if the Township Road 510 route was used, AltaLink would have to relocate the transmission line which would increase costs for the project in the near term. AltaLink also explained that since an AM transmitter was located north of Township Road 510, a line jog would have been required on private property for approximately two kilometres, which exceeded the length of jogs required on private property for both the preferred and alternate routes.³³ AltaLink stated that using the Township Road 510 route would have only shifted impacts from one group of landowners to another. AltaLink asserted that it investigated the Township Road 510 route and the results of its evaluation were uncontroverted.³⁴

90. Three main routes were identified by AltaLink as preliminary routes and presented to stakeholders; the Township Road 502 route, the Highway 625 route, and the Highway 14 route.

91. As its name suggests, the Township Road 502 route followed Township Road 502 for the majority of its length; it was the southern-most route. Following stakeholder consultations, AltaLink removed this route from consideration because it had five additional residences within 50 metres and 150 metres when compared with the Highway 625 route. AltaLink stated that it also considered the residences-within-800-metres metric which favoured the Township Road 502 route over the Highway 625 route. However, AltaLink stated that it gave significantly more weight to the residences-within-150-metres metric which resulted in its decision to remove the Township Road 502 route from its routing options. AltaLink also explained that this route was located along a municipal, 20-metre road right-of-way, as opposed to the two other preliminary routes which were located within portions of wider highway rights-of-way.

92. AltaLink used comparative analysis to determine which of the two remaining routes would be its preferred route. It used GIS data metrics, which reflected the residential, visual, agricultural and environmental impacts as well as costs, electrical considerations and special constraints for this analysis.

93. AltaLink stated that it also applied its judgment and experience to incorporate the quantitative metrics with the qualitative stakeholder feedback into the overall route determination process. For example, AltaLink stated that it uses its standard routing metric of number of residences within 150 metres of a transmission line right-of-way in all its projects, which was developed through experience on previous projects. AltaLink asserted that generally for distances up to 150 metres from a residence, there is an increased likelihood of physical impact on the residence or the yard, garden, windbreaks, and outbuildings associated with the residence, particularly in a rural setting. AltaLink stated that the 150-metre distance to residences

³³ Exhibit 20924-X0545, AML Reply Argument, paragraph 170.

³⁴ Exhibit 20924-X0545, AML Reply Argument, paragraph 173.

criterion provided a useful comparison between the potential physical impacts of different transmission line routes.

94. AltaLink stated that it did not consider one specific criterion or metric as the primary criterion in determining the lowest impact route for the Cooking Lake transmission line. It explained that it looked at a balance of all of the impacts rather than focusing on one single criterion.

95. AltaLink stated the Highway 14 route was selected as the preferred route over the Highway 625 route because it parallels existing linear infrastructure for the majority of its length, utilizes a portion of the transportation utility corridor east of Edmonton, has the fewest number of residents within 150 metres, and has sufficient land for future highway expansion.

96. At the hearing, AltaLink clarified that while the Highway 625 route also paralleled existing linear infrastructure for the majority of its length, the characteristics of the infrastructure paralleled along the Highway 14 route made it more favourable.³⁵

6.3.2 Views of the interveners

97. Mr. Berrien, CLOG's routing expert, provided a report which identified key routing factors that he believed should drive route selection and line design details. These included avoiding homesites, following existing linear disturbances, minimizing line lengths and costs, land ownership, minimizing agricultural and environmental impacts, and minimizing tree clearing and visual impacts. He asserted that a ranking exists for these factors in the process of route selection, as various competing aspects may be in play.

98. Mr. Berrien argued that avoiding homesites was the number one routing criterion. However, he stated that given the locale of the Cooking Lake 522S Substation, there appeared to be little prospect of avoiding homesites no matter where the line was routed. He stated that overall, the preferred route impacted fewer homes.³⁶

99. LSCCR stated that if the Commission approved the application, it should approve the preferred route, as the preferred route had the lowest impact on residents overall and paralleled and followed more existing linear infrastructure than the alternate route.

100. LSCCR submitted that there were other possible routes, particularly Township Road 502 and Township Road 510 that had much less impact on residents than the alternate route. LSCCR believed AltaLink discounted Township Road 502 very early in the routing process. LSCCR stated that the difference between Township Road 502 and the alternate route was slight in terms of affecting residences. Specifically, LSCCR stated that Township Road 502 only affected three more residences at 50 metres, one less at 100 metres and six more at 150 metres as compared to the alternate route.³⁷ LSCCR argued that AltaLink did not include in its rationale for discounting Township Road 502 that at 800 metres, 136 residences were affected along the Township Road 502 route while 181 residences were affected along the alternate route.

³⁵ See paragraph 244.

³⁶ Exhibit 20924-X0309, Evidence of R Berrien.

³⁷ Exhibit 20924-X0536, LSCCR Argument, paragraph 28.

101. LSCCR also stated that the Township Road 510 route would have had the shortest line length, the least amount of dead-end and angle structures, and would have been the least expensive route to build. LSCCR submitted that the Township Road 510 route was dismissed because of the location of an AM transmitter and an unregistered airstrip north of the road; Strathcona County's future plans to upgrade and widen the road to the south; existing Transmission Line 874L on the north side of the road; and the AESO's reluctance to allow triple-circuit structures along the road. LSCCR stated that the route was discounted without proper examination and no attempts were made to resolve the concerns with this route.

102. Leduc County stated that the preferred route was the lower impact route and, when considering the public interest, the better route because it minimized the burdens of transmission line infrastructure on residents, took advantage of the transportation utility corridor, avoided placement of the line in a location where approximately half the line would have to be relocated, utilized an existing distribution corridor for line placement and would be located further from Highway 14 than it would be from Highway 625.³⁸

103. Strathcona County stated that the preferred route was a greater impact route since both the preferred and alternate routes parallel linear infrastructure for 22 kilometres and since the alternate routes are shorter, a higher percentage of the alternate routes parallel existing linear infrastructure compared to the preferred route.³⁹ Strathcona County argued that the preferred route would be located in the transportation utility corridor for only 3.1 kilometres, or 12.8 per cent of the total length, and that reliance on this metric was exaggerated.⁴⁰

6.3.3 Commission findings

104. The Commission finds that AltaLink's route selection process was sound and consistent with established transmission line siting principles.

105. The Commission finds that AltaLink's decision to eliminate the routes along Township Roads 510 and 502 from its consideration was done following sufficient examination and was reasonable. In particular, the Commission agrees that the multiple constraints associated with the Township Road 510 route and the close proximity (within 50 metres) of the Township Road 502 route to more homesites than the preferred and alternate routes warranted their exclusion.

106. The Commission agrees with Mr. Berrien that the avoidance of homesites is an important siting consideration and can often be the deciding factor when developing new transmission line routes. Given the proximity of these required transmission upgrades to Edmonton and surrounding communities, the Commission appreciates that it was impossible for AltaLink to develop route options that avoided homesites entirely. Accordingly, it was necessary for AltaLink to develop routes that avoided homesites to the degree possible while still meeting the need for the project identified by the AESO. In the Commission's view, the preferred and alternate routes achieved that goal and avoid homesites, to the extent possible, given the density of development in the project area.

³⁸ Exhibit 20924-X0542, Written Argument of Leduc County – AUC Proceeding 20924, paragraph 31.

³⁹ Exhibit 20924-X0541, Argument of Strathcona County and CLCC and FEIS – 20924, paragraph 15.

⁴⁰ Exhibit 20924-X0541, Argument of Strathcona County and CLCC and FEIS – 20924, paragraph 20.

107. The Commission observes that the preferred and alternate routes each follow existing linear disturbances and use, to the extent possible, public land in the form of road allowances. Further, the Commission is satisfied that the applied-for routes minimize length and costs by following direct paths that avoid unnecessary jogs or deviations.

108. Having regard to the foregoing, the Commission is satisfied that AltaLink's route development process for this project was reasonable and that the preferred and alternate routes conform with the siting principles endorsed by the Commission in past decisions.

6.4 Right-of-way, construction workspace and access trails

6.4.1 Views of AltaLink

109. AltaLink stated that the right-of-way width for the proposed Cooking Lake transmission line was based on the swing out of conductors due to wind and was designed to ensure that the transmission line would be a safe distance from buildings, trees, and other objects. AltaLink asserted that the right-of-way width was required to safely operate and maintain the transmission line.

110. AltaLink stated that where the line was to be located in a road allowance, the single pole structures would be located one metre within the road allowance and the required right-of-way would be 10 metres inside the property line adjacent to the transmission line. AltaLink explained that it required a 21-metre wide right-of-way where the line was to be located on private property, with the poles being located in the centre of this right-of-way. It stated that the required right-of-way widths were the same for either of the proposed routes.

111. AltaLink's application included a request, under Section 34 of the *Hydro and Electric Energy Act*, to place the proposed facilities within Leduc County and Strathcona County road allowances.

112. AltaLink stated that following construction of the transmission line, landowners would continue to have free and uninterrupted use of the rights-of-way between poles, provided that their use of these lands did not interfere with the safe operation and maintenance of the transmission line.

113. AltaLink also applied for approval of construction workspaces along both routes for stringing, structure assembly or vehicle access. AltaLink originally sought a 10-metre-wide construction workspace adjacent to the 10-metre wide right-of-way. However, AltaLink amended this in its reply evidence and stated it would limit the amount of construction workspace to a 20-metre by 40-metre area around pole locations.⁴¹

114. AltaLink provided a table listing the construction workspaces required on private property as Appendix R to its application.⁴² AltaLink requested that these locations be expressly included in the permit and licence issued for the proposed transmission line. AltaLink noted, in its information response to the Commission, that not all construction workspace would be required but approval of the workspaces was being requested to avoid future construction challenges due to potential land access constraints. AltaLink stated it would work with

⁴¹ Exhibit 20924-X0406, AML Reply Evidence, paragraph 17.

⁴² AltaLink provided updated locations of the permanent right-of-way and construction workspaces on private property that it was applying for in a response to Undertaking 009, given at the hearing: Exhibit 20924-X0513.

landowners, where on private property, to assess the land required for construction use during its land acquisition discussions.⁴³

115. AltaLink also applied for trails on each route that would be needed to access the proposed transmission line. AltaLink provided a list of the required access trail locations in response to an information request from the Commission.⁴⁴ AltaLink stated that if it was unable to negotiate land access with the landowner, AltaLink would seek a right-of-entry order from the Surface Rights Board, and these access trail locations would become permanent rights-of-way.

116. AltaLink stated that a greater length of line along the alternate route would be located on private property, requiring a 21-metre right-of-way, than on the preferred route. AltaLink also stated that 40 per cent of the line length of the preferred route did not have private lands located adjacent to the right-of-way which it viewed as an advantage of the preferred route.⁴⁵

117. AltaLink provided an undertaking at the hearing which provided the length of access trails for both proposed routes. The total length of proposed access trails on the preferred route is approximately 1.8 kilometres with 1.2 kilometres located on private land and 600 metres located within undeveloped road allowance. The total length of proposed access trails on the alternate route is approximately 800 metres with 795 metres located on private land and five metres located within undeveloped road allowance.⁴⁶

118. In response to an information request from CLOG, AltaLink provided diagrams indicating the right-of-way and construction workspace requirements along the west side of Range Road 220 which would be traversed by the preferred route. These diagrams indicated that the transmission line would be located one metre into road allowance along the road and a right-of-way on private property of 10 metres would be required except for where portions of the road allowance boundary had already been widened by the county. Along the portion of Range Road 220 from the Cooking Lake 522S Substation to a point in the north half of the northeast quarter of Section 1, Township 51, Range 22, west of the Fourth Meridian, adjacent to the Bourgeois, Muncy, Grabill, Kublik, Pashak, and Fraser properties, where the county already has obtained a widened road allowance boundary, the transmission line would be located six metres into the road allowance and a right-of-way of only five metres on private land would be required.

119. In response to the concerns of CLARR member, Mr. Freeman, AltaLink stated that the proposed alternate route would only require 10.5 metres of right-of-way on his strip of land and the current access trail running along this strip could remain in the event that the alternate route was approved.

⁴³ Exhibit 20924-X0162, AML-AUC-2015DEC04-005(b).

⁴⁴ Exhibit 20924-X0162, AML-AUC-2015DEC04-007.

⁴⁵ Transcript, Volume 3, page 440.

⁴⁶ Exhibit 20924-X0484 – Undertaking 006.

6.4.2 Views of the interveners

120. CLOG stated that while there may be more homesites within 150 metres of the alternate route, most of these properties are across the road from the proposed right-of-way and no right-of-way or construction workspace will be taken from any of these landowners.⁴⁷

121. CLARR argued that the majority of the alternate route followed roads with homesites on each side whereas a large portion of the preferred route followed Highway 14 so it was not adjacent to private lands. CLARR asserted that from Undertaking 009 it was clear that the amount of private lands that would be acquired is materially more on the alternate route when compared to the preferred route.

122. Mr. Freeman, a CLARR member, was concerned about access to his land. Mr. Freeman's land includes a 30-metre-wide strip of land running adjacent to Range Road 222A which is the only way to access his lands.⁴⁸ He was concerned that the proposed alternate transmission line right-of-way would require this entire strip of land and prevent him from building a needed road if he was to subdivide his parcel in the future.

123. CLARR was also concerned that if the alternate route was approved a number of landowners, such as the Givogues, the Shepherds and the Fenskes, would have at least a portion of a structure on their lands as opposed to the preferred route where all structures would be located within road allowance.⁴⁹

6.4.3 Commission findings

124. The Commission finds that the lands for construction workspaces areas and permanent access trails, as identified by AltaLink, fall within the definition of transmission line, pursuant to sections 14, 15 and 19 of the *Hydro and Electric Energy Act*.

125. The Commission finds that the lengths of permanent access trails for the preferred and alternate routes differ by 405 metres which does not materially favour one route over the other.

126. The Commission finds that AltaLink's proposal to route sections of the preferred and alternate routes within road allowances is reasonable and will minimize the right-of-way required on private lands for the proposed transmission line. The Commission finds that the length of line requiring a 21-metre right-of-way on private property favours selection of the preferred route since it requires less private property and approximately 40 per cent of the line length is not adjacent to private lands.

6.5 Property impacts

6.5.1 Proximity to residences

6.5.1.1 Views of AltaLink

127. AltaLink stated the preferred route was located almost entirely within the transportation utility corridor, highway right-of-way and government road allowance. This was expected to reduce potential residential impacts. AltaLink stated that the alternate route was also located

⁴⁷ Exhibit 20924-X0543, Argument of the Cooking Lake Opposition Group, paragraph 24.

⁴⁸ This strip of land can be seen on PDF page 5 of Exhibit 20924-X0485.

⁴⁹ Exhibit 20924-X0539, Final Arguments for CLARR, paragraph 19.

predominantly within existing government road allowance; however, more line would be located on private property, which would require a 21-metre right-of-way.

128. AltaLink asserted that the alternate route had more line length along municipal road allowance which is narrower than the highway right-of-way of the preferred route and had greater setbacks for development thus resulting in higher potential impacts to existing residences.

129. AltaLink provided a table indicating the number of residences at various distances from the proposed transmission line routes⁵⁰ as follows:

Residential Metric	Preferred Route	Alternate Route
Number of residences within 50 metres of centreline (closest edge)	8	13
Number of residences within 100 metres of centreline	20	47
Number of residences within 150 metres of centreline	44	68
Number of residences within 800 metres of centreline	373	338

130. AltaLink asserted that, based on its experience, there is generally an increased likelihood of physical impact on a residence or the yard, garden, windbreaks, and outbuildings associated with a residence within 150 metres of a transmission line, particularly in a rural setting. AltaLink found it was less likely for a transmission line to have a physical impact on a property at distances greater than 150 metres.

131. AltaLink asserted there was an obvious difference in the residential impacts of the preferred and alternate routes which was material in its decision to identify the preferred route as preferred.⁵¹ AltaLink concluded that the preferred route was favoured from the perspective of proximity to residences because it had 24 fewer residences within 150 metres of the proposed transmission line route than the alternate route.

132. In response to concerns regarding pole placement with respect to residential driveways, AltaLink stated that during detailed design, poles would be placed as far away as practicable from driveway entrances to allow for safe, unencumbered vehicle access, and to provide for clearing, plowing, and other driveway maintenance activities.⁵²

133. In response to concerns of CLARR members, AltaLink committed to working with the Whites regarding structure locations. AltaLink also stated that the railway line west of the Fenske and Shepherd properties would not impact its ability to strategically position poles along the alternate route adjacent to these properties. However, AltaLink advised that to accommodate wider spans, taller structures would be required which would most likely require foundation footprints outside the road allowance and thus there might be some portion of encroachment onto property.⁵³

⁵⁰ Exhibit 20924-X0492 - Undertaking 010.

⁵¹ Transcript, Volume 3, page 518.

⁵² Exhibit 20924-X0406, AML Reply Evidence, paragraph 250.

⁵³ Transcript, Volume 3, pages 479 and 480.

6.5.1.2 Views of the interveners

134. The members of CLOG were concerned with the proximity of the proposed preferred route to their residences, particularly along Range Road 220 where some members would be located less than 50 metres from the line and poles. The Bourgeois family was concerned with the proposed location of pole D-100 and its proximity to their driveway. Mr. Kublik, whose residence is approximately 30 metres from the proposed centre line of the preferred route, was concerned he would have to move his garage and shed.

135. Mr. Berrien, a routing expert for CLOG stated that overall, the preferred route impacted fewer homes.⁵⁴

136. Mr. Berrien asserted that given this situation, AltaLink's task was to minimize the impacts that would be created because it could not avoid homesites. His report focused on strategies to mitigate impacts to homesites along Range Road 220, which is along the preferred route. He stated that tree clearing and visual impacts were the next most important routing criteria for this segment of the route.

137. Mr. Berrien suggested four specific strategies to reduce the impacts on homes along Range Road 220: use a different structure type, use taller structures, move the location of structure D-100, and deflect the preferred route to avoid the Kublik property. These will be discussed further in sections 6.5.3 and 6.13.

