FASKEN

Fasken Martineau DuMoulin LLP
Barristers and Solicitors
Patent and Trade-mark Agents

550 Burrard Street, Suite 2900
Vancouver, British Columbia V6C 0A3
Canada

T +1 604 631 3131
+1 866 635 3131
F +1 604 631 3232

fasken.com

Christopher R. Bystrom
Direct +1 604 631 4715
Facsimile +1 604 632 4715
cbystrom@fasken.com

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British Columbia Utilities Commission
Suite 410, 900 Howe Street
Vancouver, BC V6Z 2N3

Attention: Patrick Wruck, Commission Secretary

Dear Sirs/Mesdames:

Re: FortisBC Inc. - Application for a Certificate of Public Convenience and Necessity for Approval of the Fruitvale Substation Project

We enclose for filing in the above proceeding the Reply Submission of FortisBC Inc., dated July 25, 2024.

Yours truly,

FASKEN MARTINEAU DuMOULIN LLP

Christopher Bystrom*
*Law Corporation

Encl.

cc (email only): Registered Interveners

British Columbia Utilities Commission

FortisBC Inc.

Certificate of Public Convenience and Necessity for the Fruitvale Substation Project

Reply Argument of

of

FortisBC Inc.

July 25, 2024

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PART ONE: INTRODUCTION

1. As set out in its Application and Final Argument, FortisBC Inc. (FBC) is requesting that the British Columbia Utilities Commission (BCUC) issue a Certificate of Public Convenience and Necessity (CPCN) for the Fruitvale Substation Project (Project) pursuant to sections 45 and 46 of the *Utilities Commission Act* (UCA), and approval to decommission the existing Fruitvale (FRU) and Hearns (HER) substations.

2. Five interveners filed final arguments. The Commercial Energy Consumers Association of BC (CEC) supports approval of the Application with an additional budget of $2 to $3 million to mitigate community concerns. The Residential Consumer Intervener Association (RCIA) does not oppose approval of the Project. British Columbia Old Age Pensioners' Organization, Active Support Against Poverty, Council of Senior Citizens' Organizations of BC, Disability Alliance BC, Tenant Resource and Advisory Centre and Together Against Poverty (BCOAPO) submits that FBC should investigate expansion of the existing FRU site and consult on the community's willingness to accept higher costs and lower reliability of a substation further from the load centre. Industrial Customer Group (ICG) opposes the Project, suggesting FBC could build a single-fused protected 10 MVA transformer substation instead. Lenardon opposes the Project.

3. FBC submits that those interveners that oppose approval of the Project have not fairly characterized the evidence and their arguments are without merit. The evidence in this proceeding shows that the Project is in the public interest. FBC's evidence demonstrates the need for the Project – the equipment at the existing FRU and HER substation needs to be replaced and the reliability risk of reliance on a single transformer substation needs to be remedied. FBC has investigated all potential alternatives and sites for a new substation, including the existing FRU and HER substation sites and sites adjacent and around the existing FRU substation, and there is only one suitable location for the Project – at 2064 Grieve Road in the Village of Fruitvale, BC (Grieve Location). After many years of searching, there is no reasonable prospect of a more suitable site emerging and FBC needs to proceed with the Project as soon as reasonably possible. FBC consultation has met the BCUC's CPCN Guidelines and has been reasonable and adequate – FBC has engaged with the community, identified issues and concerns, responded to those issues and concerns, and is continuing to work with directly impacted stakeholders to mitigate outstanding issues, such as concerns with electromagnetic fields (EMF) and visual impacts of the substation. FBC acknowledges that there continues to be some community opposition to the Project, but must now proceed with the Project to continue to provide safe and reliable service to its customers.

4. In the remainder of this Reply Argument, FBC responds to the comments and recommendations of interveners. In the main body of this submission, FBC has responded to what it considers to be the main themes of Lenardon's argument. In the appendix to this Reply Submission, FBC has replied to some of the more detailed comments in Lenardon's argument. Silence in this submission on a particular statement in an intervener submission does not indicate FBC's agreement.

5. The sections below are organized as follows:

- In Part Two, FBC responds to the submissions of ICG and Lenardon with respect to the Project need.
- In Part Three, FBC responds to the submissions of BCOAPO, ICG and Lenardon with respect to the alternatives analysis.
- In Part Four, FBC responds to the submissions of CEC, BCOAPO, ICG and Lenardon with respect to consultation.
- In Part Five, FBC responds to the out of scope submissions of ICG.
- Part Six concludes this Reply Submission.

PART TWO: THE PROJECT IS NEEDED

6. In this Part, FBC responds to the submissions of ICG and Lenardon with respect to the Project need. FBC notes that ICG and Lenardon include in their submissions new evidence that is not on the record or been tested in this proceeding and therefore should be given no weight.

A. FRU Switchgear and Breakers Need to Be Replaced

7. ICG appears to dispute FBC's evidence that the FRU switchgear and breakers need to be replaced, asserting that upgrade and retrofit options have been offered by equipment manufacturers that have an excellent track record.[1] ICG's submission is not supported by evidence on the record and should not be given any weight. FBC has filed extensive evidence that the FRU switchgear and breakers (which are 56 years old) need to be replaced, including a 2017 report by a qualified third-party contractor (METSCO).[2]

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1 ICG Final Argument, pp. 2-3.

2 FBC Final Argument, paras 10 to 13.

With respect to repair options, FBC attempted to repair the switch gear and breakers in 2018 and 2024, with no improvement to condition.[3] With respect to retrofit/refurbishment, FBC determined that this is not possible:[4]

> Equipment refurbishment at FRU is not possible. FBC has determined that retrofit/refurbishment of the FRU breakers and switchgear would not be cost effective, extend the life of the electrical equipment, or improve safety and reliability, for the following reasons:
>
> - While retrofit breakers might improve individual equipment condition, due to the station design this will not provide substantial improvements to overall station reliability.
>
> - Retrofits will not improve FRU switchgear arc flash resistance and will not provide additional hazard protection to the operators. The proposed outdoor station design for the New FRU Substation eliminates arc flash hazards.
>
> - Switchgear breaker retrofits are costly when compared to purchasing new breakers. A switchgear breaker retrofit was commissioned in 2019 for approximately $74 thousand, while a new outdoor MV breaker was priced in 2023 at approximately $37 thousand.
>
> - Retrofit breakers do not have a proven reliability track-record.
>
> - Since no spare breaker is currently available for the FRU switchgear, FBC would have to pay for a built-from-scratch third retrofit breaker or operate with reduced reliability for the duration of the retrofit.

8. ICG suggests that FBC's concerns with respect to the safety of its workers due to arc flash risk from the switchgear and breakers at FRU is not warranted, stating: "There is nothing out of the ordinary regarding the arc flash risk at FRU."[5] Contrary to the ICG, the enclosed switchgear and use of high voltage fuses at FRU indeed pose a heightened risk of arc flash hazards to workers at the station, which is further heightened due to the aging of the equipment.[6] The risks associated with this type of switchgear were confirmed by CEATI Report T123700-3083 which found that, while utilities did not historically pay much attention to the risks until safety standards were put in place in 1994 and 2000, "the hazards related to working with older, non-arc resistant metal-clad switchgear are becoming widely recognized."[7] Thus,

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3 Exhibit B-3, BCUC IR1 1.2.

