

- 1 **Q. In reference to Capital Budget expenditures, please inform:**
 2 **a) What variances Newfoundland Power anticipates from the proposed capital**
 3 **expenditures to actual capital expenditures in this budget?**
 4 **b) Please provide a list of variances between proposed capital expenditures in**
 5 **approved budgets over the last five years and the actual expenditures and**
 6 **the reason for the variance.**
 7 **c) Please provide evidence that projects with variances continued to be the**
 8 **least cost option.**
 9 **d) In reference to “unforeseen amounts” please provide a cross-Canada**
 10 **canvas of jurisdictions where “unforeseen amounts” are in capital budgets**
 11 **and the amount of same in each jurisdiction.**

- 12
 13 **A. a) For the purposes of this Request for Information, Newfoundland Power understands**
 14 **the term variance to mean the definition for variance as established in the**
 15 **Provisional Guidelines.**

16
 17 *A detailed explanation for each variance where the actual expenditure*
 18 *was greater than the approved expenditure by both \$100,000 and 10%.¹*

19
 20 The budget estimates provided with the *2024 Capital Budget Application* are based
 21 upon the best information available at the time of filing. There are no variances
 22 associated with the proposed 2024 capital expenditures to report at this time.

- 23
 24 b) Table 1 includes the list of approved capital budget expenditures, the actual
 25 expenditures and variances over the last five years.

Table 1 Capital Budget Variances 2018-2022				
Year	Approved (\$000s)	Actual (\$000s)	Variance (\$000s)	Variance
2018	84,776	89,110	4,334	5.11%
2019	100,856	106,296	5,440	5.39%
2020	96,614	96,986	372	0.39%
2021	112,836	115,925	3,089	2.74%
2022	108,121	118,019	9,898	9.15%

26 The reason for the variance in each of the last five years can be found in the
 27 appendices to Newfoundland Power’s annual capital expenditure report, filed with
 28 the Board. Attachments A to E include these appendices for the convenience of the
 29 Board.

¹ See the Provisional Guidelines, section V.C.1., page 7 of 18.

- 1 c) For the purpose of this response, Newfoundland Power did not re-evaluate past
 2 projects or programs that were justified on the basis of meeting its statutory
 3 obligation of providing reliable electrical service to customers. Table 2 includes all
 4 eight capital projects that were justified on an economic basis as being least-cost
 5 using a lifecycle cost analysis from 2018 to 2022.

Table 2 Capital Budget Variances 2018-2022 Least Cost Justified (\$000s)				
Year	Project Name	Approved	Actual	Variance
2021/2022	Transmission Line Extension – 35L	1,343	2,222	879
2020	Rattling Brook Plant Refurbishment	1,183	885	-298
2020/2021	Topsail Plant Refurbishment	9,859	8,379	-1,480
2019/2021	Central Newfoundland System Planning Study ²	13,641	13,881	240
2019	Rattling Brook Plant Refurbishment	1,161	1,026	-135
2019	Application Enhancements	1,252	879	-373
2017/2018	Rose Blanche Plant Refurbishment	3,281	2,663	-618
2017/2018	Tors Cove Plant Refurbishment	1,476	1,182	-294

- 6 Six of the eight projects listed in Table 2 had actual project costs that were less than
 7 the approved budget estimate and therefore remained least cost.
 8

9 The *Transmission Line Extension – 35L* project had actual project costs greater than
 10 the approved budget estimate. However, completion of the project was still the
 11 least cost option. See the response to Request for Information CA-NP-125, part f)
 12 for additional information on the variance for this project. The projects included as
 13 part of the *Central Newfoundland System Planning Study* (the “Study”) were
 14 completed with actual expenditures only \$240,000, or approximately 2%, more than
 15 the total budget estimate of 13,641,000. The other two alternatives assessed as
 16 part of the Study were budgeted higher at \$14,755,000 and \$16,549,000. As a
 17 result, the completion of the recommended alternative remained least cost.
 18

- 19 d) Newfoundland Power has not completed a cross-Canada canvas of jurisdictions
 20 where unforeseen amounts are included in capital budgets. The inclusion of an
 21 allowance for unforeseen expenditures has been a long-standing requirement in
 22 Newfoundland and Labrador. In the 2007 *Capital Budget Application Guidelines* it
 23 stated:

² The *Central Newfoundland Planning Study* recommended multiple substation and transmission projects for the conversion of a portion of the Central Newfoundland Transmission system from 66 kV to 138 kV as the least cost solution to the rebuild of transmission lines 101L and 102L.

1 *Where it is impractical to make application to the Board for approval of a*
2 *supplemental capital expenditure, a utility may proceed with the*
3 *expenditure using the Allowance for Unforeseen Items account.*
4

5 Similarly, section V.A.7 of the Provisional Guidelines provides that an allowance for
6 unforeseen items *will be approved* by the Board for each utility as part of the utility's
7 annual capital budget application.



ATTACHMENT A:

2022 Capital Expenditure Report: Notes

2022 Capital Expenditure Report: Notes

Substations**1. Substations Refurbishment and Modernization:**

Budget: \$7,049,000 Actual: \$9,135,000 Variance: \$2,086,000

In 2022, the capital expenditure for the *Substations Refurbishment and Modernization* project was \$2,086,000, or 30%, higher than the budget estimate. This increase was due primarily to higher material costs and contractor labour costs compared to budget estimates. In addition, unexpected site-related issues at the Glovertown and Humber Substations led to construction delays and additional costs for unplanned work.

2. Replacements Due to In-Service Failures:

Budget: \$3,691,000 Actual: \$4,562,000 Variance: \$871,000

The budget estimate for the *Replacements Due to In-Service Failures* program was based on historical averages over the most recent five-year period. The capital expenditure in 2022 was \$871,000, or 24%, higher than the budget estimate. The increase was largely due to repairs required for the DUN-T1 power transformer and costs associated with corporate spares that were higher than the historical average.

