

1 **Undertaking Request (U-84)**

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3 ***Transcript Reference: July 26, 2018, Pg. 100, line 8 to Pg. 102, line 19***

4 ***Re: Undertaking #54***

5 Undertake to provide update, if prepared and provided to Hydro before the end of the  
6 hearing, of Nalcor's report on O&M costs.

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9 **Undertaking Response**

10 Please see Undertaking U-84, Attachment 1 - Lower Churchill Project Budget/Forecast  
11 2019-2021 O&M Cost Supporting Details, October 2018.



# Lower Churchill Project Budget/Forecast 2019-2021 O&M Cost Supporting Details

October 2018



# Outline

1. Purpose
2. Summary Results
3. Key Assumptions
4. O&M Cost Details
5. Labour Cost Details
6. Variance Analysis

## Appendix A – SEM Contracts Overview

# Purpose

- To provide an update on the Budget 2019 and Forecast 2020-2021 O&M costs for LIL, LTA and MF
- Updates reflect a detailed review of 2019 costs incorporating (i) progressed Power Supply Transmission and Engineering Services organizational structures compared to previous forecast, (ii) additional SEM contract awards and advancement of the procurement approach, and (iii) input from Nalcor Corporate functions which now have greater clarity on the shared services they will provide to the Power Supply division
- Given the stage of development of Power Supply Generation operations organization, there has been a preliminary refresh of MF operating labour, SEM and environmental costs to reflect the progression of work that has been achieved since the initial O&M cost estimates were prepared in 2018
  - FTE assumptions align with preliminary benchmarking done by Navigant
  - More detailed focus on costs expected in 2019, as part of 2020 Budget process, as key positions are filled within the Generation operations organization who can provide input similar to what was provided by the Transmission operations team for the 2019 Budget

# Summary Results

# Total O&M Costs 2019-2021<sup>1</sup>

(\$ millions)	Budget		Forecast	
	2019	2020	2020	2021
Operating Labour & Salaries	\$ 9.8	\$ 11.8	\$ 11.8	\$ 14.7
System Equipment Maintenance	23.5	23.4	23.4	29.3
Corporate & Engineering Support Labour & Salaries	5.2	9.2	9.2	12.8
Administration & Other Costs	7.9	9.2	9.2	15.0
	<b>46.4</b>	<b>53.6</b>	<b>53.6</b>	<b>71.8</b>
Environmental	0.9	1.6	1.6	4.2
Water Power Rental	-	5.2	5.2	15.6
IBA Payments	-	1.9	1.9	5.8
<b>Total</b>	<b>\$ 47.3</b>	<b>\$ 62.3</b>	<b>\$ 62.3</b>	<b>\$ 97.4</b>

<sup>1</sup>Represents costs associated with the operation of the assets and excludes construction period expenditures that are not eligible for capitalization in accordance with IFRS, but will be recovered through the long-term power supply and transmission related agreements with NLH following MF commissioning

# O&M Costs 2019-2021 By Component

		Budget 2019	Forecast 2020	Forecast 2021
(\$ millions)				
<b>LIL</b>	Operating Labour & Salaries	\$ 7.4	\$ 8.1	\$ 7.9
	System Equipment Maintenance	20.9	17.1	16.7
	Corporate & Engineering Support Labour & Salaries	4.0	6.0	6.1
	Administration & Other Costs	5.6	5.6	7.7
	Environmental	0.9	0.3	0.2
<b>LIL Total</b>		<b>38.8</b>	<b>37.1</b>	<b>38.6</b>
<b>LTA</b>	Operating Labour & Salaries	2.4	2.4	2.3
	System Equipment Maintenance	2.6	3.3	3.5
	Corporate & Engineering Support Labour & Salaries	1.2	1.8	2.0
	Administration & Other Costs	2.3	1.9	2.5
<b>LTA Total</b>		<b>8.5</b>	<b>9.4</b>	<b>10.3</b>
<b>MF</b>	Operating Labour & Salaries	-	1.3	4.5
	System Equipment Maintenance	-	3.0	9.1
	Corporate & Engineering Support Labour & Salaries	-	1.4	4.7
	Administration & Other Costs	-	1.7	4.8
	Environmental	-	1.3	4.0
	Water Power Rental	-	5.2	15.6
	IBA Payments	-	1.9	5.8
<b>MF Total</b>		<b>-</b>	<b>15.8</b>	<b>48.5</b>
<b>Total</b>		<b>\$ 47.3</b>	<b>\$ 62.3</b>	<b>\$ 97.4</b>
Previous forecast		52.9	71.3	106.3
<b>Variance</b>		<b>\$ (5.6)</b>	<b>\$ (9.0)</b>	<b>\$ (8.9)</b>

