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October 9, 2020

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

Attention: Ms. Marija Tresoglavic, Acting Commission Secretary

Dear Ms. Tresoglavic:

Re: FortisBC Inc. (FBC or the Company)
Project No. 1599119
Annual Review for 2020 and 2021 Rates (Application)
Evidentiary Update to the Application

On August 19, 2020, FBC filed the Application referenced above. On October 1, 2020, FBC filed its responses to information requests (IRs) in the proceeding. In response to British Columbia Utilities Commission (BCUC) IR1 14.3, FBC stated that it identified an error in the financial analysis in Appendix B – Playmor Station Upgrade Business Case of the Application and that the Company would be filing this Evidentiary Update on or before October 12, 2020.

As explained in the response to BCUC IR1 14.3, the Playmor substation costs were incorrectly shown entering rate base on January 1, 2023 instead of January 1, 2022. FBC has accordingly updated the business case and the revenue requirements analysis provided in the financial schedules included in Appendices 2 and 3 to correct this error. The Company notes that this update does not have an impact on 2020 or 2021 rates.

In Appendix A to this Evidentiary Update, FBC provides the blacklined versions of the pages 1, 9, 10, 11, 12, 17, and 18 of the Playmor business case to assist parties in identifying the revisions made.

To assist parties in referencing the latest information, FBC has include in Appendix B to this Evidentiary Update a full clean version of the revised Playmor Station Upgrade Business Case along with its Appendices 1 through 3.

If further information is required, please contact the undersigned.

Sincerely,

FORTISBC INC.

Original signed:

Diane Roy

Attachments

cc (email only): Registered Parties

Appendix A

**FBC ANNUAL REVIEW FOR 2020 AND 2021 RATES
EVIDENTIARY UPDATE, DATED OCTOBER 9, 2020**

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1. PROJECT SUMMARY

The Playmor Station Upgrade project proposes to rebuild the Playmor (PLA) substation on an expanded station footprint and increase station capacity by installing two 63kV/13/25 kV transformers (the Project). The Project is necessary to meet load growth, and to continue to reliably supply electricity to the surrounding area, including several large commercial and industrial customers. The Project will also address aging infrastructure and equipment condition issues.

The estimated total cost of the Project is \$10.331 million in as-spent dollars, including AFUDC and cost of removal. FBC plans to initiate the detailed design, procurement and construction for the Project early in the first quarter of 2021. The substation is scheduled to be in service by December 2021, with Project completion and close-out by February 2022.

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1.1 BACKGROUND

The PLA substation is located on Sentinel Rd in South Slokan, BC between Castlegar and Nelson. The existing station consists of a single 63/13 kV 16 MVA transformer (PLA T1) and is supplied by FBC's 63 kV transmission line 25 Line (25L). The station also provides a 13 kV distribution supply source to the area through three distribution feeders (PLA1, PLA2 and PLA3). The PLA station presently serves 2,484 residential customers, 270 commercial customers, and 1 industrial customer. The following figures show the area served by PLA and the PLA substation property location.

3. PROJECT ALTERNATIVES

FBC considered two alternatives to increase the capacity of PLA, which are a two-transformer solution and a one-transformer solution. These alternatives are described and evaluated below.

3.1 ALTERNATIVE A: INSTALL TWO TRANSFORMERS

Alternative A includes replacing PLA T1 with two new dual voltage 63/25/13 kV 20 MVA transformers. The station will be entirely rebuilt with all new equipment that is consistent with FBC equipment standards and will resolve other equipment age and condition issues. To accommodate the upgrade, the station footprint will be expanded.

The upgraded station will continue to have three feeders (PLA1, PLA2, and PLA3). A spare breaker will be installed for a future fourth feeder (PLA4). The conduit for PLA4 will be installed and capped off outside the station fence. Any new conductor required for the reconfiguration of the overhead feeders will use 477 ACSR. To provide offload capability, bypass switches will be required between PLA1 and PLA2, and PLA3 and PLA4. Finally, the transmission switches PLA 25-1 and 25-2 will be salvaged and held as spares.

Additional property has been acquired to the north and adjacent to the existing site. The expanded site allows for construction of the upgrade while maintaining service to customers with the existing substation in-service. Some reconfiguration of the transmission line (25L) and distribution feeders (PLA1, PLA2, and PLA3) in the immediate vicinity of the substation is also required to allow for construction of the new station.

The Class 3 capital cost estimate for this alternative is \$10.128 million (\$2020), including AFUDC and removal costs. A single-line diagram is included as Appendix 1.

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3.1.1 Advantages

The advantages of Alternative A are:

- Installed capacity summer limit 40 MVA and winter limit 47.5 MVA;
- Ability to supply large load requests in the area and native load growth;
- Reliability concerns addressed with redundant transformer. The remaining transformer can carry peak station load during a PLA transformer outage with no customers outages required;
- Mobile transformer no longer required for PLA transformer outage given redundant transformer; and
- Aging infrastructure and obsolete equipment replaced. Non arc-flash rated switchgear and asbestos exposure risks removed.

3.1.2 Disadvantages

The disadvantages of Alternative A are:

- Station needs to be expanded to accommodate the second transformer and allow for construction of the upgrade while maintaining service to customers with the existing station in-service; and
- Incremental O&M costs of approximately \$15,000 per year. The increase in O&M costs are primarily associated with the installation of a second transformer and three high voltage circuit breakers.

3.2 ALTERNATIVE B: INSTALL SINGLE TRANSFORMER

Alternative B includes replacing PLA T1 with a single new dual voltage 63/25/13 kV 40 MVA transformer. The station will be entirely rebuilt with all new equipment that is consistent with FBC equipment standards and will resolve other equipment age and condition issues. A mobile transformer connection is required. Space has been provisioned for the installation of second transformer in the future if required. To accommodate the upgrade, the station footprint will be expanded. All other aspects of the project will be similar to Alternative A.

The Class 4 capital cost estimate for this alternative is \$8.976 million (2020\$), including AFUDC and removal costs.

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3.2.1 Advantages

The advantages of Alternative B are:

- Installed capacity summer limit 40 MVA and winter limit 47.5 MVA;
- Ability to supply large load requests in the area and native load growth;
- Incremental O&M costs of approximately \$7 thousand per year, which is slightly lower than for Alternative A. The increase in O&M costs are associated with the installation of two high voltage circuit breakers; and
- Aging infrastructure and obsolete equipment replaced. Non arc-flash rated switchgear and asbestos exposure risks removed.

3.2.2 Disadvantages

The disadvantages of Alternative B are:

- No transformer redundancy at PLA. Reliability concerns persist in the event of a PLA transformer outage;

- During a PLA transformer outage, restoring customers will require the use of the mobile transformer. Availability of the mobile transformer will be dependent on BC road conditions, BC road restrictions (March to June), and if it is already designated to another station;
- The largest mobile transformer (M18) that is available in the Kootenays is 18 MVA. As per the 20-year load forecast, the M18 can only carry the winter peak station load until 2036;
- Beyond 2036, one of the following solutions will be required, as the M18 can no longer carry the winter peak station load. The customer restoration times associated with each option for a transformer outage are also provided below;
 - a) Purchase a new mobile transformer rated 32 MVA for the Kootenay region (approximately >\$2 million). Customer restoration times may be upwards of 8 hours. B.C road restrictions prevent the transportation of a larger unit (>32 MVA) as a mobile transformer;
 - b) Procure and install a second 63/25/13 kV 40 MVA transformer at PLA. Project will require costs for installing a second transformer and station equipment (approximately \$1.2 million);
 - c) FBC would need to rely on the larger mobile transformer unit (M32, 32 MVA), which resides in the Okanagan region. Customer restoration times may be extended to a minimum of 24 hours due to transport and availability of the mobile transformer from the Okanagan region. Restoration using the M32 may not be an option due to BC road restrictions (March to June) and BC road conditions. Okanagan region will be at a higher risk while M32 resides in the Kootenay region. Maintenance and transportation costs for M32 will increase due to additional wear and tear on the unit;
- Station needs be expanded to allow for construction of the upgrade while maintaining service to customers with the existing station in-service and to provide space for a potential future second transformer (land has already been acquired); and
- Excluded from the \$3,976 million capital cost is the cost of purchasing a new mobile transformer in year 2036 (assumed Option A selected). FBC assumes the cost of that addition to be \$2 million subject to inflation. These 2036 costs have been included in the 40-year financial analysis of this project for comparability to Alternatives A.

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3.3 ALTERNATIVE C: DO NOTHING

The Do Nothing Option would involve no modifications to the substation equipment.

3.3.1 Advantages

The advantages of Alternative C are:

- No immediate costs.

3.3.2 Disadvantages

The disadvantages of Alternative C are:

- Would not address station capacity issues. Inability to sustain native load growth or new load requests in the near future;
- Would not address reliability issues;
- Would not address aging infrastructure or equipment condition issues. Safety concerns associated with the switchgear (arc-flash) and asbestos would persist;
- Urgent repair expenditures at this site can be expected to rise. Major component failures would require long lead times;
- Potential to negatively affect community relations and local economy with minimal ability to connect to new load requests;
- Failure of the switchgear would result in the inability to restore customers until replacement parts or switchgear can be sourced; and
- Failure of PLA T1 would require restoration through M18, if available. Additional costs for M18 monitoring and maintenance to incur due to extended period in service.

3.4 OPTION SUMMARY AND RECOMMENDATION

Table 1 below summarizes the analysis of the three options.

Revenue requirements analyses for Alternatives A and B are included as Appendices 2 and 3, respectively.