3. PCB Bushing Phase-out:

Budget: \$899,000 Actual: \$499,000 Variance: (\$400,000)

In 2022, the capital expenditure for the *PCB Bushing Phase-out* project was lower than plan by \$400,000 due to lower than anticipated breaker and transformer bushing replacements and less engineering work than anticipated in the project scope.

Transmission

4. *Transmission Line Rebuild (124L):*

Budget: \$6,021,000 Actual: \$8,626,000 Variance: \$2,605,000

In 2022, the actual expenditure for the *Transmission Line Rebuild (124L)* project was \$2,605,000, or 43%, higher than the budget estimate resulting primarily from higher material and contractor labour costs.

Materials and construction labour costs were higher than anticipated for the rebuild of Transmission Line 124L as a result of increased site work requirements. This was primarily the result of the requirement to install a larger number of bog structures and dead-end structures than anticipated due to terrain conditions and unanticipated environmental conditions. There were also construction delays and additional contractor labour costs due to additional environmental permitting and approval requirements.

5. *Transmission Line Extension – 35L (2021 Project):*

Budget: \$1,343,000 Actual: \$2,222,000 Variance: \$879,000

In 2022, actual expenditure on the *Transmission Line Extension – 35L* project was \$879,000, or 65%, higher than the budget estimate resulting from an increase in materials and contract labour costs.

The budget estimate for the *Transmission Line Extension – 35L* project was based on engineering cost estimates. Original cost estimates were based on building six kilometres of transmission line and construction using wood poles. Due to land and right-of-way issues, the new line extension was ultimately routed closer to Winsor Lake, a public water supply. This change in location resulted in a requirement to construct eight kilometres of transmission line using steel poles rather than treated wood poles, which increased the cost of materials and contract labour for the project.

Distribution

6. *Extensions:*
Budget: \$10,333,000 Actual: \$12,489,000 Variance: \$2,156,000

The *Extensions* program budget is determined based on the forecast number of new customer connections and the average historical cost of constructing extensions. In 2022, the actual capital expenditure for the *Extensions* program was \$2,156,000, or 21%, higher than the budget estimate.

The *Extensions* program includes the cost of extending existing lines to connect new customers. The amount spent varies based on the number of new customers connected and the amount of new line that must be built to connect those customers. The Company had forecast 2,038 new customer connections for 2022. The actual number of connections was 2,646, or 30% above plan, resulting in increased expenditures.

7. *Services:*
Budget: \$3,038,000 Actual: \$3,697,000 Variance: \$659,000

The actual expenditure for the *Services* program was \$659,000, or 22%, higher than the budget estimate.

The *Services* program budget estimate is determined based on the forecast number of new customer connections, the average historical cost of connecting a new customer, and the average cost of replacing existing services over the last five years. The budget was based on 2,038 new customer connections for 2022. Actual customer connections were 2,646, or 30% above plan. The higher number of new customer connections resulted in increased expenditures.

2022 Capital Expenditure Report: Notes

Distribution

8. *Street Lighting:*
Budget: \$2,507,000 Actual: \$3,146,000 Variance: \$639,000

The actual capital expenditure for the *Street Lighting* project was \$639,000, or 25%, more than the budget estimate. The 2022 budget was based on historical average costs over the most recent five-year period and included the addition of \$225,000 for the replacement of overhead and underground wiring.¹

Capital expenditures for overhead and underground wiring replacements were \$712,000 higher than anticipated as a result of higher dedicated street light pole replacements in comparison to the historical average. Capital expenditures for new street lights were in line with the historical average.

9. *Transformers:*
Budget: \$5,958,000 Actual: \$7,307,000 Variance: \$1,349,000

For 2022, the actual expenditure required for transformer purchases was \$1,349,000, or 23%, higher than the budget estimate. This increase is largely due to supply chain issues resulting in material cost increases and the requirement to ensure an adequate supply of inventory. In addition, actual customer connections were 30% higher than plan, which resulted in increased transformer requirements.

10. *Trunk Feeders – Humber 4.16 kV Conversion:*
Budget: \$1,355,000 Actual: \$910,000 Variance: (\$445,000)

In 2022, the *Trunk Feeders- Humber 4.16 kV Conversion* project was \$445,000 lower than plan. Work associated with the voltage conversion of the 4.16 kV feeders in Humber was less than anticipated in the project scope and conversion of all three Humber 4.16 kV feeders to 12.5 kV was completed ahead of schedule and under budget.

¹ See the 2022 Capital Budget Application, Schedule B, page 33.

Transportation

11. *Purchase Vehicles and Aerial Devices (2021 Project):*
Budget: \$4,032,000 Actual: \$4,555,000 Variance: \$523,000

The actual capital expenditure for the *Purchase Vehicles and Aerial Devices* project was \$523,000, or 13%, higher than the budget estimate. This is attributed primarily to vendor pricing increases resulting from supply chain disruptions affecting the price of raw materials and parts and a manufacturer labour shortage.

The Company has not received the heavy fleet vehicles ordered under the *Purchase Vehicles and Aerial Devices* project from 2021. The original pricing remained in place for the cab and chassis units, but due to the long delivery times the cost for the five aerial devices has incurred an 18% pricing increase per unit.

In 2022, supply chain issues and inflation have impacted availability and cost of all vehicles. Manufacturers have reduced fleet incentives and reduced production of vehicles, leading to higher prices for available models.

Unforeseen Allowance

12. *Allowance for Unforeseen Items:*

Budget: \$750,000

Actual: \$0

Variance: (\$750,000)

No expenditure was required for this project in 2022.