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# Key Assumptions



# Key Assumptions

## Project Schedule

- Completion of LIL monopole testing and trial operations in January 2019
- Completion of LTA testing and trial operations in November 2018
- Completion of LIL bi-pole testing and trial operations in January 2020
- Completion of MF full commissioning in September 2020
- 2021 first full year operations for all assets

# Key Assumptions *(cont'd...)*

## Labour Costs

- Operating labour costs based on FTE assumptions as at Q2/Q3 2018, prepared during Nalcor 2019 budget cycle, based on *budgeted hours x bill rate*
- Corporate Support Services labour costs based on *budgeted hours x bill rate*, provided by support functions as part of the 2019 budget cycle
  - Labour hours estimate provided by various departments, converted to FTE based on 1950 hours/year x 85% for billable time
  - Finance costs for 2019 assume a portion of LCP Finance and Commercial team hours charged to O&M versus LCP capital cost (equivalent to approx 4 FTE's), with remaining FTE's representing an allocation for Nalcor Corporate Finance resources including Financial Reporting, Investment Evaluation, Tax, Treasury and AP/AR charging their time into the LCP Power Supply business unit
  - Executive costs represent a portion of the Power Supply Leadership team being charged into LCP O&M costs (ranging between 15-70%)
  - FTE's for other Corporate Support functions represent Nalcor Corporate resources charging their time into the LCP Power Supply business unit

# Key Assumptions *(cont'd...)*

## Labour Costs *(cont'd...)*

- Engineering Services costs based on FTE forecast as at Q2/Q3 2018, as provided by Power Supply Engineering Services
  - Labour hours estimate provided by Engineering Services, converted to FTE based on average of 2039 hours/year x 75% for billable time

## System Equipment Maintenance (“SEM”) Costs

- System Equipment Maintenance budget based on currently awarded contracts and projected requirements as at Q2/Q3 2018 (see Appendix A)

## Environment, Water Power Rentals & IBA

- Environment budget based on information provided by Nalcor Environment group
- Water Power Rental costs based on the Water Lease as modeled by Investment Evaluation
- IBA Payments based on the Impacts and Benefits Agreement as modeled by Investment Evaluation

## Key Assumptions *(cont'd...)*

### Administrative & Other Costs

- Budget based on estimates provided by various managers and include such categories as training, travel, warehousing, equipment rentals and professional services

### Contingency

- Included in the SEM cost category is a prudence contingency to address cost variations, escalation, etc. - based on 12% of total O&M Costs for each asset

### Actual vs. Budget (Estimate) True-Up

- O&M costs outlined herein based on best information currently available – LIL/LTA Interim TFA's include quarterly true-up mechanism to ensure NLH paying actual cost
- PPA, TFA/LIL Lease and GIA already include a quarterly true-up mechanism for the long term arrangements following MF Full Power

# O&M Cost Details

# O&M Costs 2019-2021 By Component

		Budget 2019	Forecast 2020	Forecast 2021
<b>LIL</b>				
	Operating Labour & Salaries	\$ 7,444.7	\$ 8,149.2	\$ 7,886.2
	System Equipment Maintenance	20,933.8	17,104.3	16,719.5
	Corporate & Engineering Support Labour & Salaries	3,991.7	5,960.7	6,071.2
	Administration & Other Costs	5,591.0	5,633.5	7,668.1
	Environmental	888.0	258.0	203.0
	<b>LIL Total</b>	<b>38,849.2</b>	<b>37,105.7</b>	<b>38,548.0</b>
<b>LTA</b>				
	Operating Labour & Salaries	2,347.6	2,406.3	2,285.4
	System Equipment Maintenance	2,603.8	3,324.9	3,531.7
	Corporate & Engineering Support Labour & Salaries	1,203.8	1,770.4	1,967.2
	Administration & Other Costs	2,296.1	1,897.4	2,535.6
	<b>LTA Total</b>	<b>8,451.3</b>	<b>9,399.0</b>	<b>10,319.9</b>
<b>MF</b>				
	Operating Labour & Salaries	-	1,263.1	4,473.1
	System Equipment Maintenance	-	2,998.1	9,089.4
	Corporate & Engineering Support Labour & Salaries	-	1,388.8	4,736.6
	Administration & Other Costs	-	1,675.3	4,812.2
	Environmental	-	1,336.8	3,972.0
	Water Power Rental	-	5,203.3	15,610.0
	IBA Payments	-	1,946.7	5,840.0
	<b>MF Total</b>	<b>-</b>	<b>15,812.1</b>	<b>48,533.3</b>
<b>Total</b>		<b>\$47,300.5</b>	<b>\$62,316.8</b>	<b>\$ 97,401.2</b>

