



**EPCOR Distribution & Transmission Inc. and
AltaLink Management Ltd.**

City of Edmonton Transmission Reinforcement Project

March 27, 2026

Alberta Utilities Commission

Decision 29866-D01-2026: City of Edmonton Transmission Reinforcement Project

EPCOR Distribution & Transmission Inc.

Proceeding 29866

Applications 29866-A001 and 29866-A003 to 29866-A015

AltaLink Management Ltd.

Proceeding 29866

Applications 29866-A002 and 29866-A016 to 29866-A019

March 27, 2026

Published by the:

Alberta Utilities Commission
Eau Claire Tower
1400, 600 Third Avenue S.W.
Calgary, Alberta T2P 0G5

Telephone: 310-4AUC (310-4282) in Alberta
1-833-511-4AUC (1-833-511-4282) outside Alberta

Email: info@auc.ab.ca

Website: www.auc.ab.ca

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Proceeding 29866
Applications 29866-A001 to
29866-A019**

1 Decision summary

1. In this decision, the Alberta Utilities Commission finds that approval of applications from EPCOR Distribution & Transmission Inc. and AltaLink Management Ltd. for the City of Edmonton Transmission Reinforcement (CETR) Project are in the public interest, having regard to the social and economic effects of the project and its effect on the environment.

2. The facility applications submitted by EPCOR reflect a substantial increase in cost from that presented in the Alberta Electric System Operator's (AESO) needs identification document (NID) application approved by the Commission in Decision 28633-D01-2024.¹ While the AESO's NID application did not explicitly specify an underground or overhead configuration, the cost estimates for its approved preferred transmission development were based on overhead routing.

3. The largest factor in the approximately \$120 million increase in costs from the NID application to EPCOR's facility applications is the change to routing alternatives that are primarily underground. The evidence on the record indicates that this change was driven primarily by the Canadian National Railway Company's (CN) concerns related to electromagnetic induction for any 240-kilovolt (kV) overhead alignment paralleling CN's railway corridor along the Yellowhead Trail, and CN's limitations on acceptable mitigation measures. CN considers this railway corridor to be the busiest and one of the most complex railway sections in the country, with approximately 20 to 35 trains moving through this location daily and is part of the east to west Canada main line.

4. With respect to cost, the Commission and parties questioned EPCOR on its estimate and low ratio of overhead cost compared to underground cost, but ultimately the Commission finds the cost estimate acceptable. Final costs will be tested for prudence in a future rates application.

5. Although the 240-kV configuration has changed from overhead to underground, the Commission finds that the facility applications filed by EPCOR meet the AESO's technical specification and address the need for transmission infrastructure in the northwest area of Edmonton. Further, EPCOR notified the AESO of the change in a timely manner and the AESO reviewed and questioned EPCOR before determining that EPCOR's final service proposal was an acceptable technical solution.

¹ Decision 28633-D01-2024: Alberta Electric System Operator – City of Edmonton Transmission Reinforcement Needs Identification Document, Proceeding 28633, Application 28633-A001, September 17, 2024.

6. The Commission finds that EPCOR's consultation with affected stakeholders, in particular CN, satisfied the requirements of Rule 007: *Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations, Hydro Developments and Gas Utility Pipelines*,² and provided sufficient information for the Commission to assess the proposed facilities. The record demonstrates that EPCOR engaged CN over an extended period, undertook detailed technical studies, and revised its routing alternatives in response to CN's operational and safety concerns. The Commission considers this proceeding to highlight the importance of early and thorough engagement with third parties whose operational requirements may fundamentally constrain routing options and, therefore, affect project costs.

7. The Commission approves the preferred route for the 240-kV transmission lines 915L and 993L and the preferred route for the 72-kV transmission lines 72FN27 and 72FN28. The Commission finds that the preferred 240-kV route, although modestly more costly, results in lower overall impacts because it avoids a new overhead crossing of the North Saskatchewan River, reduces vegetation clearing and associated wildlife effects, and aligns more closely with municipal planning considerations. In addition, the preferred 72-kV route better balances the relevant public interest considerations because it is shorter, less costly, affects fewer landowners and structures, and avoids greater direct impacts to residential property than the alternate route.

2 Introduction and background

8. Building a new transmission facility in Alberta requires two applications. The first, a needs identification document (NID) application, is filed by the AESO explaining that an expansion or enhancement of the transmission system is or may be required to meet the needs of Alberta and is in the public interest.³ The second, a facility application, is filed by a transmission facility owner or market participant proposing equipment to meet the AESO's identified need having regard for factors that include location, detailed design and routing considerations as well as consultation with potentially affected persons.

9. The AESO filed the NID application for the CETR Project on December 7, 2023. The AESO identified two constraints that underpinned the need for transmission development in the northeast Edmonton area: (i) load growth is expected to exceed the transmission system capability, and (ii) the current transmission infrastructure is reaching end of life. The AESO evaluated several transmission development options to alleviate the system constraints and selected a preferred option that included, among other things, the construction of two 240-kV transmission lines, a new 240-kV substation and two 72-kV transmission lines. Based on an overhead configuration of the transmission lines, the AESO estimated a project cost of approximately \$277 million. The Commission approved the NID application on September 17, 2024, in Decision 28633-D01-2024 (NID Decision) including its preferred transmission development.

10. On February 28, 2025, EPCOR and AltaLink submitted facility applications to the Commission for approval of the CETR Project. The facility applications included preferred and alternate 72-kV and 240-kV routes. Both the preferred and alternate 72-kV routes are overhead,

² Effective March 28, 2024, to November 5, 2025.

³ *Electric Utilities Act*, Section 34(1).

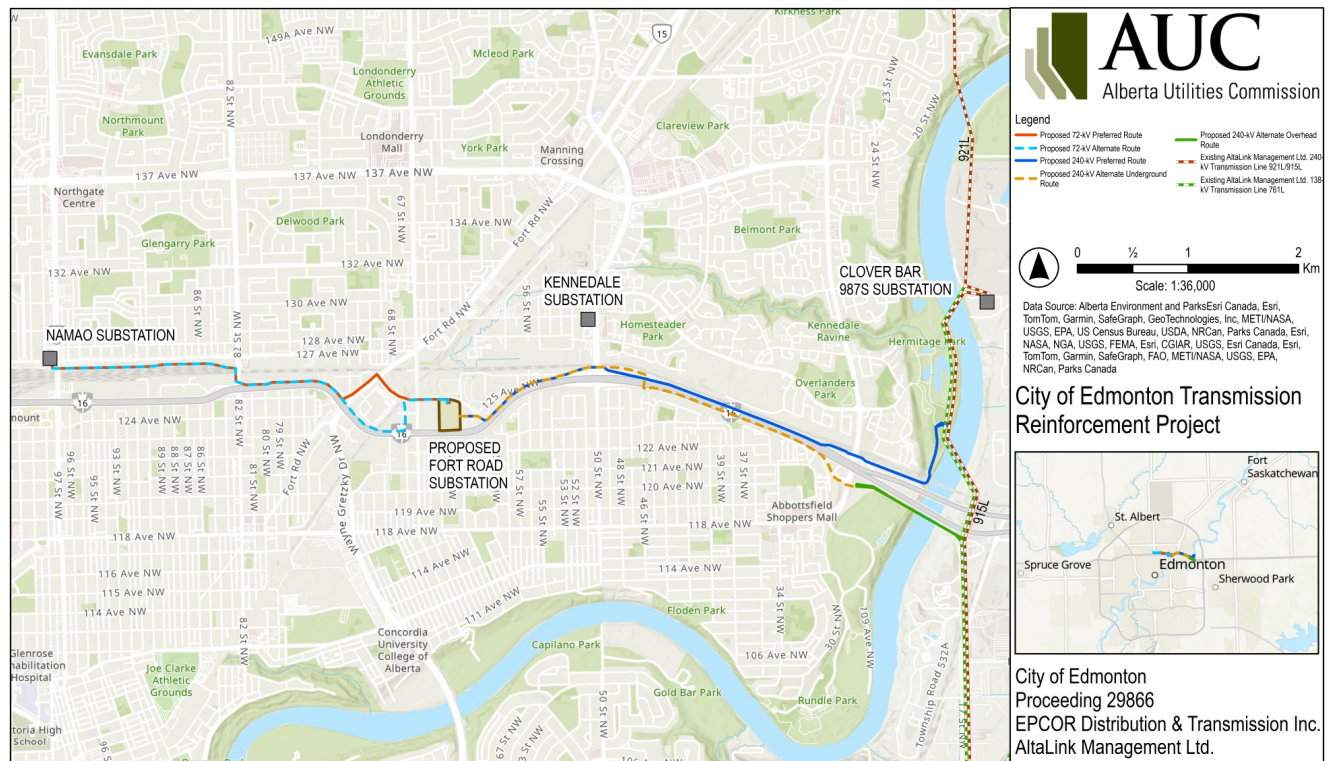
while the preferred 240-kV route is underground and the alternate 240-kV route is a hybrid overhead and underground route. EPCOR proposed to:

- Construct and operate a new, primarily underground, double-circuit, 240-kV transmission line between a cut point at AltaLink's existing Transmission Line 915L and the proposed Fort Road Substation, to be designated as 915L and 993L.
- Construct and operate a new 240/72/15-kV substation, to be designated as the Fort Road Substation.
- Construct and operate a new overhead, double-circuit, 72-kV transmission line between the proposed Fort Road Substation and the existing Namao Substation, to be designated as 72FN27 and 72FN28.
- Construct and operate a new fibre optic cable between Clover Bar Substation and Fort Road Substation, to be designated as FO-166, and a new fibre optic cable between Fort Road Substation and Namao Substation, to be designated as FO-167.
- Alter the existing Clover Bar and Namao substations.
- Connect EPCOR's transmission lines 915L and 993L to AltaLink's transmission lines 915L and 993L, respectively.
- Discontinue operations of the existing underground 72-kV transmission lines 72CN10, 72KN23, 72CK12, 72CK13 and existing Kennedale Substation.

