

Northeastern Passenger Rail Service

Updated Initial Business Case

Disclaimer

All figures within this Updated 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 through future stages of planning and delivery.

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Executive Summary

Residents, workers, and visitors in Northern Ontario have few transportation options, and the options that do exist can be costly, limited, or unsafe due to inclement winter driving conditions. The current travel landscape can restrict mobility to, from, and between northern communities, and into larger cities like Toronto. 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 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 and safety. 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.

Ontario Northland is proposing to reinstate passenger rail service between Northern Ontario and the GGH, which addresses these transportation challenges. 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 has assessed this proposal through an Initial Business Case framework and continues to support Ontario Northland by conducting further analysis through an Updated Initial Business Case (UIBC). 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. The UIBC applies a more detailed analysis to a shortlisted set of options informed by the Initial Business Case. It is a more streamlined approach that provides an interim analysis before fully progressing to a Preliminary Design Business Case.

This UIBC assesses three potential routing options for the service. These routes are illustrated in the map below.

- Option 1: the train service terminates in Timmins
- Option 2: the train service terminates in Timmins but provides a connection to Cochrane
- Option 3: the train service terminates in Cochrane

Each option is broken into two sub-options which results in a total of six combined options:

- Sub-option A: service using a new fleet of trains, and
- Sub-option B: service using a refurbished fleet of trains.

The options in the UIBC include two stations in addition to the proposed stations in the IBC, shown below in grey. The stations are in Kirkland Lake (Swastika) and South River. All base options include the full set of stations shown below. In addition to the base options, sensitivities are analysed using Option 2A to determine the effects of not including the two additional stations and the effects of a higher land use projection - that is, a higher than projected population growth. The sensitivity tests compare the following scenarios:

- Option 2A, Sensitivity i: new stations removed
- Option 2A, Sensitivity ii: base option, which includes all proposed stations
- Option 2A, Sensitivity iii: base option with land use uplift.

The combination of route and fleet options, and station and land use sensitivities resulted in six base options for analysis and three sensitivity scenarios, which are summarized in the table below. The six base options are subject to the full business case analysis while the three sensitivity scenarios are presented with supplementary summaries only.

Figure 1: Northeastern Passenger Rail Service Options

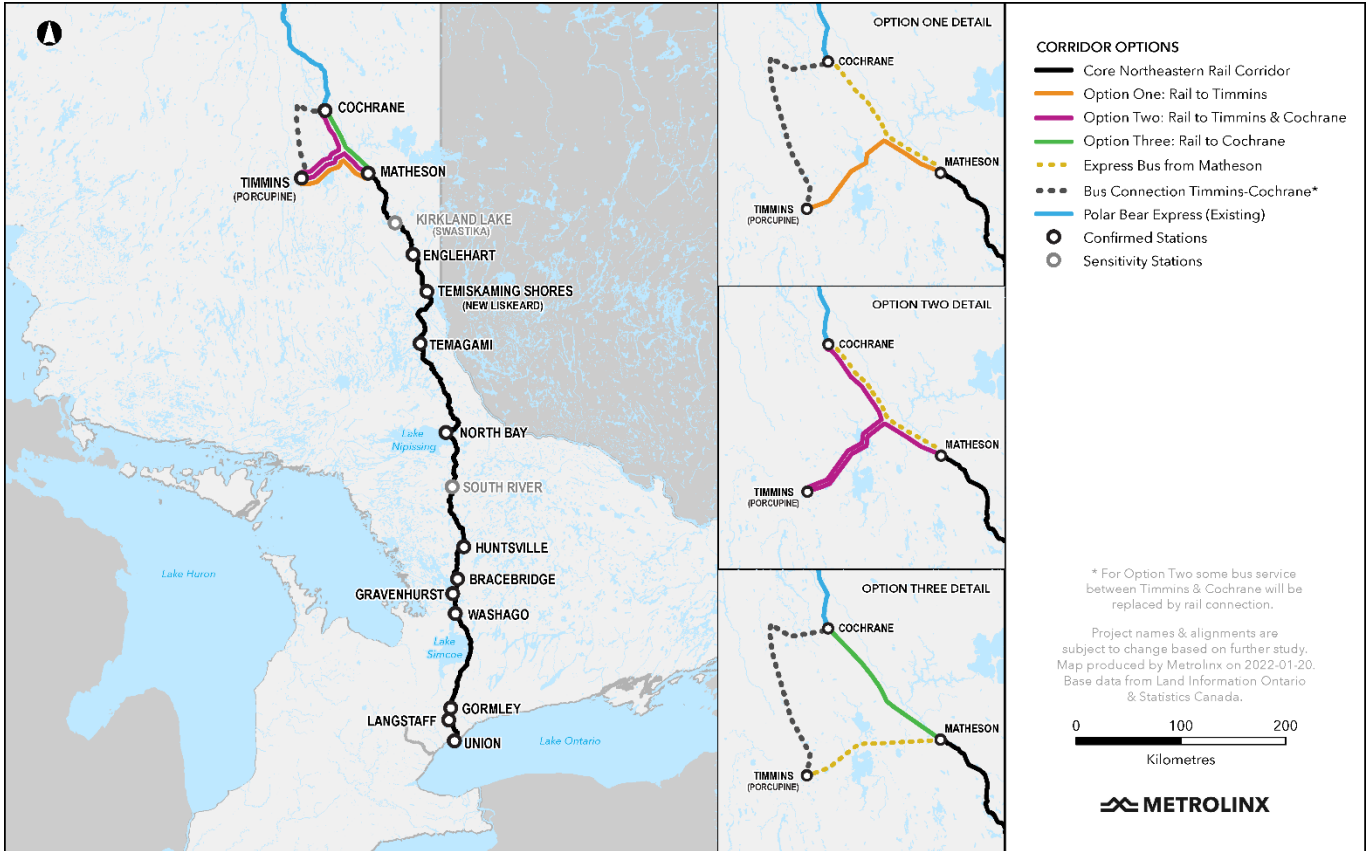


Table 1: Business Case Options

Route	Route Description	Fleet Procurement
1	Terminate in Timmins Rail service travels between Toronto and Timmins through North Bay	A New Fleet
		B Refurbished Fleet
2	Terminate in Timmins with connecting service to Cochrane Rail service travels between Toronto and Timmins through North Bay, with a connection between Timmins and Cochrane	A New Fleet
		B Refurbished Fleet
3	Terminate in Cochrane Rail service travels between Toronto and Cochrane through North Bay	A New Fleet
		B Refurbished Fleet

Table 2: Sensitivity Analysis

Option	Option Description	Sensitivity
2A	Terminate in Timmins with connecting service to Cochrane using a new fleet	i Sensitivity stations removed, resulting in no new stations from the IBC
		ii Base Option 2A
		iii Land use uplift

Business Case Findings for Base Scenarios with a New Fleet

		Option 1 Terminate in Timmins	Option 2 Terminate in Timmins with Connecting Rail Service to Cochrane	Option 3 Terminate in Cochrane
Strategic Case				
Ridership	Rail 2041	39,170 to 58,360	39,220 to 60,110	37,790 to 55,090
	Bus 2041	139,710 to 125,200	152,240 to 136,110	139,710 to 125,190
Access and Connectivity		Improved inter-community travel time to Muskoka and equivalent inter-community travel times to North Bay.		
	Rail travel times compared to bus	Slightly improved travel times to Timmins.	Slightly improved travel times to Timmins and improved inter-community travel time to Cochrane.	Improved inter-community travel time to Cochrane.
	Population Coverage	171,000 residents in northern communities with access to passenger rail	176,000 residents in northern communities with access to passenger rail	134,000 residents in northern communities with access to passenger rail
Environmental Sustainability	Annual Car GHG Reductions by 2041	3800 to 4390	3800 to 4400	3590 to 3890
Economic Case				
Total Economic Benefits (\$2021 NPV)		66.2M to 128.7M	66.4M to 132.0M	64.1M to 116.8M
Total Costs (\$2021 NPV)		554.7M to 671.3M	552.7M to 666.2M	542.2M to 649.1M
Tax Adjustment		-1.5M to -7.6M	-1.5M to -8.0M	-1.6M to -7.1M
Benefit-Cost Ratio		0.19 to 0.34	0.19 to 0.35	0.19 to 0.32
Net Benefits		-543.8M to -364.0M	-538.5M to -358.9M	-531.2M to -372.5M
Financial Case				
Total Costs (\$2021 NPV)		575.2M	574.1M	563.5M
Total Revenue (\$2021 NPV)		83.9M to 93.9M	84.0M to 94.1M	79.0M to 84.8M
Operating Cost Recovery Ratio		0.31 to 0.35	0.30 to 0.33	0.28 to 0.31
Return on Investments		-491.3M to -481.3M	-490.2M to -480.0M	-484.6M to -479.3M

	Option 1 Terminate in Timmins	Option 2 Terminate in Timmins with Connecting Rail Service to Cochrane	Option 3 Terminate in Cochrane
Deliverability and Operations Case			
Property Requirements	High	Low	Low
Construction Impacts	High	Medium	Low
Environmental Assessment Requirements	High	Medium	Medium
Operational Challenges	Medium	Medium	Medium

Strategic Case

The Northeastern Passenger Rail Service will provide additional transportation options for travel to, from, and between northern communities, in addition to connections to the GGH. 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. Community engagement sessions with Northern mayors and economic development, including Indigenous partners, revealed immense support for the return of the Northeastern Passenger Rail.

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

- Support tourism travel to and from Northeastern Ontario and Muskoka, especially peak season travel;
- Provide a reliable inter-community transportation connection to North Bay, which is the fourth largest municipality in Northern Ontario;
- Service beyond North Bay will offer additional travel alternatives to more remote communities including Indigenous communities and extend benefits further north; and
- Service to the Timmins region will serve the fifth largest municipality in Northern Ontario.

Options will provide appropriate customer amenities and a modernized rail travel experience.

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 geographically large and less densely populated areas. The benefit-cost ratios over the 60-year evaluation period are 0.19-0.20 in the conservative scenario and 0.32-0.44 in the optimistic scenario. Sensitivity analyses showed that removing the two sensitivity stations slightly worsened results and a land use uplift improved results.

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 0.28 to 0.31 under the conservative scenario and 0.31 to 0.35 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, if any, reliable transportation alternatives. By 2041, the required annual subsidy will increase to between \$11.2M to \$12.2M in the optimistic scenario, and between \$11.8M to \$12.6M in the conservative scenario.

Deliverability & Operations Case

All options propose infrastructure improvements primarily within existing rail corridors. For Options 1 and 2, the construction of a new station in the Timmins region would be required. Option 1 requires the construction of a maintenance facility in the Timmins region as well. Options 2 and 3 require an extension at the maintenance facility in Cochrane. An Environmental Assessment may need to be completed before work can begin. All options assume that major maintenance activities would take place at an existing maintenance facility in the Toronto area, while the northern terminus provides basic maintenance services.

Rail operations modelling was completed to show that the Northeastern Passenger Rail service could be operated in the proposed corridor in coordination with freight and commuter passenger rail services that share the corridor. Crew operations can be scheduled to meet upcoming crew rest rules while serving the proposed schedule and using existing crew layover facilities. The proposed schedule is based on the previous timings of the Northeastern Passenger Rail service, test train runs on part of the corridor, and rail simulations. However, further tests will need to be conducted and reliability measures developed before the re-instatement of the service.

Two fleet procurement methods were considered: purchasing a new fleet and refurbishing an old fleet. The refurbishment option will require both initial purchase and selection of a refurbishment supplier with sufficient capacity in the required timeline. However, both fleet options are expected to meet the mid-2020's delivery timeline and will provide similar level of passenger amenities.

A key project dependency for all options is negotiating an agreement with the Canadian National Railway (CN) to allow for the operation of passenger rail service on the Bala and Newmarket Subdivisions between the Doncaster Diamond and North Bay. Agreements would also need to be negotiated for the use of a maintenance facility such as the Willowbrook Rail Maintenance Facility or the VIA Toronto Maintenance Centre.

Next Steps

Once an option is selected for further project development, a Preliminary Design Business Case will be undertaken to 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.

Next steps that were previously identified in the Initial Business Case but have now been completed include the following:

- Train modelling to confirm the operability of the service pattern and schedule, as well as the optimal locations for passing tracks;
- Some refinement of the business case analysis based on more detailed data regarding capital costs, supported by:
 - Conceptual station and terminal facility designs
 - Track conditions assessments
 - Rolling stock procurement analysis
- Further analysis of rolling stock procurement options to determine the costs and benefits provided.
- The planning of parallel and connecting bus services has been partially complete.

Analysis to be undertaken through the next phases includes:

- Further train modelling and test runs to confirm the operability of the service pattern and schedule;
- More detailed service planning of parallel and connecting bus services, to maximize connectivity, while keeping service levels efficient;
- Crew shift scheduling to ensure that shifts would be within regulatory limits, while accounting for the risks of delays.
- Refinement of business case analysis parameters as new data becomes available and 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;
- Negotiations with CN to secure track access for the service, and confirm the scope of any corridor infrastructure required to operate the service; and
- Detailed design of corridor, station and shelter infrastructure, and development of more detailed cost estimates.
 - Duty to Consult Indigenous people may be impacted and should be considered here and in the selection of the preferred option for further project development.

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 1 railways to ship goods across North America. Previously, Ontario Northland operated a passenger rail service between Toronto and Cochrane via North Bay. However, this service was discontinued in 2012. 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”).

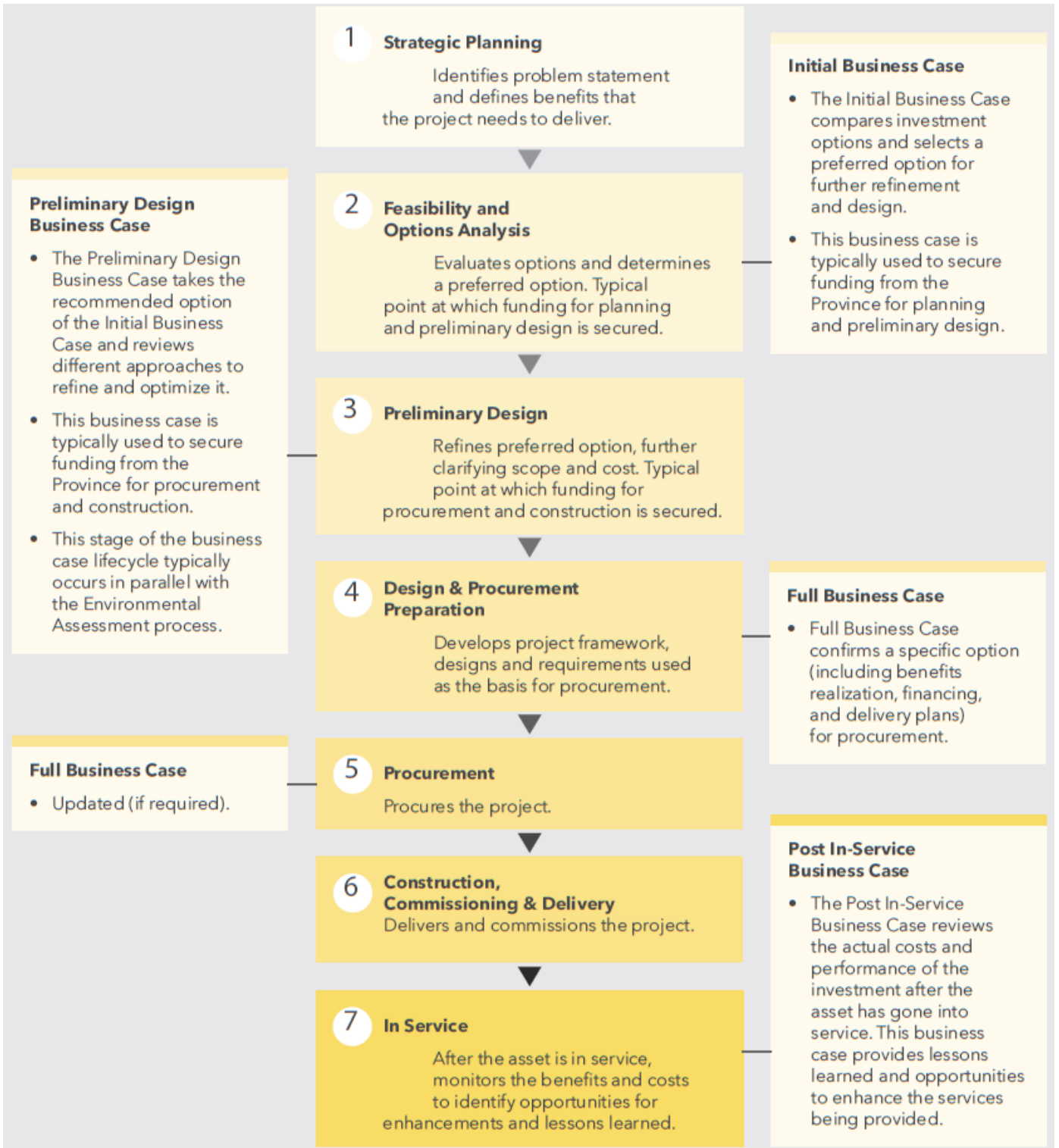
Metrolinx is an agency of the Province of Ontario responsible for providing leadership in the co-ordination, planning, financing, development, and implementation of an integrated transit network in the GGH. Metrolinx also interacts and works with other transit agencies in the development of transit related 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 reinstated 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 Metrolinx for all projects that exceed \$50M in capital costs. As projects develop in scope and construction, business cases are completed to confirm the benefits of continuing to progress through stages of project development. As shown in Figure 2, 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. This Updated Initial Business Case (UIBC) furthers the work completed in the Initial Business Case with a more detailed analysis on the operations, design, and cost estimate. The UIBC is performed on a shortlist of options based on work done in the Initial Business Case.

Figure 2: Metrolinx Business Case Development Process 2021



2



The Case for Change



Introduction

This chapter defines the case for change, which outlines the rationale for considering this service.

Case for Change

Problem Statement

There are limited alternatives to automobile travel in the north and highways are frequently closed due to severe winter conditions; therefore, residents and visitors have reduced mobility, safety, and access to essential services, and northern communities have limited opportunities for economic development and tourism.

Northern Ontario transportation options are based primarily on cars. 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, if any, 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 (including essential medical services) and businesses located across Northern Ontario and in the Greater Golden Horseshoe (GGH). The lack of strong connections between the GGH and the businesses and communities in Northern Ontario also limits economic development and tourism opportunities in the north.

In addition, the COVID-19 pandemic has greatly impacted transportation behaviour and services to and from the North in two ways. Firstly, air service in the North has reduced greatly and may never return to pre-COVID service levels, as reported in the Northern Ontario Transportation Plan¹. Secondly, demand for 'stay-cations' have risen. This has been promoted as an approach to economic recovery, leading to a focus on enhancing tourism options. 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, the primary travel behaviour is based on 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.

¹ Northern Ontario Transportation Plan, 2020, Ministry of Transportation, Ontario.
<https://files.ontario.ca/mto-northern-ontario-transportation-plan-en-2020-12-10.pdf>

Access to medical services is identified as a particular key priority. The Ontario Ministry of Health provides a Northern Health Travel Grant program 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 in this region is completed via the highway system, using private vehicles or Ontario Northland bus services. These highway corridors are the main routes for transport trucks between Ontario and western Canada, with the highway north of North Bay being single lane only. Highway routes also traverse 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.

Air travel options may be available, but the future availability of these options is uncertain given that there were temporary cancellations of services and not all services have resumed regular operations. The air services include 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 was 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 when they are available, 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 or other operational reasons, such as congestion at Pearson Airport resulting in cancellations of northern Ontario flights.

During the COVID-19 pandemic, Ontario Northland temporarily reduced the frequencies of its bus services, while airlines temporarily suspended operations on some routes. Porter Airlines temporarily suspended all operations, while Air Canada temporarily suspended its Toronto-North Bay service for a period of time. Some air services have since returned to operation. Ontario Northland services have been restored and some air services have partially resumed. However, not all air services are in full operation yet.