General Expenses Capitalized

13. *General Expenses Capitalized:*

Budget: \$6,500,000 Actual: \$7,159,000 Variance: \$659,000

In 2022, actual capital expenditures for General Expenses Capitalized were \$659,000, or 10%, higher than the budget estimate resulting primarily from inflationary increases and additional labour costs for capital planning.

Multi-Year Projects

14. *Topsail Hydro Plant Refurbishment (2020 – 2021 Multi-Year Project):*
Budget: \$9,859,000 Actual: \$8,288,000 Variance: (\$1,571,000)

The *Topsail Hydro Plant Refurbishment* project was a multi-year project that commenced in 2020. Actual capital expenditures were \$8,288,000 including \$209,000 carried over into 2022. The overall reduction in expenditure of \$1,571,000 associated with the *Topsail Hydro Plant Refurbishment* project was largely due to better than expected contract pricing through the tendering process.

ATTACHMENT B:

2021 Capital Expenditure Report: Notes

Generation Hydro

1. Rattling Brook Plant Refurbishment (2020 project):

Budget: \$1,183,000

Actual: \$885,000

Variance: (\$298,000)

The reduction in expenditure associated with the *Rattling Brook Plant Refurbishment* project was largely due to better than expected contract pricing through the tendering process. In addition, following an inspection completed after turbine disassembly, it was determined that less refurbishment work was required than was initially anticipated.

Substations2. *Substation Refurbishment and Modernization:*

Budget: \$5,153,000 Actual: \$5,726,000 Variance: \$573,000

In 2021, actual expenditure on the *Substation Refurbishment and Modernization* project was \$573,000 or 11% higher than the budget estimate resulting primarily from higher material costs. Material costs were higher than expected due to the increased price of steel and copper in 2021 as compared to the budget estimate. Also, additional materials were required as a result of increased site work requirements at the Rattling Brook Substation.

3. *Replacements Due to In-Service Failures:*

Budget: \$3,413,000 Actual: \$4,113,000 Variance: \$700,000

The budget estimate for *Replacements Due to In-Service Failures* was based on historical costs incurred over the previous 5 years. In 2021, actual expenditure on the *Replacements Due to In-Service Failures* project was \$700,000 or 21% higher than the budget estimate resulting from an increase in failures experienced.

In 2021, there were increased failures of high voltage disconnect switches, power transformers, tap changers and components of portable substation equipment. In 2021, material costs associated with failed equipment were \$2,731,000 compared to an average of \$2,248,000 over the period from 2016 to 2020 for an increase of \$483,000. The remaining increase was related to the engineering and internal labour cost associated with the increased number of failures.

4. *PCB Bushing Phaseout:*

Budget: \$717,000 Actual: \$565,000 Variance: (\$152,000)

The *PCB Bushing Phaseout* project costs were lower than forecast as a result of efficiencies gained through the coordination of the required work with other Substation projects.

2021 Capital Expenditure Report: Notes

Distribution

5. *Extensions:*
Budget: \$10,891,000 Actual: \$12,427,000 Variance: \$1,536,000

The *Extensions* project budget is determined based on the forecast number of new customer connections and the average historical cost of constructing extensions. In 2021, the actual capital expenditure on the *Extensions* project was \$1,536,000, or 14%, higher than the budget estimate.

The *Extensions* project includes the cost of extending existing lines to connect new customers. The amount spent will vary with the number of new customers connected and the amount of new line that has to be built to connect those customers. The Company forecasted 2,389 new customer connections for 2021. The actual number of connections was 2,448, or 2.5% above forecast. In addition, the expenditures attributed to new pole installations for the *Extensions* project was 12% higher in 2021 than the historical 5-year average as a result of an increase in the average length of new line extensions.

Higher material costs also contributed to the variance in the *Extensions* project. Material costs were higher than expected due to the increased price of aluminum conductor in 2021. In addition, the cost of poles increased by 4.3% in 2021 compared to 2020, which was higher than expected in determining the estimates for the *2021 Capital Budget Application*.

6. *Street Lighting:*
Budget: \$1,979,000 Actual: \$2,224,000 Variance: \$245,000

Actual expenditure on the *Street Lighting* project was \$245,000 or 12% higher than the budget estimate.

The *Street Lighting* budget estimate of \$1,979,000 was based on the average expenditure incurred over the past five years.

The main contributor to *Street Lighting* project expenditure increases in 2021 was higher material costs. The purchase cost of # 6 duplex used for street lights increased by 10% and the purchase cost of poles increased by 4.3% in 2021, which were higher than expected in determining the estimates for the *2021 Capital Budget Application*.

Distribution

7. *Distribution Reliability Initiative:*

Budget: \$700,000 Actual: \$817,000 Variance: \$117,000

Actual capital expenditure on the *Distribution Reliability Initiative* project was \$117,000 or 17% more than the budget estimate resulting primarily from higher material costs. Material costs were higher than expected primarily due to the increased price of aluminum conductor in 2021 as compared to the budget estimates. In addition, the cost of poles increased by 4.3% in 2021 compared to 2020, which was higher than expected in determining the estimates for the *2021 Capital Budget Application*.

8. *Trunk Feeders (2020 project):*

Budget: \$2,820,000 Actual: \$2,267,000 Variance: (\$553,000)

The *Trunk Feeders* project principally focused on the upgrade of the GFS-06 feeder. All work outlined in the budget was completed. The reduction in expenditure associated with the *Trunk Feeders* project was largely due to better than expected contract pricing through the tendering process.

Unforeseen Allowance

9. *Allowance for Unforeseen Items:*

Budget: \$750,000

Actual: \$0

Variance: (\$750,000)

No expenditure was required for this project in 2021.