11. AltaLink's portion of the project is considerably more minor and primarily has to do with alterations to existing Transmission Line 915L to connect the new 240-kV lines. As such, this decision deals predominantly with EPCOR's applications.

12. The existing and proposed substations, and existing and proposed preferred and alternate transmission line routes are shown in Figure 1 below.

Figure 1. Proposed CETR Project area



13. The project will include approximately 10 kilometres of transmission lines that will run in parallel and in relatively close proximity to existing CN railway infrastructure, which is subject to federal regulation. EPCOR explained that the project's 72-kV and 240-kV transmission lines will electrically interfere with CN's railway infrastructure.

14. As will be discussed in detail in Section 4 of this decision, EPCOR consulted extensively with CN about the project and electrical interference impacts. EPCOR worked to develop options, including overhead routing options, that addressed CN's concerns regarding railway safety and operations impacts. CN's concerns and limitations evolved over the course of consultation. EPCOR and CN entered a memorandum of understanding (MOU) in the fall of 2024 and an amended MOU (amended MOU) in February 2025 after CN invalidated certain mitigations previously determined to be acceptable.

15. EPCOR retained Commonrow Consulting Ltd. to assess electrical interference risks and provide a report detailing whether the 72-kV and 240-kV transmission lines could meet CN's safety and operational criteria to ensure safe and reliable railway operations. Ultimately, due to CN's limits and criteria for electromagnetic induction-related impacts on its railway lines and operations, the results of Commonrow's modelling and analyses, and the lack of any viable alternative overhead 240-kV routes, EPCOR did not further consider its overhead options except for one hybrid option.⁴

⁴ Exhibit 29866-X0031, CETR Application, PDF page 35.

16. Prior to issuing notice to potentially affected stakeholders, the Commission notified EPCOR and AltaLink of some preliminary issues and concerns associated with the applications' deviation from an overhead to primarily or entirely underground 240-kV transmission configuration, including the increase in project cost to approximately \$400 million.⁵ The Commission issued information requests to EPCOR and the AESO related to the preliminary issues.⁶ After receiving information responses from EPCOR⁷ and the AESO,⁸ the Commission determined that it had sufficient information to resume normal processing of the applications.

17. The Commission issued a notice of hearing and mailed copies directly to potentially affected stakeholders and parties in the project area. The Commission received statements of intent to participate from the Consumers' Coalition of Alberta (CCA), Loretta Yachimec, Jennifer Porritt and Dianne Pollock. The Commission determined that J. Porritt did not establish that they may be directly and adversely affected by the Commission's decision on the applications and denied standing to this intervener. D. Pollock and L. Yachimec each owned or occupied land near the proposed project and described to the Commission's satisfaction potentially direct and adverse effects associated with the Commission's decision on the applications. The Commission granted both these individuals standing and considered their concerns. While the Commission found that the CCA had not demonstrated that its legal rights may be directly and adversely affected by the applications, it granted the CCA limited participation in the applications.

18. A public hearing to consider the applications was held from October 14, 2025, to October 16, 2025. The CCA participated in the hearing, whereas the other parties that were granted standing did not. Following the public hearing, the Commission issued information requests to CN regarding CN's limits and restrictions on potential mitigation measures. On January 16, 2026, CN provided its responses. EPCOR and the CCA were provided the opportunity to file written argument and reply argument on the new evidence provided by CN. After receiving submissions from both EPCOR and the CCA, the Commission considered the record of the proceeding to be closed on February 6, 2026.

3 Do EPCOR's facility applications meet the need approved in the NID Decision?

19. The Commission approved the AESO's NID application on September 17, 2024, including its preferred transmission development, which included the addition of two 240-kV transmission lines. The AESO estimated that the project would cost approximately \$277 million.⁹ This was a Class 4 estimate with an accuracy of +50/-30 per cent (i.e., costs could increase up to \$414 million or decrease to \$193 million).¹⁰ The estimates in the NID application were based on the assumption of an overhead configuration for the two 240-kV transmission lines.

⁵ Exhibit 29866-X0055, AUC letter - Application acknowledgment and identification of preliminary issues.

⁶ Exhibit 29866-X0056, AUC information request EDTI-AUC-2025MAR25-001 to 011.

⁷ Exhibit 29866-X0061, EDTI responses to Commission IRs.

⁸ Exhibit 29866-X0063, AESO-AUC-2025APR14-001.

⁹ Exhibit 29866-X0063, AESO-AUC-2025APR14-001, PDF page 2.

¹⁰ Exhibit 29866-X0031, EDTI - CETR Application, PDF page 129.

20. EPCOR provided the AESO with its draft service proposal on September 16, 2024, which included a Class 3 estimate (+20/-10 per cent) of \$353 million.¹¹ Given this, it is clear to the Commission that costs were already rising on the project prior to EPCOR moving forward with the underground routes.

21. By the time facility applications were filed by EPCOR and AltaLink in March 2025, costs had increased to approximately \$400 million. EPCOR estimated the costs between \$390 million and \$397 million depending on the routes, while AltaLink's portion of the project was estimated to be an additional \$5 million.

22. This represents a greater than 40 per cent cost increase in the approximately six-month time frame between the NID application being approved and the facility applications being filed. This level of increase in a short time frame is concerning to the Commission. EPCOR submitted that the estimated project cost is less than the \$414 million upper limit of the AESO's Class 4 estimate, but the Commission recognizes that this project is still far from constructed and the potential for further cost increases still exists.

23. EPCOR explained that there were numerous factors that caused the approximately \$120 million increase in estimated cost. Changing from overhead to underground 240-kV transmission lines resulted in an increase of approximately \$52.24 million. Further, there is a \$24.93 million increase due to construction costs and engineering and services being more expensive in general and because the project was delayed by a year due to supply chain issues. EPCOR also estimated a \$19.97 million increase to account for contingencies.¹²

24. The Commission granted the CCA participation rights in its standing ruling and directed the CCA to limit its submissions to the information filed on this record about the anticipated costs of the proposed facilities and the design of the proposed facilities to meet the AESO's need.¹³ The CCA retained BEMA Enterprises Ltd. to provide evidence on the CETR Project costs and the design of the facilities.

25. Generally, it is more expensive to construct transmission lines underground rather than overhead. The cost comparison between the two configurations is typically presented as a ratio of the cost to construct the transmission line underground versus overhead. In its evidence, BEMA submitted that the actual costs of constructing the preferred route will be much higher given the ratio of the cost estimates for the project of 3.4 (or 2.6 if you only include infrastructure costs) is too low when compared to other transmission projects.¹⁴ It submitted that it is typical to see the ratio in the range of six to nine and provided a table showing ratios at various voltage levels, none of which were below four.¹⁵

26. The Commission considers the information provided by the CCA to be useful but ultimately places greater weight on EPCOR's evidence. In doing so, the Commission recognizes that each project must be considered within its own context and here EPCOR stated that it built

¹¹ Exhibit 29866-X0063, AESO-AUC-2025APR14-001, PDF page 3.

¹² Exhibit 29866-X0031, EDTI - CETR Application, PDF pages 130 and 131.

¹³ Exhibit 29866-X0088, AUC letter - Ruling on standing.

¹⁴ Exhibit 29866-X0215, 20250829 29866 CCA Evidence from Bema, PDF page 9.

¹⁵ Exhibit 29866-X0215, 20250829 29866 CCA Evidence from Bema, PDF page 11.

its estimates using bottom-up estimating methodology and not using ratios.¹⁶ It submitted that ratios are useful for high-level estimates but are not a reliable method for project-specific estimates. Further, EPCOR stated that the final costs of its major projects have regularly fallen within the Class 3 estimate range except for one project (+21.1 per cent) due to exceptional circumstances.¹⁷

27. The Commission spent considerable time and effort determining whether the preferred transmission development was in the public interest as part of the NID application proceeding. Part of this determination was based on weighing the costs of different alternatives. To see such considerable change in the estimates in a short period is concerning.