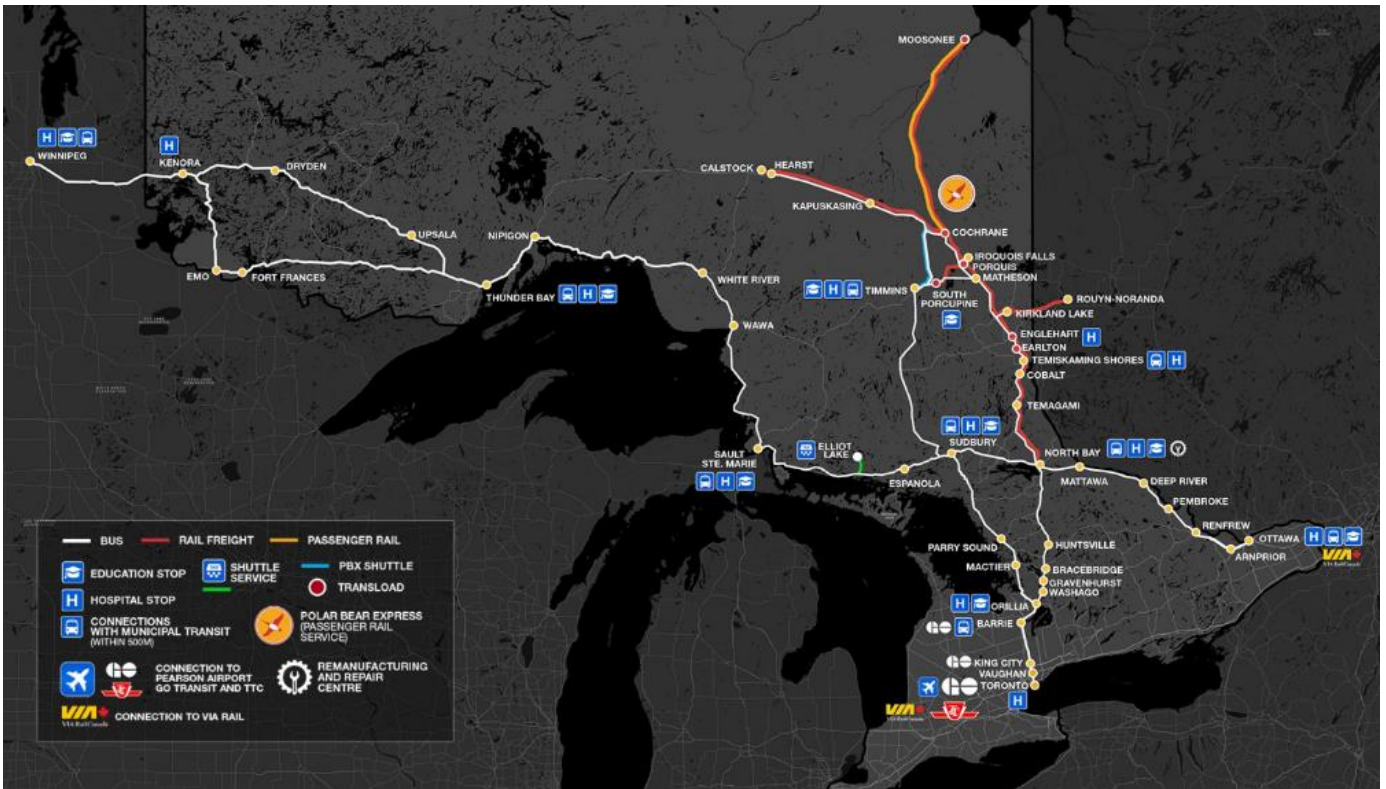
Passenger Transportation Service Provision

GO Transit, an operating division of Metrolinx, provides regional transit services within the GGH. Currently, rail services extending north from Toronto include three commuter rail lines which terminate in Barrie (at Allandale Waterfront station), Richmond Hill (at Bloomington station) and Whitchurch-Stouffville (at Old Elm 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 by 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 3.

Figure 3: Ontario Northland Existing Passenger Services



Some residents in Northern Ontario have identified challenges in using the existing bus service. The bus service 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, parts of the northern highway network are periodically closed during severe winter weather conditions and due to collisions.

Ontario Northland has partnered with GO Transit to explore potential improvements to connectivity between the GGH and Northern Ontario. This included a “train-meet” service in 2018 and 2019, where Ontario Northland buses connected with Barrie line trains at Allandale Waterfront station on summer weekends to provide services to or from Gravenhurst, Bracebridge, Huntsville, and North Bay. The service was paused due to COVID-19 in 2020.

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 major highway, and has 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 3 provides an overview of the Northeastern Rail Corridor.

Table 3: 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 The Canadian 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. The 2021 Ontario Budget is now committed to reviewing the reinstatement of the Northeastern Passenger Rail service. As such, the business case is being updated with more recent information to help inform next steps.

Demographics

The Ontario Population Projections Update of 2020-2046 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 137% increase in the population aged 80 and over in northern communities. From 2020 to 2046, as a proportion of the total population in northern communities, those aged 65 or older will increase from 22% to 29%, while those aged 80 or older will increase from 5% to 12%. 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 4 shows a summary of the population along the Northeastern Rail Corridor. Furthermore, additional population growth is expected in the northern communities as a result of COVID-19 driving migration out of urban centres.

Table 4: Population along the Northeastern Rail Corridor (thousands)

Census District	Total	2020		2046			% Change		
		65-79	80+	Total	65-79	80+	Total	65-79	80+
Cochrane	80	12	4	76	11	8	-5%	-3%	132%
Timiskaming	33	6	2	33	5	4	-1%	-12%	104%
Nipissing	87	14	5	89	14	11	3%	0%	135%
Parry Sound	45	10	3	54	11	8	20%	11%	167%
Subtotal - Northern Communities	245	42	13	252	42	31	3%	0%	137%
Muskoka	66	13	4	85	16	12	28%	22%	179%
Simcoe	538	78	24	773	115	78	44%	48%	227%
Subtotal - Central Communities	605	91	28	858	131	91	42%	44%	220%

York	1200	150	47	1624	226	156	35%	51%	228%
Toronto	2988	336	139	3954	471	314	32%	40%	126%
Subtotal - GTA Communities	4189	486	186	5579	698	470	33%	44%	152%
Total	5038	619	228	6688	871	591	33%	41%	160%

* 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. 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 motor coach and air services are available, adding rail service would increase the number of alternatives available to residents along the corridor, which is 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 of Ontario and provides 12,949 jobs for regions along the Northeastern Rail Corridor². 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 visits³. 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

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

passenger transportation service as part of their 2018 report⁴ 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.

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.

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

Indigenous respondents were almost twice as likely to respond that traveling by train was less expensive overall (29% vs 15%) and were more likely to choose the Northlander because they did not have access to a vehicle (23%) or license (15%).

For respondents that self-identified as Indigenous, 66% cited using a car as a driver or passenger as the main mode of transportation, versus 77% non-Indigenous; coach (bus) was chosen more often (16% vs. 9%) for Indigenous versus non-Indigenous irrespective of home location. This is consistent with lower vehicle ownership rates among Indigenous respondents: 9% having no personal vehicle, compared to 6% for non-Indigenous respondents.

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.

In 2021, Ontario Northland engaged with community leaders, including First Nation leaders, and Indigenous Political Territorial Organizations in northeastern Ontario. Engagement sessions held between August and November revealed inconvenience due to the limited transportation options available and a desire for dependable, on-time transportation service that would not be affected by weather or traffic.

There was positive feedback for the reinstatement of the Northeastern Passenger Rail service in every Ontario Northland community where engagement was held and there was no opposition by any members in attendance. Local newspaper articles^{5,6} referencing those engagements have echoed the need, want, and support for the return of service. Some communities, like South River and Gravenhurst, have pre-emptively started refurbishment on their existing train stations in anticipation of the reinstated

⁴ Moving Forward - Towards a Strategic Approach to Ontario's Transportation Needs, Ontario Chamber of Commerce, 2018

⁵ Toronto Star - South River.

<https://www.thestar.com/news/canada/2021/09/17/ontario-northland-south-river-council-discuss-rail-passenger-service.html>

⁶ Huntsville Doppler Online

<https://doppleronline.ca/huntsville/bid-to-reinstate-passenger-rail-service-in-northeastern-ontario-continues/>

passenger rail service. In addition to the engagement sessions, Ontario Northland also received positive feedback from municipalities through open letters stating their public support and detailing the various opportunities the service would provide to them. Every community advocated for a sustainable return of passenger rail service. Details from the community engagements can be found in *Appendix A*.

Summary

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

Table 5: 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, safety risks, and reduced travel time reliability.
	Transport Service Provision	Inter-community bus service is provided between northern communities and the GGH. Buses operate in mixed traffic and travel times are affected by disruptions in the road network.	Inter-community bus travel time reliability will continue to be negatively affected, especially during peak travel periods in the summer, and during inclement weather in the winter.

Driver	How does this Driver influence the problem/opportunity?	What is the impact of not addressing the problem/opportunity?
Transport Infrastructure and Technology	<p>Most travel, including transit, uses the existing highway infrastructure. There are existing rail corridors connecting Toronto, Timmins and Cochrane that are primarily used for freight rail traffic. There is an opportunity to leverage existing infrastructure to operate passenger rail service.</p>	<p>The highway will remain the only practical transportation link for passengers, while the existing rail corridor will continue to be used primarily for freight. Residents will have limited, if any, options for alternate travel arrangements if there are disruptions on the highways, such as congestion or closures due to collisions, construction, or inclement weather.</p>
Government Policy and Planning	<p>The 2019 Ontario Budget identified a government priority to improve transportation in Northern Ontario, including exploring options to reinstate passenger rail in the north. The 2020 draft <i>Northern Ontario Transportation Plan</i> includes more than 60 actions that will get more people moving, improve travel options for people in rural and remote communities, and support economic growth in the North.</p>	<p>Alternative options to improve northern transportation would need to be pursued, such as the construction of new highways or widening of existing highways. This may not be the most suitable transportation solution given the medical needs of some travellers and aging populations.</p>
External Demographics	<p>Increase in the proportion of residents over 65 years old, especially those over 80 years old. As the population ages, residents may be less willing or able to drive to access services, especially for long distance trips to the GGH.</p>	<p>Some residents are unhappy with the existing travel alternatives (personal vehicle, bus, or airplane) and will continue to spend time and resources trying to arrange travel with the currently limited transportation options, possibly foregoing opportunities that would have otherwise been available with more transportation options.</p>
Economic Activity	<p>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.</p>	<p>Inadequate transportation connections between Northern Ontario and the GGH limit the potential for economic growth in the region.</p>
Partner and stakeholder Input	<p>Organizations representing residents and business interests have expressed support for improved transportation in Northern Ontario.</p>	<p>The travel demands of residents and the business communities would not be met.</p>

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 population (including urban indigenous populations) will have improved access to Northern Ontario, including tourism and recreational services.

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 Innovation Initiatives Ontario North (IION), a Regional Innovation Centre in North Bay. 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 6 summarizes key items from plan and policy documents that align with the expansion of rail services to Northern Ontario.

Table 6: Summary of Alignment with Broader Policy and Plans

Stakeholder	Organization strategy, policy, or plan	Link to Problem/Opportunity	Relationship Type(s)
Government of Ontario	2021 Ontario Budget	The 2021 budget has committed investments for the Northeastern Passenger Rail, including \$5M for feasibility work. This service is identified as a strategy towards improving connections to northern Ontario.	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. The plan identified challenges in the passenger transportation options in Northern Ontario, and the opportunity for improvements. The plan specifically supports the completion of an IBC for passenger rail service in northeastern 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. 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 Northeastern 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 passenger 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 and aging 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. In the IBC, options varied in both the proposed northern terminus of the service, as well as the level of service offered. Option 6 from the IBC was selected as the starting point for analysis in this UIBC. This option included one trip in each direction during peak season, and reduced service from 7 days to 4 days during the off-peak season. Of the three terminal variants, two were retained. The option terminating in North Bay was removed, leaving two options that extend to either Timmins or Cochrane. Another terminal variant was added: a service that terminates in Timmins but also provides a connection between Timmins and Cochrane. This connection from Timmins to Cochrane also allows existing train facilities in Cochrane to be leveraged, resulting in capital cost savings compared to Option 1 where the train terminates in Timmins (Porcupine) and new facilities are required to be constructed. It also provides a direct rail service for both regions. These options were then further refined and optimized in the production of the UIBC. 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 would 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 an extension of peak period, peak direction service to the future Bloomington GO station in northeastern Richmond Hill as part of GO Expansion.

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 the northeastern passenger rail service. All options terminate in Toronto in the south. In the north, Option 1 terminates in Timmins (Porcupine), Option 2 terminates in Timmins (Porcupine) but continues to provide an additional rail connection to Cochrane, and Option 3 terminates in Cochrane with no stop in Timmins. These three options are shown in the figures below.

Figure 4: Northeastern Passenger Rail Service Option One

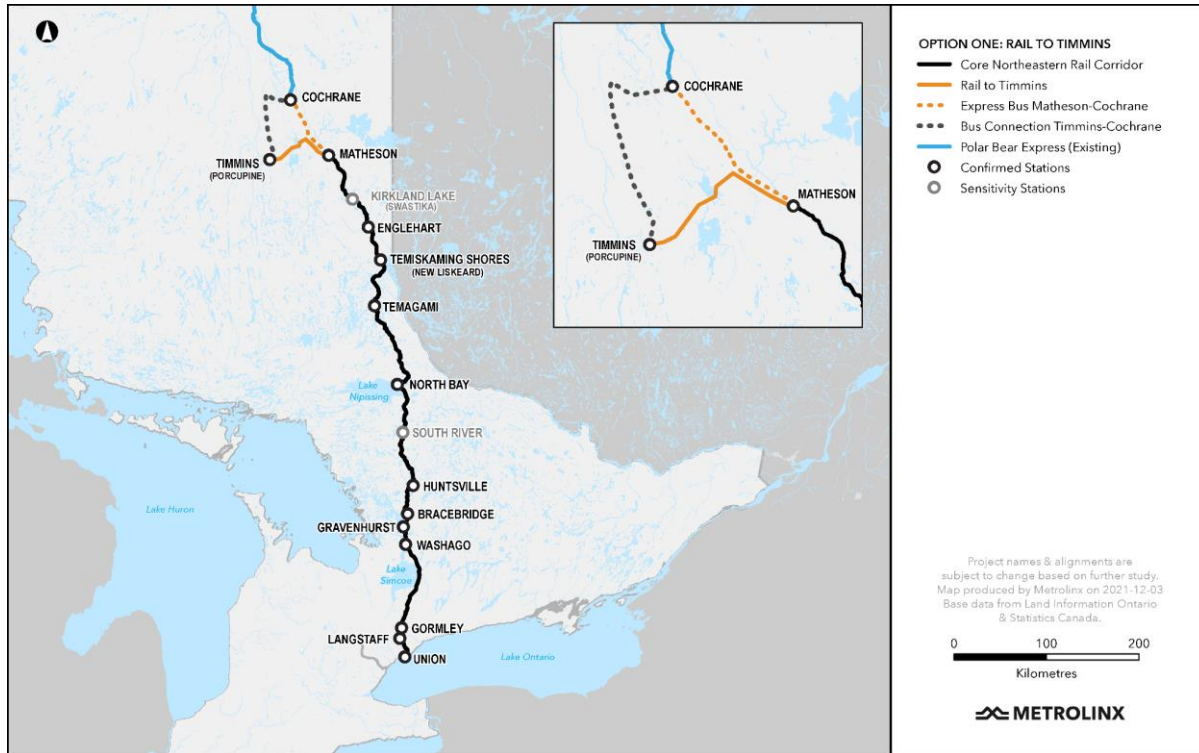


Figure 5: Northeastern Passenger Rail Service Option Two

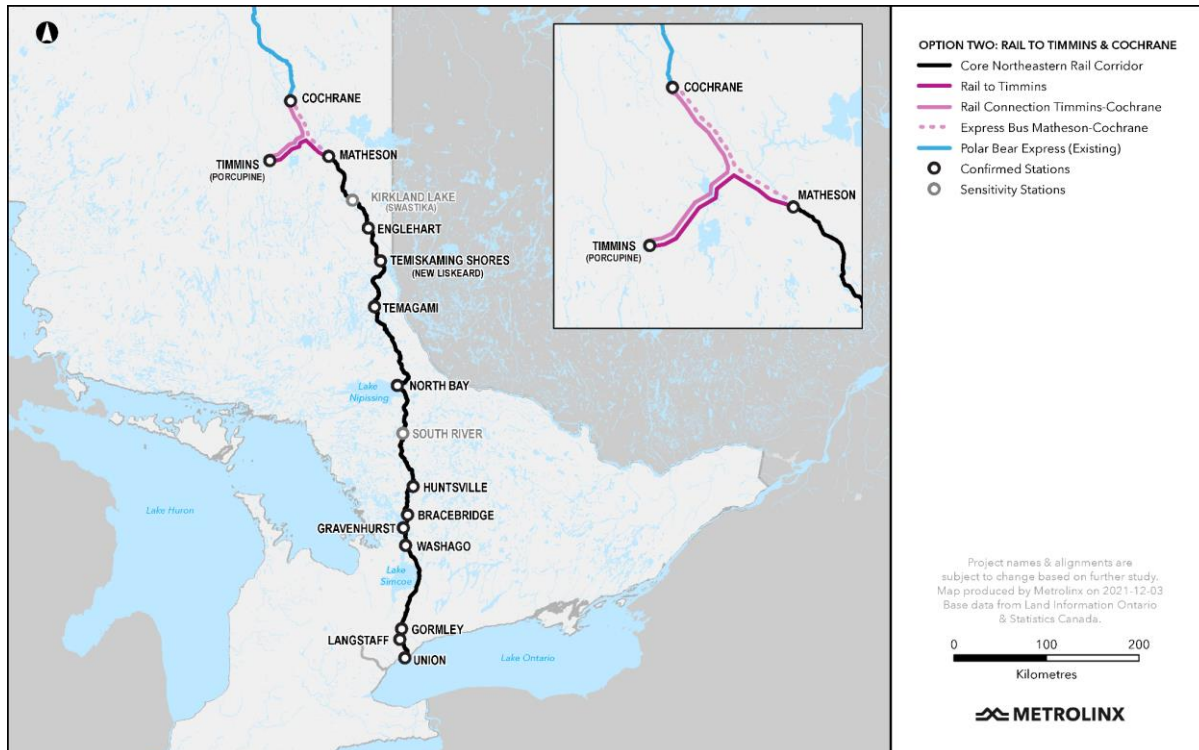
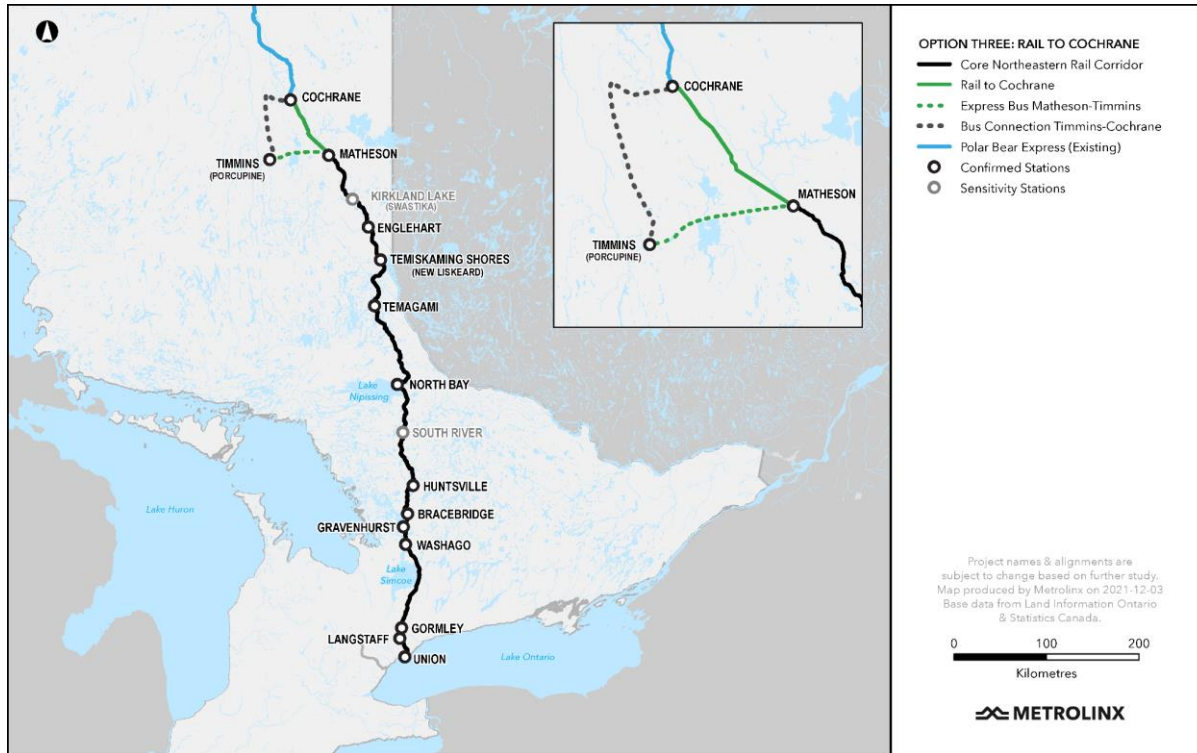


Figure 6: Northeastern Passenger Rail Service Option Three



In Options 1 and 3, a bus service would be provided between Timmins and Cochrane to ensure service connections to the Polar Bear Express are maintained and that both communities are connected regardless of where the rail service terminates. Alternatively, this bus service would be reduced and replaced by rail connection in Option 2. It is assumed that the schedules of the bus or rail service and the Polar Bear Express will be coordinated to minimize wait times, resulting in short transfer times.

In addition, Options 1 and 2 in the UIBC now include an express bus connection from Matheson to Cochrane to allow for a shorter travel time for customers who wish to reach Cochrane without travelling via Timmins. This will result in a similar travel time from Toronto to both Timmins and Cochrane regardless of the option.

Fleet Procurement Options

To deliver this service, three train sets are required with one locomotive and three passenger coaches each, or one locomotive, two passenger coaches, and a control car with passenger seating. If a control car with bi-directional travel is not included, a second locomotive for each trainset is recommended to enable bi-directional travel.

Therefore, two fleet options were studied:

A. New Fleet

A new fleet would be purchased for this service. The representative new fleet option is based on current models of regional passenger rolling stock, with costs based on recent procurements. For costing, each trainset is assumed to have one locomotive and three passenger cars.

B. Refurbished Fleet

Trains from an existing service or trains that are out of service would be purchased and refurbished. Based on a market evaluation of trains available, a set of trains were selected as a representative refurbishment option that meets the requirements of this service. For costing, each trainset is assumed to have two locomotives for bi-directional travel and three passenger cars.

The NE Rail IBC noted that refurbished GO bi-level trainsets could be used for the NE Rail Passenger Rail service. Further analysis during the UIBC evaluated the potential of a wider-range of trainsets that could be used for the service, though the potential for use of GO bi-level trainsets remains a viable option, to be evaluated along with other potential refurbished fleet options.

Sensitivity Testing: Stations & Land Use Sensitivity Scenarios

This UIBC considers two sensitivity scenarios, which test different stations and land use concepts. The sensitivity tests are applied to Option 2A only, as summarized below.

