

# 2024

## CAPITAL BUDGET APPLICATION

Presentation - July 26<sup>th</sup>, 2023

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# Outline

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- Background
- 2024 Capital Budget
- Capital Project Overview



# BACKGROUND



# Capital Planning at Newfoundland Power

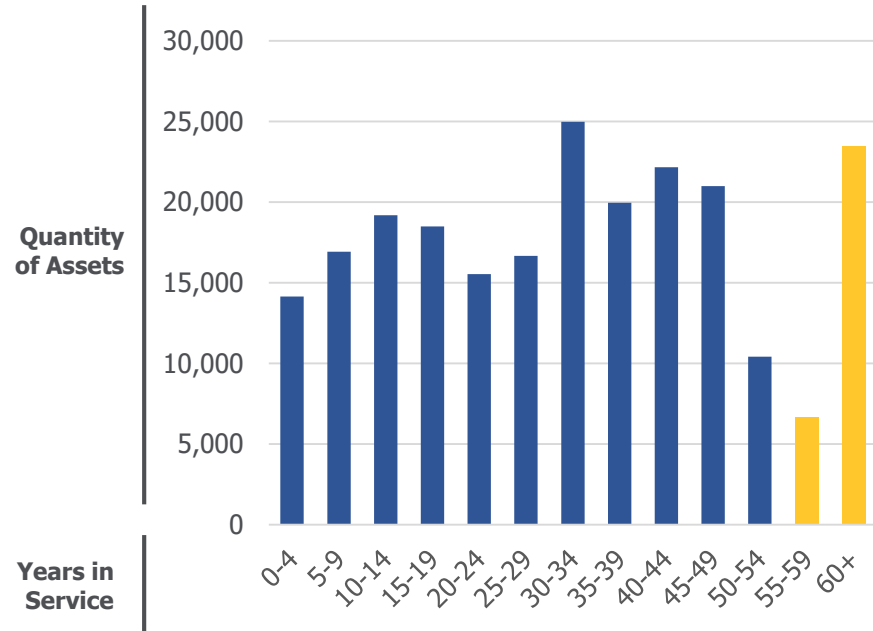
- Comprehensive process determines scope, necessity and timing of capital expenditures
- Based on sound engineering and objective data:
  - Customer connections
  - System load growth
  - Asset condition
  - Economic factors
  - Industry standards
  - Operational requirements

## Deferred/Modified/Advanced Expenditures

Previously deferred/modified projects proposed for 2024:	5
Projects advanced to 2024:	2
Projects planned for 2024 but deferred to subsequent years:	7