138. CLARR members expressed concerns on how far the transmission poles on the alternate route would be from their residences. CLARR argued that AltaLink was at a more advanced stage in the design process for the preferred route than for the alternate route so while AltaLink was able to provide preliminary structure locations for the preferred route it was unable to do the same for the alternate route.

139. In its argument, CLARR stated that Mr. Berrien concluded that the alternate route impacts a greater number of homes than the preferred route.⁵⁵ CLARR also argued that the alternate route would utilize a more narrow road allowance along Highway 625, which would result in additional right-of-way on private land.⁵⁶

140. The White's residence is located approximately 35 metres from the alternate route and they did not want the proposed transmission line in their front yard, as it would diminish their property value.⁵⁷ The Shepherds also expressed concerns that the alternate route would reduce the value of their property.⁵⁸ Additionally, the Fenske family, neighbours of the Shepherds, expressed concerns about the potential locations of the transmission poles along the alternate route in relation to their residence and property as well as the line's proximity to the railway tracks near their property.⁵⁹

141. Ms. Paul stated that there may be movement of the existing distribution line to the south side of Highway 625, near her and other CLARR members' properties, should the alternate route

⁵⁴ Exhibit 20924-X0309, Evidence of R Berrien.

⁵⁵ Exhibit 20924-X0539, Final Arguments for CLARR, paragraph 25.

⁵⁶ Exhibit 20924-X0539, Final Arguments for CLARR, paragraph 30.

⁵⁷ Exhibit 20924-X0298, Written Submission for CLARR, PDF pages 31-32.

⁵⁸ Exhibit 20924-X0298, Written Submissions for CLARR, PDF page 28.

⁵⁹ Transcript, Volume 4, pages 754-759.

be approved⁶⁰ and thus their residences would still be impacted even though the proposed line would not require right-of-way on their property.

142. The members of LSCCR were concerned with the proximity of the alternate route to their residences and argued that residential impact was greater on the alternate route. LSCCR reiterated that residences within 150 metres of a transmission line would be the most affected and that the alternate route had more residences within 150 metres of the transmission line.

143. Leduc County's expert, Mr. Preiksaitis, observed that many adjacent land uses along the preferred route were primarily agricultural with farmsteads set back a good distance away from Highway 14 whereas the alternate route had adjacent land uses designated as country residential for approximately six kilometres of the route, as shown in the Capital Region Board Land Use Plan, which would be fragmented by the alternate route.⁶¹

144. Leduc County asserted that consideration of the residential impacts "strongly militates in favour of selecting the Preferred Route because it avoids a greater impact on residential properties and property owners while achieving the same benefit."⁶²

6.5.1.3 Commission findings

145. When selecting a route to approve, one of the factors the Commission considers important is proximity to residences. The Commission considers that residences within 150 metres of a transmission line will likely experience greater impacts than residences within 400 or 800 metres of a transmission line, as there is more likelihood for physical impacts. Additionally, the Commission considers that impacts will generally decrease as the distance from the transmission line increases. As such, the Commission places more weight on the 150-metre metric compared to the 800-metre metric.

146. Regarding the number of residences at various distances from the proposed transmission line routes, more residences are impacted within 800 metres of the preferred route centre line compared to the alternate route centre line. However, 24 fewer residences are impacted within 150 metres of the preferred route centre line compared to the alternate route centre line. While the Commission understands the CLOG members' concerns with the proximity of the transmission line to their residences, it notes that CLOG expert Mr. Berrien stated that the preferred route impacted fewer homes.

147. The Commission also notes that the preferred route will be located almost entirely within the transportation utility corridor, highway right-of-way and government road allowance, while a significant portion of the alternate route will be located on private property. Additionally, the Commission agrees that the alternate route will have more line length along municipal road allowance, which is narrower than the preferred route's right-of-way.

148. The Commission accepts that adjacent lands along the preferred route are primarily agricultural whereas the alternate route has designated country residential areas which would be fragmented by the alternate route, thereby causing more impacts along the alternate route.

⁶⁰ Exhibit 20924-X0539, Final Arguments for CLARR, paragraph 38 (e).

⁶¹ Exhibit 20924-X0326, Parioplan Report, PDF pages 8 and 16.

⁶² Exhibit 20924-X0542, Written Argument of Leduc County, paragraph 14.

149. In general, the Commission finds more residences will be impacted along the alternate route compared to the preferred route. Considering all of the above, the Commission finds, with regard to proximity to residences, that the preferred route is more favourable than the alternate route.

6.5.2 Property value

150. The impact on property values of the preferred and alternate routes was an important issue in the proceeding. AltaLink, CLOG and CLARR each hired experts in property valuation: AltaLink hired Serecon Inc. (Serecon), CLOG hired HarrisonBowker Real Estate Appraisers Ltd. (HarrisonBowker) and CLARR hired Gettel Appraisals Ltd. (Gettel).

151. Serecon prepared two property value reports for AltaLink. Its first report addressed the impacts of 138-kV transmission lines on rural property values.⁶³ Its second report estimated the potential property value impacts of the proposed transmission line on residences located on or near the preferred and alternate routes.⁶⁴ Mr. Don Hoover of Serecon attended the hearing as AltaLink's property value witness.

152. HarrisonBowker prepared a report for CLOG in which it analyzed the potential property value impacts of the proposed transmission line on 10 properties located on Range Road 220 along AltaLink's preferred route.⁶⁵ Mr. Woodlock of HarrisonBowker attended the hearing as CLOG's property value witness.

153. Gettel's report for CLARR estimated the property value impact of the proposed transmission line on 201 residences located on the preferred and alternate routes.⁶⁶ Mr. Archer of Gettel attended the hearing as CLARR's property value witness.

154. In this section the Commission reviews the evidence of each of the property value experts and makes its findings on the issue of property value impacts.

The Serecon reports

155. In its first report Serecon used "paired sales analysis" to estimate the effects of a 138-kV transmission line on agricultural and country residential properties. Serecon described paired sales analysis as follows:

A Paired Sales Analysis is often used to determine the asking price for a property, or the market value of the property that is to be offered for sale. Characteristics of the property in question are compared to other properties that have recently sold in the same area. The selling prices of the other properties are considered when estimating a market value for the property that is about to be offered for sale. Positive or negative adjustments are considered to reflect differences in location, soil and topography, access, etc., as well as for the amount of time that has elapsed since the other properties were sold, depending on market conditions. By comparing the subject property to other properties that sold in the

⁶³ Exhibit 20924-X0046, Appendix Q-2, 138 kV Transmission Lines and Rural Property Values, September, 2015, PDF page 55.

⁶⁴ Exhibit 20924-X0416, Appendix 10, Analysis of Potential Land Value Impacts from the Proposed Cooking Lake 138 kV Transmission Line, April 15, 2016.

⁶⁵ Exhibit 20294-X-0318, HarrisonBowker Real Estate Appraisers Ltd., Addenda L-2, Real Estate Consulting Report, March 7, 2016.

⁶⁶ Exhibit 20294-X0300, Gettel Appraisals Ltd., Tab 2, Gettel Archer Report, March 2016.

same area, with the only difference being a 138 kV HVTL [high voltage transmission line], the difference in the property values is attributed to the presence of the 138 kV HVTL.⁶⁷

156. Serecon selected rural parcels located more than 1.6 kilometres from an urban centre for its study. For control properties, Serecon picked properties crossed by, or adjacent to, a 138-kV transmission line (i.e. within a road allowance and 10 metres or less away from the parcel). Serecon chose comparable properties with similar characteristics to the subject property but for the presence of a transmission line. Serecon's study included bareland properties with no or very limited improvements to the land and improved properties which had a single residence and no more than two supporting agricultural buildings.

157. Serecon analyzed 33 properties in its first report. Based on its analysis it concluded that:

- Property values for bareland were less sensitive to 138-kV lines than property values for improved properties.
- Property values for country residential properties and for small properties were more sensitive to 138-kV transmission lines than agricultural properties and larger properties.
- Properties where a 138-kV transmission line was located in a right-of-way across the property were more sensitive than properties where the transmission line was located in an adjacent road allowance.
- There was minimal difference between the sale price of the subject properties (with a 138-kV transmission line) and the comparable properties with no transmission line.

158. In its second report, Serecon estimated property value impacts to properties located on or adjacent to the preferred and alternate routes associated with the construction of a new 138-kV transmission line. Serecon first estimated a range of property value impacts for a 138-kV transmission line. To do this, it looked at a subset of the paired sales it considered in its first report. Serecon also took into account conclusions it had made based on previous studies that it had conducted for 240-kV and 500-kV transmission lines. Those conclusions included:

- Impact increases as distance to line decreases.
- Impact increases as visibility increases.
- Impact is larger when structures are present on the property.
- Impacts are greater for larger structures along 240 or 500-kV lines than they are for 138-kV lines.
- Orientation of residence to the transmission line is important.
- Specific structure location is also important.

⁶⁷ Exhibit 20924-X0046, Appendix Q-2, 138 kV Transmission Lines and Rural Property Values, September 2015, PDF page 60.

159. Taking into account all of the above, Serecon concluded that the potential negative impacts of the proposed transmission line would range between zero and 15 per cent with the key factor being visibility of the line. Serecon then applied this range of discounts to residences along the preferred and alternate routes. It was Serecon’s opinion that approval of the preferred route could have a negative impact on the property value of 14 properties. It estimated that the negative impacts would range from zero to 12 per cent with an average of 4.0 to 6.4 per cent. For the alternate route, Serecon estimated that 33 properties could be negatively impacted with the impacts ranging from zero to 15 per cent with an average discount of 4.5 to 7.4 per cent.⁶⁸

160. Serecon concluded that the preferred route has less overall property value impacts on adjacent properties than the alternate route having regard for the total number of properties potentially affected and the average magnitude of impact.

The HarrisonBowker report

161. HarrisonBowker used two methods to estimate the impacts of the proposed transmission line on property values. First, it reviewed nine previously published case studies on transmission line property value impacts. Second, it conducted its own paired sales analysis of improved and unimproved country residential properties. HarrisonBowker then estimated what it believed the property value impacts would be on 10 properties located along Range Road 220 if the preferred route was approved.

162. The case studies reviewed by HarrisonBowker were written between 1976 and 2009 and were based on data gathered between 1965 and 2007. Only two of the nine studies looked at the property value impact of transmission lines on rural properties, including farmland and vacant recreation properties. The remaining seven studies examined property value impacts on urban single-family homes. None of the studies reviewed considered the property value impacts of transmission lines on rural improved properties such as country residential acreages or hobby farms.

163. HarrisonBowker stated that these studies “collectively suggest that there appears to be a negative effect on improved properties in proximity to transmissions lines, with the strongest influence observed for properties close to the lines, and declining as the location increases.”⁶⁹ Based on its review of the nine studies, HarrisonBowker estimated property value impacts as follows:⁷⁰

Proximity	Discount
Within 30 metres	6-15%+
30 to 60 metres	1-5%
60 metres+	Limited-3%
Vacant farm/recreational land	0%-Limited

164. HarrisonBowker also conducted paired sales analysis of improved country residential properties and vacant country residential lots.

⁶⁸ Exhibit 20924-X0416, Appendix 10, Analysis of Potential Land Value Impacts from the Proposed Cooking Lake 138 kV Transmission Line, April 15, 2016, page 34.

⁶⁹ Exhibit 20294-X0318, Addenda L-2, Real Estate Consulting Report, March 7, 2016, page 46.

⁷⁰ Exhibit 20294-X0318, Addenda L-2, Real Estate Consulting Report, March 7, 2016, page 78.

165. For the improved properties, HarrisonBowker looked at four different country residential subdivisions in Parkland County, west of Edmonton. Two of the subdivisions were adjacent to a right-of-way or easement containing three transmission lines: one 500-kV transmission line and two 240-kV transmission lines. The other two subdivisions were adjacent to a 240-kV transmission line.

166. For each subdivision, HarrisonBowker identified a baseline property, which was located adjacent to one or more transmission lines, and at least two comparable properties (referred to as “value indicator” properties) in which the transmission line was either farther away or not visible. The properties in the four subdivisions ranged in size from one acre to 4.5 acres. HarrisonBowker made adjustments to the properties to account for the characteristics of each property and then compared the baseline properties to the value indicator properties to estimate the property value impact, or discount, associated with the adjacent transmission line.

167. HarrisonBowker used the same approach for vacant country residential lots. It again looked at four different areas. The baseline property for the first area was adjacent to the Heartland 500-kV Transmission Line; the next three areas were adjacent to a 240-kV transmission line. For one of the four areas assessed, HarrisonBowker used the list prices of lots rather than prices for which they were sold. Based on this analysis, HarrisonBowker estimated discounts for the baseline properties as compared to those that were not adjacent to a transmission line in a range of 16.36 to 37.50 per cent.

168. HarrisonBowker then looked at the effect that these discounts would have on improved properties, i.e. what the price impact would be if homes were built on the vacant lots analyzed. It estimated that the discount to improved properties would range from 4.7 to 11 per cent. It concluded that its vacant lot analysis provided secondary support for its initial analysis of improved lots and supported a discount range of five to 11 per cent for homes adjacent to transmission lines. HarrisonBowker summarized its findings as follows:⁷¹

Value Matrix: Adverse Effect of Transmission Lines on Improved Properties				
Value Range	Proximity			
	< 30 metres	30-60 metres	60-120 metres	120-180 metres
Less than \$300,000		5.00%		
More than \$300,000	12.00%	10.00%	8.00%	5.00%

169. HarrisonBowker also examined the property value impacts associated with a loss or reduction of a shelterbelt using paired sales analysis. It analyzed two different areas and determined that a lack of shelterbelt could result in property value discounts ranging from three to 13 per cent.

170. The last step in HarrisonBowker’s analysis was to apply its estimated discounts to the 10 properties located along Range Road 220. It predicted that discounts to those properties would total \$462,141 with an average discount of 8.32 per cent.

⁷¹ Exhibit 20924-X0318, Addenda L-2, Real Estate Consulting Report, March 7, 2016, page 6.

The Gettel report

171. In its report, Gettel predicted the projected cumulative property value loss for properties on both the preferred and alternate routes. To achieve this, Gettel used the assessed value of each property considered and then applied discount rates derived from three case studies it had conducted to calculate property value losses for each route. The three case studies were: the Parkland case study, the Heartland case study and the Tsawwassen Heights case study.

172. The Parkland case study was a form of paired sales analysis in which Gettel compared list prices, and in some cases, sales prices, between vacant lots in four different country residential subdivisions in Parkland County west of Edmonton. In each subdivision some lots were located adjacent to, or in clear view of, a 240-kV transmission line while the remaining comparables were not. The lots assessed were generally one acre or less in size. Based on its analysis, Gettel estimated discounts associated with proximity to the nearby 240-kV transmission line ranging from four per cent to 31 per cent. Gettel concluded as follows:

A review of the sales data would indicate that the primary effect is visual in nature, with those properties having a buffer or partial buffer to the power line achieving values on par or equivalent with lots located a greater distance away.⁷²

173. In the Heartland case study, Gettel examined 19 properties that had been purchased by AltaLink along the route of the 500-kV Heartland Transmission Project. The properties were purchased before the Heartland line was constructed and nine of the properties were sold after it was built. Gettel characterized the properties considered in the case study as agricultural and rural residential in nature.

174. Gettel stated that the key data in this case study related to the nine properties that had been resold. However, it acknowledged that some of the properties had been acquired by AltaLink at prices above market to reflect unique circumstances. Further, one of the nine properties was purchased by Pembina Pipeline Corporation for the same price that AltaLink paid. The remaining eight properties were sold for less than the price paid by AltaLink. Gettel calculated the range of discounts for these eight properties to be from 28 per cent to 57 per cent with the average discount being 30 per cent.

175. Gettel concluded as follows:

The analysis completed would indicate that the Heartland Transmission Project has exerted strong impacts on property values. The average loss of 38% is amongst the highest discounts observed within the market for properties of this type. Both improved properties and vacant land are impacted in a similar fashion and even properties set back a greater distance from the line exhibit substantial discounts.⁷³

176. The Tsawwassen Heights case study examined the resale of 104 homes located along the right-of-way for an existing 138-kV transmission line in Tsawwassen Heights, a suburb of Vancouver. BC Hydro decided to upgrade the line to 230-kV and replace the existing wooden poles with steel towers. The 230-kV transmission line extended through the property boundaries

⁷² Exhibit 20294-X0300, Gettel Appraisals Ltd., Tab 2, Gettel Archer Report, March 2016, PDF page 53.

⁷³ Exhibit 20294-X0300, Gettel Appraisals Ltd., Tab 2, Gettel Archer Report, March 2016, PDF page 100.

for most of the sites. The typical distance between the line and the homes was approximately 75 feet (23 metres).

177. BC Hydro purchased 104 homes backing on the right-of-way in 2009. A paired sales analysis conducted on behalf of BC Hydro at that time concluded that the homes along the original right-of-way were selling for 10 to 12 per cent less than similar homes in the neighbourhood that were not backing on to the transmission line.

178. BC Hydro cleaned up and repainted the homes and began offering them for sale following construction of the new line. It used a phased marketing program so that not all of the homes were for sale at one time. As of February 2011, when Gettel's case study commenced, 73 of the homes had been resold.

179. Gettel indicated that 10 properties sold by BC Hydro had lesser impacts from the transmission line. It observed that these were some of the first properties to sell and calculated a price differential of -1.59 per cent as a result of the rebuilt line.⁷⁴ Regarding the remaining properties Gettel concluded:

For the 2009 sales where there was a substantial utility right-of-way on site as well as overhead circuit lines, the average price decrease was 3.3% and a majority of sales were suggesting losses in the 5% to 9% range. The 2010 and 2011 time adjusted sales would imply additional losses in the 12% to 17% range. The Writer has ultimately concluded that the typical incremental price decrease was in the order of 6% to 12%. Combined with the original 10% to 12% impact found by the Altus Group, this would indicate a cumulative impact of 18% to 24%.⁷⁵

180. Gettel identified and ranked factors which can exert a negative impact on property value using the case studies described above as well as "a large number of third party case studies".⁷⁶ Gettel ranked those factors as follows 1) visual, 2) health, 3) disturbing sounds, 4) safety concerns, 5) stigma.