Table 7: Sensitivity Analysis

Option	Option Description	Sensitivity
2A	Terminate in Timmins with connecting service to Cochrane using a new fleet	i Sensitivity stations removed, resulting in no new stations from the IBC
		ii Base Option 2A
		iii Land use uplift applied to the base option

The stations to be served by the Northeastern Passenger Rail are shown in the three maps above and listed below in Table 8 with demographic details and their inclusion in options and sensitivity scenarios. In total, 16 stations are considered along the corridor from Union Station to Timmins (Porcupine) and Cochrane. Option 1 includes Timmins (Porcupine) station, Option 3 includes Cochrane station, and Option 2 includes both terminal stations. South River and Kirkland Lake (Swastika) stations are considered sensitivity stations in this UIBC and are excluded from the station sensitivity test. These two stations were not included in the IBC options. In addition, a land use sensitivity test was also performed for a higher population growth scenario (adding 1% incremental annual population growth, included based on community engagement feedback that COVID-19 has accelerated growth in rural and remote communities). More details about the land use sensitivity tests are included in the following section.

Table 8: Service Station Stops

Station Name	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 the Canadian rail service
Gravenhurst	Gravenhurst	12,311	
Bracebridge	Bracebridge	16,010	Small population centres within Ontario's cottage country.
Huntsville	Huntsville	19,816	
South River *	South River	1,114	The desire for connections into Algonquin Park were emphasized during community engagement with South River
North Bay	North Bay	51,553	Connections to other parts of Northern Ontario via the Ontario Northland bus network and private carriers
Temagami	Temagami	802	
Temiskaming Shores	Temiskaming Shores	9,920	
Englehart	Englehart	1,479	
Kirkland Lake (Swastika) *	Kirkland Lake	7,981	
Matheson	Black River-Matheson	2,438	
Timmins (Porcupine) **	Timmins	41,788	Connections to other parts of Northern Ontario via the Ontario Northland bus network
Cochrane ***	Cochrane	5,321	Connections to the Polar Bear Express service to Moosonee

* Excluded in the station sensitivity test

** Only included for Options 1 & 2

*** Only included for Options 2 & 3

Land Use Sensitivity

Land use in terms of population forecasts form an input in the ridership forecasting. In the IBC and in the base scenarios of all options in this UIBC, the population growth was assumed to follow the projections provided by the Ministry of Finance. To investigate the effects of population growth that is higher than projected by the Ministry of Finance, sensitivity tests involving uplifted population growths were conducted for each option. The assumed population growth by Census Sub-Division for the base scenario and for the uplifted land use sensitivity scenario are shown in the table below.

Table 9: Land Use Sensitivity Tests Population Growth

Census Division	2016 - 2041 Population Growth	
	Ministry of Finance Projection	Uplifted Projection for Land Use Sensitivity
Toronto	1.45%	1.45%
Muskoka	0.95%	1.95%
Parry Sound	0.27%	1.27%
Nipissing	0.23%	1.23%
Timiskaming	-0.44%	0.56%
Cochrane	-0.40%	0.60%
Simcoe	1.51%	1.51%
Sudbury	0.14%	1.14%
Ottawa	1.44%	1.44%
GTA	1.65%	1.65%

Figure 7 shows the proposed routing and stops for all contemplated options. The options are summarized in the table below the map **Error! Reference source not found.**

Figure 7: Northeastern Passenger Rail Service Options

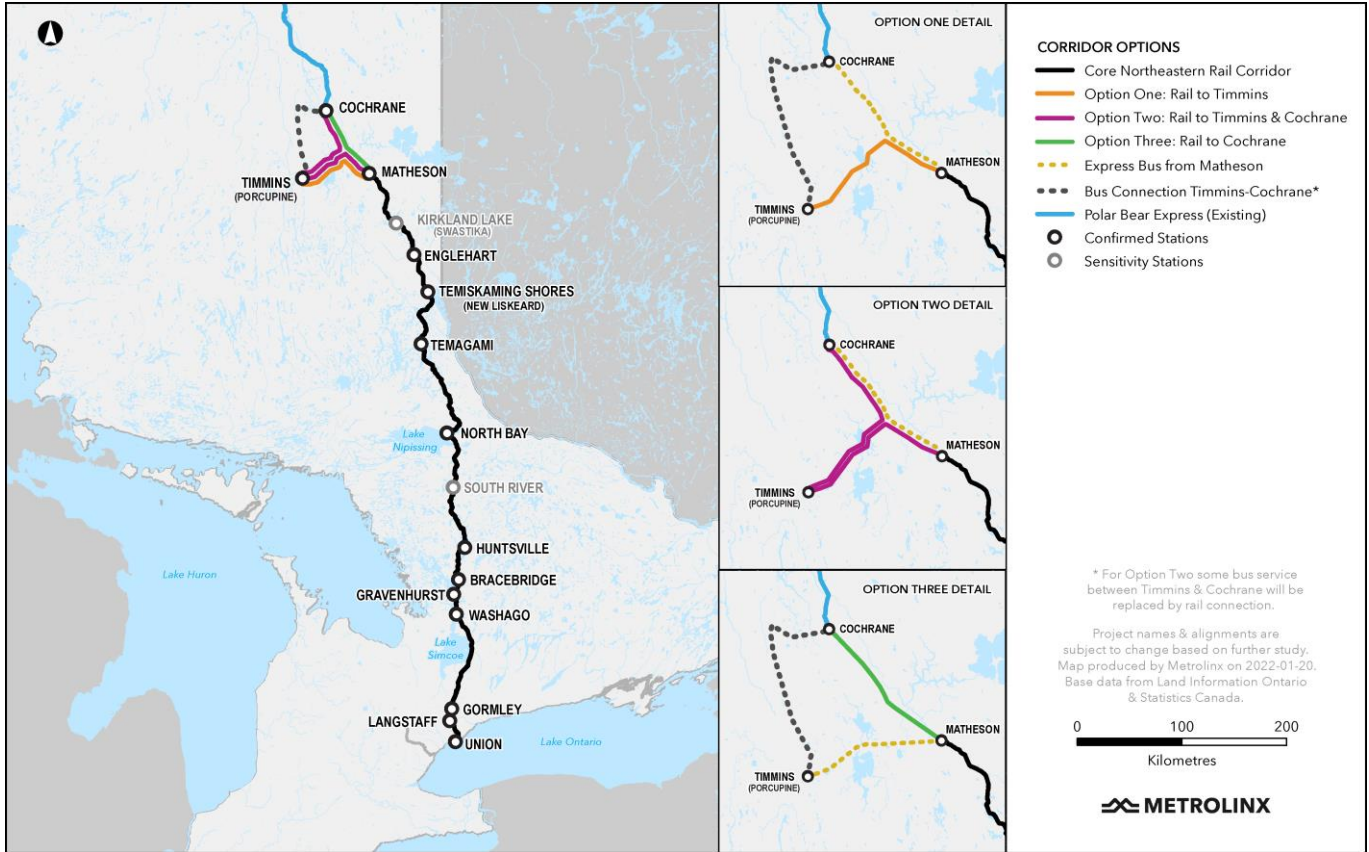


Table 10: Business Case Options Summary

Route	Route Description	Fleet
1	Terminate in Timmins Service travels between Toronto and Timmins through North Bay	A New Fleet B Refurbished Fleet
2	Terminate in Timmins with connecting service to Cochrane Service travels between Toronto and Timmins through North Bay, with a rail connection between Timmins and Cochrane	A New Fleet B Refurbished Fleet
3	Terminate in Cochrane Service travels between Toronto and Cochrane through North Bay	A New Fleet B Refurbished Fleet

Service Level

For all options considered, the service provides one trip per direction per day, travelling overnight in the northern section to allow passengers to maximize daytime at the destination. The service for each option is summarized below.

Option 1: Toronto to Timmins (Porcupine)

- Southbound:
 - The train departs Timmins (Porcupine) around midnight.
 - The train reaches North Bay in the early morning.
 - The train terminates in Toronto Union by late morning.
- Northbound:
 - The train departs Toronto Union in the early evening.
 - The train reaches North Bay around midnight.
 - The train terminates in Timmins (Porcupine) early next morning.

Option 2: Toronto to Timmins (Porcupine) with a connection to Cochrane

- Southbound:
 - The train provides a late-night connection from Cochrane to Timmins (Porcupine)
 - The train departs Timmins (Porcupine) around midnight.
 - The train reaches North Bay in the early morning.
 - The train terminates in Toronto Union by late morning.
- Northbound:
 - The train departs Toronto Union in the early evening.
 - The train reaches North Bay around midnight.
 - The train terminates in Timmins (Porcupine) early next morning.
 - The train provides a connection from Timmins (Porcupine) to Cochrane

Option 3: Toronto to Cochrane

- Southbound:
 - The train departs Cochrane around midnight.
 - The train reaches North Bay in the early morning.
 - The train terminates in Toronto Union by late morning.
- Northbound:
 - The train departs Toronto Union in the early evening.
 - The train reaches North Bay around midnight.
 - The train terminates in Cochrane early next morning.

For the southbound service, the train will depart from Timmins (Porcupine) or Cochrane around midnight to provide an overnight service reaching North Bay in the early morning and Toronto in the late morning. The train takes several hours to travel between the northern terminus and North Bay, and between North Bay and Toronto. The proposed schedules make an effort to bring the train into North Bay at a later time such that passengers would be boarding in the early morning rather than the middle of the night, but still arrive in Toronto relatively early in the day to allow passengers the remainder of the day to conduct their activities in the city.

The northbound service departs Toronto Union Station in the evening, reaching North Bay around midnight and Timmins (Porcupine) or Cochrane early the following morning. The timing of the schedule keeps the most active stations, Toronto Union, North Bay, and Timmins (Porcupine) or Cochrane, towards more desirable boarding times, while still maintaining that the terminus is reached early in the day. An overnight service that arrives in Toronto early in the day and departs in the evening also reduces the need for accommodations for visitors to Toronto.

The service is assumed to operate seven days a week during the peak season of July to December and 4 days a week during the off-peak season of January to June. The proposed schedule is shown in Table 11.

The current Ontario Northland ticketing platform will be used to integrate passenger rail and bus passengers for a seamless customer experience. Tickets will be available for electronic purchase before and after boarding. In addition, paper tickets will be available for on-boarding purchase.

Table 11: Proposed Service Schedule⁷

Station	Southbound		Northbound		Incremental Travel Times
Timmins (Porcupine) or Cochrane	0:15	↓	5:10	↑	
Matheson	1:10	↓	4:15	↑	0:55
Kirkland Lake (Swastika)	1:55	↓	3:30	↑	0:45
Englehart – 10 min break	2:35	↓	2:50	↑	0:40
	2:45	↓	2:40	↑	0:10
Temiskaming Shores (New Liskeard)	3:15	↓	2:10	↑	0:30
Temagami	4:15	↓	1:10	↑	1:00
North Bay – 10 min break	5:45	↓	23:40	↑	1:30
	5:55	↓	23:30	↑	0:10
South River	7:00	↓	22:25	↑	1:05
Huntsville	7:50	↓	21:35	↑	0:50
Bracebridge	8:25	↓	21:00	↑	0:35
Gravenhurst	8:40	↓	20:45	↑	0:15
Washago	9:05	↓	20:20	↑	0:25
Gormley	10:05	↓	19:20	↑	1:00
Langstaff	10:20	↓	19:05	↑	0:15
Toronto Union	10:55	↓	18:30	↑	0:35

⁷ The proposed schedule may differ on Sundays to provide more convenient times for travelling and to better align with travel patterns on Sundays. A potential alternative Sunday schedule is subject to future study.

Parallel Bus Service

Ontario Northland operates bus services along the Highway 11 corridor. Since the train travels through northern Ontario overnight, travel between northern communities may be poorly serviced. Bus services, especially those running during the day, would play an important role. This business case considered two possible effects on rail ridership due to bus service planning, which are reflected in the range reported in the ridership forecast results:

- Conservative Rail Ridership, where bus service will continue to operate on the corridor and provide an alternative inter-community travel mode (outside of the train schedule), resulting in a lower shift of passengers from bus to rail service;
- Optimistic Rail Ridership, where bus services will be reduced as rail service is implemented, resulting in a higher shift of passengers from bus to rail service.

In Option 1 where the train terminates in Timmins (Porcupine), bus service would continue to serve stops north of Matheson, where passengers could transfer from the train at Matheson and connect to the bus to travel to Iroquois Falls, Cochrane and beyond.

In Option 2, both Timmins (Porcupine) and Cochrane are served by the train. However, communities between Matheson and Cochrane, and northwest of Cochrane on the Highway 11 would still be served by bus.

In Option 3, where the train terminates in Cochrane without stopping in Timmins (Porcupine), Timmins would be served by bus. Stops between Matheson and Cochrane and stops beyond Cochrane would also be served by bus.

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.

4



Strategic Case



Introduction

The Strategic Case summarizes the performance of the options against the identified strategic objectives to measure the extent to which 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. The ridership forecast is based on 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 forecasts, with additional factors applied to account for changes in the stopping pattern, travel time, schedule, fare, amenities, and mode shifts from other modes, such as cars and buses, based on the availability and desirability of the modes. The estimates include a conservative scenario which assumes lower shifts from other transportation modes and limited changes to parallel bus service along the corridor; and an optimistic scenario which assumes higher shifts from other transportation modes and reduction of parallel bus service. The range of ridership for each option under the conservative and optimistic scenarios is presented in Table 12.

Table 12: Projected Ridership Along the Full Corridor⁸

Option	Route	Fleet	Estimated 2041 Rail Ridership	Estimated 2041 Bus Ridership
	BAU	No Rail	0	139,700
1A	Terminate in Timmins	New	39,170 to 58,360	125,200 to 139,710
1B		Refurbished	39,170 to 58,360	125,200 to 139,710
2A	Terminate in Timmins with connecting service to Cochrane	New	39,220 to 60,110	136,110 to 152,240
2B		Refurbished	39,220 to 60,110	136,110 to 152,240
3A	Terminate in Cochrane	New	37,790 to 55,090	125,190 to 139,710
3B		Refurbished	37,790 to 55,090	125,190 to 139,710

⁸ Bus and rail ridership values shown here are for the entire corridor considering all origin-destination pairs along the corridor. 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.

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

** This table reflects a full year of ridership equal to the ridership forecast for 7-days-a-week, all-year service. The seasonal service reduction of 4-days-a-week for half the year, applicable to UIBC options, would occur during periods of low demand and is not expected to change the ridership significantly. Ridership figures will be refined for the reduced seasonal service.*

Based on a range of 37,790 to 60,110 annual boardings from all options, and a total of 574 annual trips (287 per direction, 4 days per week for 6 months and 7 days per week for 6 months), there are an average of 66 to 105 boardings per trip if there were to be an equal distribution. However, it is expected the daily passengers per trip will vary significantly depending on schedule, day of week, season, etc. In fact, based on historical ticket sales from when the Northlander previously operated, there were trips that carried over 200 passengers particularly in the North Bay – Toronto corridor and during holiday periods such as Thanksgiving, Christmas, and summer holidays. Therefore, for the purposes of fleet sizing it was determined that each trainset should have a minimum capacity of approximately 150 seats.

Travel Time, Reliability, & Network Resilience

A conceptual rail timetable was developed to determine approximate travel times of the proposed rail service, as shown Table 11. The UIBC assumes estimated running times observed in 2012 in the previous service, recently verified through simulations and test train operations for the segment from North Bay to Timmins (Porcupine). The station-to-station travel times are assumed to be equivalent between all options.

Compared to current bus service, the Northeastern Passenger Rail Service will offer travel time savings for most long-distance origin-destination pairs, especially between Timmins and Toronto in Options 1 and 2 or Cochrane and Toronto in Option 3, assuming no major delays. Compared to personal vehicle travel times, the Northeastern Passenger Rail Service has longer travel times for all origin-destination pairs. However, when accounting for congestion and seasonal effects, rail travel times are comparable, and more reliable. Furthermore, when compared to driving, the time spent as a rail passenger can be more productive or comfortable, giving rail travel more value than car travel for the same duration of travel. Table 13 presents the travel times to Toronto from selected destinations on the Northeastern Rail Corridor, via the available travel modes. These times include en-route transfers, but do not include access travel time, transfers, and other processing times (e.g., security at airports). A summary of comparisons between modes of travel are included in the tables below:

Table 13: Terminal to Terminal In-Vehicle Travel Time Comparisons

Travel Market	Auto		Bus		Rail*		Air	
	Route	Travel Time	Route	Travel Time	Route	Travel Time	Route	Travel Time
Muskoka (Gravenhurst) - Toronto	Via Barrie	1h 40m to 2h 20m	Ontario Northland bus	2h 50m	Northeastern Rail Corridor	2h 15m	Muskoka Airport to Billy Bishop Airport	35m (seasonal)
North Bay - Toronto	Via Barrie	3h 20m to 4h 10m	Ontario Northland Bus	5h 05min express, 6h all-stop	Northeastern Rail Corridor	5h	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	Northeastern Rail Corridor	10h 40m	Victor M. Power Airport to Billy Bishop Airport	1h 21m
							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	13h 05m	Northeastern Rail Corridor	10h 40m direct, 11h 40m via Timmins	N/A	

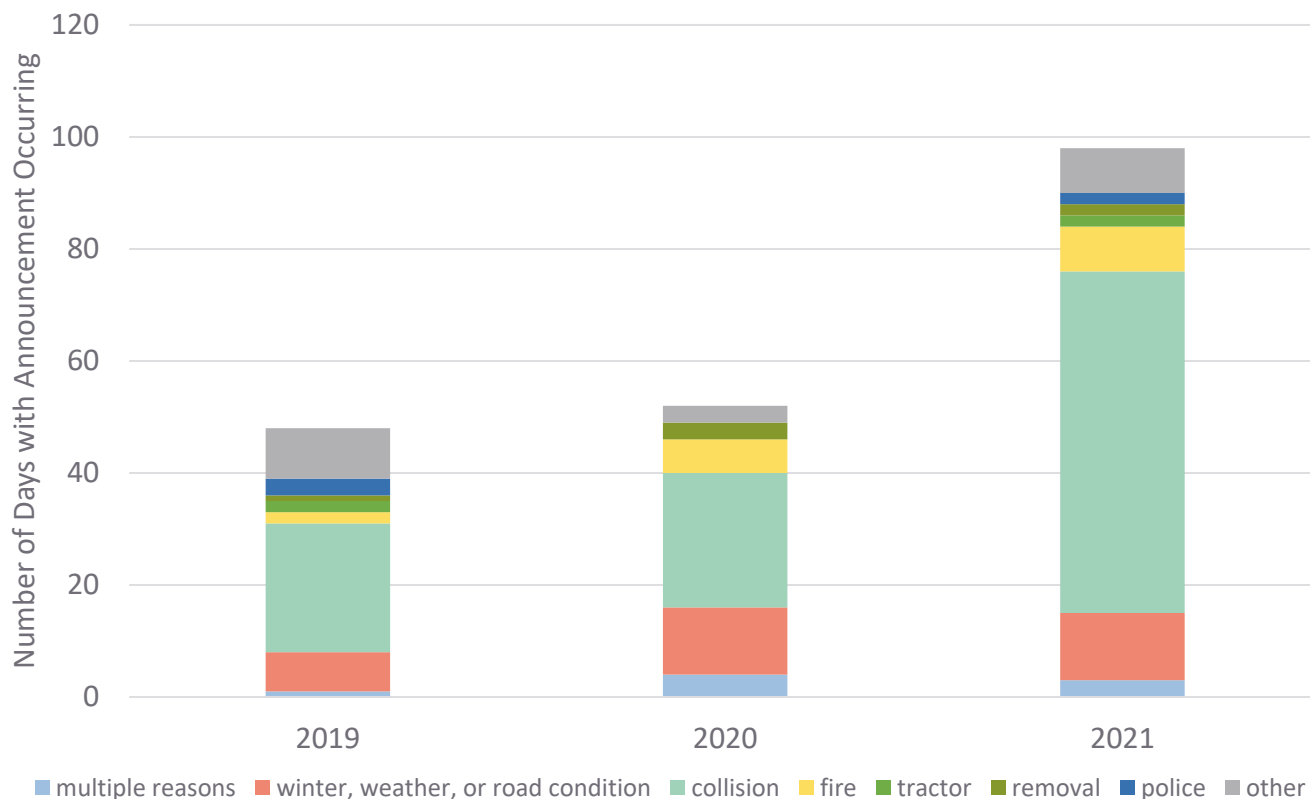
*Note: The travel times presented above are based on the current schedule, these results are preliminary and are under review. Estimates of travel times will be re-evaluated in the next stage of detailed planning and design work.

Table 14: Travel Time Comparisons between Modes

Travel Market	How other modes compare with rail in terms of travel times		
	Auto	Bus	Air
Muskoka (Gravenhurst) - Toronto	Bus and rail are slower than car but could be competitive during peak periods.	Rail will be an improvement on the existing bus travel times, with rail at under three hours.	Air is faster than bus and rail, but capacity is limited, cost is high, and requires addition extensive access and wait times due to airport locations and boarding procedures.
North Bay - Toronto	Rail is competitive compared to car.	Rail is comparable to the express bus, but faster than the all-stop bus.	Similar to above; air service is fastest but most expensive and requires additional time.
Timmins - Toronto	Rail is 3-4 hours slower than car; however, most of the time is overnight, allowing passengers to travel during otherwise unproductive time. Overnight travel may be required regardless of mode due to long distances.	Rail is more than an hour faster than bus.	Air service is much faster and is still competitive with additional access and wait times but is more costly.
Cochrane - Toronto	Rail is slower than car.	Rail is faster than bus.	Air is not available.

While travel times are listed in the table above, it should be noted that the value of the rail service cannot be measured by the travel time alone. Compared to driving, rail service performance is more reliable as it is not affected by road traffic and less affected by weather conditions. Over the past few years, Ontario 511 made 50-100 announcements per year regarding closures on Highway 11. Highway 11 extends beyond the proposed rail service, but many of the closures announced occurred on highway segments where the Northeastern Passenger Rail would have provided an alternative route. The most frequently noted reason for closures were collisions and weather-related road conditions.