4 Exhibit B-6, ICG IR1 3.2.

5 ICG Final Argument, p. 3.

6 Exhibit B-1, Application, pp. 3 and 20.

7 Exhibit B-8, Lenardon IR1 25.

attempting to keep the existing switchgear or rebuilding the New FRU Substation with the same equipment and continuing to expose workers to this hazard would not be consistent with industry standards and not acceptable to FBC, for whom safety is a top priority. To improve reliability and safety, FBC will use standard outdoor breakers at the New FRU Substation, which are easier to maintain and do not subject the maintenance crew to an arc flash hazard.[8]

9. FBC submits that it is clear that the FRU switchgear and breakers need to be replaced.

B. FRU T1 Transformer Needs to Be Replaced

10. ICG disputes FBC's claims that the FRU T1 transformer needs to be replaced based on unsupported claims about industrial transformers.[9] Contrary to the ICG, industry statistics indicate that industrial transformers have a shorter useful life than network transformers typically used by public utilities.[10] This stands to reason as utilities have an obligation to serve residential use as well, making reliability a public safety as well as an economic concern. In any case, FBC's Condition and Life Report prepared by FBC engineers who inspected the FRU T1 transformer in 2023 concludes that the FRU T1 transformer needs to be replaced in 2 to 3 years due to the deterioration of the solid and liquid insulation.[11] Furthermore, as the switchgear at the FRU substation needs to be replaced, it is cost effective to upgrade the deteriorated and aging transformer at the same time.

C. Reliability of Electricity Supply for Fruitvale and Surrounding Area

11. ICG and Lenardon argue that the Project is not driven by the need to improve reliability, citing the lack of history of transformer outages.[12] However, the need to improve reliability is not driven by an historical record of outages, but the fact that many customers are at risk of significant outages due to the lack of a back up transformer at the FRU substation. Transformer outages are rare, but their impact can be significant. As FRU T1 cannot be entirely offloaded and currently relies on a mobile transformer as a backup supply, in the event of an unplanned FRU T1 outage during peak load conditions, 39 percent of customers and 59 percent of load served by the FRU substation would be without power for a minimum

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8 Exhibit B-6, ICG IR1 4.2.

9 ICG Final Argument, p. 2.

10 Exhibit B-3, BCUC IR1 1.1.

11 Exhibit B-3, BCUC IR1 1.1 and Attachment 1.1a.

12 ICG Final Argument, p. 1; Lenardon Final Argument, p. 2.

of 24 hours and up to several months depending on the circumstances.[13] The New FRU Substation with two transformers will provide superior reliability compared to the existing FRU and HER substations, as there should be minimal, if any, customer outages in the event of a transformer failure. The New FRU Substation will also provide more flexibility for FBC to use its mobile transformer at other substations when needed, thus improving the reliability of FBC's system generally.[14]

12. ICG misstates FBC's position as being that "distribution with non-redundant transformers are no longer acceptable".[15] In fact, FBC's position is that a single transformer configuration is no longer acceptable for the New FRU Substation.[16] As FBC has noted, the FRU substation has few ties to other substations and is not in close proximity to a mobile storage location.[17] The reliability risk to the Village of Fruitvale and surrounding area due to reliance on a single transformer substation needs to be remedied.

13. ICG refers to a "Design Code for Rural Substations"[18] which is not in evidence in this proceeding. Drawing any conclusion from this 764-page document, which is from a different jurisdiction and 23 years old (dated June 2001), would be unwarranted and procedurally unfair to FBC. As such, the BCUC should disregard this reference and give it no weight.

14. ICG asserts that transformer outages are low-probability events that should not be the basis of distribution planning.[19] To the contrary, as a prudent operator, FBC must consider the potential for transformer outages when planning its distribution system and, in particular, when building or refurbishing legacy substations. While transformer failures are rare, they do occur and FBC must plan for how it can respond to such occurrences, particularly as its customers' reliance on electricity continues to grow. Extended outages during the coldest days of winter or the hottest days of summer are not a mere inconvenience, but a serious safety risk which FBC is obligated to consider and plan to avoid where cost effective to do so. Contrary to ICG's characterization, FBC is not building for redundancy throughout the entire distribution system, but rather, FBC is addressing a significant risk to the reliability of supply to its

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13 Exhibit B-1, Application, pp. 23-24.

14 Exhibit B-1, Application, Section 3.3.2; Exhibit B-3, BCUC IR1 2.2.

15 ICG Final Argument, pp. 1-2.

16 e.g., FBC Final Argument, para. 24.

17 Exhibit B-6, ICG IR1 1.5.

18 ICG Final Argument, p. 2.

19 ICG Final Argument, p. 2.

customers that can be cost-effectively addressed through the use of a redundant transformer at the New FRU Substation.

15. Overall, ICG appears to be advocating for a run-to-failure approach, which FBC submits is not prudent as it exposes customers to: (1) the risks of lengthy outages that could negatively impact public safety; and (2) the higher costs of unplanned work, in addition to the necessary costs of the New FRU Substation.

PART THREE: ALTERNATIVES ANALYSIS

16. In this Part, FBC replies to the submissions of BCOAPO, Lenardon and ICG with respect to the alternatives to the Project. FBC reiterates that the evidence not on the record referred to in Lenardon's and ICG's submissions should not be given any weight.

A. FBC Fully Investigated Potential Locations Around Existing FRU Substation

17. BCOAPO submits that "FBC has not adequately explored an alternative whereby sufficient land would be acquired adjacent to the current FRU substation site to meet the minimum station footprint requirements."[20] In fact, FBC did fully investigate locations adjacent to the existing FRU site. In its search for a new location, FBC identified and evaluated an extensive list of potential properties for the New FRU Substation. FBC considered bare properties and properties containing structures, as well as properties that were on and off the market.[21] This included properties adjacent and around the existing FRU substation site.

18. As explained below, to expand the existing FRU site to be large enough to accommodate a new substation, FBC would need to purchase multiple additional residential properties. For context, the aerial views of the existing FRU substation are provided below.[22] These aerial views show the triangular and highly limited space at the existing FRU substation and how it is located in a residential neighbourhood.

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20 BCOAPO Final Argument, p. 8.

21 Exhibit B-1, Application, p. 32; Exhibit B-3, BCUC IR1 4.1.

22 Exhibit B-1, Application, pp. 15 and 185.

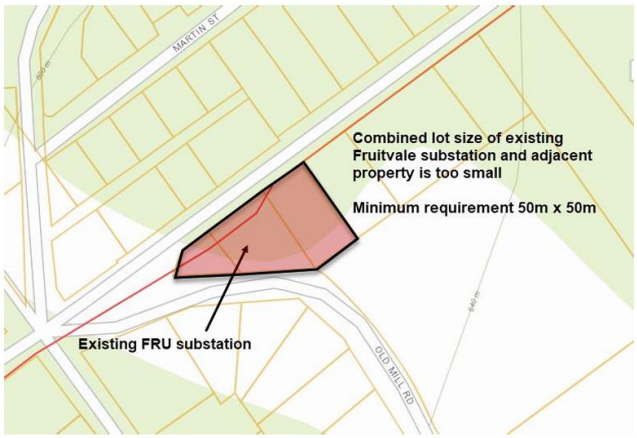
Figure 3-3: Existing Fruitvale Substation Aerial View

19. FBC submits that it is plain and obvious that the existing FRU substation site is too small for a modern substation. As FBC has emphasized throughout this proceeding, the existing FRU substation is too

small to accommodate either a single or two-transformer substation, the minimum size of which is 50 metres by 50 metres.[23] FBC explained in the Application as follows:[24]

> Further, even if replacing the FRU substation with only one transformer were an acceptable option, undertaking the required upgrades and replacements to address the equipment condition issues is not possible at the existing FRU substation site. The existing site is too small to accommodate a one-transformer substation that meets FBC's current design standards. The standard station footprint size for a typical 63 kV radial substation with either a single or two-transformer configuration is 4,736 m2 (or 61.5 m by 77 m) with a minimum typical size of 2,500 m2 (or 50 m by 50 m). In contrast, as discussed in Section 3.2, the existing FRU substation footprint is approximately 640 m2 with an irregular shape (the FRU substation property itself is approximately 1,400 m2); as a result, the existing location is too small to accommodate upgrades to the station equipment.

