



Bloor-Yonge Station Capacity Improvement Project – Stage Gate 3

Date: December 8, 2021
To: TTC Board
From: Chief Capital Officer

Summary

The purpose of this report is to provide a project update and request the Board's approval for the Bloor-Yonge Capacity Improvements Project – Stage Gate 3, establishing the project preliminary design baseline definition for project scope, schedule, and cost as well as the recommended project delivery strategy.

The completed Stage Gate 3 deliverables include a Project Charter, Project Management Plan, Business Case, Class 3 Cost Estimate, Level 3 Schedule, and Risk Register as well as a Procurement Options Analysis. The Class 3 Cost Estimate is \$1.505 billion including risk allowance, which is within the project budget of \$1.514 billion. The Level 3 Schedule including risk allowance shows the opening of the new second platform on Line 2 eastbound by Q2 2030 and completion of the remaining construction by Q1 2033.

These project preliminary design baselines are based on the recommended Progressive Design-Build (PDB) model for project delivery and will be refined at 60-80% design for approval by the Board, including further opportunities to reduce schedule and cost risks. The PDB model is recommended as it strikes a balance between (i) collaboration with TTC, designer and contractor; (ii) market experience with the design-build model; and (iii) TTC's readiness to implement the project by building on TTC's recent experience with the design-build model.

Recommendations

It is recommended that the TTC Board:

1. Approve the Bloor-Yonge Capacity Improvements project – Stage Gate 3 including the project preliminary design baselines for project scope, schedule, and model for delivery;

2. Direct staff to work with the City to enter into a contribution agreement with provincial and federal governments for their funding contribution of approximately \$500 million each under the Investing in Canada Infrastructure Plan – Public Transit Infrastructure Fund 2 (ICIP-PTIF 2); and
3. Forward this report to the City of Toronto, and Provincial and Federal governments for their information

Implementation Points

Upon approval of Stage Gate 3, the next steps for the Bloor-Yonge Capacity Improvements project include:

- Finalize the contribution agreement with Provincial and Federal partners;
- Retain an Owner’s Engineer by Q1 2022;
- Prepare a Request for Qualifications (RFQ) and then a Request for Proposal (RFP) for the selection of the Progressive Design-Build team by Q1 2023;
- Prepare and tender early works construction packages to advance underground servicing, utility relocations, and other works by Q3 2022; and
- Prepare the 60-80% Design Development stage, and establish a revised schedule and cost baselines to report back to the TTC Board for approval, which is expected by Q4 2023.

Financial Summary

There are no financial implications arising from the adoption of this report.

The total project cost for the Bloor-Yonge Capacity Improvements project is \$1.514 billion, comprising costs to the end of 2020 of \$18.497 million; funding of \$1.385 billion over the 2021-2030 Capital Plan period and post 2030 unfunded expenditures of \$110.155 million under Program 3.9 Buildings and Structures, Bloor-Yonge Capacity Improvements project, Service Improvement Category, which was approved by Council on February 18, 2021.

The Class 3 (Association for the Advancement of Cost Engineering(AACE)) cost estimate for the project is \$1.505 billion (unmitigated) and has been subject to third party peer review and a Value Engineering exercise. This Class 3 Cost Estimate (with risk allowance) identified a total project cost of \$1.505 billion, which is within the project budget of \$1.514 billion, including property acquisition costs.

The Provincial and Federal governments have made commitments to the project of approximately \$500 million each under ICIP-PTIF 2. The TTC with the City is seeking to finalize the contribution agreement with government partners. The City of Toronto has provided a one-third matching contribution with the approval of increased City Building Funds.

A business case was developed for the Bloor-Yonge Capacity Improvements Project which produced a net positive 1.49 Benefit-Cost-Ratio (BCR), signifying that the project is worthy of investment with the benefits outweighing the costs.

An integrated cost-schedule quantitative risk analysis was completed for the Bloor-Yonge Capacity Improvements Project which identified the following key conclusions:

- The schedule risk analysis identified the recommended project schedule cumulative risk allowance should be set at 12 months for the opening of the new second platform on Line 2 eastbound for an in-service date of Q2 2030, and an additional two months (14 months total) for the completion of the remaining construction for a project completion date of Q1 2033; and
- The Class 3 Cost Estimate (with risk allowance) identified a total project cost of \$1.505 billion, which is within the project budget of \$1.514 billion including property acquisition costs.