Table 1: PLA Station Upgrade Project Alternatives Comparison

Criteria	Alternative A – Two Transformers	Alternative B – Single transformer	Alternative C – Do Nothing
Capital Cost (\$2020)	\$10,128 million	\$ 8,976 million	\$ -
Incremental O&M (\$2020)	\$ 0.015 million	\$ 0.007 million	\$ -
Present Value Incremental Revenue Requirement	\$ 11,621 million	\$ 11,468 million	N/A
Levelized Rate Impact	0.19%	0.18%	N/A

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- 1 • Unforeseen environmental or archaeological discoveries during the construction phase.
2 The risk of such occurrences is considered low, based on FBC's previous construction
3 experience at PLA substation. In 2019, a preliminary site investigation revealed no
4 indicators of previous contamination or other obvious environmental concerns and
5 therefore concluded that further intrusive investigation is not warranted. All capital projects
6 include an environmental management plan, which provides guidance on management of
7 environmental risks during the construction phase;
- 8 • Availability of labour and materials may be at risk due to Covid-19 and the current state of
9 the economy. FBC has partially mitigated the risk of any financial or schedule pressures
10 by developing preliminary equipment specifications and obtaining quotes from vendors.
11 Any residual risk will be managed through project planning and contractual performance
12 guarantees; and
- 13 • Outages to be coordinated with system and operational planning to have minimal system
14 impact.

15 4.2 PROJECT COST ESTIMATE

16 The PLA Station Upgrade project has a capital cost of \$10.128 million in 2020\$ (including \$0.289
17 million of removal costs). The cost estimate for the Project has been developed to a Class 3
18 degree of accuracy as defined in the AACE International Recommended Practice No. 10S-90.

19 Table 2 below summarizes the total estimate project cost summary.

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Table 2: Total estimate project cost summary (\$ millions)

Project Component	Total Project Cost	As Spent \$
Station Work		
Line Work	0.004	0.004
Engineering	0.667	0.681
Material	3.953	4.034
Civil & Site	1.353	1.380
Buildings	0.146	0.149
Structure & Buswork	0.212	0.216
Station Equipment & Apparatus	0.417	0.425
Communication & SCADA	0.019	0.020
Protection, Control & Metering	0.135	0.137
Commissioning	0.166	0.169
Project Management	0.648	0.661
Contingency	0.951	0.971
SUBTOTAL	\$ 8.672	\$ 8.848
T&D Lines Work		
Engineering	0.132	0.135
Material	0.180	0.183
Construction	0.377	0.385
Project Management	0.036	0.037
Contingency	0.073	0.075
SUBTOTAL	\$ 0.799	\$ 0.815
Land & AFUDC		
Land	0.076	0.076
AFUDC	0.291	0.291
SUBTOTAL	\$ 0.367	\$ 0.367
TOTAL Construction Cost	\$ 9.838	\$ 10.030
Removal Costs		
Stations Cost of Removal	0.251	0.260
T&D Lines Cost of Removal	0.038	0.039
AFUDC	0.002	0.002
Net Removal Cost	\$ 0.290	\$ 0.301
Total Project Cost	\$ 10.128	\$ 10.331

Project Component

Station Work (incl. 15% contingency)
T&D Line Work (incl. 10% contingency)
Land
AFUDC

Construction Cost

Station Work COR
T&D Line Work COR
AFUDC

Net Removal Cost

Total Project Cost

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4.3 PROJECT SCHEDULE

The project is expected to be complete by February 2022, assuming approval is provided for the preferred Alternative A by December 2020, engineering and design for the IFC package begins in September 2020, and construction begins in March 2021.

The preliminary high-level project schedule is provided in Figure 6. Under the proposed schedule, final commissioning and construction of the new station would be complete by December 2021,

Appendix B

**FBC ANNUAL REVIEW FOR 2020 AND 2021 RATES
EVIDENTIARY UPDATE, DATED OCTOBER 9, 2020**

PLAYMOR STATION UPDATE BUSINESS CASE



FORTISBC INC.

Playmor Station Upgrade

Business Case

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1. PROJECT SUMMARY

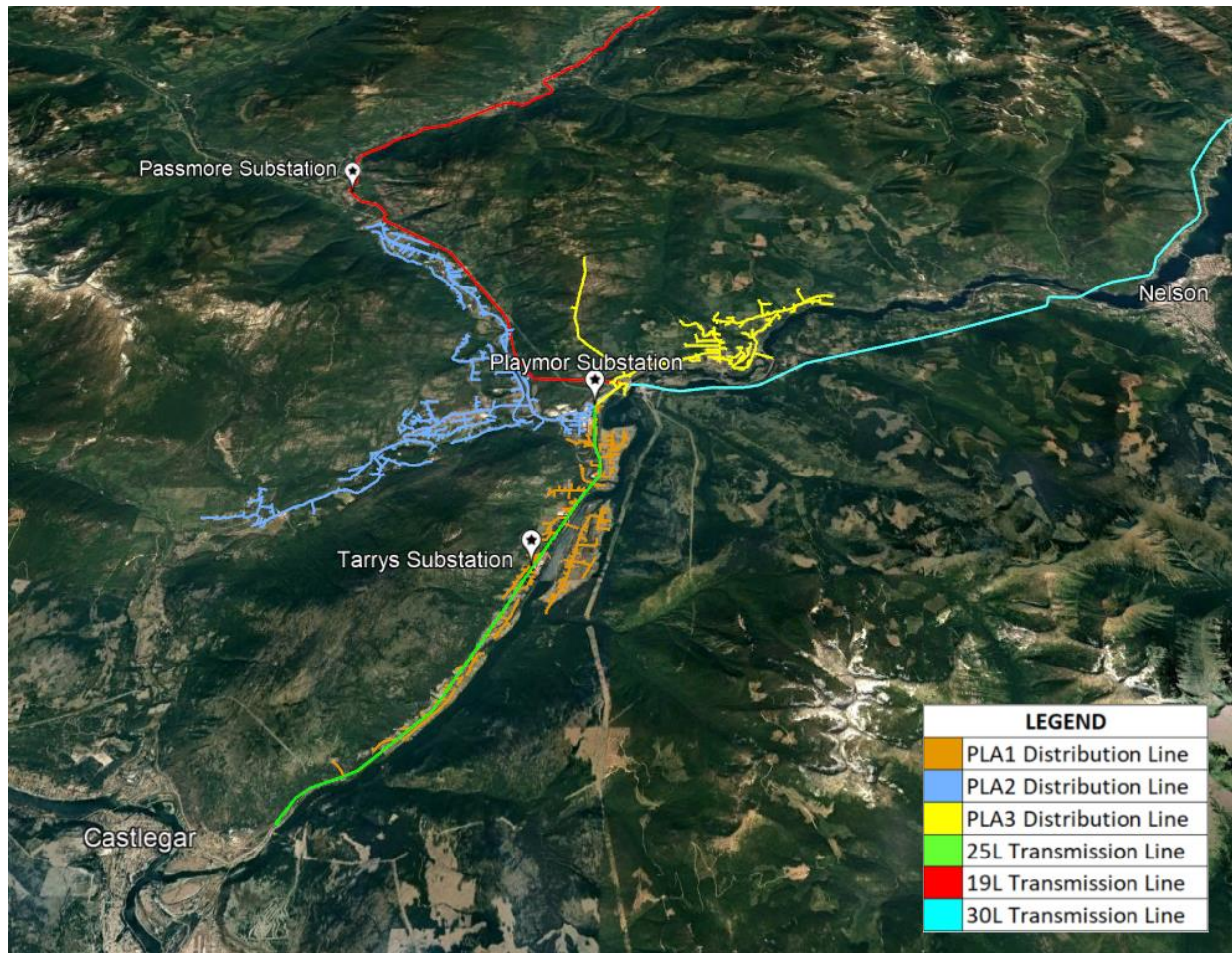
The Playmor Station Upgrade project proposes to rebuild the Playmor (PLA) substation on an expanded station footprint and increase station capacity by installing two 63kV/13/25 kV transformers (the Project). The Project is necessary to meet load growth, and to continue to reliably supply electricity to the surrounding area, including several large commercial and industrial customers. The Project will also address aging infrastructure and equipment condition issues.

The estimated total cost of the Project is \$10.331 million in as-spent dollars, including AFUDC and cost of removal. FBC plans to initiate the detailed design, procurement and construction for the Project early in the first quarter of 2021. The substation is scheduled to be in service by December 2021, with Project completion and close-out by February 2022.

1.1 BACKGROUND

The PLA substation is located on Sentinel Rd in South Slocan, BC between Castlegar and Nelson. The existing station consists of a single 63/13 kV 16 MVA transformer (PLA T1) and is supplied by FBC's 63 kV transmission line 25 Line (25L). The station also provides a 13 kV distribution supply source to the area through three distribution feeders (PLA1, PLA2 and PLA3). The PLA station presently serves 2,484 residential customers, 270 commercial customers, and 1 industrial customer. The following figures show the area served by PLA and the PLA substation property location.