20. Even if the existing FRU substation were expanded by purchasing the neighbouring residential property, the site would still be too small to accommodate the minimum 50 metre by 50 metre area required for a single or two-transformer substation. This was illustrated as follows in FBC's consultation materials.[25]



21. Therefore, to expand the existing FRU substation site to a suitable size would require the acquisition of multiple properties. This would require FBC to find willing sellers of their residential homes and would effectively make this a new location. FBC's search for a new location included the entire Village of Fruitvale, which includes the area around the existing FRU substation. FBC notes Property E,[26] which

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23 Exhibit B-1, Application, p. 28, Figure 4-1.

24 Exhibit B-1, Application, p. 27.

25 Exhibit B-1, Application, Appendix F-8, slide 9.

26 Exhibit B-1-1, Confidential Appendix F-2. FBC has committed not to reveal the location of properties that residents refused to sell.

was not available for purchase.[27] FBC approached the landowner of Property E several times. A variety of scenarios were discussed, including FBC purchasing the whole property, a portion of the property, or right-of-way access through the property. The landowner was ultimately not receptive to any of the options presented.[28] In short, FBC has investigated all potential locations, including around the existing FRU substation site.

B. FBC Has Appropriately Sized the Transformers for the New FRU Substation

22. Lenardon and ICG argue that 20 MVA sized transformers are not needed.[29] Lenardon suggests that two 10 MVA transformers could be accommodated on the existing FRU site[30] and ICG recommends that FBC "design a project that fits a single fuse-protected 10 MVA transformer at the FRU site".[31] Contrary to Lenardon and ICG, using 20 MVA transformers is both cost effective and prudent to ensure that FBC has sufficient capacity to accommodate future load growth.

23. First, 20 MVA is the smallest FBC standard transformer size.[32] FBC has standardized to a minimum standard transformer size to gain efficiencies with procurement, mitigate supply chain issues, provide operational flexibility within the system, and limit equipment sizes required for spare parts.[33] Therefore, using 10 MVA transformers, as suggested by ICG and Lenardon, would be inefficient.

24. Second, 20 MVA transformers are necessary to ensure FBC can meet future load growth, as these assets are long lived, with an estimated 50-year average service life.[34] While the New FRU Substation will have two nominally rated 20 MVA transformer, the purpose of the second transformer is for redundancy, which means that either transformer must be able to carry all of the load, limiting the New FRU Substation maximum load to 20 MVA.[35] While FBC's forecast load for FRU at 2033 is 6.94 MW, these forecast values do not consider potential new large loads, electrification, or electric vehicles.[36] For example, if FBC received just one new request for a load of 3 or more MW, a 10 MVA transformer would already be too

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27 Exhibit B-1, Application, p. 33.

28 Exhibit B-1, Application, p. 72.

29 ICG Final Argument, p. 1.

30 Lenardon Final Argument, p. 3.

31 ICG Final Argument, p. 4.

32 Exhibit B-1, Application, footnote 8.

33 Exhibit B-6, ICG IR1 2.4.

34 Exhibit B-1, Application, p. 60.

35 Exhibit B-6, ICG IR1 2.4; Exhibit B-3, BCUC IR1 3.1.

36 Exhibit B-6, ICG IR1 2.4; Exhibit B-3, BCUC IR1 3.1.

small. Given these assets have an estimated 50-year life,[37] it is prudent and cost effective for FBC to build the New FRU Substation with capacity to accommodate future load growth.

25. Third, using 10 MVA transformers would not enable FBC to use the existing FRU substation site. As discussed in Part Three, Section A above, the existing FRU substation site is too small to accommodate a single or two transformer substation, whether 10 MVA or 20 MVA. FBC reiterates that it is not able to design a substation to fit the property that would also ensure it followed good utility practice, CEATI practices, and IEEE standards and guidelines. This is due to a number of factors, including: (i) the size of the required equipment, including transformers, circuit breakers, and switching equipment; (ii) if one transformer is installed, the need for space for a mobile transformer when needed to take the transformer out of service for maintenance; (iii) space around the equipment required for maintenance purposes; and (iv) space for oil containment for power transformers.[38]

26. Finally, ICG's recommendation to use a single fuse-protected 10 MVA transformer on the existing FRU site would disregard industry standards and fail to improve safety and reliability. Contrary to ICG,[39] FBC did not say that fuses are acceptable for 10 MVA transformers. Rather, FBC stated: "FBC no longer installs high voltage fuses to protect substation transformers that are 10 MVA or larger as per the IEEE 16 C37.91 standard. … FBC is planning to replace high side fusing in similarly sized non-standard FBC legacy substations with transformers 10 MVA or larger with circuit breakers or circuit switchers."[40] To reiterate, high voltage fuses are slow, do not have SCADA or event recording capabilities, do not protect against all station faults, and create a higher arc flash hazard. To improve safety and reliability, FBC replaces high voltage fuses with high voltage circuit breakers.[41]

C. Rebuilding Both FRU and HER, and Supplying ATCO From HER, is Not Possible or Cost Effective

27. Lenardon submits that FBC should keep both the FRU and HER substations, including upgrading FRU and rebuilding HER to supply ATCO alone, stating that this would reduce the FRU load and that it is not the public's responsibility to provide service to a sawmill in any case.[42] This alterative is not a practical solution. FBC first notes that it has an obligation to serve all customers, whether residential, commercial

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37 Exhibit B-1, Application, p. 44.