Resource plan to ensure the necessary direct, support, oversight and third party resources are in place to ensure the successful delivery of the project. The necessary resources will be included in the 2022-2031 Capital Budget and Plan submission.

The Interim Chief Financial Officer has reviewed this report and agrees with the financial impact information.

Equity/Accessibility Matters

A cornerstone of the TTC's Corporate Plan 2018-2022 is accessibility and as a proud leader in providing accessible public transit in the City of Toronto, we are committed to ensuring reliable, safe and inclusive transit services for all our customers.

The Bloor-Yonge Capacity Improvements Project is being designed to be accessible in accordance with the Accessibility for Ontarians with Disabilities Act, as amended 2005 (AODA), the Integrated Accessibility Standards Regulation, O. Reg. 191/11 (IASR), and the Ontario Building Code.

Consultation with stakeholders will continue at key milestones for the Bloor-Yonge Capacity Improvements project including a meeting on September 8, 2021 with the Advisory Committee for Accessible Transit (ACAT), and an online public information meeting planned in Q1-Q2 2022.

Decision History

On April 15, 2016, Contract S85-42 Bloor-Yonge Station Capacity Enhancement was awarded to AECOM Canada Ltd to undertake an analysis of ridership and facilities at Bloor-Yonge Station, and development of a preferred concept design for the expansion of Bloor-Yonge Station.

In May 2017, City Council confirmed the expansion of the station as a priority project for Provincial and Federal funding, and requested the TTC to report on the status of the expansion of the Bloor-Yonge Station.

On April 11, 2019, the Board approved “Line 1 Capacity Requirements – Status Update and Preliminary Implementation Strategy” in which the expansion of Bloor-Yonge Station was identified as a key component to address capacity of the subway system.
https://ttc-cdn.azureedge.net/-/media/Project/TTC/DevProto/Documents/Home/Public-Meetings/Board/2019/April_11/Reports/18_Line_1_Capacity_Requirement_and_Preliminary_Implementatio.pdf?rev=812341c5088e48fa8a0bc0d7e68ff199&hash=01979E9C12FC9BAE9B9CE8B70D026760

On April 16, 2019, City Council endorsed the Bloor-Yonge Capacity Improvement project (BYCI) as a priority project under the City of Toronto’s funding allocation of the Investing in Canada Infrastructure Plan (ICIP) Public Transit Infrastructure Fund (PTIF). All three levels of government are expected to contribute \$0.5 billion towards the estimated \$1.5 billion project. City Council approved funding for the municipal share in the 2020 budget process.

On February 25, 2020, the Board authorized a contract amendment to AECOM to advance the design to approximately 30% and prepare the Stage Gate 3 – Project Performance Baseline deliverables.
https://ttc-cdn.azureedge.net/-/media/Project/TTC/DevProto/Documents/Home/Public-Meetings/Board/2020/February_25/Reports/5_Bloor_Yonge_Capacity_Improvements_Procurement_Amendment_Au.pdf?rev=fb498802173745858c71ec71985792ef&hash=467A8CBC7B7D7129EABCBB3B113853AD

On October 22, 2020, the Board authorized compensation, on a cost recovery basis, to CreateTO for up to \$1.5 million from the approved BYCI project budget for their efforts to facilitate and project manage amendments to the existing ground lease at 2 Bloor St. E., as well as the acquisition of property requirements for the construction of the early works.
https://ttc-cdn.azureedge.net/-/media/Project/TTC/DevProto/Documents/Home/Public-Meetings/Board/2020/October_22/Reports/3_Bloor_Yonge_Capacity_Improvements_Early_Works_Property_Acq.pdf?rev=a3a36f24aa674bb09fd550c019385a0e&hash=36C58E344DE5F49D2E287477DD13682F

On June 16, 2021, the Board authorized acquisition of property requirements for the main construction works of the BYCI project.
https://ttc-cdn.azureedge.net/-/media/Project/TTC/DevProto/Documents/Home/Public-Meetings/Board/2021/June_16/3_Bloor-Yonge-Capacity-Improvements---Main-Property-Acquisition-Authoriz.pdf?rev=22abaa4f2976410a9e67f280ca317719&hash=DE8C2A1B725EE07607CF408C83770C7A

Issue Background

Bloor-Yonge Station is a major transfer point in the TTC subway system. Line 1 is expected to experience significant ridership growth reflecting ridership generated from population growth from within and outside the City of Toronto and the implementation of transit expansion initiatives, including the northerly extension of Line 1.