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# O&M Cost Details by Component - LIL

(\$ thousands)	Budget 2019	Forecast 2020	Forecast 2021
<b>Operating Labour &amp; Salaries</b>			
Salaries & Benefits	\$ 6,931.8	\$ 7,623.5	\$ 7,347.4
Overtime	512.9	525.7	538.8
	<b>7,444.7</b>	<b>8,149.2</b>	<b>7,886.2</b>
<b>System Equipment Maintenance</b>			
Stations	5,885.6	2,245.1	2,347.2
Transmission	8,842.9	8,568.9	9,720.8
Facilities	6,142.1	4,178.4	4,368.4
SOBI	63.2	2,111.9	283.1
	<b>20,933.8</b>	<b>17,104.3</b>	<b>16,719.5</b>
<b>Corporate &amp; Engineering Support Labour &amp; Salaries</b>			
Corporate Support Services	1,836.1	3,818.5	3,234.1
Engineering Services	2,155.6	2,142.2	2,837.1
	<b>3,991.7</b>	<b>5,960.7</b>	<b>6,071.2</b>
<b>Administration &amp; Other Costs</b>			
Travel and Relocation	1,117.3	1,022.0	945.8
Training	1,106.4	651.7	299.8
Building Rentals	880.5	902.5	925.1
Admin Fees and Fixed Charge	775.3	794.7	814.6
Professional Services	488.8	601.0	616.0
Equipment Rentals	442.8	384.7	301.0
Transportation	288.0	295.2	302.6
Memberships, Subscriptions and Licenses	249.3	255.5	261.9
Advertising, Donations and Community	112.6	115.4	118.3
Safety Supplies	57.0	58.4	59.9
Utilities	55.7	57.1	58.5
NERC	-	-	1,725.0
Insurance	-	316.6	949.9
Independent Engineer	-	81.0	189.6
Miscellaneous	17.3	97.7	100.1
	<b>5,591.0</b>	<b>5,633.5</b>	<b>7,668.1</b>
<b>Environmental</b>	<b>888.0</b>	<b>258.0</b>	<b>203.0</b>
<b>Total</b>	<b>\$ 38,849.2</b>	<b>\$ 37,105.7</b>	<b>\$ 38,548.0</b>

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# O&M Cost Details by Component - LTA

(\$ thousands)	Budget 2019	Forecast 2020	Forecast 2021
<b>Operating Labour &amp; Salaries</b>			
Salaries & Benefits	\$ 2,180.8	\$ 2,235.3	\$ 2,110.1
Overtime	166.8	171.0	175.3
	<b>2,347.6</b>	<b>2,406.3</b>	<b>2,285.4</b>
<b>System Equipment Maintenance</b>			
Stations	597.9	570.0	591.8
Transmission	797.3	1,451.3	1,506.9
Facilities	1,208.6	1,303.6	1,433.0
	<b>2,603.8</b>	<b>3,324.9</b>	<b>3,531.7</b>
<b>Corporate &amp; Engineering Support Labour &amp; Salaries</b>			
Corporate Support Services	454.0	928.8	797.0
Engineering Services	749.8	841.6	1,170.2
	<b>1,203.8</b>	<b>1,770.4</b>	<b>1,967.2</b>
<b>Administration &amp; Other Costs</b>			
Training	1,024.3	442.1	273.6
Admin Fees and Fixed Charge	368.7	377.9	387.3
Travel and Relocation	274.2	186.9	168.8
Equipment Rentals	246.6	252.8	259.1
Transportation	172.4	176.7	181.1
Professional Services	137.4	240.8	246.8
Advertising, Donations and Community	31.3	32.1	32.9
Safety Supplies	10.7	11.0	11.3
Memberships, Subscriptions and Licenses	9.9	10.1	10.4
Utilities	8.2	8.4	8.6
Building Rentals	5.7	-	-
NERC	-	-	575.0
Insurance	-	96.6	289.8
Independent Engineer	-	20.1	48.0
Miscellaneous	6.7	41.9	42.9
	<b>2,296.1</b>	<b>1,897.4</b>	<b>2,535.6</b>
<b>Total</b>	<b>\$ 8,451.3</b>	<b>\$ 9,399.0</b>	<b>\$ 10,319.9</b>

