# Northeastern Passenger Rail Service

Initial Business Case –Final

**Disclaimer**

All figures within this Initial Business Case represent preliminary results. Forecasted costs, revenues and ridership figures are at a high level and will be subject to refinement as analysis of the Northeastern passenger rail service proceeds to the Updated Business Case phase, and later analyses in the Business Case lifecycle.

# Northeastern Passenger Rail Service

Initial Business Case –Final

# Contents

# Executive Summary

Northern Ontario has limited passenger transportation options that increase the cost of travel and restrict residents' mobility to, from and between northern communities. The primarily auto-oriented transportation network is particularly challenging for those who are unable to drive, choose not to drive, or do not have access to a vehicle. As a result, the quality of life for residents in northern communities, including Indigenous communities, is impacted due to limited access to services and businesses located across northern Ontario and in the Greater Golden Horseshoe (GGH), such as hospitals and other specialized medical services. Limited travel alternatives for the businesses and communities in Northern Ontario also limits the potential for economic development in the north.

A former passenger rail service provided by the Ontario Northland Transportation Commission (Ontario Northland), called the Northlander, provided a passenger rail transportation connection between Cochrane, North Bay and Toronto; however, the service was discontinued in 2012. Inter-community transportation service in Northern Ontario is currently primarily provided through a bus network operated by Ontario Northland. Some residents in Northern Ontario have expressed a preference for rail service instead of the existing bus service, which may be related to increased space and the ability to move around during travel. The bus service also operates within mixed traffic on the road network, which exposes the service to disruptions on the road network and decreases travel time reliability. In addition, the heavy reliance on personal and commercial vehicles, as well as inter-community passenger transportation services on the Highway 11 corridor, limits the resiliency of the northern transportation system, due to the limited or non-existent detour routes.

To address these transportation challenges, Ontario Northland is proposing to reinstate passenger rail service between Northern Ontario and the GGH. The proposed rail service will draw upon the experiences of operating the former Northlander to provide a service that better serves the needs and travel demands of northern residents.

Metrolinx is supporting Ontario Northland by conducting analysis to assess this proposal through an Initial Business Case. The Initial Business Case is a decision-making tool employed to assess the strategic and economic rationale for an investment, and the financial, deliverability and operational considerations required to implement it.

This Initial Business Case assesses six service pattern options and three potential northern termini for the service. The combination of service levels and termini resulted in 17 options for analysis, which are summarized in the table below.

| Service | Northern Terminus[1] | Description |
|---|---|---|
| Option 1: Reinstated Service | A: North Bay<br>B: Timmins<br>C: Cochrane | • One trip per direction per day, six days per week (no service on Wednesdays)<br>• Nighttime departures from Northern Ontario<br>• Onboard amenities to be determined |
| Option 2: Enhanced Service | A: North Bay<br>B: Timmins<br>C: Cochrane | • One trip per direction per day, seven days per week<br>• Nighttime departures from Northern Ontario<br>• Some onboard amenities (light snacking, sandwiches, beverages, and app pre-ordering service) |
| Option 3: Twice Daily Service | A: North Bay<br>B: Timmins<br>C: Cochrane | • Two trips per direction per day, seven days per week<br>• Nighttime and daytime departures from Northern Ontario<br>• Some onboard amenities (light snacking, sandwiches, beverages, and app pre-ordering service) |
| Option 4: Daytime Service | A: North Bay<br>B: Timmins<br>C: Cochrane | • One trip per direction per day, six days per week (no service on Wednesdays)<br>• Daytime departures from Northern Ontario<br>• Onboard amenities to be determined |
| Option 5: Staged Service | B: Timmins<br>C: Cochrane | • One trip per direction per day, six days per week (no service on Wednesdays)<br>• Nighttime departures from Northern Ontario<br>• Onboard amenities to be determined<br>• Service to North Bay only for the first ten years of service (similar service characteristics of Option 1A), then extending to Timmins or Cochrane afterward |
| Option 6: Seasonally Adjusted Service | A: North Bay<br>B: Timmins<br>C: Cochrane | • One trip per direction per day, four to seven days per week depending on the season<br>• Nighttime departures from Northern Ontario<br>• Onboard amenities to be determined |

## Business Case Results

*Strategic Case*

The Northeastern Passenger Rail Service will provide additional transportation options for travel to, from and between northern communities. This passenger rail service will supplement the existing air and highway travel options with an option that is comfortable, accessible, and resilient against congestion and inclement weather.

Rail service will also support economic development by improving connections for northern communities to the GGH. All options will:

- Support tourism travel to Northeastern Ontario, especially peak season travel to Muskoka District; and

[1] All options have as their southern terminus Toronto Union Station

- Provide a reliable inter-community transportation connection to North Bay, which is the fourth largest municipality in Northern Ontario.

Further extensions from North Bay will offer additional travel alternatives to more remote communities including Indigenous communities and extend benefits further north. The extension to the Timmins region will serve the fifth largest municipality in Northern Ontario.

Options that provide additional service frequencies will also offer additional amenities, flexibility and reliability for northern residents.

*Economic Case*

All options will generate economic benefits, however, these benefits are outweighed by the associated costs of delivering the service.

As a consequence, the proposed options each result in a negative net present value and a benefit-cost ratio that is less than 1.0, largely attributed to costs for traveling over large and less densely populated areas. The benefit-cost ratio over the 60-year evaluation period ranges between 0.23 to 0.52 in the conservative scenario, and between 0.41 to 0.74 in the optimistic scenario.

Options that increase service frequency or extend service further north generate greater total benefits, however, these benefit increases do not outweigh the additional costs to deliver the service. Of the two possible northern terminus extension, Timmins outperforms Cochrane in terms of both net economic benefits, as well as benefit cost-ratio.

*Financial Case*

From a financial perspective, all options result in incremental operating costs that outweigh the incremental revenue of the project. As a result, all options will require a subsidy to sustain operations. The operating cost recovery ratio over the 60-year evaluation period ranges between 0.15 to 0.33 under the conservative scenario and 0.22 to 0.40 in the optimistic scenario. The requirement of an operating subsidy is typical of inter-community transportation projects in North America, particularly for those with a focus on providing coverage to underserved areas with fewer reliable transportation alternatives.

At the start of operations in the mid-2020s, the service is projected to require an annual operating subsidy of between $3.6M to $20.5M in the conservative scenario, and between $2.8M to $17.2M in the optimistic scenario. By 2041, the required annual subsidy will increase to $4.1M to $23.9M in the conservative scenario, and between $3.2M to $19.9M in the optimistic scenario.

Options that provide greater frequency or extend the service terminus do not generate sufficient ridership and revenue to offset the additional operational costs.

*Deliverability and Operations Case*

All options propose infrastructure improvements primarily within existing rail corridors. Options that extend service to North Bay require less infrastructure work and would be easier to deliver compared to service to Timmins/Cochrane. The construction of a new station in the Timmins region may require an environmental assessment approval before work can begin.

Operationally, the options that propose improved operating efficiency across the infrastructure provide additional flexibility in scheduling train meets and enhance service reliability. The Enhanced Service options and Twice Daily Service options provide improved reliability, but these features come at very high cost and may not be justifiable given the population and potential ridership.

The key project dependency for all options is agreement with the Canadian National Railway (CN) to allow for the operation of passenger rail service on the Bala and Newmarket Subdivisions between Toronto and North Bay.

*Next Steps*

Once an option is selected for further project development, an updated business case (UBC) will begin assessing the preferred option at a more detailed level of analysis further refining project scope, benefits and costs. Similarly, Metrolinx uses a business case process for specific GO Transit and other major transit projects as noted in Figure 1. Analysis to be undertaken through the detailed design phase includes:

- Train modelling to confirm the operability of the service pattern and schedule;
- More detailed service planning, including consideration of parallel and connecting bus services, to maximizing connectivity, while rationalizing service levels;
- Refinement of modelling parameters as new data becomes available as well as the project proceeds, including:
    - Capital, operating and maintenance costs;
    - External benefits (e.g., GHG benefits, congestion benefits, connectivity of the northern region benefits);
    - Impacts of customer amenities on ridership and benefits;
- Further analysis of rolling stock to determine the option that best meets customer needs, while providing value for money;
- Negotiations with CN to secure track access for the service, and confirm the scope of any corridor infrastructure required to operate the service; and
- Design of corridor, station and shelter infrastructure, and development of more detailed cost estimates.

# 1

# Introduction

**Background**

Ontario Northland is an agency of the Province of Ontario responsible for providing efficient, safe and reliable transportation services in Northern Ontario. Current services include inter-community motor coach services connecting Northern Ontario to urban centres that include Toronto, Ottawa, and Winnipeg. Motor coach services also connect passengers to hospitals and post-secondary institutions, and integrate with Metrolinx/GO Transit and other private carriers for a seamless transportation experience. Passenger rail services are provided by Ontario Northland connecting the town of Cochrane to Moosonee and the First Nations communities of the James Bay Coast. Rail freight services are also provided that connect to Class one railways to ship goods across North America. Through this mandate, and as a natural extension to current services, Ontario Northland is considering the reinstatement of a passenger rail service between Toronto Union Station in the Greater Golden Horseshoe (GGH) and Northern Ontario (the "Northeastern Passenger Rail Service").

Metrolinx is an agency of the Province of Ontario responsible for providing leadership in the co-ordination, planning, financing, development and implementation of an integrated transit network in the GGH. Metrolinx also interacts and works with other transit agencies in the development of transit related policies and options. In recent years, Metrolinx has developed a business case framework as a tool to support evidence-based decision-making for investments in the regional transit network.

In support of the Northeastern Passenger Rail Service, Ontario Northland and Metrolinx are jointly developing and assessing the business case for offering regular passenger rail service between Northern Ontario and Toronto.

**Business Case Overview**

Business case analyses are required by the government for all projects that exceed $50M in capital costs. As projects develop in scope and construction, business cases are completed to define the rationale and requirements for delivering said investment. As shown in Figure 1, the Initial Business Case is the first of four business cases completed in an investment's lifecycle. It reviews variations of the investment and selects a preferred option for further design and analysis.

Figure 1: Metrolinx Business Case Development Process

# 2

## The Case for Change

## Introduction

This chapter defines the case for change, which is used to guide the evaluation of investment options considered within this business case.

## Case for Change

*Problem Statement*

Northern Ontario transportation options are based primarily on auto-oriented travel modes. This restricts residents' mobility to, from and between northern communities, especially for those who are unable to drive, choose not to drive, or do not have access to private vehicles. The availability of other modes of transportation, such as transit, inter-community bus or rail service, or air service, are also limited. Highway 11 north of North Bay is susceptible to road closures, with few alternative routes available for detours. As a result, the quality of life for residents in northern communities, including northern Indigenous communities, is impacted due to limited access to services and businesses located across Northern Ontario and in the GGH. The lack of strong connections between the GGH and the businesses and communities in Northern Ontario also limits potential economic development opportunities in the north.

In addition, the COVID-19 pandemic has greatly impacted air service in the North, that may never return to pre-COVID service levels. There is also a focus on enhancing tourism options to promote Ontario's 'stay-cation' approach to economic recovery. A passenger rail service would provide significant value to both of these focus areas.

*Key Drivers*

Travel Behaviour

Due to the distance between northern communities and the GGH, there are few daily commuters between the two regions. Instead, travel is primarily driven by occasional trips. Major trip purposes include:

- Family and social visits;
- Tourism, shopping and entertainment;
- Access to specialized services (e.g. medical, educational, government) and
- Business and work-related activities.

In particular, access to medical services is identified as a key priority. The Ontario Ministry of Health provides Northern Health Travel Grant for northern residents who must travel more than 100 km one-way to access services that are not available locally. Data from the program between 2014 and 2015 reported over 38,000 trips from Cochrane, Timiskaming and Nipissing Districts to destinations along the Northeastern Rail Corridor. Residents of Cochrane and Timiskaming Districts accounted for over 80% of the grant applications, with the most frequent destinations being Timmins (33% of trips), North Bay (19% of trips) and the Greater Toronto and Hamilton Area (28% of trips).

The majority of travel is completed via the highway system, using private vehicles or Ontario Northland bus services. The highway corridor is the main route for transport trucks between Ontario and western Canada. The highway route also traverses the snowbelt regions east of Georgian Bay and north of North Bay that frequently experience heavy snowfall and snowsqualls. The geography of the region results in long distance trips between communities that result in driver fatigue. These combined factors contribute to increased transportation safety risk for travellers in Northern Ontario.

There are also air travel options, including regularly scheduled commercial flights between Toronto and North Bay operated by Air Canada, and between Toronto and Timmins operated by Air Canada and Porter Airlines. There is also a seasonal service between Toronto and Gravenhurst operated by Porter Airlines. There are no direct flights between northern communities, other than a handful of flights between First Nation communities in the Far North. While air travel offers the shortest in-vehicle travel time, the user costs of this travel mode are also higher, especially for last minute or emergency trips. Air service is also susceptible to delays and cancellations as a result of poor weather.

Due to the COVID-19 pandemic, Ontario Northland has temporarily reduced the frequencies of its bus services, while airlines have suspended operations on some routes. Porter Airlines suspended all operations, while Air Canada suspended its Toronto-North Bay service. Ontario Northland services have been partially restored, while restoration of air service have not been announced.

### Passenger Transportation Service Provision

GO Transit, an operating division of Metrolinx, provides regional transit services within the GGH. Rail services extending north from Toronto include three commuter rail lines which terminate at Barrie (Allandale Waterfront station), Richmond Hill (Gormley station, and future Bloomington station) and Whitchurch-Stouffville (Lincolnville station). GO Transit supports its core rail service with bus service that provides options for off-peak and counter-peak trips, as well as travel to other regional destinations and more remote communities. The extent of GO bus service is Barrie on the west shore of Lake Simcoe and Beaverton on the east shore of the lake.

Inter-community passenger transportation service in Northeastern Ontario is mainly provided via rail and bus routes operated by Ontario Northland. Passenger rail service currently consists of the Polar Bear Express between Moosonee and Cochrane. A previous passenger rail service between Cochrane and Toronto, called the Northlander, was terminated in 2012. Bus service consists of a network of bus routes serving major communities in Northern Ontario. This includes four daily bus trips in each direction between Toronto and North Bay, serving local communities along the way. Passengers to and from destinations further north must transfer at North Bay or Sudbury. The Ontario Northland passenger transportation network is shown in

Figure 2: Ontario Northland Passenger Services

Some residents in Northern Ontario have identified challenges in using the existing bus service. The bus service also operates within mixed traffic on the road network, which exposes the service to disruptions on the road network and decreases travel time reliability.

Ontario Northland has partnered with GO Transit to explore potential improvements to connectivity between the GGH and Northern Ontario. This includes a "train-meet" service in 2018 and 2019, where Ontario Northland buses connected with Barrie line trains at Allandale Waterfront station to provide services to Gravenhurst, Bracebridge, Huntsville and North Bay. The service operates throughout the summer, providing northbound trips on Friday and return trips on Sunday.

### Transport Infrastructure and Technology

The main transportation artery for Northeastern Ontario is Highway 11, which begins in Barrie and serves the communities of Orillia, Gravenhurst, Bracebridge, Huntsville, North Bay, Temiskaming Shores, Englehart,Matheson, and Cochrane. It also serves the residents of Timmins via a connection to Highway 101. Through much of Northeastern Ontario, Highway 11 is the only road with limited opportunities for detour routes. The transportation network has limited resiliency to major disruptions on the highway system, such as congestion or closures due to collisions, construction or inclement weather. In 2019, the Ontario traveller information service (Ontario 511) reported over 130 incidents along Highway 11 between Orillia and Matheson, with the majority between North Bay and Englehart.

The rail corridor between Toronto and Timmins or Cochrane (the "Northeastern Rail Corridor") is approximately 460 miles (740 km) long and consists of five main railway subdivisions owned by Metrolinx, Ontario Northland, and Canadian National Railway (CN). Table 1 provides an overview of the Northeastern Rail Corridor.

Table 1: Northeastern Rail Corridor

| Subdivision | Mileage (length) | Limits | Owner |
|---|---|---|---|
| Bala | 0.0 – 15.9 (15.9 miles / 25.6 km) | Union Station to Doncaster Diamond | Metrolinx |
| | 15.9 – 88.9 (73.0 miles / 117.5 km) | Doncaster Diamond to Washago | CN |
| Newmarket | 98.9 – 225.2 (126.3 miles / 203.3 km) | Washago to North Bay | CN |
| Temagami | 0.0 – 138.5 (138.5 miles / 222.9 km) | North Bay to Englehart | Ontario Northland |
| Ramore | 0.0 – 85.7 (85.7 miles / 137.9 km) | Englehart to Porquis Junction | Ontario Northland |
| | 85.7 – 112.4 (26.7 miles / 43.0 km) | Porquis Junction to Timmins (South Porcupine) | Ontario Northland |
| Devonshire | 0.0 – 28.1 (28.1 miles / 45.2 km) | Porquis Junction to Cochrane | Ontario Northland |

The Northeastern Rail Corridor is primarily used for freight, with limited passenger rail services. CN operates freight rail services, on the Newmarket and Bala Subdivisions. Passenger rail operators include GO Transit, which operates the Richmond Hill commuter rail service within the southern end of the Bala Subdivision, and VIA Rail, which operates between Toronto and Washago as part of its trans-Canada rail service. On segments owned by freight railway companies, movement of freight traffic is typically prioritized over those of passenger trains. This presents a

challenge in maintaining on-time performance of passenger rail services, especially on single track segments of the corridor.