Bloor-Yonge Station is a key pre-condition for further network expansion planned by the Province/Metrolinx, and has been identified as a priority project by the City of Toronto, Province of Ontario and Government of Canada.

It is anticipated that without modifications to Bloor-Yonge Station, overcrowding will increase dwell times, create bottle necks and reduce the level of service to customers at both this critical interchange station and Lines 1 and 2.

This report aligns with the TTC Corporate Plan including Critical Path 3 – Move more customers more reliably, and Critical Path 4 – Make taking public transit seamless.

Comments

The Bloor-Yonge Capacity Improvements project was advanced to 30% design with the completion of Stage Gate 3 deliverables to establish the project preliminary design baselines including project scope, schedule and cost as well as a recommended project delivery strategy.

Completed Stage Gate 3 deliverables include:

- Project Charter;
- Project Management Plan;
- Business Case;
- Class 3 Cost Estimate;
- Level 3 Schedule; and
- Risk Register.

The project preliminary design baselines for schedule and cost for the Bloor-Yonge Capacity Improvements project are based on the recommended Progressive Design-Build (PDB) model of project delivery. The PDB model is expected to establish updated schedule and cost baselines, which are determined later at the 60-80% Design Development stage as discussed below.

Project Delivery Strategy

A Procurement Options Analysis (POA) was undertaken to analyze current procurement models and trends, and identify the best strategy to deliver the Bloor-Yonge Capacity Improvements project. The assessment of procurement options included a review of relevant industry background information and precedent projects, market sounding with Canadian consulting and construction sectors, value for money analysis, and quantitative risk analysis. The POA evaluated 14 different procurement models to deliver the Bloor-Yonge Capacity Improvements project including Design-Bid-Build, Design-Build, Construction Management, Alliance Contracting, Integrated Project Delivery, Progressive Design-Build, and several combinations of Design-Build-Finance-Maintain.

The results of the POA identified Progressive Design-Build as the preferred procurement model for the project for the following reasons:

- Greater collaboration between the TTC, designer and contractor;
- Market experience with the design-build model;
- The TTC's readiness to implement the project by building on the TTC's recent experience with the design-build model (McNicoll Garage);
- Early contractor involvement;
- Risk allocation between the parties is developed collaboratively, negotiated and agreed at 60-80% design;
- Ability to integrate changes up to 60-80% design; and
- Earlier completion of construction compared to Design-Bid-Build.

Progressive Design-Build (PDB) is a collaborative contracting model in which the owner and selected execution team of design and construction professionals work closely together in a collaborative manner to develop the design step-by-step. When the design is developed to 60-80% in Phase 1, the PDB team and owner negotiate a fixed price or target price and execution schedule. This price and execution schedule will form the basis of an agreement between the parties for Phase 2, which includes the integrated design, construction and commissioning of the asset based on requirements defined by the TTC. Failure of the parties to reach this Phase 2 agreement will trigger an escape clause, which will permit the TTC to return to the market. The TTC will retain the ownership rights to the design if the escape clause is triggered. The Phase 2 agreement will outline details on the project scope, schedule, cost, commissioning, warranties, insurance and liability, dispute resolution and arbitration process, etc. Upon agreement on the cost and schedule, the PDB team will finalize the design and undertake construction.

Upon approval of Stage Gate 3, the TTC project team will:

- Finalize the contribution agreement with Provincial and Federal partners;
- Retain an Owner's Engineer to develop the Project Specific Output Specifications (PSOS), provide advisory services to the TTC for PDB, review submissions from PDB team for compliance, etc.;
- Prepare a RFQ followed by a RFP for the selection of the PDB team to design and construct the project;
- Work collaboratively with the PDB team to achieve the 60-80% Design Development stage and establish a fixed / target price and execution schedule for the Bloor-Yonge Capacity Improvements Project; and
- Bring the revised schedule and cost baselines to the TTC Board by Q4 2023 for approval based on the PDB project delivery method.

Project Scope

The scope of work includes:

- New second platform on Line 2 eastbound;
- Expansion of Line 1 northbound and southbound platforms;
- New electrical substation;
- New fan plants;
- New vertical circulation elements: elevators, escalators, and stairs;
- Modified main entrance and fare line; and
- New accessible entrance on Bloor Street East.

