2021 Capital Budget Application

Introductory Presentation

Presentation by NEWFOUNDLAND POWER A FORTIS COMPANY

Outline

- 2021 CBA Overview
- LED Street Lighting Replacement Plan
- Customer Service Continuity Plan
- St. John’s North – Portugal Cove System Planning Study

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2021 Capital Budget Overview

Presenter: Bob Cahill, Eng. L.

2021 Capital Budget Overall

- 40 projects totaling $111 million
- Comprehensive planning process
- Consistent level of expenditure
- Compliance with Board directives

Source: 2021 Capital Budget Application, Volume 1, Capital Plan, Section 2.0, page 2 *et seq.*

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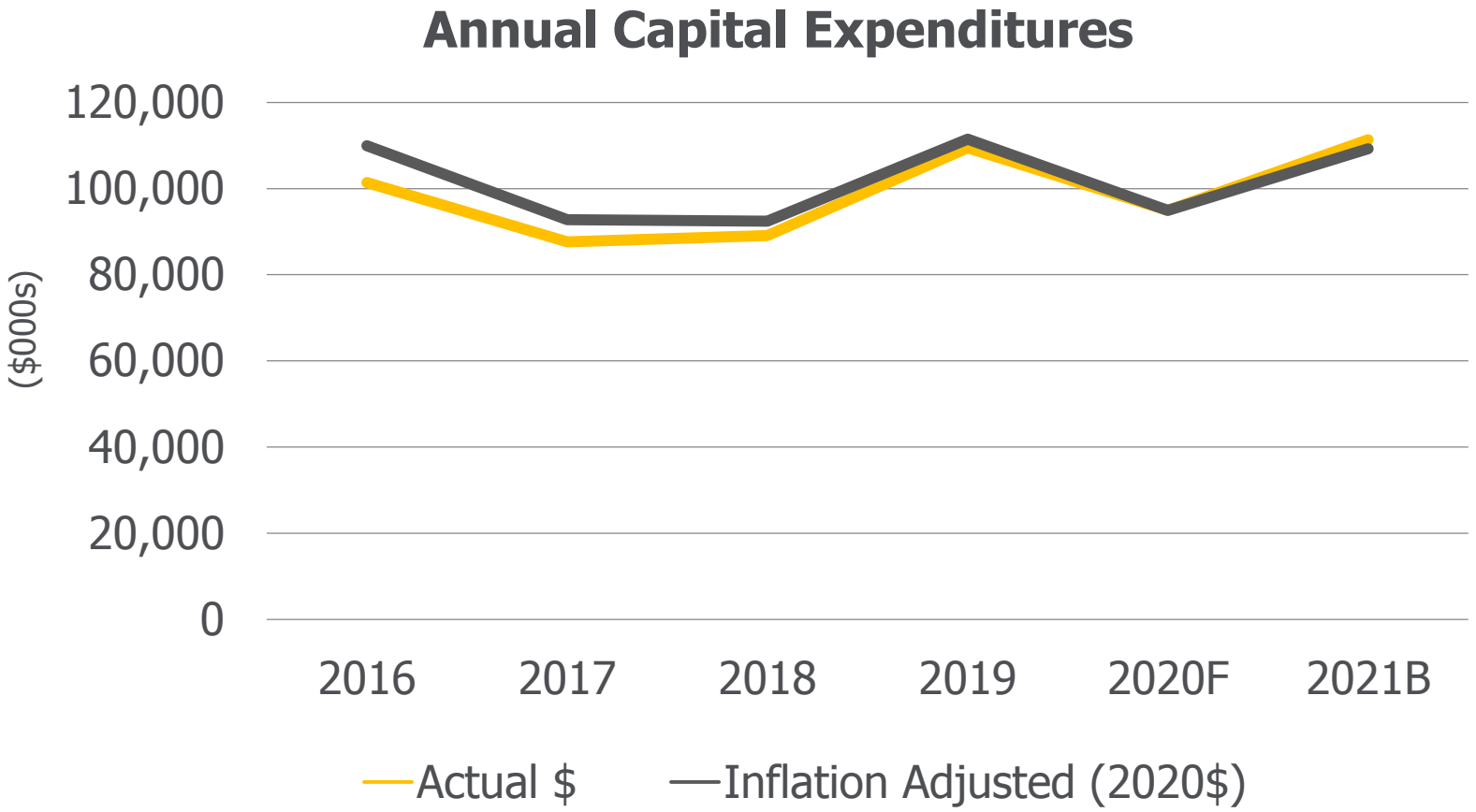
Capital Expenditure Stability



Source: 2021 Capital Budget Application, Volume 1, Capital Plan, Section 3.2, page 20.