### Government Policy and Planning

The initial business case was developed in response to the 2019 Ontario Budget commitment to review initiatives to meet the transportation needs in Northern Ontario, including options for passenger rail service, as part of a broader plan to support northern communities.

### Demographics

The Ontario Population Projections Update, 2019-2046 from the Ministry of Finance predicts uneven growth among the communities on the Northeastern Rail Corridor. Growth is concentrated at the south end of the corridor and tapers off to stable or declining populations at the north end. A stabilization in population is forecast for Nipissing, while a slight decline is forecast for Timiskaming and Cochrane census divisions. There will also be a transition towards an older age structure within the communities, with a 148% increase in the population aged 80 and over in northern communities. As a proportion of the population in northern communities, those aged 65 or older will increase from 22% of the total population in 2019 to 30% of the total population in 2046, while those aged 80 or older will increase from 5% of the total population in 2018 to 13% of the total population in 2046. Many Indigenous communities living in the North also report observing greater proportion of background health complications, which requires access to medical supports, typically available in urban centres including the GGH. Table 2 shows a summary of the population along the Northeastern Rail Corridor.

Table 2: Population along the Northeastern Rail Corridor (thousands)

| Census District | 2019 | | | 2046 | | | % change | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total | 65-79 | 80+ | Total | 65-79 | 80+ | Total | 65-79 | 80+ |
| Cochrane | 81 | 11 | 3 | 76 | 11 | 9 | -6% | 1% | 146% |
| Timiskaming | 33 | 6 | 2 | 31 | 5 | 4 | -6% | -12% | 122% |
| Nipissing | 87 | 14 | 5 | 87 | 14 | 11 | 0% | 0% | 136% |
| Parry Sound | 45 | 10 | 3 | 51 | 11 | 8 | 14% | 12% | 186% |
| **Subtotal – Northern Communities** | **246** | **41** | **13** | **245** | 41 | 32 | **0%** | **2%** | **148%** |
| Muskoka | 66 | 13 | 4 | 80 | 16 | 13 | 20% | 21% | 184% |
| Simcoe | 528 | 75 | 23 | 732 | 114 | 79 | 39% | 53% | 243% |
| **Subtotal – Central Communities** | **594** | **88** | **28** | **812** | **130** | **92** | **37%** | **48%** | **233%** |
| York | 1,181 | 143 | 45 | 1,552 | 225 | 157 | 31% | 58% | 247% |
| Toronto | 2,966 | 326 | 137 | 3,735 | 467 | 317 | 26% | 43% | 131% |
| **Subtotal – GTA Communities** | **4,147** | **469** | **182** | **5,287** | **692** | **474** | **27%** | **48%** | **160%** |

| Census District | 2019 | | | 2046 | | | % change | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total | 65-79 | 80+ | Total | 65-79 | 80+ | Total | 65-79 | 80+ |
| **Total** | **4,987** | **597** | **222** | **6,344** | **863** | **597** | **27%** | **45%** | **168%** |

* Figures may not add to totals due to rounding.

As the population ages, they will require greater access to specialized medical and long term care services; however, there will also be a greater proportion of residents who are not able or not willing to drive, especially for long distance trips to urban centres in the GGH where these services are located. While some limited motor coach and air services are available, adding rail service would increase the number of alternatives available to residents along the corridor, especially important given the decline in air services in the North.

### Economic Activity

The economic development of Northern Ontario is a priority for both the provincial and federal governments, with a number of programs established to support the development of businesses and communities in the north. The draft *Northern Ontario Transportation Plan*, released in December 2020, includes more than 60 actions to get more people moving, improve travel options for people in remote communities and support economic growth in the North.

In addition, the tourism industry is a significant component of the regional economy of Northern Ontario. Data from the Ontario Ministry of Heritage, Sport, Tourism and Culture Industries indicates that the tourism industry contributes $735M to the GDP and provides 12,949 jobs for regions along the Northeastern Rail Corridor[2]. In 2017, Tourism Region 12 (Parry Sound and Muskoka Districts) recorded an estimated 4.6M person visits, while Tourism Region 13a (Nipissing, Timiskaming and Cochrane Districts) accommodated an estimated 4.0M person visits[3]. The tourism industry is highly seasonal, particularly for Tourism Region 12, where 54% of visits occur between July and September. This leads to capacity constraints on transportation infrastructure to the region and delays for travellers during the peak season.

### Partner and Stakeholder Input

Advocacy groups for residents and businesses have expressed support for the return of passenger rail service to Northern Ontario. The Ontario Chamber of Commerce recommended improved northern passenger transportation service as part of their 2018 report on Ontario's transportation needs. A 2019 survey conducted by the Northeastern Ontario Rail Network found broad support for the reintroduction of passenger rail, and a stated intent to use the service once restored.

[2] The Economic Impact of Tourism in Ontario and its Tourism Regions; Ministry of Tourism, Culture and Sport; November 12, 2013
[3] Regional Tourism Profiles, Ministry of Heritage, Sport, Tourism and Culture Industries

Another survey was carried out by MTO in October and November of 2020, to better understand needs and preferences for travel along the rail corridor. More than 7,000 responses were received from residents in key corridor-adjacent communities, with overwhelming support for a renewed northeastern rail service.

The results indicate the main purposes of travel reported by respondents for the longest trips along the corridor were visiting friends or family (40%) and leisure (23%). However, trips for medical purpose was found higher for the respondents residing outside the GGH area. Preferences were also expressed for arrival at destination mid-day.

Partners and stakeholders in the north expect any rail service to extend beyond North Bay and provide greater coverage in Northern Ontario. The geography north of North Bay includes significant distances and limited transportation infrastructure that poses challenges for travel by northern residents. A passenger rail service connecting communities north of North Bay would provide additional travel alternatives, and would not be impacted by highway closures.

Summary

Table 3 summarizes the key issues and considerations, both internal and external, for the current and future state of transportation in the Cochrane / Timmins to Toronto corridor that shapes the opportunity and supports the case for investment in inter-community passenger transportation on the Northeastern Rail Corridor.

Table 3: Summary of Key Drivers

| | Driver | How does this Driver influence the problem/opportunity? | What is the impact of not addressing the problem/opportunity? |
|---|---|---|---|
| Internal | Travel Behaviour | • Travel between northern communities and the GGH is primarily driven by occasional trips. Travel is completed primarily using auto-based modes. | • Trips will continue to be made by auto-based modes, resulting in poor connectivity, increased emissions and safety risk, as well as reduced travel time reliability. |
| | Transport Service Provision | • Inter-community bus service is provided between northern communities and GGH. Buses operate in mixed traffic and travel times are affected by disruptions in the road network. | • Inter-community bus travel time reliability will be negatively affected, especially during peak travel periods in the summer, and during inclement weather in the winter. |
| | Transport Infrastructure and Technology | • Most travel, including transit, uses the existing highway infrastructure.<br>• There are existing rail corridors connecting Toronto, Timmins and Cochrane that are primarily used for freight rail traffic.<br>• There is an opportunity to leverage existing infrastructure to operate passenger rail service. | • The highway remains the only transportation link for passengers, while the existing rail corridor will continue to be used primarily for freight.<br>• Residents have limited options for alternate travel arrangements if there are disruptions on the highways, such as congestion or closures due to collisions, construction or inclement weather. |
| External | Government Policy and Planning | • The 2019 Ontario Budget identified a government priority to improve transportation in Northern Ontario, including exploring options to reinstate passenger rail in the north.<br>• The 2020 draft *Northern Ontario Transportation Plan* includes more than 60 actions that will get more people moving, improve travel options for people in remote communities and support economic growth in the North. | • Alternative options to improve northern transportation would need to be pursued, such as the construction of new highways or widening of existing highways. |
| | Demographics | • Increase in the proportion of residents over 65 years old, especially within the over 80 years old demographic. As the population ages, residents may be less willing or able to drive to access services, especially for long distance trips to the GGH. | • Some residents are unhappy with the existing travel alternatives (personal vehicle, bus, airplane) and will continue to express frustration when using the current modes of transportation. |
| | Economic Activity | • The economic development of Northern Ontario is a priority for both the provincial and federal governments. Economic growth would be supported by improved connections to the population and economy of the GGH. | • Inadequate transportation connections between Northern Ontario and the GGH limit the potential for economic growth in the region. |
| | Partner and stakeholder Input | • Organizations representing residents and business interests have expressed support for improved transportation in Northern Ontario. | • The travel demands of residents and the business communities would not be met. |

**Strategic Vision**

Ontario Northland and Metrolinx envision that the proposed passenger rail service would provide a direct, safe, reliable and resilient inter-community transportation link between Northern Ontario and the GGH to meet the needs of northern residents, businesses and communities.

**Strategic Outcomes and Benefits**

Achieving the Strategic Vision will generate benefits in four key outcome areas.

*Transportation*

Achieving the Strategic Vision will enhance the transportation options for travel between Northern Ontario and the GGH. The additional inter-community transportation connection will provide residents, especially those unable or unwilling to drive or take the bus, an alternative option to complete long distance trips between Northern Ontario and the GGH. The inter-community transportation service will also be more resilient to congestion and disruptions on the road network and will provide greater travel time certainty for users, while remaining affordable and financially accessible to residents.

*Quality of Life*

Achieving the Strategic Vision will improve the quality of life for residents of both Northern Ontario and the GGH. Northern communities, including Indigenous communities, will have improved access to specialized services, businesses and entertainment options that are located across Northern Ontario and within the GGH. In particular, residents will have another option in addition to the bus to access medical services that are not available in the north. Meanwhile, the GGH will have improved access to the tourism and recreational services available in Northern Ontario.

*Economic Development*

Achieving the Strategic Vision will encourage economic and regional development in the north by connecting the economies of Northern Ontario and the GGH. An improved transportation connection would support the free flow of people, expertise and ideas between the two regions and accelerate the development of an innovation-based economy around the North Bay Regional Innovation Centre. Improved connections would also provide greater access for GGH residents to the businesses and services of Northern Ontario, such as the tourism industry, encouraging the growth and development of the northern economy.

*Environmental Sustainability*

Achieving the Strategic Vision will promote environmental sustainability by providing an inter-community passenger transportation alternative for long distance trips between northern communities and the GGH. The provision of an attractive mass transportation option will divert trips that would have otherwise been completed using personal vehicles, lowering the total vehicle-kilometres travelled and may result in overall reduction in transportation-related emissions if enough auto trips are diverted to inter-community passenger transportation.

### Alignment with Broader Policy

Table 4 summarizes key items from plan and policy documents that align with the expansion of rail services to Northern Ontario.

Table 4: Summary of Alignment with Broader Policy and Plans

| Stakeholder | Organization strategy, policy or plan | Link to Problem/Opportunity | Relationship Type(s) |
|---|---|---|---|
| Government of Ontario | 2019 Ontario Budget | • The 2019 budget prioritized support for Northern Ontario, including investigating options to improve transportation connections. | Synergistic |
| | Connecting the North: A draft transportation plan for Northern Ontario, 2020 | • The plan proposes 67 actions to help build a modern and sustainable transportation system for people in Northern Ontario.<br>• The plan identified challenges in the passenger transportation options in Northern Ontario, and the opportunity for improvements.<br>• The plan specifically supports the completion of an IBC for passenger rail service in northern Ontario and a track audit to confirm the infrastructure requirements to implement passenger rail service. | Synergistic |
| Government of Canada | Prosperity and Growth Strategy for Northern Ontario | • The Strategy identified the lack of infrastructure in Northern Ontario, which results in high transportation costs for the region.<br>• The Strategy recommends investments in community and regional infrastructure to support and attract businesses. | Rationalization |
| Ontario Chamber of Commerce | Moving Forward: Towards a Strategic Approach to Ontario's Transportation Needs | • The report calls for the reinstatement of passenger rail service in northern Ontario to provide connectivity for northern residents and support economic and tourism development opportunities. | Synergistic |

### Proposed Solution

Ontario Northland and Metrolinx propose to implement a passenger rail service along the Northeastern Rail Corridor, with variations on the frequency, amenities and northern terminus of the service investigated through this business case analysis. The service would operate using existing infrastructure, with minor upgrades as needed to ensure the safety and reliability of the service. The scope and scale of upgrades would be dependent on the level of service offered.

The introduction of rail service will provide enhanced transportation options for residents in the north, increase inter-community ridership for trips between Northern Ontario and the GGH, and reduce automobile vehicle kilometres travelled on the corridor.

#### *Relevant Experience*

Experience in planning the Northeastern Passenger Rail Service will be drawn from the operations of the previous Northlander rail service, as well as current operations of Polar Bear Express passenger train and bus service. Key changes in the operating environment since the termination of Northlander service in 2012 include:

- Population growth in Ontario within the GGH and the Muskoka area;
- Greater demand and preference for travel via transit due to accessibility requirements;
- Changes in trip purposes, such as increased medical and student trips;
- Increased congestion on the road network, particularly during peak season travel to cottage country in the Muskoka region;
- More frequent weather events that lead to highway closures, such as snowstorms and flooding;
- A wider feeder bus network operated by Ontario Northland, which includes service east to Ottawa and west to Winnipeg;
- Enhanced cooperation between Metrolinx and Ontario Northland to jointly offer services, including the Muskoka pilot, Pearson airport connector, bi-level passenger coach refurbishment, and transportation procurements; and
- The potential for lasting post-COVID impacts, which may include a potential population increase in Northern Ontario associated with increased home-office/remote work, and greater demand for vacations within the province

# 3

## Investment Options

## Introduction

This chapter describes investment options for consideration and evaluation in the Strategic, Economic, Financial, and Deliverability and Operations Cases.

## Option Development

Options were developed through collaboration between Ontario Northland, Metrolinx and the Ministry of Transportation. Options varied in both the proposed northern terminus of the service, as well as the level of service offered. The following sections define the options considered in this business case.

## Option Definition

### *Business as Usual*

Under the business-as-usual scenario, Metrolinx and Ontario Northland will continue to operate passenger transportation services within the GGH and Northern Ontario respectively.

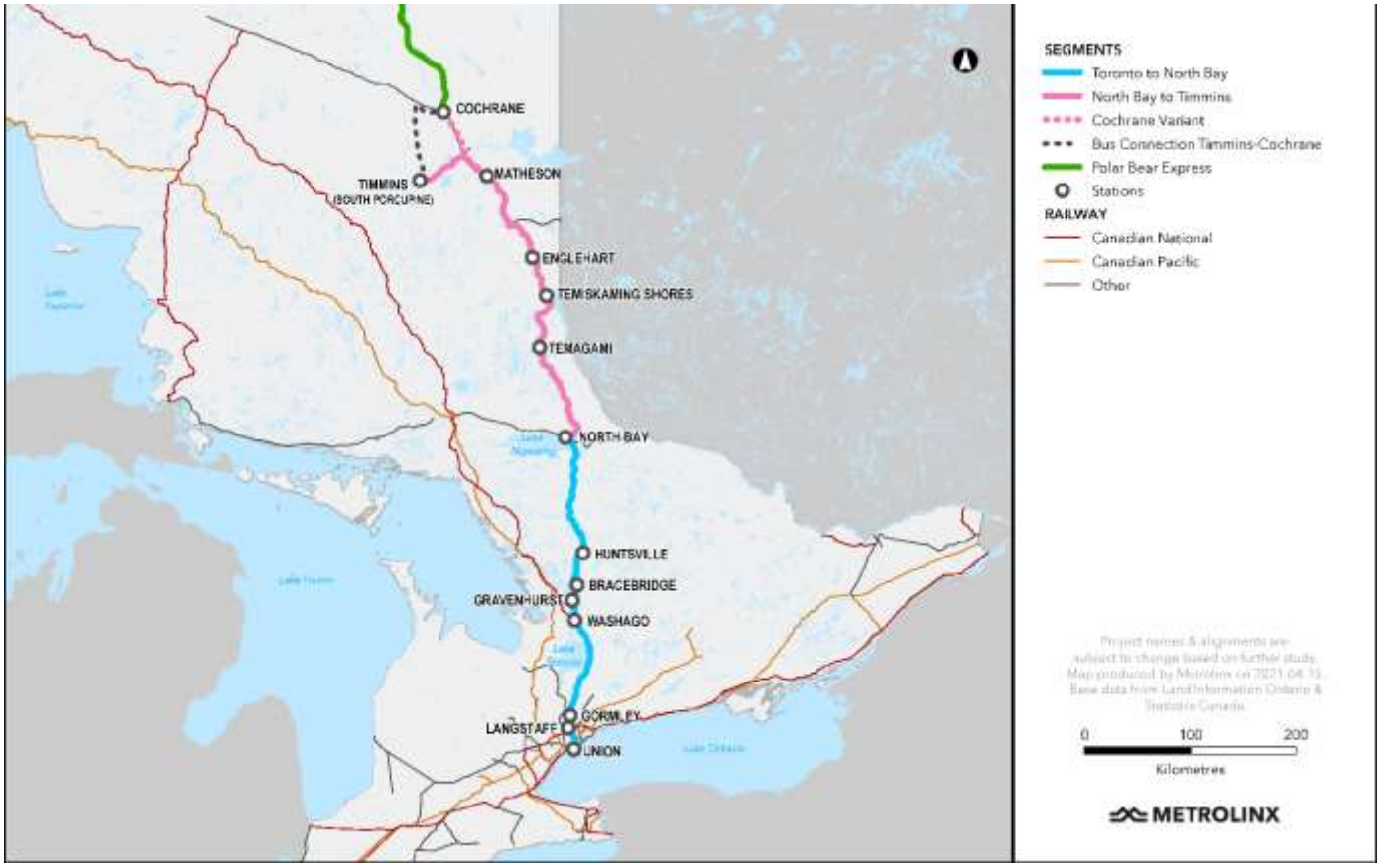
Metrolinx will continue to advance the expansion of GO rail services, including two-way all-day service to Allandale Waterfront GO station in Barrie and extension of peak period, peak direction service to the future Bloomington GO station in northeastern Richmond Hill.