The Bloor-Yonge station must remain accessible and operational during construction of the Bloor-Yonge Capacity Improvements.

Reconstruction of the main station entrance at 2 Bloor St. E. will be required. The scope of work for the main entrance and northerly expansion of Line 1 platforms is the subject of on-going negotiations with the 2 Bloor St. E. tenant, Brookfield, and will be finalized as part of the ground lease between the City of Toronto and Brookfield.

Risk, Schedule and Cost

An integrated cost-schedule quantitative risk analysis was completed for Bloor-Yonge Capacity Improvements project to determine the project capital cost and schedule risk profiles as well as the contingency for the project at 30% detail design based on the PDB procurement model. The quantitative risk analysis assessed the project scope and undertook the following:

- A schedule risk analysis to account for any duration uncertainty, schedule risk events, and determine impacts for time variable costs due to changes in schedule.
- A cost risk analysis to account for any variability in the base cost estimate and discrete risk events from the project risk register.

The results of the quantitative risk analysis are contained in the Project Schedule and Project Cost sections below.

Project Schedule

As part of Stage Gate 3, a Level 3 Schedule was developed based on Design-Bid-Build and modified to reflect the Progressive Design-Build model of project delivery. The schedule risk analysis identified the recommended project schedule cumulative risk allowance should be set at 12 months for the opening of the new second platform on Line 2 eastbound for an in-service date of Q2 2030, and an additional two months (14 months total) for the completion of the remaining construction for a project completion date of Q1 2033 as shown in Table 1.

Table 1: Project Schedule

Milestone	PDB Milestone Dates			
	Level 3 Schedule without Risk	Risk Allowance (months)	Cumulative Risk Allowance (months)	Revised Project Schedule (Unmitigated)
Opening of the new 2 nd platform on Line 2 eastbound	Q2 2029	12	12	Q2 2030
Completion of remaining construction	Q1 2032	2	14	Q1 2033

The revised project schedule with risk allowance is unmitigated and shows the opening of the new second platform on Line 2 eastbound in Q2 2030 prior to the completion of the Yonge North Subway Extension at the end of 2030. The Progressive Design-Build team will further refine the schedule to produce a revised schedule baseline at the 60-80% Design Development stage. Schedule development will include examination of opportunities to mitigate and reduce schedule risks which may result in potential cost reductions.

Project Cost

A Class 3 Cost Estimate was completed as part of Stage Gate 3 based on Design-Bid-Build and modified to reflect the Progressive Design-Build model of project delivery. The Class 3 Cost Estimate has an expected accuracy range of -20% to +30%. The Class 3 Cost Estimate (with risk allowance) identified a total project cost of \$1.505 billion, which is within the project budget of \$1.514 billion including property acquisition costs.

The cost baseline using the Progressive Design-Build model will be further refined at the 60-80% Design Development stage, including examining opportunities to reduce cost uncertainty.

Business Case

A business case was developed for Bloor-Yonge Capacity Improvements to provide evidence based rationale for the project over a 60-year period.

The benefit-cost ratio is determined by weighing the benefits against the costs. Benefits include travel time savings, travel time reliability benefits, platform/station crowding reduction, road decongestion, auto operating cost savings, GHG emissions reduction, local air pollution reduction, and road safety benefits. Costs include capital expenditures, rehabilitation costs, and operating and maintenance expenditures. A benefit-cost ratio below 1.0 means that the benefits are less than the costs associated with the project while a benefit-cost ratio above 1.0 means that the benefits exceed the costs.

The business case produced a net positive 1.49 Benefit-Cost-Ratio (BCR) for the Bloor-Yonge Capacity Improvements project, signifying that the project is worthy of investment with the benefits outweighing the costs. The Bloor-Yonge Capacity Improvements project is a prerequisite for the Yonge North Subway Extension and Ontario Line.

Business Case Executive Summary is included in Attachment 1.

Construction Coordination with Adjacent Development

The project team continues to meet regularly with the adjacent developers impacted by the Bloor-Yonge Capacity Improvements project. There are several potential development projects planned for the area in proximity to Bloor-Yonge Station and there may be opportunities to coordinate construction staging and integrate proposed works where feasible. In addition, coordination is required with the City for proposed watermain construction on Yonge Street. Coordination with the various affected parties is also important to minimize business impacts and pedestrian/traffic disruptions during construction.