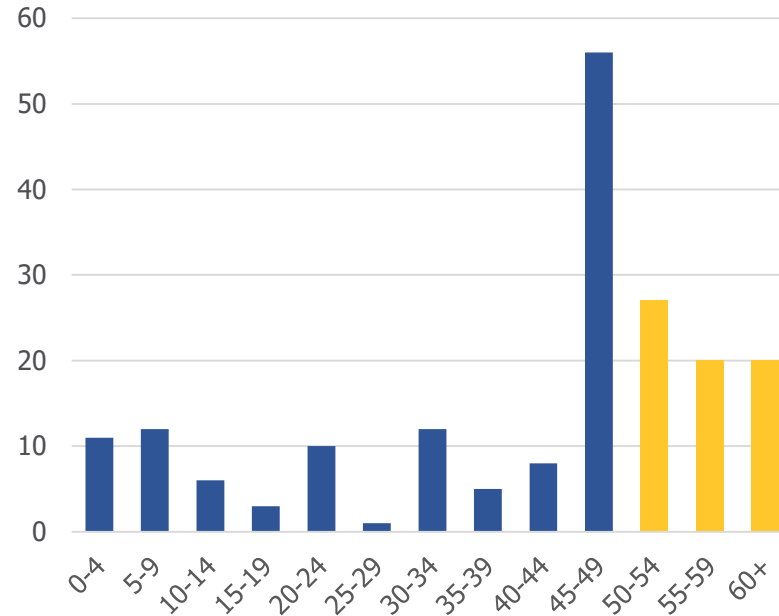
# Aging Electrical System

### Distribution Wooden Support Structures



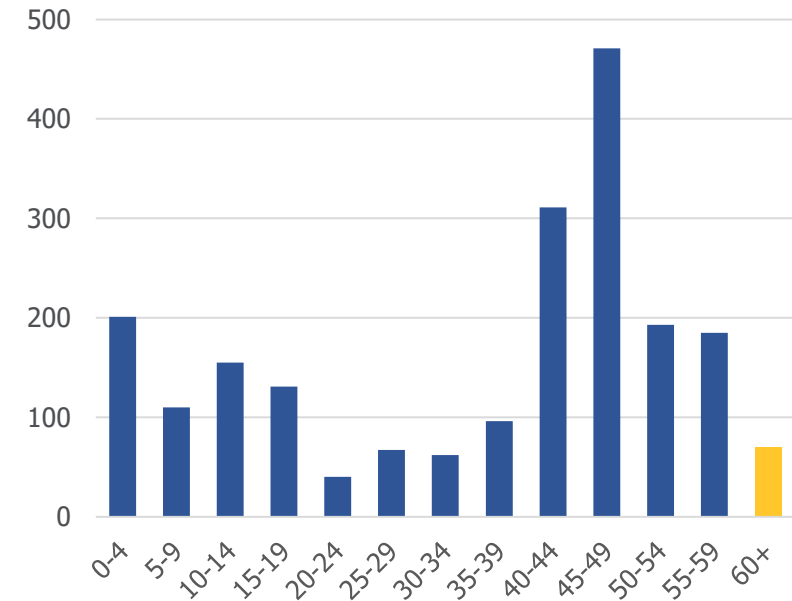
**Expected Service Life: 54 Years**

### Substation Power Transformers



**Expected Service Life: 30-50 Years**

### Transmission Overhead Conductor



**Expected Service Life: 63 Years**

# Asset Management Review

- Review ongoing
- Framework completed in 2022
- Results of review expected 2024



# Changes to Legislation

- Changes to Application organization
  - \$750,000 threshold
  - Schedules B and C
  - Amount proposed for approval

Threshold	Amount	Percentage of Total
Projects/Programs >\$750,000	38	63%
Projects/Programs <\$750,000	22	37%
<b>Total</b>	<b>60</b>	<b>100%</b>
Expenditures >\$750,000	\$104,738,000	91%
Expenditures <\$750,000	\$10,514,000	9%
<b>Total</b>	<b>\$115,252,000</b>	<b>100%</b>