28. To be clear, the Commission does not question whether there is still a need for the transmission development. The Commission continues to accept that load growth is expected to exceed the transmission system capability and that current transmission infrastructure is reaching end of life. If anything, these issues will only get worse and the need for transmission development will only grow more urgent with time.

29. At issue is whether the preferred transmission development is still the preferred transmission development. Would the Commission have decided the NID application differently had it known the true costs? The Commission is satisfied that the answer to that question is no. The Commission finds that the preferred transmission development remains in the public interest.

30. A key reason for this finding is that the AESO has reached a similar conclusion. As noted earlier, upon receiving the applications and identifying the cost increase, the Commission took the step of promptly issuing information requests to the AESO and EPCOR regarding this issue. The AESO explicitly confirmed that the transmission development approved in the NID remains the AESO's preferred transmission development. EPCOR provided updated cost estimates for all the options considered in the NID application and the preferred transmission development, when factoring in life-cycle replacement costs, was still the lowest cost. The Commission recognizes that at least some of the factors behind the cost increase of the preferred transmission development would also affect other transmission development alternatives (e.g., construction costs and engineering and services being more expensive in general).

31. The Commission recognizes that many of the circumstances of this project are likely unique and unlikely to occur again. A major driver of the cost increase is the shift to underground driven by a change in CN's assessment of the risks to its railway. This change just so happens to coincide with the time between the approval of the NID application and the filing of the facility applications.

32. Nonetheless, the Commission must strongly emphasize the importance of receiving accurate cost estimates. Early identification of risks, contingencies and changes to costs are critical in ensuring that transmission development is conducted in the public interest. Ultimately, the Commission will review the prudence of costs once the CETR Project is completed.

¹⁶ Transcript, Volume 1, page 104, lines 15 to 23.

¹⁷ Exhibit 29866-X0230.01, EDTI - Reply Evidence, PDF page 23.

33. The Commission is satisfied that EPCOR's and AltaLink's facility applications meet the approved NID. The Commission has reviewed the functional specifications and the AESO has certified that the applicable technical aspects of the transmission facility proposal prepared by EPCOR meet the requirements set out in the approved NID.

4 Did EPCOR reasonably consider overhead routing options?

34. In this section, the Commission considers EPCOR's consultation and the development of various routing options, with a particular focus on the 240-kV transmission lines.

35. The project is sited adjacent to important railway infrastructure in a dense urban area with limited viable alternate sites. While neither the preferred nor alternate routes in EPCOR's applications include exclusively overhead routes, the Commission is satisfied that EPCOR took reasonable steps to develop, model and analyze various options to ensure that they were technically feasible and in the public interest.

36. The Commission finds that EPCOR's consultation meets the requirements of Rule 007 and that EPCOR's development and assessment of route options, in particular its conclusion to reject overhead routing options, was reasonable in the circumstances. EPCOR made sufficient efforts over the course of consultation to consider various routing options, including overhead and hybrid routes. Similarly, the Commission also finds that EPCOR reasonably considered CN's concerns related to alternating current (AC) induction, which have the potential to significantly impact CN's railway safety and operations. The Commission is satisfied that the impacts of an overhead configuration to CN and to a lesser extent other stakeholders, such as the City of Edmonton (City), justifies the additional cost of an underground configuration.

4.1 What steps did EPCOR take to develop and analyze route options during consultation?

37. The purpose of this section is to set out chronological details of EPCOR's consultation and route development. In its applications, EPCOR noted that it engaged and consulted with several stakeholders as part of the route development process. EPCOR met with representatives from local governments and agencies, including the City of Edmonton. The City provided EPCOR with a letter on July 31, 2024, that detailed its position on various general and specific issues regarding the project.¹⁸ The City stated that underground transmission line infrastructure, where feasible, would be the City's preference to mitigate adverse impacts to the visual aesthetic of the City and the roadside safety of transportation infrastructure.

38. Regarding the 240-kV transmission lines, the City indicated that it preferred an underground option or a part underground and part overhead option for traffic safety and planning purposes. To mitigate adverse impacts to City projects, traffic safety and planning, the City preferred a route alignment located as close to the railway right-of-way as possible.¹⁹ The City also expressed concerns about potential routing through the City's "Greenbelt" (land north of the CN rail tracks, between the tracks and residences), and concerns about visual impacts,

¹⁸ Exhibit 29866-X0003, Appendix O – City of Edmonton Letter.

¹⁹ Exhibit 29866-X0003, Appendix O – City of Edmonton Letter, PDF page 17.

including a river crossing and overhead-to-underground transition structures along Yellowhead Trail.

39. EPCOR stated in its applications that the preferred 240-kV underground route is generally consistent with the City's feedback. With respect to the City's more specific concerns, EPCOR stated that its preferred underground 240-kV route avoids structures along Yellowhead Trail and is south of CN's railway, which avoids the City's Greenbelt. Additionally, the preferred 240-kV route does not require a river crossing.

40. As part of its participant involvement program, EPCOR personally consulted with stakeholders that are directly adjacent to the transmission line route options or substation site location. EPCOR indicated there were 144 stakeholders that provided feedback that the 240-kV transmission line should be underground. EPCOR stated that reasons stakeholders preferred undergrounding included: avoiding potential property value impacts, avoiding visual impacts of the transmission structures, avoiding potential impacts to the environment, addressing potential safety issues, resolving perceived concerns regarding health effects, and maximizing distance from residences.²⁰

41. Of these stakeholders, EPCOR undertook significant consultation and engagement with CN, given the proposed transmission facilities would be adjacent to CN's railway infrastructure and the potential impacts on railway operations and safety due to electrical interference. CN's limitations and requirements changed over the course of EPCOR's consultation, and these changed requirements ultimately led to overhead routes being ruled out by EPCOR.

42. As described in further detail in EPCOR's applications²¹ and the record of this proceeding, EPCOR first approached CN to discuss preliminary routing options in 2022. CN emphasized that its rail line accommodates a large number of trains each day and is the principal main line that runs across Canada. CN also stated that it would not accept transmission line structures on its railway right-of-way to maintain space for growth in its operations over the long term.²²

43. Between October 2022 and April 2023, EPCOR and CN established a joint technical working group to address potential electromagnetic induction effects of the project on the adjacent railway. The working group included Commonrow, an expert consulting firm retained by EPCOR to address AC interference and conduct modelling and mitigations for the project. AC transmission lines can induce voltages on railways depending on factors such as the distance between the transmission line and the railway. This AC induction, or AC interference, can cause significant safety and operational risks to railways.

44. In January 2023, EPCOR issued the first project-specific information package (PSIP-1) to potentially impacted stakeholders. PSIP-1 included above-ground 240-kV and 72-kV transmission lines. Underground routes were not considered at this time.²³ In the early part

²⁰ Exhibit 29866-X0031, EDTI – CETR Application, PDF page 128.

²¹ Exhibit 29866-X0031, EDTI – CETR Application, PDF pages 100 to 108.

²² Exhibit 29866-X0031, EDTI – CETR Application, PDF page 101.

²³ Exhibit 29866-X0010, Appendix L-4 – Participant Involvement Programs, PDF pages 2 to 15.

of 2023, the working group established technical criteria for the evaluation of AC interference.²⁴ EPCOR and Commonrow stated that they worked within standards and parameters set or accepted by CN, rather than following a published external standard such as those published by the American Railway Engineering and Maintenance-of-Way Association.

45. Following the establishment of the technical criteria, Commonrow conducted a preliminary engineering simulation that modelled AC interference and tested different overhead transmission line route configurations set out in PSIP-1. In late Q2 2023, Commonrow's modelling results indicated some level of electrical induction impacts on all routing options in PSIP-1.

46. In late 2023, EPCOR and CN discussed potential mitigation measures, including narrow band shunts and Dairyland Overwatch high-energy fault protection devices (HEFPDs), which are intended to replace lightning arresters and offer increased ability to withstand multiple lightning faults while also protecting against high-energy AC powerline faults. EPCOR also considered potential powerline mitigations using overhead and underground counterpoises. Simulation work conducted by Commonrow indicated that aerial counterpoise was a potentially effective mitigation of AC interference issues on CN's rails when combined with narrow band shunts. Buried counterpoise had little effect.

47. CN advised that narrow band shunts were currently used to mitigate electrical effects to CN's rail system and could be implemented if required. However, CN had not used Dairyland Overwatch HEFPDs but indicated that it would review their potential suitability. After review, CN ultimately advised EPCOR that because CN had no prior experience with these devices, it was not willing to install them as part of the mitigations for this project.

48. Based on these limitations and the ongoing consultation, in April 2024 EPCOR mailed PSIP-4 to potentially impacted stakeholders to inform them of routing options that were being considered at that point.²⁵ PSIP-4 included overhead 240-kV and 72-kV options as well as an underground 240-kV option due to potential challenges with the overhead options. EPCOR subsequently removed one 72-kV route option in PSIP-4 from further consideration after CN indicated that it was concerned with railway safety and operations.