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# O&M Cost Details by Component - MF

(\$ thousands)	Budget 2019	Forecast 2020	Forecast 2021
<b>Operating Labour &amp; Salaries</b>			
Salaries & Benefits	\$ -	\$ 1,198.6	\$ 4,279.6
Overtime	-	64.5	193.5
	-	<b>1,263.1</b>	<b>4,473.1</b>
<b>System Equipment Maintenance</b>			
Facilities	-	1,264.0	4,082.5
Reservoir, Dams, Spillway	-	1,383.2	3,956.7
Powerhouse	-	350.9	1,050.2
	-	<b>2,998.1</b>	<b>9,089.4</b>
<b>Corporate &amp; Engineering Support Labour &amp; Salaries</b>			
Corporate Support Services	-	974.0	2,351.7
Engineering Services	-	414.8	2,384.9
	-	<b>1,388.8</b>	<b>4,736.6</b>
<b>Administration &amp; Other Costs</b>			
Insurance	-	920.0	2,760.0
Professional Services	-	165.9	470.1
Building Rentals	-	98.6	212.3
Equipment Rentals	-	82.8	206.6
Travel and Relocation	-	79.0	214.6
Admin Fees and Fixed Charge	-	77.9	205.8
Training	-	67.1	190.3
Utilities	-	62.8	146.6
Transportation	-	42.1	118.9
Independent Engineer	-	19.7	128.4
Safety Supplies	-	15.6	41.2
Miscellaneous	-	43.8	117.4
	-	<b>1,675.3</b>	<b>4,812.2</b>
<b>Environmental</b>			
EEM Monitoring and other	-	1,336.8	3,972.0
	-	<b>1,336.8</b>	<b>3,972.0</b>
<b>Water Power Rental</b>			
	-	<b>5,203.3</b>	<b>15,610.0</b>
<b>IBA Payments</b>			
	-	<b>1,946.7</b>	<b>5,840.0</b>
<b>Total</b>	<b>\$ -</b>	<b>\$ 15,812.1</b>	<b>\$ 48,533.3</b>



# Labour Cost Details

# Operating Labour Cost Detail by Functional Discipline (\$ thousands)

Entity	Discipline	Budget 2019 FTE <sup>1</sup>	Budget 2019 Amount	Forecast 2020 FTE	Forecast 2020 Amount	Forecast 2021 FTE	Forecast 2021 Amount
LIL	Management & Support Services <sup>2</sup>	15	\$ 2,387.8	15	\$ 2,447.5	14	\$ 2,508.7
	Trades <sup>3</sup>	37	5,056.9	41	5,701.7	39	5,377.5
<b>LIL Total</b>		<b>52</b>	<b>7,444.7</b>	<b>56</b>	<b>8,149.2</b>	<b>53</b>	<b>7,886.2</b>
LTA	Management & Support Services	3	548.2	3	561.9	2	575.9
	Trades	10	1,799.4	10	1,844.4	10	1,709.5
<b>LTA Total</b>		<b>13</b>	<b>2,347.6</b>	<b>13</b>	<b>2,406.3</b>	<b>12</b>	<b>2,285.4</b>
MF	Management & Support Services	-	-	3	450.7	9	1,421.9
	Trades	-	-	6	812.4	22	3,051.2
<b>MF Total</b>		<b>-</b>	<b>-</b>	<b>9</b>	<b>1,263.1</b>	<b>31</b>	<b>4,473.1</b>
<b>Grand Total</b>		<b>65</b>	<b>\$ 9,792.3</b>	<b>78</b>	<b>\$ 11,818.6</b>	<b>96</b>	<b>\$ 14,644.7</b>

<sup>1</sup>FTE's represent net labour recharge-in

<sup>2</sup>Management & Support Services include managers, supervisors, administration and support staff

<sup>3</sup>Trades include front line and technical workers

# Corporate Support & Engineering Services Details - Total

(\$ thousands)