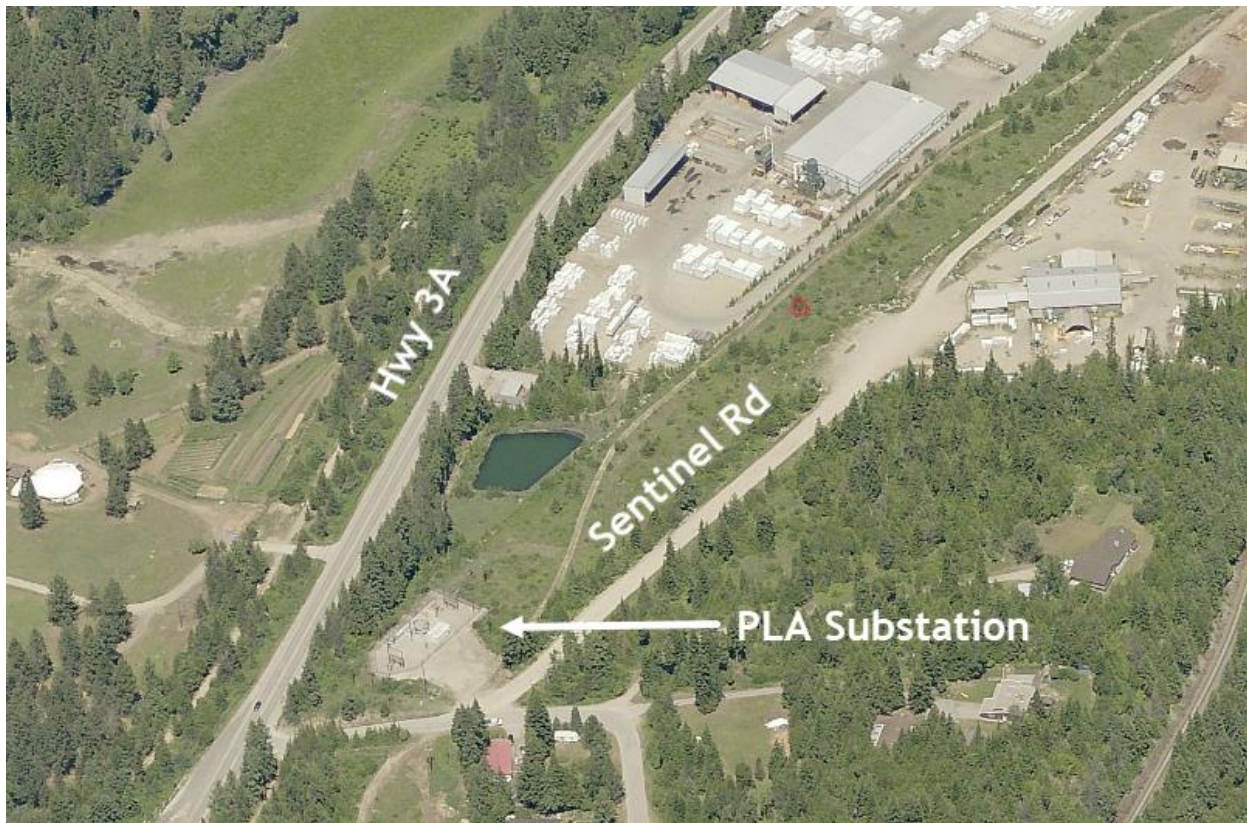
1 **Figure 1: Playmor Substation, Distribution Supply, Transmission Supply, and Surrounding Area**



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Figure 2: PLA Substation Existing Location



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2. PROJECT NEED

There are three primary drivers for the PLA Station Upgrade Project.

1. Station capacity constraints are preventing growth in the PLA area for new and existing customers;
2. FBC customers in the PLA area are potentially exposed to lengthy outages, due to the limited ability of the neighbouring substations to support the PLA load in the event of an outage to PLA T1; and
3. Station equipment is aging, poor health, and/or obsolete, presenting safety and reliability risks in the event of a failure.

An upgrade to the PLA substation, encompassing the replacement of the existing 16 MVA transformer with either two new 20 MVA 63/25/13 kV transformers (Alternative A) or a single 40 MVA 63/25/13 kV transformer (Alternative B), is required to address these issues, as discussed below.

2.1 GROWTH CAPACITY

PLA area load experiences its peak load in the winter season. The existing winter limit for PLA T1 in normal operation is 16.6 MVA as a result of equipment condition issues with the load tap changer (LTC) as noted in section 2.3.

Due to capacity constraints at the station, two potential new large load requests could not be connected at the requested load levels. To accommodate native load growth, load increases for existing commercial/industrial customers and the recent large capacity requests, it is necessary to increase the station capacity.

For each of the Alternatives, Figures 3 and 4 below show the actual/forecast winter peak PLA area load and the actual/forecast winter peak PLA area load including the potential new loads that could not be recently connected at the requested load levels.

The actual/forecast winter peak load will exceed the existing winter limit in normal operation in year 2028 assuming native load growth. However, if the potential new loads are also considered, the limit would be exceeded immediately. The winter rating in normal operation for the upgraded station would be 47.5 MVA (each 20 MVA transformer has a normal winter rating of 23.75 MVA as confirmed by the manufacturer), providing incremental capacity of 30.9 MVA compared to the current winter limit of 16.6 MVA.

1 **Figure 3: PLA Area Winter Peak Load and Limits Under Alternative A (2x20 MVA)**



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Figure 4: PLA Area Winter Peak Load and Limits Under Alternative B (1x40 MVA)



2.2 RELIABILITY

As shown in Figure 1 above, there are two neighbouring stations near PLA: Passmore (PAS) substation and Tarrys (TAR) substation. PAS and TAR both have limited station capacity, limiting FBC's ability to offload residential and commercial customers from PLA to these substations. Consequently, only 13 percent of the total PLA customers could be supplied during a PLA T1 transformer outage under peak load conditions. During a PLA T1 outage, all customers supplied by distribution feeders PLA1 and PLA3, and 866 customers supplied by PLA2 would be without service.

Figures 3 and 4 above show the existing and post-upgrade PLA station winter limits in the event of a single PLA transformer outage under Alternatives A and B.

Under Alternative A, the remaining unit can carry the entire station load during a single PLA transformer outage for the next twenty years, at winter peak loads below 23.75 MVA. No customer outages would be required, improving reliability for PLA area customers.

Under Alternative B, there would continue to be no ability at PLA station to supply load during a transformer outage without support from a mobile transformer or the installation of a second transformer.

The largest mobile transformer (M18) that may be available for substations in the Kootenay region is rated 18 MVA. A larger 32 MVA mobile transformer (M32) is located in the Okanagan region but transporting this unit can be challenging given its size, winter road conditions, and potential BC road restrictions (depending on the timing of an outage). The use of the M32 would also be subject to its availability at the time of a transformer outage event. The 20-year load forecast indicates that in 2036, PLA station winter peak load will exceed 18 MVA. Relying on the larger 32 MVA unit could result in extended outages to customers (minimum 24 hours) and would leave the Okanagan region at risk while the mobile transformer was relocated to the Kootenays.

Figures 3 and 4 illustrate that while there is a significant amount of capacity available in normal operation under both alternatives, by installing two 20 MVA transformers at PLA, a single transformer could carry the entire station load during a PLA transformer outage for the next 20 years.

2.3 AGING INFRASTRUCTURE AND EQUIPMENT CONDITION

PLA T1 was manufactured in 1966 and is now 54 years old. Recent Dissolved Gas Analysis (DGA) results indicate a fast paper insulation aging process. Additionally, the LTC for PLA T1 is experiencing abnormal arcing. The LTC is obsolete and repair is not possible because of the unavailability of parts. Replacing the LTC would not be cost-effective, compared to replacement of the transformer itself.

Other substation components are also in need of replacement. The PLA metal-clad switchgear is obsolete and there are no spare breakers. The arc shoots are also suspected to contain asbestos. The arc flash hazard at PLA is on the higher side (Category 3 with 13 cal/cm² incident energy at the switchgear). Failure of the switchgear would result in a substation outage with no ability to restore service until replacement parts or switchgear could be sourced. The switchgear needs to be replaced by 2027, even without the substation upgrade.

Furthermore, there is a deficiency in the station DC system that continues to trigger ground fault alarms. Properly addressing this issue requires replacing the station circuitry and the obsolete DC panel.

As a result of these equipment deficiencies, it is not feasible to replace these individual components, and it is therefore necessary to rebuild the substation.

2.4 SUMMARY OF PROJECT OBJECTIVES

To summarize, the objectives of the PLA Station Upgrade project are as follows:

- Increase station capacity to support growth in the area;
- Address reliability concerns during a PLA transformer outage to minimize potential customer outages; and
- Replace aging infrastructure and obsolete equipment consistent with FBC equipment standards to address reliability and safety concerns.

3. PROJECT ALTERNATIVES

FBC considered two alternatives to increase the capacity of PLA, which are a two-transformer solution and a one-transformer solution. These alternatives are described and evaluated below.

3.1 *ALTERNATIVE A: INSTALL TWO TRANSFORMERS*

Alternative A includes replacing PLA T1 with two new dual voltage 63/25/13 kV 20 MVA transformers. The station will be entirely rebuilt with all new equipment that is consistent with FBC equipment standards and will resolve other equipment age and condition issues. To accommodate the upgrade, the station footprint will be expanded.

The upgraded station will continue to have three feeders (PLA1, PLA2, and PLA3). A spare breaker will be installed for a future fourth feeder (PLA4). The conduit for PLA4 will be installed and capped off outside the station fence. Any new conductor required for the reconfiguration of the overhead feeders will use 477 ACSR. To provide offload capability, bypass switches will be required between PLA1 and PLA2, and PLA3 and PLA4. Finally, the transmission switches PLA 25-1 and 25-2 will be salvaged and held as spares.

Additional property has been acquired to the north and adjacent to the existing site. The expanded site allows for construction of the upgrade while maintaining service to customers with the existing substation in-service. Some reconfiguration of the transmission line (25L) and distribution feeders (PLA1, PLA2, and PLA3) in the immediate vicinity of the substation is also be required to allow for construction of the new station.

The Class 3 capital cost estimate for this alternative is \$10.128 million (\$2020), including AFUDC and removal costs. A single-line diagram is included as Appendix 1.

3.1.1 Advantages

The advantages of Alternative A are:

- Installed capacity summer limit 40 MVA and winter limit 47.5 MVA;
- Ability to supply large load requests in the area and native load growth;
- Reliability concerns addressed with redundant transformer. The remaining transformer can carry peak station load during a PLA transformer outage with no customers outages required;
- Mobile transformer no longer required for PLA transformer outage given redundant transformer; and
- Aging infrastructure and obsolete equipment replaced. Non arc-flash rated switchgear and asbestos exposure risks removed.