181. Gettel then undertook a high-level property value impact assessment of 201 properties along the preferred and alternate routes. Gettel focused on residential properties and did not include agricultural properties or vacant lands. Gettel used municipal tax assessments to calculate the overall value of the properties it assessed. It then evaluated each property and assigned discount rates from zero to 30 per cent to those properties using a five per cent interval (i.e. 5, 10, 15, 20...) based on its evaluation.

182. In response to an information request from AltaLink, Gettel explained that it evaluated each property based on a number of key criteria including: distance to the new powerline, existing impacts, visual mitigating factors, property type, and size of land base.

183. Gettel explained that the goal of its report was to provide a high-level overview of the two route options.

⁷⁴ Exhibit 20294-X0300, Gettel Appraisals Ltd., Tab 2, Gettel Archer Report, March 2016, PDF page 109.

⁷⁵ Exhibit 20294-X0300, Gettel Appraisals Ltd., Tab 2, Gettel Archer Report, March 2016, PDF page 111.

⁷⁶ Exhibit 20294-X0300, Gettel Appraisals Ltd., Tab 2, Gettel Archer Report, March 2016, PDF page 13.

184. Gettel concluded that approval of the alternate route would result in greater cumulative impact/value loss than approval of the preferred route. Gettel estimated the total loss on the alternate route to be \$5,307,177 and the total loss on the preferred route to be \$4,521,179. It further estimated the average property value loss to be 11 per cent for the alternate route and 7.4 per cent for the preferred route.

185. Gettel explained the differences in value loss between the two routes as follows:

The main difference between the two route variants relates to the Preferred Route's use of government road allowances adjacent to Highway 14, which allow for lesser impact on adjacent landowners relative to the Alternate Route, which primarily utilizes the much narrower road allowances adjacent to Highway 625 and local area roads. Ultimately, setbacks from existing or proposed building sites (vacant small holdings) are greater along the Preferred Route and this results in a lesser overall impact.⁷⁷

6.5.2.1 Commission findings

186. Serecon, HarrisonBowker and Gettel each used a two-step process to estimate property value impacts for the preferred and alternate routes. In the first step, they estimated a range of impacts based on a combination of:

- in-house comparative analysis (paired sales, case studies, etc.)
- review of third party property value literature and reports
- personal judgement

187. In the second step, the appraisers applied the property value discounts developed in the first step to properties along the preferred and alternate routes, having regard to the specific characteristics of the properties considered.

Estimation of property value impacts

188. For the first-step analysis, each appraiser used a different approach to estimate the range of property value discounts caused by transmission lines. Serecon used paired sales analysis to estimate the impact of 138-kV transmission lines on rural residential and agricultural properties of varying sizes. HarrisonBowker also employed a paired sales approach but the properties it examined were of a smaller, more uniform size, with the control properties being adjacent to 240-kV and 500-kV transmission lines. Finally, Gettel relied on case studies of 240-kV and 500-kV lines to estimate property value impacts.

189. For this first-step analysis, the Commission preferred Serecon's evidence to the evidence prepared by HarrisonBowker and Gettel because Serecon's paired sales analysis was the most representative of the conditions along the preferred and alternate routes in terms of transmission line size and property size variability. Put another way, Serecon estimated property value impacts using properties comparable to those along the preferred and alternate routes that were adjacent to a transmission line of comparable scale to that applied for by AltaLink; HarrisonBowker and Gettel did not.

⁷⁷ Exhibit 20294-X0300, Gettel Appraisals Ltd., Tab 2, Gettel Archer Report, March 2016, PDF page 29.

190. The evidence in the hearing was that the Heartland double-circuit 500-kV transmission towers are the largest and widest ever constructed in Alberta. When questioned by counsel for AltaLink, both Mr. Woodlock and Mr. Archer agreed that the property value impacts associated with the Heartland project would be greater than those predicted for the proposed preferred and alternate routes.⁷⁸ Further, Gettel acknowledged in its report that the purchase price for some of the Heartland properties was not based on market value. Given these circumstances, the Commission found the Heartland case study to be of very limited assistance when estimating negative property value impacts for the preferred and alternate routes.

191. The usefulness of the Tsawwassen Heights case study was similarly limited. While it demonstrated that transmission lines can have a negative impact on price when located very close to homes in an urban setting, it was not instructive in the current circumstances.

192. Gettel's Parkland case study was more relevant in the current proceeding than the preceding two case studies because it focused on country residential lots. However, the lots examined were vacant and small (mostly one acre or less) subdivision estate lots adjacent to a 240-kV transmission line. It is worth noting that very few of the properties examined by Gettel along the preferred and alternate routes were of a similar size as those described in the Parkland case study. Further, the Parkland case study was based partly on list prices rather than sale prices. In the Commission's view paired sales analysis based on a list price is less helpful than a study based on sale prices because list prices may not be reflective of the market value of the property. The Commission took these shortcomings into account when reviewing Gettel's property value analysis.

193. HarrisonBowker's analysis also suffered from shortcomings. None of its paired sales analysis related to 138-kV lines. Two of the four subdivisions examined by HarrisonBowker in its paired sales analysis were adjacent to a transmission corridor that contained a 500-kV line and two 240-kV lines. Further, HarrisonBowker's limited paired sales analysis of the four subdivisions in Parkland County provided insufficient data to support its conclusions about property value discounts. For example, HarrisonBowker's conclusion that a five per cent discount will arise for properties located 30 to 60 metres from a transmission line valued at less than \$300,000 appears to be based solely on its review of three property sales in the West 80 Estates. The Commission finds that this is an insufficient sample size to support the conclusion.

194. A third shortcoming identified by the Commission in HarrisonBowker's analysis was its decision to calculate property value discounts for transmission lines and loss of shelterbelt separately and then apply both discounts to some properties. The Commission is concerned that this approach may overestimate the impact of a transmission line because observed discounts for adjacent transmission lines already take into account the visual impacts of the transmission line.

195. The Commission appreciates that there is an element of subjectivity associated with the assessment of property value impacts, but it is of the view that the degree of subjectivity can be reduced by taking reasonable steps to ensure that value impact assessments are drawn from comparable properties and comparable transmission lines. Serecon predicted a spectrum of negative property value impacts, ranging from zero to 15 per cent, depending upon the specific characteristics of each property. The Commission has confidence in the reasonableness of this range because of Serecon's efforts to base its value impact assessment on comparable properties

⁷⁸ Woodlock: Transcript, Volume 4, page 705. Archer: Transcript, Volume 5, page 947.

and transmission lines. In the Commission’s view, Gettel’s estimate of negative property value impacts for the proposed line in excess of 15 per cent are not reasonable and not supported by the evidence filed in this proceeding.

Property value impacts on the preferred and alternate routes

196. In their second-stage analysis, the three appraisers applied the property value impacts they estimated in the first step to properties along the preferred and alternate routes. The appraisers essentially agreed on the factors that would influence the property value impact on a particular property. Those factors included:

- visibility and distance from the residence
- structure size and location
- property characteristics, including proximity to other energy or transportation infrastructure

197. Serecon and Gettel assessed impacts on properties along both routes whereas HarrisonBowker assessed 10 properties along Range Road 220 on the preferred route.

198. While HarrisonBowker’s analysis assisted the Commission in understanding the potential property value impacts on the 10 properties it assessed, the Commission did not find this analysis helpful for determining which route is likely to be most impacted from a property value perspective.

199. Serecon and Gettel each concluded that the property value impacts would be greater on the alternate route than on the preferred route, both in terms of the number of properties impacted and the quantum of the impact. However, Serecon and Gettel came to very different conclusions about the number of properties that would be impacted and average impact on each route, as shown in the table below.

	Percentage of homes impacted		Estimate of average negative impact	
	Serecon	Gettel	Serecon	Gettel
Preferred	13.72%	76.34%	4.0 to 6.4%	7.40%
Alternate	27.04%	95.37%	4.5 to 7.4%	11.00%

200. The Commission found Gettel and Serecon’s overall conclusions to be helpful when comparing the potential impacts of the two routes on property values. The Commission is satisfied, based on the evidence filed, that approval of the preferred route would result in fewer properties being subject to negative property value impacts, and that those impacts would be, on average, less than the impacts associated with approval of the alternate route. The Commission finds that this difference is largely due to the preferred route’s tracking of Highway 14, which has a wider road allowance than the roads tracked by the alternate route. This, in turn, generally allowed AltaLink to site the transmission line farther from properties and residences along the preferred route.

201. Less helpful to the Commission was the marked divergence in opinion between Serecon and Gettel on the number of properties likely to be impacted on the preferred and alternate routes. The Commission finds that the number of properties on either route that are likely to

experience a negative property value impact will be less than that predicted by Gettel but more than what was predicted by Serecon.

202. Several factors may have contributed to Gettel's overestimation. First, its use of a range of impacts between zero and 30 percent may have resulted in the inclusion of some properties that were unlikely to experience a negative price impact. Second, attributing potential negative impacts to properties located a considerable distance from the proposed line, e.g., for property 14, located 761 metres from the proposed line, Gettel predicted a five per cent discount, which may have led to the inclusion of a number of properties with a marginal probability for a negative property value impact. In total, Gettel attributed discounts of five to 10 per cent for 12 properties located more than 300 metres from the proposed 138-kV line with seven of those properties located on or across from Highway 14. Third, assessing property value impacts based on five per cent increments may have led to the inclusion of a number of properties with a marginal probability for a negative property value impact.

203. The Commission considers that Serecon may have underestimated the number of properties potentially impacted by the proposed transmission lines by adopting the position that properties across the road from a transmission line or vacant properties would experience no impact.

204. The evidence before the Commission on property value impacts demonstrates that approval of AltaLink's application will result in negative property value impacts regardless of which route is chosen. However, based on the evidence filed, the Commission finds that approval of the preferred route would result in fewer homes being subject to negative property value impacts than with approval of the alternate route. Further, the Commission finds that the negative property value impacts on the alternate route would be greater than those on the preferred route because the alternate route is generally located closer to homes than is the preferred route. The Commission concludes that the preferred route is the superior option from the perspective of minimizing property value impacts.

6.5.3 Visual impacts and tree clearing

6.5.3.1 Views of AltaLink

205. The proposed Cooking Lake transmission line is a double-circuit 138-kV line. AltaLink has proposed to use single pole, steel structures for the line that will be 20 to 35 metres in height and spaced 140 to 170 metres apart.

206. AltaLink stated at the hearing that a pole and a tower are vastly different structures and emphasized that it would only be constructing single monopoles, not towers, for the proposed development.

207. AltaLink asserted that in its experience, visual impacts are subjective and vary between stakeholders. However, AltaLink stated that it would work with landowners to attempt to minimize the visual impact of specific pole locations from their residences by moving poles along the right-of-way where possible, depending on span requirements, and environmental and physical constraints.⁷⁹

⁷⁹ Exhibit 20924-X0002, Application, Table 5-9, page 146.

208. In response to a suggestion by Mr. Berrien, AltaLink stated that it could use all-weathered steel poles along Range Road 220 instead of galvanized steel poles. It explained that all-weathered steel poles will rust over time so they will have a brown colour and look similar to a wood pole as opposed to the proposed poles which would be grey.

209. AltaLink further explained that it had also considered both wood and composite materials for the transmission structures for the proposed double-circuit transmission line. AltaLink decided against using wood poles due to procurement difficulties as well as higher costs, shorter span distances and shorter life cycles compared to steel structures. AltaLink decided against using composite materials since costs were higher than for both wood and steel and there would be additional construction costs.

210. AltaLink anticipated that there would be no cost increase to use all-weathered steel poles but advised that the hardware such as connecting bolts and associated equipment to attach the insulator and conductor would still be galvanized steel to ensure that contamination did not accumulate on the insulator.

211. At the hearing AltaLink stated if the preferred route was approved, it would consult with landowners about using all-weathered steel poles to determine if the use of this different pole type would mitigate the landowners' perceived visual impacts. AltaLink clarified that all poles along Range Road 220 would need to be of the same type so there would have to be a majority consensus amongst landowners along that road in order to use all-weathered steel poles. If there was a majority consensus, then AltaLink stated it could accommodate using all-weathered steel poles on the segment of the preferred route between points D-92 and D-100.⁸⁰

212. AltaLink committed to work with Mr. Kublik and Mr. Pashak, CLOG members located along Range Road 220, on pole placements with respect to their driveways.

213. AltaLink explained that in general, trees on the right-of-way which have the potential to conflict with a transmission line are removed to provide safe clearances to the conductor. This is typically for tree species which have the potential to grow higher than three metres. AltaLink stated that any trees within the 10-metre wide right-of-way would be cut down.

214. AltaLink stated that the amount of 10-metre-wide construction workspace uniformly applied in addition to and adjacent to the 10-metre wide right-of-way could be reduced to only those areas around structure locations to minimize the amount of tree clearing. At the hearing, AltaLink clarified that any trees in the resulting 20-metre⁸¹ by 40-metre area opposite a pole structure would have to be removed.⁸²

215. AltaLink reviewed the vegetation adjacent to Range Road 220 and found there was no opportunity for partial vegetation retention within the proposed 10-metre wide right-of-way. AltaLink stated that the majority of vegetation would have to be cleared to accommodate clearance requirements.⁸³

⁸⁰ Transcript, Volume 3, pages 486-487.

⁸¹ 20 metres consists of 10 metres of right-of-way plus 10 metres of construction workspace.

⁸² Transcript, Volume 1, page 154

⁸³ Exhibit 20924-X0406, AML Reply Evidence, PDF page 6, paragraph 14.

216. In response to a suggestion by Mr. Berrien, AltaLink considered using taller structures along Range Road 220, in order to retain some of the existing trees. AltaLink explained the structures would have to be in the range of 37 to 52 metres, to accommodate electrical clearances of the conductor, which it considered significantly taller than the proposed 20- to 35-metre design. It explained that structures of this height would require specialized design, longer lead times and larger foundations that would not fit within the one-metre road allowance, all of which would lead to increased project costs and impacts to private land. It also noted the taller structures may actually be more visible.

217. To minimize the amount of tree clearing, AltaLink also considered an alternative structure design involving vertical “stacking” of the two 138-kV circuits comprising the Cooking Lake transmission line along Range Road 220. AltaLink explained this would reduce the right-of-way required on private land from 10 metres to five metres; however, it would increase the structure height by one third, reduce span lengths, require larger construction workspaces at structure locations and require larger foundations that would not fit within the one-metre road allowance. AltaLink also stated the costs of this alternative between points D-100 and D-92 would be approximately double the transmission line cost currently proposed for this segment.

218. AltaLink submitted images showing these rights-of-way in relation to the properties along Range Road 220 between points D-100 and D-92.⁸⁴ These images also showed that adjacent to the Bourgeois, Muncy, Grabill, Kublik, Pashak, and Fraser properties the road allowance boundary is five metres wider, resulting in only a five-metre right-of-way onto these properties instead of 10 metres. Thus, only trees within a 15-metre by 40-metre area opposite pole locations on these properties would need to be cleared. Additionally, these images showed that many of the trees requiring clearing were located in road allowance and not on private property.

219. AltaLink concluded that, regardless of the type or height of the structures used along Range Road 220, tree clearing would be required to meet the required electrical and safety standards.

220. AltaLink also stated that if the alternate route were to be approved there would be locations where an existing distribution line would need to be moved to accommodate the construction of the proposed transmission line. In these locations further tree clearing would be required along the relocated distribution line. AltaLink advised that FortisAlberta’s tree clearing practices follow the distance requirements outlined in the *Alberta Electrical Utility Code*. AltaLink’s understanding was that FortisAlberta generally requires that trees be a minimum of six metres away from its distribution lines.

6.5.3.2 Views of the interveners

221. Members of CLOG, CLARR, LSCCR, and Mr. Deveney all expressed concerns with the visibility of transmission structures from their residences and proposed tree clearing.

⁸⁴ Exhibit 20924-408 – AML Reply Evidence – Appendix 02 Tree clearing images.

CLOG

222. CLOG asserted that the homes and yardsites along Range Road 220 are elevated relative to the proposed preferred route which would mean a greater visual impact. CLOG members, the Frigons, stated that there would be negative visual impact for all landowners along Range Road 220 and they did not want to look at the power lines while enjoying nature. CLOG stated that AltaLink had confirmed that members located along other portions of the preferred route would also see the transmission line poles such as the Dowler, Bliss, Harrison, and Cameron families.

223. Mr. Berrien suggested that to minimize visual impacts along Range Road 220 the transmission line structures should be non-steel or rusting steel as opposed to the proposed galvanized steel monopoles. If the preferred route were to be approved, CLOG requested that the all-weathered steel pole be used from points D-75 to D-95⁸⁵ and along Range Road 220.⁸⁶

224. CLOG member, Mr. Norman Norman, stated that they had a buffer of trees between Highway 14 and their land that they did not want to lose as it provided a buffer to reduce the continuous traffic noise from Highway 14 that “starts off at 5 AM and carries on through the night”.⁸⁷

225. CLOG members that owned land along the west side of Range Road 220 were particularly concerned about tree clearing. Mr. Metz was concerned about the removal of the large evergreens in his front yard which shield his view of the existing distribution line on the east side of Range Road 220. The Prokops indicated that the trees on their parcel were home to all kinds of wildlife and birds. The Pashaks had 40-year-old oak and spruce trees that they stated provided “a barrier to noise and pollution coming from the very busy Range Road 220”⁸⁸ that they were concerned about losing. Mr. Kublik testified that the spruce trees in front of his residence were planted in 1940, were 70 to 80 feet tall, and provided privacy to his yard. If the preferred route were approved, Mr. Kublik stated there would be total removal of the spruce trees which would reduce his privacy and increase noise and dust.