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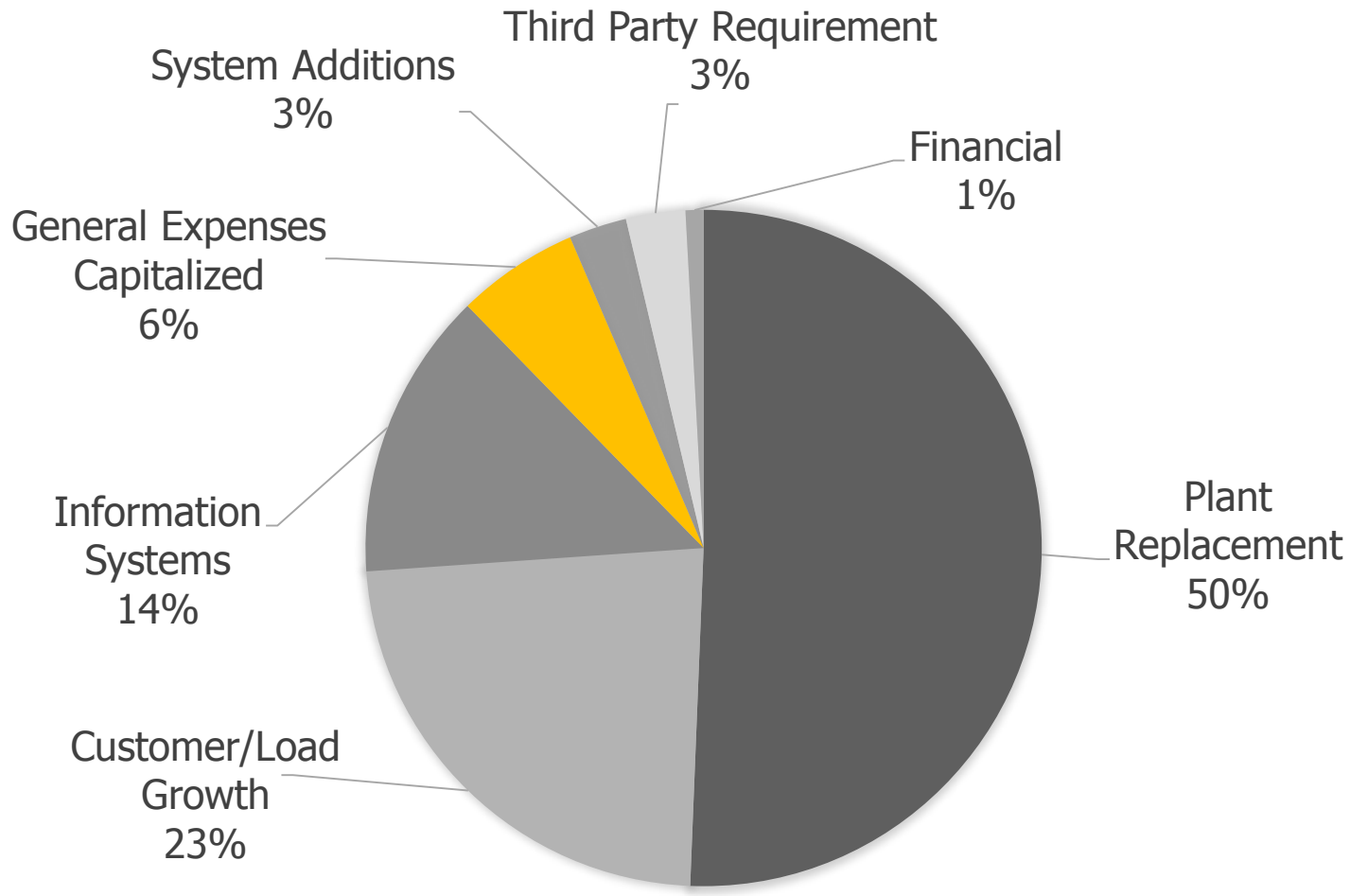
2021 Capital Budget by Asset Class

Asset Class	Budget ($000s)	Percentage
Distribution	45,875	41%
Substations	14,280	13%
Information Systems	15,362	14%
Generation	11,510	10%
Transmission	9,751	9%
Transportation	4,032	4%
General Property	2,776	2%
Telecommunications	462	0%
Allowance for Unforeseen	750	1%
GEC	6,500	6%
Total	**$111,298**	**100%**

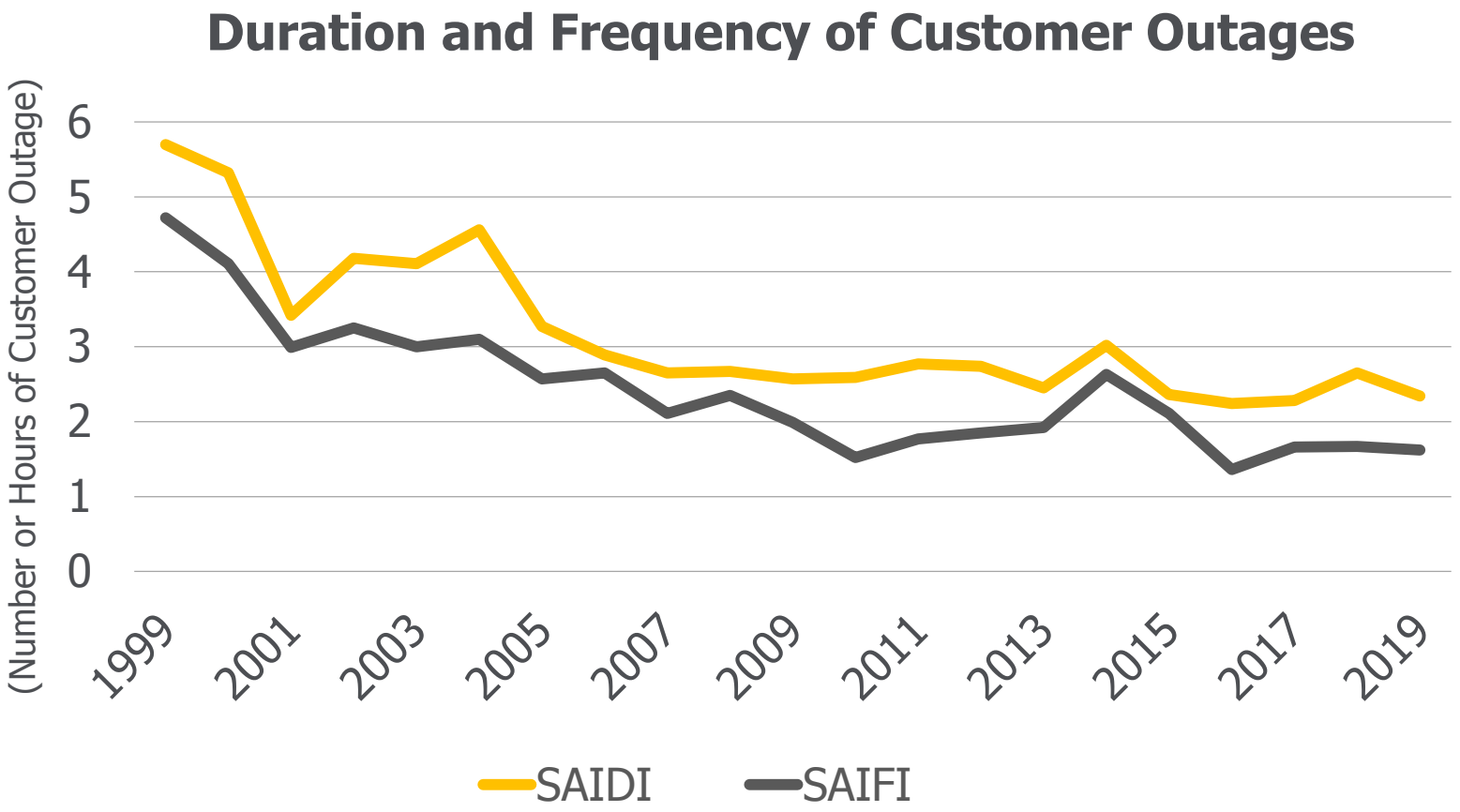
Source: 2021 Capital Budget Application, Volume 1, Capital Plan, Section 3.4, page 23 *et seq.*