Multi-Year Projects

10. *Topsail Hydro Plant Refurbishment:*
Budget: \$9,859,000 Actual: \$8,379,000 Variance: (\$1,480,000)

The *Topsail Hydro Plant Refurbishment* project was a multi-year project that commenced in 2020. The reduction in expenditure associated with the *Topsail Hydro Plant Refurbishment* project was largely due to better than expected contract pricing through the tendering process.

ATTACHMENT C:

2020 Capital Expenditure Report: Notes

Substations

1. Replacements Due to In-Service Failures:

Budget: \$3,269,000 Actual: \$3,684,000 Variance: \$415,000

Actual expenditure on the *Replacements Due to In-Service Failures* project was \$415,000 or 13% above the budget estimate.

The budget estimate was based on historical costs over the previous 5 years.

The variance is principally due to increased labour costs associated with adhering to public health measures related to COVID-19. Examples of operational changes made to maintain social distancing included: (i) introducing staggered hours of work to reduce employee contact; (ii) modifying work procedures such as permitting one person in the buckets of double bucket trucks rather than two; and (iii) limiting one employee per vehicle which resulted in the use of multiple vehicles to accommodate crews of two or more.

Distribution

2. *Services:*
Budget: \$3,272,000 Actual: \$2,890,000 Variance: (\$382,000)

Actual expenditure associated with the *Services* project was \$382,000 or 12% below the budget estimate.

The *Services* budget estimate is determined based on the forecast number of new customer connections, the average historical cost of connecting a new customer, and the average cost of replacing existing services over the last 5 years. The budget was based on 2,639 new customer connections. Actual customer connections were 2,062, or 22% below plan. The lower number of new customer connections resulted in reduced expenditure.

Reduced costs associated with the *Services* project were partially offset by costs related to the adherence to COVID-19 safety protocols.

3. *Street Lighting:*
Budget: \$2,635,000 Actual: \$3,477,000 Variance: \$842,000

Actual expenditure on the *Street Lighting* project was \$842,000 or 32% more than the budget estimate.

The *Street Lighting* budget estimate of \$2,635,000 was based on the average expenditure incurred over the past five years. The average number of units installed or replaced over the past five years was 2,575. The actual number of street lights installed or replaced in 2020 was 3,534, an increase of 37% or 959 street lights. Of the increase, 844 were replaced due to failure of the street light.

Distribution

4. *Transformers:*
Budget: \$6,581,000 Actual: \$5,628,000 Variance: (\$953,000)

Actual expenditure required for transformer purchases was \$953,000 or 14% below budget. This was largely due to lower than expected customer growth. In 2020, actual customer connections were 22% below plan which resulted in reduced expenditure.

5. *Reconstruction:*
Budget: \$5,513,000 Actual: \$6,275,000 Variance: \$762,000

Actual expenditure on the *Reconstruction* project was \$762,000 more than budget.

The *Reconstruction* project involves the replacement of deteriorated distribution structures identified through regular inspections and during site visits to address operational issues, including power interruptions and customer trouble calls. The variance is principally due to greater than expected workload compared to the previous 5-year historical average.

Adherence to COVID-19 related safety protocols also contributed to increased cost.

6. *Rebuild Distribution Lines:*
Budget: \$3,985,000 Actual: \$4,477,000 Variance: \$492,000

Actual expenditure on the *Rebuild Distribution Lines* project was \$492,000 more than budget. The budget was based on average historical expenditures over the last 5 years.

This project involves the replacement of deteriorated distribution structures identified through the Company's ongoing preventative maintenance program. In 2020, actual expenditures were higher than the budget estimate primarily because more work was identified through inspections and engineering assessments compared to the 5-year historical average.

Adherence to COVID-19 related safety protocols also contributed to increased cost.

General Property

7. *Company Building Renovation (2019 Project):*
Budget: \$1,374,000 Actual: \$1,725,000 Variance: \$351,000

The *Company Building Renovations* project was \$351,000 above budget. The variance is principally due to higher than expected tender pricing received for both the Salt Pond and Glovertown building renovations.

Information Systems

8. *Personal Computer Infrastructure:*

Budget: \$493,000

Actual: \$648,000

Variance: \$155,000

Actual expenditure for the *Personal Computer Infrastructure* project was \$155,000 above budget. The budget estimate of \$493,000 was based on the anticipated replacement of 60 desktop computers and 85 mobile computers in 2020.

Newfoundland Power's response to COVID-19 was the primary driver of cost variance.

In 2020, the Company enacted its pandemic business continuity plan. To ensure the health and safety of the workforce, many employees transitioned to working from home for an extended period of time. In order to accommodate remote work, the Company reduced the number of desktop computers purchased from 60 to 21 and increased the number of mobile computers purchased from 85 to 160. The Company also purchased the required peripheral devices such as monitors, wireless routers, docking stations, etc.

Due to the pandemic, there was a global supply shortage of mobile computers and related equipment in 2020, resulting in an overall price increase. Additionally, discounts normally associated with bulk purchase orders were not offered.

Unforeseen Allowance

9. *Allowance for Unforeseen Items:*

Budget: \$750,000

Actual: \$0

Variance: (\$750,000)

No expenditure was required for this project in 2020.

Multi Year Projects

10. *Human Resource Management System Replacement (2018/2019 Project):*
Budget: \$1,637,000 Actual: \$1,957,000 Variance: \$320,000

The *Human Resource Management System Replacement* project was approved by the Board in Order No. P.U. 37 (2017), as a 2-year project over 2018 and 2019. Delays related to extended collective bargaining and the implementation of cybersecurity measures resulted in the project being carried forward into 2020.

