

**NOTL Hydro responses to OEB Staff Supplementary Interrogatories
on the Updated Evidence**

2019 Cost of Service Rate Application

Niagara-on-the-Lake Hydro Inc. (NOTL Hydro)

EB-2018-0056

January 30, 2019

Supp-Staff-1

Ref: Exhibit 2 Rate Base – Underground Voltage Conversion- Additional Evidence, Pages 3 and 4; Appendix 1H 2018 CGC Customer Engagement Report (Original evidence)

NOTL Hydro explained the reasons that triggered the underground voltage conversion by-law in 1989 as follows:

Installing the higher poles for the 27.6 kV lines would extensively damage this tree canopy and disturb the character of the area. This would not be acceptable to the Town residents. Recognizing this, in 1989 NOTL Hydro Electric Commission passed a by-law requiring that the voltage conversion in these area be by way of underground installations.

The attached by-law 5.7.1 in the additional evidence is named as a “Policy”.

The final report of customer engagement by CGC (Appendix 1H to Exhibit 1 of the original application), which summarized the customer engagement results from the 2018 open houses, states that

Customers commented that overall, underground lines should be a matter of efficiency, not cosmetics. They are a very expensive proposition and Niagara On The Lake Hydro has to be cautious in rolling them out. When it comes a cost vs. benefit analysis, the benefit appears too small and is not a priority.

- a) Please clarify whether the “by-law” 5.7.1” is a policy of the company? If so, would a company policy be reviewed periodically to ensure the appropriateness of the policy?
- b) Please explain if and how NOTL Hydro has reviewed the policy in 2018 based on the customers’ comment in the CGC’s final customer engagement report.
 - If so, please explain how the customers’ comment was incorporated into NOTL Hydro’s decision for the underground conversion program/project.
 - If not, please explain why not.

Response:

- a) The by-law became a policy of NOTL Hydro in 2000 as explained on page 5 of the additional evidence. Every year, the NOTL Hydro Board has approved capital expenditures for the underground voltage conversion program and as part of this process reviews the appropriateness of associated expenditures. The utility has continued to find that underground voltage conversion program expenditures are appropriate, and has had no reason to revisit the policy.
- b) NOTL Hydro agrees with its customers that efficiency and cost management must be kept top of mind in decision-making. NOTL Hydro management and its Board takes all these conflicting concerns and objectives into account in their decision-making. NOTL Hydro believes NOTL Hydro's low rates and reliability are evidence that these concerns have been taken into consideration and due caution has been taken.

NOTL Hydro does not believe that the underground voltage conversion project is a significant concern for its customers. To the contrary, NOTL Hydro believes that its customers support the program. The underground voltage conversion program was not raised as a concern at the October 19, 2018 Open House where the current application was presented. While customers did raise some questions about the undergrounding program at the 2018 customer engagement sessions, the overall conclusion was that customers support the approach being taken by NOTL Hydro. The conclusion in the Customer Engagement report cited by Board staff states as follows (Exhibit 1, Appendix H, page 13):

• Customers prefer Niagara on the Lake Hydro to roll out its underground line program in a cautious manner.

Most of the downtown of Niagara on the Lake now has underground lines, as does every new housing community. The plan Niagara on the Lake Hydro has put forward to finish the job in the downtown core was seen by customers as being a reasonable cost over the right number of years. Customers are aware of the community being a tourist destination and they are also concerned with reliability. The Niagara on the Lake Hydro plans for underground lines make the most sense to its customers.

Supp-Staff-2

Ref: Exhibit 2 Rate Base – Underground Voltage Conversion- Additional Evidence, Pages 7, 8, and 9; Exhibit 2 Rate Base (Original evidence), Page 46

Page 7 of the additional evidence provides a map of past and future underground voltage conversion in NOTL Olde Town.

Page 8 of the additional evidence stated that “NOTL Hydro estimates it has completed 2/3s of the underground conversion project and that it will be completed by 2034.”

Page 9 of the additional evidence (Table 2.4) provides the underground conversion expenditure and underground conversion spend % of Total capital. The table includes \$340k underground conversion spend in 2019.