2021 Capital Budget by Origin



Source: 2021 Capital Budget Application, Volume 1, Capital Plan, Section 3.3, page 21.

Maintaining Service Reliability



Source: 2021 Capital Budget Application, Volume 1, Capital Plan, Section 2.2.2, page 10.

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Customer Rate Stability

Contribution to Customer Rates (¢/kWh)			
	2000	2020	Change
Actual	3.53	4.14	17%
Inflation-Adjusted	5.18	4.14	-20%

- Customer rates have not changed as a result of a Newfoundland Power GRA since 2016

Source: 2021 Capital Budget Application, Volume 1, Capital Plan, Section 2.3.2, page 13 *et seq.*

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LED Street Lighting Replacement Plan

Presenter: Mike Comerford, P. Eng.

Background

- Street & Area Lighting Service
- Multi-year assessment
- New service offering – March 1, 2019

"The Board finds that this service offering would be beneficial to customers and would offer lower rates compared to the HPS rates."

- Order No. P.U. 2 (2019)

Source: 2021 Capital Budget Application, Volume 1, LED Street Lighting Replacement Plan, Section 2.1, page 2.

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Customer Benefits

Lower Rates

Street Lighting Rates (October 1, 2019)				
Type	**100**	**150**	**250**	**400**
HPS	$17.89	$22.02	$30.55	$41.87
LED	$16.20	$17.70	$22.68	$25.71
Difference	9%	20%	26%	39%

Source: 2021 Capital Budget Application, Volume 1, LED Street Lighting Replacement Plan, Section 2.1, page 3.

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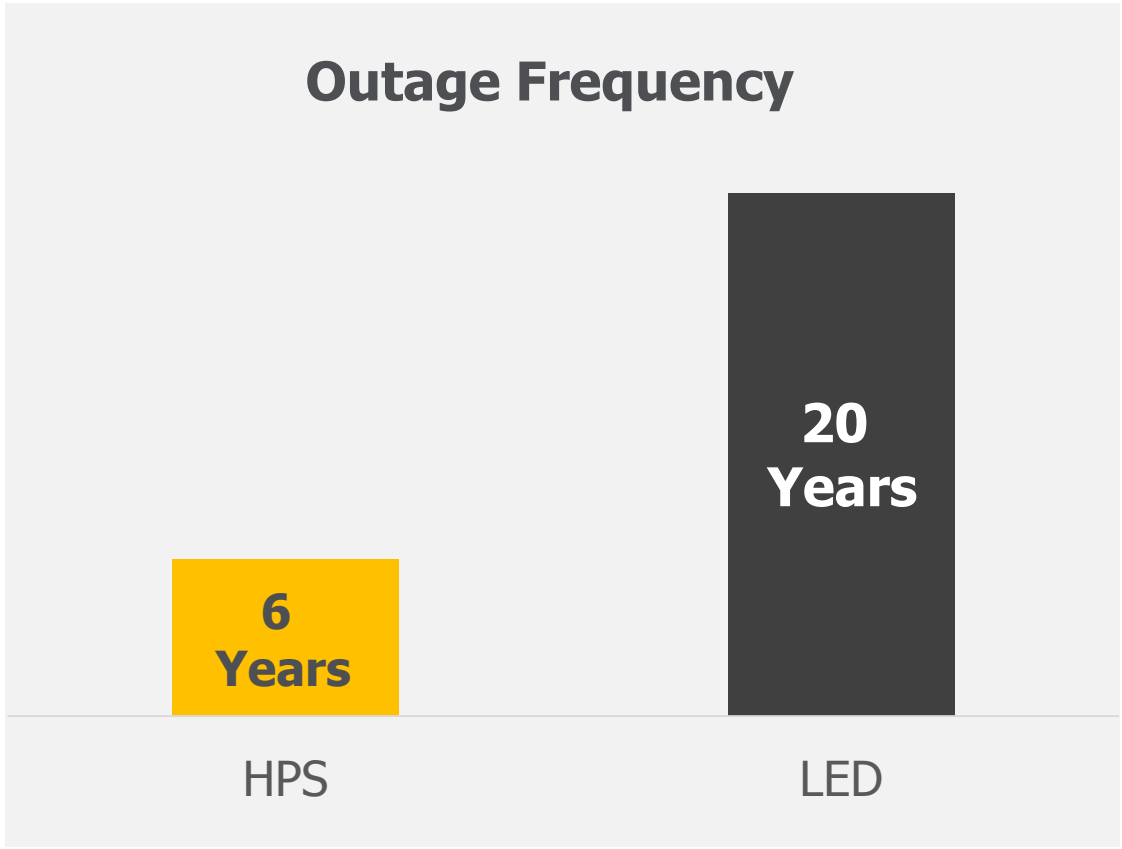
Customer Benefits