49. To identify the most cost-effective technical solution for the 240-kV transmission lines, EPCOR, with Commonrow's assistance, investigated other mitigation alternatives throughout 2024, including the use of insulating joints, an underground transmission line, and overhead routes further from the railways that were less likely to create electrical effects on CN's infrastructure.

50. The working group re-visited the use of insulating joints after CN indicated that it did not want to use Dairyland Overwatch HEFPDs as a mitigation measure. Commonrow identified the number of incremental insulating joints required to mitigate AC interference effects ranged from zero (for underground and mostly underground alternatives) to 11 (for overhead routes closer to

²⁴ Exhibit 29866-X0031, EDTI – CETR Application, PDF page 101, paragraph 282: the technical criteria for the evaluation of AC interference included: technical pass / fail criteria for AC induction on the tracks (criteria based on either industry standards or on other typical inputs into AC mitigation studies); modelling conditions for evaluating these criteria; and railway-specific characteristics.

²⁵ Exhibit 29866-X0010, Appendix L-4 – Participant Involvement Programs, PDF pages 20 to 41.

the railway). While the insulating joints are relatively common devices installed on CN tracks, CN identified that a maximum number of six insulating joints would be acceptable due to the impacts of a greater number of insulating joints on CN's signals and communications systems.

51. EPCOR then evaluated the acceptability of its routes based on this criterion and found that only one overhead route configuration, a fully underground route as well as several hybrid routes would potentially be viable if only six insulating joints were acceptable.

52. In September 2024, EPCOR set out five potential 240-kV routes for public consultation in PSIP-7, which was mailed to stakeholders.²⁶ PSIP-7 recognized that potential route options had changed from the options in PSIP-4, issued in April 2024. EPCOR had developed three hybrid route options that combine both overhead and underground segments, along with the above-ground route that runs along the south side of Yellowhead Trail and the full underground route on the north side of Yellowhead Trail.

53. In the fall of 2024, Commonrow completed simulations of available routes that incorporated CN's preferred five-amp limit as well as the industry guideline of five volts for evaluating AC-induced effects on track-connected equipment. CN had requested this change in early 2024 but only provided Commonrow with the necessary information to complete the simulations in late summer 2024.

54. Commonrow compiled results of available routes using insulating joints, grounding and bonding of unsignalled track, and aerial counterpoise as mitigation and presented them to CN in October 2024 after the Commission issued the NID Decision. CN determined that the proposed modelling parameters and mitigations were acceptable (i.e., at this time, CN considered that an overhead option could address its concerns). On October 31, 2024, EPCOR and CN entered into a memorandum of understanding (MOU).²⁷ The MOU set out EPCOR's and CN's mutual understanding of the impacts of the project and the steps required to mitigate those impacts.

55. However, in December 2024, CN changed its position such that the mitigations previously determined to be acceptable were invalidated. In late 2024 and early 2025, EPCOR and Commonrow met with CN to gather all information necessary to update Commonrow's modelling and analysis, including specific train and track scenarios CN wanted to be included in the model, track configurations for additional sections of track to be added to the model, and confirmation of mitigation measures acceptable to CN.

56. In early February 2025, Commonrow had generated new modelling results. This further work identified pre-existing AC interference from existing transmission lines in the area that paralleled existing CN rail tracks in areas outside but adjacent to the project area. Commonrow noted that if transmission line loading increased substantially, or CN upgraded the signalling in this area, CN may experience issues related to AC interference, regardless of whether the project is completed.

²⁶ Exhibit 29866-X0010, Appendix L-4 – Participant Involvement Programs, PDF pages 59 to 65.

²⁷ Exhibit 29866-X0002, Appendix P – MOU (CN Rail), PDF pages 1 to 7.

57. Commonrow evaluated the routing scenarios using combinations of the following mitigation measures that were acceptable to CN:

- Use of 60 hertz (Hz) narrow band shunts, up to a limit specified by CN.
- Grounding and bonding of all unsignalled tracks.
- Use of transposition structures on the 72-kV transmission lines.
- Use of aerial counterpoise on 240-kV overhead transmission lines.
- Use of existing lightning arresters that are part of the existing circuit board protection for signals and communications equipment.
- Upgrades to bungalow grounding in combination with arrester firing to ensure optimal grounding of downstream equipment.

58. During discussions on January 30 and February 4, 2025, Commonrow provided its conclusions to EPCOR that overhead configurations would not be viable.²⁸ EPCOR and CN updated and signed the amended MOU on February 19, 2025, which reflected the changes in CN's concerns.²⁹

59. Commonrow ultimately modelled and analyzed four different options for the 240-kV line (Route A, Route B, Route D and Route E) and only one combination of segments for the 72-kV line (N1, a common route segment, and N2). The four 240-kV lines considered by Commonrow are set out in Figure 2 below.

²⁸ Exhibit 29866-X0061, EDTI-AUC-2025MAR25-001 to 011, PDF page 17.

²⁹ Exhibit 29866-X0002, Appendix P – MOU (CN Rail), PDF pages 8 to 16.

Figure 2. 240-kV route options³⁰**LEGEND**

- Above-Ground Transmission Line
- - - Underground Transmission Line
- Two (2) Transition Structures
- Proposed New Substation
- Existing 240 kV AltaLink Transmission Line



Route A: This above-ground route runs along the south side of Yellowhead Trail



Route B: This underground route runs along the north side of Yellowhead Trail



Route D: This is a hybrid route that combines above and underground segments along the Yellowhead Trail corridor



Route E: This is a hybrid route that combines above and underground segments along the Yellowhead Trail corridor

60. Route A, which was a fully overhead route along the south side of Yellowhead Trail, was found by Commonrow to be not technically viable. The nature and extent of the mitigation measures that were required were not acceptable to CN. Specifically, in the steady-state condition, the number of narrow band shunts required to be installed on the railway line would be above the maximum amount acceptable to CN for safe railway operations. Under the fault condition, with the type and number of mitigation measures acceptable to CN, the maximum rail-to-ground voltage induced on the railway line as well as cascading arrester firing would be above the maximum amount acceptable to CN for safe railway operations.

61. Route D, a hybrid route sited approximately half-underground and half-overhead along the Yellowhead Trail corridor, was similarly not technically viable. CN did not consider that the maximum rail-to-ground voltage induced on the railway line and the cascading lightning arrestor firing limits could be reduced to acceptable levels, based on the mitigation measures available to it.

62. Route E represented a hybrid route that was mostly underground, with an overhead river crossing. Commonrow indicated that this route is technically viable because the nature and extent of mitigation measures required to reduce induced voltages to safe levels were acceptable to CN. Similarly, Route B, an underground route that runs along the north side of Yellowhead Trail, was technically viable. The nature and extent of the mitigation measures required to reduce the induced voltage to safe levels were acceptable to CN. Route B and Route E ultimately became the preferred and alternate routes, respectively, in EPCOR's applications.

63. The Commission finds that EPCOR developed route options and mitigation measures with the intention of having overhead routes form part of its applications. After a significant and prolonged engagement and refinement of options, in September 2024, EPCOR expected an overhead option would be potentially feasible based on the options in PSIP-7. EPCOR and CN entered the MOU the next month, based on the options in PSIP-7. However, CN re-evaluated its concerns regarding AC induction impacts and railway safety and operations, which ultimately led to the retirement of the overhead option being considered for the project.

4.2 What were the concerns about AC induction impacts and CN's railway safety and operations?

64. The purpose of this section is to discuss the concerns regarding railway safety and operations and AC induction. Commonrow provided a general explanation of technical concerns regarding AC induction and railway operations, and CN provided additional information regarding its specific concerns.

65. As described in the previous section, Commonrow was retained as an expert to consider AC induction impacts from transmission lines on CN's railway infrastructure and to model various routing options. As part of its report, Commonrow discussed AC interference and noted the potential impacts on railway infrastructure can be significant. As part of Commonrow's general explanation of technical concerns, it identified the following potential risks:

- Abnormal operation of railway equipment: Induced voltages and currents from nearby power lines can disrupt the normal functioning of sensitive railway signalling equipment,

³⁰ Exhibit 29866-X0023.01, Appendix E-1 - Commonrow Report and AC Mitigations, PDF page 11.

potentially leading to false activation of signals or malfunctioning crossing warning systems. This poses a significant risk to the safe and efficient operation of the railway.

- Damage to railway equipment: High levels of AC interference, especially during power system faults or switching surges, can introduce excessive voltage or current into railway signalling circuits, exceeding the insulation and operational limits of sensitive electronic components. This can damage or disable relays, circuit boards, and microprocessors, leading to false signal activations, loss of train detection, or complete system failures, ultimately jeopardizing the safety and reliability of railway operations.
- Personal safety hazards: Induced voltages on railway tracks can pose an electric shock hazard to personnel working on or near the tracks. The severity of the shock depends on factors such as the magnitude of the voltage, and the duration of exposure.³¹

66. EPCOR submitted that any additional equipment to be installed on railway infrastructure to mitigate induction effects must be evaluated and agreed to by the railway operator (i.e., CN) because of the potential impact on the operation of signals and communications devices.³² EPCOR's position was that the railway operator is the appropriate party to determine what mitigation measures were sufficient to ensure the safe operation of the railway.