Staff notes that page 46 of Exhibit 2 as filed in the original evidence (Table 2.34 capital projects table) provides the underground project expenditure as part of the system renewal expenditure from 2014 to 2028. Part of the table is reproduced below:

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Overhead	671,928	453,329	572,989	513,654	662,000	637,000	560,000	510,000	510,000	560,000	560,000	560,000	560,000	530,000	530,000
Underground	332,974	186,316	452,077	256,601	186,955	335,000	425,000	425,000	425,000	450,000	450,000	450,000	460,000	469,000	476,000
Underground - Additional Virgil						125,000	175,000								
System Renewal Total	1,004,902	639,645	1,025,066	770,255	848,955	1,097,000	1,160,000	935,000	935,000	1,010,000	1,010,000	1,010,000	1,020,000	999,000	1,006,000
Underground % of System Renewal total (staff calculation)	33%	29%	44%	33%	22%	42%	52%	45%	45%	45%	45%	45%	45%	47%	47%
Underground Average % of Total System Renewal	41%														

The underground % of system renewal total for each year from 2014 to 2028 and the average % are calculated by staff.

- Please confirm that all area shown in Map 2.2 with the future underground conversion is considered as tourist area.
- Please provide the data, if available, using the same format in the table above for the forecasted overhead, underground and total system renewal expenditures for the years of 2029 to 2034 when the underground conversion project will be completed.
- Please confirm the staff calculation for the underground % of system renewal total for each year from 2014 to 2018 and the average % calculated in the table above.
- Please confirm that the underground expenditure in 2019 that is subject to the OEB's determination is \$460k (\$335k plus \$125k Virgil project) instead of \$340k that was included in Table 2.4 of the additional evidence.
- Please confirm that NOTL Hydro did not file any additional evidence on the underground Virgil project of \$125k.

Response:

- a) Yes. The area shown in Map 2.2 shows the NOTL Olde Town, which is a tourist area. More broadly, almost all of Niagara-on-the-Lake is considered a tourist area. The wineries, distilleries, breweries, fruit farms, produce markets and other rural attractions, of which there are around many dozen, are scattered through-out the rural areas on Map 2.1. The Niagara Escarpment and the Bruce Trail run along the southern portion of Map 2.1. Queenston, Map 2.3, is home to the Laura Secord Homestead and part of the Niagara Parkway trail. The Shaw Festival, the historic Olde Town, Fort George and other old military sites are in Map 2.2. Even the Glendale area, which Niagara-on-the-Lake considers its “industrial” area and is in the southwest corner of Map 2.1, contains the Outlet Mall, four hotels and a convention centre which primarily serve the tourist market.
- b) NOTL Hydro did not forecast its capital requirements beyond 2028.
- c) NOTL Hydro confirms the staff calculation for the underground % of system renewal total for each year from 2014 to 2018 and the average % calculated in the table above. NOTL Hydro notes that the % are for the total underground system renewal capital costs and not the underground voltage conversion capital costs which are less.
- d) NOTL Hydro confirms that the underground expenditure in 2019 that is subject to the OEB’s determination is \$460k. NOTL Hydro notes that the additional evidence and Table 2.4, addresses the \$340k related specifically to the voltage conversion program and the Virgil underground project. The further \$120k of the 2019 planned expenditure of \$460k is for underground capital work that is not related to the voltage conversion program or the Virgil Project.

The overhead lines along Hwy 55 through the downtown Virgil area are already 27.6 kV so this is not a voltage conversion project. The Niagara Region is widening Hwy 55 through Virgil so the existing pole line will end up much closer to the road. For safety as well as aesthetic reasons it makes sense to move the line, just along this stretch, underground just as is done in most urban settings. As the Niagara Region will have much of the road torn apart for its roadworks in 2020, it makes sense to schedule the project then and reduce customer disruptions.

