

GO Expansion Full Business Case

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RECOMMENDATION

- **RESOLVED**, based on the recommendations in the report prepared by the Chief Planning and Development Officer, entitled “GO Expansion Business Case”, and any further amendments directed by the Board at its meeting on December 6, 2018;
- **THAT** the Board endorses the results of the GO Expansion Full Business Case;
- And **THAT** the Board direct staff to submit the GO Expansion Full Business Case to the Ontario Minister of Transportation to inform decision-making and to seek further direction;
- And **THAT** the Board direct staff to report back on the status of the GO Expansion program in February 2019;
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KEY FINDINGS

Confirmation that the benefits of the GO Expansion program significantly exceed the costs

Strong transport benefits

Benefit Cost Ratio of 2.6

Net transport benefits of
\$26 B

Saving time for drivers and transit riders

Saving 20 minutes/day for
the average commuter

Reducing congestion and
saving drivers 7M hours in
2031

Better business model

Increasing fare-box
recovery to 110% from
80% by 2031

Decreasing operating
costs per passenger from
\$11 to \$7/km

Serving new customers and unmet demand

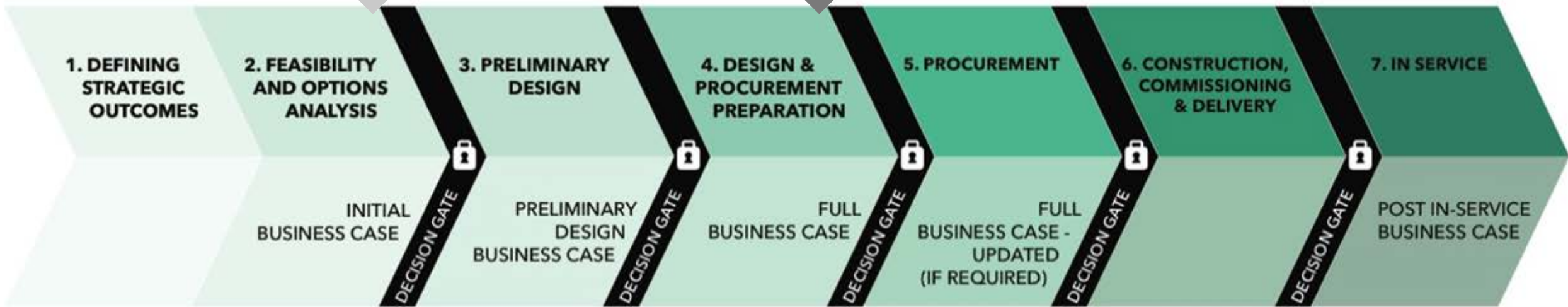
Growing annual ridership
from 60M to more than
180 M by 2031

2X train service in rush
hour
3X service outside of rush
hour

PROGRESSING GO EXPANSION

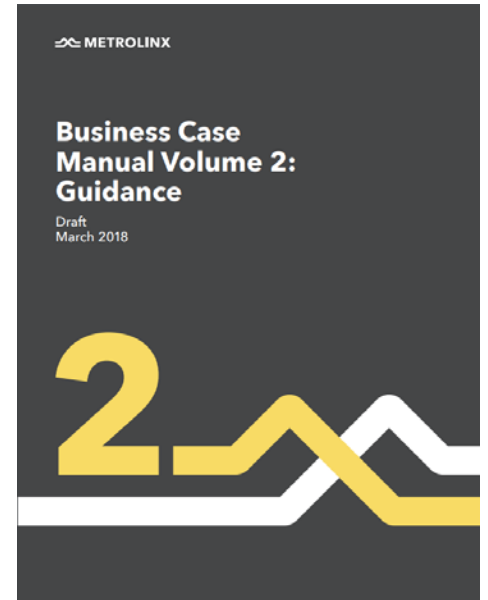
Initial Business Case
(2015)