Ontario Northland will continue to operate its bus network to serve communities in Northern Ontario and connect to major urban centres such as Toronto, Ottawa, and Winnipeg, as well as the Polar Bear Express passenger train between Moosonee and Cochrane.

### *Terminus Options*

This business case contemplates three route variants for northeastern rail service. This includes an initial phase of service between Toronto and North Bay, and ultimate service extensions to Timmins or Cochrane. While the former Northlander service operated between Toronto and Cochrane, Timmins was identified as an alternative terminus of the rail service due to its higher ridership potential. Terminating the service at Timmins would provide direct access to a larger population base and amount of economic activity, relative to the former terminus at Cochrane. To maintain connectivity for communities further north, the current bus connection will be provided between Timmins and Cochrane, as well as to the Polar Bear Express. The schedules of the proposed rail service, the Polar Bear Express and the bus connection will be coordinated to minimize wait times for passengers. The current electronic ticketing platform will be used to integrate passenger rail and bus passengers for a seamless customer experience. Figure 3 shows the proposed routing and stops for the contemplated options.

Figure 3: Northeastern Passenger Rail Service Options




Service to North Bay

Five options contemplate providing service between Toronto and North Bay as an interim phase. Based on past service times, it is estimated that the service will have an in-vehicle journey time of 5 hours and 35 minutes and serve seven stops in population centres between Toronto and North Bay, although this is subject to change. Table 5 provides a summary of the proposed stops.

Table 5: Toronto-North Bay service station stops

| Station | Census Subdivision | Population (2016) | Destinations / Major Connecting Services |
|---|---|---|---|
| Toronto Union Station | Toronto | 2,731,571 | Toronto Central Business District and connections to GO rail and TTC subway networks |
| Langstaff | Richmond Hill | 195,022 | Connection to regional destinations via Highway 407 GO bus service, including Pearson International Airport |
| Gormley | | | Park and ride lot adjacent to Highway 404 |
| Washago | Severn | 13,477 | Connections to VIA Rail's trans-Canada rail service |
| Gravenhurst | Gravenhurst | 12,311 | Small population centres within Ontario's cottage country. |
| Bracebridge | Bracebridge | 16,010 | |
| Huntsville | Huntsville | 19,816 | |
| North Bay | North Bay | 51,553 | Connections to other parts of Northern Ontario via the Ontario Northland bus network and private carriers |

## Service to Timmins

Six options contemplate providing rail service along the route between Toronto and Timmins. Based on past service times, it is estimated that extension of the service to Timmins adds approximately 6 hours and 15 minutes, plus a 30 minute layover in North Bay, for a total additional journey time of 6 hours and 45 minutes[4]. This would result in an estimated 12 hour and 20 minute in-vehicle journey time between Timmins and Toronto.

The extension provides rail service to an additional five station stops compared to the Toronto to North Bay phase. Table 6 provides a summary of the additional stations.

Table 6: North Bay-Timmins service station stops

| Station | Census Subdivision | Population (2016) | Destinations / Major Connecting Services |
|---|---|---|---|
| Temagami | Temagami | 802 | |
| Temiskaming Shores | Temiskaming Shores | 9,920 | |
| | Cobalt | 1,128 | |
| Englehart | Englehart | 1,479 | |
| Matheson | Black River-Matheson | 2,438 | |
| Timmins (South Porcupine) | Timmins | 41,788 | Connections to other parts of Northern Ontario via the Ontario Northland bus network |

[4] Results from a recent test train run indicate it may be possible to reduce the in-vehicle travel time between North Bay and the northern terminus, but these results are preliminary and are under review. Estimates of travel times will be re-evaluated in the next stage of detailed planning and design work.

### Service to Cochrane

Six options contemplate providing rail service along the route between Toronto and Cochrane. The route length and in-vehicle journey times are estimated to be similar to the Toronto-Timmins option. The Toronto-Cochrane route adds five additional stops after North Bay, four of which are shared with the Toronto-Timmins route. Table 7 provides a summary of the additional stations.

Table 7: North Bay-Cochrane service station stops

| Station | Census Subdivision | Population (2016) | Destinations / Major Connecting Services |
|---|---|---|---|
| Temagami | Temagami | 802 | |
| Temiskaming Shores | Temiskaming Shores | 9,920 | |
| | Cobalt | 1,128 | |
| Englehart | Englehart | 1,479 | |
| Matheson | Black River-Matheson | 2,438 | |
| Cochrane | Cochrane | 5,321 | Connections to the Polar Bear Express service to Moosonee |

#### *Service Level Options*

The business case also contemplates a variety of rail service options along the Northeastern Rail Corridor. Three options vary the level of service and amenities provided (Options 1 to 3), and following further review, an additional three variations on Option 1 were developed to optimize the operating costs of the service (Options 4 to 6).

### Option 1: Reinstated Service

Option 1 contemplates reinstating rail service at levels comparable to the previous Northlander train. The service will provide one daily trip in each direction six days per week (Wednesday excluded). This option will provide minimal amenities for customers. There will be no on-board sales of food or beverages, and station facilities will not allow for on-site ticket vending. Passengers would be offered opportunities to purchase tickets on-board or electronically.

For service terminating at North Bay, the service pattern will provide:

- A southbound trip with an early morning departure from North Bay and arriving in Toronto by late morning; and
- A northbound trip with an evening departure from Toronto and arriving in North Bay around midnight.

A modified schedule is proposed on Sundays to serve demand from cottage country returning to Toronto. The southbound trip from North Bay will be scheduled for an early afternoon departure, arriving in cottage country by late afternoon and arriving in Toronto by late evening. After a brief layover, the northbound trip from Toronto will depart and arrive in North Bay in the early morning, prior to the Monday morning departure.

The schedule is designed to allow northern residents, including indigenous communities living along the corridor, to conduct business and attend appointments within the GGH, as well as accommodate cottage country traffic during the weekends. Sample trips that can be completed using the proposed rail service include:

- A North Bay resident can travel to Toronto in the morning, attend a medical appointment in the afternoon and depart Toronto in the evening to return home;
- A Bracebridge resident can travel to Richmond Hill in the morning and transfer to a Highway 407 GO bus to arrive at Pearson before noon for an afternoon flight; or
- A Toronto resident can depart after work on Friday to spend the weekend in Huntsville and return home in the late afternoon on Sunday.

For northward extensions, the assumed timetable will maintain the proposed service schedule between North Bay and Toronto. The service pattern under Option 1B will provide:

- A southbound trip with a nighttime departure from Timmins or Cochrane, arriving in North Bay by early morning and arriving in Toronto by late morning; and
- A northbound trip with an evening departure from Toronto, arriving in North Bay around midnight and arriving in Timmins or Cochrane by early morning.

On Sundays, the southbound departure will leave Timmins or Cochrane in the morning, while the return trip arrives in Timmins by late morning on Monday.

Trips enabled by the service to Timmins or Cochrane include:

- A Temiskaming Shores resident can travel overnight to Timmins; attend medical appointments during the day and return home on the nighttime departure from Timmins;
- A Matheson resident can travel overnight and arrive in Toronto in the late morning; attend an appointment in the afternoon and return home at the end of the business day; or
- A Toronto resident can travel overnight to Cochrane, conduct a full day of business and return home on the overnight train back to Toronto.

### Option 2: Enhanced Service

Option 2 will deliver enhanced service on the Northeastern Rail Corridor. Two train trips will be added on Wednesday to provide daily service on the corridor, seven days per week. This option will also provide additional passenger amenities, including light snacking and beverage sales on board the trains.

### Option 3: Twice Daily Service

Under Option 3, an additional trip per day will be introduced in each direction on the Northeastern Rail Corridor. Additional passenger amenities will also be provided, similar to Option 2.

The service to North Bay would also provide:

- A northbound trip departing Toronto in the morning and arriving in North Bay by early afternoon; and
- A southbound trip departing North Bay in the late afternoon and arriving in Toronto at night.

With the twice daily service, the Sunday trip times do not need to be shifted to serve traffic from cottage country. A consistent schedule will be operated seven days a week.

Additional trips enabled by the Twice Daily service pattern include:

- A North Bay resident can travel to Toronto after work; stay overnight and complete a full day of meetings in Toronto; and then return home to North Bay after the business day.
- A Gravenhurst resident can travel to Richmond Hill after work; transfer to the Highway 407 GO bus at Langstaff GO station; and arrive at Pearson at night for a red-eye flight.

Similar to other extension options above, the service schedules between Toronto and North Bay will be maintained if Option 3 service levels are extended further north. The extension would add:

- A southbound trip with a morning departure from Timmins or Cochrane, arriving in North Bay by late afternoon, and arriving in Toronto at night; and
- A northbound trip with a morning departure from Toronto, arriving in North Bay by early afternoon, and arriving in Timmins or Cochrane at night.

Trips enabled by extending the Twice Daily Service to Timmins or Cochrane would include:

- An Englehart resident can travel overnight to North Bay, attend a medical appointment in the morning and return home in the early afternoon; or
- A Richmond Hill resident can leave in the morning and arrive in Temagami in the early evening, go camping for the weekend and return to Richmond Hill on an early afternoon train.

### Option 4: Daytime Service

Similar to Option 1: Reinstated Service, this option will provide one trip per direction per day, six days per week; however, trips will operate on a daytime schedule rather than overnight.

### Option 5: Staged Service

This option considers alternative phasing for service extensions to Timmins or Cochrane. The service will terminate at North Bay for the first ten years of service, and then serve Timmins or Cochrane over the remainder of the evaluation period.

### Option 6: Seasonally Adjusted Service

This option considers scaling weekly trip frequency on seasonal travel demand along the entire rail corridor. Periods of high demand, such as the summer and winter holiday seasons would see increased service, while periods with lower demand would have reduced service levels. Overall, this option will provide between four to seven days per week and will average 4.75 trips per week over a full year. Initial assumptions on service levels were developed based on the ridership of the previous Northlander service but could be further refined in future project development.

*Parallel Bus Service*

Ontario Northland currently operates bus services along the Highway 11 corridor. This business case considered two scenarios:

- A Conservative Scenario, where buses will continue to operate on the corridor and provide an alternative inter-community travel mode;
- An Optimistic Scenario, where bus services will be rationalized as rail service is implemented. This will involve the elimination of two bus trips per day while rail service is operational.

Bus service design, including any potential service reductions, should be further developed as the project advances in order to optimize costs while providing the greatest utility to northern residents. Particular focus should be placed on communities that are currently served by bus that would not receive rail service.

*Summary of Options*

The combination of service levels and phasing provides a total of 17 options for consideration in this business case. Table 8 provides a summary of the options considered.

Table 8: Summary of Options

| Service | Terminus | Description |
|---|---|---|
| Option 1: Reinstated Service | A: North Bay<br>B: Timmins<br>C: Cochrane | • One trip per direction per day, six days per week (no service on Wednesdays)<br>• Nighttime departures from Northern Ontario<br>• Onboard amenities to be determined |
| Option 2: Enhanced Service | A: North Bay<br>B: Timmins<br>C: Cochrane | • One trip per direction per day, seven days per week<br>• Nighttime departures from Northern Ontario<br>• Additional onboard amenities (light snacking, sandwiches, beverages, and app pre-ordering service) |
| Option 3: Twice Daily Service | A: North Bay<br>B: Timmins<br>C: Cochrane | • Two trips per direction per day, seven days per week<br>• Nighttime and daytime departures from Northern Ontario<br>• Additional onboard amenities (light snacking, sandwiches, beverages, and app pre-ordering service) |
| Option 4: Daytime Service | A: North Bay<br>B: Timmins<br>C: Cochrane | • One trip per direction per day, six days per week (no service on Wednesdays)<br>• Daytime departures from Northern Ontario<br>• Onboard amenities to be determined |
| Option 5: Staged Service | B: Timmins<br>C: Cochrane | • One trip per direction per day, six days per week (no service on Wednesdays)<br>• Nighttime departures from Northern Ontario<br>• Onboard amenities to be determined<br>• Service to North Bay only for the first ten years of service, then extending to Timmins or Cochrane for the remainder of the analysis period |
| Option 6: Seasonally Adjusted Service | A: North Bay<br>B: Timmins<br>C: Cochrane | • One trip per direction per day, four to seven days per week depending on the season<br>• Nighttime departures from Northern Ontario<br>• Onboard amenities to be determined |

# 4

# Strategic Case

**Introduction**

The Strategic Case summarizes the performance of the options against the identified strategic objectives to indicate if the investment addresses the Problem Statement.

**Strategic Evaluation**

*Transportation*

Ridership

The Northeastern Passenger Rail Service is expected to recapture some of the ridership of the former Northlander rail service, as well as new riders through the proposed optimizations in service patterns and changes in the operating environment. This included reviews of historic and current ridership, demographic data, trip purpose data and highway traffic counts.

The average ridership of the former Northlander service was used as the baseline of the ridership projections, with additional factors applied to account for changes in the stopping pattern, travel time, schedule, fare, amenities and mode shifts from other modes. The estimates include a conservative scenario which assumes lower shifts from other modes and limited changes to parallel bus service along the corridor; and an optimistic scenario which assumes higher shifts from other modes and rationalization of parallel bus service. The range of ridership for each option under the conservative and optimistic scenarios is presented in Table 9.

Table 9: Projected Ridership Along the Full Corridor[5]

| Services | Terminus | Estimated 2024* Rail Ridership | Estimated 2024 Bus Ridership | Estimated 2041 Rail Ridership | Estimated 2041 Bus Ridership |
|---|---|---|---|---|---|
| Business as Usual | | 0 | 67,725 | 0 | 87,225 |
| Option 1: Reinstated Service | A: North Bay | 22,775 to 33,275 | 65,525 to 56,650 | 29,350 to 42,850 | 84,400 to 72,975 |
| | B: Timmins | 31,950 to 45,175 | 65,100 to 54,650 | 41,150 to 58,175 | 83,850 to 70,375 |
| | C: Cochrane | 30,075 to 41,850 | 65,050 to 54,475 | 38,725 to 53,900 | 83,800 to 70,150 |
| Option 2: Enhanced Service | A: North Bay | 24,600 to 37,800 | 65,300 to 55,425 | 31,675 to 48,700 | 84,100 to 71,400 |
| | B: Timmins | 34,450 to 51,225 | 64,825 to 53,200 | 44,375 to 65,975 | 83,500 to 68,525 |
| | C: Cochrane | 32,450 to 47,500 | 64,775 to 53,000 | 41,800 to 61,175 | 83,425 to 68,275 |
| Option 3: Twice Daily Service | A: North Bay | 38,475 to 64,950 | 58,025 to 43,125 | 49,550 to 83,650 | 74,750 to 55,550 |
| | B: Timmins | 52,575 to 86,425 | 56,100 to 38,675 | 67,725 to 111,325 | 72,250 to 49,825 |
| | C: Cochrane | 50,175 to 81,050 | 55,950 to 38,275 | 64,625 to 104,400 | 72,050 to 49,300 |
| Option 4: Daytime Service | A: North Bay | 22,450 to 32,225 | 65,550 to 56,650 | 28,900 to 41,500 | 84,425 to 72,975 |
| | B: Timmins | 31,125 to 42,725 | 65,100 to 54,650 | 40,100 to 55,025 | 83,850 to 70,400 |
| | C: Cochrane | 29,375 to 39,975 | 65,050 to 54,475 | 37,850 to 51,500 | 83,800 to 70,150 |
| Option 5: Staged Service[6] | B: Timmins | 22,775 to 33,275 | 65,525 to 56,650 | 41,150 to 58,175 | 83,850 to 70,375 |
| | C: Cochrane | 22,775 to 33,275 | 65,525 to 56,650 | 38,725 to 53,900 | 83,800 to 70,150 |
| Option 6: Seasonally Adjusted Service | A: North Bay | 21,875 to 31,000 | 65,650 to 57,275 | 28,200 to 39,925 | 84,550 to 73,775 |
| | B: Timmins | 30,700 to 42,150 | 65,225 to 55,350 | 39,550 to 54,275 | 84,025 to 71,300 |
| | C: Cochrane | 28,875 to 39,025 | 65,200 to 55,200 | 37,200 to 50,275 | 84,000 to 71,100 |

[5] Whether an option refers to a rail terminus in North Bay, Timmins or Cochrane, the bus and rail ridership values shown here are for the entire corridor considering all origin-destination pairs along the corridor. For example, in Option 1A (North Bay), the bus ridership values shown include riders traveling from South River to Cochrane or Kapuskasing to Toronto, even if the rail line does not run all the way from Toronto to Timmins or Cochrane. Stations that are along the corridor, but do not have rail stations planned (meaning they would be served by feeder buses) are also included: this includes Swastika, South River, and Porquis.
Note that ridership was forecasted assuming the impact of COVID-19 will be negligible in the long-term (i.e., 2041). The passenger rail service is assumed to be operational from the mid-2020s and the impact of COVID-19 on near-term rail ridership was also treated as being minimal.