226. Ms. Fraser and Ms. Bourgeois confirmed at the hearing that the county road allowance boundary along a portion of Range Road 220 had been widened by five metres thus their property boundaries were five metres from the proposed line instead of one metre.⁸⁹

227. Mr. Berrien also suggested AltaLink consider using taller structures along Range Road 220⁹⁰ to minimize the tree clearing along that section of the preferred route. Mr. Berrien justified this suggestion by stating the importance of minimizing tree clearing and reducing visual impacts for landowners.

228. CLOG argued that many of the CLARR members, in the Green Acres and Looma Estates subdivisions for example, would not have trees cut down on their lands since no right-of-way or

⁸⁵ In the application maps provided, the second point designation is marked as D92, not D95.

⁸⁶ Exhibit 20924-X0543, Argument of the Cooking Lake Opposition Group, paragraph 269.

⁸⁷ Exhibit 20924-X0543, Argument of the Cooking Lake Opposition Group, paragraph 118.

⁸⁸ Exhibit 20924-X0543, Argument of the Cooking Lake Opposition Group, paragraph 180.

⁸⁹ Transcript, Volume 3, pages 602 and 603.

⁹⁰ Specifically “for the ¾ mile stretch between D-100 and the northeastern corner of NE¼ 1-51-22 W4M” as per Exhibit 20924-X0309, Section 2.3.2, PDF page 8.

construction workspace would be required. The group also argued that if the existing FortisAlberta distribution line along Township Road 504 was under-strung or buried then no additional trees would need to be cut down. CLOG asserted that there are substantially more mature trees and vegetation along Range Road 220 that would require clearing than along any other portion of transmission line routing proposed.

CLARR

229. CLARR members, such as the Ingrams, were also concerned that the placement of transmission line poles would impact the natural beauty of their property. Other CLARR members, such as Patrick Givogue, the Vanderzees, Shelly Deveau, and Dorothy Pettifer, also commented that introducing the transmission line along the alternate route would disrupt the privacy, the peacefulness and the beauty of their residences.

230. Kevin Neilson, a CLARR member, said that if the transmission line was put along the alternate route, the visual concerns would not go away and that "... [him and his wife] would... have a nice view of a big power line if the alternate route goes ahead...".⁹¹ CLARR member Fay Nilson stated that if the transmission line was built along the alternate route, a distribution line on the south side of Township Road 504 would have to be relocated to the north side, which would result in her losing all the trees around her residence that provided a visual barrier for her. Evan Schmidtke stated the transmission line would "... be an ugly [sight] to see coming home every day".⁹²

231. Mr. Neilson argued that even though AltaLink said it could move pole locations along the right-of-way to accommodate landowners they wouldn't be able to accommodate all landowners because there are limitations to the distances that can be spanned and a beneficial pole location for one landowner may result in a non-ideal location for the neighbouring landowner.⁹³

232. CLARR members, the Whites, had 40-year-old spruce trees in their front yard that they did not want cut down. Ms. Nilson stated she would lose all the trees that currently provide a noise barrier for her residence. CLARR members, such as the Pauls, were also concerned about additional tree clearing that would be required if an existing FortisAlberta distribution line was relocated to accommodate construction of the proposed alternate route.

233. Brenda Chitrinia argued that, based on her past experience, FortisAlberta wouldn't pay to bury the existing distribution line if it had to be moved to accommodate the proposed alternate transmission line route.⁹⁴

LSCCR

234. LSCCR members stated they had concerns with visual impacts and many of the LSCCR members expressed that there was little to no screening of the transmission line from their properties should it run along the alternate route. LSCCR member Ms. Yendall stated at the hearing that even if the transmission line was across the road from her residence, it would still be visible to her and the rest of the LSCCR members. Ms. Olson also expressed at the hearing that if

⁹¹ Exhibit 20924-X0539, Final Arguments for CLARR, paragraph 38 (a).

⁹² Exhibit 20924-X0539, Final Arguments for CLARR, paragraph 38 (j).

⁹³ Transcript, Volume 4, page 793.

⁹⁴ Exhibit 20924-539, Final Arguments for CLARR, paragraph 38 (g).

the alternate route is chosen, she would no longer be able to have the quiet, peaceful and uninterrupted view that currently exists.

Mr. Deveney

235. At the hearing, Mr. Deveney stated that if the transmission line went along the preferred route, it "... was going to be an eyesore as it was 80 metres from [his] house."⁹⁵ Mr. Deveney stated that it was his understanding from AltaLink that most of the trees on the north side of his acreage and alongside Highway 14 would be removed.

6.5.3.3 Commission findings

236. The Commission acknowledges that the imposition of new transmission structures can significantly alter a viewscape. Transmission structures are large, linear developments and their construction and operation often requires the removal of trees and other vegetation on public and private lands. Landscaping and trees are important features of peoples' properties and their unwanted removal can be very upsetting to landowners and neighbours alike. Further, and as discussed in the previous section, two important criteria for determining negative property value impacts from a transmission line are visual impacts and the degree to which those impacts can be mitigated by trees or other vegetation. Visual impacts and tree clearing were very important issues in this proceeding.

237. The Commission recognizes that approval of AltaLink's application will give rise to new visual impacts and result in tree and vegetation clearing regardless of which route is determined to be in the public interest. Accordingly, the Commission's task is to determine if the visual impacts of one route are greater than those on another.

238. The Commission finds that, overall, approval of the preferred route will result in less visual impacts than the alternate route. This is primarily because the bulk of the preferred route follows Highway 14, which has a wider road allowance than the alternate route and generally allows for the proposed line to be located farther from residences. This is reflected in the number of residences within 50 metres of each route (eight preferred, 13 alternate), within 100 metres (20 preferred, 47 alternate) and within 150 metres (44 preferred, 68 alternate).

239. The Commission acknowledges, however, that not all of the preferred route follows Highway 14 and that residences along Range Road 220 would experience an increase in visual impacts associated with the construction and operation of the proposed line and the associated tree clearing.

240. The Commission expects AltaLink to follow through with its commitment to work with landowners to attempt to minimize the visual impact of specific pole locations from their residences by moving poles along the right-of-way where possible, depending on span requirements, and environmental and physical constraints. The Commission finds that AltaLink's commitment to limit tree clearing in construction workspace to locations opposite structure locations will reduce, to some extent, the impacts of tree clearing.

241. The Commission notes AltaLink's commitment to work with Mr. Kublik and Mr. Pashak on pole placements with respect to their driveways and its commitment to use all-weathered steel

⁹⁵ Transcript, Volume 5, page 969.

poles on the segment of the preferred route between points D-92 and D-100 if the majority of landowners along that segment agree.

242. Having regard to the foregoing, the Commission finds that, from the perspective of visual impacts, including associated tree clearing, the preferred route is superior to the alternate route.

6.5.4 Existing disturbances, future development and road widening

6.5.4.1 Views of AltaLink

243. AltaLink argued that the preferred route was favoured since it paralleled more existing linear disturbance than the alternate route. However, in response to an information request, AltaLink clarified that both routes paralleled existing disturbances for approximately 22 kilometres.⁹⁶

244. AltaLink stated that this metric still favoured the preferred route because of the different characteristics of the linear disturbances. Using the transportation utility corridor and the service roads along Highway 14, the preferred route had almost 40 per cent of the line length that did not have private lands located adjacent to it. AltaLink viewed these segments where there were public lands for roads on both sides of the transmission line as an advantage of routing along Highway 14 as opposed to Highway 625.⁹⁷

245. AltaLink stated that its route development process considered future development plans. AltaLink gave priority to existing developments, then to approved developments and then to conceptual or future developments. AltaLink noted that while landowners may have future development plans, these plans do not always materialize.

246. AltaLink stated that the alternate route has more line length along municipal road allowance which is narrower than the highway right-of-way of the preferred route and has greater setbacks for development thus resulting in higher potential impacts to future development.

247. In its application, AltaLink summarized that the alternate route had a higher number of approved developments compared to the preferred route.⁹⁸ Additionally, AltaLink indicated that potential impacts to future residential developments were greater along the alternate route, as Leduc County's Land-Use Bylaw and Municipal Development Plan both planned for development within this area. By comparison, Strathcona County's Land-Use Bylaw and Municipal Development Plan have limitations to development in the area of the preferred route.⁹⁹

248. AltaLink further stated that the total length of distribution line impacted by the preferred route would be one kilometre while on the alternate route 6.8 kilometres of line would be impacted.

249. AltaLink stated that the preferred route would cross 22 pipelines while the alternate route would cross 13.¹⁰⁰ AltaLink stated that it works with pipeline owners to ensure that the

⁹⁶ Exhibit 20924-X0254, AML-SC-2016FEB05-007, PDF page 88.

⁹⁷ Transcript, Volume 3, pages 436 and 440.

⁹⁸ Exhibit 20924-X0002, Application, paragraph 406.

⁹⁹ Exhibit 20924-X0002, Application, paragraph 407.

¹⁰⁰ Transcript, Volume 3, page 501.

alternating current (AC) electrical effect from the nearby transmission line does not cause corrosion on pipelines.¹⁰¹ AltaLink explained that the number of pipeline crossings is not the only consideration when it comes to pipeline mitigation. There is also the consideration of parallels and the distance of parallel and how far the separation is for these parallels.¹⁰²

250. During its stakeholder engagement, AltaLink consulted with Alberta Transportation and affected municipalities to discuss short-term and long-term expansion plans for roads and highways.

251. Alberta Transportation indicated to AltaLink that there would be a future interchange at Highways 14 and Highway 21, Highway 14 would be twinned, and that Alberta Transportation had already acquired land for the widening of Highway 14. AltaLink stated that Alberta Transportation confirmed there was space to include a transmission line along the right-of-way for Highway 14, which the preferred route goes along,¹⁰³ and, as such, favoured placing the transmission line along the preferred route.

252. Regarding the Highway 14 and Highway 21 interchange upgrade, AltaLink stated it was aware of this future upgrade and would work with Alberta Transportation to minimize modifications required in the future and to ensure adequate clearances were maintained.¹⁰⁴

253. Regarding the interchange at Highway 14 and Range Road 232, AltaLink stated that this was not planned for the immediate future and may be delayed.¹⁰⁵ As for the interchange at Highway 14 and Range Road 223, AltaLink stated that the potential for an interchange at this location had not yet been mentioned by Alberta Transportation.¹⁰⁶

254. Alberta Transportation also indicated to AltaLink that Highway 625, which the alternate route follows, would be widened in approximately 20 to 25 years, though AltaLink stated the expansion was not guaranteed.¹⁰⁷ AltaLink stated that a number of steps, such as functional planning, preliminary design, detailed design and construction, were required before Highway 625 could be expanded¹⁰⁸ and the expected timeline for a possible Highway 625 expansion was in the 2050 timeframe.¹⁰⁹ Alberta Transportation indicated to AltaLink that the Highway 625 widening project would be before Highway 14 was widened.

255. AltaLink stated that there was a Memorandum of Agreement in place between AltaLink and Alberta Transportation regarding the placement of transmission lines within highway road allowance, and that AltaLink would relocate transmission lines in the event it was required to accommodate a road widening.¹¹⁰ AltaLink stated that if the preferred route was approved, it would design the transmission line to meet Alberta Transportation's high load corridor

¹⁰¹ Transcript, Volume 1, page 66.

¹⁰² Transcript, Volume 1, pages 68 and 69.

¹⁰³ Exhibit 20924-X0254, AML-SC-2016FEB05-005 (b), PDF page 82.

¹⁰⁴ Exhibit 20924-X0254, AML-SC-2016FEB05-005 (h), PDF page 84.

¹⁰⁵ Exhibit 20924-X0545, AML Reply Argument, paragraph 17.

¹⁰⁶ Exhibit 20924-X0545, AML Reply Argument, paragraph 19.

¹⁰⁷ Exhibit 20924-X0538, AML SWED Argument, paragraph 268, PDF page 72.

¹⁰⁸ Exhibit 20924-X0538, AML SWED Argument, paragraph 268, PDF page 72.

¹⁰⁹ Exhibit 20924-X0538, AML SWED Argument, paragraph 270, PDF page 73.

¹¹⁰ Exhibit 20924-X0254, AML-SC-2016FEB05-005 (b), PDF page 82.

requirements and if the high load corridor requirements were altered, it would alter the transmission line to meet the new requirements.¹¹¹

256. At the hearing, AltaLink provided cost estimates for relocating segments of the proposed transmission line along each route to accommodate future road widening. The estimated construction and labour cost to relocate one kilometre of line along the preferred route was \$1.4 million.¹¹² The estimated construction and labour cost to relocate one kilometre of line along the alternate route was \$1.2 million.¹¹³

6.5.4.2 Views of the interveners

CLOG

257. A number of CLOG members were concerned about the preferred transmission line routes impact on their future development plans. The Boyechkos, stated they were planning to split their land parcel in half and the proposed preferred route would be detrimental to their future building plans. The Blyths were concerned the transmission line would restrict or limit future development along their north fence line and interfere with a berm they intended to build to reduce noise from Highway 14. The Bubleys noted that a service road was going to be built on the south side of Highway 14 on Section 29, Township 51, Range 22, west of the Fourth Meridian as a result of a subdivision application. CLOG argued that these future developments make the preferred route less desirable than the alternate route.

258. CLOG and Strathcona County argued that the pipeline-crossing metric favoured selection of the alternate route.

259. CLOG argued that Mr. Willis, the transportation expert for Leduc County, confirmed that there would be future interchange upgrades at Highway 14 and Highway 21, a future interchange at Highway 14 and Range Road 232, and a future interchange at Highway 14 and Range Road 223. CLOG also argued that AltaLink failed to mention the potential future interchange at Highway 14 and Range Road 223.

260. CLOG members, the Kovacics, stated that Highway 14 would most certainly be expanded at some point in the future and putting transmission lines along Highway 14 would complicate the expansion plans.

CLARR

261. CLARR argued that on the alternate route there were many subdivided smaller building lots where homes were either under construction or in the planning and development stages and these homes would be impacted by a transmission line on the alternate route. CLARR also noted in its argument that there are 15 Planned Country Residential parcels, subdivided acreage parcels of land in which an existing residence is not built, that would be impacted if the transmission line ran along the alternate route.

¹¹¹ Exhibit 20924-X0254, AML-SC-2016FEB05-005 (d) and (e), PDF page 86.

¹¹² Transcript, Volume 3, page 483.

¹¹³ Transcript, Volume 2, page 395.

262. CLARR members were concerned about the transmission line on the alternate route and its impact on their future development plans. The Neilsons stated their long-term plans for subdivision in the northeast corner of their residence would be impacted by the transmission line. Ralph Davidson stated he wanted to subdivide his land but the transmission line would run through the subdivided land. Eugene Braun indicated he had two subdivided lots that he was planning to build on for his children and that one building plan was already cancelled as the proposed transmission line may run through his land. The McKinneys were approved for subdivision of their lands in 2008 and expressed concerns of the impacts a transmission line would have on their subdivided land. The Rups were in the process of subdividing their land for a residential development but stopped once they learned there may be a transmission line running adjacent to their lands. The Morah family also intended to subdivide their lands for residential housing development and had concerns that a transmission line would negatively impact their development plans.

263. In its argument, CLARR stated that AltaLink confirmed that if the alternate route was approved, the transmission line would have to be relocated in the future for the Highway 625 expansion. The relocation cost would be a cost put into the rate base and passed onto Alberta ratepayers. AltaLink also confirmed that the expansion of Highway 625 would occur during the lifecycle of the Cooking Lake transmission line and the cost of relocation was estimated at \$1.2 million per kilometre.¹¹⁴

264. CLARR also argued that the cost to relocate FortisAlberta distribution lines along the alternate route would be borne by ratepayers on the distribution portion of their utility costs.¹¹⁵

LSCCR

265. LSCCR stated in its argument that part of the alternate route would run through private land. LSCCR indicated that taking a right-of-way over private lands limits the development and usage of that land, as landowners may be restricted from constructing and locating outbuildings, landscaping, constructing roads or subdividing on that right-of-way.¹¹⁶ LSCCR stated that a right-of-way over private lands would hinder future developments on that land and when the impact of future development is considered, the preferred route is the better option.

Leduc County

266. Leduc County's expert, Mr. Preiksaitis, stated that the preferred route better reflected the policy directions found in the Alberta land use framework, Capital Region Board plans, and Strathcona County and Leduc County municipal development plans.

267. Mr. Preiksaitis' report indicated that there was a large area straddling Highway 625, the alternate route, designated as Cluster Country Residential Area in the Capital Region Board Land Use Plan. Cluster Country Residential Areas were defined as rural lands that "have been subdivided to create multiple residential lots that are connected to municipal or communal services, designed to group or "cluster" the residential uses together on smaller lots by applying conservation design principles to maximize the retention of open space".¹¹⁷ As such,

¹¹⁴ Exhibit 20924-X0539, Final Arguments for CLARR, paragraph 37(c).

¹¹⁵ Exhibit 20924-X0539, Final Arguments for CLARR, paragraph 37(d).

¹¹⁶ Exhibit 20924-X0536, LSCCR Argument, paragraph 13.

¹¹⁷ Exhibit 20924-X0326, ParioPlan Report, PDF page 8, Section 5.0.

Mr. Preiksaitis indicated that there were more existing and potential future residents that would be affected by the alternate route as the area had been identified in the land use plan for future cluster country residential development. Mr. Preiksaitis also added that there were dwelling units already concentrated in the Cluster Country Residential Area and development would further intensify in that area based on policy direction.¹¹⁸

268. As a part of Leduc County's evidence, Mr. Willis of Bunt & Associates prepared a report comparing the preferred and alternate routes from a transportation perspective.