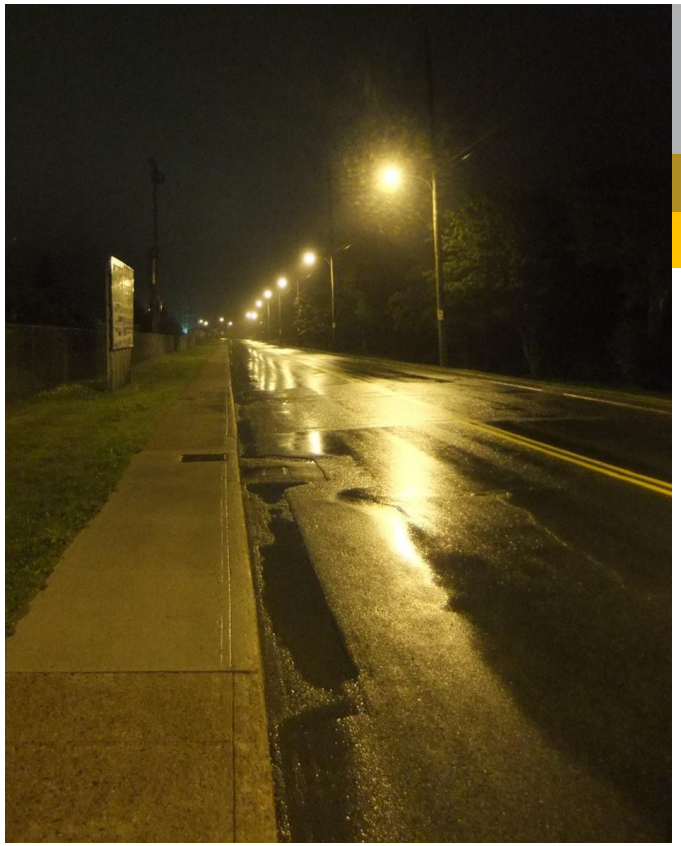
Improved Reliability



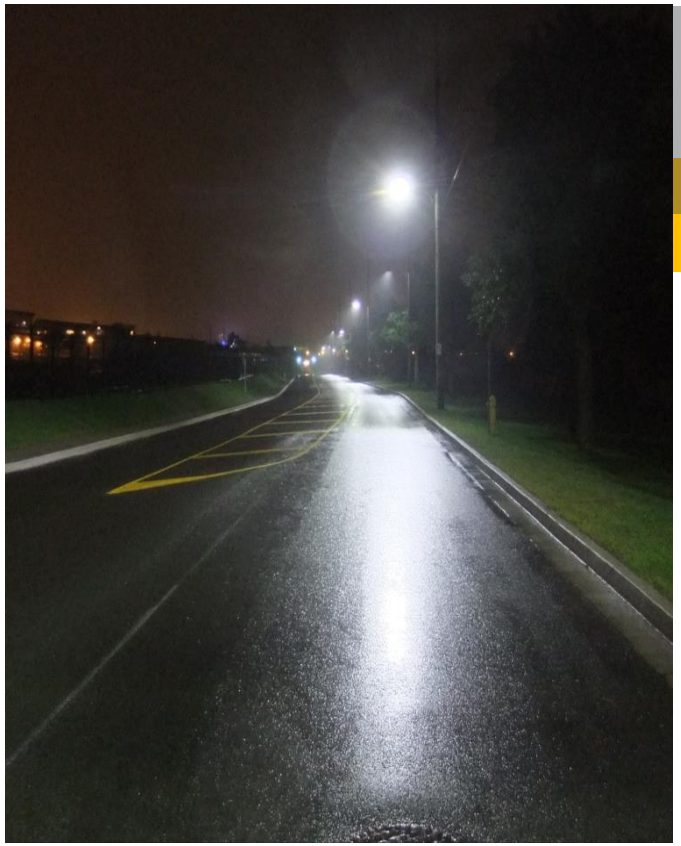
Source: 2021 Capital Budget Application, Volume 1, LED Street Lighting Replacement Plan, Section 2.1, page 4.

Customer Benefits

Better Lighting Quality



HPS

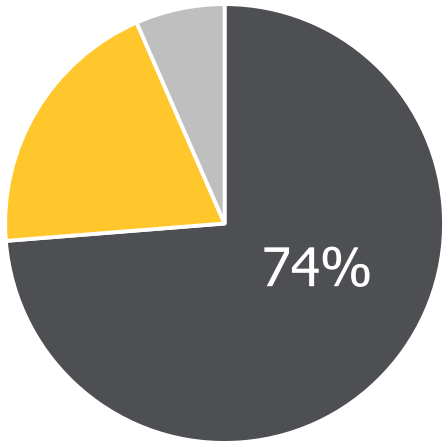


LED

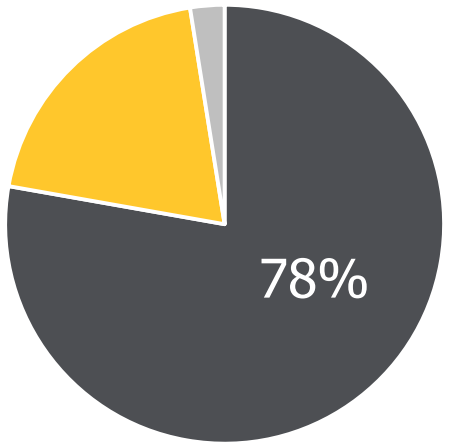
Source: 2021 Capital Budget Application, Volume 1, LED Street Lighting Replacement Plan, Section 2.1, page 4.