3.1.2 Disadvantages

The disadvantages of Alternative A are:

- Station needs to be expanded to accommodate the second transformer and allow for construction of the upgrade while maintaining service to customers with the existing station in-service; and
- Incremental O&M costs of approximately \$15,000 per year. The increase in O&M costs are primarily associated with the installation of a second transformer and three high voltage circuit breakers.

3.2 ALTERNATIVE B: INSTALL SINGLE TRANSFORMER

Alternative B includes replacing PLA T1 with a single new dual voltage 63/25/13 kV 40 MVA transformer. The station will be entirely rebuilt with all new equipment that is consistent with FBC equipment standards and will resolve other equipment age and condition issues. A mobile transformer connection is required. Space has been provisioned for the installation of second transformer in the future if required. To accommodate the upgrade, the station footprint will be expanded. All other aspects of the project will be similar to Alternative A.

The Class 4 capital cost estimate for this alternative is \$8.976 million (2020\$), including AFUDC and removal costs.

3.2.1 Advantages

The advantages of Alternative B are:

- Installed capacity summer limit 40 MVA and winter limit 47.5 MVA;
- Ability to supply large load requests in the area and native load growth;
- Incremental O&M costs of approximately \$7 thousand per year, which is slightly lower than for Alternative A. The increase in O&M costs are associated with the installation of two high voltage circuit breakers; and
- Aging infrastructure and obsolete equipment replaced. Non arc-flash rated switchgear and asbestos exposure risks removed.

3.2.2 Disadvantages

The disadvantages of Alternative B are:

- No transformer redundancy at PLA. Reliability concerns persist in the event of a PLA transformer outage;

- 1 • During a PLA transformer outage, restoring customers will require the use of the mobile
2 transformer. Availability of the mobile transformer will be dependent on BC road
3 conditions, BC road restrictions (March to June), and if it is already designated to another
4 station;
- 5 • The largest mobile transformer (M18) that is available in the Kootenays is 18 MVA. As per
6 the 20-year load forecast, the M18 can only carry the winter peak station load until 2036;
- 7 • Beyond 2036, one of the following solutions will be required, as the M18 can no longer
8 carry the winter peak station load. The customer restoration times associated with each
9 option for a transformer outage are also provided below;
 - 10 a) Purchase a new mobile transformer rated 32 MVA for the Kootenay region
11 (approximately >\$2 million). Customer restoration times may be upwards of 8
12 hours. B.C road restrictions prevent the transportation of a larger unit (>32 MVA)
13 as a mobile transformer;
 - 14 b) Procure and install a second 63/25/13 kV 40 MVA transformer at PLA. Project will
15 require costs for installing a second transformer and station equipment
16 (approximately \$1.2 million);
 - 17 c) FBC would need to rely on the larger mobile transformer unit (M32, 32 MVA), which
18 resides in the Okanagan region. Customer restoration times may be extended to
19 a minimum of 24 hours due to transport and availability of the mobile transformer
20 from the Okanagan region. Restoration using the M32 may not be an option due
21 to BC road restrictions (March to June) and BC road conditions. Okanagan region
22 will be at a higher risk while M32 resides in the Kootenay region. Maintenance and
23 transportation costs for M32 will increase due to additional wear and tear on the
24 unit;
- 25 • Station needs be expanded to allow for construction of the upgrade while maintaining
26 service to customers with the existing station in-service and to provide space for a potential
27 future second transformer (land has already been acquired); and
- 28 • Excluded from the \$8.976 million capital cost is the cost of purchasing a new mobile
29 transformer in year 2036 (assumed Option A selected). FBC assumes the cost of that
30 addition to be \$2 million subject to inflation. These 2036 costs have been included in the
31 40-year financial analysis of this project for comparability to Alternatives A.

32 **3.3 ALTERNATIVE C: DO NOTHING**

33 The Do Nothing Option would involve no modifications to the substation equipment.

3.3.1 Advantages

The advantages of Alternative C are:

- No immediate costs.

3.3.2 Disadvantages

The disadvantages of Alternative C are:

- Would not address station capacity issues. Inability to sustain native load growth or new load requests in the near future;
- Would not address reliability issues;
- Would not address aging infrastructure or equipment condition issues. Safety concerns associated with the switchgear (arc-flash) and asbestos would persist;
- Urgent repair expenditures at this site can be expected to rise. Major component failures would require long lead times;
- Potential to negatively affect community relations and local economy with minimal ability to connect to new load requests;
- Failure of the switchgear would result in the inability to restore customers until replacement parts or switchgear can be sourced; and
- Failure of PLA T1 would require restoration through M18, if available. Additional costs for M18 monitoring and maintenance to incur due to extended period in service.

3.4 OPTION SUMMARY AND RECOMMENDATION

Table 1 below summarizes the analysis of the three options.

Revenue requirements analyses for Alternatives A and B are included as Appendices 2 and 3, respectively.

Table 1: PLA Station Upgrade Project Alternatives Comparison

Criteria	Alternative A – Two Transformers	Alternative B – Single transformer	Alternative C – Do Nothing
Capital Cost (\$2020)	\$10.128 million	\$ 8.976 million	\$ -
Incremental O&M (\$2020)	\$ 0.015 million	\$ 0.007 million	\$ -
Present Value Incremental Revenue Requirement	\$ 11.621 million	\$ 11.468 million	N/A
Levelized Rate Impact	0.19%	0.18%	N/A

Criteria	Alternative A – Two Transformers	Alternative B – Single transformer	Alternative C – Do Nothing
Addresses station capacity constraints	Yes	Yes	No
Addresses reliability issues	Yes	No	No
Addresses aging infrastructure and equipment condition issues	Yes	Yes	No
Resolution Window	> 20 Years	14 years	1-2 years
Alternative Evaluation			
Ranking	1	2	3

1

2 Alternative A, installing two 20 MVA transformers, is the preferred option as it achieves all of the

3 Project criteria, and provides the longest term solution for the area (>20 years). By installing two

4 transformers at PLA, a single transformer could carry the entire forecast station load during a PLA

5 transformer outage for the next 20 years. With the ability to offload the entire station load to either

6 transformer, no customer outages would be required during a transformer outage under

7 Alternative A. Furthermore, although Alternative B has a lower capital cost initially, it would require

8 future capital expenditures after 2036 (not included in the table above) to ensure the winter peak

9 station load could be supplied during a PLA transformer outage. Finally, the rate impact to

10 customers is 0.01 percent higher for Alternative A as compared to Alternative B.

4. PROJECT DESCRIPTION

4.1 PROJECT SCOPE

The scope of the preferred Alternative A for the Playmor Station Upgrade project includes, but is not limited to, the following:

Station Work:

- Extend site for new station adjacent to existing site, built to current FBC standards;
- Install new station fence;
- Install two (2) new 20MVA, 63kV/13/25 kV transformers with OLTC;
- Install transformer containment, FQ stone and access steps;
- Install two new 69kV A-frames for line connection;
- Install transformer drainage, external sump, dry pump, soak pit;
- Install two 69kV, 1200A transformer disconnects with MODs;
- Install two 69kV, 1200A line breakers and disconnects;
- Install 69kV, 1200A tie breaker and disconnects;
- Install three aluminium breaker platforms;
- Install new 69kV bus per SLD;
- Install two, 2 bay distribution structures;
- Install two, 25kV, 2000A Main breakers and load side disconnects;
- Install four, 25kV, 1200A feeder breakers and disconnects;
- Install two feeder bypass breakers 25kV, 1200A, vertical break bypass switches;
- Install 25kV, 2000A bus breaker and disconnects;
- Install four new feeder egress structures;
- Install 7.2kV/14.4k 3 phase VTs and fuses for each distribution structure;
- Install 7.2kV/14.4k, 25kV station service transformer and fuse for each distribution structure;
- Install new station AC/DC station service;

- 1 • Install temporary distribution feeds during construction (under Transmission and
- 2 Distribution work);
- 3 • Install new Control building and cable pull pit;
- 4 • Install new station duct & cable trench system;
- 5 • Install new standard Class II metering and protection;
- 6 • Install new SCADA infrastructure;
- 7 • Install new station ground grid & interconnect with existing;
- 8 • Install 4-40m ground wells;
- 9 • Install new station lighting;
- 10 • Complete station ground grid study;
- 11 • Complete station geotechnical study;
- 12 • Realign 69kV lines to new station A-frames (under Transmission and Distribution work);
- 13 • Demolish all remaining existing structures & equipment;
- 14 • Salvage existing major station equipment;
- 15 • Demolish existing buildings on site (switchgear), remove hazardous materials as required;
- 16 • Demolish existing transformer containment (Sorbweb);
- 17 • Salvage transformer; and
- 18 • Animal protection cover-up of substation equipment to reduce the number of animal-
- 19 caused outages.

20 **Transmission and Distribution Work:**

- 21 • Re-route 25L to accommodate new PLA substation site build;
- 22 • Re-route existing distribution feeders (PLA1, PLA2 and PLA3) to accommodate the new
- 23 PLA substation site build;
- 24 • Cutover/tie-in line(s) to the new PLA substation; and
- 25 • New conductor is assumed for all new spans 477 ASCR for transmission and distribution
- 26 underbuild with 3/0 ACSR Neutral, and 750 MCM for distribution underground cables with
- 27 4/0 Copper poly Neutral underground cable.

- 1 • Unforeseen environmental or archaeological discoveries during the construction phase.
2 The risk of such occurrences is considered low, based on FBC's previous construction
3 experience at PLA substation. In 2019, a preliminary site investigation revealed no
4 indicators of previous contamination or other obvious environmental concerns and
5 therefore concluded that further intrusive investigation is not warranted. All capital projects
6 include an environmental management plan, which provides guidance on management of
7 environmental risks during the construction phase;
- 8 • Availability of labour and materials may be at risk due to Covid-19 and the current state of
9 the economy. FBC has partially mitigated the risk of any financial or schedule pressures
10 by developing preliminary equipment specifications and obtaining quotes from vendors.
11 Any residual risk will be managed through project planning and contractual performance
12 guarantees; and
- 13 • Outages to be coordinated with system and operational planning to have minimal system
14 impact.