Table 15: Closure Announcements for Highway 11 by Reasons Mentioned



Furthermore, compared to travelling on the road, rail travel is more safe, comfortable, and more able to provide conditions for on-board activities such as rest, entertainment, or work. Travelling in the comfort of an amenities-provided train allows passengers to make better use of their time than if they were driving. Driving also induces fatigue, adding risk to drivers and car passengers. In general, rail service provides a safer mode of travel than driving.

Compared to air travel, rail service provides convenience and does not require commutes to remote airport locations or lengthy security procedures and check-in times. These factors result in value delivered by rail service beyond in-vehicle travel time savings.

All options provide enhanced travel time reliability relative to driving or bus service. Highway closures remain significant north of North Bay, and this causes ongoing uncertainty for auto travel. 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 because 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. Additional siding has been proposed at Zephyr to resolve train conflicts.

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 a perceived improved ride quality and experience relative to bus service. This is partly due to on-board amenities, smoother vehicle movement, and not needing to exit the highway to stop at every community along the route.

The UIBC options provide a basic service with several customer amenities. On-board amenities include wireless connectivity (Wi-Fi), USB receptacles, luggage racks, tray tables, washrooms, heating, and air conditioning, as are standard on Ontario Northland buses (intercity coaches). Food and drinks sales will be provided to improve the ease of travel and experience for passengers. Serving the passenger rail with a new fleet is expected to provide amenities for a state-of-the-art passenger experience, while a refurbished fleet is expected to be re-engineered and include similar amenities.

The current Ontario Northland ticketing platform will be used to integrate passenger rail and bus passengers for a seamless customer experience. Tickets will be available for electronic purchase before and after boarding. In addition, paper tickets will be available for on-board purchase.

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 aging population in Northern Ontario, especially for the communities north of North Bay. This access to service 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, but it is available for passengers in times when they prefer it.

Between North Bay and Toronto, the communities of Washago, Gravenhurst, Bracebridge, Huntsville, South River, and North Bay will have access to passenger rail transportation. The 2016 counts of the census subdivisions reported 113,000 residents in these communities. From North Bay to Timmins, passenger rail service will be provided to the communities of Temagami, Temiskaming Shores, Englehart, Kirkland Lake (Swastika), Matheson and Timmins. This adds 58,000 residents to the catchment area of the service, for a total of 171,000 northern residents to be served by a train to Timmins. These options serve four of the nine districts in Northern Ontario. A connection between Timmins and Cochrane would serve an additional 5,300 residents with rail travel, for a total of 176,000 residents. A service to Cochrane without stopping in Timmins would serve a total of 134,000 residents in northern communities.

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 people 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 are 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 or a plane.

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.

Alternatively, the service will also enable residents of the GGH, including urban indigenous populations, to visit areas in the north. This is particularly important as an increasing number of urban dwellers are choosing to live car free lifestyles but may still wish to travel to the north.

Passenger rail will provide a reliable means for these individuals to travel between Northern Ontario and the GGH. In the new fleet options, passenger railcars are proposed to have integrated wheelchair lifts built into the coach vestibule, which allows for passengers in wheelchairs to board from any stop. New fleets are designed to meet or exceed all accessibility requirements. In the refurbished fleet options, coaches are not expected to accommodate accessible boarding and therefore may require wheelchair ramps to be constructed on station platforms. Refurbished fleets would also require re-engineering of interiors to improve boarding, seating, and restrooms.

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 volume of personal vehicles on the highways and lowers the risk of accidents on highways. In particular, the Northeastern Passenger Rail Service will reduce the number of auto trips along the single lane highway between North Bay and Timmins or Cochrane, through the snowbelt regions of Ontario, as well as the number of long-distance trips between Northern Ontario and the GGH. By reducing long-distance trips, the rail service also reduces night-time driving, which reduces risks of collisions due to fatigue and stress for travellers.

Economic & 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 and continuing to Timmins would also connect the fifth largest municipality.

While the proposed passenger 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. The

Innovation Initiatives Ontario North (IIION), a Regional Innovation Centre in North Bay, would benefit greatly from this connection to the GGH.

Supporting Northern Tourism

The introduction of passenger rail will provide another alternative travel mode for tourists between the GGH and Northern Ontario. 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. This service would not only benefit northern residents, but also residents of the GGH who would gain an additional option for travelling to northern destinations.

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 can 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.

Through municipal and Indigenous community engagement sessions, it was noted in almost all sessions, that winter tourism is increasing, and more communities are adapting regional tourism to support year-round activities.

Nipissing First Nation was in full support to get the return of passenger rail to their community, as it provides essential transportation for their community members, to travel to other First Nation communities, particularly those First Nation communities situated north of their community, and to the Polar Bear Express train between Cochrane and Moosonee.

Nipissing First Nation expressed how important passenger rail travel is, in particular for the positive environmental impact by reducing individual passenger vehicles on highways. Members of the community also expressed how the passenger train service would allow better access to medical appointments outside of their community.

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 and the distance between Timmins and Toronto is approximately 700km. Auto carbon emissions are reduced when drivers are diverted from cars to trains. When the reduction in auto emissions exceeds the emissions of the train service, there is a net reduction in overall transportation emissions. Between the new fleet and refurbished fleet options, the new fleet options result in lower emissions. This UIBC assumes that refurbished locomotives would most likely be Tier 3 diesel units, while the new fleet would use Tier 4 locomotives. This difference is estimated to result in a 35% reduction of GHG emissions for new fleet.

Similar to the vehicle accident risk reduction, the emissions reduction is estimated through the reduction of vehicle kilometres travelled (VKT) for auto trips, and through direct forecasting of train and bus operations. Table 16 shows the estimated VKT and emissions reductions as a result of each option.

Table 16: Estimated VKT and Emissions Reduction

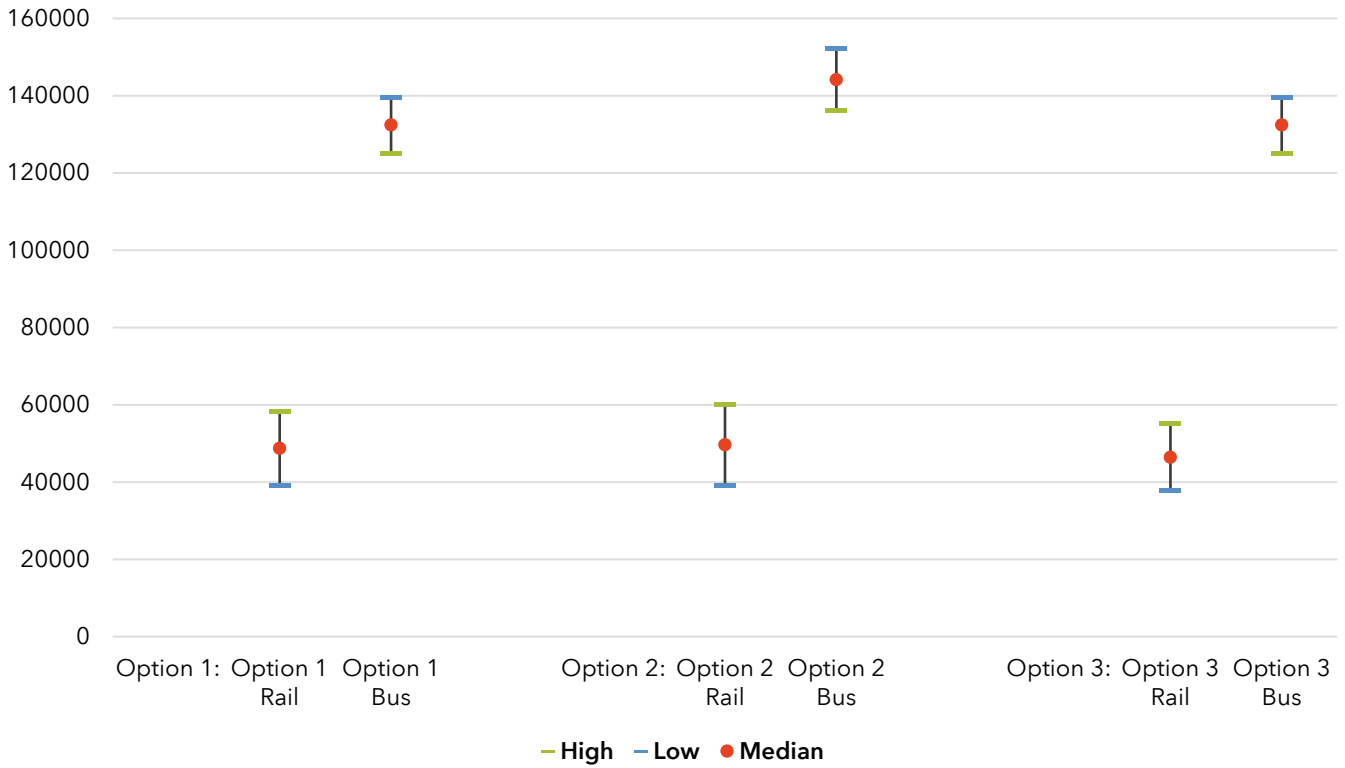
Option	Route	Fleet	Annual Auto GHG Emissions (2041) (Tonnes)			
			Auto (Reduction)	Buses (Reduction)	Trains (Production)	Total (Reduction)
1A	Terminate in Timmins	New	3800 to 4390	0 to 426	2730	1490 to 2080
1B		Refurbished	3800 to 4390	0 to 426	4200	20 to 610
2A	Terminate in Timmins with connecting service to Cochrane	New	3800 to 4400	0 to 429	3030	1200 to 1800
2B		Refurbished	3800 to 4400	0 to 429	4660	-430 to 170
3A	Terminate in Cochrane	New	3590 to 3890	0 to 426	2730	1280 to 1580
3B		Refurbished	3590 to 3890	0 to 426	4200	-190 to 110

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.

Option 2 with the added rail connection between Timmins (Porcupine) and Cochrane generates more ridership than terminating in Timmins (Porcupine) in Option 1, therefore resulting in higher reductions of VKT and GHG's. The combined bus and rail ridership are approximately 12,600 more in Option 2 than Option 1. Option 3, the Cochrane terminal route, generates the fewest estimated ridership, with 1400-3300 fewer total ridership than Option 1. The different fleet options were not assumed to change ridership significantly.

Figure 8: 2041 Ridership Estimates for Rail and Bus



Ridership, VKT reductions, and GHG reductions are best for Option 2. The higher population growth sensitivity also generates higher ridership and incrementally greater VKT and GHG reductions.

The table below summarizes the performance of each option against the strategic goals and objectives.

Table 17: Strategic Case Summary for Base Scenarios

Strategic Outcome	Business as Usual (BAU)	Option 1 Terminate in Timmins	Option 2 Terminate in Timmins with connection to Cochrane	Option 3 Terminate in Cochrane
Strategic Goal 1: Transportation				
Ridership	No rail ridership	39,170 to 58,360 annual rail riders by 2041	39,220 to 60,110 annual rail riders by 2041	37,790 to 55,090 annual rail riders by 2041
Travel Time	No changes to current bus and car travel times.	Improved inter-community travel time to Muskoka and equivalent inter-community travel times to North Bay and Timmins.		
		Slightly improved travel times to Timmins.	Slightly improved travel times to Timmins and improved inter-community travel time to Cochrane.	Improved inter-community travel time to Cochrane.
Travel Reliability and Network Resilience	Buses and cars travel on the same highways and are subject to traffic and weather impacts.	Provides redundancy in transportation network in case of highway closure. Inter-community passenger rail service operates within a separate corridor from traffic; Additional passing track provides some mitigation for potential rail operational delays. Less prone to weather delays than road transportation.		
Customer Comfort and Amenities	Passengers have bus amenities such as washrooms and Wi-Fi.	Passenger amenities will be improved with rail service compared to bus service or driving. <ul style="list-style-type: none"> • On-board refreshments would be available for purchase. • Seating provides more space for dining, working, and other activities. • Additional space would be available for baggage. • A smoother ride. 		
Strategic Goal 2: Quality of Life				
Access to inter-community passenger transportation	No northeastern resident along the rail corridor has immediate access to passenger rail.	171K residents in northern communities with access to passenger rail	176 K residents in northern communities with access to passenger rail	134,000 residents in northern communities with access to passenger rail
Equity	No passenger rail transportation is provided. Residents must use cars, buses, or air service.	Passenger rail transportation provides a more reliable and accessible mode. Benefits apply to northeastern residents.		
		Immediate access for Timmins residents.	Immediate access for Timmins and Cochrane residents.	Immediate access for Cochrane residents.
Improved safety	No safety improvements.	Provides a safer travel alternative for northern residents due to reduced driving at night-time and in adverse weather conditions, resulting in fewer accidents.		

Strategic Outcome	Business as Usual (BAU)	Option 1 Terminate in Timmins	Option 2 Terminate in Timmins with connection to Cochrane	Option 3 Terminate in Cochrane
Strategic Goal 3: Economic Development				
Connect communities	Communities have limited connectivity with few options for transportation.	Serves goal to get people moving and connect communities from <i>Connecting the North: A Draft Transportation Plan for Northern Ontario</i> . Provides more reliable transportation for growing populations.		
		Immediate access for Timmins residents.	Immediate access for Timmins and Cochrane residents.	Immediate access for Cochrane residents.
Support for northern tourism	Tourists rely predominantly on road transportation which is prone to congestion.	Provides additional capacity to accommodate peak tourism demand in all regions, especially to Ontario Tourism Region 12 (Algonquin Park, Almaguin Highlands, Muskoka and Parry Sound).		
Strategic Goal 4: Environmental Sustainability				
Reduced auto emissions	No changes to the growing trends of GHG emissions.	3,800 to 4,390 tonnes of GHG emissions from cars annually by 2041	3,800 to 4,400 tonnes of GHG emissions from cars annually by 2041	3,590 to 3,890 tonnes of GHG emissions from cars annually by 2041.

Sensitivity Tests

Option 2A was used as a base for station and land use sensitivity tests, generating the ridership below. Ridership decreases with the removal of the two sensitivity stations, South River and Kirkland Lake (Swastika). Removing the two sensitivity stations result in approximately 3,300 to 3,700 riders lost compared to the base scenario with all stations. With the land use uplift or population project increase, an additional ridership of approximately 11,200 to 12,800 can be expected.

Table 18: Sensitivity Test Strategic Case Summary

Option	Sensitivity	Estimated 2041 Rail Ridership	Estimated 2041 Bus Ridership
2A Terminate in Timmins with connecting service to Cochrane using a new fleet	i Sensitivity stations removed	36,100 to 55,900	137,000 to 152,200
	ii Base Option 2A	39,200 to 60,100	136,100 to 152,200
	iii Land use uplift on base option	49,700 to 75,900	132,100 to 152,200

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). The Economic Case assesses the expected benefits of this investment relative to its costs 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

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 passenger rail ridership data from the final years of the Northlander service and grows this base demand considering factors such as population growth, changes in scheduling and travel times, as well as other factors.

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 a 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 as noted in Table 19. The assumptions and parameters used within this Updated Initial Business Case are consistent with Metrolinx's Business Case Manual Volume 2: Guidance updated in May 2021.

Table 19: Economic Case Assumptions

Input	Impact Type
	All benefits/costs are expressed in real terms in 2021\$.
Analysis Approach	Appraisal begins in 2021. It includes 2 years of procurement, implementation, and 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 Growth Cap	30 years from base year of evaluation
Economic Benefits Social Discount Rate	3.5%
Real Cost Escalation	1%
Value of Time (VoT) (2021\$)	\$18.79/hour
VoT Growth Rate	0%
Auto operating cost savings (2021\$)	Marginal operating cost: \$0.10/km VKT
Decongestion benefit	0.0055 hours/km
Safety improvements (accident mitigation) (2021\$)	\$0.09/km, decreasing at an annual rate of 5.3%.
GHG value	\$0.01/km
Personal vehicle fuel consumption rate	12L /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 passenger 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 Service are 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 Service are listed below. A breakdown of the capital costs is provided in the Financial Case. 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 reductions 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 20: Economic Costs Summary (present value, 2021\$)

Option	Route	Fleet	Capital Cost	Operating and Maintenance Costs	Total Costs
1A	Terminate in Timmins	New	289.9M to 402.8M	249.2M to 283.3M	554.7M to 671.3M
1B		Refurbished	175.1M to 363.4M	249.2M to 283.3M	440.1M to 630.2M
2A	Terminate in Timmins with connecting service to Cochrane	New	277.9M to 383.3M	260.9M to 297.0M	552.7M to 666.2M
2B		Refurbished	162.9M to 343.0M	260.9M to 297.0M	438.3M to 625.0M
3A	Terminate in Cochrane	New	271.3M to 375.6M	256.0M to 273.4M	542.2M to 649.1M
3B		Refurbished	156.2M to 382.3M	256.0M to 284.7M	427.7M to 653.2M

* 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. This includes both travellers who will and will not make use of the proposed passenger rail service. The Northeastern Passenger Rail Service will 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 Service will 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 due to the increased passenger space of a modern train and the comforts of amenities. Travelling by nighttime train is also expected to bring about improvements to the perceived travel time relative to bus - this assumption has been accounted for in the ridership forecasts. Investing in the Northeastern Passenger Rail Service will 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 is expected to reduce the perceived generalized cost of inter-community travel from Timmins to Toronto by improving the travel experience and increasing safety and reliability. 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 between the generalized cost of travel for driving and the new generalized cost of travel on the proposed rail service. Generalized costs of travel accounts for travel times, direct costs, indirect costs, and perceived values of time spent in and out of vehicles.
- Auto Users who continue to drive - The Northeastern Passenger Rail Service will 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 in Table 21.

Table 21: User Impacts (present value, 2021\$)

Option	Route	Fleet	Transit Travel Time Benefits	Auto Congestion Reduction	Auto Operating Cost Reduction	Tax Adjustment
1A	Terminate in Timmins	New	12.8M to 66.3M	8.3M to 9.3M	33.4M to 38.6M	-21.2M to -30.4M
1B		Refurbished	12.8M to 66.3M	8.3M to 9.3M	33.4M to 38.6M	-21.2M to -30.4M
2A	Terminate in Timmins with connecting service to Cochrane	New	13.2M to 69.8M	8.3M to 9.3M	33.4M to 38.7M	-21.3M to -30.8M
2B		Refurbished	13.2M to 69.8M	8.3M to 9.3M	33.4M to 38.7M	-19.6M to -30.8M

3A	Terminate in Cochrane	New	13.7M to 61.5M	8.0M to 8.7M	31.5M to 34.2M	-20.2M to - 27.3M
3B		Refurbished	13.7M to 64.2M	8.0M to 8.7M	31.5M to 35.8M	-20.2M to - 27.3M

* Figures may not add to totals due to rounding.

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 transportation 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 effects of passenger rail minus the effects of the previously used mode. For each trip, the difference in the effects of using a more efficient mode are the benefits of providing that mode. These benefits are calculated based on the change in automobile VKT. The calculation of GHG emissions in this section also includes the additional emissions due to the operation of diesel locomotives for rail service and the savings due to bus service reductions. The emissions associated with using a new fleet is less than that associated with a refurbished fleet, since refurbished locomotives would most likely be Tier 3 diesel units, while the new fleet would use Tier 4 locomotives. This change is estimated to result in a 35% reduction of GHG emissions

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 22: External Impacts (present value, 2021\$)

Option	Route	Fleet	Collision Reduction	GHG Emissions Reduction
1A	Terminate in Timmins	New	11.3M to 13.1M	0.4M to 1.4M
1B		Refurbished	11.3M to 13.1M	-1.3M to -0.3M
2A	Terminate in Timmins with connecting service to Cochrane	New	11.4M to 13.1M	0.0M to 1.1M
2B		Refurbished	11.4M to 13.1M	-1.9M to -0.8M
3A	Terminate in Cochrane	New	10.7M to 11.6M	0.1M to 0.9M
3B		Refurbished	10.7M to 11.6M	-1.6M to -0.8M

* Figures may not add to totals due to rounding.

Economic Case Summary

The economic evaluation indicates that the Northeastern Passenger Rail Service would 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.

Compared to Option 1, where service terminates in Timmins (Porcupine), adding a connection to Cochrane will deliver more benefits and reduce capital costs. The additional benefits are due to the increased ridership from connecting Timmins (Porcupine) and Cochrane. Capital cost reductions are due to leveraging existing terminal facilities. To re-instate the service through Option 1, a new maintenance terminal facility needs to be constructed in Timmins (Porcupine). However, to implement Option 2, a maintenance facility that already exists in Cochrane can be used - only facility extensions are required. More details regarding the maintenance terminal facilities are explained in the Terminal Facilities section in the Financial Case. There are also marginally higher rail operating costs associated with the extension of service; however, these are also offset by the bus operating cost savings related to bus service reductions between Timmins and Cochrane in line with added rail service. Thus, Option 2 with a connection to Cochrane is able to increase benefits while reducing capital costs compared to Option 1.

Option 3, a service that terminates in Cochrane without serving Timmins, does not perform as well as Option 1. The estimated ridership is lower, resulting in less benefits. However, there are cost savings associated with leveraging existing terminal facilities and not needing to build a new station in Timmins (Porcupine).

For all options, the refurbished fleet procurement strategy results in lower life-cycle costs. However, due to the heightened risk of cost overruns, the expected cost has a wide range. At the lower end of

this range, the benefit-cost ratio is greater than the new fleet options, but at the costly end of this range, the benefit-cost ratio becomes similar to that of the new fleet option.