Customer Feedback

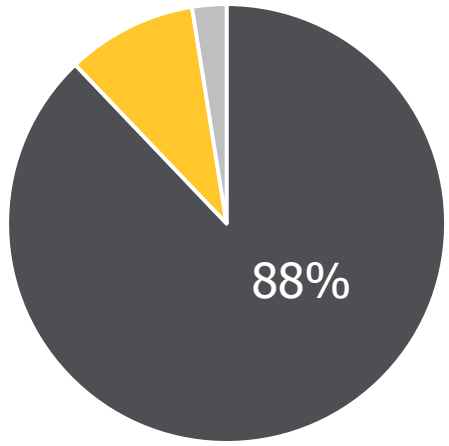
Brightness



Visibility



Preference



Source: 2021 Capital Budget Application, Volume 1, LED Street Lighting Replacement Plan, Section 2.1, page 4.

Current Installation Approach

- New service requests
- HPS fixture requires replacement
- Approximately 30-year transition

Source: 2021 Capital Budget Application, Volume 1, LED Street Lighting Replacement Plan, Section 2.2, page 5.

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Replacement Program

- Install LED fixture after HPS outage
- All LEDs within 6 years
- $32.8 million capital cost

Street Light Installations Percentage LEDs		
Year	Alternative 1: Current Approach	Alternative 2: Replacement Program
2020	3%	3%
2021	6%	19%
2022	8%	35%
2023	11%	51%
2024	14%	68%
2025	17%	84%
2026	19%	100%

Source: 2021 Capital Budget Application, Volume 1, LED Street Lighting Replacement Plan, Section 3.1.2, pages 8 and 14.

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Assessment Results

- Consistent with current Canadian utility practice
- Reduces customer costs by $27.2 million over 20 years
- Supported by customers

"MNL fully supports Newfoundland Power's proposed LED Streetlight Replacement Program and believes it will result in a fair and reasonable deployment of LED streetlights to the municipalities it serves."

- **MNL Correspondence (2020)**

Source: 2021 Capital Budget Application, Volume 1, LED Street Lighting Replacement Plan, Appendices A, B and D.

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Customer Service Continuity Plan

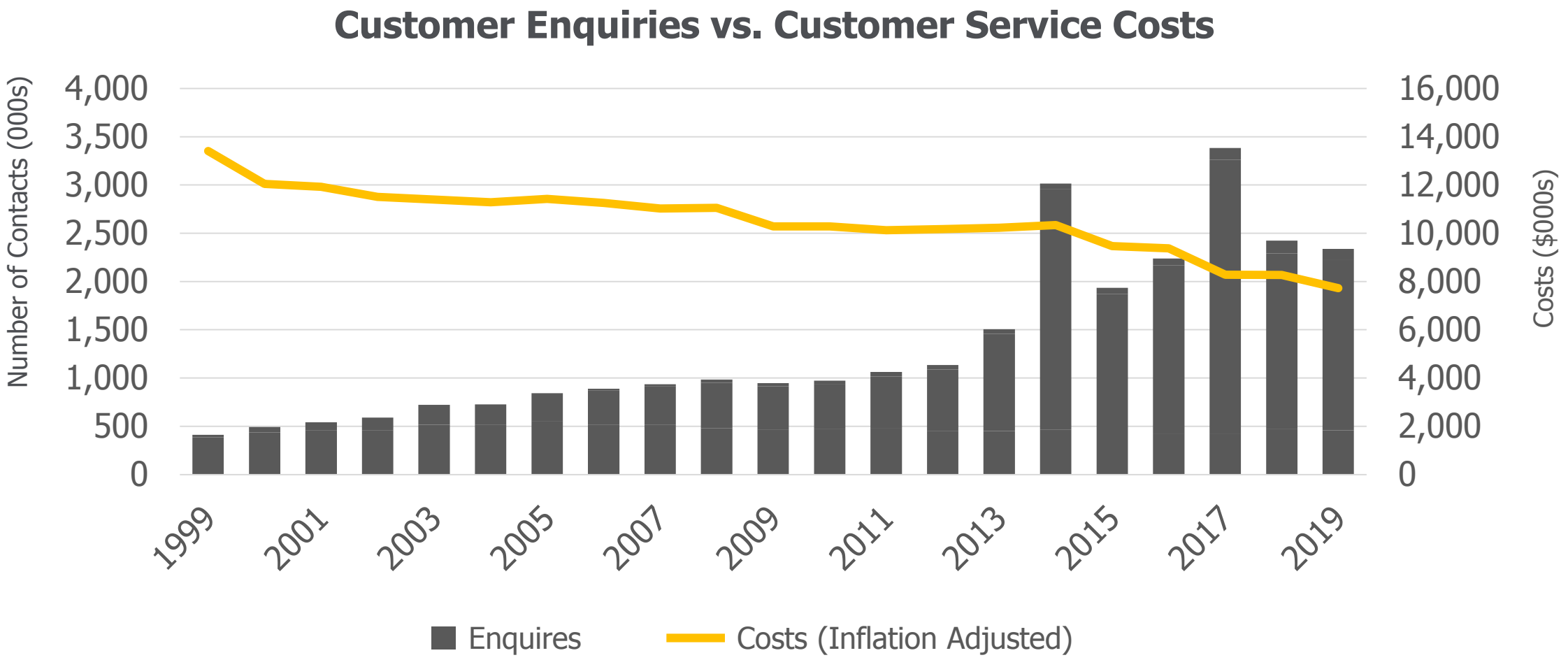
Presenter: Frank Flynn

Customer Service Delivery

- Program and service delivery
- Account management and billing
- Customer communications and contact management