The underground capital expenditures since 2004, broken out between voltage conversion and general underground are as follows:

Year	Underground voltage conversion	Virgil	General underground	Total
2004	281		159	440
2005	57		420	477

2006	467		160	627
2007	35		95	130
2008	361		26	387
2009	797		95	892
2010	320		174	494
2011	177		269	446
2012	409		184	593
2013	415		144	559
2014	253		125	378
2015	125		132	258
2016	314		226	540
2017	61		278	339
2018 Forecast	162		114	276
2019 Plan	215	125	120	460
Total	4,449	125	2,722	7,296

General underground work includes the following:

- Moving distribution lines for reasons other than voltage conversion. Projects for the Niagara Region or the Town of Niagara-on-the-Lake are examples of this.
- General underground capital work such as replacing pad-mounted transformers or conduit.
- Capital repairs. Underground assets can still be damaged though this is less likely than overhead assets.
- Allocated senior management supervision prior to 2018.
- Circuitry work as feeder lines are occasionally adjusted due to growth patterns.

NOTL Hydro acknowledges that it has sometimes grouped the Virgil project with the voltage conversion program although there is no voltage conversion in Virgil. The attempt was to differentiate planned major projects versus the general work in response to customer requests and needs.

- e) The NOTL Hydro policy refers to the “Niagara Urban Service Area”. This is considered to include the Olde Town, Queenston and Virgil. This can be seen on the map on page 29 of Exhibit 1 of the original evidence. Accordingly, the Virgil project was captured by the by-law and policy documents included with the additional evidence. The Virgil project is not a voltage conversion project. The strip in downtown Virgil is quite congested so the intent is to move services at that location underground like in many urban areas in Ontario. NOTL Hydro is planning this work at the same time the Niagara Region is widening the street so as to minimize the impact on customers. This project was discussed at the community meetings held the last two years with no objections.

As explained above, the amounts described in the additional evidence (\$340k) relate to both the planned expenditures for the voltage conversion project, as well as the Virgil project. The additional evidence does not address the amounts related to the “general underground work” described in part (d) above.

Supp-Staff-3

Ref: Exhibit 2 Rate Base – Underground Voltage Conversion- Additional Evidence, Page 9; DSP filed in the original evidence, Page 62

NOTL Hydro explained one benefit of the underground conversion project “Tree trimming costs are lower. It is estimated that when the Olde Town is fully converted the tree trimming savings will be around \$20,000 for each three year cycle.”

Page 62 of the DSP as filed in the original evidence states that

Recently, a three-year agreement was signed with a qualified contractor to provide tree trimming services for a total contract price of \$130,000.

Another benefit provided by NOTL Hydro in its additional evidence is “Better reliability”. NOTL Hydro provided four outages impacting one customer in 2018 in Olde Town to support the benefit and stated that: “we were able to provide some reassurance that most of these would no longer occur when his service was converted to underground.”

- a) Please confirm that the tree trimming cost after 2034, which is the estimated completion year of underground project, would be \$110k for three-year cycle and the annual saving would be \$6.7k.
- b) Please provide the detailed explanation of the outages in 2018, including the cause of the outages, and who provide the reassurance that it would no longer occur when the service was converted to underground.

Response:

- a) NOTL Hydro is not able to make any confirmation as to what tree trimming costs will be in 2034, 15 years from now.
- b) The outages mentioned to the customer were:

April 14, 2018 – Hydro One poles on supply line to NOTL came down in wind storm. This took out power to half the Town. (this outage was not included in the four outages noted in the evidence, because it arose from impact to Hydro One lines)

May 15, 2018 – Lightning strike damaged equipment. Over 70 customers in downtown area without power.

May 19, 2018 – Tree contact caused a short. Over 50 customers in downtown area without power.

June 26, 2018 – Trees came down in early morning wind storm and several hundred customers without power.

September 21, 2018 – Tree contact caused short due to high winds. Over 50 customers without power.

The reassurance was provided by the President and stated “As you can see one of the big causes of outages is trees coming into contact with our lines during wind storms. The tree canopy in NOTL has grown extensively over the past number of years. This is great from a quality of life point of view but bad for electricity distribution. We have a program where we trim the trees back every three years but we need to be judicious in its application. We are talking internally about being more aggressive in its application but must naturally take other concerns into account. We do have a multi-decade program of gradually converting all of the Olde Town to underground wiring. This will eliminate much of the outages. This is expensive so we can only do a few blocks each year. “

Please note that the reassurance did not state that outages “would no longer occur when the service was converted to underground” as per the question but stated that “we were able to provide some reassurance that most of these would no longer occur when his service was converted to underground.”