67. While EPCOR's submissions broadly identified CN's concerns, it could not provide details regarding railway safety and operations. Additionally, CN did not initially actively participate in this proceeding to discuss the concerns from its perspective.

68. The CCA questioned throughout this proceeding whether the preferred and alternate routes included in EPCOR's applications were the only viable routes to address CN's concerns. The CCA retained Corrosion Service Company Limited (Corrosion Service) to study electrical interference that affects adjacent CN facilities. Corrosion Service considered Commonrow's report and stated that the mitigation options identified as permissible by CN were very restrictive. The CCA identified other potential mitigation measures that it viewed might be technically feasible in the circumstances, such as guard rails as counterpoise conductors, allowing lightning arrester activation at consecutive points, and other options such as Dairyland Overwatch HEFPDs.³³

69. As a result of the CCA's questions regarding other potential viable mitigation alternatives, EPCOR sought CN's input on the record of this proceeding.³⁴ In its response, CN generally referenced concerns about the consistency between the CCA's suggested alternatives and the federal regulatory scheme regarding railways and railway safety.³⁵

70. In its evidence Corrosion Service noted that conventional guard rails or a modified isolated guard rail could be used as a mitigation yet were not modelled by Commonrow or discussed with CN.³⁶ CN was of the view that this proposal is inconsistent with Transport Canada's railway safety

³¹ Exhibit 29866-X0023.01, Appendix E-1 – Commonrow Report and AC Mitigations, PDF page 7.

³² Exhibit 29866-X0031, EDTI – CETR Application, PDF page 30.

³³ Exhibit 29866-X0210, Minutes of Technical Meeting; Exhibit 29866-X0218, Corrosion Service Evidence.

³⁴ Exhibit 29866-X0230.01, EDTI – Reply Evidence, PDF pages 57 to 60.

³⁵ Exhibit 29866-X230.01, EDTI – Reply Evidence, PDF page 58: CN references the *Railway Safety Act*, RSC 1985, c 32 (4th Supp); Transport Canada, *Rules Respecting Track Safety (RTSR)*, 2021; Transport Canada, *Canadian Railway Operating Rules (CROR)* – fail-safe operation of signals and control systems.

³⁶ Exhibit 29866-X0218, Corrosion Service Evidence, PDF pages 8 to 9.

standards and did not support its implementation. CN did not consider the use of guard rails as counterpoise conductors to be an acceptable mitigation measure. Installing long, continuous grounded guard rails would create undue safety hazards for railway crews, increase risks of train disruption during installation and maintenance, and compromise the guard rails' primary derailment-protection function. It would also impose significant long-term maintenance burdens.

71. During a technical meeting between parties, Corrosion Service inquired about CN's position on arrester cascading events, and noted that two arresters cascading in one direction are a concern for CN but two arresters cascading in opposite directions are not an issue. CN stated that from its perspective, limiting arrester activation to no more than one control point in each direction is necessary to avoid signal system integrity risks, propagation of electrical disturbances, and to ensure operational reliability. Additionally, allowing arrester activation at multiple consecutive points would cause maintenance and long-term constraints.

72. Corrosion Service also stated that the Dairyland Overwatch HEFPDs are intended to replace lightning arresters and offer increased ability to withstand multiple lighting faults while also protecting against high-energy AC powerline faults. Corrosion Service suggested that EPCOR did not sufficiently engage with CN to explore these as a mitigation measure.³⁷ CN stated that Dairyland Overwatch HEFPDs were not an approved device within CN's system standards and had not been validated for use under Transport Canada's safety requirements. Buried counterpoise within CN's right-of-way, another mitigation option, also presented several hazards and concerns, including maintenance hazards and electrical safety. Additionally, CN submitted that the right-of-way needs to be preserved to support safe growth, adaptability, and potential future track expansions.

73. In oral argument, the CCA reiterated its concerns that other mitigation measures might be available that would allow viable options in addition to the preferred and alternate routes in EPCOR's applications. Following the conclusion of the oral hearing, the Commission took steps to request CN's attendance because it believed that CN had information regarding its operational and safety concerns, which would support the Commission in rendering its decision. The Commission proceeded to issue information requests to CN.³⁸

74. As part of CN's response, CN discussed its concerns and the impact of federal legislation and regulation. CN stated that the CETR Project proposes routing, equipment and mitigations that interact with CN's safety-critical infrastructure. As a federally regulated entity, CN submitted it must object to any external or third-party installation or mitigation measure that: creates electrical interference affecting signals or track circuits; impairs the performance or intended safety function of regulated track components; introduces new hazards to crews during operations or maintenance; or reduces CN's ability to meet long-term obligations for infrastructure expansion or modification.

75. CN also discussed concerns about long-term development plans for the railway, as CN's corridor in the region is a strategic component of its long-term transportation network. CN indicated that it must preserve its right-of-way for future track expansion and yard improvements, installation of new communication or signalling systems, and federally regulated

³⁷ Exhibit 29866-X0218, Corrosion Service Evidence, PDF pages 9 to 10.

³⁸ Exhibit 29866-X0291, AUC round 1 information request to Canadian National Railway Company - CN-AUC-2025NOV07-001 and 002.

improvements to meet Transport Canada's requirements. Permanent electrical installations, such as buried counterpoise or overhead support structures, would unacceptably restrict CN's ability to ensure future compliance with its regulatory obligations and accommodate operational growth.

76. CN also detailed both safety and operational concerns related to overhead routing. CN stated that a fault event on an overhead transmission line can lead to unacceptable safety risks, including lightning arresters activating near CN workers, potential reclose attempts that pose risks to personnel engaged in maintenance, and transient fault currents and step/touch potentials that may travel along conductive structures near the right-of-way.

77. Operational hazards from overhead routing include false track occupancy caused by induced currents or arrester firings affecting track circuits, signal aspect failures or resets disrupting train movements, train delays due to fault-related alarms requiring inspection before operations resume, increased maintenance cycles for grounding systems and surge arresters, and potential need to impose temporary speed restrictions following arrester activity. CN viewed these impacts as creating risks that are unacceptable under the requirement for continuous and safe railway operations.

78. CN additionally provided clarifying information on its position regarding the CCA's proposed alternatives. CN reiterated its opposition to using guard rails as mitigation, allowing lightning arrester activation at consecutive points, and other options such as Dairyland Overwatch HEFPDs and buried counterpoise.

79. CN also provided reasons for requiring the amended MOU and related changes. CN stated that the original MOU failed to address critical risks and CN therefore required amendments to clarify arrester firing limits, incorporate updated grounding and equipment protection requirements, introduce limits on narrowband shunts, and reflect the unavailability of Dairy Overwatch HEFPDs as an approved CN device.

80. The amended MOU resolved deficiencies in the original mitigation framework by limiting electrical disturbance zones to protect signal reliability, ensuring protective devices function in compliance with CN and Transport Canada standards, reducing maintenance and inspection burdens, excluding unapproved equipment (Dairyland Overwatch HEFPDs), protecting the long-term use of the CN right-of-way, and aligning modelling assumptions with CN's operational and regulatory realities.

81. The Commission provided the CCA and EPCOR the opportunity to file argument on CN's responses to the Commission's information requests. The CCA argued that CN's responses included high-level statements on railway regulation that did not fully explain CN's position on the project. The CCA also argued that CN's explanation of its long-term development plans and the circumstances that required the MOU to be replaced with the amended MOU were insufficient. Similarly, the CCA maintained that CN did not provide adequate technical support to justify why certain mitigation measures were ruled out for safety and operational concerns. While the CCA was satisfied with CN's evidence regarding the use of guard rails as mitigation, it stated that CN's concerns with Dairyland Overwatch HEFPDs and buried counterpoise were not detailed or sufficient.³⁹

³⁹ Exhibit 29866-X0300, CCA Argument.

82. EPCOR argued that CN's response confirmed and elaborated evidence already on the record of proceeding. CN acted in accordance with its knowledge of its railway system and its legal and regulatory obligations as owner and operator of the system. CN demonstrated a clear understanding of the impacts of the 240-kV transmission lines and potential mitigation measures. CN appropriately considered potential alternatives for mitigating induction impacts. EPCOR closed by noting that Commission Decision 3450-D01-2015⁴⁰ concluded that railway owners are uniquely positioned to determine the appropriate mitigation measures required to ensure safe railway operations with a nearby transmission line.

4.3 Was EPCOR's consultation and route development and assessment reasonable in the circumstances?

83. The Commission is satisfied that EPCOR's consultation and its development and assessment of route options was reasonable in the circumstances.