Department	Budget 2019			Forecast 2020			Forecast 2021		
	FTE	Equivalent Labour hrs	Amount	FTE	Equivalent Labour hrs	Amount	FTE	Equivalent Labour hrs	Amount
<b>Corporate Support Services</b>									
Finance, IE & Treasury	3.9	6,515	\$ 572.1	13.8	22,792	\$ 2,051.5	13.8	22,791	\$ 2,102.6
Executive	1.5	2,518	525.7	3.1	5,138	1,099.5	3.1	5,138	1,127.0
Environment	2.6	4,389	366.1	3.7	6,076	519.5	5.0	8,287	726.3
Supply Chain/Procurement	1.0	1,621	111.4	3.0	4,972	350.3	3.0	4,973	359.0
Network Services/IT	0.5	900	59.1	2.0	3,315	223.1	2.0	3,315	228.7
Ind. Affairs/Comm Relations	0.5	816	69.4	1.0	1,658	144.5	1.0	1,658	148.2
Legal	0.5	829	88.6	1.0	1,658	181.6	1.0	1,658	186.2
Communications	0.5	849	74.8	1.0	1,658	149.7	1.0	1,658	153.5
Internal Audit	-	-	-	1.0	1,658	149.2	1.0	1,658	152.9
Safety	1.2	1,970	151.2	1.5	2,487	195.7	2.0	3,315	267.4
Insurance & Risk	-	-	-	0.5	829	74.6	0.5	829	76.5
Human Resources	1.3	2,125	271.7	3.0	4,972	526.2	4.0	6,630	686.5
Independent Coordinator	-	-	-	0.3	552.0	55.9	1.0	1,657.5	168.0
	<b>13.5</b>	<b>22,532</b>	<b>2,290.1</b>	<b>34.9</b>	<b>57,213</b>	<b>5,721.3</b>	<b>38.4</b>	<b>63,568</b>	<b>6,382.8</b>
<b>Engineering Services</b>									
Engineering & Technical Specialties	15.1	23,039	1,968.4	15.8	24,474	2,282.4	28.5	44,226	4,179.8
Management & Administration	6.2	9,523	937.0	6.8	10,540	1,116.2	13.9	21,492	2,212.4
	<b>21.3</b>	<b>32,562</b>	<b>2,905.4</b>	<b>22.6</b>	<b>35,014</b>	<b>3,398.6</b>	<b>42.4</b>	<b>65,718</b>	<b>6,392.2</b>
<b>Total</b>	<b>34.8</b>	<b>55,094</b>	<b>\$ 5,195.5</b>	<b>57.5</b>	<b>92,227</b>	<b>\$ 9,119.9</b>	<b>80.8</b>	<b>129,286</b>	<b>\$ 12,775.0</b>

# Corporate Support & Engineering Services Details – LIL (\$ thousands)

Department	Budget 2019			Forecast 2020			Forecast 2021		
	FTE	Equivalent Labour hrs	Amount	FTE	Equivalent Labour hrs	Amount	FTE	Equivalent Labour hrs	Amount
<b>Corporate Support Services</b>									
Finance, IE & Treasury	3.1	5,130	\$ 450.1	9.2	15,286	\$ 1,375.9	7.1	11,807	\$ 1,089.3
Executive	1.2	1,931	409.3	2.1	3,446	737.4	1.6	2,662	583.9
Environment	2.3	3,745	309.8	2.7	4,475	382.6	2.7	4,475	392.2
Supply Chain/Procurement	0.8	1,297	89.1	2.0	3,335	234.9	1.6	2,576	186.0
Network Services/IT	0.4	720	47.3	1.3	2,223	149.6	1.0	1,717	118.5
Ind. Affairs/Comm Relations	0.4	653	55.5	0.7	1,112	96.9	0.5	859	76.8
Legal	0.5	829	88.6	0.7	1,112	121.8	0.5	859	96.5
Communications	0.4	679	59.8	0.7	1,112	100.4	0.5	859	79.5
Internal Audit	-	-	-	0.7	1,112	100.1	0.5	859	79.2
Safety	1.1	1,896	146.1	1.0	1,668	131.2	1.0	1,717	138.5
Insurance & Risk	-	-	-	0.3	556	50.0	0.3	429	39.6
Human Resources	0.9	1,512	180.5	2.0	3,335	337.7	2.1	3,435	354.1
	<b>11.1</b>	<b>18,392</b>	<b>1,836.1</b>	<b>23.4</b>	<b>38,772</b>	<b>3,818.5</b>	<b>19.4</b>	<b>32,254</b>	<b>3,234.1</b>
<b>Engineering Services</b>									
Engineering & Technical Specialties	10.5	16,069	1,390.1	9.6	14,800	1,381.5	12.5	19,373	1,829.6
Management & Administration	5.3	8,125	765.5	4.8	7,471	760.7	6.3	9,779	1,007.5
	<b>15.8</b>	<b>24,194</b>	<b>2,155.6</b>	<b>14.4</b>	<b>22,271</b>	<b>2,142.2</b>	<b>18.8</b>	<b>29,152</b>	<b>2,837.1</b>
<b>Total</b>	<b>26.9</b>	<b>42,586</b>	<b>\$ 3,991.7</b>	<b>37.8</b>	<b>61,043</b>	<b>\$ 5,960.7</b>	<b>38.2</b>	<b>61,406</b>	<b>\$ 6,071.2</b>