Table 23: Economic Case Summary (present value, 2021\$)

Option	Route	Fleet	Total Costs	Total Economic Benefits	Incremental Fare Revenue Adjustment	Net Present Value	Total Tax Adjustment	Benefit Cost Ratio
1A	Terminate in Timmins	New	554.7M to 671.3M	66.2M to 128.7M	82.5M to 92.4M	-543.8M to -364.0M	-21.2M to -30.4M	0.19 to 0.34
1B		Refurbished	440.1M to 630.2M	64.5M to 127.0M	82.5M to 92.4M	-504.4M to -251.2M	-30.4M to -21.2M	0.20 to 0.43*
2A	Terminate in Timmins with connecting service to Cochrane	New	552.7M to 666.2M	66.4M to 132.0M	82.6M to 92.6M	-538.5M to -358.9M	-21.3M to -30.8M	0.19 to 0.35
2B		Refurbished	438.3M to 625.0M	64.5M to 130.2M	82.6M to 92.6M	-499.1M to -246.4M	-30.8M to -19.6M	0.20 to 0.44*
3A	Terminate in Cochrane	New	542.2M to 649.1M	64.1M to 116.8M	77.7M to 83.4M	-531.2M to -372.5M	-20.2M to -27.3M	0.19 to 0.32
3B		Refurbished	427.7M to 653.2M	62.4M to 121.6M	77.7M to 85.4M	-491.5M to -259.5M	-27.3M to -20.2M	0.20 to 0.40*

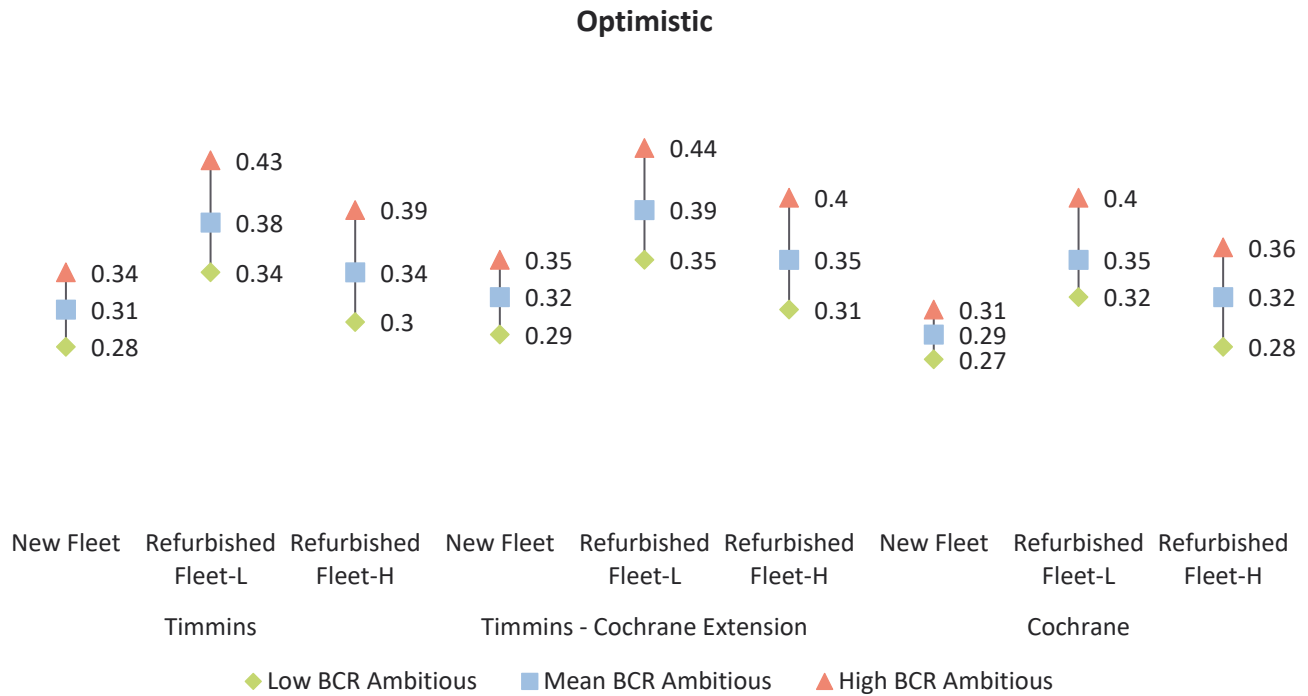
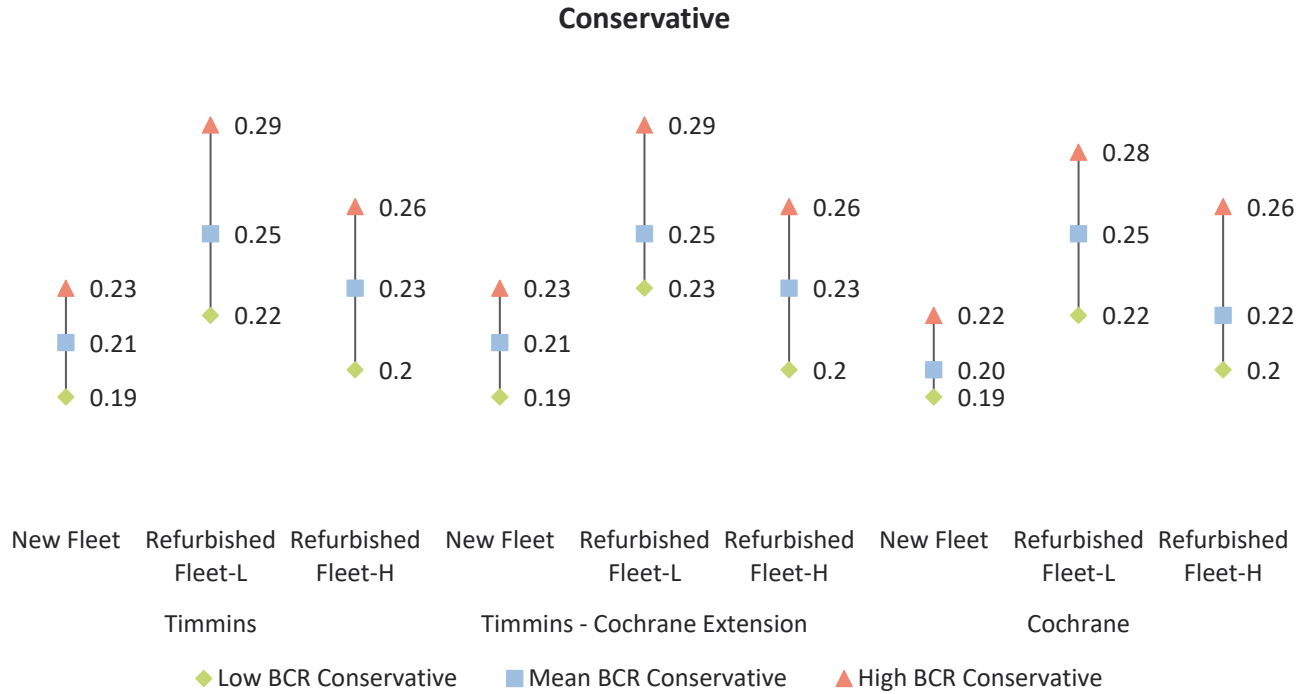
Note: Figures may not add to totals due to rounding.

* Range shown using 'low-BCR conservative' from low-cost fleet option and 'high-BCR optimistic' from high-cost option. For full breakdown of BCRs for all options and cost scenarios see Figure 9.

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 geographically large and less densely populated areas. The benefit-cost ratio over the 60-year evaluation period for all options are 0.19-0.20 in the low-range of the conservative scenarios and 0.32-0.44 in the high-range of the optimistic scenarios.

Figure 9: Benefit Cost Ratio Ranges



Sensitivity Tests

The station and land use sensitivity tests performed on Option 2A resulted in the following economic costs and benefits. The inclusion of all stations results in slightly higher costs due to addition station works, but the added benefits from increased ridership result in a higher benefit-cost ratio. With a land use uplift - that is, a higher population increase than what is projected - benefits increase substantially without increases in costs.

Table 24: Sensitivity Tests Economic Case Summary

Option	Sensitivity	Total Costs	Total Economic Benefits	Incremental Fare Revenue Adjustment	Net Present Value	Total Tax Adjustment	Benefit Cost Ratio
2 A Terminate in Timmins with connecting service to Cochrane using a new fleet	i	Sensitivity stations removed 540.2M to 653.2M	60.6M to 121.6M	76.0M to 85.4M	-536.2M to -361.8M	-19.6M to -28.5M	0.18 to 0.33
	ii	Base Option 2A 552.7M to 666.2M	66.4M to 132.0M	82.6M to 92.6M	-538.5M to -358.9M	-21.3M to -30.8M	0.19 to 0.35
	iii	Land use uplift on base option 552.7M to 666.2M	84.2M to 166.5M	104.7M to 117.4M	-504.1M to -307.6M	-26.7M to -38.7M	0.24 to 0.44

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 provides value to society, 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 BAU scenario.

The Financial Case makes use of assumptions and parameters as noted in Table 25. The assumptions and parameters used within this Updated Initial Business Case are consistent with Metrolinx's Business Case Manual Volume 2: Guidance, as of May 2021.

Table 25: Financial Case Assumptions

Input	Impact Type
Analysis Approach	60-year revenue/costs are expressed in real terms in 2021\$; while annual revenue/costs are expressed in year of expenditure terms (YOE\$) Appraisal begins in 2021. It includes 2 years of procurement, implementation, and construction (2021-2023), with an assumed opening year of 2024 ⁹ , 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 2021\$ for all options and include a 5% - 35% contingency allowance (depending on the cost item), as well as a professional services allowance to account for the completion

⁹ Service assumed to be launched in the mid-2020s, with 2024 chosen to provide an example for reference in the UIBC. Planning and construction may take more or less time than indicated in the UIBC, and as such it is not possible to provide a firm service launch date at this stage.

of designs, procurement activities, and support activities during construction. The costs presented in the UIBC are estimated based on the best available information at the time of writing and are subject to change with detailed planning and design work. Based on current Business Case guidance, additional factors to adjust for Optimism Bias have also been applied where appropriate.

The main capital cost drivers are associated with new and upgraded track, procurement of rolling stock, and the potential construction of new facilities at Timmins (Porcupine) for Option 1. For Option 2 where a connection is provided between Timmins and Cochrane, maintenance services will be provided at existing facilities in Cochrane - thus, only a customer-serving station would be required in Timmins (Porcupine). For Option 3, maintenance services will be provided in Cochrane, similar to Option 2. To provide maintenance service in Timmins (Porcupine), a new facility would need to be built on undeveloped property. In Cochrane, however, a maintenance facility exists - only a building extension is required to allow servicing of the proposed fleet. Therefore, Option 1 incurs a higher maintenance facility capital cost. In Options 1 and 2, a customer serving station and platform would still need to be constructed in Timmins (Porcupine), while Option 3 requires no construction in Timmins. A breakdown of capital costs is provided below.

Table 26: Capital Cost Input Breakdown in Financial Terms

Item	Option 1 Timmins		Option 2 Terminate in Timmins with Connecting Rail Service to Cochrane		Option 3 Cochrane	
	New Fleet	Refurbished Fleet	New Fleet	Refurbished Fleet	New Fleet	Refurbished Fleet
Stations *	15.7M	15.7M	8.1M	8.1M	4.4M	4.4M
Tracks *	12.7M	12.7M	12.9M	12.9M	12.7M	12.7M
Corridor Upgrades	23.0M	23.0M	23.0M	23.0M	23.0M	23.0M
Engineering Design *	6.0M	6.0M	6.1M	6.1M	6.0M	6.0M
Fleet	142.0M**	32.5M to 65.5M*	142.0M**	32.5M to 65.5M*	142.0M**	32.5M to 65.5M*
Marketing/ Branding *	0.3M	0.3M	0.3M	0.3M	0.3M	0.3M
Contingency	39.8M	44.2M to 56.1M	37.0M	41.4M to 53.2M	35.4M	39.8M to 51.7M
Infrastructure Cost Sub-Total	239.5M	134.4M to 179.3M	229.4M	124.3M to 169.1M	223.8M	118.7M to 163.6M
<i>Lifecycle Costs</i>						
Infrastructure Rehabilitation	8.2M	8.2M	7.0M	7.0M	6.3M	6.3M
Bus Replacement	-5.7M	-5.7M	-7.6M	-7.6M	-5.7M	-5.7M
Fleet Replacement	56.3M	56.3M	56.3M	56.3M	56.3M	56.3M
Lifecycle Cost Sub- Total	298.3M	193.2M to 238.0M	285.0M	179.9M to 224.7M	280.7M	175.6M to 220.4M

* Costs are also subject to 35% contingency

** Costs are also subject to 5% contingency for new fleet and 35% contingency for refurbished fleet

In the optimistic scenario, which assumes reduction 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 10 years at a cost of \$0.9M, which includes mid-life rehabilitation and repower.

Terminal Facilities

At the northern terminus, a facility is required to provide basic maintenance services. This terminal facility would provide the minimal services required at the end of each trip, while heavier maintenance services would be provided at a facility near the southern terminal.

- In Option 1, where the service terminates in Timmins (Porcupine) with no connection to Cochrane, a maintenance terminal facility is required in Timmins (Porcupine) to provide services. No facility currently exists; thus, a facility would need to be constructed.
- In Option 2, where there is a connection between Timmins (Porcupine) and Cochrane, maintenance services would be provided in Cochrane. There is an existing facility, where only a building extension is required to allow the Cochrane facilities to provide the services needed.
- In Option 3, where the service terminates in Cochrane, maintenance services would be provided in Cochrane as well. Only a building extension is required to allow the Cochrane facilities to provide the services needed.

In Options 1 and 2, the service provides a stop in Timmins (Porcupine) which will require station investments. Option 3, however, only requires works to be done at the Cochrane terminal facility. The services needed at the northern terminal facilities are listed in Table 27. The terminal facility capital cost pertaining to each option is broken down in Table 28.

Table 27: Northern Terminal Facility Requirements by Option

Service or Facilities Needed	Option 1 Maintenance facility to be located in Timmins (Porcupine)	Option 2 Maintenance facility to be located in Cochrane	Option 3 Maintenance facility to be located in Cochrane
Commissary servicing	Deliver from Cochrane facility or contract out to a local business. Storage needed.	Kitchen facility exists. No additional facilities needed.	Kitchen facility exists. No additional facilities needed.
Dumping	Paved area needed for service vehicle to connect to the train.	Facility exists. No additional facilities needed.	Facility exists. No additional facilities needed.
Interior Cleaning	Storage needed for cleaning supplies	Facility exists. No additional facilities needed.	Facility exists. No additional facilities needed.
Inspections	New train shed needed.	Shed extension needed (approximately 30m).	Shed extension needed (approximately 30m).
Fueling	New paving needed. Drip pans needed.	Facilities exist. No additional needed.	Facilities exist. No additional needed.
Layover track	Additional track needed - approximately 200m	Use existing layover	Use existing layover

Services that are not required between every trip, that can be provided in existing southern facilities, include but are not limited to the following:

- Equipment maintenance for brakes and wheels
- Sand refill
- Oiling and lubing
- Exterior washing

Table 28: Terminal Facility Costs by Option

Station	Facility Element	Option 1 Maintenance facility to be located in Timmins (Porcupine) with a new station	Option 2 Maintenance facility to be located in Cochrane, with a new station in Timmins (Porcupine)	Option 3 Maintenance facility to be located in Cochrane with no new stations
Timmins (Porcupine)	Station platform, shelter, and associated works	3.7M	3.7M	
	Maintenance Facility Building	2.7M		
	Maintenance Facility Train Shed	6.1M		
	Layover Track and Turnout	1.5M		
Cochrane	Train Shed Extension		2.7M	2.7M
Total		14.0M	6.4M	2.7M

Track Upgrades

Track conditions were assessed to determine the upgrades needed to return passenger service to the Northlander rail corridor. The assessment identified general track repair requirements as well as re-surfacing needed for curves to improve train travel speeds. The cost of track re-surfacing needed to improve speeds by 6mph, 10mph, and 15mph were analyzed. It was found that improving travel speeds by 6mph delivers the best value, considering the cost of implementation. Overall, the track was found to be in good condition. Work required as part of regular maintenance for the current freight operations were not included in this business case, as they are not additional due to the re-instatement of a passenger rail service. These maintenance items are listed below:

- Rail grinding
- 115RE track installation
- Current rate of tie replacements
- Shoulder cutting

Works additional to current maintenance, with costs incurred as part of this business case, are listed in Table 32. These costs are applicable to all options.

Table 29: Track Upgrade Costs

Track Element	Option 1 Terminate in Timmins	Option 2 Terminate in Timmins with Connecting Rail Service to Cochrane	Option 3 Terminate in Cochrane
Mobilization, demobilization, environmental protection	0.3M	0.3M	0.3M
Granular and ballast	4.1M	4.1M	4.1M
Track material and construction	1.6M	1.6M	1.6M
Rail bridge walkways	0.5M	0.5M	0.5M
Rail bridge handrails	1.9M	1.9M	1.9M
Crossings	0.0M	0.0M	0.0M
Superelevation surfacing including additional ballast	4.4M	4.6M	4.4M
Total	12.7M	12.9M	12.7M

Fleet Procurement

For all route options, two fleet procurement options are considered: purchasing a new fleet and refurbishing an old fleet. The procurement cost of the refurbishment option includes the purchase of an old fleet and its refurbishment. In addition to the old fleet and refurbishment costs, the refurbishment option poses a few additional costs. In the new purchase option, the fleet includes wheelchair lifts, precluding the need for accessible platform at stations. Thus, the refurbishment option incurs an additional station cost of constructing wheelchair ramps. The expected lifespan of new and refurbished fleets are 20 years. These considerations are summarized in Table 30.

Table 30: Fleet Procurement Costs

Fleet Procurement Options		
Consideration	A: New Fleet	B: Refurbishment
Initial Fleet Procurement	\$142M (Purchase) + 5% Contingency = \$149.1 M	\$32.5M to 65.5M (Purchase & Refurb) + 35% Contingency = \$43.9M to 88.4M
Station Costs (Wheelchair Ramps)	Not required, train has onboard wheelchair lift	Required, \$1.0 M
Lifecycle Fleet Replacement	\$60.0M	\$60.0M

Capital Costs Summary

Total capital costs for implementation range between \$285.7M to \$304.6M with a new fleet and \$177.7M to \$242.3M with a refurbished fleet in present value terms. Table 31 summarizes the capital costs for each option.

Table 31: Estimated Capital and Lifecycle Rehabilitation Costs in Financial Terms (PV, 2021\$)

Option	Route	Fleet	Infrastructure Costs	Rehabilitation Costs	Fleet Refurbishment	Bus Replacement Costs	Contingency	Total Capital Costs
1A		New	206.1M	8.2M	56.3M	-5.7M	39.8M	304.6M
1B	Terminate in Timmins	Refurbished	93.6M to 127.5M	8.2M	56.3M	-5.7M	44.2M to 56.1M	196.6M to 242.3M
2A	Terminate in Timmins with connecting service to Cochrane	New	198.0M	7.0M	56.3M	-7.6M	37.0M	290.6M
2B		Refurbished	85.6M to 119.5M	7.0M	56.3M	-7.6M	41.4M to 53.2M	182.6M to 228.3M
3A		New	193.4M	6.3M	56.3M	-5.7M	35.4M	285.7M
3B	Terminate in Cochrane	Refurbished	81.0M to 114.9M	6.3M	56.3M	-5.7M	39.8M to 51.7M	177.7M to 223.9M

*Figures may not add to totals due to rounding.

Operating & Maintenance Costs

The operation and maintenance of the Northeastern Passenger Rail Service forms the largest component of overall project costs. Operating and maintenance costs cover staffing, fuel, track access charges, vehicle and track maintenance and other state of good repair costs. The analysis in this UIBC assumes that there are no incremental costs for track maintenance since this work would be required to support existing freight services. Further work will be required in subsequent phases of the project to determine if there are any incremental annual track maintenance costs associated with passenger rail. Fleet maintenance costs would also need to be further refined. For the optimistic scenario, there are incremental operating cost savings related to bus reductions.

Depending on the option, rail operating costs over the 60-year project lifecycle are projected to be in the range of \$342.4M to \$362.6M, while bus operating cost savings are expected to be between \$71.8M and \$79.1M, in present value terms. Table 32 summarizes the incremental operating cost impacts of the project.

Table 32: Operating Costs, in Financial Terms

Option	Route	Fleet	60-Year Operating Costs (NPV, 2019\$)		Annual Operating Cost	
			Rail Costs	Bus Savings	Rail Costs	Bus Savings
1A	Terminate in Timmins	New	342.4M	-71.8M	270.5M	17.2M
1B		Refurbished	342.4M	-71.8M	270.5M	17.2M
2A	Terminate in Timmins with connecting service to Cochrane	New	362.6M	-79.1M	283.5M	18.0M
2B		Refurbished	362.6M	-79.1M	283.5M	18.0M
3A	Terminate in Cochrane	New	349.7M	-71.8M	277.9M	17.6M
3B		Refurbished	349.7M	-71.8M	277.9M	17.6M

* Figures may not add to totals due to rounding.

Revenue Impacts

In the base scenarios, ridership forecasts estimates that, by 2041, about 36,100 net new riders will use the proposed rail service annually under the conservative scenario and between 40,500 and 40,600 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 \$79.0M and \$84.0M under the conservative scenario, or between \$84.8M and \$94.1M under the optimistic scenario.

Table 33: Revenue in Financial Terms

Option	Route	Fleet	60-Year Incremental Revenue Impacts (NPV, 2021\$)	Annual Incremental Revenue (2041, YOES)
1A	Terminate in Timmins	New	83.9M to 93.9M	5.3M to 6.0M
1B		Refurbished	83.9M to 93.9M	5.3M to 6.0M
2A	Terminate in Timmins with connecting service to Cochrane	New	84.0M to 94.1M	5.3M to 6.0M
2B		Refurbished	84.0M to 94.1M	5.3M to 6.0M
3A	Terminate in Cochrane	New	79.0M to 84.8M	5.0M to 5.4M
3B		Refurbished	79.0M to 84.8M	5.0M to 5.4M

* Figures may not add to totals due to rounding.