Public Consultation

An online public information meeting is expected in Q1-Q2 2022 to provide an update on the Bloor-Yonge Capacity Improvements project including details on the 30% design, project timelines, project videos, Community Liaison office, stakeholder consultations, and next steps, and provide the public with an opportunity to ask questions.

Contact

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Signature

Gary Downie
Chief Capital Officer

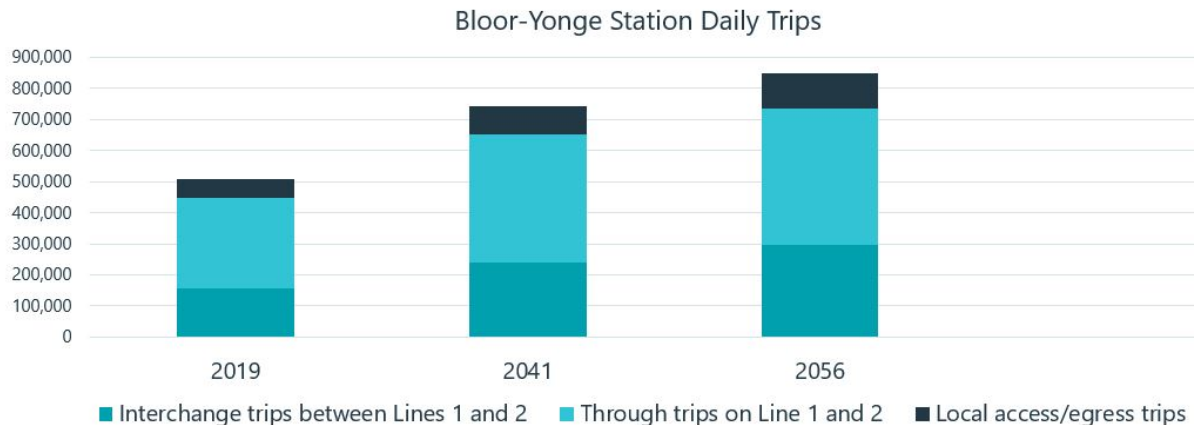
Attachments

Attachment 1 – Business Case: Executive Summary (prepared by Wood)

SP No. ZU47QVHN7S7E-313596064-26

Attachment 1 – Business Case: Executive Summary (prepared by Wood)

Key Problem Statement: As the major strategic interchange hub, Bloor-Yonge Station is mission critical to a functional and efficient subway network in the City of Toronto. Without the proposed Bloor-Yonge Capacity Improvement (BYCI) Project, the interchange station will face accessibility and capacity constraints – to the point where the station is estimated to fail to meet travel demand from 2033 onwards.



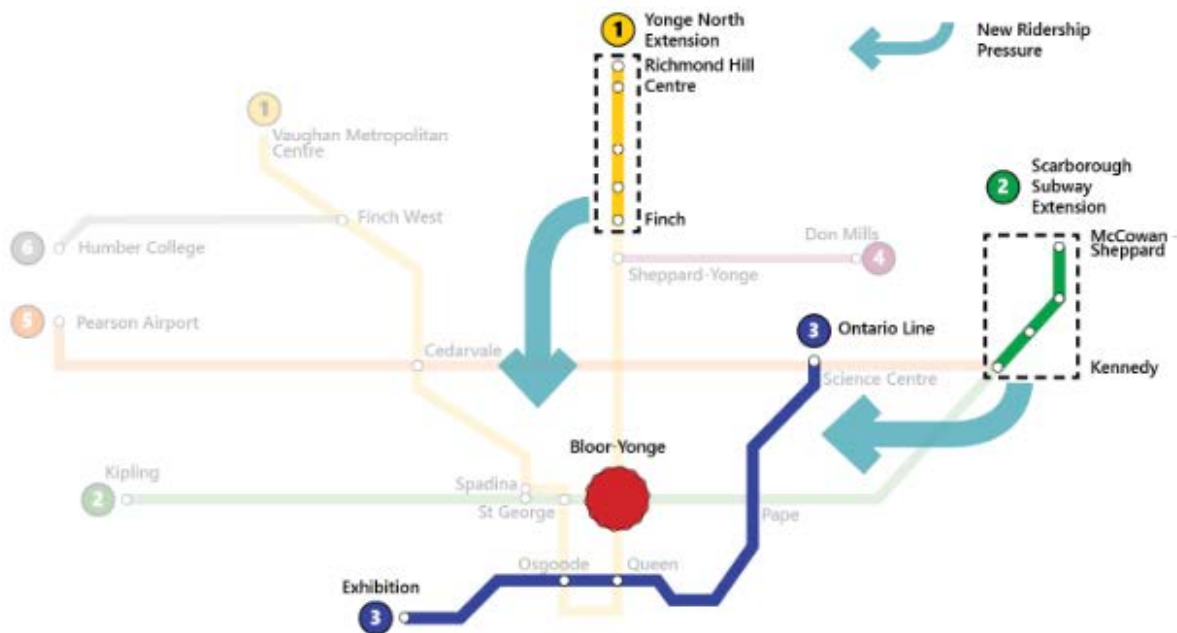
Three categories of users are currently affected, and will be more severely affected, if the capacity constraint problems go unaddressed: Local precinct-area customers who access and egress the trains at Bloor Yonge – and more sizably, subway customers who are travelling through the station on Lines 1 and 2, and those who are interchanging at the station between Lines 1 and 2.

