

March 14, 2018

**VIA COURIER, RESS and EMAIL**

Ms. Kirsten Walli  
Board Secretary  
Ontario Energy Board  
2300 Yonge Street, 27<sup>th</sup> Floor  
Toronto, ON  
M4P 1E4

Dear Ms. Walli:

**Re: Upper Canada Transmission, Inc. ("UTC" or "NextBridge")  
Ontario Energy Board ("OEB" or "Board") File EB-2017-0182/EB-2017-0194  
New East-West Tie Line Project  
NextBridge Response to Board Procedural Order No. 2**

On March 1, 2018, the OEB issued Procedural Order No. 2 in EB-2017-0182. In that order, the OEB concluded, among other things, that a more complete record on costs is needed to assess the prudence of the development costs and the reasonableness of the construction costs. On this basis, the OEB directed NextBridge to file the evidence it believes to be necessary to support the development and construction costs for the Project by March 14, 2018. NextBridge hereby submits the following additional evidence:

- Exhibit B, Tab 15, Schedule 1 plus Attachment titled "Detailed Description of Construction Costs" related to the reasonableness of NextBridge's construction costs; and
- Exhibit B, Tab 16, Schedule 1 plus Attachments titled "Development Costs" related to the prudence of NextBridge's development costs.

Also through Procedural Order No. 2, the Board offered NextBridge the opportunity to file a revised confidentiality request, and further directed NextBridge to file on or before March 14, 2018 a detailed explanation of specific reasons why the proposed confidential information should be treated as confidential and why public disclosure of that information would be detrimental. NextBridge has submitted under separate cover a letter describing the materials for which NextBridge continues to seek confidential treatment in accordance with the Board's *Practice Direction on Confidential Filings* and providing a detailed explanation of specific reasons why the proposed confidential information should be treated as confidential and why public disclosure of that information would be detrimental.



That submission also provides updated NextBridge responses to Board Staff Interrogatory #7 and CCC Interrogatory #8.

Yours truly,

(Original Signed)

Krista Hughes  
Senior Legal Counsel  
Enbridge Employee Services Canada Inc.

1                    DETAILED DESCRIPTION OF CONSTRUCTION COSTS  
2

3     On March 1, 2018, the OEB issued Procedural Order No. 2 in EB-2017-0182. In that  
4     order, the OEB directed NextBridge, among other things, to submit additional evidence  
5     on the reasonableness of construction costs. The additional evidence NextBridge is  
6     filing on the reasonableness of construction costs includes: (1) a detailed explanation of  
7     construction costs broken down in accordance with the categories set forth on  
8     pages 2 and 3 of Attachment 1 to NextBridge's response to CCC Interrogatory #8 at  
9     Exhibit I.B.NextBridge.CCC.8; and (2) a report completed by Charles River Associates  
10    comparing NextBridge's construction costs to other similar transmission project  
11    construction costs. While the following construction cost descriptions are detailed, they  
12    are not exhaustive as it is not practical to describe all anticipated construction phase  
13    activities in this evidence.

14  
15    Non-Engineering and Construction Costs

16    In Attachment 1 to NextBridge's response to CCC Interrogatory #8 at  
17    Exhibit I.B.NextBridge.CCC.8, the construction cost budget has been split into  
18    Engineering and Construction ("E&C") and Non-Engineering and Construction ("Non-  
19    E&C") costs. The table below outlines the activities related to the non-Engineering and  
20    Construction disciplines.

1

Non-Engineering and Construction Costs	
Environmental	<p>This cost category includes the Environmental Assessment (“EA”) (final EA comment and response period, field surveys associated with the EA, drafting and submitting an Amended EA, meetings with Regulators and stakeholders regarding the final and amended EA comments to help their reviews, and the amended EA comment and response period), Permit/approval acquisition, including from but not limited to the following Regulators: Department of Fisheries and Oceans; Transport Canada; Environment and Climate Change Canada; Indigenous and Northern Affairs Canada; Ministry of Natural Resources and Forestry; Ministry of Tourism, Culture and Sport; Infrastructure Ontario; Ministry of Environment and Climate Change; and Lakehead Region Conservation Authority (preliminary consultation, field surveys and assessments, drafting and submitting applications, further consultation), Construction Environmental Protection and Compensation Plan and Alignment Sheets (developing them as part of the EA and updating them prior to construction), Environmental training for field personnel for construction, Breeding Bird nest sweeps and Amphibian salvage prior to vegetation clearing, Fish salvage prior to in water works for water course crossings, and Environmental inspection during construction.</p> <p>The major services for external environmental consultants have been competitively sourced and the hourly rates of these services are consistent with NextBridge partner organization experience and expectations for these types of services, especially given the size, complexity, limited access and difficult terrain of this project.</p>
Land Rights	<p>This cost category includes activities to secure and maintain the necessary land rights for the Project. Such costs include completion of property owner and Crown interest holder acquisition; permitting activities including 3rd party crossing notification, negotiation and execution of agreements, submission of <i>Public Lands Act</i> applications, and other Provincial and Federal approvals; Land Title and legal document production and review, Project line list maintenance and updates, GIS, mapping and data support; appraisals, legal survey for plan registration; Expropriation support; in-field landowner related construction and post-construction site remediation activity coordination, and damage settlement; land</p>

Non-Engineering and Construction Costs	
	<p>compensation for requisite land rights including easement and incentive payments, Crown land payments, construction damage payments, and input towards and participation in the leave to construct process and Amended EA review process.</p> <p>The major services for external land consultant have been competitively sourced and the hourly rates of these services are consistent with NextBridge partner organization experience and expectations for these types of services.</p>
First Nation and Métis Participation	<p>First Nation and Métis economic participation costs include legal, project management and construction fees and labour costs to ensure that the commitments made during the negotiation of various agreements are carried out. For example, community liaison activities by community members providing general assistance and support in connection with the construction of the EWT Line Project. Negotiation costs with two First Nations (Pays Plat and Michipicoten) are included to account for legal fees and capacity funding to these communities to draft and conclude a Federal permit or designation to traverse reserve lands. Legal and program management costs to apply to the Aboriginal Loan Guarantee Program ("ALGP") are included.</p>
First Nation and Métis Consultation	<p>This cost category includes engagement with and continued support to communities to facilitate the development, maintenance and participation in current environmental mitigation strategies for activities relating to, or in connection with, project permitting during the construction period. Advisory committee costs are included to enable NextBridge to meet with community members from the region to provide project updates and discuss potential issues that may arise during the construction period. Community investment funds are provided to support First Nation and Métis events and groups in the region. Costs also include support for First Nation and Métis training, employment and contracting to enable communities to maximize opportunities during the construction period.</p>
Other Consultation	<p>NextBridge has targeted larger engagement activities to coincide with major project milestones. Two rounds of open houses are planned, one at the commencement of construction and one at the conclusion of construction. Given that open houses provide the most transparent and open opportunity for stakeholders to engage with project staff, NextBridge considers that they are important for the success of the project and to satisfy stakeholder</p>

Non-Engineering and Construction Costs	
	<p>expectations. The open house scheduled for the commencement of construction will provide information on what people can expect in their community as workers mobilize and construction activity begins. This contains an important safety element as well. While effective, not everybody will or can attend an open house, so NextBridge is also proposing a Construction Awareness Campaign to coincide with construction commencement. The campaign will consist of advertisements in local newspapers letting readers know what's happening, what they can do to stay safe in and around construction activity, and who to contact should they have concerns or perceive safety violations. A final round of open houses will take place at the end of construction to inform of operational activities and remediation work that may take place after the project is in service.</p> <p>Also, NextBridge intends to expand Community Investment activity in the project area. Outreach with communities will identify key priorities for the communities in 2018 and 2019, and budgeted Community Investment money will be distributed along the ROW to help address those priorities.</p> <p>In conjunction with open houses and attendance at Community Investment events, NextBridge will meet with municipal and other stakeholders in the communities to provide additional project and construction updates. These meetings will primarily be tied to activities that require attendance in the communities to reduce travel costs, however, additional meetings with municipal stakeholders may be scheduled should they be needed.</p> <p>Engagement that is required by regulatory processes, including notifications and responding to inquiries and comments on regulatory filings, will continue. Other inexpensive but effective methods of stakeholder and municipal outreach will also continue, including project update letters, newsletters and regular updating of the project web site for access to timely information and project documentation.</p>

Non-Engineering and Construction Costs	
Regulatory	<p>This cost category addresses predicted costs related to regulatory activities anticipated to be required in advance of the EWT Line Project being able to enter into service. A proceeding related to NextBridge's Leave to Construct ("LTC") application is currently underway and, if NextBridge's proposal is approved by the Ontario Energy Board, will result in authorization for NextBridge to construct the EWT Line Project in July 2018. Additional anticipated regulatory activity for the period includes preparation of an application for rates for the EWT Line Project in 2019, with a hearing expected mid-2020 to achieve December 2020 in-service. Should land acquisition negotiations not be 100% successful, mediation and/or expropriation proceedings are anticipated to be required, as well as post-expropriation compensation proceedings should landowners disagree with proposed compensation amounts.</p> <p>External counsel services will be engaged to provide legal advice and support in relation to these matters. Limited external consultant services are also expected to be incurred in support of the rate application. Hearing costs and costs related to intervenor participation in each of the LTC, rate application and any mediation and/or expropriation and compensation proceedings are also included in this category.</p> <p>Ongoing regulatory support activities and limited expenses related to project development, environmental assessment processes and construction will also continue in this period.</p>
Project Management	<p>This cost category includes the overall project management activities including task/schedule management, internal/external reporting including Ontario Energy Board reports and requests, management communication and directives, overall cost management including team lead variance discussions, back office functions including accounting, financial reporting, accounts payable, vendor management/supply chain, cash management, tax, audit management, regulatory support, and financial modeling.</p>
Contingency – Non-E&C	<p>Estimating project costs involves risk and assumptions. In recognition of these risks, NextBridge examined the current project definition and calculated the contingency based on the non-Engineering &amp; Construction tasks.</p>
Site Remediation -Non-E&C	<p>It is assumed there will be 2 years of post-construction requirements based on conditions of EA and permit approvals for site reclamation</p>

