
Subject: Metrolinx Initial Business Case Update – Niagara Falls Rail Service Extension

Report to: Public Works Committee

Report date: Tuesday, January 14, 2020

Recommendations

That Report PW 6-2020 **BE RECEIVED** for information.

Key Facts

- The purpose of this report is to provide a review and analysis of the Metrolinx's Updated Initial Business Case (IBC) for the Niagara Expansion.
- The updated IBC for extending rail service to Niagara recommends the Option 2 service pattern which results in 11 total daily train trips for Niagara (six (6) outbound trains from Niagara Falls to Union Station, five (5) trains inbound from Union Station to Niagara Falls), seven (7) days a week.
- As the next step of the expansion process, Metrolinx will refine the infrastructure scope and service patterns for Option 2. This analysis of refinements and optimizations will eventually be published as a Preliminary Design Business Case.
- Metrolinx's Board approved moving forward to a Preliminary Design Business Case using Option 2 as the targeted service levels at its November 2019 board meeting.

Financial Considerations

There are no financial considerations related to this report.

Analysis

Metrolinx has a four (4) stage, iterative Business Case process. Projects progress through the following business case cycle:

- 1) Initial Business Case—compares investment options and selects preferred option for further refinement and design
- 2) Preliminary Design Business Case—takes the recommended option of the IBC and reviews different approaches to refine and optimize it
- 3) Full Business Case—confirms a specific option including benefits, realization, financing, and delivery plans for procurement
- 4) Post In-Service Business Case—reviews the actual costs and performance of the investment after the asset has gone into service

There is no set period of time for when these business cases are undertaken or how long of a process it is from start to finish of the business case four stage cycle.

An IBC was completed for Niagara in 2015, however, Metrolinx has undertaken an update to the Niagara IBC due to new factors and new information that has materialized since the announcement of the project in 2016. Specifically, Metrolinx now has an enhanced relationship with Canadian National (CN) Railway. In addition, there is updated information from CN on the corridor capacity of the Grimsby Subdivision, and GO's recent Niagara rail expansion operations and ridership projections have changed including the examination of tourist demand in the region. The 2015 IBC did not account for these factors, especially the tourist demand. The updated IBC builds on the work completed in 2015. The newly updated IBC clarifies project scope, preliminary design, ridership demand, service patterns, benefits and costs for Niagara's expansion at a high level. The outcome of the 2019 IBC recommends that Option 2 be examined in more detail through the Preliminary Design Business Case.

The options for Niagara expansion examined in the 2019 IBC are: Base Case, Option 1, Option 2, and Option 3.

Base Case: Additional expansion of current GO Rail service levels to Niagara does not occur in this scenario. GO Rail services will only extend to the newly built Confederation GO Station for peak only services, and only once the infrastructure is completed (Note: this is dependent on a third party investment at Confederation for rail infrastructure).

Option 1: Year-round daily service of four trains per peak period to/from Union with two starting/terminating at Niagara Falls GO station and two starting/terminating at Confederation GO station. Seasonal summer rail service (seven trains; three departing from Union station and four departing from Niagara Falls GO Station) extended to daily, year-round service for a total of 11 daily trains (6 departures and 5 arrivals at Niagara Falls). Metrolinx would 'do minimum' at St. Catharines and Niagara Falls and expects third party investment at Grimsby and Confederation.

Option 2: Identical service pattern at Grimsby, St. Catharines and Niagara Falls GO stations as Option 1. In addition, hourly two-way, all-day service to/from Confederation GO Station all week. Union-bound trains would operate all stops to Oakville GO minus Appleby and Bronte GO Station and run express from Oakville GO to Union Station. Metrolinx would 'do minimum' at St. Catharines and Niagara Falls and expects third party investment at Grimsby and Confederation.

Option 3: Weekday service of half-hourly trains to/from St. Catharines GO Station (operating hourly on weekends) and hourly trains to/from Niagara Falls GO Station. Every second eastbound train arriving at St. Catharines GO Station would continue to Niagara Falls GO Station allowing for hourly service. Stations at Confederation, Grimsby, St. Catharines and Niagara Falls would see a full suite of station access measures and capital improvements. Track infrastructure in addition to Option 1 and 2 would be required on the CN Grimsby Subdivision to enable this service.

