



Brittany Zimmer
Advisor, Regulatory Applications
Leave to Construct
Regulatory Affairs

tel 519-436-4600 ext. 5004651
brittany.zimmer@enbridge.com
egiregulatoryproceedings@enbridge.com

Enbridge Gas Inc.
50 Keil Drive North,
Chatham, ON N7M 5M1
Canada

VIA EMAIL and RESS

August 12, 2021

Christine Long
Registrar
Ontario Energy Board
2300 Yonge Street, Suite 2700
Toronto, Ontario, M4P 1E4

Dear Christine. Long:

**Re: Enbridge Gas Inc. (“Enbridge Gas”)
Ontario Energy Board (“OEB”) File No.: EB-2017-0261
Scugog Island Natural Gas Pipeline Project (“Project”)
Post Construction Financial Report**

Further to the Final Monitoring Report filed by Enbridge Gas on August 12, 2021, enclosed please find the Post Construction Financial Report for the above noted proceeding in accordance with Schedule B, Section 5 of the OEB’s Decision and Order.

Please contact me if you have any questions.

Yours truly,

Brittany Zimmer
Advisor, Regulatory Applications – Leave to Construct

Scugog Island – Community Expansion Project (EB-2017-0261)
Post Construction Financial Report on Costs and Variances
Aug 12, 2021

Introduction

On December 15, 2017, Enbridge Gas Distribution Inc. (“Enbridge Gas” or the “Company”) applied to the Ontario Energy Board (“OEB”) under sections 36, 90 and 97 of the *Ontario Energy Board Act* (the “Act”) for approvals to serve the community of Scugog Island, in the Town of Scugog, in the Regional Municipality of Durham (the “Project”). In its May 31, 2018, Decision and Order the OEB granted Enbridge Gas:

- Leave to Construct (“LTC”) 7 km of NPS 4 extra high-pressure steel natural gas pipeline;
- Approval of the proposed form easement (land use) agreements; and
- Approval to charge a System Expansion Surcharge (“SES”) of \$0.23 per cubic metre of natural gas for the term of 40 years to all new customers taking distribution service from the facilities in the community of Scugog Island.

Construction activities for the Project commenced on December 9, 2019 and the related facilities were placed into service on May 12, 2020.¹

This Post Construction Financial Report was prepared to satisfy Condition 5 of the Conditions of Approval set out in the OEB’s Decision and Order:

5. Concurrent with the final monitoring report referred to in Condition 6(b), Enbridge shall file a Post Construction Financial Report, which shall indicate the actual capital costs of the project and shall provide an explanation for any significant variances from the cost estimates filed in this proceeding. Enbridge shall also file a copy of the Post Construction Financial Report in the proceeding where the actual capital costs of the project are proposed to be included in rate base or any proceeding where Enbridge proposes to start collecting revenues associated with the project, whichever is earlier.

This report summarizes estimated² and actual capital costs of the Project (see Table 1), and provides explanations for significant variances.

¹ Construction is ongoing on related distribution mains and customer services.

² EB-2017-0261, Exhibit E, Tab 2, Schedule 1, P. 1

Table 1: Total Project Costs

Item	Project Estimate (\$)	Actual Cost (\$)	Variance (\$)
1.0 Material Cost	550,767	433,364	117,403
2.0 Labour and Construction Cost	2,040,000	5,642,759	(3,602,759)
3.0 External Costs	459,600	919,124	(459,524)
4.0 Station Cost	60,000	62,168	(2,168)
5.0 Contingency	311,037	-	311,037
6.0 Interest During Construction	27,542	52,962	(25,420)
Total	3,448,946	7,110,377	(3,661,431)

1.0 Overview

The actual costs of construction for the Project exceeded project estimates by approximately \$3.60 million. Two common factors that impacted nearly all cost categories set out in Table 1 were:

- **Inflation:** Project estimates were forecast and filed with the OEB in December 2017. Construction of the Project was not completed until July 6, 2020 leading to overall increased costs due to inflation.
- **Complexity of Construction:** While the original project estimate was prepared with the best information available at the time, the cost of construction proved to be significantly higher, mainly driven by changes in the design and permitting stage requirements, as described below.