# 2024

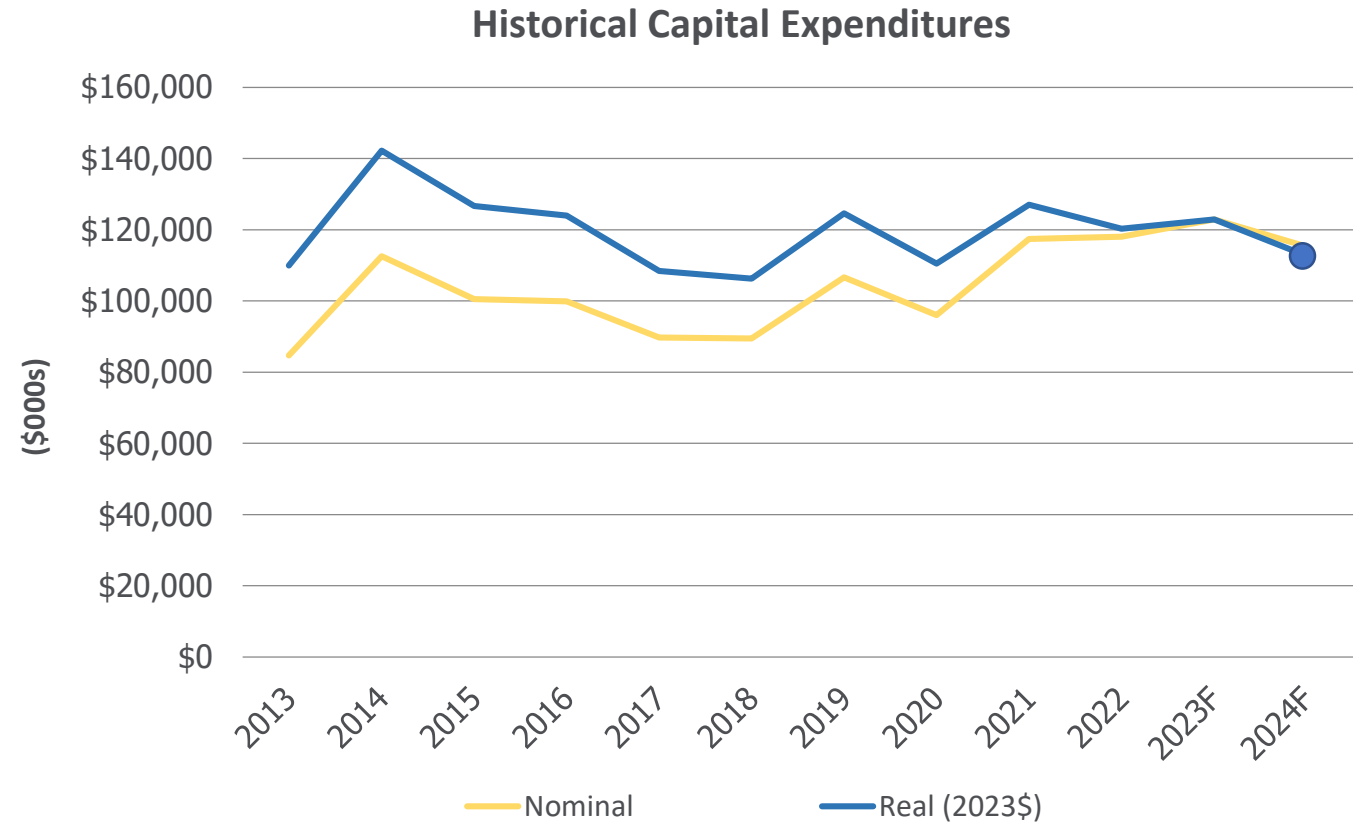
## CAPITAL BUDGET



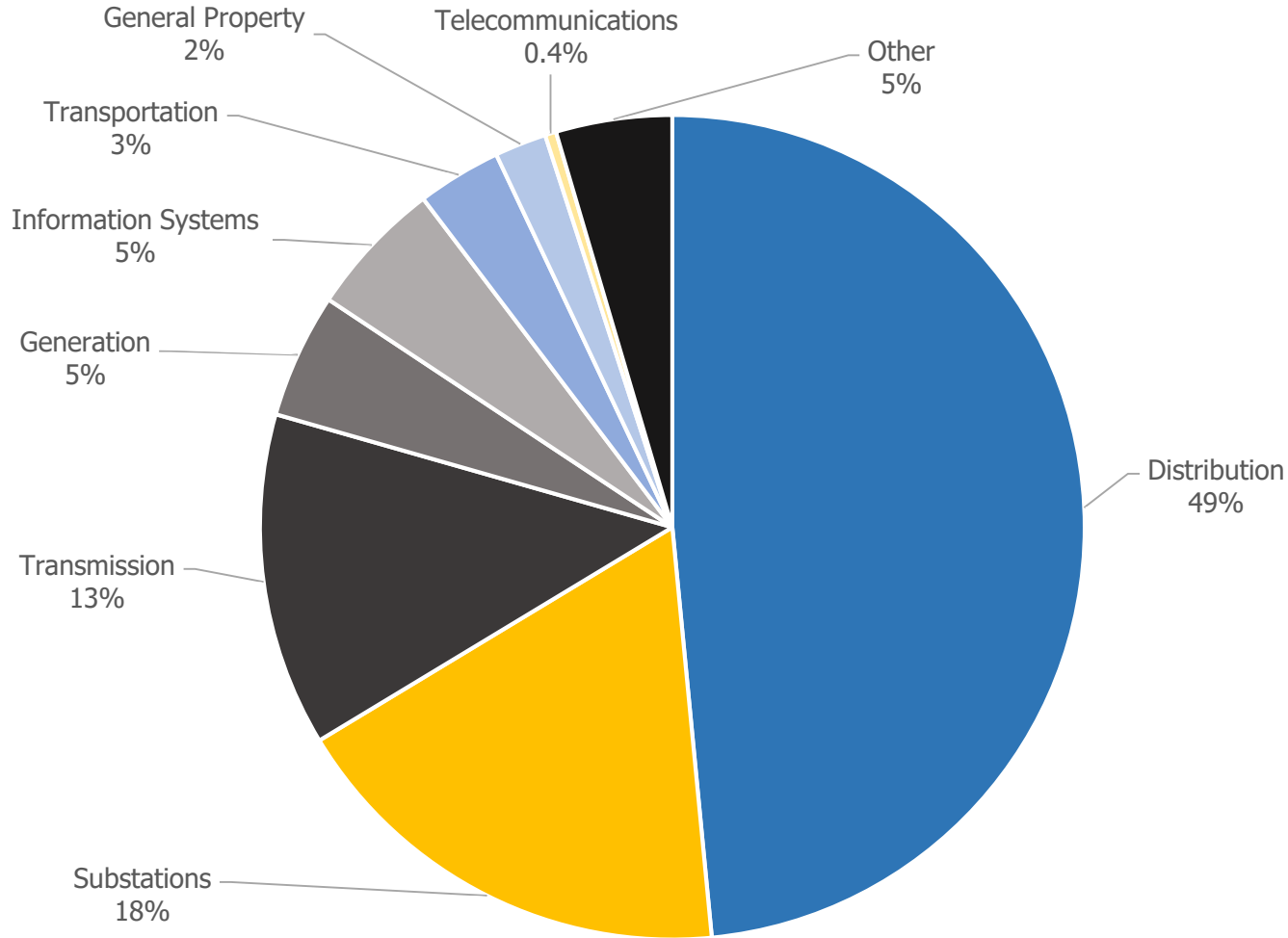


# 2024 Capital Budget

Expenditure Type	2024 Budget (\$000s)
Single-Year >\$750,000	83,833
Single-Year <\$750,000	10,514
New Multi-Year	5,234
Allowance for Unforeseen	750
<b>Subtotal</b>	<b>\$100,331</b>
Previously Approved Multi-Year	14,921
<b>Total</b>	<b>\$115,252</b>