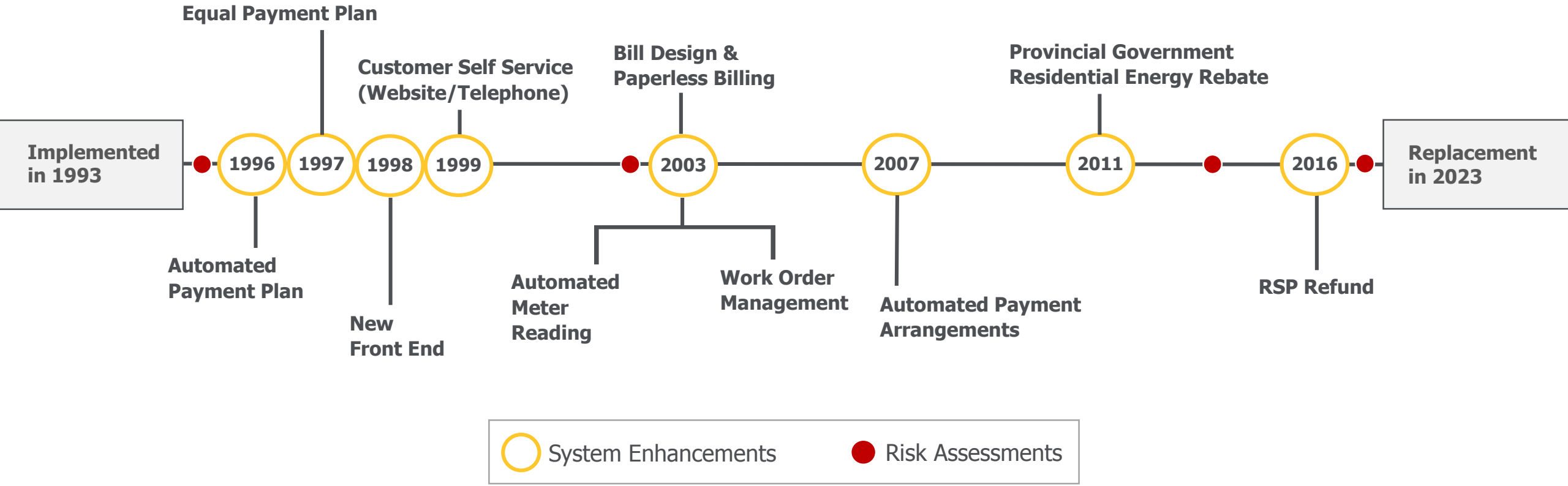
Source: 2021 Capital Budget Application, Volume 1, Customer Service Continuity Plan, Section 2.0, page 2 *et seq.*

Balancing Costs and Service



Source: 2021 Capital Budget Application, Volume 1, Customer Service Continuity Plan, Section 2.1, pages 3 to 4.

Customer Service System



Source: 2021 Capital Budget Application, Volume 1, Customer Service Continuity Plan, Attachment A, page 7.

Risks to Continued Operation

Risk Dimension	2018	If not replaced by 2023
Vendor Market Share:	Moderate – High	High
Vendor Health:	Moderate – High	High
Business Enabling:	Moderate – High	High
Support:	Moderate	High
Reliability & Security:	Low – Moderate	Moderate – High

Source: 2021 Capital Budget Application, Volume 1, Customer Service Continuity Plan, Section 2.2, page 6 *et seq.*

Assessment of Alternatives

- Independent assessment of alternatives:
  - Maintain status quo
  - Extend or enhance
  - Re-platform
  - Replace with commercial system

"Newfoundland Power is the last remaining mid-large size Canadian utility operating a legacy CIS application with no upgrade path provided by the original vendor"

- EY Survey (2018)

Source: 2021 Capital Budget Application, Volume 1, Customer Service Continuity Plan, Section 3.2, page 10.

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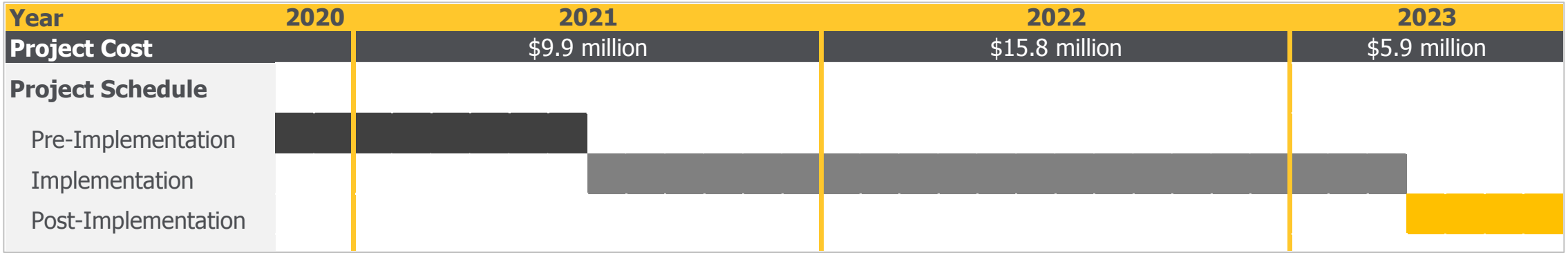
Customer Benefits