2.0 Labour and Construction

Final Labour and Construction costs were approximately \$3.66 million higher than originally estimated, due to: (i) changes to methods of construction; (ii) unanticipated Ministry of Transportation (“MTO”) permit requirements and related permit delay; (iii) the requirement to construct during the winter season; and (iv) the unprecedented and ongoing COVID-19 pandemic.

2.1 Methods of Construction Change

When Project costs were estimated, the Company assumed that most construction work would be done via open cut adjacent to the road edge. This was not possible due to unforeseen ground conditions, environmental sensitivities and MTO requirements for permit issuance.

Geotechnical and hydrogeological data collected during the design phase indicated a high water table with high hydraulic conductivity type soil, particularly in the western segment of the highway (wetland area). As a result, the Company needed to change the method of construction from open cut to directional drill, to minimize the environmental impact of potential excessive dewatering.

Targeted Species at Risk (“SAR”) field surveys were conducted during the design phase, which identified the likelihood of encountering Blanding’s Turtle (*Emydoidea blandingii*). Modifying the construction method from open trench to directional drill was preferred to mitigate impacts to Blanding’s Turtle, and was approved by the Ministry of Conservation and Parks (“MECP”) as a mitigation measure.

With the aim of minimizing its exposure to future costs and risk when working in the vicinity of buried natural gas pipelines, and as a condition of issuing a permit, the MTO requested that the pipeline be installed at a greater minimum depth and closer to the Right-of-Way (“ROW”) street line than the Company’s standard. Both the increased depth and running line requirement necessitated the pipeline be installed via horizontal directional drill, to avoid deep trenched excavations with shoring and to avoid vegetation clearing in the ROW. The MTO also requested a complex traffic control plan and a special condition for the pipeline construction along Highway 7A in response to highway structural concerns. This involved conducting an engineered settlement discharge and monitoring plan to mitigate the risk of potential road collapse during pipeline drilling.

2.2 MTO Requirements and Permit Delay

Iterative engineering re-design work and the additional engineered plan associated with the conditions discussed in section 2.1 above, significantly delayed the MTO permit and consequently the Project execution start date. The permit delay resulted in idle staff and an accelerated construction schedule consisting of additional contractor crews and equipment, and overtime hours, required to meet the environmental species at risk construction window for Blanding’s Turtles.

2.3 Winter Construction

The MTO permit delays described in section 2.2 forced the timing of pipeline construction into the winter months of February to March where weather and ground conditions impacted the cost of construction. Winter construction was also determined to be the preferred timing of construction to mitigate impacts to Blanding's Turtle (which have an active nesting season from April 1 – September 30), as well as to limit the amount of potential dewatering that may be required during project work due to frost and frozen ground conditions, as discussed in Section 2.1.

2.4 COVID-19 Pandemic

The unprecedented and ongoing COVID-19 pandemic began while the project was in execution. In response to government mandates, changes were made to day-to-day construction operations, including additional: sanitization and PPE, washing stations, and trucks to meet social distancing requirements.

3.0 External Costs

Final External Costs were approximately \$0.5 million higher than originally estimated, due to: (i) additional geotechnical and hydrogeological work; (ii) external pipeline inspection; and (iii) pipeline conditioning.

3.1 Additional Geotechnical and Hydrogeological Work

As discussed in section 2.1 above, as a condition of permit approval, MTO required a settlement discharge and monitoring plan along highway 7A to address highway structural concerns. This engineered design and associated field support was completed by external third parties.

3.2 External Pipeline Inspection

In December 2017, when the LTC application for this project was originally filed with the OEB, it was determined that internal company pipeline inspectors would be used for the Project. However, additional external pipeline inspectors were required for the entirety of the Project due to the accelerated schedule discussed in section 2.2 above.

Further, due to unforeseen environmental sensitivities and complexities of the Project, including dewatering and SAR, an external environmental inspector was also hired to support construction execution in the field to support and ensure all mitigation measures were followed during the accelerated schedule.

3.3 Pipeline Conditioning

As a result of the MTO permit delay and project in service date requirements, the 7 km of steel NPS 4 extra high-pressure pipeline required additional resources to prepare, manage and execute the conditioning plan.