Full Business Case
We are here



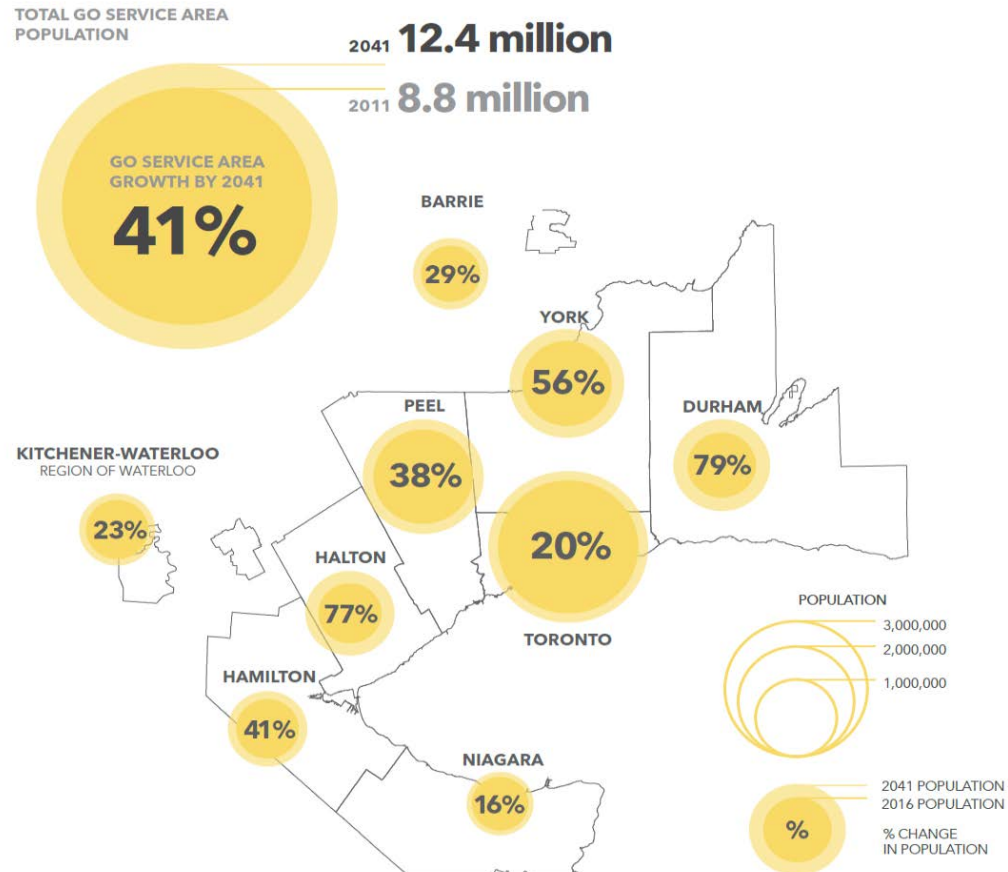
ENSURING DUE DILIGENCE

- Methods
 - Financial and economic analysis based on published Metrolinx Business Case Guidance that has been peer reviewed
- Inputs
 - Benefits based on a proof of concept service plan and infrastructure design
 - Costs estimates developed from Reference Concept designs (15%-30%) and use quantitative cost risk analysis to estimate contingencies
- Results
 - Full Business Case has been independently peer reviewed by international experts in large rail projects
 - Over 30 sensitivity tests developed to assess how assumptions impact performance



THE REGION NEEDS GO EXPANSION FOR CONTINUED PROSPERITY

If the GTHA and surrounding municipalities are to continue to grow, prosper and function as an integrated region, investment is needed in transportation capacity.