- Provide service continuity
- Maintain service efficiency
- Enhance customer experience

Source: 2021 Capital Budget Application, Volume 1, Customer Service Continuity Plan, Section 5.0, page 16 *et seq.*

Project Cost & Schedule

- $31.6 million over 3 years
- Based on planning recommendations of EY
- Consistent with industry best practices



Source: 2021 Capital Budget Application, Volume 1, Customer Service Continuity Plan, Section 6.0, page 19 *et seq.*

Conclusion

- Result of a comprehensive assessment process
- Consistent with industry best practices
- Long-term customer benefits

Source: 2021 Capital Budget Application, Volume 1, Customer Service Continuity Plan.

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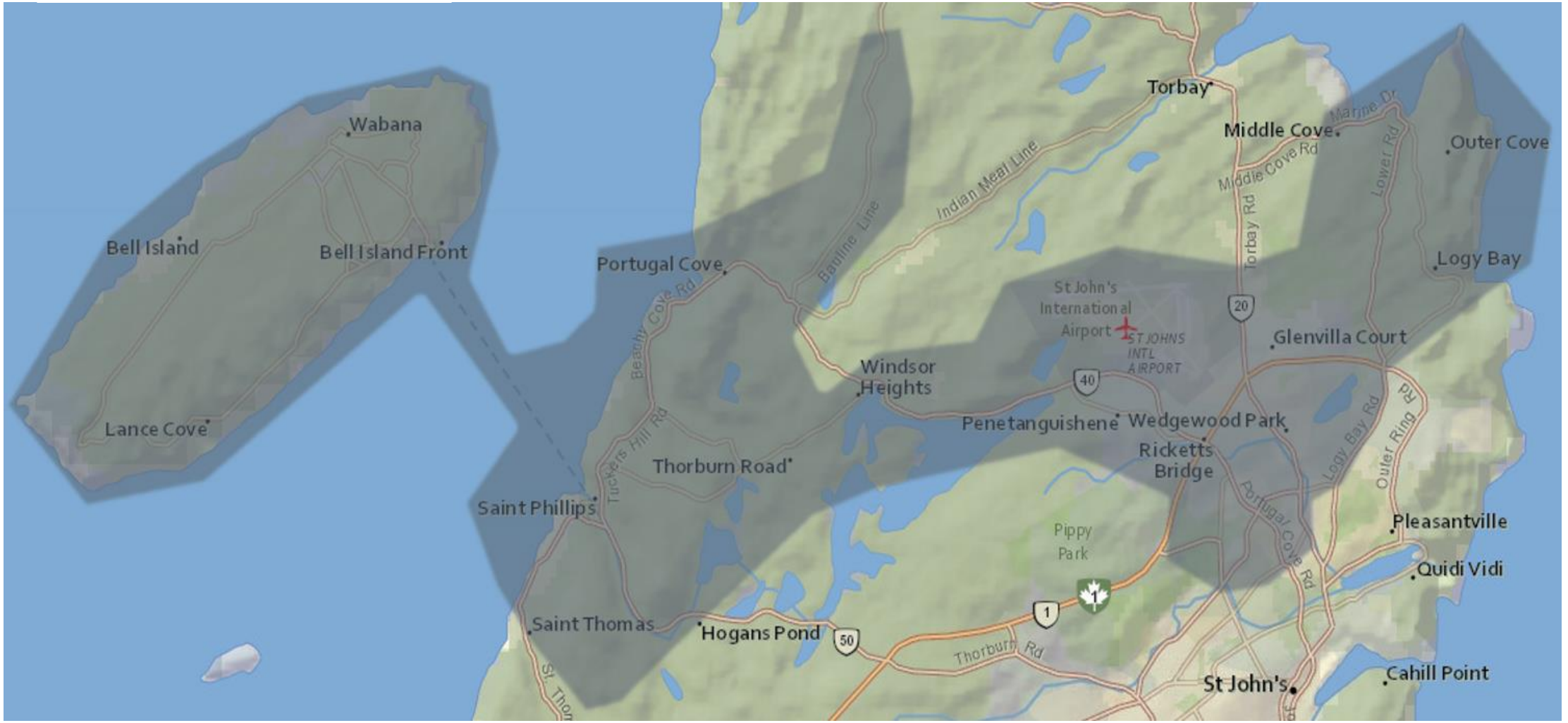
St. John's North – Portugal Cove System Planning Study

Presenter: Bob Cahill, Eng. L.

The Study Area



Source: 2021 Capital Budget Application, Volume 2, St. John's North – Portugal Cove System Planning Study, Section 2.0, page 1.

Historical Growth

Study Area Historical Growth		
Year	**Number of Customers**	**Peak Load (MVA)**
2009	15,979	122
2018	17,793	140
Increase	1,814	18

- Increased customer and electrical load growth
- 11% customer growth
- 14% peak load growth

Source: 2021 Capital Budget Application, Volume 2, St. John's North – Portugal Cove System Planning Study, Section 2.0, page 1 *et seq*.