A copy of the email sent to the customer is attached as Appendix 1.

Supp-Staff-4

Ref: Exhibit 2 Rate Base – Underground Voltage Conversion- Additional Evidence,
Page 10

In analyzing the costs, NOTL Hydro explained that “there is an additional cost to install an underground service compared to overhead but that differential is difficult to quantify.”

It further explained that the main cost drivers for the higher installation costs of overhead in urban area as compared to the rural area are the higher planning and design costs in urban area and the cost of rigorous review process including public hearings for any construction in Olde Town. Niagara-on-the-Lake Hydro stated that “the cost of this process is likely to be significant due to the additional tree trimming, and potential tree removals, that would be required with the higher 27.6 kV lines”.

- a) Please explain whether the cost of installing an overhead line would still be lower than the cost of installing the underground, even with the additional costs mentioned above.
- b) Given NOTL Hydro has started the underground conversion project in 1987, please provide the history (maintenance frequency and cost incurred for repair and maintenance) with respect to the maintenance of the underground facilities in Olde Town.
- c) Please explain whether NOTL Hydro has analyzed the cost of maintenance

- between the overhead and underground. If so, please provide. If not, why not.
- d) Please provide the method (i.e. Direct buried, Duct bank or Concrete encased duct bank) used by NOTL Hydro for its underground conversion project and the rationales for choosing the method(s)

Response:

- a) It is expected the cost of installing an overhead line would still be lower than the cost of installing the underground, even with the additional costs mentioned above. However, if the public hearing costs from those opposed to overhead lines became exorbitant then this may no longer be the case. Additionally, whether NOTL Hydro might be prevented from installing new overhead lines in the Olde Town due to a legal challenge is a different question.
- b) The following table summarizes NOTL Hydro's underground maintenance costs since 2004. NOTL Hydro was unable to locate the costs for 1987-2003. The maintenance costs are for all the underground systems (not just the Olde Town) as NOTL Hydro does track the costs by areas within the Town.

Year	Underground Maintenance Costs
2004	97,373
2005	63,902
2006	80,484
2007	112,666
2008	53,444
2009	68,626
2010	70,018
2011	98,424
2012	69,609
2013	59,159
2014	63,454
2015	117,548
2016	94,946
2017	91,334
2018 – Forecast	79,189
2019 Planned	81,203

- c) NOTL Hydro has not itself analyzed the cost of maintenance between the overhead and underground. This has not been raised as an item of concern.

In case this is an item of interest to the Board, NOTL Hydro notes that there is plenty of literature on this subject written by experts. A reference is provided:

<https://electrical-engineering-portal.com/overhead-vs-underground>

- d) NOTL Hydro underground plant is always installed in direct buried duct so cables can be replaced easily in the event of faults. Only road crossings are reinforced concrete encased because of vehicular loading.

Supp-Staff-5

Ref: Exhibit 5 Cost of Long-term debt Additional Evidence, Page 2

NOTL Hydro explained that the town advised NOTL Hydro of its intention of calling the two callable town loans and resetting the interest rates of 3.5% by providing an excerpt of the email from the town. In the email, the town staff indicated a discussion to be held in January.

Staff notes from the original evidence that one town loan has a 90-day notice period for recalling the loan and the other town loan has a 45-day notice period for recalling the loan.

- a) Please provide a pdf copy of the email from the town.
- b) Please provide an update regarding any discussion with the town.
- c) Please provide the expected effective dates for the two town loans with reset interest rates.

Response:

- a) A pdf copy of the email from the Town is attached as Appendix 2.
- b) The date when Town Council will review and approve the new loan with the new interest rate for NOTL Hydro has been scheduled for March 4, 2019. The Town has a new council so this is the earliest this item could be scheduled. Please see SEC-Supp-46 for a detailed review of the communications between the Town and NOTL Hydro on this matter.
- c) The effective dates for the two Town loans with reset interest rates will be March 1, 2019.