The requirement to adhere to COVID-19 related safety protocols including engaging with contractors remotely also contributed to delayed implementation and increased cost.

The initial implementation, which was planned for 2019 included a planned version upgrade in 2020. With implementation finalized in 2020, the application was upgraded as part of the original implementation. This eliminated the requirement for additional testing and partially offset the overall cost of the upgrade.

ATTACHMENT D:

2019 Capital Expenditure Report: Notes

Generation - Hydro

1. *Rattling Brook Plant Refurbishment:*
Budget: \$1,161,000 Actual: \$1,026,000 Variance: (\$135,000)

Actual expenditure on the *Rattling Brook Plant Refurbishment* project was \$135,000 lower than budget. The budgeted expenditure of \$1,161,000 was based on using contractors for unit disassembly and reassembly. This work was ultimately completed using internal resources, which was determined to be more cost effective. Additionally, favourable pricing was received on the rotor re-insulation and less work than budgeted was required on the turbine, which was found in better than expected condition following disassembly.

2. *Facility Rehabilitation (2018 Project):*
Budget: \$2,119,000 Actual: \$2,601,000 Variance: \$482,000

Actual expenditure on the *Facility Rehabilitation* project was \$482,000 higher than budget.

Additional costs associated with the *Second Storage Pond Dam* refurbishment project (\$197,000) and the *Tors Cove Access Road Bridge Replacement* (\$146,000) project were incurred due to poor foundation conditions found during excavation. This required additional fill material and larger concrete abutments.

Additional costs were also incurred on the *Rocky Pond Turbine Bearing Replacement* project (\$155,000) due to alignment issues encountered when the generator was reassembled.

Generation - Thermal

3. *Facility Rehabilitation - Thermal:*

Budget: \$327,000

Actual: \$165,000

Variance: (\$162,000)

The *Facility Rehabilitation - Thermal* project principally deals with in-service failures. In 2019, the cost of in-service failures was below average.

2019 Capital Expenditure Report: Notes

Substations4. *Substation Refurbishment and Modernization:*

Budget: \$8,580,000 Actual: \$7,384,000 Variance: (\$1,196,000)

The *Substation Refurbishment and Modernization* project variance was due to material and labour costs being less than anticipated. The purchase cost for major equipment, including circuit breakers, reclosers, switches, protection panels and a power transformer, were lower than the original budget estimates. Contractor installation costs were also lower than the original budget estimates.

5. *Replacements Due to In-Service Failures:*

Budget: \$3,547,000 Actual: \$4,532,000 Variance: \$985,000

Actual expenditure on the *Replacements Due to In-Service Failures* project was \$985,000 above the budget estimate. The budget was based on historical costs over the previous 5 years. The repair of 2 failed power transformers is the primary reason 2019 expenditures were above the 5-year average.

6. *LPD Substation:*

Budget: \$3,800,000 Actual: \$2,832,000 Variance: (\$1,418,000)

The *LPD Substation* project variance was due to material and labour costs being lower than anticipated. Expenditures for major equipment purchases, including circuit breakers, switches, protection panels, and a power transformer, were lower than the original budget estimates. Contractor installation costs were also lower than the original budget estimates.

7. *Pepperrell Substation Transformer Addition:*

Budget: \$2,334,000 Actual: \$1,514,000 Variance: (\$820,000)

The *Pepperrell Substation Transformer Addition* project variance was due to material and labour costs being lower than anticipated. Expenditures for the power transformer were lower than the original budget estimate. Contractor installation costs were also lower than the original budget estimates.

2019 Capital Expenditure Report: Notes

Transmission

8. *Rebuild Transmission Lines:*
 Budget: \$4,422,000 Actual: \$4,996,000 Variance: \$574,000

Actual expenditure on the 2019 *Rebuild Transmission Lines* project was \$574,000 higher than the budget estimate.

The cost of rebuilding Transmission Line 136L was approximately \$460,000 higher than the budget estimate. The additional cost was principally due to unexpected bedrock conditions that necessitated blasting for many of the structures.

Additionally, the project includes an amount to deal with high-priority deficiencies on transmission lines. Approximately \$113,000 of the additional cost resulted from more high-priority deficiencies than was anticipated.

9. *Transmission Line 36L:*
 Budget: \$400,000 Actual: \$643,000 Variance: \$243,000

Actual capital expenditure on the *Transmission Line 36L* project was \$243,000 higher than the budget estimate. The additional cost resulted from requests from Transport Canada for an aeronautical assessment due to the line's proximity to a hospital. The assessment resulted in the need to paint poles and install marker balls and a lighting system. Also, the line passes through Pippy Park and the Pippy Park Commission imposed additional constraints during construction, which added to project costs.

Distribution10. *Extensions:*

Budget: \$10,725,000	Actual: \$13,379,000	Variance: \$2,654,000
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Actual capital expenditure on the *Extensions* project was \$2,654,000, or 25%, higher than the budget estimate.

The *Extensions* budget is determined based on the forecast volume of new customer connections and the average historical cost of constructing extensions.

The number of extensions completed in 2019 was less than budget due to a decrease in new customer connections. The Company forecasted approximately 2,593 new customer connections in 2019. The actual number of connections was 2,379, or 8% below forecast.

The increased *Extensions* expenditure in 2019 was largely due to an increase in the average cost to connect commercial customers. The size and cost of commercial extensions can vary substantially. Canopy Growth and NewCo Metals are examples of larger commercial extensions completed in 2019.

Over the period 2014 to 2018, commercial extensions averaged \$1,950,000 per year. This amount was included in the 2019 *Extensions* budget. In 2019, commercial extensions accounted for \$4,150,000, an increase of \$2,200,000 over the previous 5-year average.