269. In his report, Mr. Willis stated that Highway 14 is a four-lane highway between the transportation utility corridor and Highway 824 with a 30-metre centre line separation between eastbound and westbound travel lanes and a basic 90-metre right-of-way.¹¹⁹ Alberta Transportation has sufficient right-of-way within this section of Highway 14 to upgrade the highway without requiring additional right-of-way. Mr. Willis also stated that Highway 14 would be upgraded to a divided highway from Highway 824 to Highway 834 and, as such, Alberta Transportation acquired approximately 90 metres of right-of-way for this area.

270. In his report, Mr. Willis also identified the potential interchange upgrade at Highway 14 and Highway 21 and the following future potential projects along the preferred route: interchange at Highway 14 and Range Road 232, interchange at Highway 14 and Range Road 223, and widening of Range Road 220. Mr. Willis stated that if these future interchange projects occurred, AltaLink would have to relocate between six to 7.5 kilometres of transmission line along the preferred route. However, there were no known timelines for any of these upgrades, no functional planning studies had been done for the Range Road 232 and Range Road 223 interchange upgrades, and no conceptual plan for the widening of Range Road 220 had been done.

271. Regarding the future twinning of Highway 625, Alberta Transportation planned to shift Highway 625 to the north from Range Road 241 to Range Road 235, requiring construction of new eastbound and westbound lanes, and construct new westbound lanes for Highway 625 from Range Road 235 to Highway 21. Mr. Willis stated in his report that additional right-of-way would be required for future upgrades for Highway 625. Mr. Willis also stated that upgrades to Highway 625 were not within Alberta Transportation's three-year construction program and, as such, there were no timelines for construction. Mr. Willis also addressed in his report a future interchange along the alternate route at Highway 21 and Highway 625.

272. Leduc County indicated a functional planning study was completed in 2014 by Alberta Transportation for the twinning of Highway 625. At the hearing, Mr. Willis stated that although the right-of-way plans prepared in this study had not been signed off, Alberta Transportation considered them valid.¹²⁰

273. Mr. Willis stated that if the transmission line ran along the alternate route, approximately 11 kilometres of the transmission line would need to be relocated at the time of upgrades to Highway 625. As such, more transmission line would need to be relocated along the alternate

¹¹⁸ Transcript, Volume 5, page 1014.

¹¹⁹ Exhibit 20924-X0274, Bunt & Associates Report, PDF page 11.

¹²⁰ Transcript, Volume 5, pages 1019 and 1020.

route compared to the preferred route and Mr. Willis found the preferred route was a better option from a transportation perspective.

274. Leduc County argued that functional planning for an interchange at Highway 14 and Range Road 223 required updating and that there was no evidence of any signed-off functional planning studies for the interchange at Highway 14 and Range Road 232. Thus, more preparation steps had been completed on future road upgrades along the alternate route resulting in a higher potential for impacting the proposed transmission line than on the preferred route.

Strathcona County

275. Strathcona County asserted that both the preferred and alternate routes had potential for interference with transportation upgrades. The county argued that since expansion of Highway 625 would not be warranted until the year 2050, the consideration of this future road upgrade should not be determinative in selecting between the preferred and alternate routes.

276. Strathcona County also identified the Colchester area, bounded by the transportation utility corridor to the west, Highway 21 to the east, Highway 628 to the north and Highway 14 to the south, as a potential new growth area and asserted that a new interchange between Highway 14 and Range Road 232 would be required. However, as stated in the Strathcona County Growth Management Document submitted by the CLARR group, the Strathcona County Council did not endorse proceeding to the next stage of planning for the Colchester area and instead recently endorsed another area as its next area for urban development.¹²¹

6.5.4.3 Commission findings

277. While both the preferred and alternate route parallel existing disturbances for approximately the same length, the Commission agrees with AltaLink that characteristics of existing disturbances is a material factor when determining which route is more favourable. For this project, the Commission finds when comparing the existing disturbances that the preferred and alternate routes parallel, there are differing characteristics. The preferred route parallels service roads beside a four-lane highway and uses a transportation utility corridor which allows for 40 per cent of the transmission line to be located adjacent to public lands. The Commission finds that, in general, the alternate route parallels more private lands than the preferred route.

278. The Commission also finds that the length of existing distribution line affected by the proposed line favours selection of the preferred route since one kilometre of distribution line is impacted by the preferred route whereas 6.8 kilometres of distribution line is impacted by the alternate route. The Commission understands that the cost to relocate distribution lines would be borne by ratepayers thus minimizing those costs is in the public interest and favours selection of the preferred route.

279. The Commission understands that the preferred route will cross more pipelines than the alternate route. However, the Commission finds AltaLink's mitigation measures regarding corrosion to be sufficient and accepts AltaLink's assertion that the number of pipelines crossed is not the only metric to consider with respect to pipelines. The Commission does not find the pipeline-crossing metric to be influential in choosing between the preferred and alternate routes.

¹²¹ Exhibit 20924-X0522, Strathcona County Growth Management document.

280. Considering the above, the Commission finds that even though both the preferred and alternate routes parallel existing disturbances for approximately the same length, the preferred route is more favourable than the alternate route.

281. Since the alternate route has more line length along municipal road allowance and has greater setbacks for development, the Commission agrees that higher potential impacts to future development will result if the alternate route is chosen. Since the alternate route will traverse through private land, meaning rights-of-way will have to be on private land, the Commission finds more properties along the alternate route may be impacted with respect to future developments compared to residences along the preferred route.

282. The Commission understands that sufficient lands have been acquired to accommodate the widening of Highway 14 and the Commission accepts Alberta Transportation's confirmation that, even with the widening of Highway 14, there is space to include a transmission line along the highway. If all the interchange upgrades are considered along the preferred route, approximately six to 7.5 kilometres of transmission line would have to be relocated, however, there are no plans for the Range Road 232 and Range Road 223 interchanges at this time.

283. The Commission also understands that if Highway 625 is widened, additional lands would need to be acquired and approximately 11 kilometres of the proposed transmission line along the alternate route would need to be relocated. While the timing of the expansion of Highway 625 is uncertain, Alberta Transportation has signed off on the functional planning study which indicates the expansion will occur by 2050.

284. Although the current estimated cost to relocate a one-kilometre segment of transmission line along the preferred route is higher than the cost along the alternate route, the Commission finds that since a greater length of line along the alternate route would need to be relocated, the estimated transmission line relocation costs slightly favour the preferred route. As well, if Highway 625 is widened in the future then the distribution lines along the highway, that would have already been relocated to accommodate the alternate route, would have to be relocated again. The combined costs for the relocation of the transmission line and the multiple relocations of the distribution lines more highly favours the preferred route.

285. The Commission finds that with respect to future road widening, the preferred route is favoured since upgrades along the alternate route will need additional right-of-way and more transmission line will need to be relocated compared to the preferred route. Though there is currently no set date for expanding Highway 625, the Commission understands future road widening will likely occur within the lifespan of the transmission line and the relocation cost for the alternate route would be a cost passed onto Alberta ratepayers.

6.6 Environmental impacts

6.6.1 Views of AltaLink

286. AltaLink retained CH2M to prepare a regional setting report¹²² and an environmental evaluation report¹²³ for the proposed Cooking Lake development. The Regional Setting Report described the environmental setting of the project area including terrain and soils, vegetation,

¹²² Exhibit 20924-X0041, Application Appendix M-2, PDF page 47.

¹²³ Exhibit 20924-X0041, Application Appendix M-3, PDF page 1.

hydrogeology, wetlands and watercourses, and wildlife components. The Environmental Evaluation report (EE report) discussed and assessed the potential adverse effects of the project on these environmental components and compared the potential environmental impacts of the preferred route, alternate route, and alternate variant route.

287. AltaLink prepared an Environmental Specifications and Requirements (ESR) document¹²⁴ that itemized and described more than 165 mitigation measures that it would implement to eliminate or reduce the potential effects of the project on the environmental components and the routes being considered.

288. The EE report was primarily based on desktop information, supplemented by a vegetation and wildlife route reconnaissance survey conducted in June 2014. The route reconnaissance survey involved a field crew driving along existing public roads adjacent to the proposed rights-of-way and stopping at various points to use binoculars to scan areas of interest, such as treed areas, wetlands, or native vegetation, for wildlife habitat features and potential rare plant habitat.

289. Table 19 of the EE report listed 17 environmental-related metrics that were used for comparing the environmental impacts of the preferred route, the alternate route and the alternate variant route. The data in the table indicated that the alternate and alternate variant routes were favoured for eight of the metrics, the preferred route was favoured by four metrics and the remaining five metrics did not appear to favour one route over another.

290. CH2M stated in its EE report that Alberta Environment and Parks (AEP) indicated to AltaLink during consultation that they preferred selection of the preferred route due to the heavy traffic and existing disturbance associated with Highway 14. However, AltaLink clarified during the hearing that AEP had later indicated that “they deemed the options to be similar and didn’t have a preference for one route over the other.”¹²⁵

291. The EE report concluded that the alternate and alternate variant routes would have lower potential environmental impacts than the preferred route. However, with the implementation of the proposed mitigation measures in the ESR document, CH2M concluded that all three routes were environmentally satisfactory.

292. CH2M conducted a wetland route reconnaissance survey in June 2014¹²⁶ and a supplemental wetland survey on the preferred route in May 2015.¹²⁷ During the hearing, Mr. Mark Van Wyk of CH2M stated that the results of the wetland route reconnaissance survey supported the findings of the desktop wetland analysis in the EE report.¹²⁸

293. CH2M conducted additional wildlife field surveys during the spring of 2015 to identify wildlife presence and habitat on the preferred route. These surveys included general area searches for wildlife habitat features and targeted species at risk habitat surveys.¹²⁹

¹²⁴ Exhibit 20924-X0041, Environmental Specifications and Requirements Report, Appendix M-1.

¹²⁵ Transcript, Volume 3, page 498.

¹²⁶ Exhibit 20924-254, AltaLink’s response to IR AML-SC-2016FEB05-003, PDF pages 11 to 32,

¹²⁷ Exhibit 20924-254, AltaLink’s response to IR AML-SC-2016FEB05-003, PDF pages 33 to 77.

¹²⁸ Transcript, Volume 3, page 511.

¹²⁹ Exhibit 20924-162, response to IR AML-AUC-2015DEC04-026.

294. AltaLink stated that it would complete additional pre-disturbance assessment (PDA) surveys in 2016 in areas of suitable wildlife habitat where land access was not previously granted, and in areas where construction was planned to occur during the migratory bird nesting period. AltaLink also stated that if there were any new wildlife observations during the PDA surveys, AltaLink would consult with the local AEP wildlife biologist to determine whether additional mitigations were necessary.

295. In response to criticism from Strathcona County that AltaLink did not use baseline data provided by the Beaver Hills Initiative in the preparation of the EE report, AltaLink stated that much of the Beaver Hills Initiative data was already in AltaLink's possession and was similar to AltaLink's data. AltaLink also asserted that the Beaver Hills Initiative data did not cover the entire project study area, was too coarse, and was less recent than the data it used.¹³⁰

296. AltaLink also responded to Strathcona County's contention that the existence of the Beaver Hills Biosphere Reserve favoured selection of the preferred route. AltaLink stated that all three route options were partially within the transition area of the Beaver Hills Moraine, where the greatest amount of development is allowed. AltaLink observed that the transition area has existing development and infrastructure throughout, including highways, a rail line, transmission lines, wells, pipelines, and residential development.

297. In response to concerns raised by Strathcona County and other interveners on the potential impacts of the preferred route on trumpeter swans and birds in general, AltaLink stated that it would be marking the overhead shield wire with bird marking devices at five-metre spacing to provide better coverage. AltaLink explained that these bird marking devices would be installed along portions of the shield wire within 500 metres of Cooking Lake, McFadden Lake and Bretona Pond.

298. AltaLink stated that large bird marker devices that increase the diameter of the line by at least 20 centimetres and spaced at intervals of five to 10 metres have been shown to reduce collisions by 50 to 80 per cent. AltaLink acknowledged that the effectiveness of bird markers in reducing collisions varied significantly, with one recent study of bird marking devices showing only a 9.6 per cent reduction in collisions.¹³¹ AltaLink also acknowledged that collision reduction estimates are not replicable from one transmission line to another due to differences in site-specific conditions.¹³² Notwithstanding, AltaLink maintained its opinion that a 50 to 80 per cent reduction in collisions was a reasonable estimate based on a broad spectrum of research.¹³³

299. AltaLink stated that it would use the Power Line Sentry bird markers because they can be installed on both optical ground wire and overhead shield wire without causing harm to the wires and can be seen by birds from multiple planes due to their triangular shape.¹³⁴

300. The consultation records AltaLink submitted in this proceeding stated that during a meeting in August 2014, AEP "identified that there has not been any records of trumpeter swans on Cooking Lake in a while" and that AEP "will consider existing disturbance [e.g. Highway 14] in reviewing AltaLink's construction plans within the trumpeter swan setback and is open to

¹³⁰ Exhibit 20924-X0406, AML Reply Evidence, pages 34-38, paragraphs 182-196 and page 54, paragraph 176.

¹³¹ Transcript, Volume 2, pages 234-235.

¹³² Transcript, Volume 2, page 235.

¹³³ Transcript, Volume 2, page 235.

¹³⁴ Exhibit 20924-X0406, AML Reply Evidence, PDF page 39, paragraph 204.

AltaLink working within [trumpeter swan] buffers based on existing disturbance.”¹³⁵ At the hearing, Mr. Van Wyk confirmed that the effectiveness of Cooking Lake as habitat for trumpeter swans would be reduced by the existing disturbances such as Highway 14, the residential communities adjacent to the lake and an airstrip being in close proximity to the lake.

301. AltaLink stated that it was not planning to conduct surveys or other activities to monitor bird mortalities from collisions with the proposed transmission line, and that it had not discussed this decision with the AEP wildlife biologist assigned to the project. AltaLink stated that if a bird collision concern was incidentally discovered or reported during operation, it would conduct an investigation and follow-up may include consultation with the AEP and subsequent mitigation.

302. AltaLink responded to concerns expressed by the Bourgeois family and Strathcona County regarding the preferred route’s impact on an Environmental Reserve Easement located on the Bourgeois land. AltaLink stated that the proposed corner structure would be located approximately 25 metres north of the easement and it committed not to clear trees in the area covered by the easement. AltaLink also confirmed that none of the permanent right-of-way would be within the easement.

6.6.2 Views of the interveners

CLOG

303. Mr. Cliff Wallis of Cottonwood Consultants Ltd. evaluated and compared the relative environmental impacts of the preferred route, the alternate route, and the alternate variant route on behalf of CLOG. In his report, Mr. Wallis stated that the preferred route poses an elevated risk to environmentally significant areas (ESAs), natural wetland and treed habitats, and elements of conservation concern as compared to the alternate route.

304. Mr. Wallis noted that the alternate and alternate variant routes are favoured, with less environmental impact, in comparison to the preferred route on all but two of the 11 biodiversity metrics used by CH2M in the EE report. Mr. Wallis stated that for one of the two metrics that favoured the preferred route, the number of watercourse crossings, AltaLink stated that it would span all watercourse crossings and that no bank disturbance would be created.

305. Mr. Wallis agreed with CH2M that the preferred route posed an elevated bird collision risk due to the preferred route’s closer proximity to wetlands important to birds.¹³⁶ Mr. Wallis afforded the highest weight to the ESAs-crossed and length-of-wetlands-crossed metrics, while CH2M suggested that the length of wetlands crossed was the metric they gave the most weight to, followed by the length within the trumpeter swan waterbody setback.

306. At the hearing, Mr. Wallis discussed the importance to waterfowl of sites like McFadden Lake, Bretona Pond, and Cooking Lake near the preferred route, and Looking Back Lake near the alternate route. Mr. Wallis stated that birds move back and forth between these waterbodies and nearby feeding areas. Mr. Wallis also mentioned the existence of a black-crowned night heron colony on McFadden Lake and his concern about whether the preferred route would have a satisfactory setback from this colony. Mr. Wallis stated that there was an

¹³⁵ Exhibit 20924-X0255, AML-SC-2016FEB05-001 Attachment, item 6, PDF page 105.

¹³⁶ Transcript, Volume 4, pages 674 and 683.

elevated risk of bird collisions along segments of the proposed transmission line in the vicinity of McFadden Lake, Bretona Pond and Cooking Lake.

307. However, Mr. Wallis also noted at the hearing that, based on the record, trumpeter swans hadn't been known to be using the Cooking Lake area in recent years. Mr. Wallis also stated that this metric only weakly supported the alternate routes because there was not a strong affinity or well-known established population of trumpeter swans at Cooking Lake.¹³⁷

308. Although Mr. Wallis stated that the construction of the proposed major transmission line on either the preferred or alternate routes would result in the loss of native vegetation, elevate the collision risk for wetland birds, and displace a variety of woodland wildlife species, he concluded that both routes should be considered viable from a biodiversity perspective.

Strathcona County

309. Strathcona County argued that, contrary to what had been stated in the EE report, AEP never stated a route preference between the preferred and alternate routes. Strathcona County explained that the statement from AEP indicated only that AEP preferred one of the potential routes to follow Highway 14 further east at designation point D-50 as opposed to turning south. Strathcona County believed that the EE report took the statement out of context to give the impression that, despite the greater potential environmental impacts of the preferred route, AEP supported that route over the alternate route.

310. Additionally, Strathcona County argued that the local AEP biologist's comments on the project, specifically that the project "avoid all wetlands and Natural Areas, avoid tree removals",¹³⁸ suggests that the alternate route is preferable because it crosses less wetlands and requires less tree clearing than the preferred route.

311. Strathcona County had expressed concern that AltaLink did not use baseline data provided by the Beaver Hills Initiative in the preparation of the EE report. It explained that the Beaver Hills Initiative data included hydrology, wetland, vegetation, aerial imagery, and land cover shapefiles.