Non-Engineering and Construction Costs	
	work. This cost includes environmental inspectors (“EIs”) required to monitor the entire length of the right of way (“ROW”), including temporary work spaces, access roads, laydown and storage yards, construction camps, etc. The EIs will evaluate reclamation activities, watercourse crossings, surface water at permanent watercourse crossings and roadside drainage structures for function and condition and streamflow rates. Internal labour costs are included for two years to manage the environmental inspectors, obtain any licences/approvals required in relation to follow-up work and report on post construction monitoring and succession to the regulators as part of the Environmental Assessment and permit conditions. This category also includes budgeted costs to contribute to making the project neutral to the environment by mitigating footprint impacts.
Interest During Construction	This cost category represents the calculation of financing costs using prescribed rates and assumed cash flow. Please see NextBridge response to Board Staff Interrogatory # 14 at Exhibit I.B.NextBridge.STAFF.14 for a description of the methodology used.

Engineering and Construction Costs

At page 3 of Attachment 1 to NextBridge’s response to CCC Interrogatory #8 at Exhibit I.B.NextBridge.CCC.8 the E&C budget is split into “Contractors Costs” and “NEER Costs” – where “NEER” is NextEra Energy Resources, LLC.

All of the pricing in the sub-categories under “Contractor Costs”, as individually described below, are the result of a competitive request for proposal process, final negotiations and an executed construction contract for NextBridge’s General Contractor – which was awarded to Valard as the lowest evaluated bidder in the process. Final negotiations in the General Contractor process included the shift of some pricing risk responsibilities from NextBridge to the General Contractor, which Valard has accepted given their knowledge of the region, vast experience on similar projects and ability to



1 use their means and methods to mitigate risks as they manifest during the construction  
2 period.

3  
4 Those costs described as “NEER Costs” are those that NextEra Energy Resources,  
5 LLC (the NextBridge partner organization that is managing the engineering and  
6 construction discipline) will be procuring, as opposed to the General Contractor.

7  
8 The competitive sourcing of construction services, with some risk sharing components  
9 negotiated in the final agreement, creates a reasonable basis of cost that is  
10 representative of the current market, and, therefore is priced in the best interests of the  
11 Ontario rate payers.

12

Contractors Costs	
Structure Framing & Setting	Structure framing and setting costs include construction equipment (crane, flatbed trucks, fork lift) and labour cost for all the craft required to assemble and install the structures at every location. This also includes installation of all insulators, line arresters and hardware, attachment of guy wires from the structures to the guy anchors, and installation of bird diverters and signage on the structures.
Cassions / Foundations	This line item cost includes construction equipment, material and labour costs for the craft required to install all the tower and guy anchor foundations. This foundation work involves excavation, backfill, compaction, formwork, rebar, concrete pouring, embedment, and dewatering among others.
Conductor Installation	Conductor installation costs include equipment and labour costs. Conductor installation requires the use of construction equipment such as tensioners, pullers, pilot line winders, and stringing box plus the labour craft for the stringing of all conductors, fiber optics, overhead ground wire, and installation of hardware such as splices, dampers.
Insulators	This is the materials cost for all types of insulators and jumpers to be installed on the structures to hang the transmission line cables and avoid contact with the towers.

Contractors Costs	
Assemblies	This includes all the materials cost for assembly of all the hardware required to attach the insulators to the towers and install. This line item also includes all equipment, material and labour to install the grounding system at the base of structures.
Civil Work - Access	This category involves all civil work associated with upgrading, improving or building new roads, matting installation, waterbody crossings to facilitate the movement of construction equipment, construction material and personnel to and from the transmission line corridor to access every proposed tower location where towers are to be installed. It also includes the construction of roads to have access to worker camps and laydown or storage yards and pads to facilitate the operation of cranes for the installation of towers.
Civil Work - Clearing	Clearing activities are related to timber cutting, grubbing and stump removal, preparation, staking and cutting of any vegetation along the transmission line "right-of-way" or route where structures are to be installed.
Civil Work - Yards	Yards include all those areas that are to be used as laydown or storage facilities and worker camps. The terrain of these areas requires preparation (earth work, Leveling and grading) before it can take up the worker camp containers and towers and materials to be used in the project.
Civil Work - Traffic Control	Traffic control includes cost associated with signage and personnel used to coordinate and control the regular traffic of vehicles and the higher volume of construction vehicles traffic during project construction to avoid accidents on the construction roads and on the existing roads and highways that will be used by construction vehicles.
Survey	Prior to construction, the transmission line route needs to be surveyed. Surveying involves identifying items, objects or matters such as structure location, guy anchors location, and any buried or overhead utilities.
Construction Staff	Construction staff cost is made up of all contractor supervision and management staff services throughout the duration of the project.
Contractors Costs Other	These additional costs are associated with Labour, equipment and material for contractor mobilization/demobilization, testing and commissioning of the facilities, and contractor performance bonds.

NEER Costs	
Poles (Materials)	These costs have been forecasted from experience and regular interactions with Tier 1 suppliers and are considered to be representative of the competitively sourced materials. NextBridge intends to run a competitive solicitation prior to finalizing the supply agreements for these structures. Budgeted amounts were based on the engineered weights of the structures as currently designed for this project, and vendors were contacted for current market prices on a \$/kg basis for the supply, fabrication and delivery of the structures. These measures are frequently used to support a more mature cost estimate and are relatively industry accepted as a diligent investigation to the costs.
Conductor / OPGW / OHGW	This cost category includes the supply of the electrical conductors ("cable"), the lightning shield wire and fiber optic communications cables. NEER procures a considerable amount of these types of cables every year for projects across all its affiliates through competitive solicitations. Given the high volume of procurement of these products, NEER gets some of the most favored pricing, terms and conditions for this supply in the industry. During the estimating process, the integrated supply chain team reached out to the typical suppliers in the market for current supply costs which were then incorporated into this cost category based on the engineered quantities. When the time is right to secure these products for this project, NextBridge will undertake a competitive solicitation to source these cables at the lowest evaluated costs.
Engineering	This cost category includes route surveying (LiDAR, ground surveys, topographical, as built), detailed engineering and design of the Transmission Line (alignment, structure spotting, plan & profiles, details), detailed lattice tower design/prototype fabrication and physical load testing of the 10 prototypes of lattice structures, conductor arrangement design, geotechnical investigation (desktop and fieldwork), foundation designs, weather studies, access survey and design, crossing designs (railroad, highways/roads, transmission lines, pipeline, pipeline mitigations), alternative/re-routing analysis, Independent Engineer peer review, Quality Assurance/Quality Control of material fabrications and engineering support during construction. Generally, these activities can vary in the level of effort needed due to the characteristics and needs of a specific transmission project and experience dictates that these costs can range from 2% to 5% of the total project costs. The major services included in this category of costs have been competitively

NEER Costs	
	sourced and the hourly rates of these professional services are very consistent with NEER experience from other projects and given the complexity, limited access and difficult terrain of this project.
Internal Labor	This cost category includes NextBridge's internal costs for activity related to engineering management, internal subject matter expert services, support during construction, travel & expenses, legal support for procurement agreements and contract administration, construction management, administrative and project controls support, home office management, testing and commissioning. Most of these costs are typically estimated on a percentage basis, but given the complexity/size of this project and other costs drivers not expected to impact the staffing allowances, a reduction of the typical percentages were applied to effectively lower this allowance when compared to typical projects.
Other Non-Labor	This cost category includes miscellaneous Owner costs in support of the staffing and project construction such as: vehicles for field personnel, field office trailers, onsite facilities and infrastructure (sanitary, trash, and power), storage, safety equipment, site security and communication equipment. Most of these costs are typically estimated on a percentage basis, but given the complexity/size of this project and other costs drivers not expected to impact the staffing allowances, a reduction of the typical percentages were applied to effectively lower this allowance when compared to typical projects.
Escalation	The escalation rate used is approximately 2.8% of the total project construction costs. In NextBridge's experience, this is well within the industry averages of 3%.
Contingency	Estimating project costs involves risk and assumptions. In recognition of these risks, NextBridge examined the current project definition and, based on NextBridge partner organization experience from previous projects, calculated the contingency. This contingency cost represents approximately 6.7% of the total project construction costs. This is lower than the rate used at the designation filing (9%) and within the range of NextBridge partner organization project experience of 5-10% for a linear project of this magnitude and complexity. NextBridge's due diligence, well defined scope and contracted construction costs have resulted in a reduced risk and therefore a lower contingency on a percentage basis.