Bloor-Yonge Station total traffic is expected to increase by 67% from 507,900 daily trips in 2019 to 846,900 in 2056. Already, present-day users routinely experience Level of Service “F” conditions during peak periods. “F” indicates that the volume of passengers approaching the already crowded platforms exceeds that which can be moved by the departing trains. The result: stoppage of passenger flow and unpredictable transit service at the station chokepoint during weekday peak periods, and with the cascading effect of delays and crowding elsewhere on the subway network.

Level-of-Service “F” and unplanned service delays on either Line 1 or 2 quickly creates the potential for uncomfortable and dangerous overcrowding throughout the Bloor-Yonge Station, especially on platforms and vertical access points.

Transit network and regional growth interdependencies: Looking forward to future transit expansion – essential to meet the Toronto region’s relentless population and employment growth pressures – the BYCI project is a prerequisite for unlocking the Scarborough and Yonge North Subway Extensions, forecast to generate 52,000 and 34,800 daily trips, respectively. The new Ontario Line will provide initial relief by enabling some Line 2 passengers to bypass Bloor-Yonge Station. But the diversionary benefits of the Ontario Line will be negated by continuous growth across the network, necessitating an expanded Bloor-Yonge Station by 2041. Much of that demand is propelled by Downtown Toronto, one of North America’s largest and most successful

residential and employment hubs, expected to grow by more than 451,000 residents and 951,000 jobs by 2041.



The proposed Bloor-Yonge Capacity Improvements Project will enable reliable, safe and comfortable levels of service, and will serve Toronto's growth, development and competitiveness for decades to come.

Financial Case: The BYCI Business Case is based on a preferred expansion option identified by the TTC after significant multi-year planning, design, and engineering studies -- including the 2012 *Downtown Rapid Transit Expansion Study* which examined expected growth and intensification in the Toronto core, the broader context Metrolinx Regional Transportation Plan, and the Line 1 Yonge Subway capacity pressures and requirements south of Bloor Street. The resultant \$1.5 billion capital cost assumed in the Business Case is a 30% design or Class 3 estimate with an expected accuracy range of minus 20% to plus 30%. The key components of the capacity improvement program, designed to accommodate 2056 travel demand, include:

- **Line 1:** Renovation and new construction at the Line 1 platform level to reconfigure and expand public circulation and back of house spaces, as well as new finishes to all existing public areas.
- **Line 2:** New Eastbound platform with supporting back of house spaces, and renovation to convert the existing centre platform to a Westbound only platform.
- **Station Common Elements:** Fare collection, track and signals, vertical transportation (elevator and escalator equipment and electrical connections), artwork, communication, signage and wayfinding, and other site works.
- **Fan plants;** new electrical building, and utilities.

Compared to the current station, the preferred BYCI design will entail a significantly larger layout and footprint, and more numerous and complex electrical and mechanical components, which will contribute to an increase in annual station and operating costs – all factored into the overall Financial Case. And given the estimated 60-year asset lifespan of the expanded and improved Bloor-Yonge Station, a rehabilitation factor is also built into the total capital lifecycle cost.

Economic Case: The quantifiable Economic benefits created by the Preferred BYCI Scenario, are projected to significantly exceed the total estimated financial cost. The key socio-economic beneficiary categories include:

- **Transit riders**, by far the largest beneficiaries, are estimated to realize more than \$1.7 billion in travel time savings, platform, and station crowding reduction, and travel time reliability benefits.
- **Automobile drivers and owners** are estimated to realize \$118 million in road safety and road decongestion benefits, and vehicle operating cost reductions from the mode shift to the TTC subway network.
- **External benefits to society** are estimated at more than \$25 million, reflecting environmental benefits (reductions in local air pollution and greenhouse gas emissions) and road safety benefits.