# 2024 Capital Budget by Asset Class

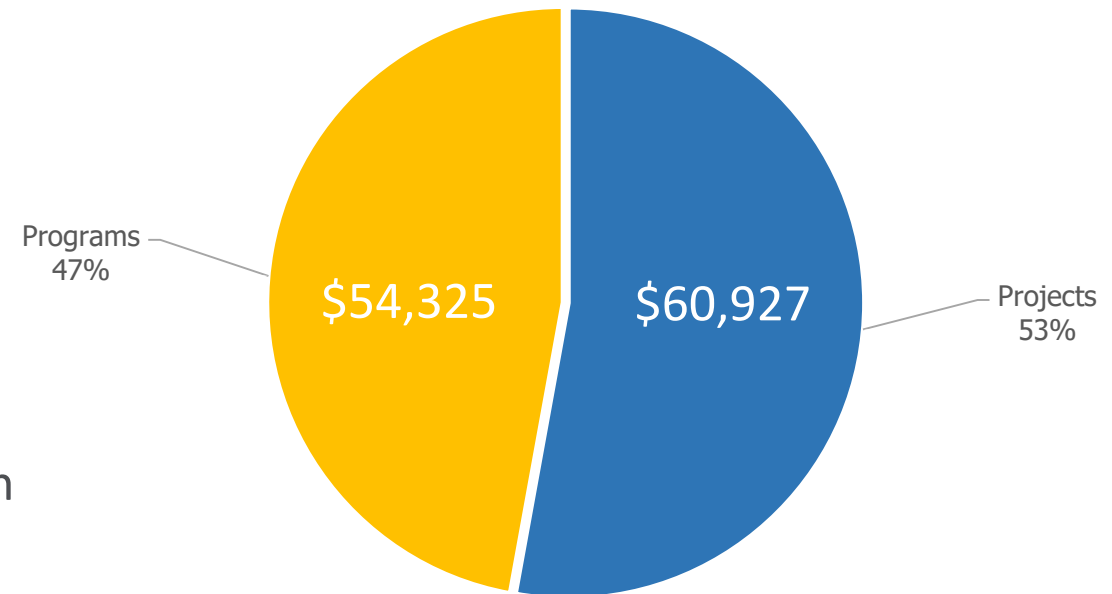


## Distribution Investments

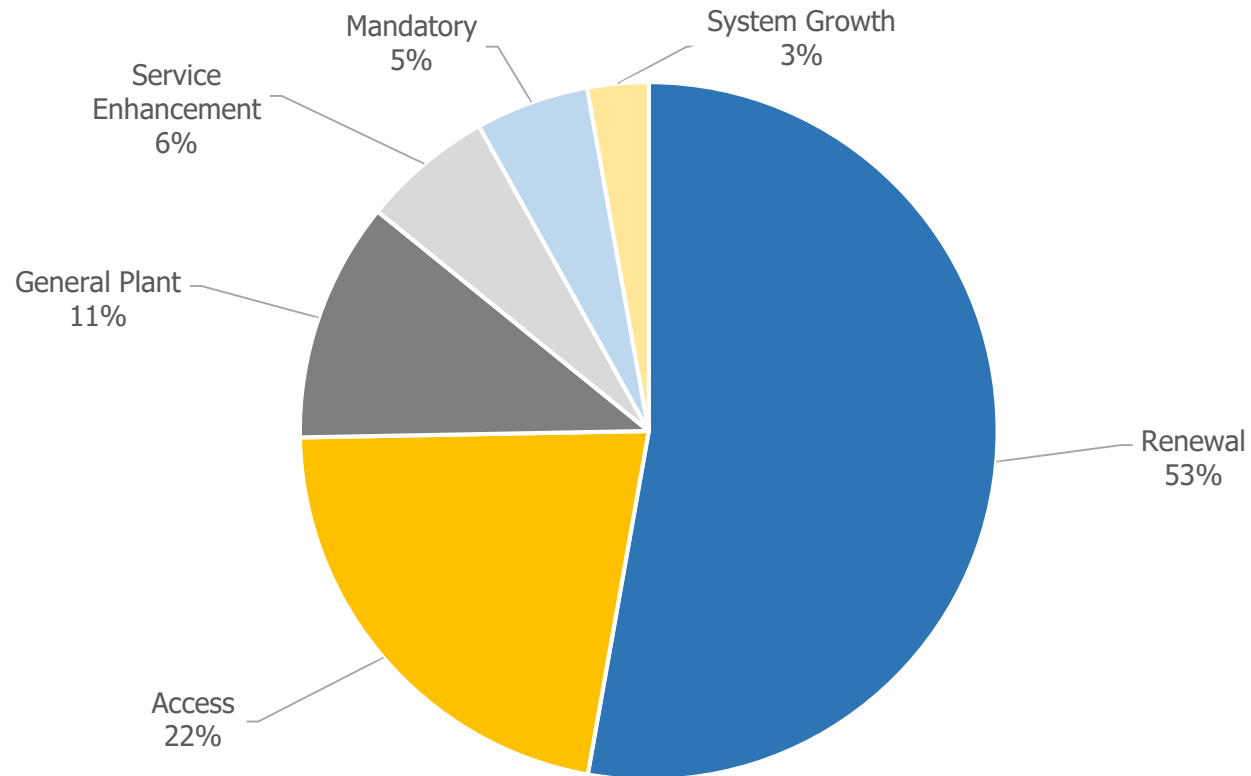
- 2,053 forecast customer connections
- Maintain electrical system:
  - Two maintenance programs
  - Two feeder refurbishments
- Service enhancements:
  - LED street lights
  - Feeder automation
- Three feeder additions for load growth (Northeast Avalon, Corner Brook area)

# 2024 Capital Budget by Category

- 38 Projects
  - Defined schedule, scope and budget based on detailed engineering estimates.
- 22 Programs
  - High-volume, repetitive work that is required on an ongoing basis. Budget typically based on 5-year historical averages.



# 2024 Capital Budget by Investment Classification



## Renewal Investments

- Primarily condition based
- Corrective and preventative maintenance programs
- Refurbishment projects:
  - Four substations for refurbishment and modernization
  - Two hydro plant refurbishments
  - One transmission line rebuild
  - Distribution Reliability Initiative

# 2024 Capital Budget by Materiality

Threshold	Quantity of Projects/ Programs	Percentage of Total Expenditures
Less than \$1 million <sup>1</sup>	34	17%
\$1 million - \$5 million	18	47%
Greater than \$5 million	8	36%
<b>Total</b>	<b>60</b>	<b>100%</b>

<sup>1</sup> Includes 22 projects and programs \$750,000 and under.