84. The Commission is satisfied that EPCOR engaged extensively with CN over a prolonged period, beginning in 2022, with the goal of developing technically feasible options. EPCOR retained Commonrow to undertake technical studies, model steady-state and fault-state conditions, and assess the feasibility of potential mitigation measures and routing configurations in light of CN's stated requirements and acceptance criteria.

85. The Commission finds that EPCOR made sufficient efforts to consider various routing options, including overhead routes. EPCOR's various PSIP consultation documents, which were mailed to potentially affected stakeholders, reflect EPCOR's efforts to legitimately consider overhead options over the course of consultation. Overhead routes were considered until CN revised its position in late 2024, after the MOU was signed on October 31, 2024.

86. The Commission acknowledges that CN's acceptance criteria and modelling requirements evolved during the course of consultation, including updates communicated after the MOU was signed. The change in CN's acceptance criteria required the parties to enter the amended MOU, which was signed on February 19, 2025. While the CCA and the Commission expressed concerns regarding CN's changing position and potentially viable alternative options as expressed through EPCOR, CN has confirmed, with additional details, the concerns identified by EPCOR in its application materials regarding safety and operations concerns to the Commission's satisfaction.

87. The Commission has previously acknowledged that railway owners are uniquely positioned to understand the impacts and effectiveness of different mitigation types because they have the experience and expertise of railway operation.⁴¹

88. Based on the information provided about CN's concerns, operations and railway regulation, the Commission finds that CN was reasonable in its requirements for the purpose of this proceeding, such that EPCOR's routing decisions were in turn reasonable. The Commission acknowledges that CN, as a railway operator, is most familiar with the regulatory requirements associated with construction and operation of railways. The Commission has reviewed the legislation and regulations identified by CN, which address the safe operations of railways. The

⁴⁰ Decision 3450-D01-2015: AltaLink Management Ltd. – Transmission Line 423L, Proceeding 3450, Application 1610987, November 27, 2015.

⁴¹ Decision 3450-D01-2015, paragraph 288.

Commission accepts that these regulatory requirements largely dictated CN's position on acceptable mitigation options.

89. The Commission notes that where third-party operational constraints have the potential to eliminate otherwise conventional routing alternatives or materially affect project costs, early and detailed consultation can be important and useful for the Commission's consideration. Such engagement assists in ensuring that feasible alternatives are clearly identified where possible, and that the Commission is provided with a complete record of engagement and well-defined range of options that can be meaningfully weighed in the public interest.

90. The record demonstrates that EPCOR engaged with CN early to obtain information about its concerns. EPCOR did not automatically concede to CN's concerns. Given the unique context of railway interference, EPCOR retained Commonrow, whose technical expertise supported the consideration of various route options and mitigation measures. Commonrow conducted extensive modelling and analysis to develop cost-effective and technically feasible options in the circumstances.

91. In making its finding that EPCOR acted reasonably in the circumstances, the Commission emphasizes the unique context of this project. First, the transmission system in the City requires reinforcement. As set out in the NID Decision, load growth is expected to exceed the transmission system capability, and the current transmission infrastructure is reaching end of life. The need for transmission reinforcement is not diminishing. If anything, the need is increasing.

92. Second, the project is sited in a dense urban area, with limited options for other development. EPCOR evaluated the potential for 240-kV overhead routes located a greater distance from the railway. Specifically, Commonrow advised that a distance between an overhead 240-kV line and the railway lines of approximately 300 metres might be enough to mitigate the induction effects on the railway to an acceptable level. EPCOR evaluated possible routes at this or a greater distance from the railway lines but determined that the routes are not feasible because they would come within potentially unsafe distances to residences and buildings, likely requiring their removal for the route to be viable.

93. Lastly, the economic and social significance of this railway must be acknowledged. EPCOR and CN stated that the railway, which lies on the principal line that extends across Canada, is important in facilitating the efficient transportation of goods across North America. Approximately 20 to 35 trains move through this location every day, and this railway provides links to the Canadian west coast, central and eastern Canada and the eastern and southern United States. CN described it as its "busiest rail yard," where logistical co-ordination is already exceptionally complex.⁴² The Commission accepts that the concerns regarding potential growth along this railway are genuine given the significance of this hub in CN's broader railway infrastructure.

94. Considering the foregoing, the Commission is satisfied that EPCOR's consultation meets the requirements as stated in Rule 007. In particular, its consultation with CN and the City were critical to inform the development and assessment of the routing alternatives advanced in the facility applications.

⁴² Exhibit 29866-X0298, Canadian National Railway Company responses to AUC round 1 IRs - CN-AUC-2025NOV07-001 and 002, PDF page 6.

95. The Commission recognizes that the additional cost to underground, approximately \$52 million, is significant. However, in this particular case, the Commission finds that there are significant impacts to the CN railway and it is not satisfied that a fully overhead route is in the public interest, let alone viable. The submissions of the City also contribute towards the Commission's finding that at least a partial underground route is in the public interest.

5 Which of the proposed routes are in the public interest?

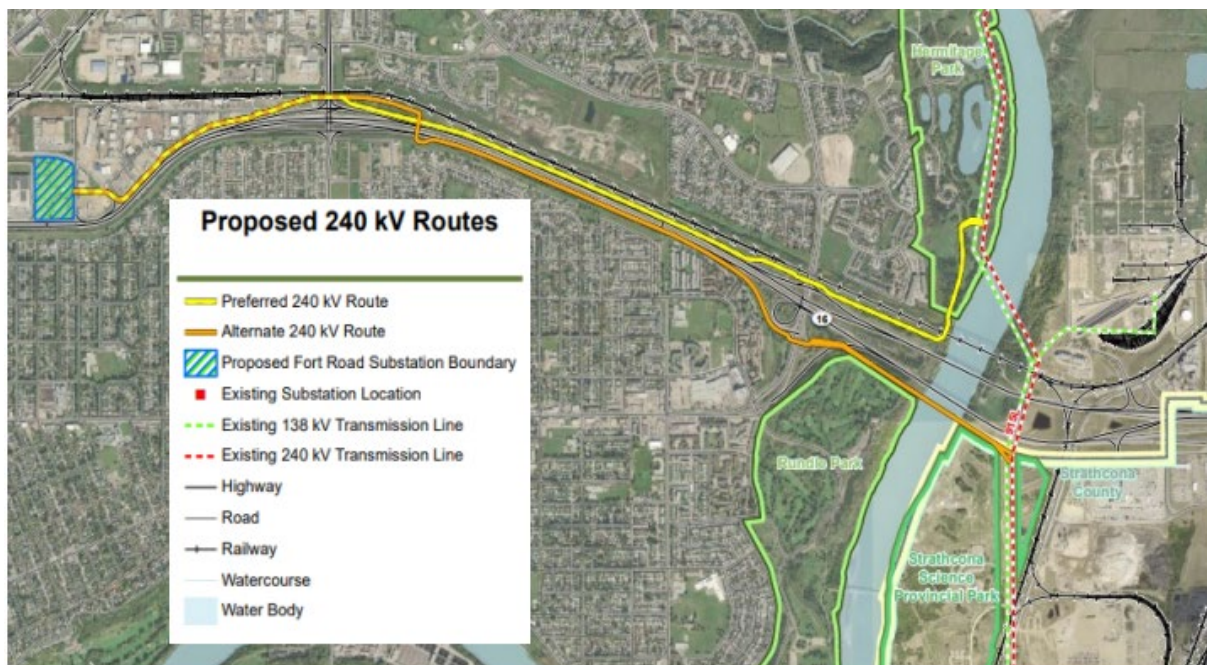
5.1 Double-circuit 240-kV transmission lines 915L and 993L

96. For the reasons that follow, the Commission approves the preferred route for the double-circuit 240-kV transmission lines 915L and 993L. In reaching this conclusion, the Commission considered the extent to which the preferred and alternate routes reasonably balance technical feasibility, constructability, environmental and land use effects, impacts on affected stakeholders, cost, and consistency with municipal planning objectives.

97. Consistent with the record, the Commission's assessment of the preferred and alternate 240-kV routes is framed as a comparison between the two options as presented, rather than a reconsideration of a fully overhead alignment. The Commission accepts that both routes are technically feasible. The record shows that both configurations are compatible with CN railway operations under the assessed conditions and would meet the AESO's need.

98. The proposed preferred and alternate 240-kV transmission line routes are shown in Figure 3 below.

Figure 3. Preferred and alternate 240-kV routes⁴³



⁴³ Exhibit 29866-X0031, EDTI - CETR Application, PDF page 5.

99. In comparing the two options, the Commission considered the physical characteristics of the routes. Both routing options form part of a new in-and-out configuration on AltaLink's existing 240-kV Transmission Line 915L. AltaLink will cut the existing Transmission Line 915L between AltaLink's East Edmonton 38S Substation and EPCOR's Clover Bar Substation; the portion of the line north of the cut point will be redesignated as Transmission Line 993L, while the portion south of the cut point will retain the Transmission Line 915L designation.