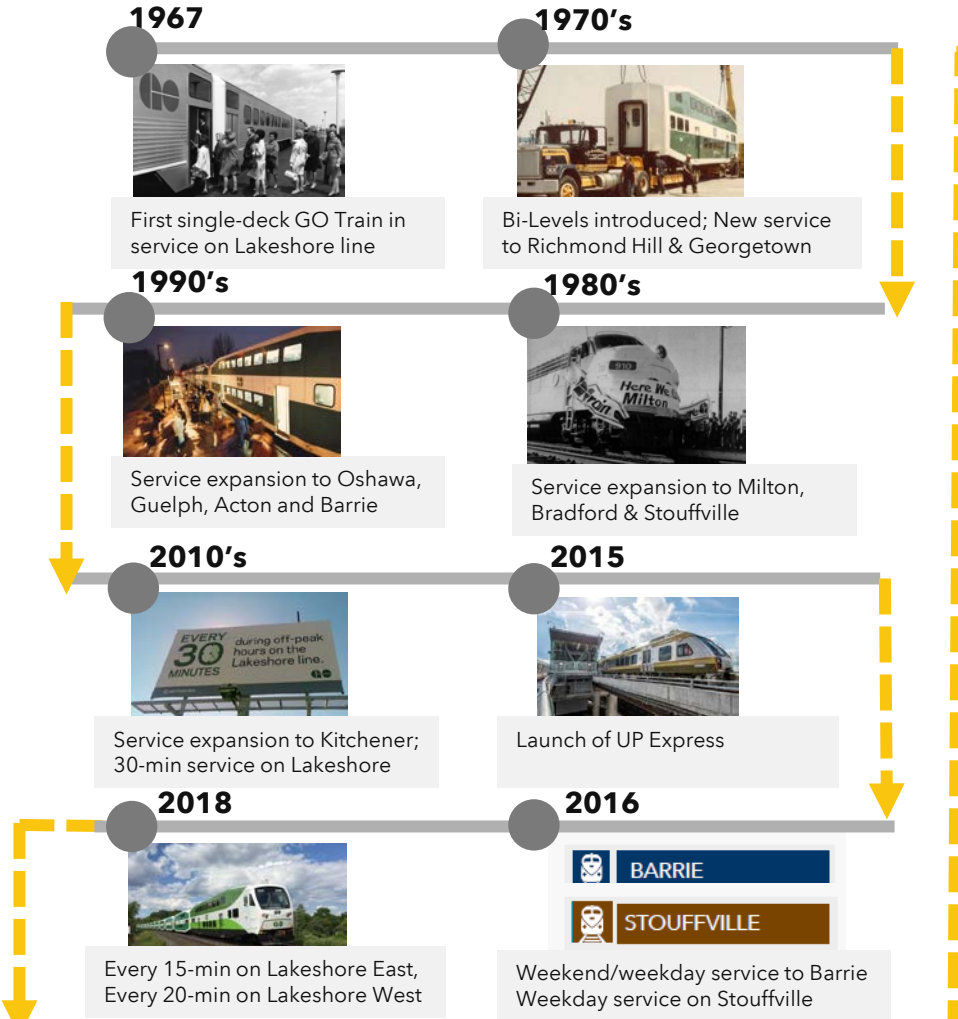


Source: Ministry of Finance Population Forecasts for Ontario.

- Travel times on the road network are increasing and reliability is decreasing.
- Increased travel times can reduce access to jobs and impact overall quality of life.
- By 2031, congestion will cost the region up to \$15 billion annually in lost productivity while also limiting opportunities for further economic development

EVOLUTION OF RAIL SERVICE

The GO Transit system and service has evolved over the last 50 years.



Today, more than 200,000 trips on GO transit everyday.

The rail network at present is realizing only a fraction of latent capability. GO ridership and revenue grew by 7.7% in the last year alone.

Rail Service Expansion and Electrification is the next step in the evolution of GO Transit.