The IBC examines each option through four separate lenses: strategic, economic, financial, and deliverability and operations. Based on this comprehensive evaluation the report recommends a preferred option for further study.

Strategic Case

The Strategic Case examines how the proposed options align with Metrolinx's 2041 Regional Transportation Plan (RTP) goals and discusses the expected outcomes. The outcomes examined are: population and jobs served by the expansion, increase in ridership, improvements to the transit network, improvements to transit travel time, improvements to transit reliability, reduction in auto vehicle trips, encouragement of active modes of transportation, and natural heritage impact.

The Strategic Case summarized the following outcomes in relation to Metrolinx's 2041 RTP goals for the Option 2 level of service.

- Population and jobs served by Niagara Rail Extension: 11,200 people and 9,300 jobs within 800 metres of a station along the Niagara Extension with direct access to rail services by 2031
- Increase GO Ridership in Hamilton and Niagara: 2031 annual ridership of 1,826,000 and average weekend day ridership of 200
- Improve the Transit Network: Improved connections to local and regional transit networks in Niagara Region and Hamilton with four GO Rail stations
- Improve Travel Time: Significant travel time reductions from Union Station to Niagara Falls of up to 15-45 minutes from current train-bus services
- Improve Transit Reliability: Transit service will have a separate right-of-way from road vehicles, but will share the corridor with freight traffic. Contingent on Welland Canal crossing agreement with the St. Lawrence Seaway Management Corporation (SLSMC)
- Reduce Auto Vehicles Trips: Three of four proposed stations are centrally located and would promote non-auto access to GO stations and provide direct GO Rail access for Hamilton and Niagara Region
- Encourage Active Modes of Transportation: Three of four proposed locations would be in residential areas, encouraging active modes of station access

Economic Case

The Economic Case is one of two chapters that focuses on the rationale for pursuing the investment. While the Strategic Case evaluates options based on a project specific policy/plan oriented evaluation framework, the Economic Case determines if the expected benefits of this investment exceed the costs required to deliver it. This analysis considers the magnitude of costs and benefits over a 60-year project lifecycle and determines the Benefit Cost Ratio (BCR) and the Net Present Value (NPV).

Costs are the required investment to deliver the Niagara Falls Rail Extension and are divided into Capital Costs and Operating and Maintenance Costs.

Capital costs for Option 1 and 2 are identical as the physical infrastructure does not change to operate either option. However, Option 2 accumulated over \$130M in additional operating and maintenance costs due to operating hourly services to and from Confederation GO Station. Capital costs for Option 3 is around \$50M more than Option 1 and 2, these costs would be to improve infrastructure to enable two-way, all-day rail operations to St. Catharines and Niagara Falls GO Stations. The operating and maintenance costs for Option 3 exceed those of Option 2 by \$923M over the project lifecycle (60 years) which is the reason why Option 3 is currently not recommended for further analysis.

The Economic Case analysis includes evaluation of expected benefits which are categorized as user impacts and societal impacts.

User impacts occur for three main groups: existing GO Bus/Rail passengers, new GO Rail passengers, and auto users. Existing and new user time savings account for the largest share of user impacts.

Societal impacts are when people change their mode of transportation from a less efficient mode to GO Rail which then reduces the externalities on society. Externalities include emissions that pollute the air or injuries that can occur from collisions.

Results indicate that Option 2 generates the greatest return on investment per dollar spent. For every dollar spent \$1.2 of benefits are returned to society.

Financial Case

The Financial Case assesses the overall financial impact of proposed investment options. This includes a review of total revenues (fares) gained and expenditures (capital, operating and maintenance) required over the lifecycle of the investment, which is calculated at 60 years.