100. EPCOR proposes to construct two new 240-kV transmission circuits extending from a cut point on AltaLink's existing Transmission Line 915L to the proposed Fort Road Substation. To facilitate this connection, AltaLink will cut the existing Transmission Line 915L between AltaLink's East Edmonton 38S Substation and EPCOR's Clover Bar Substation. The portion of the line north of the cut point will be redesignated as Transmission Line 993L and the portion south of the cut point will retain the Transmission Line 915L designation, both to be owned and operated by AltaLink. The newly constructed circuits will be designated 915L and 993L, respectively, and will be constructed, owned and operated by EPCOR.

101. The preferred 240-kV route is approximately 5.4 kilometres in length and is constructed entirely underground until it connects to AltaLink's respective transmission line near the North Saskatchewan River. From the Fort Road Substation, the alignment parallels the north side of Yellowhead Trail for most of its length. Near the North Saskatchewan River at the approximate location of the 1908 Train Bridge, the route turns north and continues underground through the Hermitage Park area before reaching the connection location with AltaLink's existing Transmission Line 915L west of the river.

102. The alternate 240-kV route is approximately 5.7 kilometres in length and consists of a hybrid configuration combining underground and overhead construction. Beginning at the Fort Road Substation, the alignment initially parallels the north side of Yellowhead Trail before crossing the roadway near 45th Street N.W. and continuing along the south side of the corridor. The line remains underground along this section until east of Victoria Trail, where it transitions to an overhead configuration. The overhead portion continues eastward crossing over the North Saskatchewan River before tying into the existing Transmission Line 915L near the Strathcona Science Provincial Park.

103. As shown in Table 1, the cost of the preferred and alternate 240-kV routes when paired with a 72-kV route are generally comparable. The Commission considers the approximately \$3 million additional cost for the 240-kV preferred route to be modest in the context of the overall project and finds that other public-interest considerations weigh more heavily.

Table 1. Route cost comparison⁴⁴

Route description	Class 3 estimate
Preferred 240-kV route and preferred 72-kV route	\$393,145,543
Preferred 240-kV route and alternate 72-kV route	\$397,182,755
Alternate 240-kV route and preferred 72-kV route	\$390,240,300
Alternate 240-kV route and alternate 72-kV route	\$394,277,512

⁴⁴ Exhibit 29866-X0001, Appendix Q - Project Cost Estimates.

104. In particular, the alternate 240-kV route would introduce an overhead segment that crosses the North Saskatchewan River and would require substantially more vegetation clearing than the preferred route.

105. The Commission also considered statements from the City⁴⁵ and the Otipemisiwak Métis Government,⁴⁶ both of which expressed a preference for the lower environmental impacts associated with an underground route that does not cross the North Saskatchewan River. Although the preferred route involves more excavation and soil management due to its underground construction, the record supports that overall, this underground route has lower environmental impacts. Accordingly, the Commission finds that increased environmental risks do not justify the cost savings of the alternate route.

106. The City expressed concern that the alternate 240-kV route would introduce visible infrastructure along the Yellowhead Trail corridor, including the river crossing and overhead-to-underground transition structures. While such municipal preference is not determinative, the Commission considers it to be relevant where routing options are otherwise comparable, and municipal objectives align with minimizing disruption and supporting long-term land use planning.

107. Taking these considerations together, the Commission finds that the preferred 240-kV route results in lower overall impacts when compared to the alternate route. In particular, the preferred route avoids the need for a new overhead transmission crossing of the North Saskatchewan River, reduces vegetation clearing and associated wildlife effects, and aligns more closely with municipal planning considerations. The Commission therefore finds that the preferred route for the 240-kV transmission lines 915L and 993L is in the public interest.

5.2 Double-circuit 72-kV transmission lines 72FN27 and 72FN28

108. For the reasons that follow, the Commission finds that the preferred route for the double-circuit 72-kV transmission lines 72FN27 and 72FN28 is in the public interest.

109. EPCOR proposed two overhead routing options between the existing Namao Substation and the proposed Fort Road Substation. The preferred route is approximately 4.2 kilometres long, and the alternate route is approximately 4.4 kilometres long.

110. From the south side of Namao Substation, the routes share a common section that proceeds eastward along the south side of 127th Avenue N.W. until 82nd Street N.W., then turns south along 82nd Street N.W. crossing the CN railway. They then run eastward, paralleling the north side of Yellowhead Trail. The routes then diverge near the intersection of Yellowhead Trail and Fort Road N.W.

111. The preferred route runs northeast, following the west side of Fort Road N.W., then proceeds east along the north side of 125th Avenue N.W. The alternate route continues along Yellowhead Trail, and then turns north along 67th Street N.W. The routes then rejoin and share a common alignment, proceeding east along 125th Avenue N.W. to connect to the north side of the proposed Fort Road Substation.

⁴⁵ Exhibit 29866-X0003, Appendix O - City of Edmonton Letter, PDF page 25.

⁴⁶ Exhibit 29866-X0230.01, Appendix E-1 - Commonrow Report and AC Mitigations, PDF pages 44 to 45.

112. The preferred and alternate 72-kV transmission line routes are shown in Figure 4 below.

Figure 4. Preferred and alternate 72-kV routes⁴⁷



113. Both route options involve the construction of an overhead double-circuit 72-kV transmission line supported primarily on monopole transmission structures. The physical configuration of the facilities is similar for both routes, and the overall route lengths differ only marginally. As a result, the primary distinctions between the two routing options arise from the differences in alignment within the Fort Road area and the relative public-interest impacts associated with each option.

114. The record indicates that the configuration using the alternate route has an approximately \$4 million higher estimated overall cost than the preferred route. The Commission considers this difference to be modest in the context of the overall project and finds that cost is not the determinative factor in selecting between the two routing options.

115. The preferred route has lower costs, fewer private landowners being affected, would be shorter in length and have fewer structures, and would better align with municipal planning objectives in the Fort Road area. EPCOR also explained that earlier routing options were retired during the route development process where those options would have resulted in greater residential or stakeholder impacts. The preferred route reflects refinements made through this routing process and through feedback received during stakeholder consultation. Both routes are proposed in developed areas and pose a low risk to the environment.⁴⁸

⁴⁷ Exhibit 29866-X0031, EDTI - CETR Application, PDF page 59.

⁴⁸ Exhibit 29866-X0016, Appendix I - EE and EPP, PDF pages 111 and 112.

116. The submissions from L. Yachimec opposed the preferred route and instead advocated for the alternate route. L. Yachimec's concerns focused primarily on broader community and planning considerations, including potential impacts on nearby residential property values in the Balwin neighbourhood, visual effects associated with transmission structures along Fort Road, perceived health and electromagnetic field concerns, and the potential effect of the preferred route on neighbourhood amenities and future redevelopment of the Fort Road corridor. L. Yachimec also submitted that the alternate route would better align with existing industrial land uses and would avoid proximity to residential areas.

117. D. Pollock owns property adjacent to the alternate route and expressed concern that the proximity of the transmission line could affect rental income and property value.

118. The Commission finds that the proposed mitigation measures are adequately applicable to both routes and notably include dust, noise, light and garbage controls that would be applied during construction activities.⁴⁹ However, these measures would not eliminate the fundamental differences between the routing options. In weighing the evidence, the Commission places particular emphasis on minimizing direct impacts on individual landowners where a reasonable alternative exists. While the preferred route raises broader community and amenity considerations as framed by L. Yachimec, those impacts are diffuse in nature and relate primarily to longer-term planning considerations.

119. Considering the record as a whole, the Commission finds that the preferred route better balances the relevant public-interest considerations. In particular, the preferred route avoids increased direct impacts to residential property that would occur with the alternate route. Further it is also shorter, lower cost, and is preferred by the City. The Commission therefore finds that the preferred route for the double-circuit 72-kV transmission lines 72FN27 and 72FN28 is in the public interest.

