



Niagara Region

Niagara Escarpment Crossing  
Comprehensive Environmental  
Assessment  
Proposed Terms of Reference

Appendix N  
Financial Work Plan

October 2024

Prepared by:



# Table of Contents

1 Introduction..... 1

2 Existing Financial Information Sources ..... 2

3 Assessment of the Alternatives ..... 3

    3.1 Alternatives To the Project ..... 3

        3.1.1 Preliminary Criteria and Indicators ..... 3

    3.2 Alternative Methods of Carrying Out the Project ..... 4

        3.2.1 Preliminary Criteria and Indicators ..... 5

4 Proposed Project ..... 6

5 Documentation..... 7

# List of Tables

Table 3-1: Preliminary Criteria and Indicators for Assessing the Alternatives To the Project..... 4

Table 3-2: Preliminary Criteria and Indicators for Assessing the Alternative Methods of Carrying Out the Project..... 5

## 2 Introduction

This document outlines the proposed work plan that will be carried out during the Niagara Escarpment Crossing Environmental Assessment (EA) to generate cost estimates for the identified “alternatives to” the project, the generated “alternative methods” for carrying out the project, and the proposed project. This work plan forms **Appendix N** to the proposed Niagara Escarpment Crossing Comprehensive EA Terms of Reference (ToR) and should be read in conjunction with it.

Relevant existing available sources of financial information will first be collected and reviewed as part of the process of generating cost estimates (**Section 2**). The ToR currently proposes that both the alternatives to the project and the alternative methods of carrying out the project will be assessed based on sets of preliminary evaluation criteria and indicators including those from a financial or cost perspective. The preliminary financial evaluation criteria and indicators for both alternatives to and alternative methods are presented in **Sections 3** and **4** respectively along with the level of costing to be generated at each of these EA stages.

Once a preferred method(s) or proposed project is identified through the comparative evaluation of the alternative methods, a more precise cost estimate for it will be prepared during the preparation of the Niagara Escarpment Crossing EA (**Section 5**). **Section 6** outlines the three documents to be generated from the Financial Work Plan during the Niagara Escarpment Crossing EA.

### 3 Existing Financial Information Sources

Available existing sources of information will be collected and reviewed for use in generating costs at each of the three EA stages. Presently, the list of existing information sources that will be collected and reviewed as part of the proposed financial work plan includes, but may not be limited to, the following:

- Financial data from other projects of a similar size and nature.
- Similar project capital and operating expenditure information.
- Construction and industry journals and databases for similar projects.
- Information and costs from local land records to estimate the value of easements or parcels of land.
- Historical/current costs associated with like facilities.
- Historical records and databases from Niagara Region, the Province, as well as other municipalities or that have completed similar works.
- Industry cost estimating documents, RS Means, etc.
- Historical records from contractors and project managers specializing in the preparation of pre-tender construction estimates.
- Cost information from other ongoing and recently completed projects within Niagara Region.
- Niagara Region records for infrastructure operating and maintenance costs including associated energy usage costs from appropriate suppliers as well as internally generated energy.

## 4 Assessment of the Alternatives

### 4.1 Alternatives To the Project

The proposed Niagara Escarpment Crossing ToR provides a preliminary list of alternatives to the project including the following:

- Alternative 1 - Do Nothing
- Alternative 2 - Implement Additional Traffic Management Measures
- Alternative 3 - Extend Bartlett Avenue Southerly and Utilize Park Road Corridor
- Alternative 4 - Construct a New North-South Corridor between Grimsby and Beamsville

Utilizing available existing financial sources of information, the following cost information will be developed for the preceding alternatives:

- Conceptual capital cost estimates using industry standards.
- Conceptual cost of land acquisition for easements and/or individual land parcel.

The estimate prepared during the alternatives to the project stage will be a Class 5 Estimate in accordance with the Recommended Practice No. 17R-97 and 18R-97 developed by the Association for the Advancement of Costing (AACE) International.

Calculating the conceptual Class 5 costs will involve analysis of financial data from other similar scope projects and will include contingency costs and allowances for market variability as well as the potential impact on the overall construction costs. The calculation of the land acquisition costs will consider the historical and present value of the land.

#### 4.1.1 Preliminary Criteria and Indicators

The preliminary evaluation criteria and indicators that will be used for assessing the alternatives to the project from a financial perspective include, but may not be limited to, those set out in **Table 3-1**. The preliminary evaluation criteria and indicators will be finalized based on comments received during the Niagara Escarpment Crossing EA and documented in the EA Report.