1 Construction Cost Estimate Comparisons

2 Included as an Attachment to this Exhibit at Exhibit B, Tab 15, Schedule 1, Attachment  
3 is a report prepared by Charles River Associates (“CRA”) comparing NextBridge’s EWT  
4 Line Project construction costs to other similar transmission project construction costs.

5 This analysis sets forth a comparative assessment of only the construction costs of  
6 select transmission projects, escalated to have in-service dates of 2020. Where the  
7 2017 CRA Benchmark Report compared projects on their total cost basis assuming  
8 project lengths of 450 km and scaling for similar voltages, this report instead took the  
9 projects as-is from both a length and voltage perspective. Therefore the attached report  
10 should be considered a supplement to the benchmarking study, which was intended to  
11 create an apples-to-apples comparison. The construction costs of the Hydro One  
12 projects were taken as-is and escalated, without adjustments for differences in voltage,  
13 which, as CRA understands from reviewing its previous filings, is the process that Hydro  
14 One typically uses when presenting this information to the Board.

15  
16 In developing this comparative assessment, projects from the benchmarking study and  
17 also projects with which the Ontario Energy Board would be familiar were included. The  
18 Hydro One projects included in the CRA construction cost comparison report are those  
19 that have been brought before the Ontario Energy Board in the past.



**Prepared for:**

NextBridge Infrastructure

# Comparative Assessment of the NextBridge EWT Construction Cost Estimates

**Prepared by:**

Charles River Associates

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Date: March 14, 2018

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## 1. Approach

Charles River Associates (“CRA”) was engaged by NextBridge Infrastructure (“NextBridge” or “NB”) to analyze and compare the construction costs of various transmission projects to that of its East-West Tie Line (“NB EWT”) as described in detail in Ontario Energy Board (“OEB”) matter EB-2017-0182. CRA has reviewed the OEB’s second procedural order in this proceeding, and understands the OEB has provided NextBridge an opportunity to provide additional evidence on the reasonableness of its construction costs. The purpose of this report is to provide additional evidence that compares NextBridge’s construction costs to other similar transmission projects.

As explained below, in order to compare the construction costs of NextBridge to other similar transmission projects, CRA needed to back out development costs. In order to back out development costs an assumption of what share the development costs represent of the total project cost must be determined. This assumption is necessary because isolated construction costs are not publically available for each and every project included in this report. The only consistently available figure for all projects is the total project cost, which includes development and construction costs.

Accordingly, while this report determines the appropriate assumption to back out development costs, the focus of the report is not on the comparison of development costs, rather a comparison of construction costs.

To complete this analysis CRA analyzed only the construction costs of select transmission projects and compared them to the construction costs of the NB EWT. Transmission projects reviewed in this study include: Hydro One’s (“HONI”) 2007 Bruce to Milton project; BC Hydro’s Northwest Transmission Line project; Black & Veatch’s 2014 transmission expansion planning report for the Western Electricity Coordinating Council (“WECC”); the Alberta Electric System Operator’s (“AESO”) transmission cost benchmarking database; HONI’s Cherrywood TS to Clairville TS; HONI’s Lennox TS to Bowmanville TS; and HONI’s Bruce to Longwood TS.

For this study all costs have been escalated to the NB EWT projected in service year of 2020. All historical costs have been escalated to 2020 Canadian dollars (“CAD”) using a simple average of: the 10-year growth rate of the most recently published Handy-Whitman Index for



utility construction costs in the United States Plateau region,<sup>1</sup> and the 10-year growth rate of the Canadian Price Index ("CPI"). This resulted in a cost escalation rate of 2.5%. The indices and average growth rates used to escalate costs in this analysis are presented in Figure 1.

**Figure 1. Cost Escalation Indices**

Handy Whitman Plateau Region (CAD)	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	10-Year CAGR
HW - Towers & Fixtures	455	494	537	472	469	494	529	560	669	697	701	4.4%
HW - Poles & Fixtures	508	531	595	556	512	529	549	581	691	716	710	3.4%
HW - Structural Steel Erected	477	543	582	483	482	497	528	564	664	656	668	3.4%
HW - Overhead Conductors & Devices	600	653	774	567	537	536	569	624	744	796	763	2.4%
											<b>Average</b>	<b>3.4%</b>
CAN CPI (2010=100)	95.6	98.0	98.3	100.0	102.9	104.5	105.5	107.5	108.7	110.2	111.8	1.6%
											<b>Annual Cost Escalator</b>	<b>2.5%</b>

## 2. Assumption to back out Development Costs

CRA did not find general industry consensus on the best practice for determining the proportion of development costs to back out total project cost. The lack of consistency in development costs across the projects covered in this study, and the general lack of development costs publically reported in other projects also supports this finding.

With the understanding, for the purposes of this analysis, CRA made an development cost assumption based on actual development costs for the NB EWT project and applied it to all the other similar projects studied. Specifically, CRA assumed that consistent with NB's costs to date, a competitive project in Ontario will have development costs account for approximately 5% of total costs. The use of 5% figure is generally consistent with the breakdown of development costs to total project costs put forth by proponents in the EWT application.<sup>2</sup>

**Figure 2. Share of Development Costs from EWT Designation Phase 2**

	Development	Construction	Total Cost	Share
AltaLink	18.2	454	472.2	3.85%
UCT	22.2	409	431.2	5.15%
RES	21.4	472	493.4	4.34%
EWT LP	22.1	427	449.1	4.92%
CPNI	24.0	527	551.0	4.36%
lccon/TPT*	45.5	487	532.5	8.54%
*reduced to 30.6 post-request	30.6	487	517.6	5.91%
			<b>Average</b>	<b>5.3%</b>

<sup>1</sup> The Handy-Whitman Index is prepared by Whitman, Requardt and Associates and is representative of cost trends for different types of utility construction. Separate Indices are published for the electric, gas and water industries. These are used by regulatory bodies, operating bodies, operating utilities, service companies, valuation engineers as well as insurance companies. (Source: <https://wralp.com/about-us/handy-whitman-index>).

<sup>2</sup> EB-2011-0140. *East-West Tie Line Designation Phase 2 Decision and Order*. August 7, 2013.

With the supportable assumption that a 5% development cost back-out is appropriate, the remainder of the report focuses on the comparison of construction costs between the NB EWT and other transmission projects.

### 3. Comparing Construction Costs from the 2017 Benchmark Study

When construction costs for all projects used in the 2017 CRA Benchmarking Study<sup>3</sup> are compared in 2020 CAD the NB EWT has the lowest construction cost in millions per km ("M/km"). Figure 3 illustrates this analysis. For the British Columbia NTL project ("BC NTL"), CRA deducted 11% for substation costs and 5% for development costs because only total costs were publicly reported.<sup>4</sup>

**Figure 3. Cost Comparison to 2017 Benchmark Study Projects**

	NB EWT	Bruce to Milton	BC NTL	2014 WECC <sup>5</sup>	AESO Project 1	AESO Project 2
	[a]	[b]	[c]	[d]	[e]	[f]
[1] Length (km)	450	180	344	450	450	450
[2] Construction Costs (M) <sup>6</sup>	736	567	630	588	1309	1189
[3] Reporting year	2017	2012	2014	2014	2013	2013
[4] Construction Costs 2020 \$ (M)	736	680	724	879	1538	1397
[5] M/km	1.64	3.78	2.11	1.95	3.42	3.10

**Calculations:**

$$[4]=[2]*((2.5%)*(2020-[3]))+[2]$$

$$[5]=[4]/[1]$$

<sup>3</sup> Filed: 2018-01-25, EB-2017-0182, Exhibit I.B.NextBridge.CCC.11, Attachment, pp. 1 of 15.

<sup>4</sup> In their initial 2007 application, Hydro One estimated that the total cost of the 500 kV Bruce to Milton project would be \$635 million with \$68 million, or 11%, estimated for station work, so CRA has used 11% as a general guideline for the portion of station costs to total costs.

<sup>5</sup> The CAD to US Dollar ("USD") annual average exchange rate was taken as published by the Board of Governors of the Federal Reserve System and was used to convert costs from USD to CAD where necessary.

<sup>6</sup> Construction costs include all costs other than development costs. For BC NTL, CRA backed out 11% for substation costs and 5% for development costs since only total costs are publically reported.

#### 4. Comparing Construction Costs to Hydro One Projects

CRA compared the NB EWT to past HONI projects that HONI included in its Bruce to Milton application. The results indicate that the NB EWT has the lowest construction cost in M/km. Again, development costs were backed out using an assumption that development costs account for 5% of total costs. For the HONI projects, station cost and property costs were not included.

**Figure 4. Cost Comparison to Hydro One Projects<sup>7</sup>**

	NB EWT	Bruce x Milton SS (estimated)	Cherrywood TS x Clairville TS (actual)	Lennox TS x Bowmanville TS (actual)	Bruce x Longwood TS (actual)
	[a]	[b]	[c]	[d]	[e]
[1] Voltage (kV)	240	500	500	500	500
[2] Length (km)	450	179	46	178	186
[3] In Service Date	2017	2011	1993	1994	1990
[4] Total Cost	777	420	81	202	218
[5] Development Costs	40	21	4	10	11
[6] Construction Costs (M)	736	399	77	192	207
[7] Construction Costs 2020\$ (M)	736	489	130	317	362
[8] M/km	1.64	2.73	2.82	1.78	1.95

**Calculations:**

$$[5]=[4]*5\%$$

$$[6]=[4]-[5]$$

$$[7]=[6]*((2.5\%)*(2020-[3]))+[6]$$

$$[8]=[7]/[2]$$

<sup>7</sup> All project data other than NB EWT taken from: Hydro One. Exhibit B Project Cost, Economics – Tab 4, Schedule 2, Table 5. EB-2007-0050. March 29, 2007.