# Corporate Support & Engineering Services Details – LTA (\$ thousands)

Department	Budget 2019			Forecast 2020			Forecast 2021		
	FTE	Equivalent Labour hrs	Amount	FTE	Equivalent Labour hrs	Amount	FTE	Equivalent Labour hrs	Amount
<b>Corporate Support Services</b>									
Finance, IE & Treasury	0.8	1,385	\$ 122.0	2.3	3,793	\$ 341.4	1.8	2,991	\$ 275.9
Executive	0.4	587	116.4	0.5	855	183.0	0.4	674	147.8
Environment	0.4	644	56.3	0.3	497	42.5	0.3	497	43.6
Supply Chain/Procurement	0.2	324	22.3	0.5	827	58.3	0.4	653	47.1
Network Services/IT	0.1	180	11.8	0.3	552	37.2	0.3	435	30.0
Ind. Affairs/Comm Relations	0.1	163	13.9	0.2	276	24.1	0.1	218	19.5
Legal	-	-	-	0.2	276	30.2	0.1	218	24.5
Communications	0.1	170	15.0	0.2	276	24.9	0.1	218	20.2
Internal Audit	-	-	-	0.2	276	24.8	0.1	218	20.1
Safety	-	74	5.1	0.2	414	32.6	0.3	435	35.1
Insurance & Risk	-	-	-	0.1	138	12.4	0.1	109	10.1
Human Resources	0.4	613	91.2	0.5	827	117.4	0.5	870	123.1
	<b>2.5</b>	<b>4,140</b>	<b>454.0</b>	<b>5.5</b>	<b>9,007</b>	<b>928.8</b>	<b>4.5</b>	<b>7,536</b>	<b>797.0</b>
<b>Engineering Services</b>									
Engineering & Technical Specialties	4.6	6,970	578.3	4.5	7,071	649.1	6.2	9,689	902.5
Management & Administration	0.9	1,398	171.5	0.9	1,384	192.5	1.2	1,896	267.7
	<b>5.5</b>	<b>8,368</b>	<b>749.8</b>	<b>5.4</b>	<b>8,455</b>	<b>841.6</b>	<b>7.4</b>	<b>11,585</b>	<b>1,170.2</b>
<b>Total</b>	<b>8.0</b>	<b>12,508</b>	<b>\$ 1,203.8</b>	<b>10.9</b>	<b>17,462</b>	<b>\$ 1,770.4</b>	<b>11.9</b>	<b>19,121</b>	<b>\$ 1,967.2</b>

# Corporate Support & Engineering Services Details – MF

(\$ thousands)

Department	Budget 2019			Forecast 2020			Forecast 2021		
	FTE	Equivalent Labour hrs	Amount	FTE	Equivalent Labour hrs	Amount	FTE	Equivalent Labour hrs	Amount
<b>Corporate Support Services</b>									
Finance, IE & Treasury	-	-	\$ -	2.2	3,713	\$ 334.2	4.8	7,993	\$ 737.4
Executive	-	-	-	0.5	837	179.1	1.1	1,802	395.3
Environment	-	-	-	0.7	1,104	94.4	2.0	3,315	290.5
Supply Chain/Procurement	-	-	-	0.5	810	57.1	1.1	1,744	125.9
Network Services	-	-	-	0.3	540	36.3	0.7	1,163	80.2
Ind. Affairs/Comm Relations	-	-	-	0.2	270	23.5	0.4	581	51.9
Legal	-	-	-	0.2	270	29.6	0.4	581	65.2
Communications	-	-	-	0.2	270	24.4	0.4	581	53.8
Internal Audit	-	-	-	0.2	270	24.3	0.4	581	53.6
Safety	-	-	-	0.2	405	31.9	0.7	1,163	93.8
Insurance & Risk	-	-	-	0.1	135	12.2	0.2	291	26.8
Human Resources	-	-	-	0.5	810	71.1	1.4	2,325	209.3
Independent Coordinator	-	-	-	0.3	552	55.9	1.0	1,658	168.0
	-	-	-	<b>6.1</b>	<b>9,986</b>	<b>974.0</b>	<b>14.6</b>	<b>23,778</b>	<b>2,351.7</b>
<b>Engineering Services</b>									
Engineering & Technical Specialties				1.7	2,603	251.8	9.8	15,164	1,447.7
Management & Administration				1.1	1,685	163.0	6.4	9,817	937.2
				<b>2.8</b>	<b>4,288</b>	<b>414.8</b>	<b>16.2</b>	<b>24,981</b>	<b>2,384.9</b>
<b>Total</b>			<b>\$ -</b>	<b>8.9</b>	<b>14,274</b>	<b>\$ 1,388.8</b>	<b>30.8</b>	<b>48,759</b>	<b>\$ 4,736.6</b>