[6] Option 5: Staged Service assumes service to Timmins / Cochrane could begin ten years after the start of service to North Bay. While the annual ridership in 2041 will be equivalent to those of Option 1: Reinstated Service, the 60-year total ridership is lower for this option.

**Launch of the service is planned for the mid-2020s. Ridership and costing estimates assume 2024 as the launch year and date is subject to change.*

Travel Time

A conceptual rail timetable was developed to determine approximate travel times of the proposed rail service. This IBC assumes estimated running times observed in 2012 and that the station-to-station travel times are equivalent between all options.

Compared to current bus service, the Northeastern Passenger Rail Service will offer similar travel times between most origin-destination pairs, except between Timmins and Toronto where the bus service will continue to be faster, assuming no service interruptions due to weather or congestion along the highway corridor. Compared to personal vehicle travel times, the Northeastern Passenger Rail Service has longer travel times for all origin-destination pairs. Table 10 presents the travel times to Toronto from selected destinations on the Northeastern Rail Corridor, via the available travel modes. These times include on-route transfers, but do not include first mile last mile travel time, transfers and other processing times (e.g., security at airports).

Table 10: Terminal to Terminal In-Vehicle Travel Time Comparisons

| | Auto | Bus | Rail* | Air |
|---|---|---|---|---|
| Muskoka (Gravenhurst) - Toronto | Via Barrie: 1h 40m to 2h 20m | Ontario Northland bus: 3h | Northeastern Rail Corridor (all options): 2h 41m | Muskoka Airport to Billy Bishop Airport: 35m (seasonal) |
| North Bay – Toronto | Via Barrie: 3h 20m to 4h 10m | Ontario Northland Bus: 5h (express); 6h (all-stop) | Northeastern Rail Corridor (all options): 5h 35m | Jack Garland Airport to Pearson International Airport: 1h 8m |
| Timmins – Toronto | Via Sudbury and Barrie: 7h to 8h | Ontario Northland bus with transfer via Sudbury: 11h 05m | Northeastern Rail Corridor (Timmins terminus options): 12h 20m | Victor M. Power Airport to Billy Bishop Airport:1h 21m or Pearson International Airport: 1h 40m |
| Cochrane - Toronto | Via North Bay and Barrie: 7h 10m to 8h 20m | Ontario Northland bus with transfer via Matheson & North Bay: 12h 05m | Northeastern Rail Corridor (Cochrane terminus options: (12h 20m) | N/A |

**Note: The travel times presented above are based on running times observed in 2012. Results from a recent test train run indicate it may be possible to reduce the in-vehicle travel time between North Bay and the northern terminus, but these results are preliminary and are under review. Estimates of travel times will be re-evaluated in the next stage of detailed planning and design work.*

For the Muskoka-Toronto market, the rail service will be a slight improvement on the existing bus travel times, with rail journey times estimated at just under three hours. Bus and rail travel times are slower than travel by car but could be competitive during peak periods. Air travel remains faster than rail; however, air travel is only available during the summer, provides limited capacity and is generally more expensive for users compared to bus and rail.

For the North Bay-Toronto market, the rail service travel time is comparable to the existing bus schedules. The service is faster than the all-stop bus, but slower than the express offerings. Compared to the car, rail travel is approximately one and a half to two hours slower. Similar to the Muskoka market, air travel remains the fastest, but

most expensive travel mode. Air travel was previously available year-round for this destination, but service was discontinued due to the COVID-19 pandemic. The return of air service to North Bay has not been confirmed.

For the Timmins-Toronto market, the rail service is estimated to be approximately one hour slower than the current bus service and approximately five hours slower than travel by car. The majority of this time is overnight, however, which allows passengers to travel during otherwise unproductive time. Year-round flights are available to and from Timmins, at costs comparable to rail if booked in advance with a travel time of approximately 90 to 100 minutes.

Travel times for the Cochrane-Toronto market are similar to the Timmins-Toronto market. Rail service would provide comparable travel times to current bus service but would remain slower than travel by car. Cochrane has fewer travel options than Timmins however, since air travel is not an available option.

Travel Reliability and Network Resilience

All options provide enhanced travel time reliability relative to bus service. Rail service operates on a separate corridor from general traffic, providing a service that is unaffected by highway congestion. By operating on a separate right-of-way from the highway, the service also provides a resilient transportation mode in the event of a closure or disruption on the road network.

There is still the potential for rail service delays as a result of conflicting rail movements, particularly on single track territory where trains may need to wait in sidings to allow for an opposing train to pass. The Enhanced Service options propose additional passing track locations to mitigate this risk, while Twice Daily Service options would also provide passing tracks at regular intervals to provide further operational flexibility. Enhanced and Twice daily service would come at a very high cost, however, and may not be justifiable given the population and potential ridership.

Customer Comfort and Amenities

All options provide an enhanced inter-community experience by replacing existing coach buses with a passenger rail option. Rail transportation offers more space for passengers and an improved ride quality relative to bus service.

The Reinstated Service options provide a basic service with limited customer amenities. Customers would be required to either purchase tickets online prior to boarding or purchase their tickets on-board. On-board amenities include wireless connectivity (Wi-Fi), USB receptacles, luggage racks, washrooms, heating and air conditioning, as are standard on Ontario Northland buses (intercity coaches).

Both the Enhanced Service options and Twice Daily Service options provide additional amenities such as on-board food and drink sales to improve the ease of travel and experience for passengers.

*Quality of Life*

Access to inter-community passenger transportation

The Northeastern Passenger Rail Service will extend the reach of passenger rail transportation to serve communities in Northern Ontario, including Indigenous communities. The service provides a means for northern residents to access specialized services across Northern Ontario and in the GGH. In particular, medical appointments are and will continue to be a significant driver of travel for the ageing population in Northern Ontario, especially for the communities north of North Bay. This access to services contributes to healthy

communities and improved standard of living for residents of Northern Ontario. The service schedule for all options is designed to maximize the number of daytime hours in Toronto, allowing northern residents to attend appointments and complete errands through a day trip. It is important to note that two consecutive long-distance overnight trips might not be a desirable option for elderly people as well as for people making trips for medical appointments.

Through the implementation of service between North Bay and Toronto, communities of Washago, Gravenhurst, Bracebridge, Huntsville and North Bay will have access to passenger rail transportation. The 2016 counts of the census subdivisions reported 113K residents in these communities. Overall, these options only serve the two southern-most districts in Northern Ontario.

Extension of the service to Timmins will provide rail service to the communities of Temagami, Temiskaming Shores, Englehart, Matheson and Timmins. This adds 58K residents to the catchment area of the service. These options serve four of the nine districts in Northern Ontario and meets stakeholder expectations for a service that connects a significant portion of the north.

Extension to Cochrane would also serve the communities of Temagami, Temiskaming Shores, Englehart, and Matheson. Serving Cochrane instead of Timmins, however, will directly serve a lower number of residents, however, this option would still provide a seamless connection to Timmins from Matheson train station, through Ontario Northland's inter-community bus service. The North Bay-Cochrane route serves 21K residents, in addition to those served by the Toronto-North Bay route. In total, only 16% of Northern Ontario residents live in communities served by the Toronto-Cochrane route.

The service also offers the ability for residents in communities between Timmins, Cochrane and North Bay to access services and businesses in these small population centres.

### Equity

The introduction of rail service will add service for disadvantaged members of northern communities, over the existing Ontario Northland bus service. These include individuals that:

- do not have access to a personal vehicle, or are unwilling or unable to drive;
- do not have a family member, friend or caregiver who can provide a ride;
- have a low income and unable to afford alternative travel modes (e.g. flights); and/or
- have accessibility needs that make it more difficult to board and ride a bus.

This is particularly important for communities, including Indigenous communities, that are further north and more remote, as the challenges are exacerbated by the distance and time required for travel.

Passenger rail will provide a reliable means for these individuals to travel between Northern Ontario and the GGH. Platforms and railcars are proposed to be operated in a similar manner to a GO Transit's mini-platform and accessibility coaches, which provide easy level boarding access for passengers.

### Improved Transportation Safety

The Northeastern Rail Corridor would improve the safety of travellers between Northern Ontario and the GGH. The service is forecasted to reduce the overall vehicle-kilometres travelled, which reduces the accident risk on

highways. In particular, the Northeastern Passenger Rail Servicewill reduce the number of auto trips through the snowbelt regions of Ontario, as well as the number of long-distance trips between Northern Ontario and the GGH.

*Economic and Regional Development*

Supporting Innovation and Prosperity

Service on the Toronto-North Bay route would connect the GGH with the fourth largest municipality in Northern Ontario, while the extension to Timmins would also connect the fifth largest municipality. The Cochrane terminus variant also extends service; however, Cochrane is a smaller community.

While the proposed rail service schedules are not expected to expand the commute shed of the GGH (the area that workers might or are known to commute from for employment, assuming maximum travel time or distances); it would allow northern residents and businesses to conduct occasional travel more easily. This provides the north with greater access to the GGH economy, specialized services, as well as education, training and skills development opportunities.

Supporting Northern Tourism

The introduction of passenger rail will provide another alternative travel modes for tourists between the GGH and Northern Ontario. In particular, this provides an option for interprovincial and international tourists, who may not have access to a personal vehicle, and may not want to ride a bus or be able to afford a plane ticket.

Passenger rail also increases the capacity of the transportation network to accommodate travellers during the peak season, particularly to cottage country destinations in Muskoka District. By operating in a separate right-of-way, passenger rail is able to provide reliable travel times, even during the peak tourism season. The provision of an alternative, more reliable travel mode may also induce further travel demand for the tourism industry in Northern Ontario.

*Sustainable Environment*

Reduction in Transportation-Related Emissions

The Northeastern Passenger Rail Service may provide a more sustainable transportation mode for a relatively long-distance journey. The distance between North Bay and Toronto is approximately 360km, while the distance between Cochrane / Timmins and Toronto is approximately 700km. While the ridership on the service is relatively low, the long distances may still result in carbon emissions savings by diverting trips that otherwise would have been completed with personal vehicles, if sufficient mode shift from cars to trains is achieved.

Similar to the vehicle accident risk reduction, the emissions reduction is estimated through the reduction of vehicle kilometres travelled (VKT). Table 11 shows the estimated reductions as a result of each option. It is important to note that operating a rail service also generates greenhouse gas emissions (GHG) that are not included in the figures shown in

Table 11: Estimated Auto-Related VKT and Emissions Reduction

| Service | Terminus | Annual VKT Reduction (2041) | Annual Auto GHG Emissions Reduction (2041) |
|---|---|---|---|
| Option 1: Reinstated Service | A: North Bay | 9.6M to 10.9M | 2,410 to 2,720 tonnes |
| | B: Timmins | 14.9M to 17.0M | 3,740 to 4,240 tonnes |
| | C: Cochrane | 13.5M to 14.3M | 3,380 to 3,570 tonnes |
| Option 2: Enhanced Service | A: North Bay | 10.4M to 12.5M | 2,600 to 3,130 tonnes |
| | B: Timmins | 16.1M to 19.4M | 4,020 to 4,840 tonnes |
| | C: Cochrane | 14.5M to 16.3M | 3,640 to 4,080 tonnes |
| Option 3: Twice Daily Service | A: North Bay | 13.5M to 19.8M | 3,370 to 4,950 tonnes |
| | B: Timmins | 20.8M to 30.0M | 5,210 to 7,510 tonnes |
| | C: Cochrane | 18.9M to 25.5M | 4,720 to 6,370 tonnes |
| Option 4: Daytime Service | A: North Bay | 9.4M to 10.2M | 2,360 to 2,550 tonnes |
| | B: Timmins | 14.4M to 15.3M | 3,590 to 3,820 tonnes |
| | C: Cochrane | 13.1M to 13.1M | 3,270 to 3,270 tonnes |
| Option 5: Staged Service | B: Timmins | 14.9M to 17.0M | 3,740 to 4,240 tonnes |
| | C: Cochrane | 13.5M to 14.3M | 3,380 to 3,570 tonnes |
| Option 6: Seasonally Adjusted Service | A: North Bay | 9.3M to 10.0M | 2,320 to 2,510 tonnes |
| | B: Timmins | 14.4M to 15.8M | 3,600 to 3,950 tonnes |
| | C: Cochrane | 13.0M to 13.3M | 3,250 to 3,320 tonnes |

**Strategic Case Summary**

All options evaluated in this business case provide improved transportation options for residents in northern Ontario and support the goals outlined in the Case for Change.

Options that provide a higher level of service generate greater transportation benefits and serve a wider variety of trip types. The most significant impact is the provision of Twice Daily Service under Option 3, which resulted in a 65%-95% increase in ridership relative to the Reinstated Service options. Associated benefits, including reductions in vehicle-kilometres travelled and collisions, also increase with this service level option.

Similarly, options that extend the service further north generate greater strategic benefits by providing access to a greater proportion of northern residents. In particular, options that extend service to Timmins will serve a larger population centre in Northern Ontario.

Table 12 summarizes the performance of each option against the strategic goals and objectives.

Table 12: Strategic Case Summary

| Strategic Outcome | Option 1: Reinstated Service | | | Option 2: Enhanced Service | | | Option 3: Twice Daily Service | | |
|---|---|---|---|---|---|---|---|---|---|
| | **A: North Bay** | **B: Timmins** | **C: Cochrane** | **A: North Bay** | **B: Timmins** | **C: Cochrane** | **A: North Bay** | **B: Timmins** | **C: Cochrane** |
| **Strategic Goal 1: Transportation** | | | | | | | | | |
| Ridership | 29.4K to 42.9K annual rail riders by 2041 | 41.2K to 58.2K annual rail riders by 2041 | 38.7K to 53.9K annual rail riders by 2041 | 31.7K to 48.7K annual rail riders by 2041 | 44.4K to 66K annual rail riders by 2041 | 41.8K to 61.2K annual rail riders by 2041 | 49.6K to 83.7K annual rail riders by 2041 | 67.7K to 111.3K annual rail riders by 2041 | 64.6K to 104.4K annual rail riders by 2041 |
| Travel Time | Improved inter-community travel time to Muskoka, and equivalent inter-community travel times to North Bay | Slower inter-community travel times to Timmins. Overnight trips allow for travel during unproductive time | Slower inter-community travel times to Cochrane. Overnight trips allow for travel during unproductive time | Improved inter-community travel time to Muskoka, and equivalent transit travel times to North Bay | Slower inter-community travel times to Timmins. Overnight trips allow for travel during unproductive time | Slower inter-community travel times to Cochrane. Overnight trips allow for travel during unproductive time | Improved inter-community travel time to Muskoka, and equivalent transit travel times to North Bay | Slower inter-community travel times to Timmins. Overnight trips allow for travel during unproductive time | Slower inter-community travel times to Cochrane. Overnight trips allow for travel during unproductive time |
| Travel Reliability and Network Resilience | Provides redundancy in transportation network in case of highway closure. Inter-community passenger rail service operates within a separate corridor; potential delays from opposing train movements | | | Provides redundancy in transportation network in case of highway closure. Additional passing track provides some mitigation for potential rail operational delays | | | Provides redundancy in transportation network in case of highway closure. Regular passing track locations provides additional operational flexibility | | |
| Customer Comfort and Amenities | No passenger amenities. Passengers must buy tickets online in advance or on-board | | | Some passenger amenities. Passengers must buy tickets online in advance or on-board | | | Some passenger amenities. Passengers must buy tickets online in advance or on-board | | |
| **Strategic Goal 2: Quality of Life** | | | | | | | | | |
| Access to inter-community passenger transportation | 113K residents in northern communities with access to passenger rail | 171K residents in northern communities with access to passenger rail | 134K residents in northern communities with access to passenger rail | 113K residents in northern communities with access to passenger rail | 171K residents in northern communities with access to passenger rail | 134K residents in northern communities with access to passenger rail | 113K residents in northern communities with access to passenger rail | 171K residents in northern communities with access to passenger rail | 134K residents in northern communities with access to passenger rail |
| Equity | Passenger rail transportation provides a more reliable and accessible mode for northern residents. | Passenger rail transportation provides a more reliable and accessible mode. Benefits are extended to more remote northern communities. | | Passenger rail transportation provides a more reliable and accessible mode for northern residents. | Passenger rail transportation provides a more reliable and accessible mode. Benefits are extended to more remote northern communities | | Passenger rail transportation provides a more reliable and accessible mode for northern residents. | Passenger rail transportation provides a more reliable and accessible mode. Benefits are extended to more remote northern communities | |
| Improved safety | Provides a safer travel alternative for northern residents. | Provides a safer travel alternative for northern residents. Benefits are extended to more remote northern communities. | | Provides a safer travel alternative for northern residents. | Provides a safer travel alternative for northern residents. Benefits are extended to more remote northern communities. | | Provides a safer travel alternative for northern residents. | Provides a safer travel alternative for northern residents. Benefits are extended to more remote northern communities. | |
| **Strategic Goal 3: Economic Development** | | | | | | | | | |
| Connect communities | Serves goal to get people moving and connect communities from Connecting the North: A Draft Transportation Plan for Northern Ontario | | | | | | | | |
| Support for northern tourism | Provides additional capacity to accommodate peak tourism demand, especially to RTO 12. | | | Provides additional capacity to accommodate peak tourism demand, especially to RTO 12. | | | Provides additional capacity to accommodate peak tourism demand, especially to RTO 12. | | |
| **Strategic Goal 4: Environmental Sustainability** | | | | | | | | | |
| Reduced auto emissions | 2.4K to 2.7K tonnes of GHG emissions from cars annually by 2041 | 3.7K to 4.2K tonnes of GHG emissions from cars annually by 2041 | 3.4K to 3.6K tonnes of GHG emissions from cars annually by 2041 | 2.6K to 3.1K tonnes of GHG emissions from cars annually by 2041 | 4.0K to 4.8K tonnes of GHG emissions from cars annually by 2041 | 3.6K to 4.1K tonnes of GHG emissions from cars annually by 2041 | 3.4K to 4.9K tonnes of GHG emissions from cars annually by 2041 | 5.2K to 7.5K tonnes of GHG emissions from cars annually by 2041 | 4.7K to 6.4K tonnes of GHG emissions from cars annually by 2041 |