38 Exhibit B-3, BCUC IR1 7.4.

39 ICG Final Argument, p. 3, first paragraph.

40 Exhibit B-3, BCUC IR1 7.4.

41 Exhibit B-1, Application, p. 21.

42 Lenardon Final Argument, pp. 4-5.

or industrial. FBC has reiterated above why it cannot build a new substation on the existing FRU substation site. Therefore, if FBC were to rebuild HER to supply ATCO alone, which itself would not be reasonable or cost effective, FBC would still have to construct another substation to serve the remainder of the Village of Fruitvale and the surrounding area. It is not cost-effective to build an additional substation to serve this area when FBC is able to serve the entire area with a single new substation close to the load centre as proposed.[43]

D. Serving Fruitvale From the Beaver Park (BEP) Substation is Not An Alternative

28. ICG claims that FBC does not provide adequate information regarding serving the Village of Fruitvale from the BEP substation, stating that FBC appears to have not considered using voltage regulators.[44] However, the amount of load that can be supplied by any distribution line is constrained by both voltage and thermal limits.[45] While the addition of a voltage regulator may regulate voltage, it does not address thermal constraints. To address these constraints, serving the Village of Fruitvale and the surrounding area from the BEP substation would require both an expansion of the BEP substation and costly line upgrades.[46] This would entail impacts to stakeholders from the expansion of the substation and the construction of the line assets, which is complicated by the fact that the BEP substation is on an archaeological site. Further, the resulting service would be less reliable due to the distance of BEP from the load centre, as damage at any point along the 8 km line between BEP and Fruitvale would cause an outage to the entire area. Similar to using other sites further from the load centre such as HER, using BEP would come with increased costs, higher impacts and decreased reliability, and therefore is not practical.[47]

PART FOUR: CONSULTATION WAS REASONABLE AND SUFFICIENT

29. In this Part, FBC responds to the submissions of CEC, BCOAPO, ICG and Lenardon regarding consultation. As discussed below, FBC's consultation was reasonable and sufficient, having complied with the BCUC's CPCN Guidelines and positioned the BCUC to make a determination on the public interest of the Project.

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43 Exhibit B-1, Application, Section 4.

44 ICG Final Argument, p. 4.

45 Exhibit B-1, Application, pp. 30-31.

46 Exhibit B-3, BCUC IR1 7.1.

47 Exhibit B-3, BCUC IR1 7.1.

A. FBC Listened to and Incorporated Feedback from the Mazzocchi Location Experience

30. A theme of Lenardon's argument is that FBC has not listened to feedback from the community regarding the Mazzocchi Location. Lenardon states: "If Fortis had "listened" to the abundance of feedback garnered from the Mazzocchi Park experience this [Grieve] location would not have been considered."[48] However, FBC has indeed listened to the feedback from the community from the Mazzocchi Park experience and took that into account in its choice of the Grieve Location. To summarize:

- The Mazzocchi Location was offered by the Village of Fruitvale as an option on July 12, 2021.[49] The site was next to Mazzocchi Park and adjacent to a low number of residences, as shown in the picture below.[50]

- The Village of Fruitvale voted against selling the Mazzocchi Location on April 11, 2022 after opposition during the rezoning process.[51] The key areas of concern regarding the Mazzocchi Location were EMF, parking, proximity to community infrastructure, and visual/station aesthetics. Table 8-2 of the Application summarizes in more detail the stakeholder feedback gathered up to the time the Village of Fruitvale voted against selling the Mazzocchi Location.[52]

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48 Lenardon Final Argument, p. 7.

49 Exhibit B-1, Application, pp. 69 to 70.

50 Exhibit B-1, Application, Appendix F-3.

51 Exhibit B-1, Application, pp. 69 to 70.

52 Exhibit B-1, Application, p. 71.

- FBC incorporated the feedback into its search for a new location, including by incorporating specific considerations into its Land Evaluation Matrix. For example, based on the experience with the Mazzocchi Location, FBC considered that properties used by the public, or properties adjacent to public spaces, may not be supported by the community. Property D is an example of a location that FBC considered too similar to the Mazzocchi Location.[53]

- The Grieve Location addresses many of the key concerns raised about the Mazzocchi Location. Namely: it is not located next to public infrastructure such as a park, school, ball field or daycare; it is currently zoned to allow for utilities; it is not used for public parking; and, as a privately owned lot, it does not impact public land use.[54]

31. FBC has also heard ongoing concerns from directly impacted stakeholders regarding issues such as safety, station aesthetics, siting, and noise impacts. These are common interests that FBC expects would be brought forward with respect to any location chosen for the Project[55] and FBC is committed to continue to work with stakeholders to mitigate potential impacts.[56]

B. FBC's Consultation Leading up to the Purchase of the Grieve Location was Reasonable and Appropriate

32. BCOAPO asserts that there was "little to no consultation" between April 2022 and the purchase of the Grieve property in May 2023.[57] However, during this period – between the rejection of the Mazzocchi Location and the identification of the Grieve Location – the Project was essentially on hold as FBC was focussed on finding a new location for the substation. FBC was actively seeking and taking recommendations from the public for possible locations, which was the most relevant form of consultation needed at this time.[58] FBC's search for a new location also took into account the feedback FBC had already received over three and half years of consultation, including the specific criteria coming

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53 Exhibit B-3, BCUC IR1 15.3.

54 Exhibit B-3, BCUC IR1 15.3.

55 Exhibit B-3, BCUC IR1 15.3.

56 Exhibit B-3, BCUC IR1 15.4.

57 BCOAPO Final Argument, p. 13.

58 Exhibit B-3, BCUC IR1 15.2.

out of the community's rejection of the Mazzocchi Location. Further, FBC's consultation log shows ongoing consultation with both the RDKB and municipal government during this time.[59]

33. The suggestion that FBC should have consulted more fully "leading up to the offer to purchase the Grieve site"[60] ignores the reality that the real estate market is open and competitive. It would not have been practical for FBC to consult on whether to purchase the Grieve Location. As the Grieve Location was the only suitable location, FBC needed to secure it and could not have consulted on doing so without compromising its ability to purchase the property or purchase it at a reasonable price. Either the property would have been sold to another buyer while FBC was consulting, or FBC could have compromised its negotiating position and been forced to pay a higher price. FBC consulted with the local community after the purchase and, if for some reason FBC determined that it could not proceed with the Grieve Location, it could have sold it. However, FBC could not risk losing the opportunity to purchase the property in the first place. The Project has already been materially delayed due to the difficulty in finding a location for the new substation. FBC needed to purchase the only suitable location for the substation that it found over years of searching in order to maintain safe and reliable power to the Fruitvale community.

34. Overall, FBC submits that its consultation leading up to the purchase of the Grieve Location was reasonable and appropriate: FBC was searching for a substation location taking into consideration the extensive feedback it had already received from the community, investigated all locations suggested by the public, continued to update government authorities on the status of the Project, and prudently purchased the only suitable location when it became available, concluding its nearly 5-year search for a property for the substation.

C. Further Consultation Regarding Reliability and Cost Is Not Required

35. BCOAPO submits that FBC should consult on whether the Fruitvale community is willing to accept the lower level of reliability and pay higher costs associated with a substation located further away.[61] As an initial matter, FBC consulted on its reasons for rejecting other potential locations, including those further from the load centre.[62] FBC understands BCOAPO's submission to be that FBC needs to consult specifically on the Fruitvale community's preference for lower reliability and higher costs associated with

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59 Exhibit B-1, Appendix F-1.

60 BCOAPO Final Argument, p. 14. See also, Lenardon Final Argument, p. 7.

61 BCOAPO Final Argument, p. 14.

62 e.g., Exhibit B-1, Application, Appendix F-8.

a substation further away from the load centre. FBC submits that no such consultation is required and this suggestion is inconsistent with regulatory principles, design standards, the broader public interest, and does not reflect all the pros and cons of siting a station further from the load centre.

36. First, the costs of the New FRU Substation will be paid for by all customers in rates, not solely the Fruitvale community, and FBC is held to a prudence standard by the BCUC. Therefore, FBC cannot agree to incur higher costs because the Fruitvale community is willing to pay higher rates.