15 **4.2 PROJECT COST ESTIMATE**

16 The PLA Station Upgrade project has a capital cost of \$10.128 million in 2020\$ (including \$0.289
17 million of removal costs). The cost estimate for the Project has been developed to a Class 3
18 degree of accuracy as defined in the AACE International Recommended Practice No. 10S-90.

19 Table 2 below summarizes the total estimate project cost summary.

Table 2: Total estimate project cost summary (\$ millions)

Project Component		Total Project Cost	As Spent \$
Station Work			
	Line Work	0.004	0.004
	Engineering	0.667	0.681
	Material	3.953	4.034
	Civil & Site	1.353	1.380
	Buildings	0.146	0.149
	Structure & Buswork	0.212	0.216
	Station Equipment & Apparatus	0.417	0.425
	Communication & SCADA	0.019	0.020
	Protection, Control & Metering	0.135	0.137
	Commissioning	0.166	0.169
	Project Management	0.648	0.661
	Contingency	0.951	0.971
	SUBTOTAL	\$ 8.672	\$ 8.848
T&D Lines Work			
	Engineering	0.132	0.135
	Material	0.180	0.183
	Construction	0.377	0.385
	Project Management	0.036	0.037
	Contingency	0.073	0.075
	SUBTOTAL	\$ 0.799	\$ 0.815
Land & AFUDC			
	Land	0.076	0.076
	AFUDC	0.291	0.291
	SUBTOTAL	\$ 0.367	\$ 0.367
TOTAL Construction Cost		\$ 9.838	\$ 10.030
Removal Costs			
	Stations Cost of Removal	0.251	0.260
	T&D Lines Cost of Removal	0.038	0.039
	AFUDC	0.002	0.002
Net Removal Cost		\$ 0.290	\$ 0.301
Total Project Cost			
		\$ 10.128	\$ 10.331

4.3 PROJECT SCHEDULE

The project is expected to be complete by February 2022, assuming approval is provided for the preferred Alternative A by December 2020, engineering and design for the IFC package begins in September 2020, and construction begins in March 2021.

The preliminary high-level project schedule is provided in Figure 6. Under the proposed schedule, final commissioning and construction of the new station would be complete by December 2021,

and the station, transmission and distribution salvage would take place in January and February 2022.

Figure 6: Preliminary high-level project schedule

Task Name	Duration	Start	Finish
PLA Station Rebuild			
Stations			
Major material procurement	40 days	Mon 12/7/20	Fri 1/29/21
Engineering	109 days	Tue 9/1/20	Fri 1/29/21
Engineering IFC package	6 days	Fri 2/5/21	Fri 2/12/21
RFP tender process	30 days	Mon 2/15/21	Fri 3/26/21
Civil construction	70 days	Mon 4/5/21	Fri 7/9/21
Physical construction	50 days	Mon 6/21/21	Fri 8/27/21
Electrical construction	60 days	Mon 8/9/21	Fri 10/29/21
Transformer delivery	5 days	Mon 8/16/21	Fri 8/20/21
Commissioning	30 days	Mon 11/1/21	Fri 12/10/21
Energization	5 days	Mon 12/13/21	Fri 12/17/21
Demo existing station/equipment	25 days	Mon 1/10/22	Fri 2/11/22
Transmission/Distribution			
Engineering	60 days	Mon 9/7/20	Fri 11/27/20
Material procurement	40 days	Mon 1/4/21	Fri 2/26/21
Construction	20 days	Mon 3/8/21	Fri 4/2/21
Station H/V connections	5 days	Mon 10/11/21	Fri 10/15/21
Feeder demo	10 days	Mon 1/10/22	Fri 1/21/22

5. PUBLIC AND FIRST NATIONS CONSULTATION

Three residential customers are located within 150 meters from the substation, with the closest residential customer approximately 75 meters from the existing station. As shown in Figure 2, residential customers have limited visibility of the station due to tree coverage. There is also limited visibility of the station from Highway 3A since it is located on a hill and behind a tree line. The new station will be built adjacent to the existing station and visibility of the rebuilt substation will be similar.

Letters were sent out to residents within 150 meters of the project in August of 2020 notifying them of the project and footprint expansion.

Finally, the transmission and distribution work will be completed in a staged approach to relocate existing facilities to accommodate the new substation and minimize outages to customers as best as possible, in particular to the distribution services where there are limited backup capabilities.

The PLA station upgrade does not trigger a requirement for First Nations consultation, as FBC believes that Aboriginal Rights and Title will not be affected by this Project. The proposed substation site is not near any known archaeological site and is not in a zone of high archeological potential.

6. CONCLUSION

The Company respectfully submits that the PLA Station Upgrade project is necessary to support growth and improve reliability of service for new and existing customers in the PLA area. Based on the evaluation of all feasible alternatives, Alternative A provides the best solution that would allow the Company to meet all Project objectives and requirements. The substation is scheduled to be in service by December 2021, with Project completion and close-out by February 2022.

Appendix 1

ALTERNATIVE A SINGLE LINE DIAGRAM

Appendix 2

ALTERNATIVE A REVENUE REQUIREMENTS ANALYSIS

EVIDENTIARY UPDATE, DATED OCTOBER 9, 2020

FortisBC Inc.
Playmor Station Upgrade - Alternative A
August 2020
(S000s), unless otherwise stated

Particulars	Reference	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2045	2050	2055	2060	2064
Cost of Service																											
Operation & Maintenance - Net of Capitalized Overhead	Line 23	-	-	-	13	13	13	14	14	14	15	15	15	16	16	16	16	16	17	17	17	18	20	22	24	26	29
Property Taxes	Line 28	-	-	-	70	70	70	70	70	71	71	71	71	71	71	72	72	72	72	72	72	73	74	75	77	85	92
Depreciation Expense	Line 54	-	-	247	262	262	262	262	262	262	262	262	262	262	262	262	263	263	263	263	263	263	263	264	205	122	10
Income Taxes	Line 96	-	(416)	(136)	6	20	33	45	56	65	74	81	87	93	98	103	106	109	112	114	116	117	118	113	83	47	2
Earned Return	Line 79	-	-	643	654	637	620	603	586	569	552	535	518	501	484	467	450	433	416	399	382	365	280	195	119	66	38
Incremental Annual Revenue Requirement	Sum of Line 1 to Line 6	-	(416)	754	1,004	1,002	999	994	988	981	973	964	954	943	932	919	907	893	880	865	850	835	754	667	508	345	171
PV of Revenue Requirement (After-tax WACC of 5.77%)	Line 7 / (1 + Line 81)^Yr	-	(372)	637	802	757	713	671	631	592	555	520	486	455	425	396	369	344	320	298	277	257	175	117	67	35	14
Total PV of Annual Revenue Requirement	Sum of Line 8	11,621																									
2021 Approved Revenue Requirement (2021 Advanced Materials)		393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512
% change in Rates	Line 7 / Line 11	0.00%	-0.11%	0.19%	0.26%	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%	0.24%	0.24%	0.24%	0.24%	0.23%	0.23%	0.23%	0.22%	0.22%	0.22%	0.21%	0.19%	0.17%	0.13%	0.09%	0.04%
PV of Annual 2021 Approved Revenue Requirement	Line 11 / (1 + Line 81)^Yr	372,040	351,740	332,548	314,403	297,248	281,029	265,695	251,197	237,491	224,532	212,281	200,698	189,747	179,394	169,605	160,351	151,601	143,329	135,509	128,115	121,124	91,494	69,112	52,205	39,434	31,507
Total PV of 2021 Approved Revenue Requirement	Sum of Line 14	6,272,492																									
Levelized % Increase (45 yrs) on 2021 Rate	Line 9 / Line 15	0.19%																									
Operation & Maintenance																											
Labour Costs		-	-	-	15	15	16	16	16	17	17	17	18	18	18	19	19	19	20	20	21	21	23	26	28	31	34
Non-Labour Costs		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Gross O&M Expenses	Line 19 + Line 20	-	-	-	15	15	16	16	16	17	17	17	18	18	18	19	19	19	20	20	21	21	23	26	28	31	34
Less: Capitalized Overhead	Overhead Rate of 15%	-	-	-	(2)	(2)	(2)	(2)	(2)	(2)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(4)	(4)	(5)	(5)	(5)
Net O&M Expenses	Line 21 + Line 22	-	-	-	13	13	13	14	14	14	14	15	15	15	16	16	16	16	17	17	17	18	20	22	24	26	29
Property Taxes																											
General, School and Other		-	-	-	70	70	70	70	70	71	71	71	71	71	71	72	72	72	72	72	72	73	74	75	77	85	92
1% in Lieu of General Municipal Tax ¹	1% of Line 7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Property Taxes	Line 26 + Line 27	-	-	-	70	70	70	70	70	71	71	71	71	71	71	72	72	72	72	72	72	73	74	75	77	85	92
1 - Calculation is based on the second preceding year, e.g. 2019 is based on 2017 revenue																											
Capital Spending																											
Project Capital Spending ²		483	8,710	546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
AFUDC		8	283	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Annual Capital Spending & AFUDC	Sum of Line 32 to 35	490	8,993	546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cost of Removal		-	31	270	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Contributions in Aid of Construction (CIAC)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Annual Project Cost - Capital	Line 34 + Line 35	490	9,024	817	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Project Cost (incl. AFUDC)	Sum of Line 34	10,030																									
Net Project Cost (incl. Removal and/or CIAC)	Sum of Line 37	10,331																									
2 - Excluding capitalized overhead; First year of analysis includes all prior year spending																											
Gross Plant in Service (GPIS)																											
GPIS - Beginning ³	Preceding Year, Line 48	-	-	9,483	10,030	10,032	10,034	10,037	10,039	10,041	10,044	10,046	10,049	10,052	10,054	10,057	10,060	10,063	10,066	10,069	10,072	10,075	10,091	10,109	8,239	5,177	491
Additions to Plant ⁴		-	-	546	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	4	4	5	5	
Retirements		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(276)
Net Addition to Plant	Sum of Line 45 to 46	-	-	546	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	4	4	5	(270)	
GPIS - Ending	Line 44 + Line 47	-	-	10,030	10,032	10,034	10,037	10,039	10,041	10,044	10,046	10,049	10,052	10,054	10,057	10,060	10,063	10,066	10,069	10,072	10,075	10,078	10,095	10,113	8,243	5,182	221
3 - Consistent with treatment of CPON, additions (when work complete and placed in-service) is shown in the opening balance of plant on Jan 1 of following year																											
4 - Includes capitalized overhead																											
Accumulated Depreciation																											
Accumulated Depreciation - Beginning	Preceding Year, Line 57	-	-	-	54	(208)	(470)	(732)	(993)	(1,255)	(1,517)	(1,780)	(2,042)	(2,304)	(2,566)	(2,829)	(3,091)	(3,354)	(3,616)	(3,879)	(4,142)	(4,404)	(5,720)	(7,037)	(6,352)	(4,132)	86
Depreciation Expense ⁵	Line 44 @ 2.63%	-	-	(247)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(262)	(263)	(263)	(263)	(263)	(263)	(263)	(264)	(205)	(122)	(10)	
Retirements		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	276
Cost of Removal		-	-	301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Accumulated Depreciation - Ending	Sum of Line 53 to 55	-	-	54	(208)	(470)	(732)	(993)	(1,255)	(1,517)	(1,780)	(2,042)	(2,304)	(2,566)	(2,829)	(3,091)	(3,354)	(3,616)	(3,879)	(4,142)	(4,404)	(4,667)	(5,983)	(7,301)	(6,558)	(4,253)	352
5 - Depreciation & Amortization Expense calculation is based on opening balance x composite depreciation rate; The composite rate of all assets addition to plant is 2.63%																											