Supp-Staff-6

Ref: Exhibit 5 Cost of Long-term debt Additional Evidence, Page 3

NOTL Hydro stated that "The proposed rate is equivalent to what financial institutions were offering at that time for 10 year debt. Again, as this debt is unsecured and has no financial covenants it is really much cheaper."

a) Please provide the support for the statement that “the proposed rate is equivalent to what financial institutions were offering at that time for 10 year debt.”

Response:

In early December, NOTL Hydro contacted a schedule A bank and requested indicative rates. The bank provided that the indicative swap rate as of December 13, 2018 was 2.73%. On top of this NOTL Hydro pays a 0.75% stamping fees giving an aggregate rate of 3.48%. The rate of 3.50% was therefore considered a fair rate.

As was noted in the additional evidence, the loans from the Town are much more conducive to NOTL Hydro as they do not contain restrictive financial covenants and are unsecured. The Town would also be easier to negotiate with in the event NOTL Hydro needed to change the terms of the loans. Paying around the same rate as would be required from a financial institution is therefore beneficial.

Supp-Staff-7

Ref: Exhibit 9 Group 2 and LRAM Rate Riders Additional Evidence, Page 3; DVA Continuity Schedule filed on Jan 10, 2019, Tab 7 Rate Rider Calculations

Staff notes that the Group 2 rate riders for all rate classes in the DVA continuity schedule filed with the settlement proposal are still based on one-year disposition period instead of two-year period.

- a) Please confirm if the staff observation above is correct. If so, please update the Group 2 rate riders in the DVA continuity schedule using a two-year disposition period.

Response:

The staff observation is correct. The Group 2 rate riders in the DVA continuity schedule are still based on a one-year disposition period. NOTL Hydro was/is unable to change the disposition period to two-years in the model due to editing restrictions in the excel file. The cells are locked.

Tim Curtis

From: Tim Curtis
Sent: Thursday, September 27, 2018 10:59 AM
To: [REDACTED]
Cc: Sara Engels
Subject: FW: Contact Us Form Entry

[REDACTED]

Thank you again for your e-mail.

We believe you have had five outages this year so you were being kind to us with your estimate of four.

The dates and causes are summarized as follows:

April 14, 2018 – Hydro One poles on supply line to NOTL came down in wind storm. This took out power to half the town.

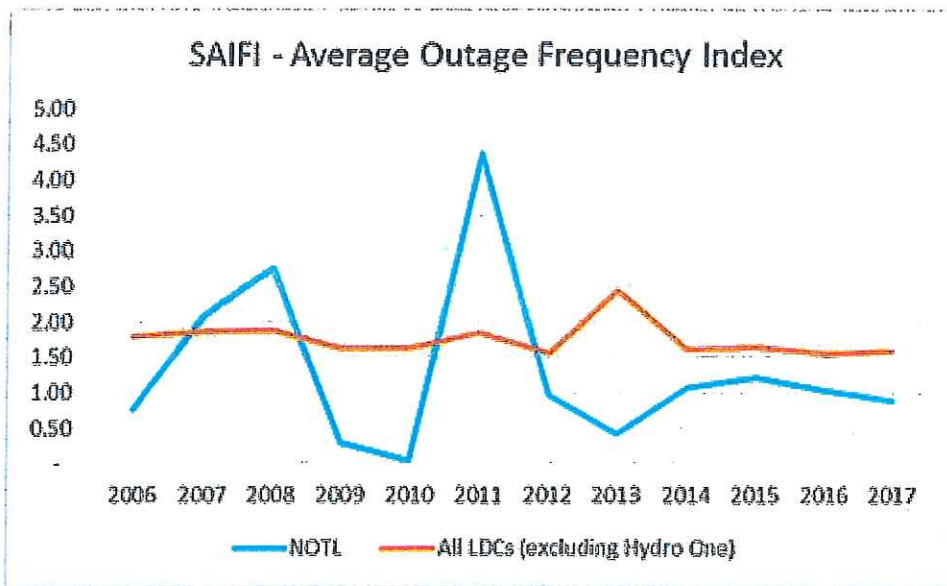
May 15, 2018 – Lightning strike damaged equipment. Over 70 customers in downtown area without power.