# Variance Analysis



# Variance Analysis – LIL 2019

Updated view for Budget 2019 for LIL is \$4.7M lower compared to previously provided Forecast 2019 estimates prepared during the Budget 2018 process. Variance is primarily a result of:

## Operating Labour & Salaries

- Portion of time allocated to LCP capital costs relating to bi-pole commissioning and testing activities
- Partially offset by higher rotational travel costs which roll up to salaries

## System Equipment Maintenance

- Updates to contract values based on current awards/updated projections for GE/ATCO/Growler (maintenance and operating assistance, mentoring, oversight contracts)
- Lower costs in 2019 for vegetation management which will ramp up in 2021 base year
- Removed SOBI inspection related costs as to be completed in 2018, and will be a bi-annual inspection thereafter
- Partially offset by i) higher estimated contract costs as a result of the Emergency Response Plan review (EFLA) including such items as simulation exercises and inventory storage and ii) additional materials, contracts, tools, supplies and other costs as a result of detailed review



# Variance Analysis – LIL 2019 (cont'd...)

## Corporate & Engineering Support Labour & Salaries

- System Planning & Operations removed from Budget 2019 as already budgeted within NLSO
- Support costs such as Finance, Executive, Supply Chain etc. allocated between both O&M and LCP capital costs on a staged basis until MF commissioning occurs and all assets are fully operational
- Lower average bill rate (~30%) for Engineering Services group than previously forecasted and fixed charge component budgeted as part of admin fees

Partially offset by higher costs for Budget 2019 as compared to previously provided Forecast 2019 primarily a result of:

## Administration & Other Costs

- Increase in training costs to reflect detailed plan for first year of operations as employees are trained in new assets – expected to decrease in subsequent years
- Increase in travel costs to reflect updated view on travel requirements for training and to provide coverage for geographical area of oversight
- Increase in building rental to reflect current/projected warehousing requirements
- Increase in equipment rental to reflect additional rentals required until capital purchasing decisions are made
- Fixed charge on Engineering Services labour was forecasted as part of labour cost but now budgeted as admin fees
- Partially offset by reduction for community betterment - costs now budgeted in Nalcor Other Power Supply Business Unit, and will not be part of costs recovered from Hydro

# Variance Analysis – LIL 2020/21

Updated view for Forecast 2020 and 2021 for LIL is \$5.9M and \$5.4M lower compared to previously provided Forecast for 2020 and 2021, respectively. Variances are primarily a result of:

## **System Equipment Maintenance**

- Reduction compared to previous estimates for ATCO/Growler contracts for mentoring and oversight activities
- For 2021, removal of SOBI inspection related costs which is forecasted to be a bi-annual inspection in 2018 and 2020
- Partially offset by higher estimated costs as a result of simulation exercises as part of the Emergency Response Plan review (EFLA)

## **Corporate & Engineering Support Labour & Salaries**

- System Planning & Operations removed from Forecast 2020 and 2021 as already budgeted within NLSO
- Lower average bill rate (~30%) for Engineering Services group than previously forecasted and fixed charge component budgeted as part of admin fees

# Variance Analysis – LTA 2019

Updated view for Budget 2019 for LTA is \$0.9M lower compared to previously provided Forecast 2019 estimates prepared during the Budget 2018 process. Variance is primarily a result of:

## Corporate & Engineering Support Labour & Salaries

- System Planning & Operations removed from Budget 2019 as already budgeted within NLSO
- Support costs such as Finance, Executive, Supply Chain etc. allocated between both O&M and LCP capital costs on a staged basis until MF commissioning occurs and all assets are fully operational
- Lower estimated hours and average bill rate (~30%) for Engineering Services group than previously forecasted and fixed charge component budgeted as part of admin fees

# Variance Analysis – LTA 2019 (cont'd...)

Partially offset by higher costs for Budget 2019 as compared to previously provided Forecast 2019 primarily a result of:

## **Operating Labour & Salaries**

- Higher bill rate for CF employees than Nalcor/NLH which was used in forecast during 2018 budget process