GO Expansion service :



MORE TRIPS	FASTER TRAVEL	HIGH FREQUENCY	CAPACITY
<p>6000 weekly trips</p> <p>2x as many rush-hour options</p> <p>3x as many off-peak options</p>	<p>Electric trains accelerate and decelerate faster.</p> <p>Introduction of additional Express services</p>	<p>No need to check a schedule with service every 15 minutes or better, in both directions, all day</p>	<p>Doubling regional commuter capacity equivalent to nine highways the size of the 401</p>

SIGNIFICANT SERVICE ENHANCEMENTS WILL CONTINUE WITH GO EXPANSION



6,000

Trips per week
(currently over 2,000)

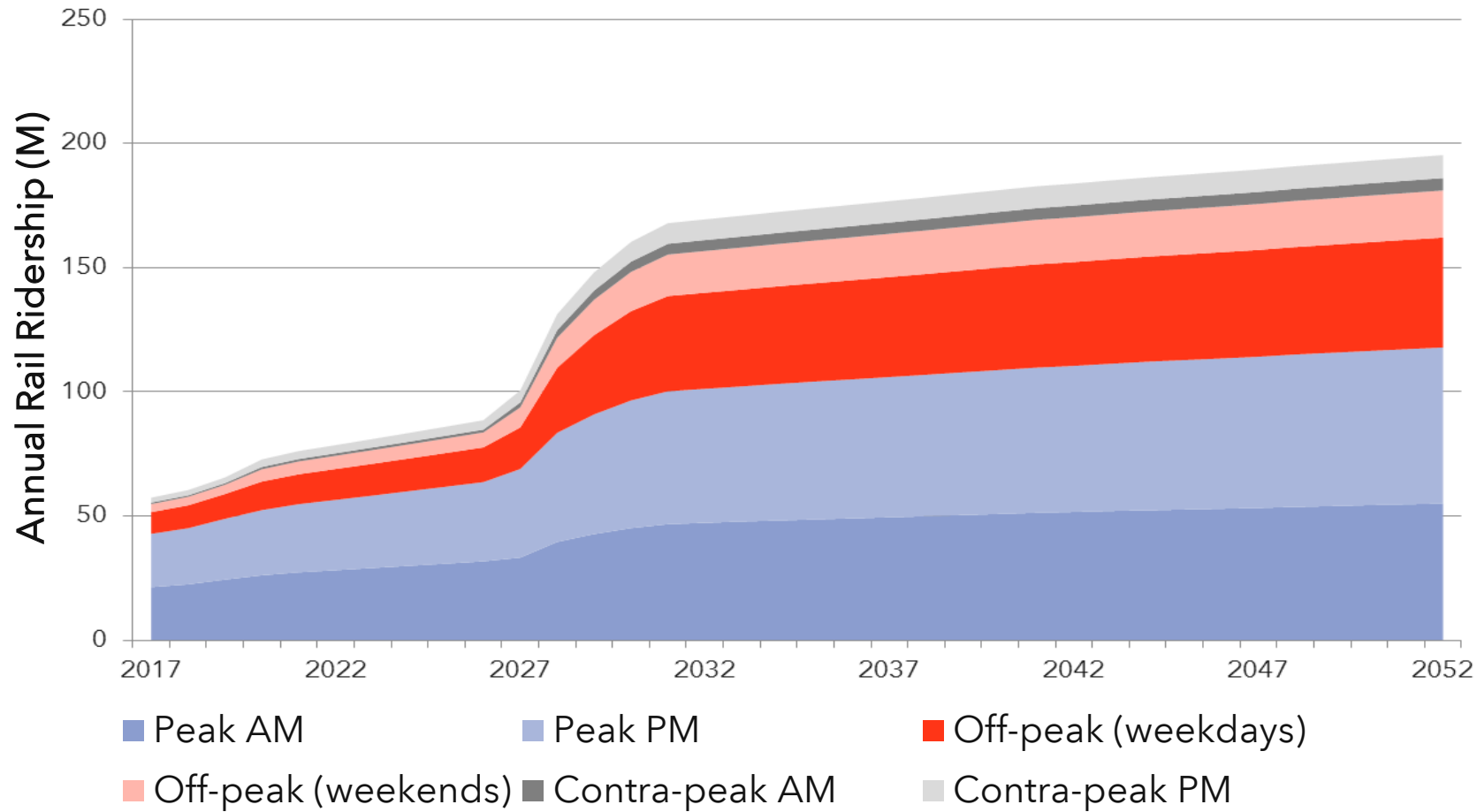
3X

trips outside of weekday
rush-hour periods,
including evenings and
weekends

2X

trips during the weekday
rush-hour period

RIDERSHIP WILL SUBSTANTIALLY INCREASE, ESPECIALLY IN OFF-PEAK AND CONTRA-PEAK



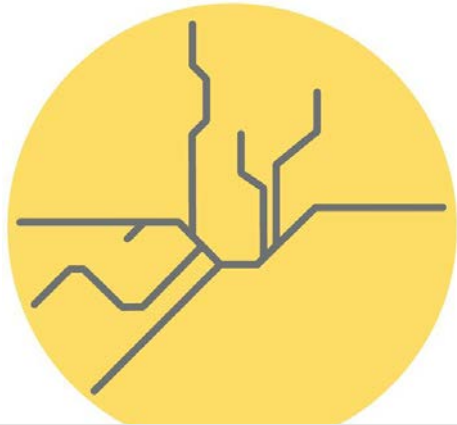
3X

Ridership by 2031

5X

Off-peak and contra-peak ridership

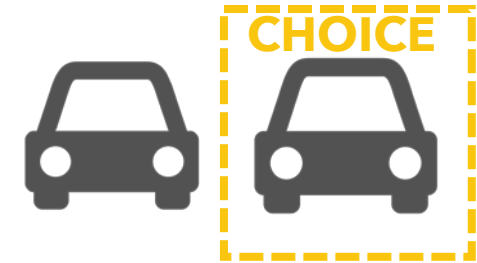
SERVING PEOPLE, NEW CUSTOMERS & UNMET DEMAND