Financial Case Summary

For all options, the expected revenue from the project does not exceed the projected costs, as with other intercity passenger rail services. Similarly, the incremental operating cost recovery ratio is below 1.0, indicating that an operating subsidy is required under all options studied, as was required for the previous Northlander service, and as is required for many long-distance rail services serving remote communities. 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, they also incur additional operational costs resulting 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: 0.80¹⁰
- Ontario Northland Polar Bear Express rail services: 0.30⁶
- GO Transit bus and rail services: 0.64¹¹
- TransLink Vancouver bus and rail services: .59¹²
- VIA Rail Windsor-Quebec Corridor services: 0.69¹³
- VIA Rail Long Haul services: 0.47⁸

Table 34 shows the financial results on an annual basis at the 2041 horizon year. For most options the growth in incremental revenue is outpaced by the growth in incremental operating costs. By 2041, the

¹⁰ Ontario Northland Transportation Commission Annual Report 2018-2019

¹¹ Metrolinx Annual Report 2019-2020

¹² TransLink 2019 Year End Financial & Performance Report

¹³ VIA Rail Annual Report 2019

required annual subsidy will increase to between \$11.2M to \$12.2M in the optimistic scenario, and between \$11.8M to \$12.6M in the conservative scenario.

Table 34: Annual Net Revenue (2041, YOE\$)

Option	Route	Fleet	Incremental Revenue	Incremental Operating Costs	Required Subsidy **	New Users	Subsidy per New User **
1A	Terminate in Timmins	New	5.3M to 6.0M	17.2M	11.2M to 11.8M	39,170 to 43,860	255 to 302
1B		Refurbished	5.3M to 6.0M	17.2M	11.2M to 11.8M	39,170 to 43,860	255 to 302
2A	Terminate in Timmins with connecting service to Cochrane	New	5.3M to 6.0M	18.0M	12.0M to 12.6M	39,220 to 43,970	273 to 322
2B		Refurbished	5.3M to 6.0M	18.0M	12.0M to 12.6M	39,220 to 43,970	273 to 322
3A	Terminate in Cochrane	New	5.0M to 5.4M	17.6M	12.2M to 12.6M	37,790 to 40,570	302 to 334
3B		Refurbished	5.0M to 5.4M	17.6M	12.2M to 12.6M	37,790 to 40,570	302 to 334

*Figures may not add to totals due to rounding.

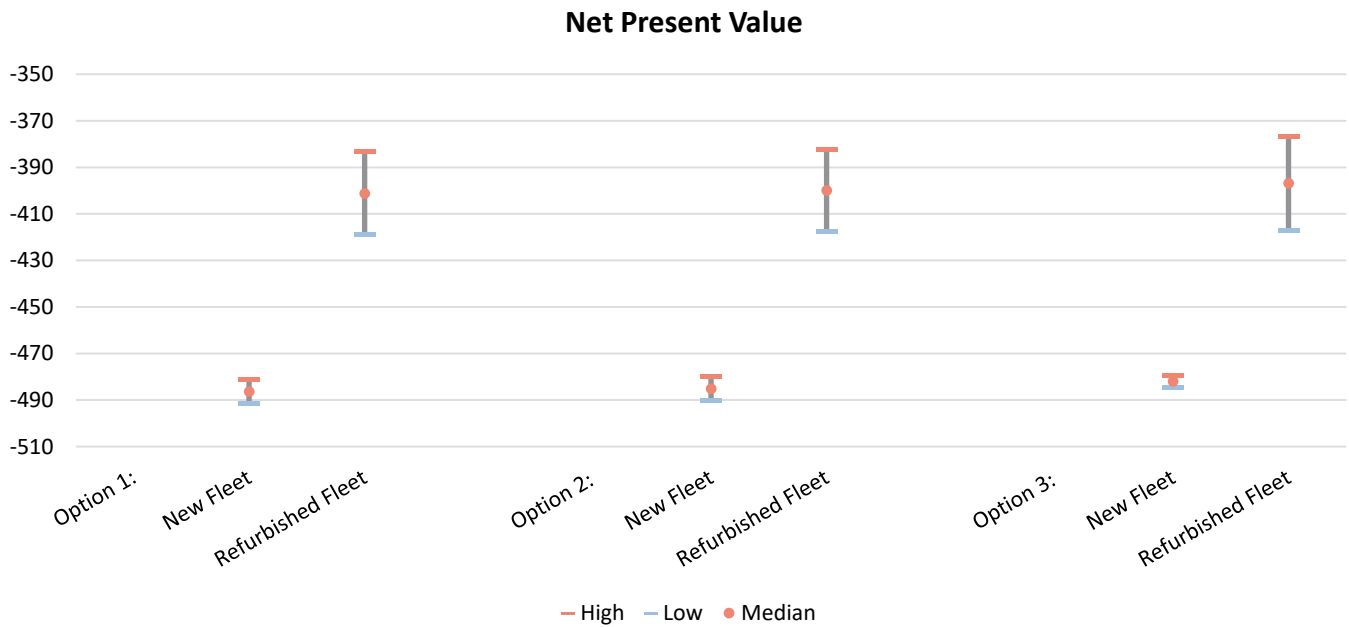
Table 35 presents the financial performance of all options over the 60-year evaluation period. The net revenue, shown in Figure 10, further deteriorates with the addition of capital expenditures over the evaluation period.

Table 35: Financial Case Summary (present value, 2021\$)

Option	Route	Fleet	Total Capital Costs	Incremental Operating & Maintenance Costs	Incremental Revenue Impact	Net Revenue	Operating Cost Recovery Ratio
1A	Terminate in Timmins	New	304.6M	270.5M	83.9M to 93.9M	-491.3M to -481.3M	0.31 to 0.35
1B		Refurbished	196.6M to 242.3M	270.5M	83.9M to 93.9M	-419.0M to -383.3M	0.31 to 0.35
2A	Terminate in Timmins with connecting service to Cochrane	New	290.6M	283.5M	84.0M to 94.1M	-490.2M to -480.0M	0.30 to 0.33
2B		Refurbished	182.6M to 228.3M	283.5M	84.0M to 94.1M	-417.7M to -382.1M	0.30 to 0.33
3A	Terminate in Cochrane	New	285.7M	277.9M	79.0M to 84.8M	-484.6M to -479.3M	0.28 to 0.31
3B		Refurbished	177.7M to 223.9M	277.9M	79.0M to 84.8M	-417.0M to -376.6M	0.28 to 0.31

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 0.28 to 0.31 under the conservative scenario and 0.31 to 0.35 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, if any, reliable transportation alternatives.

Figure 10: Net Revenue



Sensitivity Tests

Station and land use sensitivity tests were performed on Option 2A, generating the following financial results. With the removal of the sensitivity stations, capital and operating costs decrease marginally. However, there is also a revenue decrease due to lost ridership. The land use sensitivity generated increased revenue due to increased ridership. Overall, the cost recovery ratio decreases slightly when stations are removed and increase substantially with the land use uplift (population increase).

Table 36: Sensitivity Test Financial Case Summary

Option	Sensitivity	Total Capital Costs	Incremental Operating & Maintenance Costs	Incremental Revenue Impact	Net Revenue	Operating Cost Recovery Ratio
2A Terminate in Timmins with connecting service to Cochrane using a new fleet	i Sensitivity stations removed	289.9M	271.5M	77.3M to 86.8M	-484.1M to -474.5M	0.28 to 0.32
	ii Base Option 2A	290.6M	283.5M	84.0M to 94.1M	-490.2M to -480.0M	0.30 to 0.33
	iii Land use uplift on base option	290.6M	283.5M	106.5M to 119.4M	-467.7M to -454.8M	0.38 to 0.42

7



Deliverability & Operations Case



Introduction

The Deliverability and Operations Case is an analysis of investment delivery, operations and maintenance, service plans and any other issues that should be considered to result in a successful implementation of the project. 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 of a safe and reliable service. The corridor infrastructure improvements proposed under each option are summarized below:

- Reinstatement of track between the Newmarket Subdivision and North Bay station
- Spot improvements of track to ensure the safety of the service, raise line speeds, and increase passenger comfort.
- Minimal passing track construction at Zephyr (1.2 miles or 1.93 km)
- Addition of handrails and walk-ways to bridge crossings for passenger safety in cases of emergency stops

Train Stop Infrastructure

Following the termination of the Northlander train service, operations at many 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 by constructing new shelters for most stations and further developing the site to meet accessibility requirements. For the Timmins station, a property has been located in Porcupine at the end of the

existing tracks as a preferred location. This property would need to be acquired and a new station would need to be constructed on the currently undeveloped property.

The infrastructure for a typical station on the corridor includes a side rail platform, heated station shelters, and accessible parking. Ticketing infrastructure will not be provided at stations. Passengers would need to purchase tickets on-board or online prior to boarding the trains. A conceptual design of each station is included in *Appendix B*.

The works required at each station to bring the passenger rail service are summarized in Table 37. For Union Station and the existing GO stations at Langstaff and Gormley, no additional work is required to re-instate the service. For most Northern Ontario stations such as Washago, Gravenhurst, Huntsville, South River, Temagami, Temiskaming Shores (New Liskeard), Englehart, Kirkland Lake (Swastika), and Matheson, stations exist, but require the addition of a heated shelter and platform repaving. The station at Bracebridge requires platform construction, as no platform currently exists. At Kirkland Lake (Swastika), some grading is required for a sidewalk path to make the station accessible. At North Bay, no additional work has been identified aside from the provision of accessible parking spots.

Initially, a full-service Operations, Maintenance, and Storage Facility (OMSF) was considered for the Timmins (Porcupine) terminal location. Due to the timeline of re-instating the Northlander train service and the land available, it was deemed infeasible to provide a full-service OMSF at the Timmins (Porcupine) terminal location. In addition, full-service OMSF facilities exist at the Willowbrook Rail Maintenance Facility or the VIA Toronto Maintenance Centre in the GTA. It is assumed that costs for using an existing maintenance facility would be far exceeded by the cost of building a new facility. Thus, instead of planning for the provision of a full-service OMSF in Timmins (Porcupine), the northern terminal facility would only need to provide the minimum services needed at the end of every northbound trip, while major maintenance would ideally be provided in the GTA. This leads to significant cost savings and improved deliverability. For Option 1, the northern terminal would be located at the Timmins (Porcupine) station, requiring the construction of a new but minimal maintenance facility. For Option 2, which provides a passenger rail connection between Timmins and Cochrane, and Option 3, which terminates in Cochrane, maintenance services would be provided at the Cochrane terminal. This requires an extension to an existing coach shed, but most other facilities are already in place.

Some Northern Ontario stops (including terminal stations at Timmins (Porcupine) or Cochrane) are expected to facilitate transfers from the Ontario Northland bus network. These locations will provide additional bus stop infrastructure, as well some locations already include a station building to provide additional amenities for passengers.

Table 37 provides a summary of the status of the proposed stations, and the required infrastructure improvements for the Northeastern Passenger Rail Service.

Table 37: Train stop requirements

Station	Option	Status	Station Infrastructure Requirements	Upgrade Details
Toronto Union Station	All options	Existing GO and VIA rail station with multiple GO island platforms	None	None
Langstaff	All options	Existing GO station with single side GO platform	None	None
Gormley	All options	Existing GO station with single side GO platform	None	None
Washago	All options	Existing VIA station with single side VIA platform	Upgrade station to base station scope	Needs new shelter, platform repaving, and parking lot line painting.
Gravenhurst	All options	Discontinued Northlander station	Purchase or lease property and reinstate station; Upgrade station to base station scope	Needs new shelter, platform repaving, and parking lot line painting.
Bracebridge	All options	Discontinued Northlander station	Purchase or lease property and reinstate station; Upgrade station to base station scope	Needs new shelter, new platform construction, and parking lot line painting.
Huntsville	All options	Discontinued Northlander station	Purchase or lease property and reinstate station; Upgrade station to base station scope	Needs new shelter, platform repaving, and parking lot line painting.
South River	All options	Discontinued Northlander station	Purchase or lease property and reinstate station; Upgrade station to base station scope	Needs new shelter, platform repaving, and parking lot line painting.
North Bay	All options	Former Northlander station and existing Ontario Northland bus terminal with single side Ontario Northland platform	None	Needs parking lot line painting.
Temagami	All options	Discontinued Northlander station, lands owned by Ontario Northland, station owned by town	Upgrade station to base station scope	Needs new shelter, platform repaving, and parking lot line painting.
Temiskaming Shores (New Liskeard)	All options	Previous station location, lands owned by Ontario Northland	Upgrade station to base station scope. Station requires major upgrades.	Needs new shelter, platform repaving, and parking lot line painting.

Station	Option	Status	Station Infrastructure Requirements	Upgrade Details
Englehart	All options	Discontinued Northlander station, lands owned by Ontario Northland	Reinstate station; Upgrade station to base station scope	Needs new shelter, platform repaving, and parking lot line painting.
Kirkland Lake (Swastika)	All options	Discontinued Northlander station, lands owned by Ontario Northland, Station demolished	Construct station to base station scope	Needs new shelter, platform repaving, walkway construction, and parking lot line painting.
Matheson	All options	Discontinued Northlander station, lands owned by Ontario Northland	Upgrade station to base station scope	Needs new shelter, platform repaving, and parking lot line painting.
Timmins (Porcupine)	Options 1 & 2	New station location	Purchase or lease property and construct new station for Options 1 & 2; construct maintenance facilities for Option 1	Needs new station construction, including shelter, platform, parking, and walkways for Options 1 & 2. For Option 1, needs new maintenance facility including layover track, a train shed, and maintenance building
Cochrane	Options 2 & 3	Existing Polar Bear Express station with single side Ontario Northland platform	Extend existing facility for Options 2 & 3	For Option 2 & 3, a train shed needs to be extended.

Fleet Requirements

All options will require procuring a fleet of trains to operate the service. As a basis for analysis, the business case assumed three trainsets are required with three passenger coaches each, or two passenger coaches and a cab car. With cab cars the rolling stock would have bi-directional travel, eliminating the need for turn-around infrastructure at terminals and reducing operating costs.

Two fleet procurement strategies were considered: purchasing a new fleet and refurbishing an old fleet. The purchase of a new fleet will depend on an expedient delivery and has very few risks related to cost overruns or timelines for start of service in the mid-2020's. The refurbishment of an older fleet will depend on the following criteria:

- **Availability of a fleet for refurbishment**

A detailed market review revealed there are several previously used fleet options available in the market today or in the near future, making it feasible to pursue the refurbishment option to meet the mid-2020's timeline for start of service. This review included assessment of multiple fleet typologies, and costs for refurbishment will vary depending on the prior condition, therefore a range of refurbishment costs is included in this UIBC.

- **Refurbishment facility capacity**

If ONTC is selected as the refurbishment provider, the North Bay refurbishment facilities are currently occupied for on-going refurbishment contracts. To refurbish a fleet for the Northeastern Passenger Rail, adjustments may be required to the current workplans or an alternative refurbishment location may be considered as an alternative. This decision is outside the scope of this UIBC.

- **Refurbishment timeline**

The refurbishment of a fleet, regardless of the supplier, can likely be delivered within the mid-2020's timeline, based on the market scan that has been conducted.

- **Quality of amenities**

The engineering and specifications for refurbishment will determine the level of amenities, which may be comparable to new fleet. It will be important to plan based on feedback received during community engagements. This work found that the amenities of a modern train, such as comfortable seating, personal space for working and dining, the provision of Wi-Fi, accessible boarding and restrooms, and convenient baggage storage are highly valued to customers. These amenities, in addition to on-board sales of food and beverages are expected to be provided in either new or refurbished fleet options.

Community engagement with northern Ontario residents had identified that onboard provision of food and beverages, Wi-Fi, and baggage storage are desirable features for this passenger rail service. The fleet would be selected for its ability to provide these amenities, as well as current accessibility requirements, while remaining financially viable.

All options will be operated with three trains. An allowance for rolling stock procurement is included in the cost estimates for each service option, corresponding with the procurement method. The next stage of detailed planning work would refine the procurement cost through further negotiations and price quotes.

Environmental Assessment Requirements

The majority of the capital work for this service involves rehabilitation or reinstatement of existing infrastructure, or the addition of small shelters on existing developed properties. It is important to note that regardless of the requirement for any environmental assessments for this project, the duty to consult remains if there are adverse impacts to Aboriginal and Treaty rights.

The new construction of a station in Timmins (Porcupine), however, requires new property development, as this location was not served by the previous Northlander line. In either option, at minimum a new station must be constructed on undeveloped land. In Option 1 where the service terminates in Timmins, a maintenance facility would also need to be constructed. In Option 2, where a connection is provided to Cochrane, and Option 3, where the service terminates in Cochrane, the maintenance facility in Cochrane requires a building extension on existing developed property. The environmental assessment requirements of these works will be further developed as the project progresses and as future regulations become more certain.

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 & Maintenance

Roles & Responsibilities

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

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. Several of the communities to be served by the Northeastern Passenger Rail have expressed during community engagement that they would be willing to provide operational services for their local station, such as snowplowing and landscaping.

Service Plan

The proposed Northeastern Passenger Rail Service would operate one trip per day (on days of operation) in each direction. The northbound trip from Toronto is scheduled to leave Union Station early in the evening and arrive at the northern terminus the following morning. The southbound trip would depart the northern terminus around midnight and arrive at Union Station before noon. The service would operate 7 days a week during peak season and 4 days a week during off peak.

The service can be operated with two or three trainsets; however, three would be used to allow continued service during long periods of maintenance. Trains would layover during the midday and overnight between trips. This could be facilitated through GO Transit's existing Willowbrook Yard or the VIA Toronto Maintenance Centre in Toronto and a new layover yard at the northern terminus of the service.

Figure 11 and Figure 12 depict the space-time progression of the proposed timetable for the service, illustrating train cycling and layover at terminals under either three-train rotation or two-train rotation during periods when one trainset is undergoing heavy maintenance.

Figure 11: Proposed Service Schedule (Option 1 & 3, 2-train vs. 3-train rotation)