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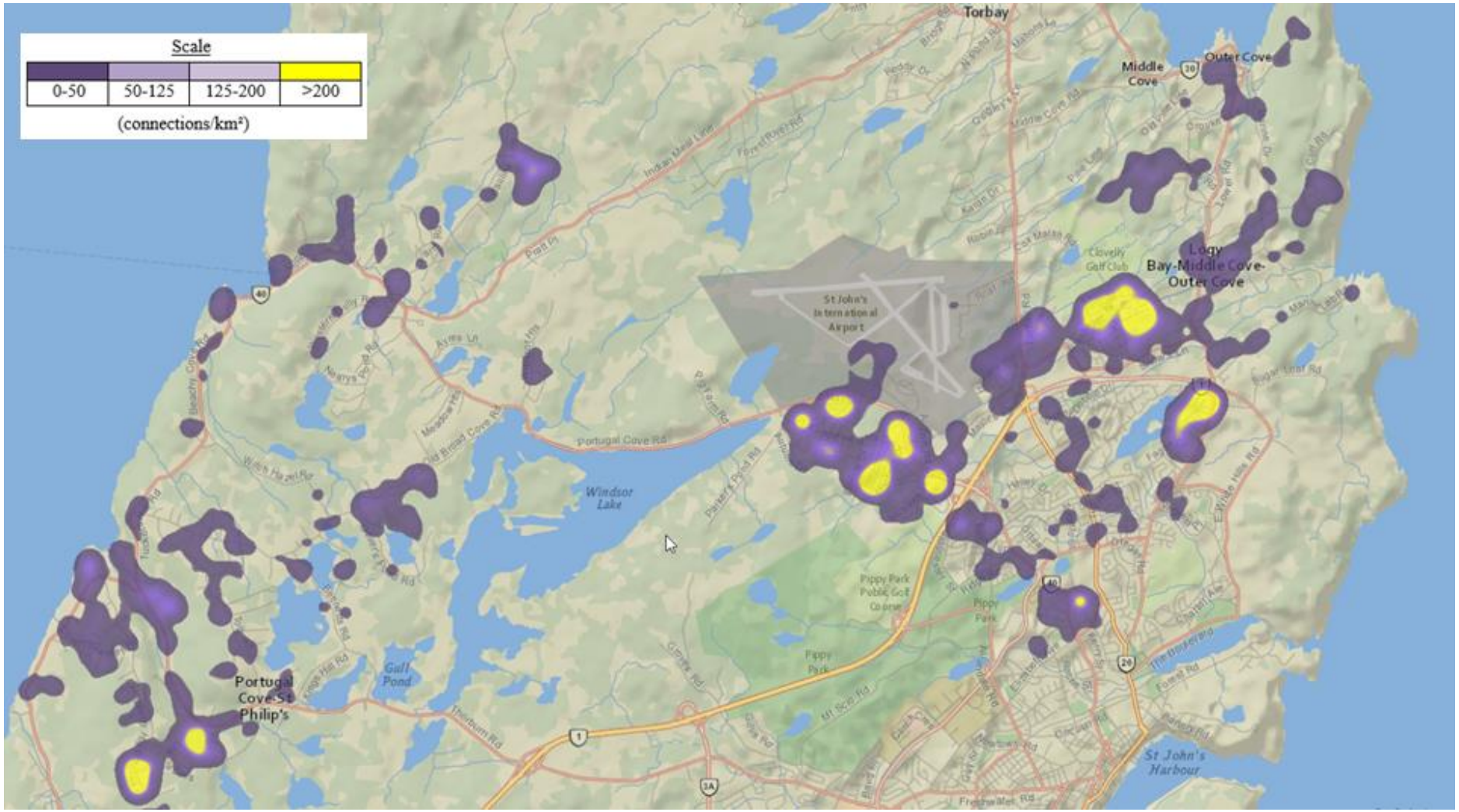
Historical Growth



Source: 2021 Capital Budget Application, Volume 2, St. John's North – Portugal Cove System Planning Study, Section 2.0, page 2.

Ongoing Development

Source: 2021 Capital Budget Application, Volume 2, St. John's North – Portugal Cove System Planning Study, Section 2.0, page 3.

Load Forecast

Study Area Load Forecast			
Transformer	**Transformer Rated Capacity (MVA)**	**2021 Forecast Load (MVA)**	**2040 Forecast Load (MVA)**
BCV-T1	25	26.6	29.9
RRD-T2	20	19.5	21.9
RRD-T3	20	22.1	24.8
VIR-T1	25	20.4	22.9
VIR-T2	25	23.2	26.0
VIR-T3	25	25.0	31.8

- 20-year load forecast for each substation
- 3 of 6 transformers overloaded in 2021
- 5 of 6 transformers overloaded in 2040

Source: 2021 Capital Budget Application, Volume 2, St. John's North – Portugal Cove System Planning Study, Section 4.0, page 5.

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Assessment of Alternatives

Capital Costs ($000s)		
Alternative		**Cost**
1	New Transformers at Broad Cove and Virginia Waters Substations	$7,491
2	New Substation near St. John's International Airport	$6,794
3	New Substation in Portugal Cove	$7,982

Source: 2021 Capital Budget Application, Volume 2, St. John's North – Portugal Cove System Planning Study, Section 5.0, page 6 *et seq*.

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Economic Analysis

Net Present Value Analysis ($000s)			
Alternative	**Base Case Forecast NPV**	**High Load Forecast NPV**	**Low Load Forecast NPV**
1	8,814	9,155	8,164
2	8,590	9,153	7,055
3	9,875	10,786	8,292

Source: 2021 Capital Budget Application, Volume 2, St. John's North – Portugal Cove System Planning Study, Section 6.3, page 11.

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Recommendation

- Alternative 2: New Substation near St. John's International Airport
- Maintains adequate supply
- Meets all required technical criteria
- Least-cost alternative

Source: 2021 Capital Budget Application, Volume 2, St. John's North – Portugal Cove System Planning Study, Section 7.0, page 12.

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WHENEVER. WHEREVER.
We'll be there.