May 19, 2018 – Tree contact caused a short. Over 50 customers in downtown area without power.

June 26, 2018 – Trees came down in early morning wind storm and several hundred customers without power.

September 21, 2018 – Tree contact caused short due to high winds. Over 50 customers without power.

We do track closely the number of outages our customers have incurred. Over the past five years the average has been just under one per year. That is the blue line in the chart below. The five that you have incurred this year is therefore unusual.



As you can see one of the big causes of outages is trees coming into contact with our lines during wind storms. The tree canopy in NOTL has grown extensively over the past number of years. This is great from a quality of life point of view

but bad for electricity distribution. We have a program where we trim the trees back every three years but we need to be judicious in its application. We are talking internally about being more aggressive in its application but must naturally take other concerns into account.

We do have a multi-decade program of gradually converting all of the Olde Town to underground wiring. This will eliminate much of the outages. This is expensive so we can only do a few blocks each year. [REDACTED] will not be done for another 10 years (2025-2034).



There is nothing specific to your street or area other than you still have overhead service. If the neighbours you refer to our on Simcoe then that is the reason for the difference in number of outages as they have been converted to underground.

I can assure you that everything reasonable is being done to keep outages to a minimum and to reduce the response time when there is an outage. I, unfortunately, can never guarantee that there will not be another outage.

**Niagara
On-The-Lake
HYDRO**

Timothy B. Curtis

President

Tel: 905-468-4235 x550 Fax: 905-468-3861 Cell: 905-537-4512

E-mail: tcurtis@notlhydro.com Web: www.NOTLhydro.com

From: Niagara-on-the-Lake Hydro Billing
Sent: Friday, September 21, 2018 3:13 PM
To: Tim Curtis <tcurtis@notlhydro.com>
Subject: FW: Contact Us Form Entry



Customer Service Department

Tel: 905-468-4235 Fax: 905-468-3861

E-mail: billing@notlhydro.com Web: www.NOTLhydro.com

NOTL Hydro: 8 Henegan Road, PO Box 460, Virgil, ON L0S 1T0



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From: NOTL Hydro Contact Form [<mailto:billing@notlhydro.com>]

Sent: September-21-18 2:53 PM

To: Niagara-on-the-Lake Hydro Billing

Subject: Contact Us Form Entry

Name: [REDACTED]

Email: [REDACTED]

Phone: [REDACTED]

Topic: Billing Question

Message: Good afternoon

I live at [REDACTED] NOTL. We had a power cut this morning at 424a.m. and this by my count, is the fourth such occurrence this summer. That is the most that I have ever had in any home in any of the varied locations that I have lived previously. I am concerned that there is a chronic problem of some kind with the system in my immediate area. When the power goes out our sump and varies alarms are inoperable and this leaves our home very vulnerable. Several of our neighbours have invested in back up generators and we are now considering doing the same.

I would like some level of assurance that everything possible is being done to maintain and service the power grid in our immediate area. These power outages are very specific and neighbouring homes on the next street appear to be unaffected by this chronic problem.

Respectfully

[REDACTED]

[REDACTED]

Tim Curtis

From: KFreeborn@notl.org
Sent: Wednesday, December 19, 2018 9:46 PM
To: Tim Curtis
Cc: Holly Dowd
Subject: NOTL Hydro Debt with Town

Hi Tim,

With respect to the \$2 million loan from the Town of NOTL dated October 1, 2015 and the 3 million loan dated January 19, 2015, in each case the Town has the option to call the loan within a suitable notice period. The intent of these conditions was to allow the Town to refinance the loan should interest rates rise. Interest rates have been rising recently and we believe the rates we receive on these loans should reflect this. It is the intent of the Town to call these loans with a view to replacing them, once required approvals have been received, with otherwise identical loans at 3.5%.

Let's setup a time to discuss further, we are shut down after this Friday over the holidays but reopen on January 2nd.

Regards,

Kyle Freeborn, BCom(Hons), CPA, CMA
Acting Director of Corporate Services/Treasurer
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Twitter: [@Town of NOTL](https://twitter.com/Town_of_NOTL) & [@NOTLfiredept](https://twitter.com/NOTLfiredept)

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