37. Second, FBC has obligations to provide safe and reliable service, and must consider the needs of the whole community over the long term, not only the current residents or those that reside next to the new substation. Given the long-lived nature of the assets, and the difficulty in siting infrastructure (as demonstrated by this proceeding), siting the new substation further from the load centre would reduce the reliability of service to the entire Village of Fruitvale indefinitely. Therefore, FBC cannot agree to site the substation further from the load centre even if the Fruitvale community were to indicate that it is currently willing to accept a lower level of reliability.

38. Third, locating a substation further from the load centre does not only result in higher costs and lower reliability, but also the higher visual and other impacts from the new triple circuit line infrastructure that would be needed to deliver the power from the substation to the load centre.[63] This would shift the potential infrastructure impacts to new stakeholders who may not be in favour of such a trade off.

39. Ultimately, FBC – and the BCUC in evaluating FBC's Application – must consider the interest of all stakeholders and balance competing interests. Considering the broader public interest, FBC submits that siting the New FRU Substation at any of the sites further from the load centre would come with increased costs, higher impacts, and decreased reliability, and therefore is not practical. Further consultation with stakeholders will not change that conclusion. While FBC understands that residents close to the Grieve Location would prefer the substation not to be located near them, FBC has evaluated all the relevant options and concluded that the Grieve Location is the only suitable location available.

D. <u>FBC Has Addressed or Is Continuing to Work with Stakeholders Regarding Potential Impacts</u>

40. Lenardon refers to a number of issues and concerns with the New FRU Substation at the Grieve Location. FBC recognizes these issues and concerns, has addressed many of them, and is committed to

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[63] Exhibit B-3, BCUC IR1 5.6.

continue working with directly impacted stakeholders to mitigate outstanding issues and concerns. Table 8-3 of the Application and the table provided in the response to BCOAPO IR1 13.3 list the various issues and concerns raised during the consultation process and in Letters of Comment, and FBC's response. For example, regarding Lenardon's concern regarding potential lighting disturbance,[64] lighting at the substation is not expected to impact neighbours. Specifically, to allow safe access to the station and control room, a very low-level porch light on the control building will be on a photocell, which is not expected to impact neighbors. The remaining station lighting is on a switch and will only be turned on in an emergency situation.[65]

41. In the following subsections, FBC responds to what appear to be the main issues and concerns raised by Lenardon in argument.

(a) Electromagnetic Fields

42. Lenardon raises several concerns regarding EMF which FBC addresses below.

43. First, Lenardon argues that EMF poses health risks and, in particular, that long-term exposure to EMF at certain strengths is "possibly carcinogenic".[66] There is no evidence to support the New FRU Substation posing health risks to local residents such as Lenardon. The magnetic field strength modelling undertaken by FBC demonstrates that, even assuming the maximum possible emergency load at the station, the EMF levels of the new section of transmission line will remain well-below the exposure guidelines developed by the International Commission on Non-Ionizing Radiation Protection (ICNIRP).[67] These exposure guidelines are endorsed by the World Health Organization (WHO),[68] and the BCUC has recognized the exposure established by the ICNIRP and WHO as a "relevant and useful reference point for considering the safety of EMF levels".[69]

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64 Lenardon Final Argument, p. 7.

65 Exhibit B-1, Application, p. 79.

66 Lenardon Final Argument, p. 6.

67 Exhibit B-8, Lenardon IR1 29.

68 In its guidelines update in 2010, ICNIRP recommends a residential magnetic field exposure limit of 2,000 milligauss (mG) and an occupational exposure limit of 10,000 mG: Exhibit B-8, Lenardon IR1 29.

69 BCUC Order and Decision C-4-06, dated July 7, 2006 (BCTC CPCN Application for the Vancouver Island Transmission Reinforcement), p. 71. Online: https://docs.bcuc.com/documents/proceedings/2006/doc_12040_1-vitr%20decision-july%207%202006%20-%20web.pdf.

44. Further, as set out in BCUC Order G-33-20, BC Hydro's most recent reporting to the BCUC regarding EMF and accepted EMF guidelines affirms that long-term exposure to Extremely Low Frequency EMF (ELF-EMF) is not known to cause any adverse health effects, including cancer or other illnesses. While BC Hydro had been directed to provide updated EMF reporting at least every two years since 2006, in 2020, the BCUC determined that such reporting was no longer required unless there was a material change in the research related to the health impact of EMF exposure.[70]

45. Second, Lenardon argues that FBC has disregarded concerns with respect to EMF.[71] In fact, FBC considered the impact of EMF from the substation and power lines in evaluating each of the potential properties for the New FRU Substation, including the Grieve Location.[72] The inclusion of EMF as part of this assessment was specifically informed by the feedback provided by stakeholders.[73] Further, consistent with the BCUC's recognition in its past decisions that EMF from transmission lines may cause stress and anxiety in some residents (despite the BCUC concluding that science does not support such fears),[74] FBC is committed to working with local residents to respond to concerns regarding EMF, such as by providing Health Canada and WHO information and modelled EMF levels.[75]

46. Third, Lenardon suggests that the proposed transmission lines would run directly above their flower and vegetable gardens, fish pond, and outdoor dining and entertainment area. However, as shown in Confidential Appendix C-2, the proposed transmission line would remain within the Grieve Location property.[76]

The BCUC has followed these guidelines in subsequent decisions. See, e.g., Decision and Order C-4-07, dated May 9, 2007; Decision and Order C-4-08, dated August 8, 2008; Decision and Order C-5-08, dated October 2, 2008; Decision and Order C-6-08, dated December 10, 2008; Decision and Order G-144-12, dated October 10, 2012.

70 Recital D of BCUC Order G-33-20, dated February 27, 2020, states: "On March 19, 2019, the British Columbia Hydro and Power Authority (BC Hydro) filed the latest Report and states that consistent with all previous reports, the recent research results, including scientific literature that has been reviewed, do not provide any new evidence to alter the conclusion that long-term exposure to Extremely Low Frequency Electric and Magnetic Fields (ELF-EMF) is not known to cause any adverse health effects, including cancer or other illness." Online: https://www.ordersdecisions.bcuc.com/bcuc/orders/en/item/462124/index.do?q=%22EMF%22.

71 Lenardon Final Argument, p. 6.

72 Exhibit B-3, BCUC IR1 4.1.

73 Exhibit B-1, Application, Table 8-2 (p. 71); Exhibit B-3, BCUC IR1 15.3.1.

74 BCUC Order and Decision C-4-06, p. 71.

75 Exhibit B-7, RCIA IR1 7.3.

76 Exhibit B-1-1, Confidential Appendix C-2, pp. 3-4.

47. Finally, Lenardon argues that FBC did not consider mitigating the negative impacts associated with EMF. This was considered by FBC. However, the Grieve Location was assessed as having a "Low" EMF impact, as the EMF levels associated with the Project are well-below levels that may cause adverse health effects. Therefore, FBC determined that mitigation strategies were not necessary.[77]

(b) Alleged Devaluation in Property Values Should be Given No Weight

48. Lenardon suggests that the Project will cause a devaluation in property values of either 10 or 15 percent.[78] Lenardon's estimated property value impacts appear to be from the Letter of Comment from the Beaver Valley Concerned Citizens (BVCC), which includes a review of property values in collaboration with a local realtor and informed community members.[79] Neither the BVCC nor Lenardon provide any information to substantiate the estimated property value impacts. There is no evidence to support the estimated property value impacts and FBC submits that they should be given no weight.