Expansion of the rail network which already links major population bases in Toronto and surrounding communities and will capture pent up demand and support continued growth of these communities.



Twice as many residents will live within 2km of a GO Rail Station with two-way, all-day service.



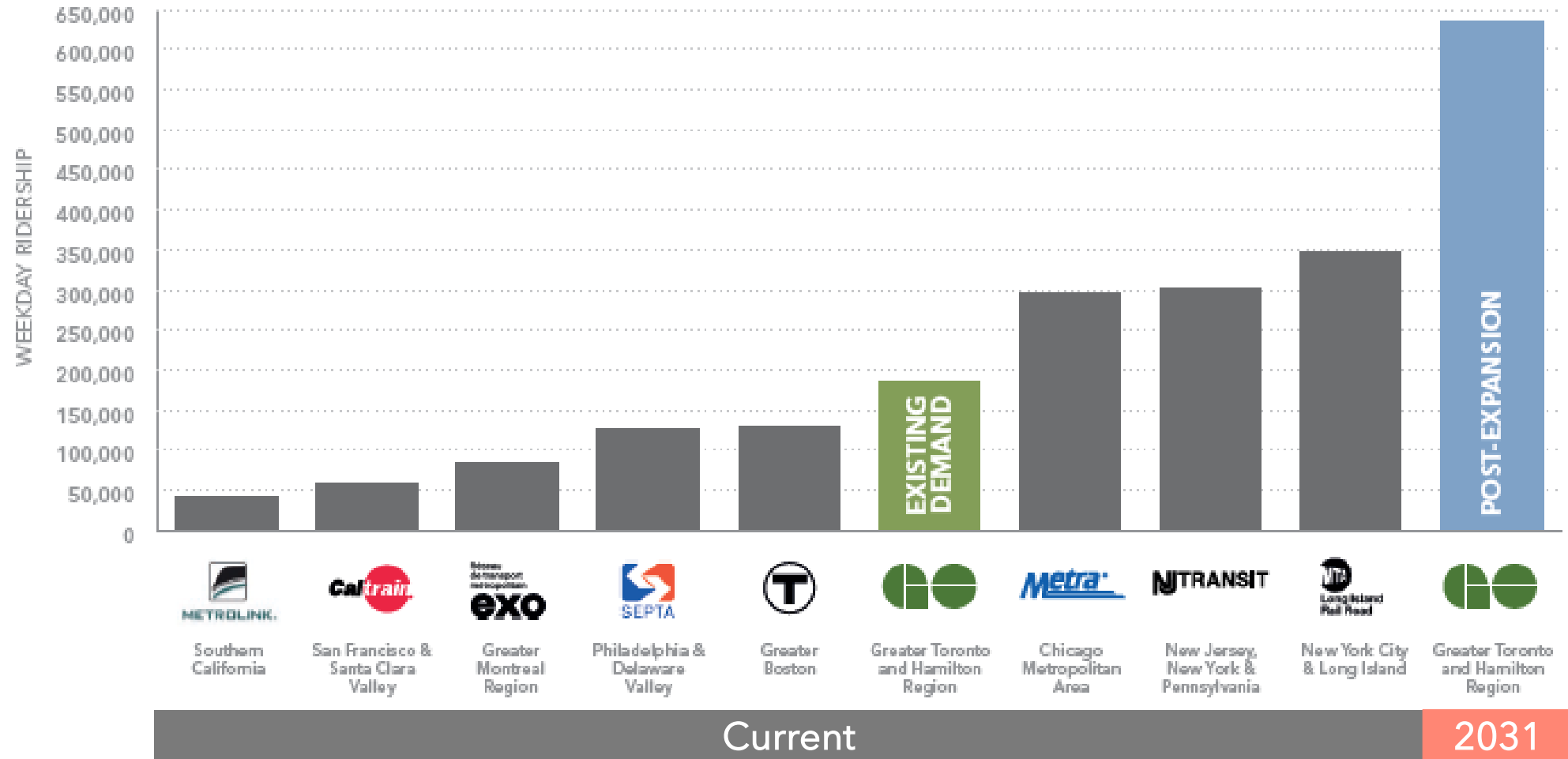
Increasingly, young couples are struggling to afford the cost of two cars. According to CAA, households can save up to \$8,900 per year in car ownership costs by giving up one car.