The detailed Financial and Economic Case assumptions, including estimation approach and methodology, are contained in Sections 2 and 4 of the main Business Case report.

The Business Case Proforma summarizes the overall performance of the Preferred BYCI Scenario through the Benefit-Cost Ratio (“BCR”) in Net Present Value terms (2021\$). The Business Case analysis found that over the long-term study horizon, **the Preferred BYCI Scenario will create a net positive 1.49 Benefit-to-Cost Ratio (BCR)** compared to the Do-Minimum scenario.

Business Case Pro Forma

	Impacts	Preferred BYCI Scenario
	Total Benefits (2021\$, NPV):	\$1,845.4 M
Transportation User Impacts:	Travel Time Savings	\$1,254.8 M
	Travel Time Reliability Benefits	\$332.9 M
	Platform/Station Crowding Reduction	\$124.7 M
Automobile User Impacts:	Road Decongestion Benefits	\$61.9 M
	Auto Operating Cost Savings	\$45.3 M
External or Societal Impacts:	GHG Emissions Reduction	\$5.0 M
	Local Air Pollution Reduction	\$10.1 M
	Road Safety Benefits	\$10.5 M
	Total Costs (2021\$ NPV):	\$1,238.5 M
	Capital Expenditures and Rehab	\$1,166.7 M
	Operating and Maintenance Expenses <i>Net incremental</i>	\$71.8 M
	Benefit-Cost Ratio (BCR)	1.49

The estimation of the Qualitative Impacts of the Preferred BYCI Scenario was performed in supplement and strengthen, but are not directly additive to, the quantitative case making. The key evaluation findings in the qualitative assessment include:

- **Agglomeration Economies:** Given Bloor-Yonge’s strategic location at the gateway to Toronto’s Central Business District, the preferred capacity improvement scenario is expected to facilitate a greater concentration of economic activity and productivity benefits through labour and knowledge clustering, specialization and sharing. The Ontario Line Business Case, for a rapid transit line that will service the downtown core, estimated agglomeration benefits to be equivalent to 17.5% to 22% of total user benefits.
- **Land Value Uplift:** Increased property values due to significant improvements to travel costs, congestion, reliability, and other accessibility benefits are known to generate 4% to 13% increase in adjacent real estate prices, according to rapid transit project experience in the Greater Toronto and Hamilton Area (GTHA) and other Canadian urban regions.

- **Temporary Direct, Indirect and Induced Economic Contributions** include \$1.49 billion to Ontario's GDP over the 2021 to 2032 period, of which approximately \$0.9 billion would be a contribution to labour income. Moreover, at the direct, indirect, and induced levels, it is estimated that an average of approximately 1,060 Full-Time Equivalent (FTE) jobs could be created or sustained across Ontario annually by the BYCI construction over the 2022 to 2032 period.
- **Long-Term Direct, Indirect, and Induced Economic Contributions** include \$270 million to Ontario's GDP over 2021 to 2090, including \$170 million would be a contribution to labour income. An estimated average of 60 FTEs per year could be sustained by these incremental operating activities from 2031 to 2090.

Economic Development Impacts

	Temporary from BYCI construction 2022 to 2032	Long-Term from BYCI incremental operations 2031 to 2090
GDP (2021\$)	\$1,490 M	\$270 M
Labour Income (2021\$)	\$900 M	\$170 M
Employment (per year average)	1,060	60