1 DEVELOPMENT COSTS

2 Development Costs Incurred

3 Between August 7, 2013 and July 31, 2017 (the “Extended Development Period”),  
4 NextBridge incurred \$40.2 million developing the East West Tie Line Project to the point  
5 of being in a position to file a leave to construct application. While NextBridge invested  
6 significant staff hours of internal time and associated resources and incurred substantial  
7 external services costs to prepare its application for designation and participate in the  
8 Board’s designation process, those costs have not been included in the development  
9 costs for the East West Tie Line Project (“EWT Line Project”).

10 Some Development Costs Already Determined to be Prudent and Reasonable

11 Of the \$40.2 million in development costs incurred during the Extended Development  
12 Period, \$22.4 million (nominal dollars)<sup>1</sup> have already been approved for recovery by the  
13 Board. NextBridge was selected as the designated transmitter for the development  
14 phase of the EWT Line Project in the Board’s EB-2011-0140 Phase 2 Decision and  
15 Order issued on August 7, 2013 (the “Phase 2 Decision”). In accordance with the  
16 Board’s Phase 1 Decision and Order issued on July 12, 2012 in the same proceeding  
17 (the “Phase 1 Decision”), the selection of a transmitter for designation indicates, first,  
18 that the Board has found the transmitter’s development costs to be reasonable and,  
19 second, that the development costs are approved for recovery.<sup>2</sup> The Phase 2 Decision  
20 concluded that the development costs budgeted by NextBridge are reasonable and it  
21 confirmed that NextBridge will be able to recover the costs of project development, up to

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<sup>1</sup> \$22,187,022 in 2012\$– see Phase 2 Decision at p.41, escalated in accordance with NextBridge’s EB-2011-0140 Response to Board Interrogatory 26 to all Applicants, at Attachment 1 (the “Board-Approved Costs”).

<sup>2</sup> Phase 1 Decision, at page 17.

the budgeted amount, even if the final assessment of need indicates that the EWT Line Project is no longer required.<sup>3</sup>

### Development Activities and Corresponding Costs

At a high level, the development work completed during the Extended Development Period included:

- Engaging with landowners and land interest holders, negotiating option agreements, obtaining consent and access for various purposes;
- Engaging with stakeholders, hosting open houses and numerous meetings with representatives of municipalities along the route of the proposed transmission line and government agencies;
- Developing and obtaining Ministerial approval for terms of reference for environmental assessment ("EA");
- Completing field study activity, socio-economic data collection and alternatives assessment related to the project and completing analysis and preparation of an environmental assessment;
- Completing detailed engineering of a family of lattice tower structures and testing of such structures;
- Completing detailed engineering and design of the transmission line and foundations;
- Collecting laser identification detection and ranging ("LiDAR") and survey data, designing an access and construction plan and engaging a general contractor to oversee construction of the project once appropriate authorizations are in place;
- Extensive engagement, consultation and negotiation of capacity funding agreements with 18 First Nations and Métis communities identified by the Ontario Ministry of Energy as potentially impacted by the EWT Line Project; and

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<sup>3</sup> Phase 2 Decision, at pages 41-42.

- Negotiating participation arrangements in the EWT Line Project with several First Nations and Métis communities.

Details related to the budgeted costs incurred and activities completed in developing the EWT Line Project between August 7, 2013 and July 31, 2017 are outlined on an individual work stream basis in Attachments 1 through 9 to this Exhibit at Exhibit B, Tab 16, Schedule 1, Attachments 1 through 9. Specifically, the discipline addressed within each attachment is as follows:

<b>Discipline/Work Stream</b>	<b>Attachment</b>
Engineering, Design and Procurement Activity	Attachment 1
Permitting and Licensing	Attachment 2
Environmental and Regulatory Approvals	Attachment 3
Land Rights	Attachment 4
First Nations and Métis Consultation	Attachment 5
Other Consultation	Attachment 6
Regulatory (legal support, rate case and LTC filings)	Attachment 7
Interconnection Studies	Attachment 8
Project Management	Attachment 9

In addition, costs were incurred in the Extended Development Period related to activities that were identified at designation as an integral component of development activity but for which no cost was estimated. Specifically, at the time of designation NextBridge was not in a position to estimate costs associated with First Nation and Métis participation and land acquisition until further engagement had been initiated with communities.<sup>4</sup>

Details related to First Nation and Métis land acquisition and First Nations and Métis participation costs incurred and activities completed through July 31, 2017 are outlined in Attachment 10 to this Exhibit at Exhibit B, Tab 16, Schedule 1, Attachment 10.

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<sup>4</sup> Upper Canada Transmission, Inc. operating as NextBridge Infrastructure Application for Designation to Develop the East-West Tie Line dated January 4, 2013 (EB-2011-0140), at pages 46 and 116; Upper Canada Transmission, Inc. Response to Board Interrogatory 26 to all Applicants, at Attachment 1.

1 Finally, carrying charges on all development expenditures and costs related to  
2 NextBridge's participation in an appeal of the designation proceeding Phase 2 Decision  
3 by Ojibways of Pic River (Heron Bay First Nation), now Biigtigong Nishnaabeg, were  
4 incurred during the Extended Development Period and are included in the Extended  
5 Development Period Costs.

6 Attachment 11 to this Exhibit at Exhibit B, Tab 16, Schedule 1, Attachment 11  
7 consolidates the Extended Development Period Costs, both budgeted and unbudgeted  
8 as described above, to match the format in NextBridge's reports to the Ontario Energy  
9 Board.

10 Prudence and Reasonableness of Development Costs

11 1. A Prudent Approach to Controlling Costs

12 As outlined in NextBridge's response to Board Staff Interrogatory #23 at  
13 Exhibit I.B.NextBridge.STAFF.23, NextBridge implemented a robust cost management  
14 strategy and control measures during the development phase of the EWT Line Project.  
15 This involved management of day-to-day expenditures at the Lead project manager  
16 level, with regular reporting to the Project Director and to the Operations Committee that  
17 closely monitored any variance from the estimated EWT Line Project budget. Starting in  
18 October 2013, budgeted cost information was presented in the regular OEB project  
19 reporting materials at first on a monthly basis, and then on a quarterly basis starting  
20 January 2015. During the entire development phase of the project, when the internal  
21 financial reporting was completed as part of either the OEB monthly report or quarterly  
22 report, a variance analysis was completed by the project management office for each  
23 discipline and variances (i.e., under or over spend in the month) were asked to be  
24 explained.

2. Cost Recording and Prudent Resource Use

As described above, Attachments 1 through 10 to this Exhibit at Exhibit B, Tab 16, Schedule 1, Attachments 1 to 10 detail the total budgeted and unbudgeted amounts recorded by each of the respective disciplines throughout the Extended Development Period. When NextBridge was designated to complete development work for the EWT Line Project in 2013, NextBridge used the work breakdown structure ("WBS") project system to establish a cost recording framework, which is consistent with NextEra's project management system. The WBS project system is used to plan, execute, track and account for projects as part of NextBridge's business system. Examples of codes that were established by NextBridge to capture EWT Line Project development costs include internal labour and related employee expenses within each discipline. Additional codes were established where applicable for third party activity, external counsel services, and other matters and/or cost categories relevant to a specific discipline.

With respect to the internal labour and related employee expense codes, these codes represent time charges from NextBridge partner entity staff that were seconded to the EWT Line Project and working specifically on EWT Line Project development activities during the Extended Development Period. Over the 48-month period, there existed about 7,700 of potential working hours available (40 hours / week times 48 weeks per year for 4 years) per full-time staff member. With respect to the Land Rights discipline, the amount of internal labour charged (approximately \$0.5 million) by the land team represents about 0.4 of a fulltime employee working on the EWT Line Project. With respect to Regulatory (legal support, rate case and LTC filings), the amount of internal labour charged (approximately \$1.1 million) represents about 0.75 of a fulltime employee over this 48-month period. By accessing partner entity staff on a variable, flexible basis and only as needed, NextBridge was able to retain access to highly skilled and knowledgeable staff without the requirement of compensating such staff at full time



1 levels. NextBridge diversified the use of partner entity employees and used them as  
2 required by the project schedule and to save on labour costs.

3 Regarding third party activity-related costs, these represented costs that NextBridge  
4 incurred from outside parties that supported the EWT Line Project team in order to  
5 execute specific development activities. These costs were prudently managed and, as  
6 outlined in NextBridge's response to SEC Interrogatory #8 at  
7 Exhibit I.B.NextBridge.SEC.8, the majority of these costs were competitively procured.

### 8 3. A Prudent Response to Extension of the Development Phase

9 Not all of the development costs incurred by NextBridge were initially expected to form  
10 part of the development phase of the EWT Line Project. At the time of designation,  
11 NextBridge anticipated incurring \$22.2 million<sup>5</sup> over an 18 month development period to  
12 complete activities sufficient to file a Leave to Construct application for the EWT Line  
13 Project.

14 In response to new information and changing circumstances, the most significant of  
15 which was the Ontario Power Authority's<sup>6</sup> September 2014 recommendation to extend  
16 the in-service date from 2018 to 2020<sup>7</sup>, NextBridge adapted development activity to suit  
17 the changing circumstances and timelines.