| Strategic Outcome | Option 4: Daytime Service | | | Option 5: Staged Service7 | | Option 6: Seasonally Adjusted Service | | |
|---|---|---|---|---|---|---|---|---|
| | A: North Bay | B: Timmins | C: Cochrane | B: Timmins | C: Cochrane | A: North Bay | B: Timmins | C: Cochrane |
| **Strategic Goal 1: Transportation** | | | | | | | | |
| Ridership | 28.9K to 41.5K annual rail riders by 2041 | 40.1K to 55K annual rail riders by 2041 | 37.9K to 51.5K annual rail riders by 2041 | 41.2K to 58.2K annual rail riders by 2041 | 38.7K to 53.9K annual rail riders by 2041 | 28.2K to 39.9K annual rail riders by 2041 | 39.5K to 54.3K annual rail riders by 2041 | 37.2K to 50.3K annual rail riders by 2041 |
| Travel Time | Improved inter-community travel time to Muskoka, and equivalent transit travel times to North Bay | Slower inter-community travel times to Timmins. Overnight trips allow for travel during unproductive time | Slower inter-community travel times to Cochrane. Overnight trips allow for travel during unproductive time | Slower inter-community travel times to Timmins. Overnight trips allow for travel during unproductive time | Slower inter-community travel times to Cochrane. Overnight trips allow for travel during unproductive time | Improved inter-community travel time to Muskoka, and equivalent transit travel times to North Bay | Slower inter-community travel times to Timmins. Overnight trips allow for travel during unproductive time | Slower inter-community travel times to Cochrane. Overnight trips allow for travel during unproductive time |
| Travel Reliability and Network Resilience | Provides redundancy in transportation network in case of highway closure. Transit service operates within a separate corridor; potential delays from opposing train movements | | | Provides redundancy in transportation network in case of highway closure. Additional passing track provides some mitigation for potential rail operational delays | | Provides redundancy in transportation network in case of highway closure. Regular passing track locations provides additional operational flexibility | | |
| Customer Comfort and Amenities | No passenger amenities. Passengers must buy tickets online in advance | | | No passenger amenities. Passengers must buy tickets online in advance | | No passenger amenities. Passengers must buy tickets online in advance | | |
| **Strategic Goal 2: Quality of Life** | | | | | | | | |
| Access to inter-community passenger transportation | 113K residents in northern communities with access to passenger rail | 171K residents in northern communities with access to passenger rail | 134K residents in northern communities with access to passenger rail | 171K residents in northern communities with access to passenger rail | 134K residents in northern communities with access to passenger rail | 113K residents in northern communities with access to passenger rail | 171K residents in northern communities with access to passenger rail | 134K residents in northern communities with access to passenger rail |
| Equity | Passenger rail provides a more reliable and accessible mode for northern residents. | Passenger rail provides a more reliable and accessible mode. Benefits are extended to more remote northern communities. | | Passenger rail provides a more reliable and accessible mode. Benefits are extended to more remote northern communities | | Passenger rail provides a more reliable and accessible mode for northern residents. | Passenger rail provides a more reliable and accessible mode. Benefits are extended to more remote northern communities | |
| Improved safety | Provides a safer travel alternative for northern residents. | Provides a safer travel alternative for northern residents. Benefits are extended to more remote northern communities. | | Provides a safer travel alternative for northern residents. Benefits are extended to more remote northern communities. | | Provides a safer travel alternative for northern residents. | Provides a safer travel alternative for northern residents. Benefits are extended to more remote northern communities. | |
| **Strategic Goal 3: Economic Development** | | | | | | | | |
| Connect Communities | Serves goal to get people moving and connect communities from Connecting the North: A Draft Transportation Plan for Northern Ontario | | | | | | | |
| Support for northern tourism | Provides additional capacity to accommodate peak tourism demand, especially to RTO 12. | | | Provides additional capacity to accommodate peak tourism demand, especially to RTO 12. | | Provides additional capacity to accommodate peak tourism demand, especially to RTO 12. | | |
| **Strategic Goal 4: Environmental Sustainability** | | | | | | | | |
| Reduced auto emissions | 2.4K to 2.5K tonnes of GHG emissions from cars annually by 2041 | 3.6K to 3.8K tonnes of GHG emissions from cars annually by 2041 | 3.3K to 3.3K tonnes of GHG emissions from cars annually by 2041 | 3.7K to 4.2K tonnes of GHG emissions from cars annually by 2041 | 3.4K to 3.6K tonnes of GHG emissions from cars annually by 2041 | 2.3K to 2.5K tonnes of GHG emissions from cars annually by 2041 | 3.6K to 3.9K tonnes of GHG emissions from cars annually by 2041 | 3.3K to 3.3K tonnes of GHG emissions from cars annually by 2041 |

[7] Note that while Options 5B and 5C achieve similar strategic benefits compared to Options 1B and 1C respectively, the full benefits are not achieved until 10 years after project implementation due to the staged approach for the northern segment of the project.

# 5

# Economic Case

**Introduction**

The Economic Case is one of two chapters focused on the rationale for pursuing an investment (the other being the Strategic Case). While the Strategic Case evaluates options based on a project specific policy / plan oriented evaluation framework, the Economic Case determines if the expected benefits of this investment exceed the costs required to deliver it, and articulates the overall benefit to society of pursuing each investment option.

The Economic Case compares costs and benefits to determine the overall economic viability of an investment. This analysis considers the magnitude of costs and benefits for a 60-year lifecycle (the evaluation period) as well as:

- Benefit Cost Ratio (BCR) – the net benefits divided by the net costs, which is used to indicate benefits that are realized per dollar spent
- Net Present Value (NPV) – the net benefits minus net costs, which is used to indicate total net benefits to the region

**Assumptions**

Metrolinx retained a consultant to study the potential ridership of the Northeastern Passenger Rail Service. The ridership impacts of the proposed investment were estimated using a direct demand model which developed annual 2041 ridership forecasts for each option at a station-to-station level. This approach was chosen based on the available data and to best deal with the uncertainties associated with this type of forecast, particularly in the absence of available software-based transportation models covering Northern Ontario. At a high level, the approach uses rail ridership data from the final years of the Northlander service, and grows this base demand derived from factors such as population growth, changes in scheduling and travel times, as well as other factors. For a near term (i.e., 2024) ridership as well as economic and financial analysis please see Appendix A.

Travel time impacts are considered by comparing the proposed rail service's perceived travel times to those of the original Northlander service, and varying demand based on externally researched elasticity estimates for long-distance rail trips.

Travel time benefits together with external impacts associated with reductions in VKT are evaluated over an assumed 60-year life of the investment and compared against the costs required to deliver the investment over the same period to determine the overall net economic benefits to society.

The model makes use of assumptions and parameters throughout the social cost benefit analysis, as noted in Table 13. The assumptions and parameters used within this Initial Business Case are consistent with Metrolinx's Business Case Manual Volume 2: Guidance updated in April 2019.

Table 13: Economic Case Assumptions

| Input | Impact Type |
|---|---|
| Analysis Approach | All benefits/costs are expressed in real terms in 2019$.<br><br>Appraisal begins in 2019. It includes 2 years of construction (2021-2023), with an opening year of 2024, and 60 years of operation (2024-2083) |
| Ridership and Benefits Forecast Year | 2041 |
| Evaluation Period | 60 years |
| Ridership and Benefits Cap | 30 years from base year of evaluation |
| Economic Discount Rate | 3.5% |
| Real Cost Escalation | 1% |
| Value of Time (VoT) (2019$) | $18.06/hour |
| VoT Growth Rate | 0% |
| Auto operating cost savings (2019$) | Marginal operating cost: $0.09/km |
| Decongestion benefit | 0.0055 hours/km |
| Safety improvements (accident mitigation) (2019$) | $0.10/km, decreasing at an annual rate of 5.3%. |
| GHG value | $0.011/km |
| Personal vehicle fuel consumption rate | 10.8L /100km |
| Assumed auto occupancy | 1.0 persons/vehicle |

All analysis completed in this section uses real values and a social discount rate, as opposed to nominal values and a financial discount rate. Real values do not include the impact of general inflation but must consider real growth. A social discount rate reflects society's time value preference for realizing benefits or incurring costs – a benefit or cost incurred tomorrow is considered less 'valuable' than the same benefit or cost incurred today.

The model analyzed all options considered for the proposed investment relative to a Business as Usual (BAU) scenario (today's bus service). The results from each option under the conservative and optimistic scenarios were then compared to determine the incremental benefits that can be realized, and incremental costs required to provide rail service to North Bay, Timmins or Cochrane. The analysis does not consider the impacts of rail operational delays on service reliability, and the resultant impact on ridership and benefits for passengers.

**Costs**

The costs or 'required investment' to deliver the Northeastern Passenger Rail Serviceare divided into two categories:

- Capital Costs – fixed one-time costs incurred during the implementation of the investment. The capital costs include the labour and materials required for construction; as well as contingency, major rehabilitation and any replacement costs associated with assets, equipment or vehicles nearing the end of their useful life.
- Operating and Maintenance Costs – ongoing costs required to operate the service as well as day to day maintenance.

The total capital, operating and maintenance costs for the entire lifecycle of the Northeastern Passenger Rail Serviceare listed below. A breakdown of the capital costs is provided in the next Chapter. These costs are incremental to a BAU scenario and have been discounted based on the approach defined earlier in this chapter. Costs for each option are presented as a range between the conservative and optimistic scenarios. The only difference in costs between the two modelled scenarios is the incremental bus operating cost savings and bus replacement costs associated with bus rationalization under the optimistic scenario. Other costs that may be incurred to achieve the optimistic ridership scenario, such as subsidies or partnerships with local transit agencies or ride hailing services to improve station access, have not been included in this business case.

Table 14: Economic Costs Summary (present value, 2019$)

| Service | Terminus | Capital Cost | Operating and Maintenance Costs | Total Costs |
|---|---|---|---|---|
| Option 1: Reinstated Service | A: North Bay | $28.3M to $26.6M | $159.9M to $138.8M | **$188.2M to $165.4M** |
| | B: Timmins | $59.8M to $58.1M | $263.1M to $220.2M | **$322.9M to $278.3M** |
| | C: Cochrane | $57.7M to $56.0M | $263.1M to $219.0M | **$320.8M to $275.1M** |
| Option 2: Enhanced Service | A: North Bay | $38.6M to $36.9M | $188.3M to $163.7M | **$226.9M to $200.6M** |
| | B: Timmins | $73.9M to $72.2M | $312.1M to $262.1M | **$386.0M to $334.3M** |
| | C: Cochrane | $71.8M to $70.1M | $312.1M to $260.7M | **$383.9M to $330.8M** |
| Option 3: Twice Daily Service | A: North Bay | $80.2M to $78.5M | $356.0M to $331.3M | **$436.2M to $409.9M** |
| | B: Timmins | $116.7M to $115.0M | $583.0M to $533.0M | **$699.6M to $648.0M** |
| | C: Cochrane | $114.6M to $113.0M | $583.0M to $531.5M | **$697.6M to $644.5M** |
| Option 4: Daytime Service | A: North Bay | $28.3M to $26.6M | $159.9M to $138.8M | **$188.2M to $165.4M** |
| | B: Timmins | $59.8M to $58.1M | $263.1M to $220.2M | **$322.9M to $278.3M** |
| | C: Cochrane | $57.7M to $56.0M | $263.1M to $219.0M | **$320.8M to $275.1M** |
| Option 5: Staged Service | B: Timmins | $59.8M to $58.1M | $231.3M to $195.2M | **$291.1M to $253.2M** |
| | C: Cochrane | $57.7M to $56.0M | $231.3M to $194.3M | **$289.0M to $250.4M** |
| Option 6: Seasonally Adjusted Service | A: North Bay | $28.3M to $26.6M | $128.0M to $111.3M | **$156.4M to $137.9M** |
| | B: Timmins | $59.8M to $58.1M | $212.2M to $178.2M | **$272.0M to $236.3M** |
| | C: Cochrane | $57.7M to $56.0M | $212.2M to $177.3M | **$270.0M to $233.3M** |

*Figures may not add to totals due to rounding.

### User Impacts

User Impacts are a key area of analysis for transport investments. They capture how the investment will improve the welfare of transport network users or travellers. This includes both travellers who will and will not make use of the proposed rail service. The Northeastern Passenger Rail Servicewill change the generalized cost of travel- the monetary and non-monetary costs of a trip - to three main groups:

- Existing Ontario Northland Bus Passengers – The Northeastern Passenger Rail Servicewill reduce the perceived generalized cost of travel for existing bus users by introducing rail service. Users perceive their travel time to be shorter on rail compared to travel time on a bus. There may also be improvements in the perception of travel time for a nighttime train relative to bus. Investing in the Northeastern Passenger Rail Servicewill therefore provide a direct benefit to these existing bus users who would switch to the new rail service.

- New Ontario Northland Rail Passengers/Former Auto Users – The rail service will reduce the perceived generalized cost of inter-community travel from North Bay, Timmins or Cochrane to Toronto. This will attract new users to the rail service who were previously auto users. These new users will receive a benefit equal to the difference in what they were willing to pay and the new generalized cost of travel on the proposed rail service.
- Auto Users – The Northeastern Passenger Rail Servicewill attract some auto users to its new rail service. This abstraction of car trips may result in decongestion on roads previously travelled by these auto users which in turn may reduce the travel time and operating cost for travellers who continue to drive.

All user impacts included in this analysis are 'net impacts' across the investment; a sum of benefits and disbenefits. Impacts are presented in ranges across options reflecting the conservative and optimistic modelled scenarios

Table 15: User Impacts (present value, 2019$)

| Service | Terminus | Transit Travel Time Benefits | Auto Congestion Reduction | Auto Operating Cost Reduction |
|---|---|---|---|---|
| Option 1: Reinstated Service | A: North Bay | $8.7M to $27.3M | $5.7M to $6.1M | $17.9M to $20.2M |
| | B: Timmins | $13.8M to $45.1M | $6.8M to $7.4M | $27.8M to $31.6M |
| | C: Cochrane | $12.6M to $39.3M | $6.4M to $6.6M | $25.1M to $26.6M |
| Option 2: Enhanced Service | A: North Bay | $9.4M to $30.9M | $6.1M to $7.0M | $19.3M to $23.3M |
| | B: Timmins | $14.9M to $50.9M | $7.3M to $8.4M | $29.9M to $36.0M |
| | C: Cochrane | $13.6M to $44.4M | $6.8M to $7.6M | $27.1M to $30.4M |
| Option 3: Twice Daily Service | A: North Bay | $17.2M to $54.8M | $7.9M to $11.0M | $25.1M to $36.8M |
| | B: Timmins | $25.1M to $86.8M | $9.4M to $13.0M | $38.7M to $55.8M |
| | C: Cochrane | $23.1M to $76.8M | $8.8M to $11.8M | $35.1M to $47.4M |
| Option 4: Daytime Service | A: North Bay | $8.2M to $24.4M | $5.5M to $5.8M | $17.5M to $19.0M |
| | B: Timmins | $11.2M to $33.5M | $6.5M to $6.8M | $26.7M to $28.4M |
| | C: Cochrane | $10.6M to $30.9M | $6.2M to $6.2M | $24.3M to $24.3M |
| Option 5: Staged Service | B: Timmins | $12.3M to $39.8M | $6.4M to $7.0M | $24.9M to $28.2M |
| | C: Cochrane | $11.4M to $35.8M | $6.1M to $6.5M | $23.0M to $24.7M |
| Option 6: Seasonally Adjusted Service | A: North Bay | $8.4M to $25.5M | $5.4M to $5.7M | $17.3M to $18.7M |
| | B: Timmins | $13.2M to $42.2M | $6.5M to $6.8M | $26.8M to $29.4M |
| | C: Cochrane | $12.1M to $36.8M | $6.1M to $6.2M | $24.2M to $24.7M |

**External Impacts**

Every auto trip taken contributes to negative impacts to society such as carbon emissions or the risk of injuries that can occur from collisions. These impacts are considered external impacts, or the 'social cost of transport' and are realized by society. Transportation investments are an opportunity to reduce these social costs by improving the economic efficiency of the transportation system, meaning less impact for the same amount of travel (measured in impacts per passenger kilometre).