11. *Meters:*

Budget: \$622,000	Actual: \$481,000	Variance: (\$141,000)
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Actual expenditure on *Meters* was \$141,000 below budget. This was largely due to lower than expected customer growth. The budget was based on 2,593 new customer connections. Actual customer connections were 2,379, or 8% below the budget estimate.

2019 Capital Expenditure Report: Notes**Appendix A**
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12. *Street Lighting:*
Budget: \$2,301,000 Actual: \$3,455,000 Variance: \$1,154,000

Actual expenditure on the *Street Lighting* project was \$1,154,000 more than budget.

The *Street Lighting* budget estimate is based on the projected number of new customer connections multiplied by the average annual cost per customer over the last 5 years.

Over the last 5 years, the average number of street lights installed was 2,588. The number of street lights installed in 2019 was 3,183, or 23% higher than the 5-year average. The higher number of installations resulted in higher expenditure.

Additionally, actual expenditure associated with LED street light fixtures in 2019 was higher than the original budget estimate.

13. *Transformers:*
Budget: \$6,716,000 Actual: \$5,696,000 Variance: (\$1,020,000)

Actual expenditure required for transformer installations was \$1,020,000 below budget. This was largely due to lower than expected customer growth. The budget was based on 2,593 new customer connections. Actual customer connections were 2,379, or 8% below the budget estimate.

14. *Relocate/Replace Distribution Lines for Third Parties:*
Budget: \$2,442,000 Actual: \$5,192,000 Variance: \$2,750,000

Actual expenditure on the *Relocate/Replace Distribution Lines for Third Parties* project was \$2,750,000 more than budget. Budgeted expenditure is based on the 5-year historical average. Actual expenditure is largely driven by the capital programs of the Company's joint use partners. In 2019, these joint use partners significantly increased their capital programs, most notably through the Bell "Connecting Canadians" project. As a result, the amount of distribution plant requiring upgrade to accommodate joint use requirements exceeded the historical average.

Distribution

15. *Feeder Additions for Growth:*

Budget: \$1,865,000 Actual: \$2,465,000 Variance: \$600,000

Actual expenditure on the *Feeder Additions for Growth* project was higher than expected.

Additional work was required on the new PEP-05 feeder, resulting in a variance of \$261,000.¹ The original plan called for using existing underground ductwork to exit the substation. When construction commenced, it was discovered that much of the existing underground ductwork had collapsed and the entire duct bank required replacement.

Complications that arose with rear lot access on the SLA-05 feeder project resulted in a variance of \$150,000 for that project.² Additional tree cutting and the use of specialized equipment (e-z haulers) was required.

¹ Distribution feeder PEP-05 is serviced by Pepperrell (“PEP”) Substation in St. John’s.

² Distribution feeder SLA-05 is serviced by Stamp’s Lane (“SLA”) Substation in St. John’s.

General Property16. *Company Building Renovations:*Budget: \$1,374,000 Actual: \$1,712,000³ Variance: \$338,000

The *Company Building Renovations* project was \$338,000 above budget. The variance is principally due to higher than expected tender pricing received for both the Salt Pond and Glovertown building renovations. The work for both projects will not be completed until 2020.

17. *Physical Security Upgrades:*

Budget: \$300,000 Actual: \$183,000 Variance: (\$117,000)

The *Physical Security Upgrades* project expenditure was \$117,000 below budget. This resulted from an alternative solution being implemented for substation security than was planned at the time of the budget.

18. *Duffy Place Roof Replacement (2018 Project):*

Budget: \$900,000 Actual: \$1,101,000 Variance: \$201,000

The *Duffy Place Roof Replacement* project expenditure was \$201,000 above budget. This work was required as a result of deteriorated roof conditions, which resulted in persistent leaks in 2017 and again in 2018. The project was approved through a supplemental application filed in July 2018. Only one qualified bid was received through the tendering process and work did not commence until late October 2018. The additional expenditure was principally due to added difficulties experienced when replacing the roof under winter conditions.

³ Includes forecast expenditure of \$530,000 for the *Company Building Renovations* project carried forward into 2020.

Information Systems

19. *Application Enhancements:*
Budget: \$1,252,000 Actual: \$879,000 Variance: (\$373,000)

Actual expenditure for the *Application Enhancements* project was \$373,000 less than budget.

Cancellation of the *eTailboards* project at a cost of \$213,000 contributed to this variance. Newfoundland Power evaluated solutions through a Request for Proposals process. The detailed evaluation showed that proposed solutions were not compatible with the mobile technology deployed in the Company's fleet of vehicles. The project could not be cost-effectively implemented as a result.

The *Weather Normalization Data Automation* project was delayed to 2020, resulting in a variance of \$132,000. Execution of this project was delayed due to reallocation of internal resources to ensure completion of the *Outage Management System Replacement* project.

Unforeseen Allowance

20. *Allowance for Unforeseen Items:*

Budget: \$750,000

Actual: \$0

Variance: (\$750,000)

No expenditure was required for this project in 2019.

General Expenses Capitalized

21. *General Expenses Capitalized:*

Budget: \$4,000,000 Actual: \$6,203,000 Variance: \$2,203,000

The increase in *General Expenses Capitalized* resulted from a change in the capitalization of pension expense associated with Accounting Standards Update 2017-07. This change was approved in Order No. P.U. 2 (2019) and was not included in the original budget for this project.