49. A determination of a prospective property value impact is a complex matter that would require expert evidence filed and tested in this proceeding. For example, in Decision and Order C-1-6, the BCUC rejected the assumption by interveners that a transmission line would reduce the value of adjacent properties because "the assumption…was not fully tested before the Commission Panel."[80] Similar reasoning was applied in Decision and Order C-4-07 where the BCUC accorded little or very little weight to the property value opinions provided by an accredited appraiser and a licenced realtor that were not tested in cross examination.[81]

50. In the current case, there is no evidence other than a mere assertion in a letter of comment of a 10 to 15 percent property value impact. FBC submits that this assertion should be given no weight.

(c) Property Values Do Not Impact the Regional District's Tax Base

51. Lenardon argues that the alleged reduction in property values will decrease the tax base in the Regional District by approximately $2.0 to 3.0 million which, in turn, will necessitate either a reduction in

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77 Exhibit B-7, RCIA IR1 7.2.

78 Lenardon Final Argument, p. 8.

79 Exhibit D-13, PDF p. 83.

80 BCUC Order and Decision C-1-06, dated June 2, 2006, p. 40. Online: https://www.ordersdecisions.bcuc.com/bcuc/decisions/en/111667/1/document.do.

81 BCUC Order and Decision C-4-07, dated May 9, 2007, p. 32. Online: https://www.ordersdecisions.bcuc.com/bcuc/orders/en/116417/1/document.do.

services or increased taxes.[82] However, changes in property values do not impact how much the taxing authority collects through property taxes. Rather, the Regional District's tax base determines what tax rate is needed to meet the Regional District's revenue requirement. Taxes based on this rate are then distributed to individual properties, with properties assessed as having a greater value paying a higher share of the overall taxes collected in the Regional District.[83] Thus, the assessed value of a property only determines what *proportion* of the tax collected by the taxing authority a property owner will pay, and not whether property taxes increase, decrease or stay the same.

(d) The Project's Risk to the Environment and Wildlife is Low

52. Lenardon describes the Grieve Location as a rural gem and, in particular, that the property attracts a variety of permanent wildlife and those that use the property as a wildlife corridor.[84] While FBC understands the importance individual residents may ascribe to different areas within their community, the Grieve Location is a private property that has been zoned by the Regional District to allow for utility use and is in close proximity to Highway 3B, a railway, a sawmill and a residential neighbourhood.[85] As discussed below, the risk of environmental impacts associated with the Project (specifically the Highway 3B Option) is low and FBC has addressed environmental considerations associated with the Grieve Location in a number of ways.

53. First, while the Fruitvale area is abundant with wildlife, including ungulates, birds, and small mammal species, this is typical of the West Kootenay Region and FBC's desktop review and on-site assessment do not support the Grieve Location as being particularly attractive for wildlife, such that the Project should not be sited on the property.[86] In particular, the Grieve Location is not a Protected Area, does not have a Critical Habitat designation, and there are no known occurrences of Species at Risk within the property boundaries.[87]

54. Second, the Highway 3B Option will preserve wildlife habitat by allowing the majority of the treed area at the Grieve Location to be left undisturbed.[88] This is consistent with FBC's commitment to preserve

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82 Lenardon Final Argument, p. 8.

83 Exhibit B-4, BCOAPO IR1 13.3.

84 Lenardon Final Argument, p. 7.

85 Exhibit B-1, Application, p. 43; Exhibit B-4, BCOAPO IR1 13.3; Exhibit B-3, BCUC IR1 15.3.1.

86 Exhibit B-4, BCOAPO IR1 13.3.

87 Exhibit B-1, Application, p. 64 and Appendix E.

88 Exhibit B-3, BCUC IR1 14.1.

as many trees as safely possible when developing the substation footprint and setbacks (while also balancing the associated rate impacts).[89] FBC has also undertaken an Old Growth Assessment at the Grieve Location, which concluded that there are no old growth trees on the property.[90]

55. Third, FBC will prepare a comprehensive Environmental Management Plan (EMP) with site-specific environmental mitigations.[91] Further, a Qualified Environmental Professional (QEP) will be on-site during construction to undertake environmental monitoring and ensure environmental controls are implemented, as well as working with the Project team to manage any environmental risks (including the authority to stop work) should they arise.[92] For example, the QEP will ensure construction is outside of bird nesting windows and breeding periods for ungulate and other wildlife populations.[93] FBC has included an allowance in the forecast Project cost to address site specific environmental mitigations, if they are required.[94]

56. Finally, the property does not fall within the Agricultural Land Reserve and is not currently being used for agriculture.[95]

E. Community Acceptance and Consultation

57. The CEC suggests that community acceptance may be a worthwhile criterion to be included as part of the site selection process.[96] However, while community acceptance is a best-case scenario, this is not achievable in all cases and not a required outcome of consultation. The BCUC has stated this directly in Decision and Order G-278-22:[97]

> The Panel observes that adequacy of the consultation does not necessitate agreement by all stakeholders, nor does it provide any particular group of stakeholders with a right of veto. Rather, robust consultation entails serious consideration of the feedback and may

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89 Exhibit B-1, Application, p. 78.

90 The ICHxw Biogeoclimatic Ecosystem Classification Zone defines an "Old Growth" tree as being 250 years or older: Exhibit B-4, BCOAPO IR1 13.3.

91 Exhibit B-3, BCUC IR1 15.4.

92 Exhibit B-4, BCOAPO IR1 4.2; Exhibit B-1, Application, p. 64.

93 Exhibit B-1, Application, p. 64.

94 Exhibit B-4, BCOAPO IR1 4.1.

95 Exhibit B-1, Application, Table 8-3 (p. 78).

96 CEC Final Argument, p. 9, para. 58.

97 Decision and Order G-278-22, dated October 6, 2022, p. 21. Online: https://www.ordersdecisions.bcuc.com/bcuc/decisions/en/521281/1/document.do.

> include some element of accommodation of stakeholder interests in response to their input…

This means that consultation may be adequate despite ongoing opposition. For example, in the case of FBC's CPCN Application for the Advanced Metering Infrastructure Project in 2013, the BCUC found the consultation process undertaken by FBC to be reasonable and sufficient, despite "a high degree of public interest", including nearly all Letters of Comment opposing the Project.[98]

58. The BCUC has also commented on the purpose of consultation to provide the BCUC with the evidence needed to make a determination on the public interest. In Decision and Order C-12-15, the BCUC stated:

> To grant a CPCN the Commission Panel must be persuaded that the Project is in the public interest. The purpose of consultation is to provide the Commission with sufficient evidence to determine whether the Project is in the public interest. The goal is to provide evidence that the public necessity and convenience requires the Project…

59. This aligns with the BCUC's CPCN Guidelines which include the need to identify the issues and concerns raised, the measures taken to address them, why further action is not required and outstanding issues and concerns:

> Public Consultation
>
> (i) Overview of the community, social and environmental setting in which the project and its feasible alternatives will be constructed and operated, and of the public who may be directly impacted by the project and its feasible alternatives.
>
> (ii) Description of the information and consultation programs with the public, including the organizations, agencies and individuals consulted, the information provided to these parties, and a chronology of meetings and other communications with members of the public and their representatives. This includes consultation with both the public who may be directly impacted by the project and the public that may experience impacts on their rates and service.
>
> (iii) Description of the issues and concerns raised during consultations, the measures taken or planned to address issues or concerns, or an explanation of why no further action is required to address an issue or concern.
>
> (iv) Identification of any outstanding issues or concerns.
>
> (v) Applicant's overall assessment as to the sufficiency of the public consultation process with respect to the project, in the context of the decision which is being sought from the Commission.
>
> (vi) A statement of what future public consultation is contemplated subsequent to the preparation of the CPCN application.