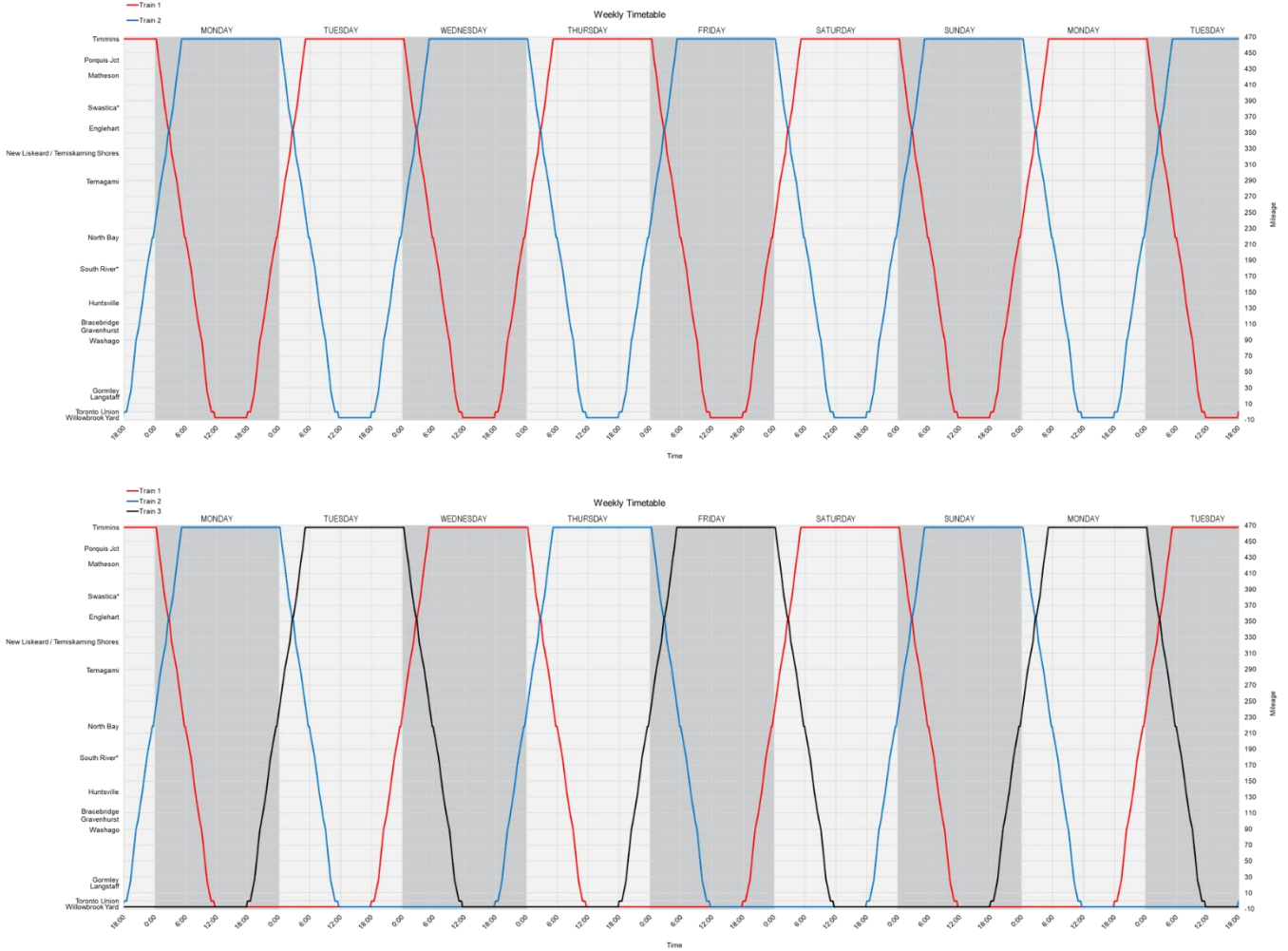
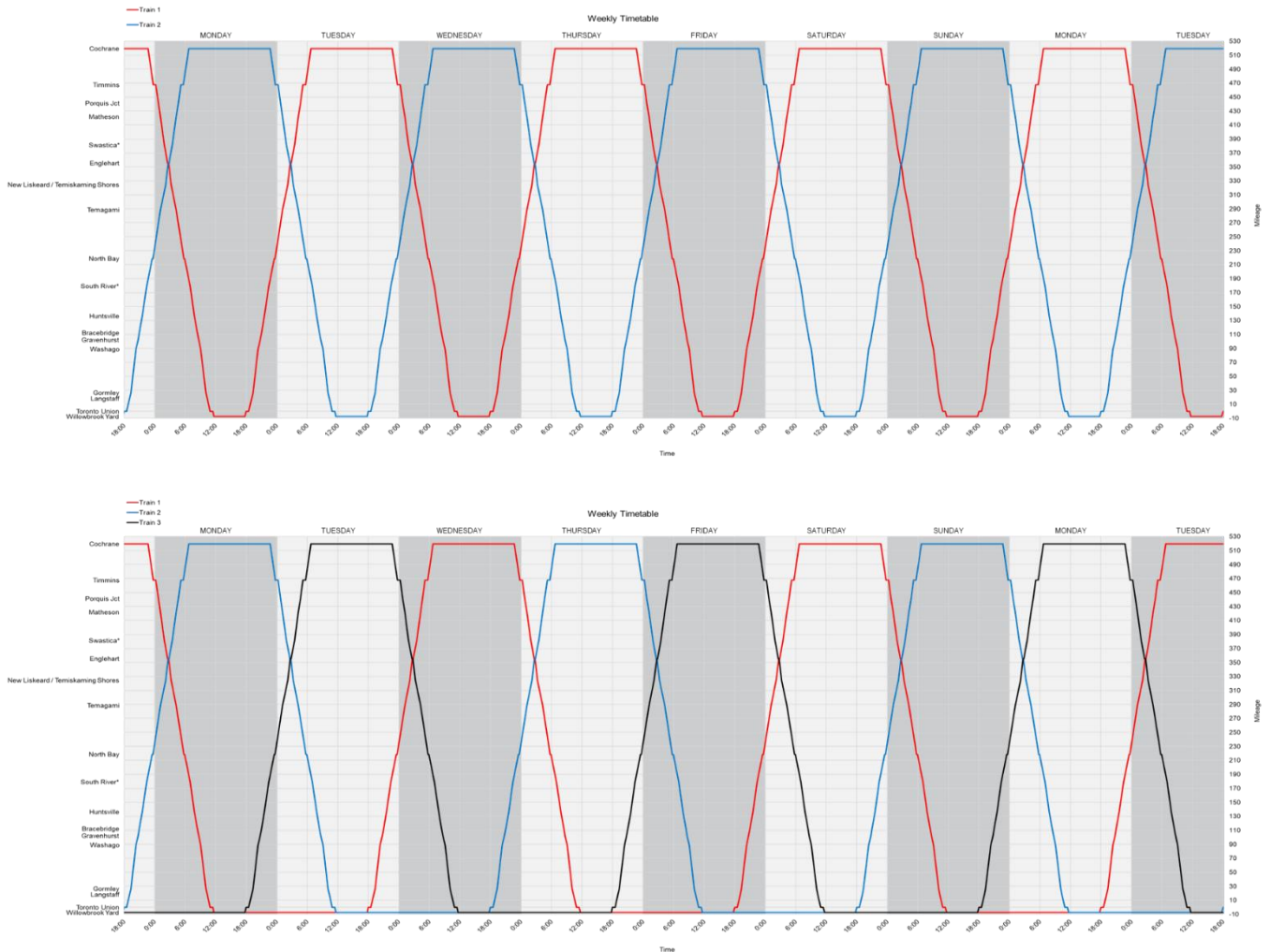


Figure 12: Proposed Service Schedule (Option 2, 2-train vs. 3-train rotation)



The existing yard at Cochrane could be upgraded to accommodate the layover for Option 2, where a connection to Cochrane is provided, or Option 3, where the service terminates in Cochrane. Otherwise, a new greenfield build in Timmins would be required. Major maintenance could be carried out in Toronto, North Bay or Cochrane, while the northern terminus would provide facilities for light maintenance.

Each trip would be operated by two separate crews in order to meet the new crew duty and rest period rules (coming into effect in 2024), with change of crew planned to occur at Englehart. The south section between Toronto and Englehart requires three crews in rotation between trips, whereas a separate fourth crew at a minimum is needed to operate the north section between Englehart and the northern terminus. Crew rest facility or accommodation options could be provided in Toronto, Englehart, and the northern terminus.

Table 38 below shows the anticipated crew duty and rest periods required to operate the service. This takes into consideration the 2024 crew duty and rest period rules. It should be noted that crew changeover at Englehart requires exact timing (i.e., within the proposed 15-minute window). Therefore, longer delays in the northern section could result in extended duty periods for the southern section crews, and vice versa. In the extreme case, the north section service should not be delayed by more than 3 hours in order for the duty periods of Crews 1, 2 or 3 to not exceed the 12-hour maximum shift requirement. It should also be noted that in Option 2, the total duty period per 28 days for Crew 4 (i.e., 224 hours) surpasses the maximum 192-hour requirement, in which case a supplementary crew might be required to carry on the service. Alternatives will be studied in future stages of the project.

Table 38: Crew Duty and Rest Periods Summary

Crew		Option 1	Option 2	Option 3
	Section	Toronto ↔ Englehart	Toronto ↔ Englehart	Toronto ↔ Englehart
1 / 2 / 3	Number of Shifts Per Week	4 to 5	4 to 5	4 to 5
	Duty Period Per Shift	9 hours	9 hours	9 hours
	Rest Period Between Shifts	24 hours (Englehart) 30 hours (Toronto)	24 hours (Englehart) 30 hours (Toronto)	24 hours (Englehart) 30 hours (Toronto)
	Total Duty Period Per 7 Days	42 hours	42 hours	42 hours
	Total Duty Period Per 28 Days	168 hours	168 hours	168 hours
	Rest Break Per 2 Weeks	252 hours (10.5 days)	252 hours (10.5 days)	252 hours (10.5 days)
	Section	Englehart ↔ Timmins	Englehart ↔ Cochrane	Englehart ↔ Cochrane
4	Number of Shifts Per Week	7	7	7
	Duty Period Per Shift	5 hours	8 hours	5 hours
	Rest Period Between Shifts	19 hours (Timmins)	16 hours (Cochrane)	19 hours (Cochrane)
	Total Duty Period Per 7 Days	35 hours	56 hours	35 hours
	Total Duty Period Per 28 Days	140 hours	224 hours	140 hours
	Rest Break Per 2 Weeks	266 hours (11.1 days)	224 hours (9.3 days)	266 hours (11.1 days)

A capacity study determined that rail corridor upgrades would enhance travel time and reliability of the Northeast Passenger Rail service. The study proposed a new siding north of Zephyr to facilitate train meets between Ontario Northland and CN trains. Preliminary cost estimates for this siding are included in the capital requirements of this business case, though future delivery will be determined through negotiations with CN.

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.

Ontario Northland owns the required rail corridors beyond North Bay, so no additional negotiations would be required to establish the service to Timmins or Cochrane. The proposed operating plan requires use of a 3rd party facility in Toronto area, such as the VIA Toronto Maintenance Centre or the Willowbrook Rail Maintenance Facility. An agreement with the relevant organization will be required to use one of these facilities. This agreement would further confirm the operating costs of the rail service.

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 closed by the municipalities. However, through recent community engagements with local communities, First Nations groups, and Indigenous organizations, it was found that residents have a high desire for the rail service to return, given the limited options for transportation in northern Ontario. The limited options are also subject to weather and traffic impacts. In addition, every community reported population growth and some have expressed that a passenger rail service would support their economic development. In fact, some communities have already taken initiative to explore funding options to assist in the development of their local station or offered maintenance resources for the operation of their local station. It is expected that the communities to be served by the Northlander rail will be fully cooperative with its development.

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 station in Timmins may require a larger property to accommodate a maintenance facility, depending on the option selected. 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. Available space for parking has been identified at most station locations; however, the exact parking capacity required at each station still needs to be determined. 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. Local municipalities may provide bus services to and from the station or a nearby bus stop. At the proposed terminals, transfers from Ontario Northland buses are also available. The benefits of the service are dependent on convenient access to the station and service. Station maintenance activities are expected to be supported by local municipalities. The station access options, and any required supporting infrastructure, should be investigated in more detail as the service advances through subsequent phases of development.

Fleet Procurement

Before the service can be re-instated, a fleet that meets the requirements outlined in this business case must be acquired. Of the two procurement paths considered, both new purchase and refurbishment are viable options. Both options can be delivered in time for the proposed service launch in the mid-2020's. A market scan conducted in parallel to this business case has identified a new fleet option and several candidate fleets for refurbishment.

Conclusion

All options analyzed through this Updated Initial Business Case are technically feasible. 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. Given the positive feedback received from community engagements, it is likely that local stakeholders and partners of the stations served by the rail would be supportive of re-instating the rail service.

8



Business Case Summary



Introduction

This chapter summarizes the findings of the four-case evaluation 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 and apply to all options:

- **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.¹⁴
- **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 and the GGH to each other's economy, increases tourism, and facilitates the exchange of goods, services, and expertise along the corridor. Not only would residents in Northern Ontario benefit from improved connections to the GGH, GGH residents would also benefit from improved connections to the industries in the north. 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.

The rail service would provide benefits to rural, remote, and underserved communities north of North Bay. The Timmins terminus provides benefits by serving a relatively larger population centre in Northern Ontario compared to the Cochrane option. The option with a connection between Timmins and Cochrane serves an even larger population.

Economic Case

All options will generate economic benefits; however, these are outweighed by the associated cost of the service, as is typical for long-distance passenger rail serving remote areas. This results in a negative

¹⁴ 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.

net present value and a benefit-cost ratio that is less than 1.0. The benefit-cost ratios over the 60-year evaluation period are 0.19-0.20 in the conservative scenario and 0.32-0.44 in the optimistic scenario. Sensitivity tests show that results are better with all stations included and even more improved with a land use uplift.

Of the three options, Option2 with a connection between Timmins and Cochrane outperforms the other options in terms of both total economic benefits and 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 0.28 to 0.31 under the conservative scenario and 0.31 to 0.35 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, if any, reliable transportation alternatives. By 2041, the required annual subsidy will increase to \$11.2M to \$12.2M in the optimistic scenario, and between \$11.8M to \$12.6M in the conservative scenario.

Deliverability & Operations Case

All options propose infrastructure improvements primarily within existing rail corridors, as well as the reinstatement of existing stations. In particular, the construction of a new station in the Timmins region, additions of new siding(s) along the corridor, or the extension of maintenance facilities in Cochrane may require an environmental assessment to take place before work can begin. Operationally, the addition of any new sidings along the corridor will provide added flexibility in scheduling train meets and enhance service reliability.

A 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.

The timely procurement of the fleet is also required for the service to commence. This will require purchasing a new fleet or obtaining and refurbishing an older fleet.

Next Steps

Once an option is selected for further project development, a Preliminary Design Business Case will be undertaken to 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.

Next steps identified in the Initial Business Case that have now been completed include the following:

- Train modelling to confirm the operability of the service pattern and schedule, as well as the optimal locations for passing tracks;
- Some refinement of the business case analysis based on more detailed data regarding capital costs, supported by:

-
- Conceptual station and terminal facility designs
 - Track conditions assessments
 - Rolling stock procurement analysis
 - Further analysis of rolling stock procurement options to determine the costs and benefits provided.
 - The planning of parallel and connecting bus services has been partially complete.

Analysis to be undertaken through the next phases include:

- Further train modelling and test runs 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 keeping service levels efficient;
- Crew shift scheduling to ensure that shifts would be within duration limits even accounting for the risks of delays.
- Refinement of business case analysis 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;
- Negotiations with CN to secure track access for the service, and confirm the scope of any corridor infrastructure required to operate the service; and
- More detailed design of corridor, station and shelter infrastructure, and development of more detailed cost estimates.
 - Duty to Consult Indigenous people may be impacted and should be considered here and in the selection of the preferred option for further project development.

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.
Updated Initial Business Case (UIBC)	An update to an Initial Business Case that provides further developments in the project planning, design, and optioneering, but not at the same level of development as a PDBC.
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, Brantford, 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 in an urban region 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.

APPENDIX

A



Community Engagement Summary

Overview

- Ontario Northland and Metrolinx are working collaboratively on an Updated Initial Business Case (UIBC) for Northeastern Passenger Rail, with a final report due to the Ministry of Transportation (MTO) by the end of 2021/early 2022.
- To better understand and assess the needs of the communities along the Northeastern Passenger Rail corridor, Ontario Northland engaged with select community leaders, First Nations, Political Territorial Organizations and other Indigenous organizations located in Northeastern Ontario.
- Communities that were chosen for engagement sessions were identified in the Initial Business Case. First Nations communities were selected based on the Northeastern passenger rail line operating through their treaty territories, and the Provincial Territorial Organizations and Indigenous groups were chosen to include people and organizations that live/work outside of a specific Indigenous community.
- Ontario Northland attempted a minimum of two times to connect and schedule sessions with each of the communities, First Nations, and organizations.
- Fifteen (15) community leaders located along the Northeastern Passenger Rail corridor were contacted. Engagement sessions were conducted with thirteen (13) of those communities, with no response received from two (2) communities.
- Eighteen (18) First Nations, Indigenous organizations, and Provincial Territorial Organizations were contacted. Engagement sessions were conducted with three (3) of the First Nations and Indigenous groups. There was no response received from the remaining communities or organizations.

Objectives of Engagement Sessions

- Provide communities and organizations with details of the Initial Business Case and discuss the next steps with the Updated Initial Business Case.
- Engage municipalities and Indigenous partners in discussions about their needs and requirements for passenger rail and connected motor coach services.
- Share important information with municipalities and Indigenous partners about a connected bus and rail passenger service for the north.
- Seeks ways to collaborate to better connect municipalities and Indigenous communities through bus and or passenger rail.

Overview of Engagement Sessions

- The community engagement sessions took place between August to November 2021 and were approximately 1-2 hours in length per meeting.

- Each session commenced with a presentation led by Ontario Northland's President & CEO (Corina Moore) and the Senior Director of Passenger Operations (Tracy MacPhee), where the Initial Business Case of Northeastern Passenger Rail was outlined, as well as an overview of Ontario Northland's bus and rail services. Also in attendance from Ontario Northland were Matthew Ryan (Project Manager), and either Renée Baker (Manager of Communications) or Rebecca McGlynn (Director of Marketing and Communications).
- The presentation was followed by a Question-and-Answer session, where leaders were able to ask questions about the proposed service and provide feedback about the return of passenger rail. In addition to the Question-and-Answer session, Ontario Northland also provided a feedback form for the communities to complete and return.

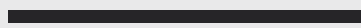
Engagement Summary & Recurring Themes:

- Many communities expressed frustration to the limited transportation options that are available in their regions. There was a clear desire to have a dependable, on-time service that would not be impacted by weather or traffic delays.
- The proposed timetable was well received and there was an overall consensus that it better suited their community than the previous Northlander schedule, under the provision that there were no significant delays in rail sidings (e.g., meeting freight trains) along the route.
- Some communities inquired into connecting services, such as shuttle bus services, taxi/car service, and Polar Bear Express connections at the stations. Nipissing First Nation inquired if there was an opportunity to have a shuttle service connect the North Bay Station to their community.
- There was a clear desire for a modern train that was well equipped with Wi-Fi, ample baggage storage, environmentally friendly, and accessible. Nipissing First Nation expressed desire to have Wi-Fi service, as well as connecting service to Pearson Airport in Toronto.
- Several communities located in the Northern corridor (i.e., north of North Bay) inquired about a sleeper car because of their long travel times. The primary concern was with their senior population that would be attending medical appointments in the Greater Toronto region.
- The availability of a diner car was discussed at every engagement and there was unanimous desire to have it included as part of the service.
- To boost tourism, many communities inquired about adding storage in a baggage car that would be able to accommodate snowmobiles, canoes/kayaks, and bicycles. There are already several tourism initiatives within the regions promoting these activities and the passenger rail service would help complement those objectives by allowing passengers to travel with equipment.

- Members were concerned that the ticket pricing would be inflated and were hoping to have it aligned like the previous Northlander service. The communities also want to know how Ontario Northland was planning on selling tickets for the service. There was interest shown from some communities to include non-digital ticketing options for those individuals that do not have access to technology. This was brought up as a concern for Nipissing First Nation, as some community members do not have access to technology or credit cards to purchase tickets online.
- Although each community has different requirements for their station depending on their existing structures, there was a clear basic needs requirement discussed. Communities were aligned with having ample parking, proper lighting, and a secure heated shelter. Some communities have already reached out for funding grants to assist in their development. Others had expressed interest in having local businesses operate from within a station to provide additional opportunities for foot traffic and potential revenue streams.
- Since COVID-19, every community reported some form of population growth. That growth was primarily fueled by people with the ability to work from home and wanting to escape large urban centers, as well as a desire to find more affordable housing. That growth has attracted land developers and spawned several economic initiatives to cater to the new population.
- Members believed that passenger rail would help fuel that growth and service the needs of the community.
- Every community agreed that the return of the service would boost their tourism, provide medical access to their residents, and promote living in their respective area. Multiple communities spoke about how the return of passenger rail could support their economic development plans.
- Nipissing First Nation requested if there would be procurement opportunities with First Nation communities and encouraged Ontario Northland to reach out for assistance with any procurement opportunities identified to establish the service.

APPENDIX

B

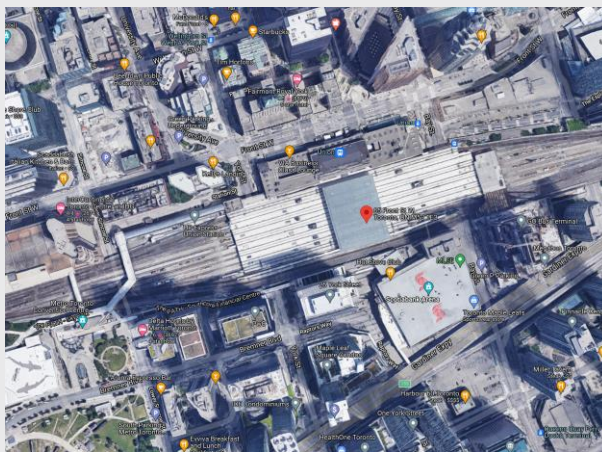


Site Condition Assessments & Conceptual Station Designs

Union Station

The SCA of Union Station was limited to a review of information provided online. Union Station, which is located at 65 Front Street West, Toronto, was constructed in approximately 1927. The Station is designated as National Historic Site.

The Station serves as a transportation hub for the Greater Toronto and Hamilton Area (GTHA). The City of Toronto, which has been the owner of the station since 2000, undertook a multi-year revitalization project that concluded in July 2021. The sixteen tracks, available at this Station, are used by GO Transit, VIA Rail, Amtrak, UP Express (an express train from Union Station to Toronto Pearson International Airport), and Ontario Northland.



Note: Toronto Union Station, Langstaff and Gormley are owned and operated by Metrolinx. No changes are anticipated at these stations to accommodate the addition of NE Passenger Rail.

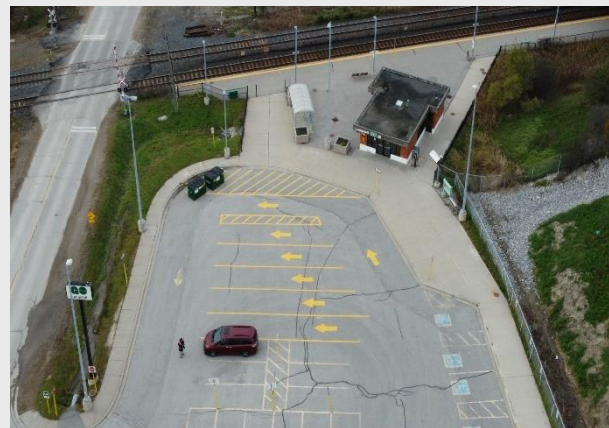
Langstaff

Langstaff Station, located at 10 Red Maple Road, Thornhill, is operated by Metrolinx and is currently primarily used by GO Transit. The Rail Station serves the communities in Thornhill and the southern part of Richmond Hill (Gormley Station serves northern Richmond Hill).

Langstaff Station has two Station buildings: the north Station building and south Station building; both buildings serve one train Station platform. The north Station building was constructed in 2005 and contains a waiting area, ticket counters, and washrooms. The south Station building was constructed in 1978 and provides shelter for passengers. There are no washrooms or amenities in the south Station building. An elevated area is provided on the platform to provide access for passengers in wheelchairs.

Each Station building is provided with a parking lot and a drop-off area. At this location, passengers have access to transports, such as the GO Bus, which has a stop at this location, and VIVA Bus (operated by York Region Transit), which operates the bus terminal at Richmond Hill Centre, which is located just northwest of the Station.

The site and Station buildings are generally well-maintained and are in fair to good condition, overall. Repairs or reconstruction of the parking lots and the replacement of the roof covers are anticipated within the next five years.



Gormley

Gormley Station is an active GO train and bus terminal located at 1650 Stouffville Road, Richmond Hill. The Station is reportedly operated by Metrolinx. The location serves the Oak Ridges and Whitchurch-Stouffville communities. The Station building and parking lots were constructed and developed in approximately 2016.