More opportunity for individuals and families to use GO Transit

<p>COMMUTE TO AND FROM WORK</p>	<p>WEEKEND TRIPS TO TORONTO</p>	<p>WEEKEND TRIPS OUT OF THE CITY</p>	<p>FUN AND ENTERTAINMENT</p>	<p>CONNECTING TRANSPORT MODES</p>	<p>VISITING FAMILY AND FRIENDS</p>	<p>ATTENDING MEETINGS AND APPOINTMENTS</p>

GO RAIL RIDERSHIP WILL BE AMONG THE HIGHEST IN NORTH AMERICA

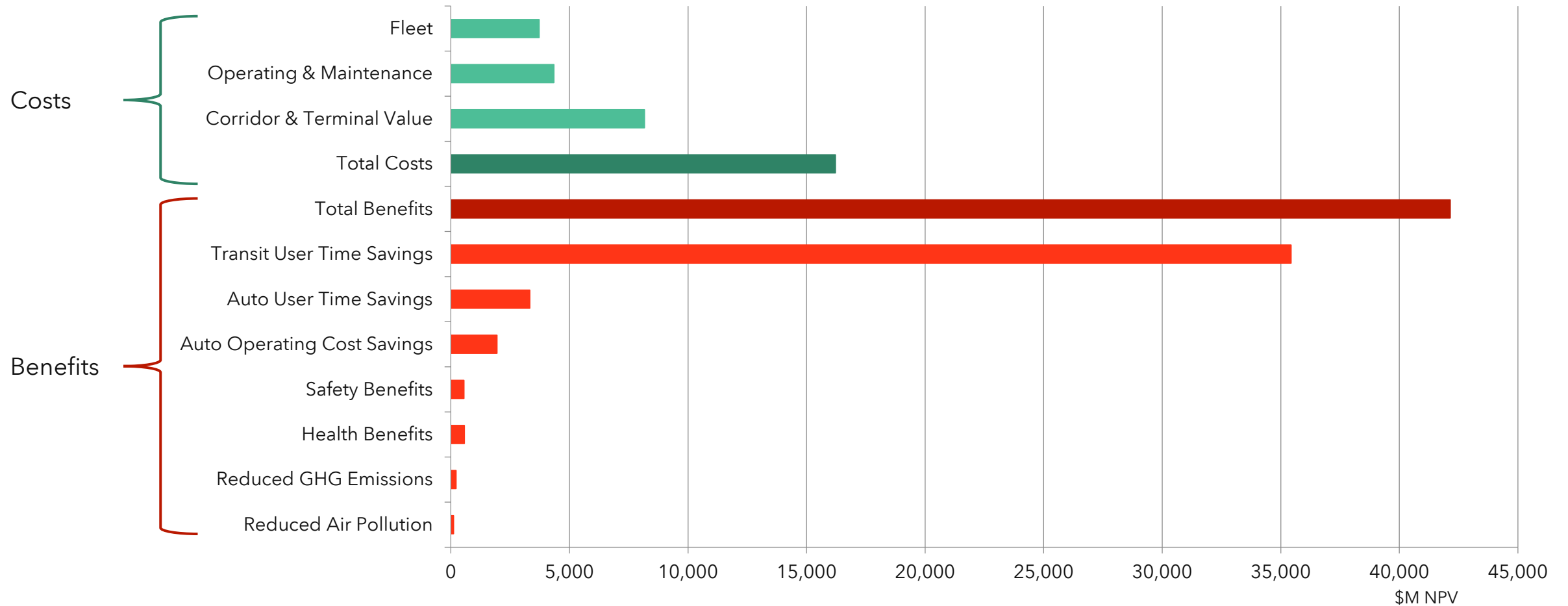
GO Rail Ridership compared to other North American passenger railways



GO RAIL EXPANSION PROVIDES SIGNIFICANT BENEFITS

Benefit Cost Ratio = 2.6

Every \$1 invested in GO Expansion provides \$2.60 in economic benefits to the region



ACTIONS

- More All-Day Service
- Service in Both Directions
- Trains at least every 15 minutes
- Faster and More Efficient Fleet
- More Accessible Stations
- An Expanded Union Station

COST (NPV)

Incremental Capital Costs:
\$12.2 billion

Incremental Operating Costs:
\$4.4 billion

Incremental Revenue:
\$12.3 billion

Incremental Investment:
\$4.3 billion

Terminal Value:
\$340 million
(Cost offset)

This investment will benefit the GTHA as a whole

ECONOMIC BENEFITS (NPV)

- With faster and more frequent services, travellers on the GO Rail network will realize time benefits of **\$35.4 billion**
- Automobile operating costs reductions due to fewer cars on the road will realize a benefit of over **\$1.9 billion**
- GO Expansion will make roads safer and less congested by diverting travellers to the railway, realizing safety and decongestion benefits of **\$3.9 billion**
- GO Expansion will also reduce Green House Gas emissions and Criteria Air Contaminant by using more efficient trains and attracting travelers from auto to rail, realizing a benefit of **\$330 million**
- With GO Expansion, increased walking and cycling to access GO Rail will realize a health benefit of **\$565 million**

BENEFITS EXCEED COSTS BY 2.6X

GO Expansion has an economic Benefit Cost Ratio of 2.6

$\frac{\$42.2 \text{ billion benefits}}{\$16.2 \text{ billion costs}} = 2.6$

This means, for every dollar invested in GO Expansion, the region benefits by \$2.60

FINANCIAL BENEFITS (NPV)

- Total Revenue: \$34.6 billion**
- Total Operating Costs: \$31.4 billion**
- Total Operating Margin: \$3.2 billion**
- Lifecycle Operating Cost Ratio: 110%**

PROVINCIAL BENEFITS

GO Expansion requires an incremental investment of **\$4.3 billion**

This incremental investment will realize a benefit of **\$5.8 billion** to road users in Ontario