## Investments Greater than \$5 million

### *Proposed:*

- Extensions (\$12.1M)
- Reconstruction (\$7.0M)
- Transmission Line 146L Rebuild (\$11.4M)
- Gambo Substation R&M (\$5.3M)
- Islington Substation R&M (\$5.0M)
- LED Street Lighting Replacement (\$5.5M)

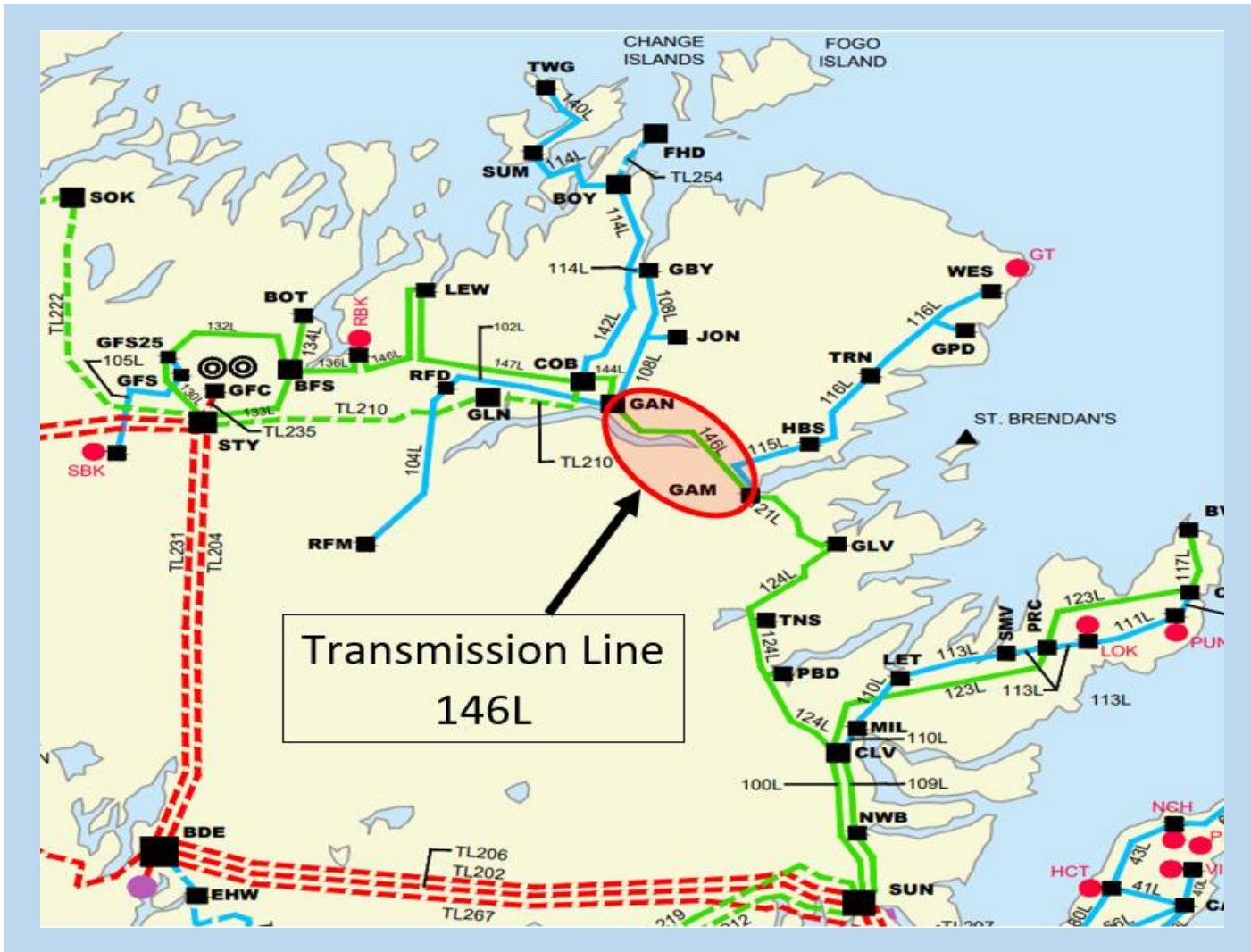
### *Previously Approved:*

- Transmission Line 55L Rebuild
- Transmission Line 94L Rebuild

# CAPITAL PROJECT OVERVIEW



# Transmission Line 146L Rebuild (\$11.4M)

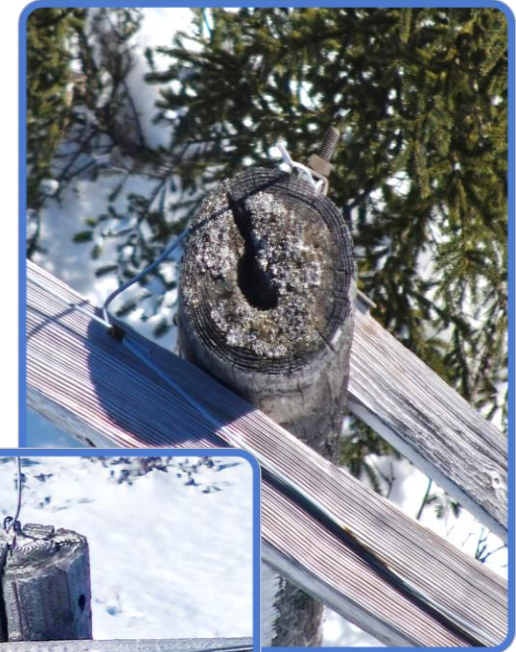


- Constructed in 1964
- Critical to central transmission system
- 192 poles requiring replacement

# Transmission Line 146L Rebuild (\$11.4M)

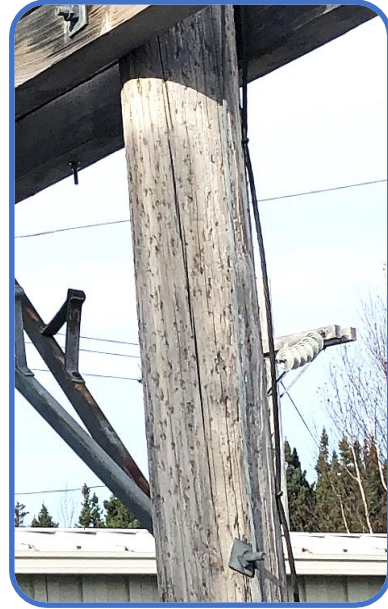