The Station building contains ticket counters, a waiting area, and barrier-free accessible washrooms. A breezeway connected to the Station building provides shelter on the Station platform. To onboard passengers in wheelchairs, an elevated area is constructed on the Station platform.

Parking lots with a network of roadways and a drop-off area are provided at this location. The bus terminal, adjacent to the Station, serves as a connection to various GO Bus routes. A taxi stand is provided at the drop-off area.

The Station building, platform shelters, and site infrastructure are in good condition overall.



Washago

Washago Station, which is located immediately south of Simcoe County Road 169 and east of Highway 11, serves the Washago Community. The Rail Station is the first stop westbound after Toronto's Union Station for VIA Rail's Transcontinental Canadian Route. The Station was a stop on the Northlander Passenger Train service until the service was discontinued in 2012.

The Station building is generally a shelter for passengers and does not have any amenities, such as washrooms. There is no staff permanently on site. The site is surrounded by property owned by CN Rail.

There are no parking spaces dedicated for the Station. Public transit is not available at this location.

The Station building is generally in fair condition, overall. Site components, such as the train platform and light standards, are in poor condition.





Gravenhurst

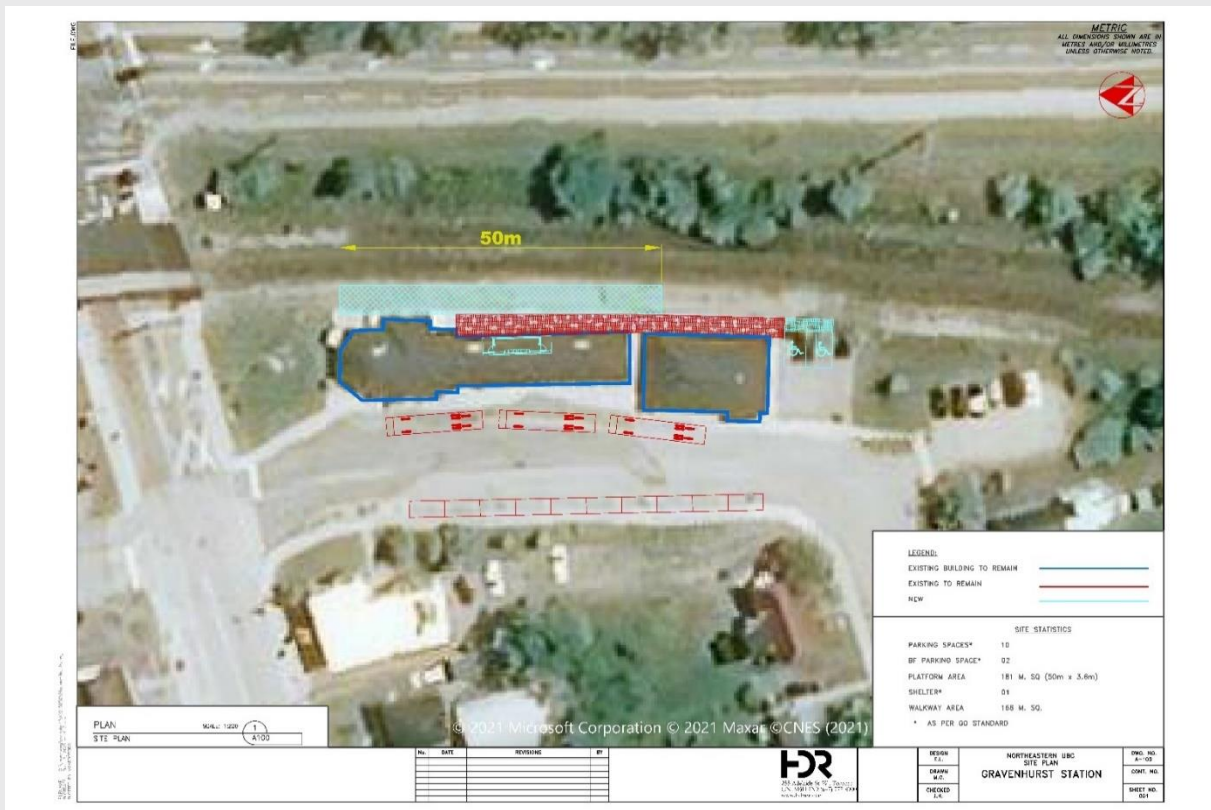
Gravenhurst Station is owned by the Town of Gravenhurst and is situated at 1501 Second Street, Gravenhurst. The Station, after the discontinuation of the Ontario Northland train services, has not been in use.

According to the information gathered on site, the main Station building was constructed in 1919. The ancillary Station building, located to the north of the main Station building, was likely constructed at the same time. The buildings have now been repurposed: the main Station building is partially occupied by Muskoka Taxi; and the ancillary Station building is occupied by Gravenhurst Veterinary Services.

It appears, when the Station was in operation, a café and washroom amenities, were provided in the building (at the time site visit building access to confirm the presence of the above was not available).

A drop-off area and street parking are available on Second Street. Currently there is no local bus service to the Station. The bus stop reportedly has been relocated to be in front of the ticket agency location.

The Station buildings appear to be generally well-maintained and are in fair condition.



Bracebridge

Bracebridge Station, located at 85 Hiram Street, Bracebridge, was a stop on Northlander Passenger Train service, until the service was discontinued in 2012.

The Station building is currently vacant. Based on the information gathered, the Station building was constructed and opened in 2004. Currently, the Station building is owned by the Town of Bracebridge. There are likely no amenities within the building.

A public parking lot owned and operated by the Town of Bracebridge is constructed adjacent to the Station building. An asphalt-paved Station platform is provided at the train onboarding area.

No local city transit (bus routes) is available at this location.

The Station building and platform are in fair condition overall. The parking lot appears to have been recently repaved and is in good condition.





Huntsville

Huntsville Station is a privately owned property that is located at 26 Station Road, Huntsville. The Station was a stop for the Northlander Passenger Train service when train service was in operation. The surrounding yard and neighbouring freight shed on site remains in use by CN Rail.

The Station building was constructed in 1924 and is reportedly a designated/listed Historical building under the Ontario Heritage Act (Provincial) as well as under Heritage Railway Stations Protection Act (Federal). The Station building has now been repurposed into commercial retail units and leased to a training/fitness studio and a winery.

A parking lot is located along the southeast elevation of the Station building. An asphalt-paved Station platform is provided for the onboarding area.

No local transportation is available at this Station.

The Station building and site components are generally in poor to fair condition overall. Significant deterioration on the platform was observed.



South River

South River Station, located at 75 Ottawa Avenue, is owned by Town of South River. The Station was a stop on the Northlander Passenger Train service, when in operation (discontinued in 2012).

The Station building was constructed reportedly in 1884. The Station building appears to have been repurposed to a museum or community heritage centre, until it was reportedly closed by CN Rail in 1986. Ontario Northland has confirmed during a community engagement call that the building does not contain washrooms.

There is an unmarked gravel-covered parking lot, which appears to be shared with the neighbouring church facility. An asphalt-paved Station platform on par with the surrounding grade is constructed along the Station building's east elevation. Local transportation is not available within the vicinity of the site.

The Station building and site components are in fair condition overall.





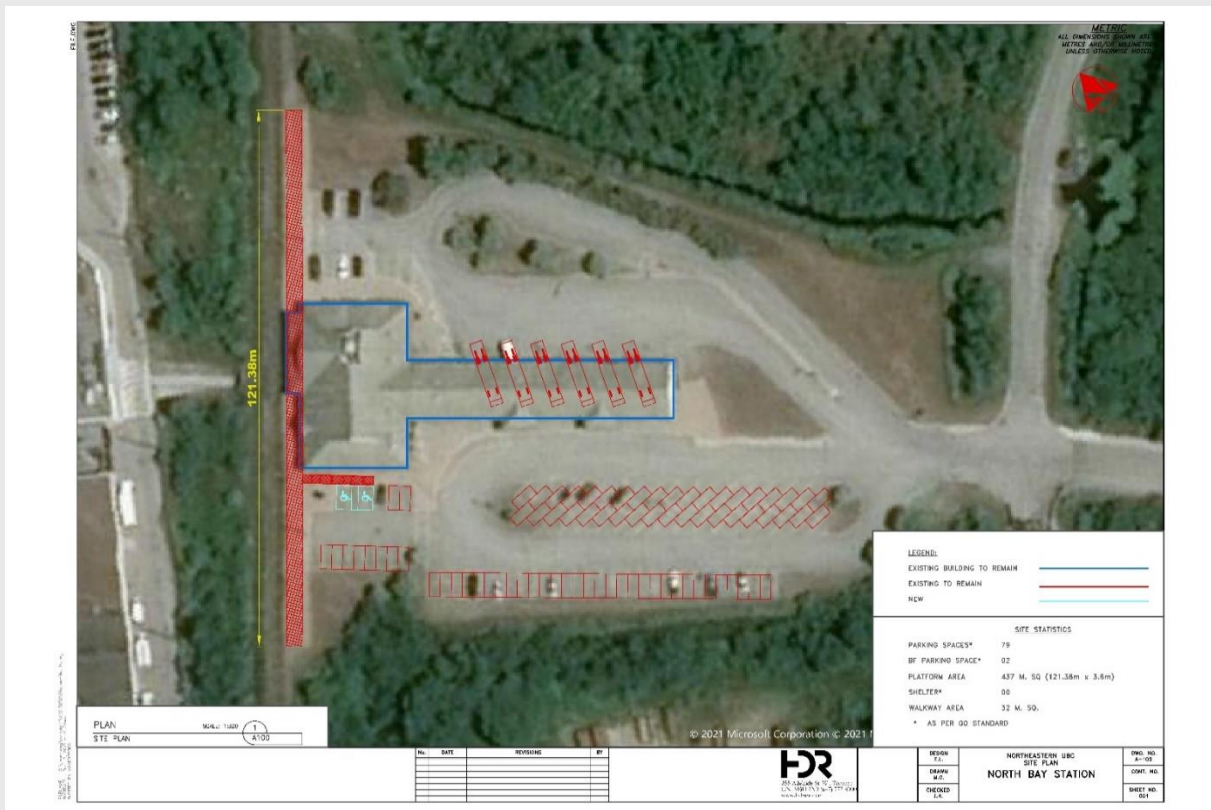
North Bay

North Bay Station is an Ontario Northland train station and bus terminal. The Station is located at 100 Station Road, which is east of the downtown area in North Bay. The Station, which currently only operates as the bus terminal, is a hub for multiple bus routes.

Based on the information gathered, the Station building was constructed in 1996. Amenities such as washrooms, vending machines, and locker storage, are provided in the Station building. Ticket counters are available in the waiting area. The Station platform, paved with interlock concrete stone, is constructed to the north of the Station building.

Parking lots adjacent to the west and east elevations of the Station building are provided for staff and patrons. Access to the neighbouring shopping mall located to the north of the Station site is provided by a path connected to the basement entrance to the Station building.

The Station building and site components are in fair to good condition overall.



Temagami

Temagami Station is owned by Municipality of Temagami, Ontario.

The current Station building structure, located at 6718A Highway 11 North, Temagami, was reportedly constructed in 1909, after a fire, in 1907, burned down the original building. When the Station was in operation, the building contained an office, telegraph, signal equipment, ticket counters, waiting rooms, and washrooms (an accessible washroom remains available). The Station building has been repurposed, and currently used as an art gallery and tourist information centre. The Station is managed by the Temagami Station Restoration Trust.

The Station is surrounded by asphalt pavement that functions as a parking lot and onboarding platform (no elevation difference). There is no local transportation available at this location.

The Station building is well-maintained and is in good condition overall. The asphalt paved parking lot, which is in poor condition, has several patch repairs.





Temiskaming Shores (New Liskeard)

New Liskeard Station is located at 13 Jaffray Street in New Liskeard, Temiskaming Shores. This location was a stop on the Northlander Passenger Train service until 2012, when the service was discontinued. Ontario Northland buses continued to use this Station until 2016. The Station is currently vacant and closed.

Access was not available; however, it appears the Station building has washrooms. There is no local transportation available within vicinity of the site.

An asphalt-paved parking lot is constructed to the east of the Station building. There is a drop-off area under the Station Building’s canopy. An asphalt-paved Station platform is constructed to the west of the Station Building.

The Station building and site are generally in very poor condition. There have been instances of security breaches and flooding within the building.



Englehart

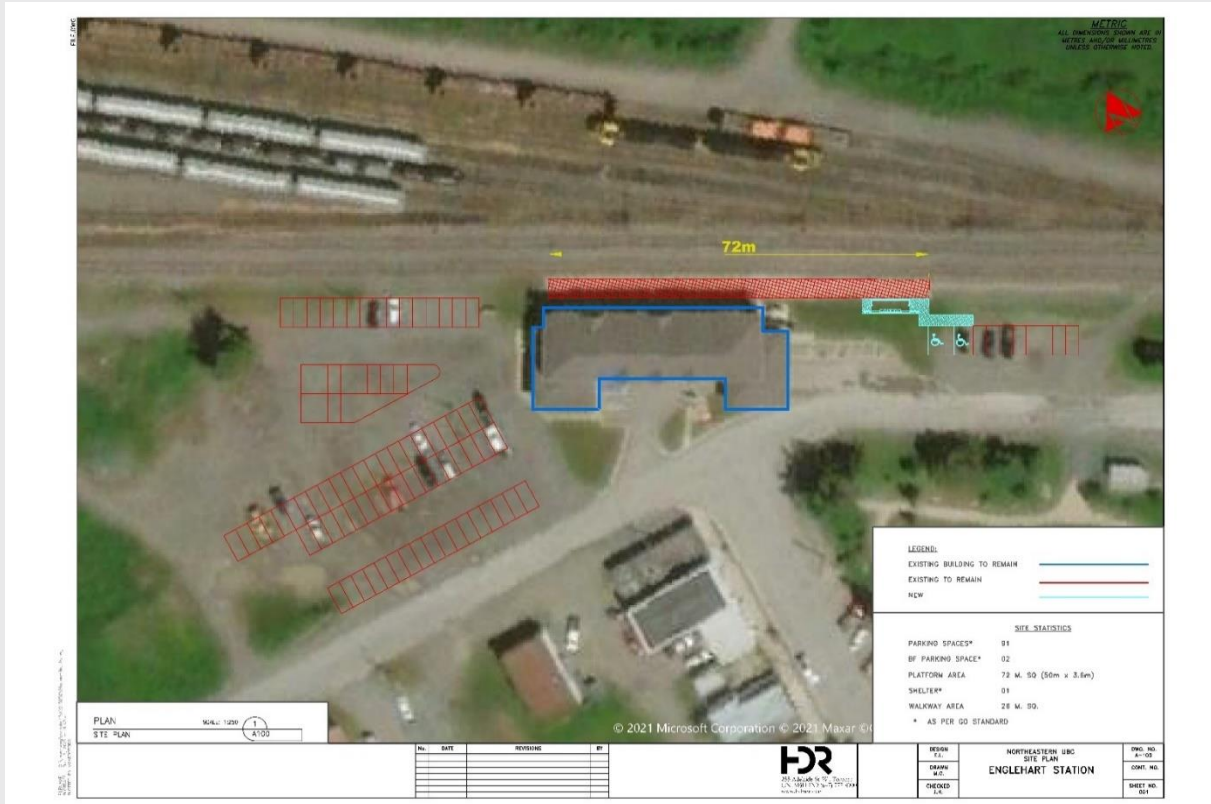
The Station building was constructed in 1988. According to Ontario Northland, Englehart Station is a major site for its rail operations. The Station has a waiting area, ticket counters, and washrooms. The Station platform, consisting of concrete and asphalt paved areas, is constructed to the north of the Station building.

A gravel paved parking lot is provided to the west of the Station building. There is also a gravel paved drop-off area adjacent to the south elevation of the Station building.

There is no local public transit service available at this Station.

The Station building and site are in fair to good condition overall.





Kirkland Lake (Swastika)

Swastika Station, which is located at the intersection of Highway 66 and Cameron Street, served Swastika and the neighbouring Kirkland Lake communities. The station lands are reportedly owned by Ontario Northland.

The original Station building, which was constructed in 1908, was demolished in May 2021. Currently there is no structures or facilities at this location.

The asphalt-paved Station platform and parking, which remain at this site, are generally in good condition. Local transportation is not available at this location.



Matheson

Matheson Station, which is owned by Ontario Northland, was a train stop for the Northlander Passenger Train service.

The Station building, located at 385 Railway Street, Matheson, was constructed in 1916. Currently, the Station building is vacant and closed. The Station building contains a waiting area, service counters, and barrier-free accessible washrooms.

The asphalt paved area, located at this location, serves as a parking lot and train Station platform.

Local transportation is not available at this location.

The Station building and site are generally in poor to fair condition.

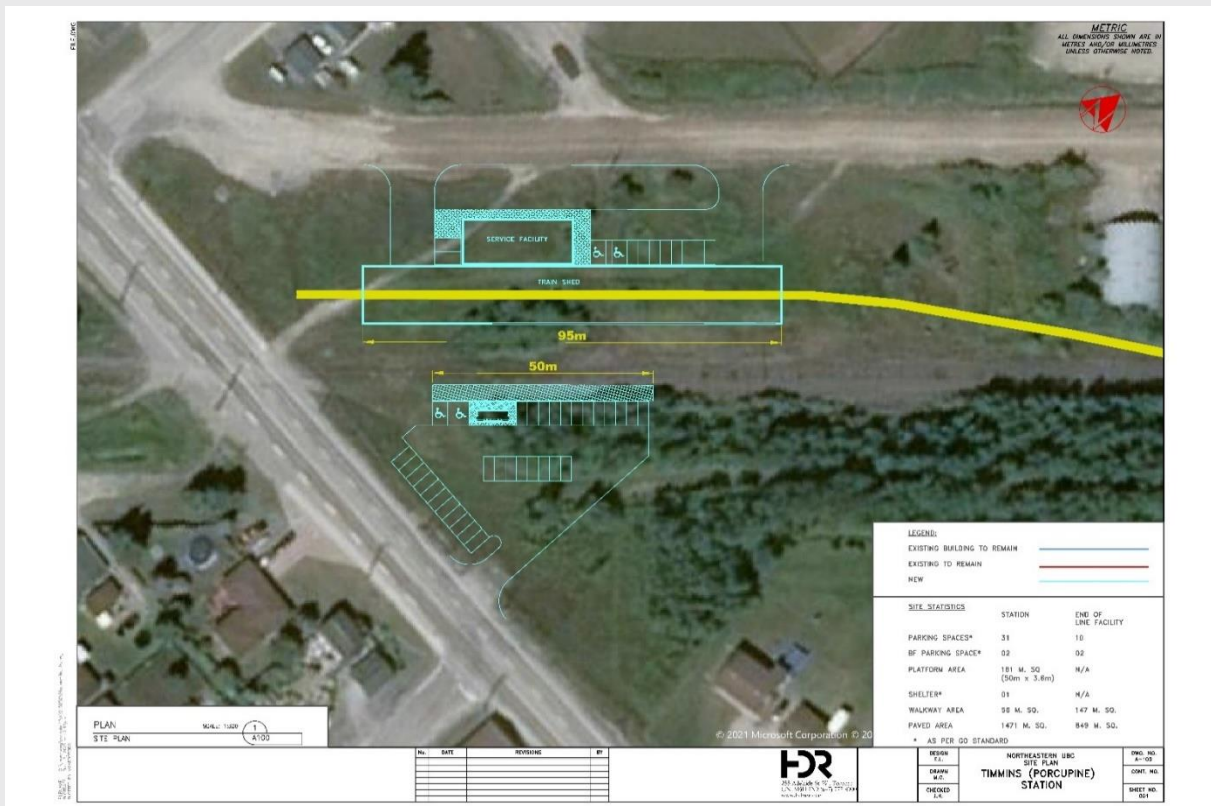




Timmins (Porcupine)

Porcupine (Timmins) Station is a parcel of land located at the intersection between Gervais Street North and King Street, in Porcupine, which is near Timmins, Ontario. The City of Timmins is the reported owner of this property.

There are currently no structures or facilities at this location. A bus stop is located on Falcon Street (along west site perimeter); the stop is likely serviced by Timmins Transit.



Cochrane

Cochrane Station, which is located at 200 Railway Street, Cochrane, is owned by Ontario Northland. The Station is part of the rail yard provided at this location. This train Station remains in operation and has commuter service running from Cochrane to Moosonee. Ontario Northland also operates a bus service from this location.

The Station building and Restaurant building provided at this location are separate structures constructed in approximately 1910. In 1990, the two structures were connected by link. The Station building is currently a hotel, which are owned and operated by Ontario Northland. The restaurant property is owned by Ontario Northland but is leased to a third-party operator.

Asphalt-paved parking lots are available to the north and west of the Station building. A gravel-covered parking lot is located to the east of the Station building. The Ontario Northland bus stop is located at the north parking lot. The Station platform, completed with interlock concrete stone, is constructed to the south of the Station building.

The Station building is generally well-maintained and is in good condition, overall. There is some deterioration on the paved surfaces.





NOTE: ALL DIMENSIONS GIVEN ARE IN METERS AND/OR MILLIMETERS UNLESS OTHERWISE NOTED.

LEGEND

EXISTING BUILDING TO REMAIN	
EXISTING TO REMAIN	
NEW	

SITE STATISTICS

PARKING SPACES*	150
BY PARKING SPACE*	02
PLATFORM AREA	300 M. SQ (83m x 3.6m)
PROPOSED SHELTER*	00
WALKWAY AREA	29 M. SQ.

* AS PER GO STANDARD

PLAN
SITE PLAN

SCALE: 1:1000

1
4/100

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NO.	DATE	REVISIONS	BY



DESIGN BY	NORTHEASTERN UBC	DWG. NO. P-100
DRAWN BY	COCHRANE STATION	CONT. NO.
CHECKED BY		SHEET NO. 001