## **System Equipment Maintenance**

- Addition of a vegetation management program to start in 2019 (vs 2020)
- Additional materials, contracts, tools, supplies and other costs as a result of detailed review
- Partially offset by i) updates to contract values based on current awards/updated projections for GE (maintenance and operating assistance) and ii) lower costs in 2019 for road maintenance which will ramp up in 2021 base year

## **Administration & Other Costs**

- Increase in training costs to reflect detailed plan for first year of operations as employees are trained in new assets – expected to decrease in subsequent years
- Increase in equipment rental to reflect additional rentals required until capital purchasing decisions are made
- Fixed charge on Engineering Services labour was forecasted as part of labour cost but now budgeted as admin fees
- Partially offset by i) reduction for community betterment - costs now budgeted in Nalcor Other Power Supply Business Unit, and will not be part of costs recovered from Hydro

# Variance Analysis – LTA 2020/21

Updated view for Forecast 2020 and 2021 for LTA is \$1.3M and \$0.8M lower compared to previously provided Forecast for 2020 and 2021, respectively. Variances are primarily a result of:

## **System Equipment Maintenance**

- Reduction for GE contract value for maintenance and operating assistance based on current award/updated projections

## **Corporate & Engineering Support Labour & Salaries**

- System Planning & Operations removed from Forecast 2020 and 2021 as already budgeted within NLSO
- Lower average bill rate (~30%) for Engineering Services group than previously forecasted and fixed charge component budgeted as part of admin fees

# Variance Analysis – MF 2020/2021

Updated view for Forecast 2020 and 2021 for MF is \$1.8M and \$2.7M lower compared to previously provided Forecast for 2020 and 2021, respectively. Variances are primarily a result of:

## **Environmental**

- Lower costs for environmental effects monitoring for methylmercury, human health risk, aquatic program, ice formation
- Defer of environmental effects monitoring for forest avifauna and winter and summer ground surveys to 2022/24
- Removal of permit fees which apply to 2019 only

Partially offset by higher forecasted costs primarily a result of:

## **System Equipment Maintenance**

- Additional identified contracts such as debris management on the log boom

# Appendix A – SEM Contracts Overview



# SEM Contracts Overview – Base Year (July 2018)

Component	Stations	Facilities	Transmission	SOBI	Reservoir, Dam & Spillway	Powerhouse
<b>Labrador Island Link</b>	<ul style="list-style-type: none"> <li>• Converter Station/GIS/ Sync Plant</li> <li>• Diesel generators</li> <li>• Gases</li> <li>• Other</li> </ul>	<ul style="list-style-type: none"> <li>• Snow clearing</li> <li>• Security</li> <li>• Mobile equipment maintenance</li> <li>• Inventory storage and control</li> <li>• HVAC (heating, ventilation, air conditioners)</li> <li>• Crane and hoist</li> <li>• Janitorial/Waste removal</li> <li>• Electrical contracts</li> <li>• Trucking/ transportation</li> <li>• Other</li> </ul>	<ul style="list-style-type: none"> <li>• Right of Way road maintenance</li> <li>• Vegetation management</li> <li>• Emergency response initiatives</li> <li>• Helicopter Service</li> <li>• Long term crown title rentals</li> <li>• Other</li> </ul>	<ul style="list-style-type: none"> <li>• Routine maintenance and inspection</li> </ul>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
<b>Labrador Transmission Assets</b>	<ul style="list-style-type: none"> <li>• Converter Station/GIS/ Sync Plant</li> <li>• Other</li> </ul>	<ul style="list-style-type: none"> <li>• Maintenance and other costs for MF Admin building (cost shared)</li> <li>• Snow clearing</li> <li>• HVAC (heating, ventilation, air conditioners)</li> <li>• Mobile equipment maintenance</li> <li>• Security</li> <li>• Other</li> </ul>	<ul style="list-style-type: none"> <li>• Right of Way road maintenance</li> <li>• Vegetation management</li> <li>• Other</li> </ul>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
<b>Muskat Falls</b>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>	<ul style="list-style-type: none"> <li>• Security</li> <li>• Inventory storage and control</li> <li>• Janitorial/Waste removal</li> <li>• Mobile equipment maintenance</li> <li>• Snow clearing</li> <li>• Other</li> </ul>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>	<ul style="list-style-type: none"> <li>• Debris management on log boom</li> <li>• North Spur dewatering</li> <li>• Dams and Dykes oversight</li> <li>• Other</li> </ul>	<ul style="list-style-type: none"> <li>• Crane and hoist</li> <li>• HVAC (heating, ventilation, air conditioners)</li> <li>• Other</li> </ul>