Particulars	Reference	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2045	2050	2055	2060	2064	
Rate Base and Earned Return																												
Gross Plant in Service - Beginning	Line 44	-	-	9,483	10,030	10,032	10,034	10,037	10,039	10,041	10,044	10,046	10,049	10,052	10,054	10,057	10,060	10,063	10,066	10,069	10,072	10,075	10,078	10,091	10,109	8,239	5,177	491
Gross Plant in Service - Ending	Line 48	-	-	10,030	10,032	10,034	10,037	10,039	10,041	10,044	10,046	10,049	10,052	10,054	10,057	10,060	10,063	10,066	10,069	10,072	10,075	10,078	10,091	10,109	8,243	5,182	221	
Accumulated Depreciation - Beginning	Line 53	-	-	-	54	(208)	(470)	(732)	(993)	(1,255)	(1,517)	(1,780)	(2,042)	(2,304)	(2,566)	(2,829)	(3,091)	(3,354)	(3,616)	(3,879)	(4,142)	(4,404)	(5,720)	(7,037)	(6,352)	(4,132)	86	
Accumulated Depreciation - Ending	Line 57	-	-	54	(208)	(470)	(732)	(993)	(1,255)	(1,517)	(1,780)	(2,042)	(2,304)	(2,566)	(2,829)	(3,091)	(3,354)	(3,616)	(3,879)	(4,142)	(4,404)	(4,667)	(5,983)	(7,301)	(6,558)	(4,253)	352	
CIAC - Beginning	Line 59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
CIAC - Ending	Line 59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Accumulated Amortization of CIAC - Beginning	Line 59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Accumulated Amortization of CIAC - Ending	Line 59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Net Plant in Service, Mid-Year	(Sum of Lines 61 to Line 71) / 2	-	-	9,783	9,954	9,694	9,435	9,175	8,916	8,656	8,397	8,137	7,878	7,618	7,358	7,099	6,839	6,579	6,320	6,060	5,800	5,540	4,241	2,942	1,786	987	575	
Cash Working Capital	Line 48 x FBC CWC/Closing GPIS %	-	-	29	29	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	24	15	1	
Total Rate Base	Sum of Line 73 to 74	-	-	9,813	9,983	9,724	9,464	9,205	8,945	8,686	8,426	8,167	7,907	7,647	7,388	7,128	6,869	6,609	6,349	6,090	5,830	5,570	4,271	2,971	1,810	1,002	576	
Equity Return	Line 75 x ROE x Equity %	-	-	359	365	356	346	337	327	318	308	299	289	280	270	261	251	242	232	223	213	204	156	109	66	37	21	
Debt Component	7	-	-	284	289	281	274	266	259	251	244	236	229	221	214	206	199	191	184	176	169	161	124	86	52	29	17	
Total Earned Return	Line 77 + Line 78	-	-	643	654	637	620	603	586	569	552	535	518	501	484	467	450	433	416	399	382	365	280	195	119	66	38	
Return on Rate Base %	Line 79 / Line 75	0.00%	0.00%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	
After- Tax Weighted Average Cost of Capital (WACC)	8	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	
6 - (Line 47 + Line 54 + Line 59) x [(Days In-service/365)-1/2]																												
7 - Line 75 x (LTD Rate x LTD% + STD Rate x STD %)																												
8 - ROE Rate x Equity Component + [(STD Rate x STD Portion) + (LTD Rate x LTD Portion)] x (1- Income Tax Rate)]																												
Income Tax Expense																												
Earned Return	Line 79	-	-	643	654	637	620	603	586	569	552	535	518	501	484	467	450	433	416	399	382	365	280	195	119	66	38	
Deduct: Interest on debt	Line 78	-	-	(284)	(289)	(281)	(274)	(266)	(259)	(251)	(244)	(236)	(229)	(221)	(214)	(206)	(199)	(191)	(184)	(176)	(169)	(161)	(124)	(86)	(52)	(29)	(17)	
Add: Depreciation Expense	Line 54	-	-	247	262	262	262	262	262	262	262	262	262	262	262	262	263	263	263	263	263	263	263	264	205	122	10	
Deduct: Overhead Capitalized Expenses for Tax Purposes		-	-	-	(2)	(2)	(2)	(2)	(2)	(2)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)	(4)	(4)	(5)	(5)	
Deduct: Removal Costs	Line 35	-	(31)	(301)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Deduct: Capital Cost Allowance	Line 104	-	(1,094)	(673)	(609)	(560)	(515)	(474)	(436)	(401)	(369)	(340)	(312)	(287)	(264)	(243)	(224)	(206)	(189)	(174)	(160)	(148)	(97)	(64)	(42)	(28)	(20)	
Taxable Income After Tax	Sum of Line 87 to 92	-	(1,125)	(368)	16	55	91	122	151	176	199	219	237	252	266	277	287	296	303	308	313	316	319	305	225	126	6	
Income Tax Rate		27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	
Total Income Tax Expense	Line 93 / (1 - Line 94) x Line 94	-	(416)	(136)	6	20	33	45	56	65	74	81	87	93	98	103	106	109	112	114	116	117	118	113	83	47	2	
Capital Cost Allowance																												
Opening Balance	Proceeding Year, Line 105	-	-	8,098	7,687	7,078	6,518	6,002	5,528	5,092	4,691	4,322	3,982	3,669	3,382	3,117	2,874	2,650	2,444	2,255	2,080	1,920	1,291	877	604	424	325	
Additions to Plant	Line 34	-	9,483	546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Less: AFUDC	Line 33	-	(291)	(285)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Less: CIAC	Line 36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Net Addition for CCA	Sum of Line 100 through 102	-	9,192	262	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
CCA	[Line 99 + (Line 103/2)] x CCA Rate	-	(1,094)	(673)	(609)	(560)	(515)	(474)	(436)	(401)	(369)	(340)	(312)	(287)	(264)	(243)	(224)	(206)	(189)	(174)	(160)	(148)	(97)	(64)	(42)	(28)	(20)	
Closing Balance	Line 99 + Line 103 + Line 104	-	8,098	7,687	7,078	6,518	6,002	5,528	5,092	4,691	4,322	3,982	3,669	3,382	3,117	2,874	2,650	2,444	2,255	2,080	1,920	1,773	1,194	813	562	396	305	