18 The establishment of a new in-service date for the EWT Line Project of December 2020  
19 ultimately worked to add 30 months to the development phase of the EWT Line Project,  
20 extending the development period from 18 months to a total of 48 months.

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<sup>5</sup> In 2012\$.

<sup>6</sup> The Ontario Power Authority is now the Independent Electricity System Operator and is referred to as either the "OPA" or the "IESO", as appropriate, in this evidence.

<sup>7</sup> OPA letter to Board dated September 30, 2014.

1 Having knowledge of the important changes in circumstances, in particular the near  
2 tripling of the development period, NextBridge carefully considered the conservation  
3 and best use of development dollars going forward.

4 NextBridge started by assessing the work required to be completed in response to the  
5 changed circumstances. That assessment identified the need to: (a) adjust scheduling  
6 to ensure work was not completed prematurely but would allow, among various other  
7 considerations, that construction of the EWT Line Project with a route through  
8 Pukaskwa National Park would be possible should authorization to study be allowed;  
9 (b) identify new tasks to be completed and existing tasks to be extended and/or delayed  
10 in response to the changing circumstances; and (c) undertake re-budgeting activity to  
11 understand the corresponding costs associated with the altered and additional  
12 development work required.

13 Through various means, NextBridge revisited all development activities and assessed  
14 the characteristics of those activities to inform priorities, categorizing activities within  
15 each workstream. Activities that had either not yet been initiated or that could be  
16 delayed without incurring additional development costs or compromising project  
17 progression were delayed. Examples here include decisions not to undertake  
18 environmental field study activity in the 2015 study season and temporary  
19 demobilization of land agents in the field. Staff activity was also reduced within most  
20 disciplines.

21 Activities already underway that could be put on hold without significant overall  
22 additional expenditure were frozen. One example of this type of activity was  
23 preparation of the LTC application. In the fall of 2014, NextBridge had already initiated  
24 preparation of the LTC application, initially scheduled for submission in January 2015.  
25 With confirmation of delay to the in-service date for the EWT Line Project, NextBridge  
26 concluded that it would be more cost-effective to cease preparation of the LTC

1 application and resume at a later date instead of continuing to update and revise the  
2 application throughout the extended development period. In contrast, as the draft route  
3 Alternatives Assessment requested to be completed by the Ministry of Environment and  
4 Climate Change ("MOECC") was near completion, NextBridge determined that  
5 finalization and submission of the draft Alternatives Assessment to MOECC and the  
6 Ministry of Natural Resources and Forestry was warranted to ensure additional costs  
7 were not incurred to stop and resume the activity. Completion of the draft Alternatives  
8 Assessment also served the added purpose of retaining some EWT Line Project  
9 momentum with regulator involvement with the project.

10 Activities that were already committed, for example tower design and testing and other  
11 contractual obligations for which NextBridge was responsible, were continued in order  
12 to ensure additional costs were not incurred either to complete the already scheduled  
13 activity or in the form of penalties. Financial management activities and ongoing  
14 reporting in accordance with licence conditions were included in this category.

15 Finally, NextBridge also identified existing or new activities that were considered to be  
16 critical to proceed with so as to preserve the Project's good standing and best-position  
17 the EWT Line Project to be able to resume full development quickly and effectively as  
18 circumstances continued to evolve.

19 One example of this kind of critical activity relates to Pukaskwa National Park ("the  
20 Park"). In response to the OPA letter, NextBridge identified the need for and devoted  
21 substantial effort towards a satisfactory resolution of the Park access issue, and  
22 undertook additional activity in order to explore the possibility of a route through the  
23 Park, or at least access to the Park to study a route, in response to OPA's  
24 recommendation. These activities included: preparing correspondence and holding  
25 meetings with Ontario government representatives; meeting with federal government  
26 representatives; engaging with Aboriginal communities and facilitating Aboriginal

1 community correspondence and engagement with federal and provincial government  
2 representatives; engaging with various stakeholders regarding Park access; and further  
3 investigating data collection processes and permit application processes and timelines.  
4 While ultimately unsuccessful, NextBridge acted promptly in response to the OPA's  
5 letter and diligently pursued permission to study a route through the Park in accordance  
6 with the OPA's recommendation until such time as it was evident that access to the  
7 Park for the purpose of studying a route through the Park would not be allowed.

8 In further example, in relation to land activities, NextBridge saw the opportunity to gain  
9 some benefits from the extension of the development period by prudently taking  
10 advantage of additional time available to deal with land acquisition. Certain private land  
11 optioning and related activity to obtain consent from Crown disposition and interest  
12 holders ("Land Optioning") that initially was going to be pursued in the construction  
13 phase was pulled forward into the development phase and started in 2016. Generally  
14 speaking, additional time for Land Optioning negotiations results in a higher percentage  
15 of optioned landowners and interest holders, and a corresponding reduction in the  
16 number of expropriations required. This activity served to increase Land Optioning  
17 costs within the development phase, however overall costs related to Land Optioning  
18 activity did not increase, and in fact, the increased amount of Land Optioning work  
19 completed in the Extended Development Period defining the route and negotiating with  
20 landowners is predicted to reduce the extent of costly expropriation processes.  
21 NextBridge has secured option agreements from 74% of private landowners and  
22 consent of 18% of Crown interest holders.

23 Once development activities were identified and categorized, NextBridge considered the  
24 appropriate level of work to sustain the EWT Line Project over the Extended  
25 Development Period without jeopardizing the benefit of the work completed to date.  
26 From the beginning, NextBridge committed to and successfully established proactive  
27 public communication and consultation programs and built and maintained respectful

1 and productive relationships with landowners, municipalities and communities engaged  
2 in, and affected by, the EWT Line Project. On this basis, NextBridge concluded that  
3 additional open houses, related municipal engagement and maintenance of a continued  
4 EWT Line Project presence was important throughout the Extended Development  
5 Period. All channels of communication with stakeholders were maintained (web site,  
6 email and project hotline), and consistent (albeit less frequent) updates were provided  
7 to stakeholders and landowners over the period of reduced activity. Similarly,  
8 Indigenous engagement activities were continued on a less frequent basis. Because of  
9 the strong foundation that NextBridge had built to that point, NextBridge was able to  
10 scale back this activity significantly in the late 2014 and 2015 period without  
11 compromising Project relationships.

12 As a result of the measures taken, NextBridge was able to reduce the amount spent  
13 during the delay period by executing cost management practices in developing a new  
14 budget for this period. The new budget for the delay period focused on the identified  
15 committed and critical tasks. This methodology was implemented to allow low spend  
16 while keeping the EWT Line Project's ability to ramp up its development effort when  
17 required to do so. Leads were asked to develop their budgets from the bottoms up for  
18 this period concentrating on the committed and critical tasks. The adopted lower spend  
19 levels were critical to keeping the costs low during the extended development phase of  
20 the project. NextBridge successfully transitioned from an average monthly spend of  
21 approximately \$1.4 million per month in the fall of 2014 to a low spend of \$240,000 in  
22 March of 2015. NextBridge maintained this reduced spend level through 2015 and into  
23 early 2016, successfully stretching the original \$22.4 million of Board approved costs  
24 through until the fall of 2016. Attached as Attachment 12 to this Exhibit at Exhibit B,  
25 Tab 16, Schedule 1, Attachment 12 is a graph showing the monthly EWT Line Project  
26 spend over the Extended Development Period.

1 This is in addition to the competitive tendering activity NextBridge undertook in relation  
2 to the major components of the Project and the more general and systemic cost  
3 management and control measures that NextBridge undertook upon designation and  
4 throughout the Extended Development Period to ensure that development activity  
5 undertaken and corresponding costs were prudently managed and incurred over the  
6 Extended Development Period. Please refer to NextBridge's Response to Board Staff  
7 Interrogatory #23 (a), found at Exhibit I.B.NextBridge.STAFF.23 for a description of day-  
8 to-day cost management and control measures used by NextBridge during the  
9 development phase of the project.

10 In summary, NextBridge rigorously and systematically considered elements required to  
11 ensure the EWT Line Project development continued as necessary to ensure success  
12 of the project and in accordance with feedback received and in light of changing  
13 circumstances, and limited expenditures as possible to those reasonably required to  
14 achieve the end result in an efficient and effective manner.