## TD4 Work Requests

2014	12
2015	14
2016	12
2017	14
2018	10
2019	14
2020	22
2021	44
2022	84
2023	156





# Substation Refurbishment and Modernization



## Gambo Substation (\$5.3M)

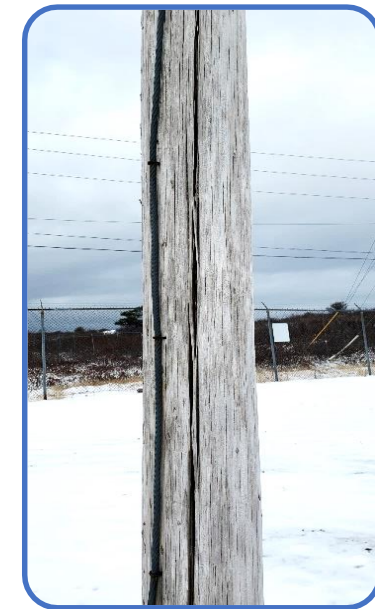
- Supplies 1,400 customers in Gambo area
- Condition:
  - Deteriorated 138 kV, 66 kV, 25 kV infrastructure
  - 138 kV and 66 kV breakers at end of life
  - Obsolete protection and controls



## Memorial Substation (\$4.4M)

- Supplies Memorial University
- Condition:
  - Obsolete 12.5 kV switchgear breakers
  - Deteriorated 66 kV switches and breakers
  - Obsolete protection and control