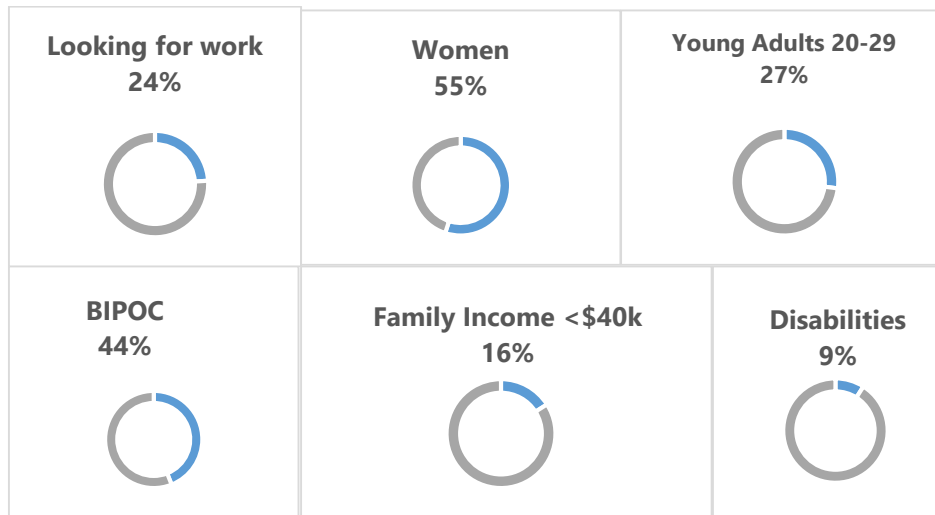
Strategic Fit of the Preferred BYCI Scenario with the foundational policy vision and directions of tri-government partners are well aligned, and include:

- **For Canada:** Infrastructure Canada Public Transit Investment Fund, Climate Action and Sustainable Development, Immigration and Population Growth, Toronto as the epicentre of Canadian business and commerce.
- **For Ontario:** Greater Golden Horseshoe (GGH) Growth Plan, 2041 Metrolinx Regional Transportation Plan (RTP), Metrolinx Mobility Hub Guidelines.
- **For Toronto:** Major Transit Station Area (MTSA) and Transit Oriented Development (TOD), TTC 15-Year Capital Plan, TTC Ridership Growth Strategy.

Inclusion Case

The Preferred BYCI Scenario is an opportunity to improve mobility and outcomes for Toronto's historically disadvantaged population sectors. Bloor-Yonge Station's existing user/demographic composition, which is expected to be consistent with the TTC diverse subway customer profile, is as follows:

Estimated % of Bloor-Yonge Station users who are:



As the strategic interchange hub, and with the future subway Ontario Line, Scarborough and Yonge North extensions and new Eglinton Crosstown and Finch West Light Rail Transit lines completed – the Preferred BYCI option will support Toronto’s socio-economic and cultural diversity. It will connect Toronto’s diverse and lower-income Neighbourhood Improvement Areas with multiple employment hub opportunities in Downtown Toronto Central Business District, Etobicoke Centre, North York Centre, Scarborough City Centre, and Yonge-Eglinton.

Deliverability Case: For an undertaking as costly, complex and of strategic importance as the Preferred BYCI Scenario, the Business Case identifies the need for mitigation strategies to address Top 6 high-potential implementation risks:

- Available capacity of the engineering, construction and project management sector in the Toronto region to deliver;
- Cost escalation beyond original budget approval;
- Project scope creep;
- Project delivery and timeline delays;
- Long-term construction impacts on the local business and residential community; and
- Safe, effective and efficient operations of the Bloor-Yonge strategic interchange hub throughout the construction period.

Climate Lens Assessment (CLA) is a required feature of large public transit business cases and mandated by the Federal government since 2019. The Business Case examined three pillars of the CLA, and concluded:

- Greenhouse Gas (GHG) Mitigation Assessment:** A net increase in GHG emissions when construction and future station energy requirements and construction compared with the Do Minimum Scenario – offset by operations emissions which represent a net decrease when the systemwide effects of station capacity improvement and auto-to-subway mode shift are considered. The Preferred BYCI Scenario will contribute to the achievement of Canada’s Net Zero Emission objectives;
- Climate Change Resilience Assessment:** An examination of the impacts of Toronto Climate Change long-range projections following trendlines to mitigate and build resilience into the new and improved station’s infrastructure design and engineering:

Climate Event to 2056	Trend [Increasing or Decreasing]
High temperature	+
Low Temperature	-
Extreme rainfall	+
Winter rain	+
Freezing rain	-
Extreme snowfall	-
High wind	+
Lightning	+
Hail	+
Freeze-thaw cycles	-
Groundwater	0

Conclusion: With an estimated net positive Benefit-to-Cost Ratio of 1.49, the strong Business Case result reinforces BYCI’s essential, strategic interchange role in the regional transportation system, and should give decision-makers and funding partners the confidence that the proposed investment for capacity expansion will generate positive returns for transit riders, other transportation users, the economy, the environment, and the wider community.