In the case of the Northeastern Passenger Rail Service, motorists switching to its proposed rail service decrease the number of trips on the road network. This will lead to fewer collisions and may result in a reduction of emissions, making the transportation network safer and healthier.

External impacts are estimated through the mode changes generated by the proposed investment. If travellers move from a less efficient mode to passenger rail, then there is an impact equivalent to the externalities per trip on passenger rail, minus the externalities on their previously used mode. These benefits are calculated based on the change in automobile VKT. The calculation of GHG emissions also includes the additional emissions due to the operation of diesel locomotives for rail service.

Safety and environmental impacts resulting from the introduction of rail service between Toronto and Northern Ontario are presented in ranges across options reflecting the conservative and optimistic scenarios modelled.

Table 16: External Impacts (present value, 2019$)

| Service | Terminus | Collision Reduction | GHG Emissions Reduction |
|---|---|---|---|
| Option 1: Reinstated Service | A: North Bay | $7.7M to $8.6M | -$0.6M to -$0.4M |
| | B: Timmins | $11.9M to $13.5M | -$2.2M to -$1.8M |
| | C: Cochrane | $10.7M to $11.4M | -$2.6M to -$2.2M |
| Option 2: Enhanced Service | A: North Bay | $8.3M to $9.9M | -$0.9M to -$0.7M |
| | B: Timmins | $12.8M to $15.4M | -$2.8M to -$2.4M |
| | C: Cochrane | $11.6M to $13.0M | -$3.3M to -$2.8M |
| Option 3: Twice Daily Service | A: North Bay | $10.7M to $15.7M | -$3.3M to -$2.8M |
| | B: Timmins | $16.6M to $23.9M | -$8.0M to -$7.1M |
| | C: Cochrane | $15.0M to $20.3M | -$8.7M to -$7.8M |
| Option 4: Daytime Service | A: North Bay | $7.5M to $8.1M | -$0.6M to -$0.4M |
| | B: Timmins | $11.4M to $12.1M | -$2.3M to -$1.9M |
| | C: Cochrane | $10.4M to $10.4M | -$2.7M to -$2.3M |
| Option 5: Staged Service | B: Timmins | $10.0M to $11.3M | -$2.5M to -$2.1M |
| | C: Cochrane | $9.4M to $10.2M | -$2.8M to -$2.4M |
| Option 6: Seasonally Adjusted Service | A: North Bay | $7.4M to $8.0M | -$0.1M to $0.0M |
| | B: Timmins | $11.4M to $12.5M | -$1.2M to -$0.9M |
| | C: Cochrane | $10.3M to $10.5M | -$1.6M to -$1.3M |

**Economic Case Summary**

The economic evaluation indicates that the Northeastern Passenger Rail Servicewould reduce the perceived travel time for existing and new Ontario Northland passengers, potentially reduce automobile usage and congestion, generate safety benefits and potentially reduce environmental impacts. For all options, these economic benefits do not outweigh the associated capital, operating and maintenance costs, resulting in a negative net present value and a benefit-cost ratio that is less than 1.0.

Options that increase service frequency or extend service further north generate greater total benefits, however, these do not outweigh the additional costs to deliver the service. Of the two possible northern terminus extension options, Timmins outperforms Cochrane in terms of both total economic benefits, as well as benefit cost-ratio. Table 17 summarizes the economic analysis results for each option.

Table 17: Economic Case Summary (present value, 2019$)

| Service | Terminus | Total Costs | Total Economic Impacts | Incremental Fare Revenue Adjustment | Net Present Value | Benefit Cost Ratio |
|---|---|---|---|---|---|---|
| Option 1: Reinstated Service | A: North Bay | $188.2M to $165.4M | $39.4M to $61.9M | $44.5M to $47.9M | -$104.4M to -$55.7M | 0.45 to 0.66 |
| | B: Timmins | $322.9M to $278.3M | $58.1M to $95.8M | $67.4M to $73.6M | -$197.4M to -$108.9M | 0.39 to 0.61 |
| | C: Cochrane | $320.8M to $275.1M | $52.2M to $81.7M | $61.4M to $64.0M | -$207.2M to -$129.3M | 0.35 to 0.53 |
| Option 2: Enhanced Service | A: North Bay | $226.9M to $200.6M | $42.2M to $70.5M | $47.8M to $55.0M | -$136.9M to -$75.1M | 0.40 to 0.63 |
| | B: Timmins | $386.0M to $334.3M | $62.0M to $108.4M | $72.4M to $84.2M | -$251.5M to -$141.7M | 0.35 to 0.58 |
| | C: Cochrane | $383.9M to $330.8M | $55.7M to $92.6M | $66.1M to $73.4M | -$262.1M to -$164.9M | 0.32 to 0.50 |
| Option 3: Twice Daily Service | A: North Bay | $436.2M to $409.9M | $57.6M to $115.6M | $62.1M to $87.0M | -$316.5M to -$207.3M | 0.27 to 0.49 |
| | B: Timmins | $699.6M to $648.0M | $81.7M to $172.5M | $94.0M to $131.7M | -$523.9M to -$343.7M | 0.25 to 0.47 |
| | C: Cochrane | $697.6M to $644.5M | $73.3M to $148.5M | $86.0M to $115.6M | -$538.3M to -$380.4M | 0.23 to 0.41 |
| Option 4: Daytime Service | A: North Bay | $188.2M to $165.4M | $38.2M to $56.8M | $44.0M to $45.6M | -$106.1M to -$63.0M | 0.44 to 0.62 |
| | B: Timmins | $322.9M to $278.3M | $53.6M to $78.9M | $64.4M to $68.1M | -$204.8M to -$131.3M | 0.37 to 0.53 |
| | C: Cochrane | $320.8M to $275.1M | $48.8M to $69.5M | $59.9M to $59.9M | -$212.1M to -$145.7M | 0.34 to 0.47 |
| Option 5: Staged Service | B: Timmins | $291.1M to $253.2M | $51.1M to $84.3M | $60.6M to $66.0M | -$179.4M to -$102.9M | 0.38 to 0.59 |
| | C: Cochrane | $289.0M to $250.4M | $47.1M to $74.7M | $56.4M to $59.3M | -$185.5M to -$116.4M | 0.36 to 0.53 |
| Option 6: Seasonally Adjusted Service | A: North Bay | $156.4M to $137.9M | $38.3M to $57.9M | $42.8M to $44.3M | -$75.3M to -$35.7M | 0.52 to 0.74 |
| | B: Timmins | $272.0M to $236.3M | $56.7M to $90.0M | $64.8M to $68.3M | -$150.4M to -$77.9M | 0.45 to 0.67 |
| | C: Cochrane | $270.0M to $233.3M | $51.1M to $76.9M | $59.0M to $59.3M | -$159.8M to -$97.1M | 0.41 to 0.58 |

*Figures may not add to totals due to rounding.

# 6

## Financial Case

## Introduction

The Financial Case assesses the overall financial impact of proposed investment options. While the Strategic Case and Economic Case outline how an investment achieves organizational goals and social value, the Financial Case is one of two cases (the other being the Deliverability and Operations Case) that focuses on the requirements to successfully deliver an investment. This includes a review of total revenue (fares) gained and expenditures (capital, operating and maintenance) required over the lifecycle of the investment incremental to the base case scenario.

The Financial Case makes use of assumptions and parameters throughout the financial analysis, as noted in Table 18. The assumptions and parameters used within this Initial Business Case are consistent with Metrolinx's new Tier 2 Business Case Guidance, as of April 2018.

Table 18: Financial Case Assumptions

| Input | Impact Type |
|---|---|
| Analysis Approach | 60-year revenue/costs are expressed in real terms in 2019$; while annual revenue/costs are expressed in year of expenditure terms (YOE$)<br><br>Appraisal begins in 2019. It includes 2 years of construction (2021-2023), with an opening year of 2024[8], and 60 years of operation (2024-2083) |
| Ridership and Revenue projection year | 2041 |
| Evaluation Period | 60 years |
| Ridership and Revenue Cap | 30 years from base year of evaluation |
| Financial Discount Rate | 5.5% (including 2% inflation) |
| Inflation Rate | 2.0% |
| Real Operating Cost Inflation | 1% |
| Real Capital Cost Inflation | 1% |
| Real Fare Cost Inflation | 0% |

## Capital Costs

The capital cost of building and delivering the proposed investment options forms the second largest component of overall project costs after annual operating and maintenance costs. High level capital costs were estimated in 2019$ for all options and include a 35% contingency allowance, as well as a professional services allowance to account for the completion of designs, procurement activities, and support activities during construction. The costs presented in the IBC are estimated based on the best available information at time of writing, and are subject to change with detailed planning and design work.

[8] Service to be launched in the mid-2020s, with 2024 chosen to provide an example for reference in the IBC. The actual launch date of the service will only be determined once the Updated Business Case is complete. Planning and construction may take more or less time than indicated in the IBC, and as such it is not possible to provide a firm service launch date at this stage.

The main capital cost drivers are associated with new and upgraded track, procurement of rolling stock, and the additional new facility costs and new track requirements if Timmins is chosen as the terminus. Station and other costs would be higher in a Timmins/South Porcupine terminal scenario because a station would have to be built, whereas for a Cochrane terminal scenario a station currently exists, which could require significant upgrades. As new information becomes available, there may be a greater difference in capital costs between the Timmins and Cochrane options. In the optimistic scenario, which assumes rationalization of parallel bus services, there are savings on bus replacement costs for two Ontario Northland buses over the 60-year project lifecycle. A bus is assumed to be replaced every 12 years at a cost of $0.9M, which includes mid-life rehabilitation and repower.

Total capital costs for implementation range between $26.6M to $116.7M in present value terms. Table 19 summarizes the capital costs for each option.

Table 19: Estimated Capital Cost in Financial Terms (present value, 2019$)

| Service | Terminus | Initial Capital Expenditure | Rehabilitation Costs | Bus Replacement Costs | Contingency | Total Capital Costs |
|---|---|---|---|---|---|---|
| Option 1: Reinstated Service | A: North Bay | $19.5M | $2.0M | $0.0M to -$1.7M | $6.8M | **$28.3M to $26.6M** |
| | B: Timmins | $41.1M | $4.3M | $0.0M to -$1.7M | $14.4M | **$59.8M to $58.1M** |
| | C: Cochrane | $39.7M | $4.2M | $0.0M to -$1.7M | $13.9M | **$57.7M to $56.0M** |
| Option 2: Enhanced Service | A: North Bay | $26.6M | $2.8M | $0.0M to -$1.7M | $9.3M | **$38.6M to $36.9M** |
| | B: Timmins | $50.8M | $5.3M | $0.0M to -$1.7M | $17.8M | **$73.9M to $72.2M** |
| | C: Cochrane | $49.4M | $5.2M | $0.0M to -$1.7M | $17.3M | **$71.8M to $70.1M** |
| Option 3: Twice Daily Service | A: North Bay | $55.2M | $5.8M | $0.0M to -$1.7M | $19.3M | **$80.2M to $78.5M** |
| | B: Timmins | $80.2M | $8.4M | $0.0M to -$1.7M | $28.1M | **$116.7M to $115.0M** |
| | C: Cochrane | $78.8M | $8.2M | $0.0M to -$1.7M | $27.6M | **$114.6M to $113.0M** |
| Option 4: Daytime Service | A: North Bay | $19.5M | $2.0M | $0.0M to -$1.7M | $6.8M | **$28.3M to $26.6M** |
| | B: Timmins | $41.1M | $4.3M | $0.0M to -$1.7M | $14.4M | **$59.8M to $58.1M** |
| | C: Cochrane | $39.7M | $4.2M | $0.0M to -$1.7M | $13.9M | **$57.7M to $56.0M** |
| Option 5: Staged Service | B: Timmins | $41.1M | $4.3M | $0.0M to -$1.7M | $14.4M | **$59.8M to $58.1M** |
| | C: Cochrane | $39.7M | $4.2M | $0.0M to -$1.7M | $13.9M | **$57.7M to $56.0M** |
| Option 6: Seasonally Adjusted Service | A: North Bay | $19.5M | $2.0M | $0.0M to -$1.7M | $6.8M | **$28.3M to $26.6M** |
| | B: Timmins | $41.1M | $4.3M | $0.0M to -$1.7M | $14.4M | **$59.8M to $58.1M** |
| | C: Cochrane | $39.7M | $4.2M | $0.0M to -$1.7M | $13.9M | **$57.7M to $56.0M** |

*Figures may not add to totals due to rounding.
*Note: Costs presented in the IBC are estimated based on the best available information at time of writing and are subject to change.*

### Operating and Maintenance Costs

The operation and maintenance of the Northeastern Passenger Rail Serviceforms the largest component of overall project costs. Operating and maintenance costs cover all aspects of the proposed rail service including staffing, fuel, track access charges, vehicle and track maintenance and other state of good repair costs. This analysis in this IBC assumes that there are no incremental costs for track maintenance, since this work would be required to support existing freight services in the BAU scenario. Further work will be required in subsequent phases of the project to determine incremental annual track maintenance costs. For the optimistic scenario, there are incremental operating cost savings related to bus rationalization.

Rail operating costs over the 60-year project lifecycle are projected to be in the range of $128.0M to $583.0M in present value terms, depending on the option, while bus operating cost savings over the 60-year project lifecycle under the optimistic scenario are expected to be between $16.8M and $51.4M in present value terms, depending on the option. Table 20 summarizes the incremental operating cost impacts of the project.

Table 20: Operating Costs, in Financial Terms

| Service | Terminus | 60-Year Operating Costs (NPV, 2019$) | | | Annual Operating Cost | |
|---|---|---|---|---|---|---|
| | | Rail Costs | Bus Savings | Total | 2024 (YOE$) | 2041 (YOE$) |
| Option 1: Reinstated Service | A: North Bay | $159.9M | $0.0M to -$21.1M | **$159.9M to $138.8M** | $6.5M to $5.7M | $7.7M to $6.7M |
| | B: Timmins | $263.1M | $0.0M to -$42.9M | **$263.1M to $220.2M** | $10.7M to $9.0M | $12.7M to $10.6M |
| | C: Cochrane | $263.1M | $0.0M to -$44.1M | **$263.1M to $219.0M** | $10.7M to $8.9M | $12.7M to $10.6M |
| Option 2: Enhanced Service | A: North Bay | $188.3M | $0.0M to -$24.6M | **$188.3M to $163.7M** | $7.7M to $6.7M | $9.1M to $7.9M |
| | B: Timmins | $312.1M | $0.0M to -$50.0M | **$312.1M to $262.1M** | $12.7M to $10.7M | $15.1M to $12.6M |
| | C: Cochrane | $312.1M | $0.0M to -$51.4M | **$312.1M to $260.7M** | $12.7M to $10.6M | $15.1M to $12.6M |
| Option 3: Twice Daily Service | A: North Bay | $356.0M | $0.0M to -$24.6M | **$356.0M to $331.3M** | $14.5M to $13.5M | $17.2M to $16.0M |
| | B: Timmins | $583.0M | $0.0M to -$50.0M | **$583.0M to $533.0M** | $23.8M to $21.7M | $28.1M to $25.7M |
| | C: Cochrane | $583.0M | $0.0M to -$51.4M | **$583.0M to $531.5M** | $23.8M to $21.7M | $28.1M to $25.6M |
| Option 4: Daytime Service | A: North Bay | $159.9M | $0.0M to -$21.1M | **$159.9M to $138.8M** | $6.5M to $5.7M | $7.7M to $6.7M |
| | B: Timmins | $263.1M | $0.0M to -$42.9M | **$263.1M to $220.2M** | $10.7M to $9.0M | $12.7M to $10.6M |
| | C: Cochrane | $263.1M | $0.0M to -$44.1M | **$263.1M to $219.0M** | $10.7M to $8.9M | $12.7M to $10.6M |
| Option 5: Staged Service | B: Timmins | $231.3M | $0.0M to -$36.2M | **$231.3M to $195.2M** | $6.5M to $5.7M | $12.7M to $10.6M |
| | C: Cochrane | $231.3M | $0.0M to -$37.0M | **$231.3M to $194.3M** | $6.5M to $5.7M | $12.7M to $10.6M |
| Option 6: Seasonally Adjusted Service | A: North Bay | $128.0M | $0.0M to -$16.8M | **$128.0M to $111.3M** | $5.2M to $4.5M | $6.2M to $5.4M |
| | B: Timmins | $212.2M | $0.0M to -$34.0M | **$212.2M to $178.2M** | $8.6M to $7.3M | $10.2M to $8.6M |
| | C: Cochrane | $212.2M | $0.0M to -$35.0M | **$212.2M to $177.3M** | $8.6M to $7.2M | $10.2M to $8.6M |

*Figures may not add to totals due to rounding.