312. Strathcona County also had concerns about the potential impact of the project on the Beaver Hills Moraine landscape area. Strathcona County stated during the hearing that the Beaver Hills Moraine has recently been designated as a UNESCO biosphere reserve,¹³⁹ which was also confirmed by AltaLink. Strathcona County contended that selecting the preferred route would disregard the planning and conservation work completed to protect the Beaver Hills Biosphere Reserve.

313. Strathcona County also described concerns over the potential impacts of the preferred route on trumpeter swans that inhabit Cooking Lake. Strathcona County pointed out that trumpeter swans use Cooking Lake for breeding habitat between April and October, and also as staging habitat during the spring and fall migration periods. Strathcona County noted that

¹³⁷ Transcript, Volume 4, page 718.

¹³⁸ Exhibit 20924-X0279, Strathcona County Evidence, PDF pages 5-6, paragraph 15.

¹³⁹ Transcript, Volume 5, page 1075. According to the UNESCO website, biosphere reserves are "special places for testing interdisciplinary approaches to understanding and managing changes and interactions between social and ecological systems, including conflict prevention and management of biodiversity".

AltaLink only dedicated one day of aerial surveys to the description of the presence and behavior of trumpeter swans on Cooking Lake, and that this amount of survey work was insufficient to evaluate the potential impacts of the project on trumpeter swans.

314. Strathcona County also questioned why AltaLink had not committed to monitoring the effectiveness of its proposed glow tape bird markers during operation. Strathcona County argued that AltaLink's proposed solution, investigating incidental bird collisions discovered or reported during operation, was insufficient and provided no assurance that serious impacts to trumpeter swans, waterfowl and other birds would be prevented.¹⁴⁰ Strathcona County also pointed out that in meeting minutes between FortisAlberta and AltaLink, FortisAlberta stated that it had experienced numerous outages of its power lines in the area caused by birds including trumpeter swans.¹⁴¹

315. Strathcona County and the Bourgeois family, members of CLOG, raised a concern regarding land owned by the Bourgeoises. The Bourgeois lands are adjacent to the preferred route in Strathcona County and a portion of the land has an Environmental Reserve Easement registered on it. Strathcona County opposed the placement of any structures in the easement and contended that AltaLink had not provided sufficient information to confirm that construction of the preferred route would not affect the easement.¹⁴²

The Friends of Elk Island Society

316. The Friends of Elk Island Society (FEIS) described their concerns about the effectiveness of the proposed transmission line bird markers at preventing or eliminating mortality of trumpeter swans. The FEIS cited two studies which suggested that infrastructure in proximity to large waterbodies can negatively impact the use of those waterbodies by trumpeter swans, and collisions with transmission lines caused 44 per cent of known mortalities of trumpeter swan fledglings. Due to the suitability of Cooking Lake as trumpeter swan habitat, the FEIS hoped that there would be future increases in the populations of trumpeter swans in the Cooking Lake and Beaver Hill area. The FEIS expressed concern that the development of the preferred route may inhibit such increases.

317. During the hearing, Dr. Eaton of FEIS stated that bird marker effectiveness studies gloss over how individual bird species have varying degrees of vulnerability to collisions with power lines. Dr. Eaton discussed the vulnerability of trumpeter swans to collisions with power lines, even with bird diverters in place.¹⁴³ Additionally, Dr. Eaton discussed how trumpeter swans breed less frequently than most bird species, hatch less young, don't mate until they are five to seven years old, and sometimes may not pair-bond until they are 20 years old. He explained that, as a result of these breeding characteristics, power line collision-related mortalities of just a couple of trumpeter swans can have a large impact on the local population levels of the trumpeter swan.¹⁴⁴

¹⁴⁰ Exhibit 20924-X0541, Argument of Strathcona County and CLCC and FEIS, PDF page 14-15, paragraph 44.

¹⁴¹ Exhibit 20924-X0541, Argument of Strathcona County and CLCC and FEIS, PDF page 15, paragraph 46.

¹⁴² Exhibit 20924-X0279, Strathcona County Evidence, PDF page 13, paragraph 49.

¹⁴³ Transcript, Volume 5, pages 1134-1135.

¹⁴⁴ Transcript, Volume 5, pages 1135-1136.

Leduc County

318. Leduc County observed that both the preferred and alternate routes cross the Beaver Hills Moraine, and argued that the presence of the biosphere reserve does not support the selection of one route over the others.¹⁴⁵

319. Leduc County argued that there was no expert evidence or studies that established the recent use of Cooking Lake by trumpeter swans and very limited expert evidence or studies that specifically reviewed the impact of surrounding residential development, visitor area use, and airport use on the potential for Cooking Lake to be frequented and used by trumpeter swans.

6.6.3 Commission findings

320. Table 19 of CH2M's EE report lists the 17 environmental metrics it used to compare the two routes. The Commission finds that the three most relevant metrics for comparing the preferred and alternate routes are:

- ESAs crossed (0.6 kilometres for the preferred route versus 0.0 kilometres for the alternate routes).
- Approximate length of wetlands and artificial ponds crossed (4.3 kilometres for the preferred route versus 3.3 and 3.2 kilometres for the alternate routes).
- Length within trumpeter swan waterbody setbacks (1.5 kilometres for the preferred route versus 0.0 kilometres for the alternate routes).

321. CH2M and Mr. Wallis indicated that they placed the most weight on some combination of these three metrics. These three metrics all favoured the alternate and alternate variant routes over the preferred route from the perspective of minimizing the potential environmental impacts.

322. The Commission observes that there was little difference between the three routes for the following eight metrics:

- Line length (a 1.0 kilometre difference between the three routes).
- Land uses crossed (the same for all routes).
- Slopes greater than 15 degrees (within 0.1 kilometres of each other).
- Areas crossed with potential soil concerns (17.2 kilometres for the preferred route versus 16.2 kilometres for the alternate and alternate variant routes).
- Potential soil concerns (the same for all routes).
- Length crossed of high rare plant potential areas (within 0.5 kilometres of each other).
- Springs and artesian wells within 400 metres (the same for all routes).
- Length through pasture, treed areas and wetlands (0.3-kilometre difference between the three routes).

¹⁴⁵ Exhibit 20924-X0548, Rebuttal Argument – Leduc County, PDF page 3, paragraph 7.

323. One metric that appeared to favour the alternate routes over the preferred route was “extent paralleling existing linear development”. AltaLink updated its measurements during the hearing and confirmed that the preferred route parallels existing disturbances for approximately 88 per cent or 91 per cent of its total length, while the alternate and alternate variant routes parallel 95 per cent and 93 per cent, respectively. However, as discussed in Section 6.5.4, the preferred route is actually favoured for this metric due to the characteristics of the disturbances paralleled.

324. Another metric in Table 19 that appeared to slightly favour the alternate routes over the preferred route was “length within recommended 200-metre year-round setback distance of piping plover”. However, the Commission finds that this metric is not material because the AEP wildlife biologist indicated in correspondence to AltaLink that South Cooking Lake is not considered by the Province of Alberta to be a significant piping plover management site and therefore the AEP’s recommended year-round minimum setback of 200-metres from piping plover nesting sites are not required for the proposed project.¹⁴⁶

325. A few metrics from Table 19 appear to favour selection of the preferred route. However, the Commission found these metrics to be of limited value when assessing the comparative impacts of the preferred and alternate routes for the following reasons:

- The “number of watercourses crossed” metric is of minimal relevance because AltaLink plans to span all watercourses (i.e. rivers and streams) and ensure that vehicle and equipment crossings occur without any instream work in the watercourses.
- The “length within sensitive raptor range” and “length within sharp-tailed grouse range” metrics are of limited assistance because CH2M did not measure how many active raptor nests and sharp-tailed grouse leks are located within AEP’s recommended minimum setback distances for each route. Without this information, the Commission finds that it is difficult to verify the reasonableness of these two metrics.
- The “number of previously recorded rare plant occurrences within 5 kilometres” metric is of limited value to the Commission given the large search boundary and the non-comprehensive nature of the Alberta Conservation and Information Management System (ACIMS) database. Further, the results of the other rare plant metric listed in Table 19, named “length crossed of high rare plant potential areas”, which was determined by a desktop vegetation analysis completed by an environmental professional specializing in rare plant identification, showed less than a 0.4-kilometre difference between the preferred route (2.9 kilometres crossed) and the alternate variant route (3.3 kilometres crossed), and a 0.1-kilometre difference between the alternate route (2.8 kilometres crossed) and the preferred route.

¹⁴⁶ Exhibit 20924-X0255, Consultation Records with AEP, PDF page 104.

326. The Commission also finds that there are some factors that could not be captured as metrics in Table 19 of the EE report which either favour the preferred route over the alternate route or lessen the degree to which the alternate routes are more favourable than the preferred routes from an environmental perspective; those factors are described below:

- AEP did not express a preference for one route over another, and advised that both were environmentally satisfactory.
- The preferred route is located within the transportation utility corridor for approximately 3.1 kilometres, or 13 per cent, of its route. The Edmonton transportation and utility corridor was specifically set aside by the provincial government for major linear infrastructure such as transmission lines, and therefore these lands are, or eventually will be, highly disturbed. The alternate routes are not located in a transportation and utility corridor.
- The preferred route will parallel a wider existing linear disturbance and heavier traffic levels than what the alternate routes will parallel. Therefore, bird and wildlife species in proximity to the preferred route may have become more habituated to higher human activity and noise levels than bird and wildlife species in proximity to the alternate routes.
- The segment of the preferred route in the vicinity of Cooking Lake will be sited in an already disturbed area, and the use of Cooking Lake by trumpeter swans in recent years appears to have been minimal, therefore reducing the potential impacts of the project on trumpeter swans. Furthermore, AEP indicated that it is open to AltaLink working within the trumpeter swan waterbody setback.

327. Having regard to the foregoing, the Commission finds that the alternate route and the alternative route variant are marginally preferable to the preferred route from an environmental perspective. In coming to this conclusion the Commission was most influenced by the alternate routes' avoidance of ESAs and the fact that the length of wetlands and artificial ponds crossed and the length within trumpeter swan waterbody setbacks were both less on the alternate routes. However, the Commission is satisfied that all three of the routes are viable from an environmental impact perspective and that the impacts on each route can be adequately mitigated by AltaLink.

328. The Commission acknowledges that AltaLink prepared a draft ESR and proposed the implementation of mitigation measures for avoiding or reducing environmental impacts. The Commission accepts AltaLink's representations in the application and related evidence that it will implement those mitigation measures in good faith and to the extent practical.

329. The Commission expects AltaLink to hold ongoing discussions with AEP on the project and to complete further pre-construction wildlife field surveys and post-construction bird mortality surveys, as directed by AEP.

330. To ensure that the above expectations are realized, the Commission will direct AltaLink, as a condition of any approval it may issue, to file with the Commission brief written summaries of its efforts to achieve the pre-construction expectations of AEP. The summaries shall be filed six and 12 months following the issuance of an approval. The Commission also expects AltaLink to advise it, in writing, of discussions with AEP 12 months after construction is complete and

advise if AltaLink received direction from AEP to: a) conduct any post-construction bird mortality surveys or b) take any steps to mitigate bird mortalities resulting from the presence of the line.

331. The Commission concludes that, with diligent application of AltaLink's proposed mitigation measures and implementation of additional mitigation and monitoring where warranted, the environmental impact differences between the three routes are not significant and that the preferred and alternate routes are all viable from an environmental perspective.

6.7 Cost

6.7.1 Views of AltaLink

332. AltaLink's application provided initial cost estimates for the overall Cooking Lake development for both the preferred and alternate developments. AltaLink stated in its reply evidence that it had refined both its land costs and its pipeline mitigation cost estimates, which had changed the costs for land easement requirements and pipeline mitigations on each route.

333. The final estimated cost of the preferred Cooking Lake development was \$76.9 million (+20 per cent/-10 per cent); the estimated cost of the alternate Cooking Lake development was \$73.1 million (+20 per cent/-10 per cent).¹⁴⁷ AltaLink indicated that the proposed reduction in the amount of construction workspace required may further decrease project costs.

334. In response to concerns expressed by CLARR, AltaLink clarified that its cost estimates did not specifically estimate the cost of Surface Rights Board proceedings but did include costs for land acquisition which included costs associated with Surface Rights Board proceedings. AltaLink also asserted that the \$150,000 estimated cost to relocate the rural electrification association facilities along the alternate route was sufficiently covered by the estimate's contingency of +20 per cent/-10 per cent.

335. AltaLink further clarified that the cost estimate for the alternate route did not include the potential future costs to relocate the proposed transmission line due to roadway widening. It stated that it was not realistic to put a potential future cost into the cost estimate given that the timing of the roadway widening was unknown.¹⁴⁸

336. In response to a request from CLOG at the hearing, AltaLink provided estimated annual linear tax amounts payable to each county for both routes.¹⁴⁹ The difference in the linear tax amount between the two routes in 2016 would have been approximately \$1,700.

6.7.2 Views of the interveners

337. CLOG did not comment on the overall development costs but argued that the access trails on the alternate route would cost ratepayers less money than the preferred route (\$280,000 vs. \$630,000).

338. CLARR asserted that the cost of the alternate route development was understated and unclear. They were concerned that without the opportunity to further cross-examine AltaLink

¹⁴⁷ Exhibit 20924-X0417, AML Reply Evidence - Appendix 11. See also Exhibit 20924-X0516 - Undertaking 013.

¹⁴⁸ Transcript, Volume 2, page 304.

¹⁴⁹ Exhibit 20924-X0479 - Undertaking 001.

after the relevant undertaking was filed at the hearing, there was confusion remaining as to the estimated cost for the alternate development. CLARR also argued that the estimated cost for the alternate route did not include Surface Rights Board adverse effect claims, relocation costs for facilities of the Battle River Rural Electrification Association, and the cost to move the transmission line should Highway 625 be widened in the future. The CLARR group stated that the five per cent difference in estimated cost between the routes was insignificant and should not favour either route.¹⁵⁰

339. Leduc County submitted that, since the total estimated project costs are over \$70 million, the cost differences between the preferred and alternate routes of five per cent did not justify placing the transmission line along the alternate route, which had a greater number of residents.¹⁵¹

340. Strathcona County stated that the estimated cost difference between the two routes had increased between the filing of the applications in October 2015, and the filing of AltaLink's reply evidence in April 2016, and argued that this increase was so significant that the Commission should favour the alternate route. Strathcona County also argued that the Commission should only consider the known estimated costs for the proposed routes and not consider future unknowns such as the cost to ratepayers to move the transmission line in the future to accommodate road upgrades. Strathcona County asserted that it was in the public interest to select the less expensive option since higher construction costs ultimately result in higher costs of depreciation and return paid by ratepayers over the life of the assets.

6.7.3 Commission findings

341. The estimated project costs submitted in reply evidence were later confirmed in Hearing Undertaking 013 and thus the Commission considers them to be sufficiently clear for comparative purposes.

342. The Commission agrees with AltaLink that potential future transmission line relocation costs for the alternate route should not be included in the cost estimate. The Commission finds that the difference in cost between the preferred and alternate routes is not significant given the overall cost of the project and the tolerance range of the estimates.

343. However, as per Section 6.5.4, the Commission understands that future road widening along the alternate route would likely occur within the lifespan of the transmission line and the relocation cost for the alternate route would be a cost passed on to Alberta ratepayers. The combined costs for the future relocation of the transmission line and the multiple future relocations of distribution lines along the alternate route slightly favours the preferred route.

6.8 Cooking Lake Cemetery

6.8.1 Views of AltaLink

344. The Cooking Lake Cemetery is located adjacent to Highway 14 and the preferred route. The cemetery is operated by the Cooking Lake Cemetery Company (CLCC) and was represented by Mr. Ferguson and Mr. Heitman at the hearing.

¹⁵⁰ Exhibit 20924-X0547, CLARR Rebuttal Argument, paragraph 43.

¹⁵¹ Exhibit 20924-X0542, Written Argument of Leduc County, paragraph 22.

345. In its application, AltaLink stated that it would not need to clear trees on the CLCC's property and committed to constructing the line from the highway and removing the potential 20-metre construction workspace on private property at the cemetery. In its Historical Resources Impact Assessment, AltaLink concluded that the Cooking Lake Cemetery would not be impacted. AltaLink subsequently received a *Historical Resources Act* approval from Alberta Culture and Tourism.

346. In response to concerns expressed by the CLCC, AltaLink contacted Alberta Culture and Tourism regarding the CLCC's issues with *Historical Resources Act* approval. Alberta Culture and Tourism re-reviewed the Historical Resources Impact Assessment, and found that AltaLink's assessment was acceptable. It also concluded that the construction practices proposed by AltaLink north of the cemetery were sufficient to effectively mitigate any adverse impacts to the burial sites.¹⁵²

347. AltaLink stated that it would undertake ground penetrating radar in AltaLink's right-of-way and construction workspace located beyond the cemetery's northern boundary if the preferred route was approved. AltaLink explained that it would undertake this work in consultation with Alberta Culture and Tourism and provide the CLCC an opportunity to be present during the ground penetrating radar procedure and provide its input. If sites of concern were identified, they would be marked and further direction from Alberta Culture and Tourism would be sought prior to construction.¹⁵³

348. AltaLink stated that the cemetery was approximately 910 metres from the shoreline of Cooking Lake and the property was not considered to have an increased risk of bird injuries or death from collisions with the proposed transmission line relative to adjacent properties. However, AltaLink did state it would install bird markers to mitigate concerns.

349. AltaLink stated that it would hand clear trees in the area directly north of the cemetery as it would provide it the opportunity to identify smaller line-compatible vegetation and in general be selective with the tree removal process. AltaLink committed to spanning the area adjacent to the cemetery in order to eliminate the need to clear in the workspace between the cemetery and Highway 14.¹⁵⁴

350. AltaLink stated that when it conducted any future surveys, it would inform the CLCC and offer it an opportunity to participate. At the hearing, representatives from the CLCC confirmed the company would like to be involved in future survey opportunities.