ATTACHMENT E:

2018 Capital Expenditure Report: Notes

2018 Capital Expenditure Report: Notes**Appendix A**
Page 1 of 10**Generation - Hydro**

1. *Facility Rehabilitation:*
Budget: \$2,119,000 Actual: \$2,478,000 Variance: \$359,000

Total expenditure on the *Facility Rehabilitation* project was \$359,000 higher than budget. The actual cost associated with *Second Storage Pond Dam* refurbishment (\$197,000) and *Tors Cove Access Road Bridge Replacement* (\$146,000) projects were higher than budget due to poor foundation material found during excavation, requiring additional fill material and larger concrete abutments. Additional costs were also incurred on the *Rocky Pond Turbine Bearing Replacement* project due to alignment issues encountered when the generator was reassembled.

2. *Facility Rehabilitation (2017 Project):*
Budget: \$1,607,000 Actual: \$1,442,000 Variance: (\$165,000)

The expenditure on the *Facilities Rehabilitation (2017 Project) project* was \$165,000 less than budget. Detailed engineering on the *West Brook Forebay Dam and Spillway Refurbishment* project revealed less concrete deterioration than initially anticipated. This resulted in a reduced project scope and lower costs.

3. *Rose Blanche Plant Refurbishment (2017 Project):*
Budget: \$3,281,000 Actual: \$2,663,000 Variance: (\$618,000)

The expenditure on the *Rose Blanche Plant Refurbishment* project was \$618,000 less than budget. The project included contingency for additional slope stabilization that ultimately was not required. In addition, the turbine rehabilitation expenditure was less than budgeted because an anticipated need for contractor assistance with the turbine reassembly was not required.

4. *Tors Cove Plant Refurbishment (2017 Project):*
Budget: \$1,476,000 Actual: \$1,182,000 Variance: (\$294,000)

The expenditure on the *Tors Cove Plant Refurbishment* project was \$294,000 less than budget. Tors Cove Hydro Plant has 3 generating units, 2 of which are fully automated and under remote control through SCADA. Unit G1 is not automated and must be controlled on site by a plant operator. The Company has deferred consideration of the automation of Unit G1 due to higher priority projects. As a consequence, the Company decided to remove the valve replacement aspect of the 2017 project from the project scope, resulting in a lower 2017 expenditure.

Generation Thermal

5. *Facilities Rehabilitation Thermal:*

Budget: \$301,000

Actual: \$408,000

Variance: \$107,000

The expenditure on the *Facilities Rehabilitation Thermal* project was \$107,000 more than budget due to the required replacement of a failed engine fuel pump on the Wesleyville Gas Turbine and a starting motor on the Mobile Gas Turbine. These failures both occurred late in 2018.

Transmission

6. *Transmission Line Rebuild:*
Budget: \$2,100,000 Actual: \$2,779,000 Variance: \$679,000

The expenditure on the *Transmission Line Rebuild* project was \$679,000 more than budget. The *Transmission Line Rebuild* project budget included a \$2,100,000 estimate for addressing deficiencies identified during inspections.¹ The estimate was based on average historical expenditures. The actual work required in 2018 as determined by the annual inspections was greater than the average historical amount.

¹ Item 6 refers to the 2018 project for the replacement of transmission line components arising from annual inspections or as a result of in-service failures (\$2,100,000). It does not include the 2018 expenditures associated with the multi-year projects to rebuild transmission lines 302L (\$2,068,000) and 363L (\$3,000,000).

2018 Capital Expenditure Report: Notes

Distribution

7. *Meters:*
Budget: \$546,000 Actual: \$884,000 Variance: \$338,000

The expenditure on the *Meters* project was \$338,000 more than budget. In 2017, the Company achieved 100% penetration of AMR meters, concluding an accelerated program of AMR meter installation. With the conclusion of the accelerated program, the annual capital budget for meters dropped by almost \$4,000,000. The historical average unit cost upon which the 2018 capital budget estimate was based reflects economies of scale associated with the larger number of meters replaced during the accelerated program.² In addition to the effect of reduced economies of scale, the cost associated with higher cost metering components such as current and potential transformers had a larger impact on the overall unit cost of the much smaller program. These changes in the cost composition of the *Meters* budget were the principal contributors to the variance.

8. *Services:*
Budget: \$3,200,000 Actual: \$3,811,000 Variance: \$611,000

The expenditure on the *Services* project was \$611,000 more than budget. The 2018 variance is attributed to three principal factors. First, distribution systems in some new residential subdivisions were constructed using the new front-lot hybrid construction configuration. In this configuration, the secondary wires, the costs of which are included in *Extensions*, are replaced by underground wiring in conduit, the cost of which is included in the *Services* project.³ Second, in recent years, more customers are choosing to install underground services, which are more costly to construct than aerial services.⁴ Finally, while overall gross customer connections have declined, the number of higher cost general service connections has remained relatively constant. As a result, the average cost of new services has increased.⁵

² Over the 5-year period from 2013 to 2017, an average of 38,500 meters were replaced each year.

³ Secondary wires are included in the *Extensions* project for aerial construction. In 2018, the *Extensions* costs were \$464,000 less than budget.

⁴ The cost difference between aerial and underground services is charged to the customer making the request.

⁵ Typically, it costs more to install a service for a general service customer than for a domestic customer.

Distribution

9. *Street Lighting:*
Budget: \$1,814,000 Actual: \$3,062,000 Variance: \$1,248,000

The expenditure on the *Street Lighting* project was \$1,248,000 more than budget. The *Street Lighting* budget estimate is based on the projected number of new customer connections multiplied by the average annual cost per customer over the last 5 years. Over the last 5 years, the average number of street lights installed was 2,465. Despite declining new customer connections, the number of street lights installed in 2018 was 3,221, or 31% higher than the 5-year average.⁶ Table 1 provides a breakdown of street lighting installation data for St. John’s and the remainder of the Company’s service territory.