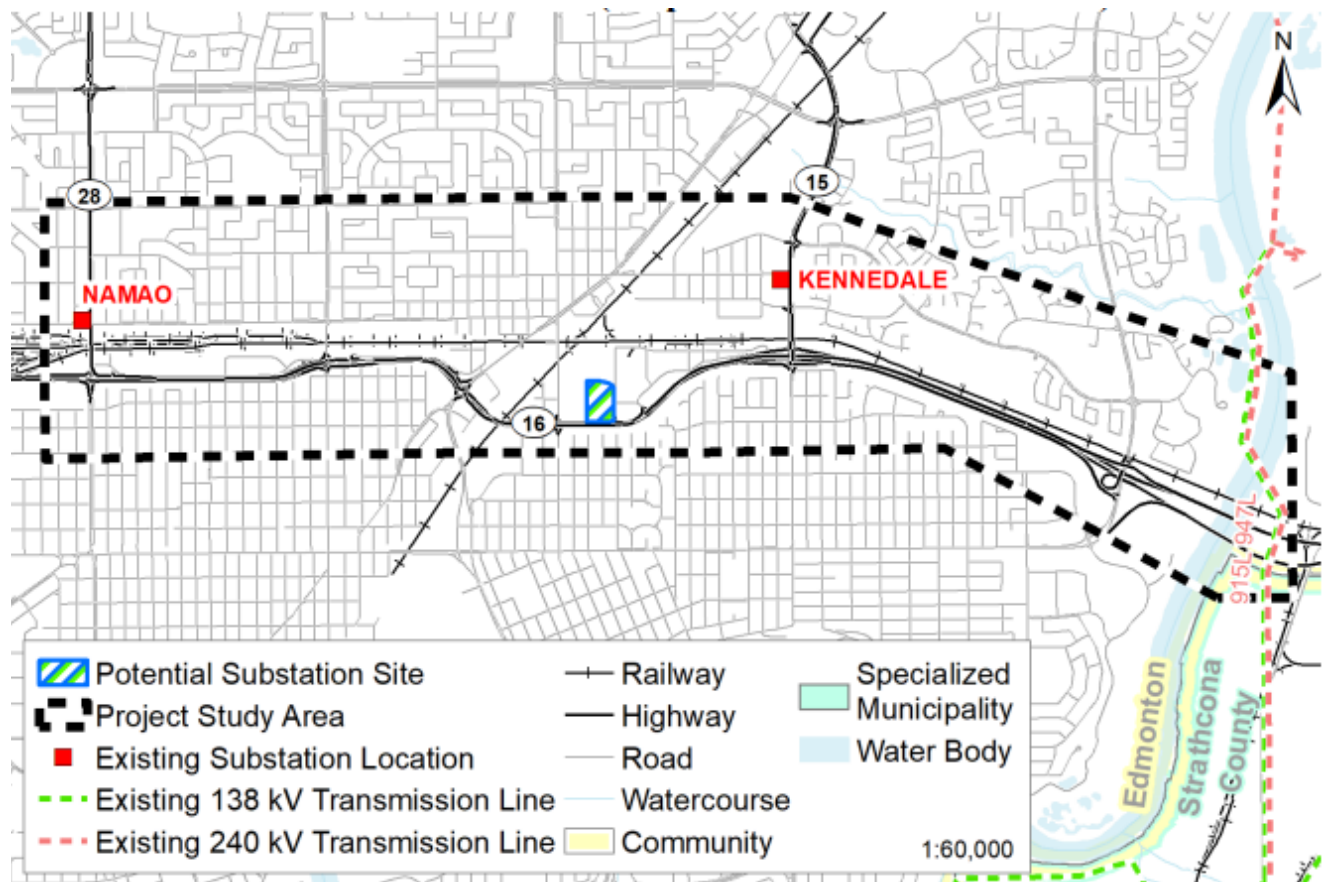
6 Fort Road Substation

120. The Fort Road Substation forms a key component of the CETR Project. As discussed earlier in this decision, the Commission previously approved the need for additional 72-kV and 240-kV transmission infrastructure to address reliability constraints in northeast Edmonton. The proposed substation will support the reliable supply of electricity to customers in the area. For the reasons that follow, the Commission approves the proposed Fort Road Substation.

121. EPCOR applied for approval to construct and operate the new 240/72/15-kV Fort Road Substation to be located at 12310 – 62nd Street N.W. in Edmonton. The substation will serve as the termination point for the new double-circuit 240-kV transmission lines 915L and 993L and the new double-circuit 72-kV transmission lines 72FN27 and 72FN28 proposed as part of the applications.

122. The proposed substation site is shown in Figure 5 below.

⁴⁹ Exhibit 29866-X0016, Appendix I - EE and EPP, PDF pages 155 to 161.

Figure 5. Proposed Fort Road Substation site⁵⁰

123. The Commission reviewed the environmental evaluation and environmental protection plan filed for the project. The Fort Road Substation is proposed within an existing gravel parking lot with extensive disturbance and documented contamination.⁵¹ The Commission is satisfied that, with the implementation of targeted remediation and development of a risk management plan, the construction and operation of the substation are unlikely to result in significant adverse environmental effects.⁵²

124. The applicant carried out consultation with nearby stakeholders regarding the proposed facilities and reported no outstanding concerns at the time the applications were filed. Further, no interested party filed a submission opposing the substation.

125. The noise impact assessment (NIA) identified 20 residential receptors surrounding the project area. The assessment considered the surrounding urban environment, which is dominated by transportation noise from Yellowhead Trail, nearby roadways and the CN railway corridor. The results of the NIA indicate that predicted cumulative sound levels from the Fort Road Substation are below the applicable permissible sound levels at all assessed receptors. The predicted sound levels remain below the permissible sound levels by a margin of at least

⁵⁰ Exhibit 29866-X0031, EDTI - CETR Application, PDF page 45.

⁵¹ Exhibit 29866-X0016, Appendix I - EE and EPP, PDF page 36.

⁵² Exhibit 29866-X0016, Appendix I - EE and EPP, PDF page 36.

three A-weighted decibels (dBA), indicating that the project is expected to comply with Rule 012 without the need for additional noise mitigation.

126. Based on the evidence on the record, the Commission finds that the NIA meets the requirements of Rule 012 and that cumulative sound levels from the Fort Road Substation are expected to comply with the permissible sound levels established under the rule.

7 Conclusion

127. The Commission is satisfied that EPCOR's and AltaLink's applications meet the requirements of Rule 007. The Commission finds that the facility applications continue to satisfy the need approved in Decision 28633-D01-2024, notwithstanding the change to primarily underground 240-kV routing and the resulting increase in project cost.

128. The project is sited adjacent to important railway infrastructure in a dense urban area with limited viable alternate sites. The parties conducted comprehensive participant involvement programs, and the Commission finds that EPCOR's development and assessment of route options were reasonable in the circumstances. EPCOR considered a range of routing and mitigation options, and reasonably concluded that a fully overhead 240-kV configuration was not viable in light of railway safety, operational and land use constraints.

129. The Commission finds that the preferred 240-kV route and the preferred 72-kV route best balance the relevant public-interest considerations. The preferred 240-kV route avoids greater environmental, visual and land use impacts associated with a new overhead river crossing, while the preferred 72-kV route avoids greater direct impacts to residential property and better reflects the outcome of the route refinement and consultation process. Although cost differences exist between the preferred and alternate routing options, the Commission finds those differences to be modest in the context of the overall project and not determinative.

130. The Commission finds that the proposed Fort Road Substation meets the requirements of Rule 007 and is expected to comply with Rule 012.

131. The Commission is satisfied that, with the proposed mitigation measures, the project is unlikely to result in significant adverse environmental effects.

132. For the above reasons, the Commission considers the applications to be in the public interest in accordance with Section 17 of the *Alberta Utilities Commission Act*, and approves the facility applications from EPCOR and AltaLink.

8 Decision

133. Under sections 14, 15, 18, 19 and 21 of the *Hydro and Electric Energy Act*, the Commission approves the applications and grants the following approvals:

- Transmission Line Permit and Licence 29866-D02-2026, to construct and operate Transmission Line 915L (Appendix 1).
- Connection Order 29866-D03-2026, to connect AltaLink's Transmission Line 915L to EPCOR's Transmission Line 915L (Appendix 2).
- Transmission Line Permit and Licence 29866-D04-2026, to construct and operate Transmission Line 993L (Appendix 3).
- Transmission Line Permit and Licence 29866-D05-2026, to construct and operate Transmission Line 72FN27 (Appendix 4).
- Transmission Line Permit and Licence 29866-D06-2026, to construct and operate Transmission Line 72FN28 (Appendix 5).
- Substation Permit and Licence 29866-D07-2026, to construct and operate the Fort Road Substation (Appendix 6).
- Substation Permit and Licence 29866-D08-2026, to alter and operate the Namao Substation (Appendix 7).
- Transmission Line Permit and Licence 29866-D09-2026, to alter and operate Transmission Line 915L (Appendix 8).
- Transmission Line Permit and Licence 29866-D10-2026 alter and operate Transmission Line 993L (Appendix 9).
- Connection Order 29866-D11-2026, to connect AltaLink's Transmission Line 993L to EPCOR's Clover Bar E987S Substation (Appendix 10).
- Connection Order 29866-D12-2026, to connect AltaLink's Transmission Line 993L to EPCOR's Transmission Line 993L (Appendix 11).

134. The Commission does not issue approvals for fibre optics cables installed along transmission lines. It also finds that some of the applications filed by EPCOR and AltaLink were duplicative. As such, the Commission finds it unnecessary to issue approvals specifically for applications 29866-A008, 29866-A011, 29866-A012, 29866-A016, and 29866-A017 to 29855-A019.

135. The appendixes will be distributed separately.

136. EPCOR applied to alter existing fibre optic cables FO-25 and FO-40. However, it did not provide maps for the updated routing of the cables. As such, the Commission directs EPCOR to file maps for FO-25 and FO-40. The Commission will issue permits and licences for those facilities once it receives the mapping information.

Dated on March 27, 2026.

Alberta Utilities Commission

(original signed by)

Cairns Price
Panel Chair

(original signed by)

Michael Arthur
Commission Member