Capital costs for Option 2 consists of infrastructure at stations and track work in select areas of CN's Grimsby Subdivision to meet the proposed service pattern. Major infrastructure improvements would primarily occur between West Harbour and St. Catharines GO Stations; however, overall there is a smaller amount of required track than in Option 3, while the Lewis Road Layover Facility and existing GO/VIA stations in St. Catharines and Niagara Falls would see minor capital improvements. All scenario costs assume that the proposed GO station in Grimsby will be paid for by third parties under a market-driven strategy. Operating and maintenance costs cover all aspects of keeping the investment running including staffing, fuel, vehicle and track upkeep and

other state of good repair costs. Operating and maintenance costs increase proportionally to rail service increases across the options.

Revenue impacts are based on forecasted fare revenues. Option 2 has the highest revenue to cost ratio of 38% indicating that it achieves the best balance between capital and operating and maintenance costs and expected revenues.

Deliverability and Operations Case

The deliverability and operations case is an analysis of investment delivery, operations and maintenance, service plans and any other issues that may prevent the realization of an option. This case scopes the work to be undertaken for each option. The recommended Option 2 requires the following:

- Track work at Confederation GO Station to allow for access on both north and south sides of the platform
- Expansion of the Lewis Road train layover facility and double tracking of sections of the Grimsby subdivision
- On-corridor infrastructure work—signaling, tracks, and communication upgrades
- Minimal infrastructure at Grimsby GO Station provided by a third party
- New self-serve PRESTO machines in St. Catharines and Niagara Falls GO/VIA Station

Option 2 deliverability has two dependencies: operating agreements with CN Rail and an operating agreement with SLSMC at the Welland Canal. SLSMC has indicated that the two peak period train crossings in the morning and evening can be dedicated times and would not be impacted by marine movements in the canal, leaving the seven off-peak trains vulnerable to delays due to movements within the canal, if no formal agreement for dedicated crossing times can be reached.

The IBC determines that Option 2 is technically feasible and requires a medium amount of investment in existing and new infrastructure due to reduced station and infrastructure scope. Although there are stakeholder risks, the 11 trains per day over the Welland Canal makes an operational agreement with the SLSMC achievable.

Next Steps

Option 2 was supported by the Metrolinx Board. Now a Preliminary Design Business Case will begin assessing the preferred option at a more detailed level of analysis further refining project scope, service pattern, benefits and costs. The Preliminary Design Business Case is the second stage of the four-stage business case process at Metrolinx and will be followed by a Full Business Case and a Post In-Service Business Case.

Alternatives Reviewed

Option 1 and 3 were reviewed in the IBC. Option 1 was not the recommended option due to the same capital requirements as Option 2 but with fewer daily trains and lower ridership which made the BCR less than what is anticipated with Option 2 service levels.

Option 3 was also tested; this service option proposed two-way, full-day half hourly service to St. Catharines with hourly service to Niagara Falls. Ultimately the capital, and operating and maintenance costs were not offset by the benefits and projected fare revenue. However, Option 3 is not precluded from future implementation if demand, conditions, and Provincial direction are met. Option 2 is simply the initial proposed level of service delivery for the Niagara Expansion. This approach is consistent with Metrolinx's approach to service expansion to new service areas and increased service beyond Option 2 will be driven by ridership demand.

The Updated IBC did not examine any future impacts or analysis related to Lincoln. That review and analysis requires a separate IBC process to be undertaken by third party proponents.

Relationship to Council Strategic Priorities

The Metrolinx Updated Initial Business Case—Niagara Falls Rail Service Extension with a recommended service option for GO Rail service and a recommendation to proceed to the next stage is directly related to Council Strategic Priority: Responsible Growth and Infrastructure Planning Objective 3.1 of Advancing Regional Transit and GO Rail Services.

Other Pertinent Reports

Confidential CSD 17-2019 – Niagara GO Station Development Strategy

[Metrolinx Initial Business Case Update—Niagara Falls Rail Service Extension](http://www.metrolinx.com/en/regionalplanning/projectevaluation/benefitscases/2019-11-14-Niagara-Falls-Rail-Extension-IBC-Update-FINAL.pdf)

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