NextBridge Infrastructure LP  
Extended Development Period Costs - Engineering, Design and Procurement Activity  
March 14, 2018

Category of Activity	Description	Cost
(1) Internal labour and employee expenses	<p>Engineering-related activities to progress development of the EWT Line Project, including:</p> <ul style="list-style-type: none"> <li>(a) Team lead meetings,</li> <li>(b) Team lead calls,</li> <li>(c) Attend open houses,</li> <li>(d) Prepare leave to construct application,</li> <li>(e) Input to and review of the Draft and Final Environmental Assessment Report,</li> <li>(f) Complete financial requirements, including budgets, assisting in monthly financial reporting,</li> <li>(g) Team scheduling calls and discussions,</li> <li>(h) Consultant/Vendor management, including RFP and procurement process,</li> <li>(i) EWT Line Project reporting including OEB milestone tracking and content for monthly and quarterly reporting,</li> <li>(j) Travel expenses for EWT Line Project meetings,</li> <li>(k) Ongoing advice and support in relation to other work stream project development activity</li> <li>(l) Scope development for all engineering and construction studies required for project development including transmission line engineering, tower design, preliminary construction and access plan, weather studies, grounding studies, preliminary desktop and field geotechnical among others,</li> <li>(m) Oversight, review and vetting of all the EWT Line Project development engineering and construction work and studies report,</li> <li>(n) Tower prototype testing coordination and witnessing,</li> <li>(o) Preparation of transmission line crossings packages including meetings and discussion with Hydro One Networks Inc.,</li> <li>(p) Input and review of Alternative Assessment, Draft and Final Terms of Reference, Environmental Protection Plan, and</li> <li>(q) Preparation of safety guidelines and safety coordination for all field work during development.</li> </ul>	2,271,851
(2) Transmission line design	<ul style="list-style-type: none"> <li>(a) Complete design package from Engineer of Record,</li> <li>(b) Tower testing participation (Engineer of Record),</li> <li>(c) Engineering due diligence on "Through the park route", and</li> <li>(d) Transmission Line crossing details (engineering &amp; drawings).</li> </ul>	2,287,924
(3) Foundation Design	<ul style="list-style-type: none"> <li>(a) Complete preliminary foundation design by Foundation engineering consultant, and</li> <li>(b) Foundation design revision from Geotechnical study results.</li> </ul>	105,750
(4) Structure Design and Testing	<ul style="list-style-type: none"> <li>(a) Tower supplier engineering design and testing contract,</li> <li>(b) Tower re-design and testing, and</li> <li>(c) Tower prototype fabrication and testing QA/QC.</li> </ul>	1,985,607

NextBridge Infrastructure LP  
Extended Development Period Costs - Engineering, Design and Procurement Activity  
March 14, 2018

Category of Activity	Description	Cost
(5) Land Survey and LIDAR	(a) LIDAR collection, (b) Land survey, (c) Provincial survey data purchase, and (d) Road inventory.	1,611,416
(6) Geotech	(a) Geotech survey activity, and (b) Helicopter access geotech borings.	969,958
(7) Third Party Engineering	(a) Tower design software (PLS CADD), and (b) Structure design engineering consultant.	356,786
(8) Studies Contract	(a) Weather study, (b) Pipeline mitigation study, (c) Grounding studies, (d) Telecom design, (e) Hydro One Networks Inc. crossing design, and (f) Preliminary construction access plan.	171,352
(9) Miscellaneous Engineering & Construction	(a) Legal support for contracts, (b) Permitting due diligence, (c) Tower delivery logistic reconnaissance, (d) Aboriginal participation negotiation support and facilitation, and (e) Support for open house, regulatory training, community events, advisory boards.	480,111
(10) Project delay	Specific activities to address extension of development period, including: (a) Internal time to prepare project delay filing materials.	22,708
TOTAL		<u>10,263,464</u>



NextBridge Infrastructure LP  
Extended Development Period Costs - Permitting and Licensing  
March 14, 2018

Category of Activity		Description	Cost
(1)	External Consultant Services	External consultant assisting in permits and applications	72,027
(2)	Project delay	Providing consulting support related to project extension-related matters.	12,754
TOTAL			<u>84,781</u>

NextBridge Infrastructure LP  
Extended Development Period Costs - Environmental and Regulatory Approvals  
March 14, 2018

Category of Activity	Description	Cost
(1) Internal labour and employee expenses	<p>Environment-related activities to progress development of the EWT Line Project, including:</p> <ul style="list-style-type: none"> <li>(a) Team lead meetings,</li> <li>(b) Team lead calls,</li> <li>(c) Attend open houses,</li> <li>(d) Prepare leave to construct application,</li> <li>(e) Complete environmental assessment (EA), <ul style="list-style-type: none"> <li>(i) Managed and participated in the development and consultation of the Draft and Final Terms of Reference (ToR),</li> <li>(ii) Managed, developed and participated in the consultation with regulators, stakeholders, including open houses, of the draft and final environmental assessments,</li> <li>(iii) Coordination and submission of draft comment responses,</li> <li>(iv) Managed the development and review of the Alternatives Assessment,</li> <li>(v) Participation in the access and construction footprint change process,</li> <li>(vi) Participation in route review and route change process,</li> <li>(vii) Coordination and management for field programs occurring in 2014, 2016, 2017 for geotechnical study, geomatics survey, environmental surveys and studies, and archaeological testing,</li> <li>(viii) Consultation with regulators, stakeholders, including open houses, regarding EA comments and methodology,</li> <li>(ix) Completion of record of consultation,</li> <li>(x) Managed the development of the Construction Environmental Protection Plan, Alignment Sheets and Mapping,</li> </ul> </li> <li>(f) Complete financial requirements, including budgets, assisting in monthly financial reporting,</li> <li>(g) Team scheduling calls and discussions,</li> <li>(h) Consultant/Vendor management, including RFP and procurement process,</li> <li>(i) EWT Line Project reporting including OEB milestone tracking and content for monthly and quarterly reporting,</li> <li>(j) Ongoing advice and support in relation to other work stream project development activity,</li> <li>(k) Travel expenses for EWT Line Project meetings, including First Nation and Métis community meetings, and</li> <li>(l) Manage comments submitted to the EWT Line Project including entry into database.</li> </ul>	1,140,210
(2) Environmental Surveys and Studies	<p>Specific activities to complete Environmental Surveys and Studies, including:</p> <ul style="list-style-type: none"> <li>(a) Geology and soils,</li> <li>(b) Watercourse crossings (fish and fish habitat),</li> <li>(c) Surface and groundwater,</li> <li>(d) Vegetation and wetlands,</li> <li>(e) Wildlife including Species at Risk,</li> <li>(f) Air Quality assessment,</li> <li>(g) Climate Change assessment,</li> <li>(h) Acoustic environment,</li> <li>(i) Archaeological assessments, stage 1, 2 and 3,</li> <li>(j) Nest Sweeps and Amphibian mitigation,</li> <li>(k) Preparation of Alternative Assessment, Socio-Economic Assessment and EA Reports,</li> <li>(l) Cultural Heritage assessment,</li> <li>(m) Human Health assessment,</li> <li>(n) Visual assessment,</li> <li>(o) Cumulative effects assessment,</li> <li>(p) Indigenous engagement with surveys,</li> <li>(q) External staffing support, and</li> <li>(r) Environmental Inspectors for Geotech work.</li> </ul>	2,888,777

NextBridge Infrastructure LP  
Extended Development Period Costs - Environmental and Regulatory Approvals  
March 14, 2018

Category of Activity	Description	Cost
(3) Regulatory Applications	<ul style="list-style-type: none"> <li>(a) Draft EA, including: <ul style="list-style-type: none"> <li>(i) All survey information collected above was inputted into the Environmental assessment document,</li> <li>(b) Draft EA comment responses (information request round #1),</li> <li>(c) Final EA,</li> <li>(d) Environmental Permit Support, including: <ul style="list-style-type: none"> <li>(i) Infrastructure Ontario Environmental Site Assessment (EA) and Class EA,</li> <li>(ii) Ministry of Natural Resources and Forestry work permits, including: <ul style="list-style-type: none"> <li>(a) Amendments to Land Use Plans,</li> <li>(b) Overall benefit permit,</li> <li>(iii) Ministry of Environment and Climate Change Permit to Take Water and Environment Compliance Approval,</li> <li>(iv) Lakehead Regional Conservation Authority permits,</li> <li>(v) Transport Canada self-assessment and authorizations,</li> <li>(vi) Engagement with Department of Fisheries and Oceans Canada, and</li> <li>(vii) Environment and Climate Change Canada permits, and</li> <li>(viii) Indigenous and Northern Affairs Canada.</li> </ul> </li> </ul> </li> </ul> </li> </ul>	2,175,843
(4) Environmental Protection and Compensation Plans	<ul style="list-style-type: none"> <li>(a) Development of the Construction Environmental Protection Plan, and</li> <li>(b) Alignment Sheets and Mapping.</li> </ul>	114,978
(5) Consultation Support	<ul style="list-style-type: none"> <li>(a) Meetings for archaeological assessments and permitting,</li> <li>(b) Attend open Houses, and</li> <li>(c) Meetings with regulators and stakeholders to go over comments and responses on the EA documents.</li> </ul>	231,637
(6) External Project Management Services	<ul style="list-style-type: none"> <li>(a) External meetings,</li> <li>(b) Consultant meetings,</li> <li>(c) Monthly reports,</li> <li>(d) Accruals/Budget and Schedule tracking, and</li> <li>(e) Strategic advice/Adhoc requests.</li> </ul>	1,093,415
(7) Project delay	<p>Specific activities to address extension of development period, including:</p> <ul style="list-style-type: none"> <li>(a) Internal time to prepare project delay filing materials, and</li> <li>(b) Consultant time working with communities on project delay consultation.</li> </ul>	90,356
(8) Pukaskwa Park	(a) Working with interested parties to consult and work with Parks Canada on potential for going through Pukaskwa Park.	82,464
TOTAL		<u><u>7,817,680</u></u>

NextBridge Infrastructure LP  
Extended Development Period Costs - Land Rights  
March 14, 2018