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[98] The Letters of Comment also included over 2,200 petition signatures, and the majority of those in opposition to the Project cited, in particular, potential negative health impacts from radiofrequency transmissions: Decision and Order C-7-13, dated July 23, 2013, pp. 49-50. Online: https://www.ordersdecisions.bcuc.com/bcuc/decisions/en/111642/1/document.do.

60. Given the above guidance, FBC submits that its consultation has been reasonable and sufficient. In particular, FBC has identified the issues and concerns raised, and the measures taken to address them or why no further action is required. FBC has also identified outstanding issues or concerns and is committed to continuing to work with directly impacted stakeholders. FBC submits that the resulting evidentiary record in this proceeding provides the BCUC with sufficient evidence to determine that the Project is in the public interest.

F. Budget for Mitigation Measures

61. CEC recommends that the BCUC approve the Project with an additional amount of $2 to $3 million in spending to be used for mitigating community concerns "given the significance of the community feedback".[99] FBC has already allocated funds for mitigation measures,[100] and does not believe that $2 to $3 million can be reasonably spent to further mitigate concerns. For example, FBC does not believe it should bury transmission lines to mitigate visual impacts, take high-cost measures to reduce EMF, or compensate neighbouring property owners for alleged property value impacts. However, FBC is committed to continuing to work with directly impacted stakeholders and can confirm that the amounts it has budgeted for mitigation will not prevent FBC from taking reasonable measures to mitigate concerns. While FBC welcomes guidance from the BCUC on what may be considered reasonable in this regard, FBC is concerned about setting expectations for future projects. FBC acknowledges that there remains some community opposition to the Project, but considers that opposition to electrical infrastructure is not unexpected and may be more common as FBC is required to expand it system to serve growing demand and replace aging infrastructure. FBC is therefore wary of setting expectations that will make it increasingly difficult to site new infrastructure and complete projects at reasonable costs for customers.

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99 CEC Final Argument, p. 16.

100 Exhibit B-3, BCUC IR1 14.2.

PART FIVE: OUT OF SCOPE ISSUES RAISED BY ICG

A. Rural Substation Plan Is Out of Scope

62. ICG's request that the BCUC order FBC to prepare a plan to address all small rural distribution substations with solutions unique to each location is out of scope of this proceeding.[101] The Application and this proceeding relate solely to the Fruitvale Substation Project. This proceeding has not developed an evidentiary record which supports the ICG's request, which is baseless in any case. As demonstrated in FBC's Reply submission above, ICG's argument is based on misleading interpretations of the evidence, assertions without any evidentiary foundation, a disregard for the safety of FBC's workers and current industry standards, and a proposal that would not provide a reliable level of service to FBC's customers. In short, ICG's recommendations for the Fruitvale Substation Project are without merit and fail to establish any reasonable grounds on which FBC should plan to refurbish or replace other substations.

B. ICG's Request for Limit on Expenditures Prior to Approval Is Baseless

63. ICG's request that the BCUC should consider limits on expenditures prior to issuances of CPCNs is baseless. While FBC has spent or committed approximately 22 percent of the estimated total Project costs,[102] FBC sought and received approval from the BCUC for the Project prior to being directed to file the current CPCN Application. Accordingly, with approval already in place, FBC purchased the two transformers for the new substation as they are long lead-time items.[103] Further, FBC's purchase of the Grieve Location was necessary to secure the land for the Project. FBC submits that it has at all times acted reasonably in carrying out the Project. FBC submits that ICG's requests regarding spending limits have no foundation, are out of scope, and should be rejected.

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101 ICG Final Argument, pp. 3-4.

102 Exhibit B-4, BCOAPO IR1 7.1.

103 Exhibit B-1, Application, pp. 7-8.

PART SIX: CONCLUSION

64. FBC submits that the Fruitvale Substation Project is in the public interest and that the BCUC should grant a CPCN for the Project and permission to decommission the existing HER and FRU substations.

ALL OF WHICH IS RESPECTFULLY SUBMITTED

Dated:	July 25, 2024	***[original signed by Chris Bystrom]***
		Chris Bystrom
		Counsel for FortisBC Inc.
Dated:	July 25, 2024	***[original signed by Niall Rand]***
		Niall Rand
		Counsel for FortisBC Inc.

APPENDIX: FURTHER REVIEW OF LENARDON FINAL ARGUMENT

Lenardon Final Argument	FBC Reply
"higher voltage 24 mV feeder lines" are not warranted (Lenardon Final Argument, p. 2)	FBC will install three 25 kV distribution feeders to support the potential for future conversion, but they will be operated at 13 kV. (Exhibit B-1, Application, p. 50)
"Maintenance records do not fully substantiate the conclusion that age and condition of the equipment at the FRU and HER substations warrant their total decommissioning." (Lenardon Final Argument, p. 2.)	The comprehensive condition assessment of FBC's stations with metal-clad switchgear performed by METSCO in 2017 fully supports the conclusion that the switchgear is end of life. (Exhibit B-1, Appendix A) The condition assessments of the FRU and HER transformers fully support the conclusion that they are at end of life. (Exhibit B-3, BCUC IR1 1.1)
"Outage records do not support the premise of unreliable power issues in Fruitvale and area due to a failing transformer or other causes." (Lenardon Final Argument, p. 2.)	Transformer outages are rare, but their impact can be significant. The customers served by the FRU and HER substations are at risk of outages due to the lack of a back up transformer at FRU. The New FRU Substation will provide superior reliability compared to the existing FRU and HER substations in the event of a transformer outage. The New FRU Substation will also provide more flexibility for FBC to use its mobile transformer at other substations when needed, thus improving the reliability of FBC's system. (Exhibit B-1, Section 3.3.2; Exhibit B-3, BCUC IR1 2.2)
"Having lived here in Fruitvale for 33 years I can attest to the reliability of the power and to the efficiency of it being restored when it does go out." (Lenardon Final Argument, p. 2)	The historical reliability of the service to Fruitvale is based on having the FRU substation operational and close to the load centre. The FRU substation is at end of life and the level of service experienced to date cannot be maintained by the current equipment.
"We have not been provided with Fortis's original engineering report showing voltage load flow feed from Beaver Park or their annual outage statistics showing transformer failure is a factor." (Lenardon Final Argument, p. 3)	It is unclear what original engineering report Lenardon is referring to. FBC provided the results of the load flow analysis for the scenario of FRU supplied by BEP in the response to Lenardon IR1 10 and the scenario of FRU transferred to HER/BEP in the response to Lenardon IR1 11. FBC provided transformer outage statistics in the response to BCUC IR1 2.1.
"Designing and planning a new substation requires a look at existing feeders and where potential load growth might be. Site availability and cost is only part of the equation. For this site I see 3 easy routes. Two feeders going west back to the existing FRU substation and one to ATCO. Going west there is no real loading past Bluebird corner and the load to HER is negligible. It is unlikely the ATCO feeder load is going to change. The capability of a feeder is determined by the conductor size of the line it serves, then the distance of the load comes into play. The two back to Fruitvale will probably require a total rebuild (larger poles/closer together) of the 60KV line	The proposed new feeder routes for the New FRU Substation for the Highway 3B Option are shown in Confidential Appendix C-3 on PDF page 85. Lenardon's arguments should be given no weight. Lenardon has not filed any evidence in this proceeding and has not demonstrated expertise in electrical engineering matters. FBC has had no opportunity to question Lenardon or file evidence in response. The statement that it "is unlikely the ATCO feeder load is going to change" is speculation and should be disregarded.