Distribution

Table 1 – Street Light Installations

	St. John’s	Remainder	Total
5-year Avg.	1,052	1,413	2,465
2018	1,866	1,355	3,221

In 2018, the installation of street lights in rural areas declined, while installations in St. John’s increased. The average cost to install a street light in and around St. John’s is typically higher than in other parts of the Company’s service territory. Back-lot construction in most of St. John’s and surrounding area requires the installation of roadside steel poles and underground wiring. In other areas, existing roadside poles with aerial wiring are typically utilized. This is a lower cost configuration, as compared to using dedicated poles and underground wiring.

10. *Reconstruction*
Budget: \$5,366,000 Actual: \$5,903,000 Variance: \$537,000

The expenditure on the *Reconstruction* project was \$537,000 more than budget, primarily as a result of an above-average amount of work being completed under this project. The budgeted expenditure is based on the average historical expenditure over the previous 5 years. In 2018, the total cost of high priority work identified by the Company’s inspection program, and required follow-up from operational problems, exceeded the historical 5-year average.

⁶ As the installation of street lighting is typically the last phase of construction in subdivisions, the cost associated with street lighting often lags the other costs associated with new customer connections.

2018 Capital Expenditure Report: Notes**Distribution**11. *Rebuild Distribution Lines:*

Budget: \$3,844,000 Actual: \$4,429,000 Variance: \$585,000

The expenditure on the *Rebuild Distribution Lines* project was \$585,000 more than budget. This Distribution project involves the replacement of deteriorated distribution structures identified through the Company's ongoing preventative maintenance program. The expenditure is budgeted based on average historical expenditures over the previous 5 years. Actual 2018 *Rebuild Distribution Lines* expenditures were higher than budget due to the identification of work requirements that exceeded the historical average.

12. *Relocate/Replace Distribution Lines for Third Parties:*

Budget: \$2,317,000 Actual: \$3,177,000 Variance: \$860,000

The expenditure on the *Relocate/Replace Distribution Lines for Third Parties* project was \$860,000 more than budget. The budget is based on the 5-year historical average expenditure. The actual expenditure is largely driven by the capital programs of the Company's joint use partners. In 2018, these joint use partners significantly increased their capital programs. As a result, the amount of distribution plant requiring upgrade to accommodate joint use requirements exceeded the historical average.

13. *Trunk Feeders (2017 Project):*

Budget: \$1,834,000 Actual: \$1,295,000 Variance: (\$539,000)

The expenditure on the 2017 *Trunk Feeders* project was \$539,000 less than budget. The cost of back lot work for the King's Bridge Substation conversion project was reduced when the Company was able to source and utilize specialized equipment designed for work in customers' yards. Also, the final design of the King's Bridge Substation conversion project included less underground infrastructure than originally planned. Finally, the vault replacement at the Terra Nova Tel building was not completed. The building owner advised of plans to renovate the building in 2018, eliminating the need for an upgrade at this time.

14. *Meters (2017 Project):*

Budget: \$4,391,000 Actual: \$3,925,000 Variance: (\$466,000)

The expenditure on the 2017 *Meters* project was \$466,000 less than budget. The *Meters* budget estimate is based on the projected number of new customer connections multiplied by the average annual cost per customer over the past 5 years. A large portion of the AMR meters installed in 2017 were located in urban areas. The higher urban population density resulted in a lower average installation cost than prior years. Also, a higher availability of Company employees to complete the installations resulted in lower costs than anticipated.

General Property

15. *Security Fencing Refurbishment:*
Budget: \$315,000 Actual: \$197,000 Variance: (\$118,000)

The expenditure on the *Security Fencing Refurbishment* project was \$118,000 less than budget. When detailed inspections were completed, the requirement to replace fencing material was less than anticipated.

Transportation

16. *Purchase Vehicles and Aerial Devices (2017 Project):*
Budget: \$3,456,000 Actual: \$3,824,000 Variance: \$368,000

The variance of \$368,000 is largely attributed to a heavy fleet vehicle originally budgeted for purchase in 2017, but delivered in 2018. During acceptance testing, it was determined that the vehicle as constructed did not meet the cab and chassis specification required for the weight of the aerial device. The necessary modifications delayed delivery, and increased the overall cost of the vehicle. The remainder of the variance is related to inflation and cost changes associated with the mix of passenger and off road vehicles purchased.

Telecommunications17. *Fibre Optic Network:*

Budget: \$99,000

Actual: \$227,000

Variance: \$128,000

The expenditure on the *Fibre Optic Network* project was \$128,000 more than budget. In 2018, the Company added another cable to its fibre optic network connecting substations in Corner Brook. The original budget estimate was based on installing the cable along the shortest route between substations. To avoid expensive distribution line upgrades due to clearance issues, an alternate longer route was chosen as the final design. While the alternate route increased the fibre cable installation cost, it resulted in a lower distribution line upgrade cost and was the least cost option overall.⁷

⁷ The distribution work associated with the installation and relocation of communications cables used by the Company's various protection and control systems is included in the *Relocate/Replace Distribution Lines for Third Parties* Distribution project. The Company will typically seek quotes for rented/leased fibre optic capacity from its joint use partners. These quotes will not include the Company's cost to upgrade distribution plant to accommodate fibre optic cable to be rented/leased by these joint use partners to the Company. To ensure a fair comparison between owned or rented/leased fibre optic cable alternatives, the Company treats the cost to upgrade distribution plant similarly across both alternatives.

Unforeseen Allowance

18. *Allowance for Unforeseen Items:*

Budget: \$750,000 Actual: \$260,000 Variance: (\$490,000)

The *Allowance for Unforeseen Items* is used as required. The \$260,000 expenditure was related to the refurbishment of the Company's mobile diesel generator to address water damage sustained during the summer of 2018. The remaining allowance of \$490,000 was not required to be used in 2018.