6.8.2 Views of the interveners

351. The CLCC expressed concern that placing the transmission line along the preferred route may allow for encroachment on consecrated land. It stated that the easement for transmission lines along the preferred route would be right up to the fence line of the cemetery on the north side. One of the CLCC's main concerns was that unmarked burial sites may be located beyond the northern boundary of the cemetery, as ground penetrating radar had confirmed that unmarked burial sites were located outside the cemetery's eastern boundary.

¹⁵² Exhibit 20924-X0545, AML Reply Argument, paragraph 195.

¹⁵³ Exhibit 20924-X0545, AML Reply Argument, paragraph 201.

¹⁵⁴ Exhibit 20924-X0545, AML Reply Evidence, paragraph 203.

352. The CLCC also stated that AltaLink did not provide evidence to confirm that concerns regarding burial sites outside of the cemetery's boundaries were disclosed during the Historical Resources Impact Assessment or prior to the issuance of the *Historical Resources Act* approval.¹⁵⁵ As such, the CLCC met with Alberta Culture and Tourism and presented the results of ground penetrating radar outside of the cemetery's eastern boundary.

353. The CLCC also had concerns that birds flying in and out of South Cooking Lake would be injured or killed by the transmission line and land within the cemetery's boundaries. It submitted that the presence of injured or dead birds in and around the cemetery would have an adverse impact on the serene environment currently existing there, would raise sanitary concerns for the cemetery and would ultimately impact their obligations under the *Cemeteries Act*.

354. The CLCC stated that although trees would not need to be cleared on its property, constructing the preferred route would require the removal of trees up to 10 metres on either side of the line and this would still impact the cemetery. The CLCC stated that it relied on the shelter of the trees surrounding the cemetery area to keep noise levels from Highway 14 down. The CLCC contended that approval of the preferred route would adversely impact the serene environment existing at the cemetery.

355. The CLCC stated that running the transmission line along the preferred route would damage the environment surrounding the cemetery and since AltaLink had failed to properly address issues regarding potential burial sites being located north of the cemetery, the CLCC believed the alternate route was the more appropriate option.

356. At the hearing, the CLCC representatives confirmed that AltaLink's revised plan to conduct ground penetrating radar in the right-of-way and construction workspace along the cemetery's northern boundary would help the CLCC identify sites of concern outside the cemetery property.

6.8.3 Commission findings

357. The Commission finds Alberta Culture and Tourism's determination that the construction practices proposed by AltaLink north of the cemetery would be sufficient to effectively mitigate any adverse impacts to burial sites to be persuasive evidence that the AltaLink proposed construction activities and mitigation measures in the vicinity of the cemetery are reasonable.

358. The Commission finds that AltaLink's commitment to undertake ground penetrating radar north of the cemetery shows its willingness to mitigate the CLCC's concerns. The Commission accepts AltaLink's commitment to include the CLCC in future surveys surrounding the cemetery.

359. The Commission finds that AltaLink's commitment to hand clear trees in areas north of the cemetery and span the area adjacent to the cemetery in order to eliminate the need to clear trees between the cemetery and Highway 14 will sufficiently mitigate the CLCC's concerns that tree clearing would impact its serene environment and increase noise in the cemetery.

¹⁵⁵ Exhibit 20924-X0289, CLCC Evidence, paragraph 10, PDF page 4.

360. The Commission is satisfied that if the transmission line runs along the preferred route, it would not increase the risk of injured or dead birds within the cemetery's boundaries as the cemetery is approximately 910 metres from Cooking Lake.

361. The Commission concludes that the potential impacts to the Cooking Lake Cemetery will be sufficiently mitigated and therefore are not determining factors in selecting the lowest impact route.

6.9 Electric and magnetic fields (EMF)

362. AltaLink explained that electric fields are created when a voltage is present on a conductor and magnetic fields are created when current flows in a conductor. These fields are commonly referred to as EMF. AltaLink explained that EMF levels diminish rapidly as the distance from a transmission line increases and are much lower at the right-of-way edges and beyond as compared to the levels on the right-of-way.

363. AltaLink used a computer program called Corona and Field Effects to model the expected levels of EMF for the proposed Cooking Lake transmission line. At the edge of the 10-metre right-of-way of the proposed 138-kV transmission line, the maximum calculated electric field level would be 0.8 kilovolts per metre (kV/m). The maximum magnetic field level at the edge of the 10-metre right-of-way was calculated to be approximately 23.5 milligauss (mG). At a distance of 50 metres from the centre line, the electric field decreased to 0.0 kV/m and the maximum magnetic field decreased to 0.9 mG.¹⁵⁶

364. AltaLink stated that it recognized that stakeholders were concerned about exposure to EMF from transmission lines and treated these concerns seriously.

365. AltaLink retained Exponent, Inc. to prepare a report on research developments since the 2007 World Health Organization's review of extremely low frequency (ELF) electric and magnetic fields on human health as well as an evaluation of plant and animal health. The report concluded that "the existing body of scientific literature is extensive and has been thoroughly evaluated by multidisciplinary expert panels convened by numerous national and international health, scientific, and governmental agencies, including the World Health Organization. Overall, none of these agencies and expert panels has concluded that long-term exposure to ELF EMF is known to cause any adverse health effect, including cancer and other illnesses. Recent research does not provide new evidence to alter this conclusion."¹⁵⁷

366. AltaLink also stated that Health Canada "does not consider that any precautionary measures are needed regarding daily exposures to EMFs at ELFs. There is no conclusive evidence of any harm caused by exposures at levels found in Canadian homes and schools, including those located just outside the boundaries of power line corridors."¹⁵⁸

367. AltaLink stated that the exposure guidelines for the general public developed by the International Commission on Non-Ionizing Radiation Protection (ICNIRP) are 4.2 kV/m for electric fields and 2,000 mG for magnetic fields. AltaLink indicated that the predicted EMF levels are lower than these international guidelines.

¹⁵⁶ Exhibit 20924-X0045, Appendix P-1, Table 1-20, Table 1-21, Table 1-22 and Table 1-23.

¹⁵⁷ Exhibit 20924-X0045: Appendix P-2, PDF page 31.

¹⁵⁸ Exhibit 20924-X0045: Appendix P-1, paragraph 10.

368. The report by Exponent, Inc. also found that the research to date “does not suggest that magnetic or electric fields...result in adverse effects on the health, behaviour or productivity of fauna, including livestock such a dairy cows, sheep, pigs, and a variety of other species including small mammals, deer, elk, birds and bees.”¹⁵⁹

369. No expert evidence was filed by interveners on the potential health effects of EMF and no expert witnesses were presented at the hearing. However, several members of CLOG, CLARR, and LSCCR raised concerns regarding potential health impacts of the proposed development. These concerns included potential impacts to health of children, infertility and birth defects, increased risk of cancer, impacts to neurological conditions, and impacts to animals.

370. LSCCR stated that the group’s perception was that close proximity to high voltage transmission lines has potentially harmful effects and the perception of the public was still negative regarding the health effects from EMF. Mr. Neilson, a member of CLARR who is a physician, asserted that his profession allowed him to have a unique perspective with respect to research and stated that “the research that suggests the safety of EMF is weak at best”.¹⁶⁰

6.9.1 Commission findings

371. The Commission acknowledges that many of the interveners expressed concerns about the potential impacts of EMF from transmission lines on human and animal health. However, the evidence submitted by AltaLink regarding the electric and magnetic field levels produced by the proposed 138-kV transmission line was uncontroverted by any other expert.

372. AltaLink stated that the maximum electric field at the 10-metre right-of-way edge would be 0.8 kV/m which is lower than the ICNIRP guideline of 4.2 kV/m. AltaLink stated that the maximum magnetic field at the 10-metre right-of-way edge was 23.5 mG which is lower than ICNIRP guideline of 2,000 mG. The Commission accepts AltaLink’s evidence that the expected EMF levels for the proposed transmission line will be well below the public exposure guidelines at the edge of the right-of-way.

373. The Commission finds that there is no evidence to suggest that there will be adverse health effects associated with the EMF produced by the proposed 138-kV transmission line. Further, the Commission finds that there would be no difference in the EMF levels between the preferred and alternate route thus there would be no difference in impacts on potentially affected landowners. Accordingly, the Commission is of the view that either the preferred or the alternate route is acceptable from an EMF perspective.

6.10 Noise

374. AltaLink asserted that it designs and ensures that its facilities comply with the Commission’s Rule 012: *Noise Control*. AltaLink stated that Figure 1-14 in Appendix P of the application “illustrates that the audible noise contribution from the proposed transmission lines will be below 15 decibels A-weighted (dBA) in fair weather under the transmission line, and lower at distances further away. This audible noise contribution from the transmission line will not be noticeable above the existing background ambient sound level of 35 dBA used in

¹⁵⁹ Exhibit 20924-X0045, Appendix P-2, PDF page 62.

¹⁶⁰ Transcript, Volume 4, page 747.

Rule 012.”¹⁶¹ AltaLink further stated that noise from wind, rain, traffic, or industrial sources tends to mask the low levels of audible noise generated by a transmission line.

375. Several members of CLOG and CLARR raised concerns regarding potential noise impacts of the proposed development. Some members were “concerned that the transmission line will increase noise impacts that already exist due to traffic and the existing substation.” Other members were concerned that increased noise levels would “impact their sleep, their health, the health of their livestock, and could interfere with their agricultural operations and their enjoyment of their properties.”¹⁶²

376. CLOG also raised the concern of the Bourgeois family with respect to the current noise levels at the Cooking Lake 522S Substation. AltaLink stated that it had undertaken noise surveys, one in 2010 and another in 2015, at the Cooking Lake 522S Substation in consultation with the Bourgeois family. AltaLink stated the survey results showed that the Cooking Lake 522S Substation was in compliance with Rule 012.

377. CLOG stated that a noise impact assessment should have been completed for the Cooking Lake 522S Substation as part of the current application. It asserted that an assessment was needed for comparative purposes so that a fair conclusion of compliance could be reached regarding the noise complaint of the Bourgeois family.

378. CLOG members, such as the Swanns and Shepherds, were concerned about radio frequency (RF) interference from the proposed transmission line. AltaLink explained that higher frequency radio signals, such as FM, cellular phone, and wireless internet, operate above the general range of potentially affected frequencies and therefore reception problems as a result of RF interference were not expected from the proposed transmission line. However, AltaLink also explained that RF interference from corona on transmission lines could be present at lower frequency bands that may be used by hobby or HAM radios. AltaLink stated that interference is not normally a problem, as the antenna of a radio can usually be placed at a distance far enough away from the transmission line where interference levels are much lower. AltaLink stated that if unusually high levels of RF interference were experienced, it would investigate whether an equipment problem was causing the issue and repair or tighten any malfunctioning equipment affecting reception.¹⁶³

379. LSCCR noted that AltaLink committed to ensure that transmission line interference was in compliance with the Industry Canada regulations such that it should not affect the internet reception of the communication tower adjacent to the Olsen’s residence.¹⁶⁴

6.10.1 Commission findings

380. The Commission finds that based on the evidence submitted by AltaLink, the proposed transmission line will meet the noise requirements of Rule 012, as the predicted sound level of 15 dBA (L_{eq}) is well below the permissible sound level of 40 dBA (L_{eq}).

¹⁶¹ Exhibit 20924-X538, AML SWED Argument, paragraph 91.

¹⁶² Exhibit 20924-X0406, AML Reply Evidence, paragraph 356.

¹⁶³ Exhibit 20924-X0406, AML Reply Evidence, paragraph 373.

¹⁶⁴ Exhibit 20924-X0551, Reply Argument of LSCCR, paragraph 6.

381. The Commission heard from a number of interveners about the traffic noise on Highway 14, Range Road 220, Highway 625 and Township Road 504, thus the Commission finds it reasonable that AltaLink has predicted that noise from the proposed transmission line will not be noticeable above background sound levels such as traffic noise.

382. No noise producing equipment was proposed to be added to the Cooking Lake 522S Substation thus the Commission finds that a noise impact assessment, which is to predict the noise levels of proposed facilities, is not required for the Cooking Lake development. The Commission notes that two noise surveys, which measure the actual sound levels of facilities once they are operational, have already been completed at the Bourgeois property and the facilities were found to be in compliance with Rule 012.

383. The Commission finds that impacts associated with noise produced by the proposed transmission line is not a determining factor when selecting the lowest impact route.

6.11 Safety

6.11.1 Views of AltaLink

384. A number of interveners were concerned about the safety of the proposed transmission line given its proximity to highways.

385. AltaLink stated that it consulted extensively with Alberta Transportation throughout its route development process and Alberta Transportation did not raise any safety concerns regarding the placement of structures in a highway right-of-way. The transmission line would be designed to meet all clearance requirements, including high load corridor requirements.

386. AltaLink stated in its argument that the preferred route would be located in the Highway 14 road allowance, which has a 90-metre wide right-of-way. The proposed structures would be situated one metre from the edge of the Highway 14 right-of-way boundary and each structure would be on terrain slightly more elevated than the running surface of the highway asphalt.

387. With respect to vehicle traffic, AltaLink stated the preferred route was not expected to pose an incremental safety risk as there were existing FortisAlberta distribution lines along Highway 14. At the hearing, AltaLink reiterated that transmission facilities within road allowances were a primary location for 138-kV transmission lines and, as such, were not a safety issue for vehicles.

388. AltaLink stated it would assist landowners to ensure any metal buildings, fences and other structures close to AltaLink's facilities are properly grounded to avoid build-up of an electrical charge and potential shocks.

389. Additionally, AltaLink retained a third party airport expert that indicated that the preferred route would not have an impact on the safety of the South Cooking Lake airport.

6.11.2 Views of interveners

390. CLOG members were concerned with the proximity of the proposed transmission line along the preferred route to a major highway and the South Cooking Lake airport. They felt the poles would pose a hazard to vehicles along a highway that already has frequent accidents. They

were also concerned about having electrical infrastructure on both sides of narrow Range Road 220. The Blyths, members of CLOG, raised concerns that their wire fence, which would run directly under the preferred route, may become electrically charged and create a safety risk.

391. CLOG and Strathcona County were both concerned that part of Highway 14 was a high load corridor for vehicles up to 12.8 metres in height and the proposed line would pose a safety concern for these tall vehicles. CLARR and Leduc County had similar concerns about the portion of Highway 625 that is a high load corridor for vehicles up to nine metres in height. However, Mr. Willis, the transportation expert retained by Leduc County, stated that high load corridor concerns can be mitigated through detailed design to ensure proper vertical clearances.

392. CLARR and LSCCR members expressed concerns with the proximity of the proposed transmission line to roads along the alternate route and stated concerns about vehicle safety. Many of the CLARR members felt that there was not a lot of area between the transmission poles and Township Road 504, which would increase the likelihood of accidents, and stated that there was a high accident rate on Highway 625. At the hearing, the LSCCR panel stated that the location of transmission poles running alongside the highway presented a safety concern.

393. The report by Mr. Willis, submitted by Leduc County, indicated that there was 22 metres separation from the transmission line poles to the edge of Highway 14 on the preferred route and that separation from the poles to the edge of Highway 625 on the alternate route would be 14.5 metres. It was Mr. Willis's opinion that, given these separation distances, there was sufficient clear zones and horizontal clearance from errant vehicles on both routes.¹⁶⁵

6.11.3 Commission findings

394. The Commission accepts AltaLink's assertion that Alberta Transportation did not have safety concerns with routing a 138-kV transmission line within road allowance. The Commission understands that transmission lines are commonly routed in road allowances as evidenced by the existing distribution lines already located in the road allowance along Township Road 504 and Range Road 220.

395. The Commission accepts Mr. Willis' assessment that there is sufficient separation between the proposed transmission poles and the roadway edges of Highway 14 and Highway 625 as to provide reasonable clear zones and horizontal clearances from errant vehicles.

396. The Commission understands that AltaLink will design the transmission line to meet all Alberta Electric Utility Code clearance requirements and notes AltaLink's commitment to assist landowners with building and fence grounding to prevent potential shocks.

397. The Commission finds that safety concerns weakly favour the preferred route since there is a greater separation between the proposed poles and the edge of the roadway than on the alternate route.

¹⁶⁵ Exhibit 20924-X0274, Bunt & Associates Report, PDF page 18.

6.12 Approved route

398. The Commission finds that the proposed facilities for the Cooking Lake development, including both the preferred and alternate routes, are consistent with the need identified in the AESO's needs identification document application.

399. Based on the foregoing analysis, the Commission concludes that approval of the preferred route is in the public interest. While the Commission recognizes that approval of each of the routes proposed by AltaLink has associated impacts, it finds approval of the preferred route would result in less impacts than approval of either of the alternate routes.

400. In these circumstances, the Commission agrees with Mr. Berrien that the avoidance of homesites was a key factor in route selection. Given the development's proximity to a large urban centre, AltaLink was unable to avoid homesites altogether. However, in the Commission's view, the preferred route is clearly superior from this perspective. This is reflected in the number of residences in close proximity to the line. The preferred route has significantly fewer residences than the alternate within 50 metres, 100 metres and 150 metres.

401. While the preferred route has more residences within 800 metres than the alternate, the evidence before the Commission in this proceeding was that distance from a transmission line is a key factor for assessing the impact of the line on nearby residences. Distance influences visual impacts, health and safety concerns, future development opportunities and property values. In this case, it is primarily the distance from the preferred line to adjacent residences and properties that makes it superior to the alternate.

402. The preferred route is favoured with respect to future road widening because upgrades along the alternate route will require additional right-of-way and more transmission line and distribution line will need to be relocated as compared to the preferred route. Though there is currently no set date for expanding Highway 625, the Commission understands future road widening will likely occur within the lifespan of the transmission line.

403. While the difference in the estimated cost between the preferred and alternate routes is not significant given the overall cost of the project and tolerance range of the estimates, the combined costs for the future relocation of the transmission line and the multiple future relocations of distribution lines along the alternate route would be a cost passed onto Alberta ratepayers which slightly favours selection of the preferred route.