Category of Activity	Description	Cost
(1) Internal labour and employee expenses	Land-related activities to progress development of the EWT Line Project, including: <ul style="list-style-type: none"> <li>(a) Team lead meetings,</li> <li>(b) Team lead calls,</li> <li>(c) Attending open houses, public meetings, and other stakeholder meetings including regulatory agencies, municipalities, other utilities,</li> <li>(d) Prepare leave to construct application,</li> <li>(e) Input to and review of the Draft and Final Environmental Assessment Report,</li> <li>(f) Complete financial requirements, including budgets, assisting in monthly financial reporting,</li> <li>(g) Team scheduling calls and discussions,</li> <li>(h) Consultant/Vendor management, including RFP and procurement process,</li> <li>(i) EWT Line Project reporting including OEB milestone tracking and content for monthly and quarterly reporting,</li> <li>(j) Travel expenses for EWT Line Project meetings,</li> <li>(k) Designation application review including a review of scope, budget and commitments made with respect to the land acquisition program,</li> <li>(l) Ongoing advice and support in relation to other work stream project development activity,</li> <li>(m) Scope development for third party services specific to the land acquisition program including: <ul style="list-style-type: none"> <li>(i) Land Contract,</li> <li>(ii) Appraisal Contract,</li> <li>(iii) Land Survey Contract,</li> <li>(iv) Timber Valuation Contract,</li> <li>(v) Aggregate and Mining Valuation Contract,</li> </ul> </li> <li>(n) Supporting the drafting and development of Project communication tools (update letters, open house materials, land agent orientation),</li> <li>(o) Input to and review of the Draft and Final Terms of Reference (TOR),</li> <li>(p) Input to and review of the Alternatives Assessment,</li> <li>(q) Managing the land acquisition and permitting program in support of EWT Line Project development including: <ul style="list-style-type: none"> <li>(i) Development of, and change management of the line list,</li> <li>(ii) Development and implementation of land compensation principles,</li> <li>(iii) Supporting the drafting and finalization of the forms of agreement for property owner land acquisition,</li> <li>(iv) Working with land contractor for the development and implementation of Crown interest compensation policies,</li> <li>(v) Developing standard templates for landowner documents,</li> <li>(vi) Coordination of access for field programs occurring in 2014, 2016, 2017 for geotechnical study, geomatics survey, environmental surveys and studies, and archaeological testing,</li> <li>(vii) Land agent orientation and option acquisition kick off,</li> <li>(viii) Establishment of issue resolution process for property owner and Crown interest holder acquisition,</li> <li>(ix) Participation in route review and route change process,</li> <li>(x) Oversight of access and construction footprint change process,</li> <li>(xi) Land permitting program kick off, and</li> <li>(xii) Third party crossing program kick off.</li> </ul> </li> </ul>	495,938

NextBridge Infrastructure LP  
Extended Development Period Costs - Land Rights  
March 14, 2018

Category of Activity	Description	Cost
(2) External Consultant Services	<ul style="list-style-type: none"> <li>(a) Initial Benchmark Market Valuation,</li> <li>(b) Review of Benchmark Market Valuation,</li> <li>(c) Individual appraisals,</li> <li>(d) Land acquisition and permitting for the EWT Line Project including: <ul style="list-style-type: none"> <li>(i) Negotiation and acquisition support,</li> <li>(ii) Field support,</li> <li>(iii) Planning and permitting support,</li> <li>(iv) Administration support,</li> <li>(v) Land legal support</li> <li>(vi) GIS support, including data management,</li> <li>(vii) Reporting,</li> <li>(viii) Open house attendance,</li> <li>(ix) Sketch and map production,</li> </ul> </li> <li>(e) Visualization of EWT Line Project infrastructure in response as mitigation for landowner issue,</li> <li>(f) Purchase of parcel fabric for initial EWT Line Project line list, and</li> <li>(g) Timber valuation and assessment to determine compensation for merchantable timber.</li> </ul>	4,826,371
(3) External Counsel Services	<p>Legal support and advice regarding land acquisition and permitting requirements on private and public land in Ontario including:</p> <ul style="list-style-type: none"> <li>(a) Agreement drafting and finalization,</li> <li>(b) Land title updating and review,</li> <li>(c) Agreement registration, and</li> <li>(d) Limited participation in stakeholder meetings.</li> </ul>	81,801
(4) Land Owners Payments	<ul style="list-style-type: none"> <li>(a) Option payments to property owners in accordance with compensation principles,</li> <li>(b) Review payments to property owners in accordance with compensation principles, and</li> <li>(c) Survey access payment to property owners.</li> </ul>	347,246
(5) Project delay	<p>Specific activities to address extension of development period, including:</p> <ul style="list-style-type: none"> <li>(a) Internal time to prepare project delay filing materials, and</li> <li>(b) Consultant time working with land owners on project delay consultation.</li> </ul>	49,176
TOTAL		5,800,532

NextBridge Infrastructure LP  
Extended Development Period Costs - First Nations and Métis Consultation  
March 14, 2018

Category of Activity	Description	Cost
(1) Internal labour and employee expenses	First Nations and Métis consultation - related activities to progress development of the EWT Line Project, including: (a) Team lead meetings, (b) Team lead calls, (c) Attend open houses, (d) Prepare leave to construct application, (e) Input to and review of the Draft and Final Environmental Assessment Report, (f) Complete financial requirements, including budgets, assisting in monthly financial reporting, (g) Team scheduling calls and discussions, (h) Consultant/Vendor management, including RFP and procurement process, (i) EWT Line Project reporting including OEB milestone tracking and content for monthly and quarterly reporting, (j) Ongoing advice and support in relation to other work stream project development activity, (k) Travel expenses for EWT Line Project meetings, including First Nation and Métis community meetings, (l) Negotiations of Capacity Funding Agreements and coordinating with internal and external legal counsel, (m) Coordination and attendance at Indigenous community meetings, (n) Coordination and attendance at Indigenous leadership meetings to present EWT Line Project updates and discuss future activities, (o) Input to and review of the Draft and Final Terms of Reference (ToR), and (p) Input to and review of the Alternatives Assessment.	505,007
(2) Capacity Funding to Communities	(a) Funding provided to 18 communities for engagement related to delegated Duty to Consult.	1,330,172
(3) External Legal Counsel	(a) Costs of negotiating Capacity Funding Agreements, and (b) Providing advice on Indigenous legal matters related to consultation.	402,148
(4) Aboriginal Advisory Board	(a) Aboriginal Advisory Board expenses, and (b) Meeting costs.	14,805
(5) Project delay	Specific activities to address extension of development period, including: (a) Internal time to prepare project delay filing materials, and (b) Consultant time working with communities on project delay consultation.	12,339
(6) Pukaskwa Park	(a) Working with communities to consult and work with Parks Canada on potential for going through Pukaskwa Park.	7,815
(7) Third party	(a) External consultants arranging meetings and daily interactions with 18 First Nation and Métis communities, and (b) Environmental assessment support for communities from environmental consultant.	981,715
TOTAL		<u>3,254,002</u>

NextBridge Infrastructure LP  
Extended Development Period Costs – Other Consultation  
March 14, 2018

Category of Activity	Description	Cost
(1) Internal labour and employee expenses	Stakeholder consultation-related activities to progress development of the EWT Line Project, including: <ul style="list-style-type: none"> <li>(a) Team lead meetings,</li> <li>(b) Team lead calls,</li> <li>(c) Coordinating and attend open houses,</li> <li>(d) Prepare leave to construct application,</li> <li>(e) Input to and review of the Draft and Final Environmental Assessment Report and EA notifications,</li> <li>(f) Complete financial requirements, including budgets, assisting in monthly financial reporting,</li> <li>(g) Team scheduling calls and discussions,</li> <li>(h) Consultant/Vendor management, including RFP and procurement process,</li> <li>(i) EWT Line Project reporting including OEB milestone tracking and content for monthly and quarterly reporting,</li> <li>(j) Travel expenses for EWT Line Project meetings,</li> <li>(k) Ongoing advice and support in relation to other work stream project development activity,</li> <li>(l) Compile mailing lists and coordinating EWT Line Project mailings,</li> <li>(m) Manage comments submitted through the EWT Line Project hotline, open houses and general enquires including entry into database and distribution to leads for a response,</li> <li>(n) Website building and maintenance,</li> <li>(o) Preparation of EWT Line Project newsletters and update letters,</li> <li>(p) Meetings with community representatives,</li> <li>(q) Input to and review of the Draft and Final Terms of Reference (ToR), and</li> <li>(r) Input to and review of the Alternatives Assessment.</li> </ul>	758,854
(2) Project delay	Specific activities to address extension of development period, including: <ul style="list-style-type: none"> <li>(a) Internal time to prepare project delay filing materials,</li> <li>(b) Consultant time working with communities on project delay consultation,</li> <li>(c) Notification to project mailing list of project delay, and</li> <li>(d) Additional stakeholder engagement and monitoring of comments due to delay.</li> </ul>	108,835
(3) External Consultant Services and Supplies	<ul style="list-style-type: none"> <li>(a) Open House support including newspaper advertising, mailing of notices, security, venue rentals, catering, satellite phones, travel and accommodation,</li> <li>(b) Draft and Final Terms of Reference and EA submission notification support including purchase of space in papers, formatting, and French translation,</li> <li>(c) Stakeholder database establishment and maintenance, including license and data entry,</li> <li>(d) Website management and updating,</li> <li>(e) Printing of EWT Line Project newsletters, handouts, open house panels, business cards, notices and letters,</li> <li>(f) Mail coordination, including mailing and courier costs,</li> <li>(g) Consulting services to assist with Stakeholder Relations including office space and office supplies,</li> <li>(h) Laptops for the purposes of viewing the draft EA review at public viewing locations, and</li> <li>(i) Community investment and support contributions (including Thunder Bay Commerce of Chamber membership).</li> </ul>	719,326
TOTAL		1,587,015