Revenue Impacts

Depending on the option contemplated, ridership forecasts estimates that, by 2041, between 25,550 to 52,750 net new riders will use the proposed rail service annually under the conservative scenario and between 26,475 and 73,925 under the optimistic scenario. Average base fare for the service was applied to the annual ridership estimate to derive the incremental change in fare revenues. Incremental revenue over the 60-year project lifecycle is estimated to be between $42.8M and $94.0M under the conservative scenario, or between $44.3M and $131.7M under the optimistic scenario.

Table 21: Revenue in Financial Terms

| Service | Terminus | 60-Year Incremental Revenue Impacts (NPV, 2019$) | Annual Incremental Revenue (2024, YOE$) | Annual Incremental Revenue (2041, YOE$) |
|---|---|---|---|---|
| Option 1: Reinstated Service | A: North Bay | $44.5M to $47.9M | $1.7M to $1.8M | $2.2M to $2.4M |
| | B: Timmins | $67.4M to $73.6M | $2.6M to $2.8M | $3.3M to $3.6M |
| | C: Cochrane | $61.4M to $64.0M | $2.4M to $2.5M | $3.0M to $3.2M |
| Option 2: Enhanced Service | A: North Bay | $47.8M to $55.0M | $1.8M to $2.1M | $2.4M to $2.7M |
| | B: Timmins | $72.4M to $84.2M | $2.8M to $3.2M | $3.6M to $4.2M |
| | C: Cochrane | $66.1M to $73.4M | $2.5M to $2.8M | $3.3M to $3.6M |
| Option 3: Twice Daily Service | A: North Bay | $62.1M to $87.0M | $2.4M to $3.3M | $3.1M to $4.3M |
| | B: Timmins | $94.0M to $131.7M | $3.6M to $5.0M | $4.6M to $6.5M |
| | C: Cochrane | $86.0M to $115.6M | $3.3M to $4.4M | $4.2M to $5.7M |
| Option 4: Daytime Service | A: North Bay | $43.7M to $45.6M | $1.7M to $1.7M | $2.2M to $2.3M |
| | B: Timmins | $65.4M to $68.1M | $2.5M to $2.6M | $3.2M to $3.4M |
| | C: Cochrane | $59.9M to $59.9M | $2.3M to $2.3M | $3.0M to $3.0M |
| Option 5: Staged Service | B: Timmins | $60.6M to $66.0M | $1.7M to $1.8M | $3.3M to $3.6M |
| | C: Cochrane | $56.4M to $59.3M | $1.7M to $1.8M | $3.0M to $3.2M |
| Option 6: Seasonally Adjusted Service | A: North Bay | $42.8M to $44.3M | $1.6M to $1.7M | $2.1M to $2.2M |
| | B: Timmins | $64.8M to $68.3M | $2.5M to $2.6M | $3.2M to $3.4M |
| | C: Cochrane | $59.0M to $59.3M | $2.3M to $2.3M | $2.9M to $2.9M |

*Figures may not add to totals due to rounding.

**Financial Case Summary**

For all options, the overall net revenue of the investment is negative, indicating that the project is not profitable on a strictly financial basis. Similarly, the incremental operating cost recovery ratio is below 1.0, indicating that an operating subsidy is required under all options studied. Financial results are primarily driven by the operating costs of the service. While options with higher frequency or extended service result in higher ridership and incremental revenue, these are outweighed by the additional operational costs results in greater subsidy requirements.

The requirement of an operating subsidy is typical of bus and passenger rail projects in North America, particularly for projects with a focus on providing coverage to underserved areas. For comparison, other transportation services achieved the following operating cost recovery ratios:

- Ontario Northland bus services: 0.80[9]
- Ontario Northland Polar Bear Express rail services: 0.30[6]
- GO Transit bus and rail services: 0.64[10]
- VIA Rail Windsor-Quebec Corridor services: 0.69[11]
- VIA Rail Long Haul services: 0.47[8]

Table 22 and Table 23 show the financial results on an annual basis at the start of service in 2024 and at the 2041 horizon year respectively. For most options (Option 5: Staged Service excluded), the growth in incremental revenue is outpaced by the growth in incremental operating costs. With inflation included, the total required subsidy increases between launch in the mid-2020s and 2041; however, with the growth in ridership, the per passenger subsidy decreases between launch and 2041 even after inflation is considered.

Option 5: Staged Service proposes an extension of rail service between launch and 2041, resulting in a greater increase in operating costs and subsidy requirement by 2041, relative to the other options.

[9] Ontario Northland Transportation Commission Annual Report 2018-2019
[10] Metrolinx Annual Report 2019-2020
[11] VIA Rail Annual Report 2019

Table 22: Annual Net Revenue (2024, YOE$)

| Service | Terminus | Incremental Revenue | Incremental Operating Costs | Required Subsidy | New Users | Subsidy per New User |
|---|---|---|---|---|---|---|
| Option 1: Reinstated Service | A: North Bay | $1.7M to $1.8M | $6.5M to $5.7M | **$4.8M to $3.8M** | 20.6K to 22.2K | $233 to $172 |
| | B: Timmins | $2.6M to $2.8M | $10.7M to $9.0M | **$8.1M to $6.2M** | 29.3K to 32.1K | $277 to $192 |
| | C: Cochrane | $2.4M to $2.5M | $10.7M to $8.9M | **$8.4M to $6.5M** | 27.4K to 28.6K | $305 to $226 |
| Option 2: Enhanced Service | A: North Bay | $1.8M to $2.1M | $7.7M to $6.7M | **$5.8M to $4.6M** | 22.2K to 25.5K | $263 to $179 |
| | B: Timmins | $2.8M to $3.2M | $12.7M to $10.7M | **$9.9M to $7.5M** | 31.6K to 36.7K | $315 to $203 |
| | C: Cochrane | $2.5M to $2.8M | $12.7M to $10.6M | **$10.2M to $7.8M** | 29.5K to 32.8K | $345 to $238 |
| Option 3: Twice Daily Service | A: North Bay | $2.4M to $3.3M | $14.5M to $13.5M | **$12.1M to $10.2M** | 28.8K to 40.4K | $421 to $252 |
| | B: Timmins | $3.6M to $5.0M | $23.8M to $21.7M | **$20.2M to $16.7M** | 41.0K to 57.4K | $492 to $290 |
| | C: Cochrane | $3.3M to $4.4M | $23.8M to $21.7M | **$20.5M to $17.2M** | 38.4K to 51.6K | $533 to $334 |
| Option 4: Daytime Service | A: North Bay | $1.7M to $1.7M | $6.5M to $5.7M | **$4.8M to $3.9M** | 20.3K to 21.2K | $239 to $185 |
| | B: Timmins | $2.5M to $2.6M | $10.7M to $9.0M | **$8.2M to $6.4M** | 28.5K to 29.7K | $288 to $215 |
| | C: Cochrane | $2.3M to $2.3M | $10.7M to $8.9M | **$8.4M to $6.6M** | 26.7K to 26.7K | $315 to $248 |
| Option 5: Staged Service | B: Timmins | $1.7M to $1.8M | $6.5M to $5.7M | **$4.8M to $3.8M** | 20.6K to 22.2K | $233 to $172 |
| | C: Cochrane | $1.7M to $1.8M | $6.5M to $5.7M | **$4.8M to $3.8M** | 20.6K to 22.2K | $233 to $172 |
| Option 6: Seasonally Adjusted Service | A: North Bay | $1.6M to $1.7M | $5.2M to $4.5M | **$3.6M to $2.8M** | 19.8K to 20.5K | $180 to $138 |
| | B: Timmins | $2.5M to $2.6M | $8.6M to $7.3M | **$6.2M to $4.6M** | 28.2K to 29.8K | $218 to $156 |
| | C: Cochrane | $2.3M to $2.3M | $8.6M to $7.2M | **$6.4M to $4.9M** | 26.4K to 26.5K | $242 to $187 |

*Figures may not add to totals due to rounding.

Table 23: Annual Net Revenue (2041, YOE$)

| Service | Terminus | Incremental Revenue | Incremental Operating Costs | Required Subsidy | New Users | Subsidy per New User |
|---|---|---|---|---|---|---|
| Option 1: Reinstated Service | A: North Bay | $2.2M to $2.4M | $7.7M to $6.7M | **$5.5M to $4.3M** | 26.6K to 28.6K | $208 to $152 |
| | B: Timmins | $3.3M to $3.6M | $12.7M to $10.6M | **$9.4M to $7.0M** | 37.8K to 41.3K | $248 to $169 |
| | C: Cochrane | $3.0M to $3.2M | $12.7M to $10.6M | **$9.7M to $7.4M** | 35.3K to 36.8K | $274 to $201 |
| Option 2: Enhanced Service | A: North Bay | $2.4M to $2.7M | $9.1M to $7.9M | **$6.7M to $5.2M** | 28.6K to 32.9K | $236 to $158 |
| | B: Timmins | $3.6M to $4.2M | $15.1M to $12.6M | **$11.5M to $8.5M** | 40.7K to 47.3K | $283 to $180 |
| | C: Cochrane | $3.3M to $3.6M | $15.1M to $12.6M | **$11.8M to $9.0M** | 38.0K to 42.2K | $311 to $212 |
| Option 3: Twice Daily Service | A: North Bay | $3.1M to $4.3M | $17.2M to $16.0M | **$14.1M to $11.7M** | 37.1K to 52.0K | $381 to $225 |
| | B: Timmins | $4.6M to $6.5M | $28.1M to $25.7M | **$23.5M to $19.2M** | 52.8K to 73.9K | $445 to $260 |
| | C: Cochrane | $4.2M to $5.7M | $28.1M to $25.6M | **$23.9M to $19.9M** | 49.5K to 66.5K | $483 to $300 |
| Option 4: Daytime Service | A: North Bay | $2.2M to $2.3M | $7.7M to $6.7M | **$5.6M to $4.4M** | 26.1K to 27.3K | $213 to $163 |
| | B: Timmins | $3.2M to $3.4M | $12.7M to $10.6M | **$9.5M to $7.3M** | 36.7K to 38.2K | $258 to $190 |
| | C: Cochrane | $3.0M to $3.0M | $12.7M to $10.6M | **$9.7M to $7.6M** | 34.4K to 34.5K | $283 to $221 |
| Option 5: Staged Service | B: Timmins | $3.3M to $3.6M | $12.7M to $10.6M | **$9.4M to $7.0M** | 37.8K to 41.3K | $248 to $169 |
| | C: Cochrane | $3.0M to $3.2M | $12.7M to $10.6M | **$9.7M to $7.4M** | 35.3K to 36.8K | $274 to $201 |
| Option 6: Seasonally Adjusted Service | A: North Bay | $2.1M to $2.2M | $6.2M to $5.4M | **$4.1M to $3.2M** | 25.6K to 26.5K | $159 to $120 |
| | B: Timmins | $3.2M to $3.4M | $10.2M to $8.6M | **$7.0M to $5.2M** | 36.4K to 38.4K | $194 to $136 |
| | C: Cochrane | $2.9M to $2.9M | $10.2M to $8.6M | **$7.3M to $5.6M** | 34.0K to 34.1K | $216 to $165 |

*Figures may not add to totals due to rounding.

Table 24 presents the financial performance of all options over the 60-year evaluation period. The net revenue further deteriorates with the addition of capital expenditures over the evaluation period.

Table 24: Financial Case Summary (present value, 2019$)

| Service | Terminus | Total Capital Costs | Incremental Operating & Maintenance Costs | Incremental Revenue Impact | Net Revenue | Operating Cost Recovery Ratio |
|---|---|---|---|---|---|---|
| Option 1: Reinstated Service | A: North Bay | $28.3M to $26.6M | $159.9M to $138.8M | $44.5M to $47.9M | -$143.8M to -$117.5M | 0.28 to 0.35 |
| | B: Timmins | $59.8M to $58.1M | $263.1M to $220.2M | $67.4M to $73.6M | -$255.5M to -$204.7M | 0.26 to 0.33 |
| | C: Cochrane | $57.7M to $56.0M | $263.1M to $219.0M | $61.4M to $64.0M | -$259.4M to -$211.0M | 0.23 to 0.29 |
| Option 2: Enhanced Service | A: North Bay | $38.6M to $36.9M | $188.3M to $163.7M | $47.8M to $55.0M | -$179.1M to -$145.5M | 0.25 to 0.34 |
| | B: Timmins | $73.9M to $72.2M | $312.1M to $262.1M | $72.4M to $84.2M | -$313.5M to -$250.0M | 0.23 to 0.32 |
| | C: Cochrane | $71.8M to $70.1M | $312.1M to $260.7M | $66.1M to $73.4M | -$317.9M to -$257.4M | 0.21 to 0.28 |
| Option 3: Twice Daily Service | A: North Bay | $80.2M to $78.5M | $356.0M to $331.3M | $62.1M to $87.0M | -$374.1M to -$322.8M | 0.17 to 0.26 |
| | B: Timmins | $116.7M to $115.0M | $583.0M to $533.0M | $94.0M to $131.7M | -$605.6M to -$516.2M | 0.16 to 0.25 |
| | C: Cochrane | $114.6M to $113.0M | $583.0M to $531.5M | $86.0M to $115.6M | -$611.6M to -$528.9M | 0.15 to 0.22 |
| Option 4: Daytime Service | A: North Bay | $28.3M to $26.6M | $159.9M to $138.8M | $43.7M to $45.6M | -$144.5M to -$119.8M | 0.27 to 0.33 |
| | B: Timmins | $59.8M to $58.1M | $263.1M to $220.2M | $65.4M to $68.1M | -$257.4M to -$210.2M | 0.25 to 0.31 |
| | C: Cochrane | $57.7M to $56.0M | $263.1M to $219.0M | $59.9M to $59.9M | -$261.0M to -$215.2M | 0.23 to 0.27 |
| Option 5: Staged Service | B: Timmins | $59.8M to $58.1M | $231.3M to $195.2M | $60.6M to $66.0M | -$230.5M to -$187.2M | 0.26 to 0.34 |
| | C: Cochrane | $57.7M to $56.0M | $231.3M to $194.3M | $56.4M to $59.3M | -$232.7M to -$191.1M | 0.24 to 0.30 |
| Option 6: Seasonally Adjusted Service | A: North Bay | $28.3M to $26.6M | $128.0M to $111.3M | $42.8M to $44.3M | -$113.6M to -$93.6M | 0.33 to 0.40 |
| | B: Timmins | $59.8M to $58.1M | $212.2M to $178.2M | $64.8M to $68.3M | -$207.2M to -$168.0M | 0.31 to 0.38 |
| | C: Cochrane | $57.7M to $56.0M | $212.2M to $177.3M | $59.0M to $59.3M | -$210.9M to -$174.0M | 0.28 to 0.33 |

*Figures may not add to totals due to rounding.

# 7

# Deliverability and Operations Case

**Introduction**

The Deliverability and Operations Case is an analysis of investment delivery, operations and maintenance, service plans and any other issues that may prevent the realization of an option. This includes delivering the project from original concept through to planning, design, environmental assessment, partner/stakeholder engagement, procurement, construction and operations. The Deliverability and Operations Case is one of two cases (the other being the Financial Case) focused on requirements for delivering the investment.

**Project Delivery**

*Project Sponsor*

Ontario Northland is the primary sponsor of this service, with Metrolinx providing technical support and expertise for the project evaluation and implementation phases.

The majority of assets, including some stations and all new rolling stock, delivered through the service will be owned by Ontario Northland. Ownership of new corridor infrastructure, however, would be retained by the owner of the respective rail corridor, with certain access rights being granted to Ontario Northland.

*Major Project Components*

Rail Corridor Infrastructure

The service will primarily operate on existing rail corridors that are owned and operated by Metrolinx, Ontario Northland or CN. These corridors are currently in use for existing passenger or freight rail services and are not anticipated to require significant upgrades. Minor upgrades to the corridor are proposed to allow for the operation a safe and reliable service. The corridor infrastructure improvements proposed under each option are summarized in Table 25.