Line	Particular	Reference	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2045	2050	2055	2060	2064
1	Cash Flow																											
2	Add: Revenue	Business Case, Line 7	-	(416)	754	1,004	1,002	999	994	988	981	973	964	954	943	932	919	907	893	880	865	850	835	754	667	508	345	171
3	Less: O&M, Property Tax Expense	Business Case, -(Line 2 + Line 3)	-	-	-	(82)	(83)	(83)	(84)	(84)	(85)	(85)	(86)	(86)	(86)	(87)	(87)	(88)	(88)	(89)	(89)	(90)	(91)	(93)	(96)	(101)	(111)	(120)
4	EBITDA ¹	Line 2 + Line 3	-	(416)	754	922	919	915	910	904	896	888	878	868	857	845	832	819	805	791	776	760	745	661	571	407	234	50
5	Capital Expenditures ²	Business Case, -Line 37	(490)	(9,024)	(817)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	Pre-Tax Cash Flow	Line 4 + Line 5	(490)	(9,440)	(62)	922	919	915	910	904	896	888	878	868	857	845	832	819	805	791	776	760	745	661	571	407	234	50
7	Income Tax Expense	Line 4 x Income Tax Rate @ 27%	-	112	(204)	(249)	(248)	(247)	(246)	(244)	(242)	(240)	(237)	(234)	(231)	(228)	(225)	(221)	(217)	(213)	(209)	(205)	(201)	(179)	(154)	(110)	(63)	(14)
8	Overhead Capitalized Tax Shield	Business Case, -Line 90 x Income Tax Rate	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
9	CCA Tax Shield & Removal Costs	Business Case, -(Line 92 + Line 91) x Income Tax Rate	-	304	263	164	151	139	128	118	108	100	92	84	78	71	66	60	56	51	47	43	40	26	17	11	8	5
10	Terminal Value of CCA Tax Shield	³	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36
11	Terminal Value	⁴	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	573
12																												
13	Free Cash Flow	Sum of Line 6 to Line 11	(490)	(9,024)	(3)	838	823	808	793	778	763	748	733	719	704	689	674	659	644	629	614	599	584	510	435	310	179	652
14																												
15	After Tax WACC %	Business Case, Line 81	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%
16	Present value of Free Cash Flow ⁵	Line 13 / (1 + Line 15) ⁵ *Yr	(464)	(8,066)	(2)	669	622	577	536	497	461	427	396	366	339	314	290	269	248	229	212	195	180	119	76	41	18	52
17	Total Present Value of Free Cash Flow	Sum of Line 16	(42)																									

19 1 - Earnings Before Interest, Taxes, Depreciation & Amortization (EBITDA)
20 2 - Net of CIAC and removal costs (if applicable)
21 3- [UCC Closing Balance x CCA Rate / (CCA Rate + WACC)] x Income Tax Rate
22 4 - Evaluation period reflects less than the useful life of the assets, therefore terminal value equals the net book value of assets at end of evaluation period
23 5 - 2020 present value calculates capital expenditure to occur at time zero

Appendix 3

ALTERNATIVE B REVENUE REQUIREMENTS ANALYSIS

EVIDENTIARY UPDATE, DATED OCTOBER 9, 2020

FortisBC Inc.
Playmor Station Upgrade - Alternative B
August 2020
(\$000s), unless otherwise stated

Particulars	Reference	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2045	2050	2055	2060	2064
Cost of Service																											
Operation & Maintenance - Net of Capitalized Overhead	Line 23	-	-	-	6	6	6	6	7	7	7	7	7	7	7	8	8	8	8	8	8	9	9	10	12	13	14
Property Taxes	Line 28	-	-	-	70	70	70	70	71	71	71	71	71	71	71	72	72	72	72	72	72	73	74	75	77	85	92
Depreciation Expense	Line 54	-	-	218	231	231	231	231	231	231	231	231	231	231	231	231	231	231	304	304	304	304	304	304	252	178	80
Income Taxes	Line 96	-	(367)	(133)	6	19	30	41	50	58	66	72	78	83	87	91	94	75	85	92	98	104	120	124	102	71	31
Earned Return	Line 79	-	-	568	580	565	550	535	520	505	490	474	459	444	429	414	399	475	547	527	508	488	389	290	199	128	84
Incremental Annual Revenue Requirement	Sum of Line 1 to Line 6	-	(367)	653	893	891	887	883	878	871	864	856	847	837	827	816	804	861	1,016	1,004	990	976	896	803	642	475	301
PV of Revenue Requirement (After-tax WACC of 5.77%)	Line 7 / (1 + Line 81)^Yr	-	(328)	552	713	673	634	596	560	526	493	462	432	404	377	352	328	332	370	346	322	301	208	141	85	48	24
Total PV of Annual Revenue Requirement	Sum of Line 8	11,468																									
2021 Approved Revenue Requirement (2021 Advanced Materials)		393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512	393,512
% change in Rates	Line 7 / Line 11	0.00%	-0.09%	0.17%	0.23%	0.23%	0.23%	0.22%	0.22%	0.22%	0.22%	0.22%	0.22%	0.21%	0.21%	0.21%	0.20%	0.22%	0.26%	0.26%	0.25%	0.25%	0.23%	0.20%	0.16%	0.12%	0.08%
PV of Annual 2021 Approved Revenue Requirement	Line 11 / (1 + Line 81)^Yr	372,040	351,740	332,548	314,403	297,248	281,029	265,695	251,197	237,491	224,532	212,281	200,698	189,747	179,394	169,605	160,351	151,601	143,329	135,509	128,115	121,124	91,494	69,112	52,205	39,434	31,507
Total PV of 2021 Approved Revenue Requirement	Sum of Line 14	6,272,492																									
Levelized % Increase (45 yrs) on 2021 Rate	Line 9 / Line 15	0.18%																									
Operation & Maintenance																											
Labour Costs		-	-	-	7	7	7	8	8	8	8	8	8	9	9	9	9	9	9	10	10	10	11	12	14	15	16
Non-Labour Costs		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total Gross O&M Expenses	Line 19 + Line 20	-	-	-	7	7	7	8	8	8	8	8	8	9	9	9	9	9	9	10	10	10	11	12	14	15	16
Less: Capitalized Overhead	Overhead Rate of 15%	-	-	-	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(2)	(2)	(2)	(2)	(2)	(2)
Net O&M Expenses	Line 21 + Line 22	-	-	-	6	6	6	6	7	7	7	7	7	7	7	8	8	8	8	8	8	9	9	10	12	13	14
Property Taxes																											
General, School and Other		-	-	-	70	70	70	70	70	71	71	71	71	71	71	72	72	72	72	72	72	73	74	75	77	85	92
1% in Lieu of General Municipal Tax ²	1% of Line 7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total Property Taxes	Line 26 + Line 27	-	-	-	70	70	70	70	70	71	71	71	71	71	71	72	72	72	72	72	72	73	74	75	77	85	92
1 - Calculation is based on the second preceding year, e.g. 2019 is based on 2017 revenue																											
Capital Spending																											
Project Capital Spending ²		473	7,625	499	-	-	-	-	-	-	-	-	-	-	-	-	-	2,746	-	-	-	-	-	-	-	-	-
AFUDC		7	251	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Annual Capital Spending & AFUDC	Sum of Line 32 to 35	480	7,876	499	-	-	-	-	-	-	-	-	-	-	-	-	-	2,746	-	-	-	-	-	-	-	-	-
Cost of Removal		-	31	270	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Contributions in Aid of Construction (CIAC)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Annual Project Cost - Capital	Line 34 + Line 35	480	7,907	769	-	-	-	-	-	-	-	-	-	-	-	-	-	2,746	-	-	-	-	-	-	-	-	-
Total Project Cost (incl. AFUDC)	Sum of Line 34	11,601																									
Net Project Cost (incl. Removal and/or CIAC)	Sum of Line 37	11,902																									
2 - Excluding capitalized overhead; First year of analysis includes all prior year spending																											
Gross Plant in Service (GPIS)																											
GPIS - Beginning ³	Preceding Year, Line 48	-	-	8,356	8,855	8,856	8,857	8,858	8,860	8,861	8,862	8,863	8,864	8,866	8,867	8,868	8,870	8,871	11,618	11,619	11,621	11,622	11,630	11,639	9,982	7,272	3,142
Additions to Plant ⁴		-	-	499	1	1	1	1	1	1	1	1	1	1	1	1	1	2,747	1	1	1	2	2	2	2	2	2
Retirements		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(251)
Net Addition to Plant	Sum of Line 45 to 46	-	-	499	1	1	1	1	1	1	1	1	1	1	1	1	1	2,747	1	1	1	2	2	2	2	2	(248)
GPIS - Ending	Line 44 + Line 47	-	-	8,855	8,856	8,857	8,858	8,860	8,861	8,862	8,863	8,864	8,866	8,867	8,868	8,870	8,871	11,618	11,619	11,621	11,622	11,624	11,632	11,641	9,984	7,275	2,894
3 - Consistent with treatment of CPCN, additions (when work complete and placed in-service) is shown in the opening balance of plant on Jan 1 of following year)																											
4 - Includes capitalized overhead																											
Accumulated Depreciation																											
Accumulated Depreciation - Beginning	Preceding Year, Line 57	-	-	-	83	(147)	(378)	(609)	(840)	(1,071)	(1,302)	(1,533)	(1,764)	(1,995)	(2,226)	(2,457)	(2,688)	(2,920)	(3,151)	(3,454)	(3,758)	(4,062)	(5,580)	(7,100)	(6,852)	(5,249)	(1,823)
Depreciation Expense ⁵	Line 44 @ 2.63%	-	-	(218)	(231)	(231)	(231)	(231)	(231)	(231)	(231)	(231)	(231)	(231)	(231)	(231)	(231)	(231)	(304)	(304)	(304)	(304)	(304)	(304)	(252)	(178)	(80)
Retirements		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	251
Cost of Removal		-	-	301	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Accumulated Depreciation - Ending	Sum of Line 53 to 55	-	-	83	(147)	(378)	(609)	(840)	(1,071)	(1,302)	(1,533)	(1,764)	(1,995)	(2,226)	(2,457)	(2,688)	(2,920)	(3,151)	(3,454)	(3,758)	(4,062)	(4,365)	(5,884)	(7,404)	(7,104)	(5,428)	(1,652)
5 - Depreciation & Amortization Expense calculation is based on opening balance x composite depreciation rate; The composite rate of all assets addition to plant is 2.63%																											

FortisBC Inc.
Playmor Station Upgrade - Alternative B
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 (\$000s), unless otherwise stated