**Table 4-1: Preliminary Criteria and Indicators for Assessing the Alternatives To the Project**

Category	Criterion	Indicator
<b>Financial</b>	- Estimated construction costs	- Conceptual capital cost estimate to construct the alternative
<b>Financial</b>	- Estimated land acquisition costs	- Conceptual land acquisition cost estimate to implement the alternative

## 4.2 Alternative Methods of Carrying Out the Project

Following the identification of the preferred alternative(s) to the project, alternative methods will be generated, possibly screened, assessed, and comparatively evaluated leading to a recommended method(s).

With the available existing financial sources of information in hand, cost estimates will be generated for each alternative method as follows:

- Develop capital cost estimates using industry standards.
- Develop cost of land acquisition for easements and/or individual land parcels.
- Prepare annual operation and maintenance costs estimates for the life of the infrastructure.
- Prepare 50-year net present worth cost estimates for the infrastructure.

Class 4 cost estimates in accordance with Recommended Practice No. 17R-97 and 18R-97 developed by AACE International will be generated for each Alternative Method. A Class 4 estimate will be prepared for each long-listed alternative method (i.e., Level 1 Concept Design (see the Transportation Planning and Engineering Work Plan) and for each short-listed alternative method (i.e., Level 2 Concept Design see the Transportation Planning and Engineering Work Plan) as appropriate.

Calculating the capital costs will involve analysis of financial data from other similar scope projects and will include contingency costs and allowances for the variability of the market as well as the potential impact on the overall construction costs. The calculation of the land acquisition costs will consider the historical and present value of the land. Operating and maintenance (O&M) costs will be calculated using historical

data as well as ongoing existing operating and maintenance rates scaled to the magnitude of the project. O&M costs will also include components and costs associated with market variability.

All future costs identified will be presented in terms of 50year net present worth in order to determine the overall cost of each alternative in current dollars. Costs will be based on conceptual design engineering estimates.

#### 4.2.1 Preliminary Criteria and Indicators

The preliminary evaluation criteria and indicators that will be used for assessing the alternative methods of carrying out the project from a financial perspective include, but may not be limited to, those set out in **Table 3-2**. The preliminary evaluation criteria and indicators will be finalized based on comments received during the Niagara Escarpment Crossing EA and documented in the EA Report.

**Table 4-2: Preliminary Criteria and Indicators for Assessing the Alternative Methods of Carrying Out the Project**

Category	Criterion	Indicator
<b>Financial</b>	- Estimated construction costs	- Capital cost estimate to construct the alternative
<b>Financial</b>	- Estimated land acquisition costs	- Land acquisition cost estimate to implement the alternative
<b>Financial</b>	- Estimated operation and maintenance costs	- 50-year net present worth cost estimate for the constructed alternative

## 5 Proposed Project

Once selected, the preferred method(s) of carrying out the project (i.e., proposed project) will be further developed at a preliminary design level of detail.

The cost estimates developed for the preferred method of carrying out the project will be re-visited and updated where necessary to reflect the preliminary design level of detail. As a result, more specific capital, land acquisition, operating and maintenance, and 50-year Net Present Worth Costs will be developed.

A Class 3 cost estimate in accordance with Recommended Practice No. 17R-97 and 18R-97 developed by AACE International will be prepared for the proposed project.



## 6 Documentation

The results of implementing this work plan will be documented in three documents during the Niagara Escarpment Crossing EA:

- **Cost Estimates for the Alternatives to the Project** - will document the Class 5 Estimates prepared in accordance with Recommended Practice No. 17R-97 and 18R-97 developed by AACE International.
- **Cost Estimates for the Alternative Methods of Carrying Out the Project** – will document the Class 4 Estimates prepared in accordance with Recommended Practice No. 17R-97 and 18R-97 developed by AACE International.
- **Cost Estimate for the Proposed Project** – will document the Class 3 Estimate prepared in accordance with Recommended Practice No. 17R-97 and 18R-97 developed by AACE International.

Upon completion, each document will be made available during the Niagara Escarpment Crossing EA to review agencies, Indigenous Communities, and the public for their information via the project website and upon request and will become either a reference or supporting document to the submitted EA Report. The EA Report will be based on and reflect the information contained in the three documents.