Table 25: Rail Corridor Infrastructure Requirements

| Service | Terminus | Rail Corridor Infrastructure Requirements |
|---|---|---|
| Option 1: Reinstated Service | A: North Bay | • Reinstatement of track between the Newmarket Subdivision and North Bay station<br>• Spot improvements of track to ensure the safety of the service, and raise line speeds<br>• Minimal passing track construction (1.5 miles) |
| | B: Timmins | Scope of Option 1A, plus:<br>• Additional spot improvements of track between North Bay and Timmins<br>• Track rehabilitation on Ramore Subdivision near Timmins<br>• New layover for train storage and light maintenance in Timmins |
| | C: Cochrane | Scope of Option 1A, plus:<br>• Additional spot improvements of track between North Bay and Cochrane<br>• Track modifications to provide a passenger train route through Cochrane Yard<br>• New layover for train storage and light maintenance in Cochrane |
| Option 2: Enhanced Service | A: North Bay | Scope of Option 1A, plus:<br>• Additional passing track to improve service reliability (2.5 miles in total) |
| | B: Timmins | Scope of Option 1B, plus:<br>• Additional passing track to improve service reliability (2.5 miles in total) |
| | C: Cochrane | Scope of Option 1C, plus:<br>• Additional passing track to improve service reliability (2.5 miles in total) |
| Option 3: Twice Daily Service | A: North Bay | Scope of Option 2A, plus:<br>• Passing tracks at regular intervals to facilitate train meets (4.5 miles in total)<br>• Additional track improvements to remove slow orders |
| | B: Timmins | Scope of Option 2B, plus:<br>• Passing tracks at regular intervals to facilitate train meets (4.5 miles in total)<br>• Additional layover track capacity in Timmins<br>• Additional track improvements to remove slow orders |
| | C: Cochrane | Scope of Option 2B, plus:<br>• Passing tracks at regular intervals to facilitate train meets (4.5 miles in total)<br>• Additional layover track capacity in Cochrane<br>• Additional track improvements to remove slow orders |
| Option 4: Daytime Service | A: North Bay | Scope of Option 1A |
| | B: Timmins | Scope of Option 1B |
| | C: Cochrane | Scope of Option 1C |
| Option 5: Staged Service | B: Timmins | Scope of Option 1B |
| | C: Cochrane | Scope of Option 1C |
| Option 6: Seasonally Adjusted Service | A: North Bay | Scope of Option 1A |
| | B: Timmins | Scope of Option 1B |
| | C: Cochrane | Scope of Option 1C |

Train Stop Infrastructure

Following the termination of the Northlander train service, operations at most of the existing rail stations were discontinued and the station assets were divested, except for those that remain in use by GO Transit or VIA Rail. The Northeastern Passenger Rail Service would need to reinstate former stations or construct new shelters or stations.

The infrastructure for a typical station on the corridor includes a side rail platform, heated station shelters, passenger information displays and CCTV monitoring. Under the Reinstated Service options (Option 1), ticketing infrastructure will not be provided at stations. Passengers would need to purchase tickets on-board or online prior to boarding the trains.

All Northern Ontario stops (including terminal stations at North Bay and Timmins / Cochrane) are expected to facilitate transfers from the Ontario Northland bus network. These locations will provide additional bus stop infrastructure, as well as a station building to provide additional amenities for passengers.

Table 26 provides a summary of the status of the proposed stations, and the required infrastructure improvements for the Northeastern Passenger Rail Service.

Table 26: Train stop requirements

| Station | Applicable Terminus Variants | Status | Station Infrastructure Requirements |
|---|---|---|---|
| Toronto Union Station | All | Existing GO and VIA rail station with multiple GO island platforms | None |
| Langstaff | All | Existing GO station with single side GO platform | None |
| Gormley | All | Existing GO station with single side GO platform | None |
| Washago | All | Existing VIA station with single side VIA platform | Construct new infrastructure for passenger rail service; base station scope |
| Gravenhurst | All | Discontinued Northlander station, lands divested | Purchase or lease property and reinstate station; base station scope |
| Bracebridge | All | Discontinued Northlander station, lands divested | Purchase or lease property and reinstate station; base station scope |
| Huntsville | All | Discontinued Northlander station, lands divested | Purchase or lease property and reinstate station; base station scope |
| North Bay | All | Former Northlander station and existing Ontario Northland bus terminal with single side Ontario Northland platform | None |
| Temagami | Timmins, Cochrane | Discontinued Northlander station, lands owned by Ontario Northland | Construct new station; base station scope |
| Temiskaming Shores | Timmins, Cochrane | Previous station location, lands owned by Ontario Northland | Construct new station; base station scope |
| Englehart | Timmins, Cochrane | Discontinued Northlander station, lands owned by Ontario Northland | Reinstate station with base station scope. Station requires upgrades |
| Matheson | Timmins, Cochrane | Discontinued Northlander station, lands owned by Ontario Northland | Station requires major upgrades |
| Timmins (South Porcupine) | Timmins | New station location | Purchase or lease property and construct new station; terminal station with station building and bus facilities |
| Cochrane | Cochrane | Existing Polar Bear Express station with single side Ontario Northland platform | None |

## Rolling Stock Requirements

All options will require additional rolling stock to operate the service. As a basis for analysis, the business case assumed that the trains will consist of a locomotive, accessibility coach and cab car. The Enhanced and Twice Daily service options will also include onboard storage of food and beverages.

The number of train consists required for each option depends on the frequency and cycle time for the service. Table 27 summarizes the number of train consists required for each option. These figures do not include spares required for redundancy and service reliability.

Table 27: Rolling Stock Requirements

| Service | Terminus | Train Consists Required |
|---|---|---|
| Option 1: Reinstated Service | A: North Bay | 1 |
| | B: Timmins | 2 |
| | C: Cochrane | 2 |
| Option 2: Enhanced Service | A: North Bay | 1 |
| | B: Timmins | 2 |
| | C: Cochrane | 2 |
| Option 3: Twice Daily Service | A: North Bay | 2 |
| | B: Timmins | 4 |
| | C: Cochrane | 4 |
| Option 4: Daytime Service | A: North Bay | 1 |
| | B: Timmins | 2 |
| | C: Cochrane | 2 |
| Option 5: Staged Service | B: Timmins | 2 |
| | C: Cochrane | 2 |
| Option 6: Seasonally Adjusted Service | A: North Bay | 1 |
| | B: Timmins | 2 |
| | C: Cochrane | 2 |

An allowance for rolling stock procurement is included in the cost estimates for the service. The next stage of detailed planning work would explore the most cost-effective approach to securing the rolling stock, including refurbishment of existing equipment or purchase of second-hand equipment.

### *Environmental Assessment Requirements*

The majority of the capital works for this service involve rehabilitation or reinstatement of existing infrastructure, or the addition of sidings to existing rail corridors. Further analysis will be undertaken to determine if an environmental assessment is required.

Both northern extension options will require a new shelter servicing Temiskaming Shores, while the extension to Timmins will also require a new station in Timmins. Timmins was not served by the previous Northlander line. Implementation of train stops in Timmins may require an environmental assessment.

*Operations during Construction*

The proposed infrastructure scope generally involves rehabilitation of existing track and construction of new passing tracks and station platforms adjacent to the existing track. These works are not expected to require long term closures of the railway, and can be conducted under planned protections, overnight closures or weekend closures. Works would need to be planned to maintain safety of both construction and railway operations.

**Operations and Maintenance**

*Roles and Responsibilities*

Ontario Northland will be responsible for the routine operation and maintenance of the service. This includes staffing at terminal stations, ticket sales, crewing on trains, as well as maintenance of the rolling stock. Metrolinx will support the operations if required, such as emergency rolling stock maintenance at Willowbrook Yard or Emergency Support Services in the event of a train being disabled on a journey.

Metrolinx, Ontario Northland and CN are responsible for the operation and maintenance of corridor infrastructure within their respective rail corridors. Existing GO stations will continue to be operated and maintained by Metrolinx, while Ontario Northland will be responsible for any new rail stations.

*Service Plan*

All options will operate one trip per day (on days of operation) in each direction, except the Twice Daily Service options which propose two trips per day in each direction. The Northeastern Passenger Rail Serviceproposes new passing track infrastructure to facilitate train meets between Ontario Northland, Metrolinx, VIA and CN trains. The locations of these passing tracks will be determined through more detailed operational modelling in subsequent phases of service development.

The Reinstated Service, Daytime Service, Staged Service and Seasonally Adjusted Service options carry a minimal allowance for new track construction. This limits the number of locations where trains can pass, which would require precisely timed train meets and can lead to service delays. The Enhanced Service options carry a greater allowance for passing tracks to offer a more resilient service, while the Twice Daily Service options will provide passing tracks at regular intervals throughout the length of the corridor to further improve service reliability.

Trains will layover during the midday and overnight between trips. This will be facilitated through GO Transit's existing layover yards in Toronto and a layover yard at the northern terminus of the service. The northern layover yard would provide storage, as well as facilities for light maintenance. With a terminus in North Bay, the existing Ontario Northland yards will be used for the layover. If the service terminus is located in Timmins or Cochrane, then a new layover yard would be required. Cochrane currently has a layover yard that would only require upgrades, compared to a new greenfield build in Timmins.

**Project Dependencies**

*Rail Operating Agreements*

The service will require an operating agreement between Metrolinx and Ontario Northland, which outlines the roles and responsibilities of each agency in relation to this service. The agreement would also outline the running rights of the service within Metrolinx-owned territory on the Bala Subdivision and the Union Station Rail Corridor.

Additionally, the service will require negotiations with CN for access to their portions of the Bala and Newmarket Subdivisions between Toronto and North Bay. This would include establishing the allowable passenger train frequencies, available time blocks for train movements, as well as interfaces between passenger and freight rail services where crossover movements between tracks are required.

The on-time performance of the rail service is a key driver in achieving the projected ridership and delivering benefits for passengers. This metric is dependent on CN handling of the passenger trains on their territory and should be considered within the discussions for corridor access.

Ontario Northland owns the required rail corridors beyond North Bay, so no additional negotiations would be required to establish the service extension options to Timmins or Cochrane.

*Other Partner and Stakeholder Negotiations*

Following the termination of the previous Northlander rail service, most stations on the corridor between Toronto and North Bay were divested. Ontario Northland will work with municipalities to confirm support for passenger rail services in their community and establish an acceptable location and station/shelter.

Ontario Northland continues to own and operate the rail corridors between Timmins / Cochrane and North Bay. This business case assumes that infrastructure required for the train stops can be located within the existing corridor rights-of-way, and no additional lands will be required. The proposed terminal station in Timmins is expected to be a larger facility that facilitates transfers to bus services. This location is anticipated to require negotiations with stakeholders to secure the property for the station facilities.

*Station Access*

While the Northeastern Passenger Rail Service provides an inter-community passenger transportation connection between Northern Ontario and the GGH, there is generally low population density in the immediate vicinity of the proposed station locations, and the proposed station scope does not include the provision of parking facilities. Station access is expected to primarily be accommodated through third party parking facilities in the vicinity of the station (e.g., municipal or private parking lots), pick-up / drop-off, taxi, or other ridesharing options. At the proposed terminal facilities, transfers from Ontario Northland buses are also available. The benefits of the service are dependent on convenient access to the station and service. The station access options, and any required supporting infrastructure, should be investigated in more detail as the service advances through subsequent phases of development.

**Conclusion**

All options analyzed through this Initial Business Case are technically feasible but have challenges in the deliverability and operations of the service. In all cases, deliverability of the service will be dependent on agreement with third-party stakeholders to share an existing corridor and reinstate former stations. Generally, the options that only extend service to North Bay performs better on the deliverability considerations due to the smaller project scope. However, based on partner and stakeholder feedback, the full project scope to Timmins or Cochrane would address transportation needs in the region.

# 8

# Business Case Summary

**Introduction**

This chapter summarizes the findings of the four-case evaluation, provides a recommendation on the option(s) to be advanced for preliminary design, and highlights additional work or investigations that are required to confirm the findings of this business case.

**Investment Review**

*Strategic Case*

The implementation of rail service along the Northeastern Rail Corridor provides strategic benefits aligned with the planning and policy objectives of the Province of Ontario. Strategic benefits are divided into four key outcome areas:

- Transportation: Rail service provides a more reliable transportation mode that is resilient against congestion and disruptions on the road network. By operating within a separate right-of-way, it provides a redundant transportation corridor for Northern Ontario in the event of a highway closure.[12]
- Quality of Life: Passenger rail transportation provides disadvantaged individuals and remote communities in the north, including Indigenous communities, with a more comfortable (i.e., ability to move around on a long journey) and additional travel option with which to reach specialized services across Northern Ontario and in the GGH.
- Economic and Regional Development: Passenger rail transportation connects small and medium population centres within Northern Ontario, connects Northern Ontario to the economy of the GGH, increases tourism, and facilitates the exchange of goods, services and expertise along the corridor. The additional capacity and travel time reliability achieved through the implementation of passenger rail transportation will also improve the travel experience of tourists to Northern Ontario.
- Sustainable Environment: Rail service diverts long distance car trips to a potentially more energy efficient and lower emission transportation mode per passenger-kilometer, assuming there is sufficient mode shift from current auto-based modes.

Options that extend the service to Timmins or Cochrane provide stronger strategic benefits by extending service to more remote and underserved communities north of North Bay. The Timmins terminus provides improved strategic benefits relative to the Cochrane terminus by serving a larger population centre. In addition, the Enhanced Service and Twice Daily Service options provide improvements to the customer experience and reliability benefits for passengers.

*Economic Case*

All options will generate economic benefits; however, these are outweighed by the associated cost of the service. This results in a negative net present value and a benefit-cost ratio that is less than 1.0[13]. The benefit-cost ratio over

[12] Air serves this role currently, although air services along the corridor have been temporarily suspended. Without any further evidence, it is too early to conclude that air services along the corridor will remain suspended for a longer period and the proposed rail service (if re-instated) would serve air travellers.
[13] The results of the analysis assume the impact of COVID-19 will have a negligible effect on the near-term and longer term ridership and benefits.

the 60-year evaluation period ranges between 0.23 to 0.52 in the conservative scenario, and between 0.41 to 0.74 in the optimistic scenario.

Options that increase service frequency or extend service further north generate greater total benefits, however, these do not outweigh the additional costs to deliver the service. Of the two possible extension options, Timmins outperforms Cochrane in terms of both total economic benefits, as well as benefit cost-ratio.

*Financial Case*

From a financial perspective, all options result in incremental operating costs that outweigh the incremental revenue of the project. As a result, all options will require a subsidy to sustain operations. The operating cost recovery ratio over the 60-year evaluation period ranges between 0.15 to 0.33 under the conservative scenario and 0.22 to 0.40 in the optimistic scenario.

At the start of operations in the mid-2020s, the service is projected to require an annual operating subsidy of between $3.6M to $20.5M in the conservative scenario, and between $2.8M to $17.2M in the optimistic scenario. By 2041, the required annual subsidy will increase to $4.1M to $23.9M in the conservative scenario, and between $3.2M to $19.9M in the optimistic scenario.

Options that provide greater frequency or extend the service terminus do not generate sufficient ridership and revenue to offset the additional operational costs.

*Deliverability and Operations Case*

All options propose infrastructure improvements primarily within existing rail corridors, as well as the reinstatement of existing stations. Options that provide service to North Bay require less infrastructure work and would be easier to deliver. In particular, the construction of a new station in the Timmins region may require an environmental assessment approval before work can begin.

Operationally, the options that propose additional infrastructure upgrades (e.g. passing tracks, sidings, etc.) provide additional flexibility in scheduling train meets and enhance service reliability. The Enhanced Service options and Twice Daily Service options provide improved reliability.

The key project dependency for all options is agreement with CN to allow for the operation of passenger rail service on the Bala and Newmarket Subdivisions between Toronto and North Bay.

**Next Steps**

Once an option is selected for further project development, an Updated Business Case will begin assessing the preferred option at a more detailed level of analysis further refining project scope, benefits and costs. Analysis to be undertaken through the preliminary design phase includes:

- Train modelling to confirm the operability of the service pattern and schedule, as well as the optimal locations for passing tracks;
- More detailed service planning, including consideration of parallel and connecting bus services, to maximizing connectivity, while rationalizing service levels;
- Refinement of modelling parameters as new data becomes available, including:
    - Capital, operating and maintenance costs;
    - External benefits (i.e., GHG benefits, congestion benefits);

    - Impacts of customer amenities on ridership and benefits;
- Further analysis of rolling stock to determine the option that best meets customer needs, while providing value for money;
- Negotiations with CN to secure track access for the service, and confirm the scope of any corridor infrastructure required to operate the service; and,
- Design of corridor, station and shelter infrastructure, and development of more detailed cost estimates.

# Glossary

| Term | Definition |
|---|---|
| Initial Business Case (IBC) | The first Business Case prepared for a project in line with part two of Metrolinx's stage gate process (Feasibility and Options Analysis). The IBC compares potential investments to identify if there is merit in further design and development. |
| Greater Toronto and Hamilton Area (GTHA) | The combined area of the Cities of Hamilton, and Toronto; and the Regions of Durham, Halton, Peel, and York. |
| Greater Golden Horseshoe (GGH) | The combined area of the Greater Toronto and Hamilton Area, as well as the Cities of Barrie, Branford, Guelph, Kawartha Lakes, Orillia, Peterborough; the Counties of Brant, Dufferin, Haldimand, Northumberland, Peterborough, Simcoe, and Wellington; and the Regions of Niagara and Waterloo. |
| Business As Usual (BAU) | A scenario used in Business Case analysis that reflects the future state of the region (including population, employment, and the transportation network) without the investment that is appraised in the Business Case. |
| Net Present Value | The total economic value of a project. Determined by subtracting project costs from its total benefits. A positive Net Present Value indicates that the project's benefits exceed its costs |
| Mode Share | The percentage of person-trips made by one mode of travel relative to the total number of trips made by all modes. |
| Vehicle-Kilometres Travelled | A measure of roadway use, commonly used in estimating congestion, that reflects the distance that an individual drives or, more typically, the cumulative distance driven by all vehicles during a specified period of time. Vehicle kilometres travelled can reflect the link between land use and transportation. Land uses that are further away from each other result in longer trip lengths, more traffic on roadways and more vehicle kilometres travelled, for example |
| Benefit Cost Ratio (BCR) | An economic indicator that reflects the relationship between benefits and costs of an investment. A BCR greater than 1 indicates the projects benefits exceed costs. |