Lenardon Final Argument	FBC Reply
if you want to put 2 under built lines on it using large conductors." (Lenardon Final Argument, p. 3)	
"Is this total rebuild of the 60KV line accounted for in the project? It appears not but is mentioned in Exhibit B-8 p 21" (Lenardon Final Argument, p. 3)	FBC is not planning a "total rebuild", but rather, a reconductoring of transmission line 20L, as contemplated in FBC's Long-Term Electric Resource Plan. The reconductoring of 20L is not part of the Project. (Exhibit B-5, CEC IR 7.2)
"Where would a 4th feeder line be required given the community is rural residential with minimal commercial/industrial zoned land?" (Lenardon Final Argument, p. 3)	The route for the fourth feeder will depend on how load grows in the area and thus has not been determined at this time. It is normal and cost-effective to include an option for future growth by providing for a fourth feeder. (Lenardon IR1 24)
"Two - 7.5/10 MVA transformer are all that is required…." (Lenardon Final Argument, p. 3)	20 MVA transformers are FBC's minimum standard size and is a cost-effective and prudent choice for the New FRU Substation. See Part Three, Section B of the Reply Submission.
"…the substation can be redesigned in the existing location." (Lenardon Final Argument, p. 3)	The existing location of the FRU substation cannot accommodate a single or two transformer substation. (Exhibit B-3, BCUC IR1 7.4)
"We have not been provided with Fortis's original engineering report showing feed from Beaver Park or their annual outage statistics showing transformer failure is a factor. What is needed is the voltage at each point under full load in the requested SLD's." (Lenardon Final Argument, p. 4)	FBC provided the results of the load flow for the scenarios of FRU supplied by BEP at historical winter 2022 peak load, i.e., at "full load". (Exhibit B-8, Lenardon IR1 10) Outage statistics do not show the reliability issue because transformer failures are rare. (Exhibit B-3, BCUC IR1 2.2)
"Fortis has failed to provide a 60kV load flow showing that all 3 new substations (BEP, SALMO, this proposal) can be served on the existing 60KV line stating that "the voltage will be controlled by the load tap changers" yet they are proposing the installation of capacitors which, if required, would be less expensive (and more effective) if installed on the feeders." (Lenardon Final Argument, p. 4.)	Lenardon's submissions are unclear and it is not apparent what material is being quoted. The Project is not related to the transmission system. The FRU and HER substations are normally supplied by 20 Line (20L), which is a 63 kV transmission line. (Exhibit B-1, Application, p. 12) The BEP substation and the FRU substation are interconnected by a single distribution tie. (Exhibit B-3, BCUC IR 1.3). This will not change with the New FRU Substation. Distribution voltage will be maintained by the load tap changer of the power transformers at the substations. (Exhibit B-8, Lenardon IR1 2)
"The load centre is better located at Hearns, where there is sizable vacant Industrial zoned land and the site of Fortis' REN project." (Lenardon Final Argument, p. 12)	Load centres are not chosen, but rather, are determined based on where the load actually exists. The load centre is the Village of Fruitvale. (Exhibit B-1, Application, p. 30)
"The cost of this proposal has increased to almost 19M with no end in site. It should be noted that the cost has almost doubled from Salmo just 3 years ago. (9.8M to 19M)" (Lenardon Final Argument, p. 4)	It cannot be said that the Project's cost has "almost doubled" from the Salmo Substation Upgrade project, as the two projects are discrete projects, and the Salmo project is not an alternative to this Project. The cost between projects can vary based on a number of factors, including a project's scope and other project-specific considerations such as differing environmental, archaeological or consultation requirements. For example, the Salmo Substation Upgrade and Beaver Park Station

Lenardon Final Argument	FBC Reply
	Upgrade projects do not have the same cost despite being undertaken only a year apart. (Exhibit B-8, Lenardon IR1 8)
"I believe HER rebuild is warranted. The idea of offloading Atco is paramount and feasible, and though not in alignment with Fortis' plan, is a noteworthy alternative to decommissioning two working substations." (Lenardon Final Argument, pp. 4-5)	In addition to the reliability acknowledged by Lenardon, relocating the existing FRU substation to the HER substation would have a significantly higher incremental capital cost than a new substation at the Grieve Location (approximately $8 to 9 million), due to the need for extensive line upgrades. This is based on a high-level Class 5 estimate, and therefore, the incremental cost could be even higher. (Exhibit B-3, BCUC IR1 5.6)
"The Project is not a planned upgrade, nor in the same category as an upgrade. I assume that a planned upgrade would be much cheaper." (Lenardon Final Argument, p. 8)	The Project is a planned upgrade as FBC is planning and constructing the Project before the equipment actually fails.
"Could it be possible that the "advanced accelerated aging" that caused FRU switchgear deterioration to the 31.25% condition by 2017 as indicated by Metsco, was due to lack of routine maintenance and nothing to do with age?" (Lenardon Final Argument, p. 9)	Nothing in the maintenance activities/upgrades at the FRU substation support a lack of maintenance being the driver for the condition of the FRU switchgear. (Exhibit B-5, CEC IR1 2.1)
"Is 'condition' a ruse to disguise and avert focus from residential rate payers footing the bill for a significantly larger substation designed to service "commercial/industrial enterprises?" (Lenardon Final Argument, p. 11)	FBC has filed evidence supporting its conclusions of the condition of the equipment at the FRU and HER substations. The size of the transformers is prudent and cost-effective and needed to accommodate future load growth. FBC has an obligation to serve all customers, whether residential, commercial or industrial. See Part Three, Section B above.
"Expansion of Infrastructure capacity results in increased electricity demand, widening the demand/supply gap necessitating increased out of province imports and thus higher rates." (Lenardon Final Argument, p. 12)	There is no evidence that the New FRU Substation will be the driver of increased electricity demand in the area. Rather, load growth can be driven by a number of factors, such as economic drivers, fuel switching, new kinds of load (e.g., electric vehicles), or unknown potential new large loads. (Exhibit B-7, RCIA IR1 9.1) The link between load growth, the need for imports, and rates is complex, and beyond the scope of this proceeding.
"Increasing supply infrastructure to accommodate new large load commercial and industrial users places an unwarranted burden on residential ratepayers." (Lenardon Final Argument, p. 13)	The need for the Project is not driven by new loads, but rather, the condition of the equipment and age of infrastructure at both the FRU and HER substations, as well as the need to address the risk to the reliability of the electricity supply for Fruitvale and the surrounding area. (Exhibit B-1, Application, p. 20) The allocation of costs to residential, commercial and industrial customers through rates is based on cost causation and is overseen by the BCUC.
"No future load estimates were provided." (Lenardon Final Argument, p. 13)	FBC provided a forecast of future peak load in the response to BCUC IR1 3.1 (Exhibit B-3).