NextBridge Infrastructure LP  
Extended Development Period Costs - Regulatory (legal support, rate case and LTC filings)  
March 14, 2018

Category of Activity	Description	Cost
(1) Internal labour and employee expenses	Regulatory-related activities to progress development of the EWT Line Project, including:	1,153,202
	(a) Team lead meetings,	
	(b) Team lead calls,	
	(c) Attend open houses,	
	(d) Prepare leave to construct application,	
	(e) Input to and review of the Draft and Final Environmental Assessment Report,	
	(f) Complete financial requirements, including budgets, assisting in monthly financial reporting,	
	(g) Team scheduling calls and discussions,	
	(h) Consultant/Vendor management, including RFP and procurement process,	
	(i) EWT Line Project reporting including OEB milestone tracking and content for monthly and quarterly reporting,	
	(j) Travel expenses for EWT Line Project meetings,	
	(k) Consider and prepare as needed other Ontario Energy Board applications (US GAAP, early access, cost recording),	
	(l) Ongoing advice and support in relation to other work stream project development activity (EA preparation and review, licence reporting, route selection, stakeholder engagement, scheduling	
	(m) Engagement with regulators and stakeholders (OEB, IESO, HONI, PBR consultation), and	
	(n) Input to and review of the Alternatives Assessment.	
(2) External Counsel Services	(a) Providing legal advice and support on regulatory matters.	306,766
(3) External Consultant Services	(a) Research, transmission ratemaker model development and regulatory support services.	60,495
(4) Stakeholder costs	(a) Costs reimbursed to stakeholders related to participation in NextBridge's Rate Methodology Stakeholder Consultation session held on September 10, 2014.	6,380
(5) Project delay	Specific activities to address extension of development period, including:	346,655
	(a) Internal time to undertake rescheduling and rebudgeting activity and prepare and support proposals for regulatory approval, and	
	(b) External counsel services to provide legal advice and support related to project extension-related matters.	
TOTAL		<u>1,873,499</u>



NextBridge Infrastructure LP  
Extended Development Period Costs - Interconnection Studies  
March 14, 2018

Category of Activity	Description	Cost
(1) Internal labour and employee expenses	<ul style="list-style-type: none"> <li>(a) Team lead meetings,</li> <li>(b) Team lead calls,</li> <li>(c) Prepare leave to construct application,</li> <li>(d) Input to and review of the Draft Environmental Assessment Report,</li> <li>(e) Team scheduling calls and discussions,</li> <li>(f) EWT Line Project reporting including OEB milestone tracking and content for monthly and quarterly reporting,</li> <li>(g) Travel expenses for EWT Line Project meetings, and</li> <li>(h) Ongoing advice and support in relation to other work stream project development activity.</li> </ul>	15,873
(2) External Services	<ul style="list-style-type: none"> <li>(a) Independent Electricity System Operator - System Impact Assessment costs, and</li> <li>(b) Hydro One Networks Inc. - Customer Impact Assessment costs.</li> </ul>	67,986
TOTAL		83,859

NextBridge Infrastructure LP  
Extended Development Period Costs - Project Management  
March 14, 2018

Category of Activity	Description	Cost
(1) Internal labour and employee expenses	Overall project management including task/schedule management, internal/external reporting including Ontario Energy Board reports and requests, management communication and directives, overall cost management including team lead variance discussions, back office functions including accounting, financial reporting, accounts payable, vendor management/supply chain, cash management, tax, audit management, regulatory support, and financial modeling, in addition to: (a) Team lead meetings, (b) Team lead calls, (c) Attend open houses, (d) Prepare leave to construct application, (e) Input to and review of the Draft and Final Environmental Assessment Report, (f) Complete financial requirements, including budgets, assisting in monthly financial reporting, (g) Team scheduling calls and discussions, (h) Consultant/Vendor management, including RFP and procurement process, (i) EWT Line Project reporting including OEB milestone tracking and content for monthly and quarterly reporting, (j) Travel expenses for EWT Line Project meetings, (k) Ongoing advice and support in relation to other work stream project development activity, and (l) Operations & maintenance coordination and support, including resolving rights of way access matters.	3,370,265
(2) Toronto office expense	(a) Rent for the EWT Line Project Toronto office.	249,977
(3) Safety Review	(a) Internal labour to review and develop safety plan.	5,843
(4) External GIS consultant	(a) External GIS consultant supporting the EWT Line Project team members.	9,420
(5) Project delay	Specific activities to address extension of development period, including: (a) Internal time to prepare project delay filing materials, and (b) Providing support related to project extension-related matters.	285,879
(6) Pukaskwa Park	(a) Working with communities to consult and work with Parks Canada on potential for going through Pukaskwa Park.	1,803
(7) External Consultant Services and Supplies	(a) External project management consulting supporting task/schedule management, internal/external reporting including Ontario Energy Board reports and requests, overall cost management including team lead variance discussions, assist with back office functions including accounting, financial reporting, accounts payable, vendor management/supply chain, cash management, tax, audit management, regulatory support, and financial modeling. (b) Office supplies, (c) Office administrative support, (d) IT support, and (e) Annual external financial and tax reporting.	1,043,597
TOTAL		<u>4,966,784</u>

NextBridge Infrastructure LP  
Extended Development Period Costs - First Nations and Métis Land Acquisition and First Nations and Métis  
Participation  
March 14, 2018

<u>FIRST NATION AND MÉTIS LAND ACQUISITION</u>	
Category of Activity	Description
(1) External Consultant Services	(a) External consultants engagement with Pays Plat & Michipicoten representatives related to reserve crossings.
	Cost 16,862
	<u>16,862</u>

TOTAL

<u>FIRST NATION AND MÉTIS PARTICIPATION</u>	
Category of Activity	Description
(1) Internal labour and employee expenses	(a) Internal legal, project management, engineering and finance staff labor costs for negotiations, and (b) Travel expenses to attend EWT Line Project meetings, including First Nation and Métis community meeting.
	Cost 593,874
(2) External Legal Counsel	(a) Costs of negotiating Capacity Funding Agreements, and (b) Providing legal advice and support related to negotiation of economic participation arrangements with First Nations and Métis community representatives.
	1,116,541
(3) Capacity Funding to Communities	(a) Funding provided to communities in support of economic participation negotiations, and (b) Travel expenses for meetings.
	1,163,612
(4) Project delay	Specific activities to address extension of development period, including: (a) Internal time to prepare project delay filing materials.
	23,216
(5) Third party	(a) Costs for setting up environmental monitoring program for field work - Indigenous and environmental consultant labour costs, meeting space for training, and (b) Indigenous environmental monitoring activity for environmental assessment field work.
	518,144
	<u>3,415,388</u>

TOTAL

NextBridge Infrastructure LP  
Extended Development Period Costs  
March 14, 2018

Cost Category	Board-Approved Costs (1)	Anticipated Extended Development Period Incremental Costs (in 2015 \$, rounded to nearest 10,000s)	Actual Extended Development Period Incremental Costs (in nominal \$) (2)	Total Extended Development Period Costs (in nominal \$)
	(A)		(B)	(A + B)
Engineering, Design and Procurement Activity	10,553,290	240,000	(289,826)	10,263,464
Permitting and Licensing	47,320	30,000	37,461	84,781
Environmental and Regulatory Approvals	3,592,680	4,890,000	4,225,000	7,817,680
Land Rights	1,991,000	2,580,000	3,809,532	5,800,532
First Nations and Métis Consultation	1,724,000	3,750,000	1,530,002	3,254,002
Other Consultation	496,000	2,020,000	1,091,015	1,587,015
Regulatory (legal support, rate case and LTC filings)	985,000	1,510,000	888,499	1,873,499
Interconnection Studies	179,000	60,000	(95,141)	83,859
Project Management (3)	1,300,000	3,330,000	3,666,784	4,966,784
Contingency (4)	<u>1,529,710</u>	<u>1,960,000</u>	<u>(1,529,710)</u>	<u>0</u>
SUBTOTALS - BUDGETED	22,398,000	20,370,000	13,333,616	35,731,616
First Nation and Métis Land Acquisition			16,862	16,862
First Nation and Métis Participation			3,415,388	3,415,388
Pic River Appeal Costs			230,163	230,163
Carrying Costs			<u>855,474</u>	<u>855,474</u>
SUBTOTALS - UNBUDGETED	0	0	4,517,886	4,517,886
TOTALS	<u><u>22,398,000</u></u>	<u><u>20,370,000</u></u>	<u><u>17,851,501</u></u>	<u><u>40,249,501</u></u>

**NOTES:**

(1) Ontario Energy Board EB-2011-0140 East-West Tie Line Designation Phase 2 Decision and Order issued on August 7, 2013 escalated in accordance with Upper Canada Transmission, Inc. Response to Board Interrogatory 26 to all Applicants ("NextBridge Response to IR 26") (rounded to the nearest 000s).

(2) "Actual" refers to actual costs plus estimated accruals at July 31, 2017.

(3) Costs not attributable to a specific workstream have been captured within Project Management.

(4) Contingency of \$1,319,136 and escalation of \$211,062 as per NextBridge Response to IR 26.