404. The Commission recognizes that the preferred route is not superior to the alternate route for all criteria. From an environmental perspective, the Commission considers the alternate route to be marginally better than the preferred route. However, because the Commission is confident that the environmental impacts associated with the preferred route can be effectively mitigated, which was the evidence of both environmental experts that appeared at the proceeding, the Commission is satisfied that approval of the preferred route can be achieved without significant effects to the local environment.

405. As per paragraphs 329 and 330, the Commission expects AltaLink to hold ongoing discussions with AEP on the project and to complete further pre-construction wildlife field surveys and post-construction bird mortality surveys, as directed by AEP. The Commission directs AltaLink to file brief written summaries of its efforts to achieve the pre-construction expectations. The summaries shall be filed six and 12 months following the issuance of the

approvals for the Cooking Lake transmission line¹⁶⁶. Further, the Commission expects AltaLink to advise it, in writing, of discussions with AEP 12 months after construction is complete and advise if AltaLink received direction from AEP to: a) conduct any post-construction bird mortality surveys or b) take any steps to mitigate bird mortalities on the line.

406. Regarding the remaining criteria, the Commission is satisfied that the routes are comparable from the perspective of safety, EMF and noise.

407. While the Commission finds that the preferred route is the lowest impact route overall, it recognizes that the landowners along Range Road 220 will be impacted more than landowners along other portions of the preferred route. The Commission expects AltaLink to carefully consider pole locations along Range Road 220 taking into account potential impacts and landowner feedback in order to minimize the impacts experienced by these landowners. In the next section of this decision the Commission considers some of the routing options proposed by CLOG to address site-specific concerns relating to the preferred route.

6.13 Proposed route variations

408. Mr. Berrien recommended four strategies to mitigate the impacts to the landowners along Range Road 220 if the Commission selected the preferred route. Two of the strategies were changing the material used for the transmission structures and increasing the transmission structure height, as discussed in Section 6.5.3. The other two strategies were relocating structure D-100 and adding a route deflection.

409. Mr. Berrien stated in his report that the D-100 structure located south of the Bourgeois driveway represented a significant visual impact to the Bourgeois family. As such, Mr. Berrien recommended AltaLink use two angle structures at designation points D-100 and D-102, placing the D-100 structure north of the Bourgeois driveway on the west side of Range Road 220. Mr. Berrien stated there was a greater tree density to the north of the driveway that would provide greater visual screening.

410. AltaLink explained that it considered placing the D-100 structure farther north during route development and consulted with the Ottos, landowners located to the east of the Bourgeois' and on whose land the substation was adjacent. AltaLink stated that the Ottos were not in favour of AltaLink placing the D-100 structure on their land north of the substation, on the east side of Range Road 220. AltaLink argued the proposed structure location for D-100 was the least impact alternative, as it kept the transmission line in the road allowance, avoided the Bourgeois' driveway and crossed Range Road 220 directly onto AltaLink's property.

411. Mr. Berrien also proposed a deflection near the Kublik residence "to preserve the home and yard of the Kublik family".¹⁶⁷ Mr. Berrien suggested that a route deflection, or jog, to the east side of Range Road 220 may minimize impacts to the Kubliks. Mr. Berrien explained that he contacted Mr. Scammell, the landowner on the east side of Range Road 220, across from the Kublik property, who had no issue with the jog. Mr. Berrien stated that a buyout would likely be required if the jog could not be implemented.

¹⁶⁶ Transmission lines 780L and 174L.

¹⁶⁷ Exhibit 20924-X0309, Evidence of R Berrien, PDF page 9.

412. AltaLink explained that it attempts to angle its road crossings close to 90 degrees in order to limit the length of line situated over roads. Hence, the proposed jog would actually require four dead-end structures which would increase costs. AltaLink further explained the jog would end up traversing the Otto's and Scammell's properties on the east side of Range Road 220 which would require additional right-of-way and tree clearing on those properties. AltaLink indicated that while Mr. Scammell had indicated that a single pole on his property to minimize impacts to the Kublik property would be acceptable he was still concerned with the visual impacts and thus did not fully endorse a route alternative adjacent to his property.¹⁶⁸ AltaLink also explained that there was an existing FortisAlberta distribution line in the road allowance on the east side of Range Road 220 that would require relocation or reconfiguration if the line were to jog.

413. AltaLink stated the closest edge of the Kublik residence would be approximately 31 metres from the centre line of the preferred route and the transmission line would be located in the road allowance. AltaLink stated that none of the buildings in Mr. Kublik's yard site would require relocation as they are located outside of the proposed right-of-way. AltaLink committed to working with Mr. Kublik regarding the location of tree clearing required along his property. AltaLink confirmed that it would not be offering to purchase the Kublik's property.¹⁶⁹

414. In response to a criticism by CLOG regarding an angled jog across Township Road 504 on the alternate route that would not require four new structures, AltaLink stated that that deflection ensured the transmission line was on the opposite side of the road allowance from most of the adjacent landowners and did not need to cross back. It contended that in contrast to that single deflection, Mr. Berrien's proposed deflection would increase the overall impacts.

6.13.1 Commission findings

415. The Commission accepts that AltaLink considered the location of structure D-100 during route development and incorporated feedback from all affected stakeholders when deciding on the applied-for location. The Commission notes that only a 15-metre by 40-metre section of trees will need to be cleared around the structure location and there will still be trees to provide visual screening between the Bourgeois residence and the proposed structure.¹⁷⁰

416. While the Commission is sympathetic to the Kublik's situation, the Commission notes that only a 15-metre by 40-metre section of trees will need to be cleared around each pole location along the Kublik property line¹⁷¹ and AltaLink has committed to work with Mr. Kublik to minimize the tree clearing on his property. The Commission finds that the complexity of the proposed line jog to avoid the Kublik property would result in increased tree clearing and project costs as well as introduce impacts onto additional landowners.

417. The Commission finds that the D-100 structure location and preferred route as applied-for are in the public interest and does not approve the changes suggested by Mr. Berrien.

¹⁶⁸ Exhibit 20924-X0406, AML Reply Evidence, paragraph 33.

¹⁶⁹ Exhibit 20924-X0406, AML Reply Evidence, paragraph 34.

¹⁷⁰ See paragraph 218 and Exhibit 20924-X0408 - Tree clearing images, PDF page 1.

¹⁷¹ Exhibit 20924-X0408 - Tree clearing images, PDF page 4.

7 Findings

418. The Commission finds that the proposed facilities satisfy the need as identified by the AESO and approved by the Commission in Decision 2014-126.

419. The Commission finds that the applications for the proposed developments, filed by AltaLink pursuant to sections 14, 15, 18, and 21 of the *Hydro and Electric Energy Act*, comply with the information requirements prescribed in Rule 007.

420. The Commission is satisfied that the participant involvement program undertaken by AltaLink for all proposed developments meets the requirements of Rule 007.

421. The Commission finds that the technical and environmental aspects of the project, as submitted by AltaLink, fulfill the requirements of Rule 007.

422. After careful consideration of the record of the proceeding and for the reasons set out in this decision, the Commission finds that approval of the proposed developments is in the public interest having regard for the social and economic effects of the project and its effects on the environment.

423. As per Section 5.2, the Commission finds that approval of the preferred substation location for the Saunders Lake 289S Substation will have the lowest overall impact and is in the public interest.

424. As per Section 6.12, the Commission finds that approval of the preferred route for the Cooking Lake transmission line will have the lowest overall impact and is in the public interest.

8 Decision

425. Pursuant to sections 14, 15, 18, 19, 21 and 34 of the *Hydro and Electric Energy Act*, the Commission approves the facility applications and grants AltaLink the approvals set out in the following appendices:¹⁷²

- Appendix 1 – Alter Cooking Lake 522S Substation – Permit and Licence 20924-D02-2016
- Appendix 2 – Alter Transmission Line 780L – Permit and Licence 20924-D03-2016
- Appendix 3 – New Saunders Lake 289S Substation – Permit and Licence 20924-D04-2016
- Appendix 4 – New Transmission Line 454L/455L – Permit and Licence 20924-D05-2016
- Appendix 5 – Alter Transmission Line 174L – Permit and Licence 20924-D06-2016
- Appendix 6 – Alter Transmission Line 858L – Permit and Licence 20924-D07-2016
- Appendix 7 – New Transmission Line 1112L/1140L – Permit and Licence 20924-D08-2016

¹⁷² The approved alterations at the Wabamun 19S Substation do not require an updated permit and licence.

- Appendix 8 – Alter Transmission Line 910L – Permit and Licence 20924-D09-2016
- Appendix 9 – Alter Transmission Line 914L – Permit and Licence 20924-D10-2016
- Appendix 10 – Alter Leduc 325S Substation – Permit and Licence 20924-D11-2016
- Appendix 11 – Alter Bardo 197S Substation – Permit and Licence 20924-D12-2016
- Appendix 12 – Connection Order for Transmission Line 910L – 20924-D13-2016
- Appendix 13 – Connection Order for Transmission Line 914L – 20924-D14-2016

426. Because the lands for the construction workspaces and access trails, as identified by AltaLink, fall within the definition of transmission line, pursuant to sections 14, 15 and 19 of the *Hydro and Electric Energy Act*, the Commission grants AltaLink's request and will specify the workspace and trail locations needed for the purposes of the transmission line in the permits and licences to be issued.

427. Pursuant to sections 15 and 19 of the *Hydro and Electric Energy Act*, the Commission grants TransAlta the following approvals:

- Appendix 14 – Transmission Line 910L – Licence 20924-D15-2016
- Appendix 15 – Transmission Line 914L – Licence 20924-D16-2016

428. The permits and licences granted to AltaLink and TransAlta will be distributed separately.

Dated on July 15, 2016.

Alberta Utilities Commission

(original signed by)

Tudor Beattie, QC
Panel Chair

(original signed by)

Neil Jamieson
Commission Member

(original signed by)

Bill Lyttle
Commission Member

Appendix A – Proceeding participants

Name of party or organization (abbreviation) Counsel or representative	Group (if applicable)
Abraham, B.	LSCCR
AltaLink Management Ltd. (AltaLink) Hunter, B., Yearsley, J. and Ghikas, M.	
Ayoubi, A. and R.	LSCCR
Bhanji, M.	
Bayer, G. and R. M.	LSCCR
Berube, R. and J.	CLARR
Black, J.	CLOG
Bliss, K. and R.	CLOG
Bluett, S.	CLOG
Blyth, D.	CLOG
Bordato, C. and N.	CLOG
Bourgeois, C.	CLOG
Boyechko, A. and L.	CLOG
Bublely, G. and C.	CLOG
Burns/Venne	LSCCR
Cameron Drainage District	
Cathton Investments Ltd. Manning, R.	
Chitrinia, E. and B.	CLARR
Chorney, J.	CLOG
Collinge-Cameron, D. and S.	CLOG
Cooking Lake Alternate Route Resistors (CLARR) Bishop, D. and Henriques, R.	
Cooking Lake Cemetery Waters, F.	
Cooking Lake Opposition Group (CLOG) Secord, R. and Cheng, Y.	
County of Leduc Finlay, S.	
County of Strathcona Marriott, T.	
Crawford, R. and L.	CLOG
Doiron, M.	
Dowler, K.	CLOG
Ducherer, G. and D.	LSCCR
Forsythe, L.	CLOG
Fraser, B. and L.	CLOG
Friends of Elk Island Society Eaton, B.	
Frigon, K.	CLOG
Goudreau, R.	CLARR
Grabill, C.	CLOG
Gunderson, D. and K.	CLOG
Gupta, K. and S.	

Name of party or organization (abbreviation) Counsel or representative	Group (if applicable)
Harrison, D. and L.	CLOG
Hermann, M.	
Hoffman, L. and L.	LSCCR
Imhoff, J. and A.	LSCCR
Ingram, E. and A.	CLARR
Kafer, K. and T.	CLOG
Kovacic, A.	CLOG
Kovacic, J.	CLOG
Kublik, D.	CLOG
Lengweiler, F.	CLOG
LSCCR Group Campbell, D. and Brander, B.	
Madathiparambil, J.	LSCCR
Maksym, K.	CLARR
McMullan, P.	CLOG
Metz, A.	CLOG
Mills, S. and D. ¹⁷³	CLOG
Mountney, M. and K.	CLOG
Mudie, M.	CLOG
Muncy, L. and T.	CLOG
Neilson, K. and K.	CLARR
Nilson, F. and Rule, R.	CLARR
Norman, C.	CLOG
Norman, N. and E.	CLOG
Olsen, L.	LSCCR
Otto, A.	CLOG
Paltzat, G. and C.	CLOG
Parathundathil, B.	LSCCR
Pashak, W. and K.	CLOG
Prokop, T. and C.	CLOG
Redman, C.	CLOG
Rup, K. and J.	CLARR
Ryan, P. and L.	CLOG
Scammell, B. and C.	CLOG
Scammell, D.	CLOG
Schmidtke, E. and S.	CLARR
Schneider, H.	CLOG
Simpson, B.	LSCCR
Soch, T. and L.	CLARR
Swann, M. and L.	CLOG
The Wildlife Society Fisher, J.	

¹⁷³ This party joined the CLOG group following commencement of the hearing, as per Exhibit 20924-X0543, paragraph 9.

Name of party or organization (abbreviation) Counsel or representative	Group (if applicable)
Todd, P.	CLOG
Tufty, C. and D.	CLOG
Vanwieren, S. and N.	CLOG
Yendall, L. and D.	LSCCR
Zaal, F.	CLOG

<p>Alberta Utilities Commission</p> <p>Commission panel Tudor Beattie, Panel Chair Neil Jamieson, Commission Member Bill Lyttle, Commission Member</p> <p>Commission staff JP Mousseau (Commission counsel) Shanelle Sinclair (Commission counsel) Jaimie Graham (Commission counsel) Abhinav Ayri Danielle Glover Lindsey Mosher</p>

Appendix B – Oral hearing – registered appearances

Name of party or group (abbreviation) Counsel	Witnesses
AltaLink Management Ltd. (AltaLink) Hunter, B.	Turriff, S. Heffernan, S. Mundy, W. Chen, C. Van Wyk, M. Hoover, D.
M. Bhanji	
Cooking Lake Opposition Group (CLOG) Secord, R. Cheng, Y.	Blyth, D. Bourgeois, M. Bourgeois, C. Fraser, B. Kublik, D. Zaal, F. Farquharson, J. Berrien, R. Metz, A. Woodlock, P. Wallis, C.

Name of party or group (abbreviation) Counsel	Witnesses
Cooking Lake Alternate Route Resisters (CLARR) Bishop, D. Henriques, R.	Neilson, K. Neilson, K. Fenske, W. Fenske, D. White, A. White, M. Davidson, R. Berube, R. Berube, J. Chitrinia, B. Maksym, K. Paul, L. Paul, J. Soch, T. Nilson, F. Schmidtke, E. Marceau, T. Givogue, P. Archer, R. Ingram, E. Braun, E. Freeman, D. Deveau, S. Pettifer, D. Vanderzee, S. Vanderzee, J. Campbell, S.
Deveney, B.	
Leduc Strathcona County Concerned Residents Group (LSCCR) Campbell, D.	Olsen, L. Yendall, L.
Leduc County Finlay, S.	Willis, S. Preiksaitis, A.
Strathcona County Marriott, T.	Leplante, P. Mills, L. Eaton, B. Thrasher, J. Dekker, R. Ferguson, G. Heitman, J.

Appendix C – Cooking Lake Alternate Route Resistors (CLARR) group members¹⁷⁴

Name of member	Name of member
Arthurs, G. and G.	Maksym, K.
Berube, M.	Marceau, T.
Berube, R. and J.	Marshall, R. and C.
Bilodeau, H. and G.	McFetridge, J.
Bilodeau, J. and Tinant, S.	McKinney, G. and L.
Braun, E. and S.	McKinney, K.
Buldoc, S. and L'heureux, G.	McKinney, T.
Campbell, K. and S.	Miller, S. and J.
Carrington, S.	Morah, B.
Charette, D. and J.	Morah, E. and C.
Cherchuk, L.	Morah, R.
Chitrinia, E. and B.	Munro, P. and T.
Clark, M.I	Nilson, F. and Rule, R.
Curran, D. and A.	Nielson, K. and K.
Davidson, R. and L.	Nordstrom, B. and M.
Desbiens, R. and S.	Nwofor, O.
Deveau, S.	Paul, L. and J.
Donohue, M. and I.	Perry, B.
Drewes, J.	Peters, L. and B.
Ducharme, C. and S.	Petlikau, J. and V.
Ducherer, M. and J.	Pettifer, B. and D.I
Evans, D. and A.	Plamondon, G. and Crosbale, S.
Fenske, W. and D.	Reichert, K. and R.
Fisher, M. and D.	Reinhardt, K. and K.
Freeman, D. and Gray, R.	Rup, K. and J.
Givogue, P. and C.	Schmidtke, E. and S.
Goudrea, R.	Shepherd, M. and P.
Gravel, D. and M.	Sirois, D.
Harrison, C.J. and Haines, C.	Soch, B. and S.
Haswell, Ray	Soch, T. and L.
Huntley, J. and Nelson, T.	Smith, D.
Hutchison, G. and D.	Vanderzee, J. and S.
Ingram, E. and A.	Walker, R. and M.
Janke, A. and P.	Warner, D. and M.
Johnson, A. and MacEarchern, T.	Welychko, R. and L.
Kruger, D. and F.	White, A. and M.
LeRoux, T. and N.	Widney, A.
Lessard, D. and C.	Wrightman, T.
Lubchynski, A.	Zane, B.
Lubchynski, S.	
Lukaseder, J.	

¹⁷⁴ From Exhibits 151, 157, 174, 186, 203, 215, 270 and Transcript, Volume 4, page 794.