# Substation Refurbishment and Modernization



## Islington Substation (\$5.0M)

- Supplies 1,000 customers in Islington area
- Condition:
  - Power transformer approaching end of life
  - Deteriorated 12.5 kV wood pole infrastructure
  - Deteriorated switches

## Old Perlican Substation (\$3.4M)

- Supplies 1,800 customers in Old Perlican area
- Condition:
  - Deteriorated 66 kV and 12.5 kV wood pole infrastructure
  - 12.5 kV switches at end of life
  - Non-standard transformer protection

# Feeder Additions for Load Growth (\$2.8M)

## Distribution Feeder BVS-04

- 49% increase in customers
- 11-kilometre section overloaded

## Distribution Feeder OXP-01

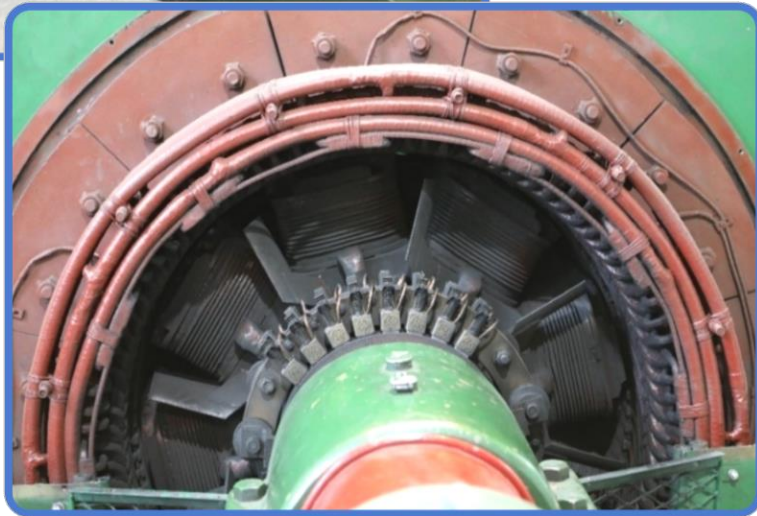
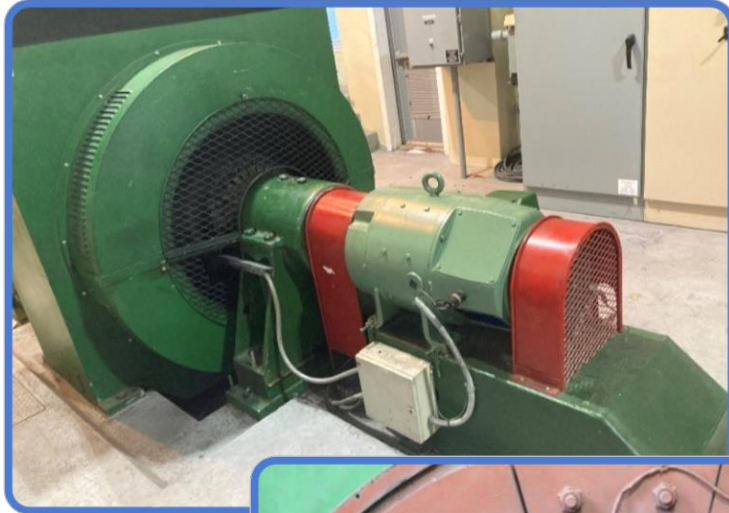
- 64% increase in customers
- 1.5-kilometre section overloaded

## Distribution Feeder PUL-02

- 112% increase in customers
- 2.5-kilometre section overloaded



# Lookout Brook Hydro Plant Refurbishment (\$1.9M)



- Commissioned in 1946
- Two generating units
- 31.5 GWh annual production

## Lifecycle Cost Analysis (50 Years)

Scenario	Levelized Value	Net Benefit
Lifecycle Cost of the Plant	3.52 ¢/kWh	-
Cost of Replacement Production (Run of River)	5.63 ¢/kWh	2.11 ¢/kWh
Cost of Replacement Production (Fully Dispatchable)	6.49 ¢/kWh	2.97 ¢/kWh

# Gander Building Renovation (\$0.9M)



- Originally constructed in 1975
- Condition:
  - Deteriorated and failed roofing and cladding systems
  - Deteriorated HVAC system
- Proposed as two-year multi-year project



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