60	Particulars	Reference	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2045	2050	2055	2060	2064	
61	Rate Base and Earned Return																												
62	Gross Plant in Service - Beginning	Line 44	-	-	8,356	8,855	8,856	8,857	8,858	8,860	8,861	8,862	8,863	8,864	8,866	8,867	8,868	8,870	8,871	11,618	11,619	11,621	11,622	11,622	11,630	11,639	9,982	7,272	3,142
63	Gross Plant in Service - Ending	Line 48	-	-	8,855	8,856	8,857	8,858	8,860	8,861	8,862	8,863	8,864	8,866	8,867	8,868	8,870	8,871	11,618	11,619	11,621	11,622	11,624	11,632	11,641	9,984	7,275	2,894	
64	Accumulated Depreciation - Beginning	Line 53	-	-	-	83	(147)	(378)	(609)	(840)	(1,071)	(1,302)	(1,533)	(1,764)	(1,995)	(2,226)	(2,457)	(2,688)	(2,920)	(3,151)	(3,454)	(3,758)	(4,062)	(5,580)	(7,100)	(6,852)	(5,249)	(1,823)	
65	Accumulated Depreciation - Ending	Line 57	-	-	83	(147)	(378)	(609)	(840)	(1,071)	(1,302)	(1,533)	(1,764)	(1,995)	(2,226)	(2,457)	(2,688)	(2,920)	(3,151)	(3,454)	(3,758)	(4,062)	(4,365)	(5,884)	(7,404)	(7,104)	(5,428)	(1,652)	
66																													
67	CIAC - Beginning	Line 59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
68	CIAC - Ending	Line 59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
69																													
70	Accumulated Amortization of CIAC - Beginning	Line 59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
71	Accumulated Amortization of CIAC - Ending	Line 59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
72																													
73	Net Plant in Service, Mid-Year	(Sum of Lines 61 to Line 71) / 2	-	-	8,647	8,824	8,594	8,364	8,135	7,905	7,675	7,445	7,215	6,986	6,756	6,526	6,296	6,066	7,209	8,316	8,014	7,712	7,410	5,899	4,388	3,004	1,935	1,281	
74	Cash Working Capital	Line 48 x FBC CWC/Closing GPIS %	-	-	26	26	26	26	26	26	26	26	26	26	26	26	26	26	34	34	34	34	34	34	34	29	21	9	
75	Total Rate Base	Sum of Line 73 to 74	-	-	8,674	8,850	8,620	8,390	8,161	7,931	7,701	7,471	7,241	7,012	6,782	6,552	6,322	6,092	7,243	8,350	8,048	7,746	7,444	5,933	4,422	3,034	1,956	1,289	
76																													
77	Equity Return	Line 75 x ROE x Equity %	-	-	317	324	315	307	299	290	282	273	265	257	248	240	231	223	265	306	295	284	272	212	162	111	72	47	
78	Debt Component	7	-	-	251	256	249	243	236	229	223	216	209	203	196	189	183	176	209	242	233	224	215	172	128	88	57	37	
79	Total Earned Return	Line 77 + Line 78	-	-	568	580	565	550	535	520	505	490	474	459	444	429	414	399	475	547	527	508	488	389	290	199	128	84	
80	Return on Rate Base %	Line 79 / Line 75	0.00%	0.00%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	6.55%	
81	After-Tax Weighted Average Cost of Capital (WACC)	8	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	
82	6 - (Line 47 + Line 54 + Line 59) x [(Days In-service/365)-1/2]																												
83	7 - Line 75 x (LTD Rate x LTD% + STD Rate x STD %)																												
84	8 - ROE Rate x Equity Component + [(STD Rate x STD Portion) + (LTD Rate x LTD Portion)] x [(1 - Income Tax Rate)]																												
85																													
86	Income Tax Expense																												
87	Earned Return	Line 79	-	-	568	580	565	550	535	520	505	490	474	459	444	429	414	399	475	547	527	508	488	389	290	199	128	84	
88	Deduct: Interest on debt	Line 78	-	-	(251)	(256)	(249)	(243)	(236)	(229)	(223)	(216)	(209)	(203)	(196)	(189)	(183)	(176)	(209)	(242)	(233)	(224)	(215)	(172)	(128)	(88)	(57)	(37)	
89	Add: Depreciation Expense	Line 54	-	-	218	231	231	231	231	231	231	231	231	231	231	231	231	231	231	304	304	304	304	304	304	252	178	80	
90	Deduct: Overhead Capitalized Expenses for Tax Purposes		-	-	-	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(2)	(2)	(2)	(2)	(2)	(2)	
91	Deduct: Removal Costs	Line 35	-	(31)	(301)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
92	Deduct: Capital Cost Allowance	Line 104	-	(963)	(594)	(537)	(494)	(454)	(418)	(385)	(354)	(326)	(300)	(276)	(254)	(233)	(215)	(197)	(291)	(378)	(348)	(320)	(294)	(194)	(128)	(84)	(56)	(40)	
93	Taxable Income After Tax	Sum of Line 87 to 92	-	(994)	(360)	17	51	82	110	135	158	178	195	211	225	236	247	255	204	230	249	266	280	325	336	277	192	85	
94	Income Tax Rate		27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	27%	
95																													
96	Total Income Tax Expense	Line 93 / (1 - Line 94) x Line 94	-	(367)	(133)	6	19	30	41	50	58	66	72	78	83	87	91	94	75	85	92	98	104	120	124	102	71	31	
97																													
98	Capital Cost Allowance																												
99	Opening Balance	Preceding Year, Line 105	-	-	7,135	6,787	6,250	5,756	5,302	4,884	4,499	4,145	3,820	3,520	3,245	2,991	2,758	2,543	2,346	4,800	4,422	4,074	3,755	2,500	1,674	1,129	770	573	
100	Additions to Plant	Line 34	-	8,356	499	-	-	-	-	-	-	-	-	-	-	-	-	-	2,746	-	-	-	-	-	-	-	-	-	
101	Less: AFUDC	Line 33	-	(259)	(252)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
102	Less: CIAC	Line 36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
103	Net Addition for CCA	Sum of Line 100 through 102	-	8,098	247	-	-	-	-	-	-	-	-	-	-	-	-	-	2,746	-	-	-	-	-	-	-	-	-	
104	CCA	[Line 99 + (Line 103/2)] x CCA Rate	-	(963)	(594)	(537)	(494)	(454)	(418)	(385)	(354)	(326)	(300)	(276)	(254)	(233)	(215)	(197)	(291)	(378)	(348)	(320)	(294)	(194)	(128)	(84)	(56)	(40)	
105	Closing Balance	Line 99 + Line 103 + Line 104	-	7,135	6,787	6,250	5,756	5,302	4,884	4,499	4,145	3,820	3,520	3,245	2,991	2,758	2,543	2,346	4,800	4,422	4,074	3,755	3,460	2,306	1,546	1,045	714	533	

Evidentiary Update, dated October 9, 2020

FortisBC Inc.
Playmor Station Upgrade - Alternative B
August 2020
(\$000s), unless otherwise stated

Line	Particular	Reference	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2045	2050	2055	2060	2064
1	Cash Flow																											
2	Add: Revenue	Business Case, Line 7	-	(367)	653	893	891	887	883	878	871	864	856	847	837	827	816	804	861	1,016	1,004	990	976	896	803	642	475	301
3	Operation & Maintenance - Net of Cap	Business Case, -(Line 2 + Line 3)	-	-	-	(76)	(76)	(76)	(77)	(77)	(77)	(78)	(78)	(78)	(79)	(79)	(79)	(80)	(80)	(80)	(81)	(81)	(81)	(83)	(85)	(88)	(97)	(106)
4	EBITDA ¹	Line 2 + Line 3	-	(367)	653	817	815	811	806	801	794	786	778	768	758	748	737	725	781	936	923	909	895	813	718	553	377	196
5	Capital Expenditures ²	Business Case, -Line 37	(480)	(7,907)	(769)	-	-	-	-	-	-	-	-	-	-	-	-	-	(2,746)	-	-	-	-	-	-	-	-	-
6	Pre-Tax Cash Flow	Line 4 + Line 5	(480)	(8,274)	(116)	817	815	811	806	801	794	786	778	768	758	748	737	725	(1,964)	936	923	909	895	813	718	553	377	196
7	Income Tax Expense	Line 4 x Income Tax Rate @ 27%	-	99	(176)	(221)	(220)	(219)	(218)	(216)	(214)	(212)	(210)	(207)	(205)	(202)	(199)	(196)	(211)	(253)	(249)	(246)	(242)	(219)	(194)	(149)	(102)	(53)
8	Overhead Capitalized Tax Shield	Business Case, -Line 90 x Income Tax Rate	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
9	CCA Tax Shield & Removal Costs	Business Case, -(Line 92 + Line 91) x Income Tax Rate	-	268	242	145	133	123	113	104	96	88	81	74	68	63	58	53	79	102	94	86	79	52	35	23	15	11
10	Terminal Value of CCA Tax Shield	³	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	72
11	Terminal Value	⁴	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,242
12																												
13	Free Cash Flow	Sum of Line 6 to Line 11	(480)	(7,907)	(51)	742	728	715	702	689	675	662	649	636	623	609	596	583	(2,096)	785	768	751	733	646	559	427	291	1,468
14																												
15	After Tax WACC %	Business Case, Line 81	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%	5.77%
16	Present value of Free Cash Flow ⁵	Line 13 / (1 + Line 15) ^{Yr}	(454)	(7,068)	(43)	592	550	511	474	440	408	378	350	324	300	278	257	237	(808)	286	264	244	226	150	98	57	29	118
17	Total Present Value of Free Cash Flow	Sum of Line 16	(29)																									

19 1 - Earnings Before Interest, Taxes, Depreciation & Amortization (EBITDA)
20 2 - Net of CIAC and removal costs (if applicable)
21 3- [UCC Closing Balance x CCA Rate / (CCA Rate + WACC)] x Income Tax Rate
22 4 - Evaluation period reflects less than the useful life of the assets, therefore terminal value equals the net book value of assets at end of evaluation period
23 5 - 2020 present value calculates capital expenditure to occur at time zero