DRIVERS AND ENABLERS OF BENEFITS

Drivers

Enhanced Service

- Increase in rail service by 2x in peak and 5x in off-peak service drives 3x growth in rail ridership to 2031

Electrification

- Electric trains accelerate and decelerate faster compared to diesel trains with lower operating costs providing:
 - Faster Journey times (save 20 minutes per day on average)
 - More customers (10% more customers)
 - Lower operating costs (\$11/customer down to \$7/customer)

Level Boarding

- Provides safer and quicker access between platforms and trains
- Expected to improve dwell times by 15 seconds per station and increases ridership by close to 5%

Enablers

Union Station Expansion

- Increase track and platform capacity from 40 trains per hour to 66 trains per hour by 2025
- Enhance passenger movement to accommodate increased peak and contra-peak movement

Multi-Modal Station Access

- Robust, multi-modal station access strategy including 24k new parking spaces.
- Transit improvements, micro-transit and 4,200 additional sheltered bike parking

Fare Integration

- Assumed that fare barriers are removed between TTC and GO
- Increases ridership by 13%

Delivery Schedule

- Each year fast and frequent service is advanced or delayed adds or subtracts more than \$1B in benefits

SENSITIVITY TESTING SHOWS GO EXPANSION IS A ROBUST PROGRAM

- Over 30 sensitivity tests are described in the FBC

Scenario	Change	BCR
Cost escalation	25% increase in lifecycle costs	2.3
Economic decline	25% reduction in value of time	2.3
	Reduce value of time growth rate from 0.75% per year to 0%	2.1
Failure to capture off-peak market	Hold peak ridership to natural growth with no off-peak ridership growth	1.0
Reduced fuel prices	25% reduction in auto operating costs	2.5

- In a pessimistic scenario where benefits decrease by 25% *and* costs increase by 25%, the BCR would be 1.6

APPROACH TO NEW STATIONS IN THE FULL BUSINESS CASE

- New stations are considered as a sensitivity analysis
- Metrolinx is adopting a market driven strategy for advancing new stations. New stations will advance in collaboration with third party investments
- Full Business Case provides narrative on the potential for new stations to increase ridership, benefits, and revenue

Indicator	GO Expansion	Plus new stations
Benefit-cost ratio	2.6	No significant impact (reduced by 0.08)
Net present value	\$26B	Increase by \$1.7B
Lifecycle fare box recovery	110%	Decrease by 3%
Lifecycle costs	\$16.2B	Increase by \$2.7B
Ridership in 2031	180M	Increase by 6M

In March 2018, Board directed staff to continue the delivery of twelve new stations and advance Park Lawn to Preliminary Design Business Case

- Gerrard-Carlaw
- East Harbour
- King Liberty
- St. Clair Weston
- Lawrence-Kennedy
- Finch-Kennedy
- Spadina-Front
- Bloor-Lansdowne
- Innisfil
- Breslau
- Kirby
- Mulock

BUILDING BENEFITS MANAGEMENT INTO PROCUREMENT:

APPROACH ENSURES CONTRACTOR ACCOUNTABILITY FOR ACHIEVING OUTCOMES AND REWARDS INNOVATION

Defining Requirements

Metrolinx

Define GO Expansion Outcomes & Benefits

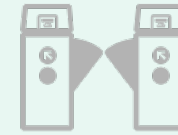
Define Required Service Capacity, Journey Time, Frequency & Reliability

Delivery and Operations

Metrolinx Responsibility

OnCorr Project Company Contract & Payment Management

Fares & Revenue



Customer Service



GO Station Operations



Project Company "OnCorridor" Responsibility (Bundled 35-Year Contract)

Infrastructure Design

Train Operations

Service Design

Construction

Fleet

Financing

NEXT STEPS

- Targeted municipal and stakeholder engagement and public outreach
- The program is moving forward to the Province for decisions, informed by the Full Business Case
- On-Corr Request for Proposals release planned for Q4 of 2018/19
- Metrolinx to develop a Benefits Realization Plan to ensure that the benefits described in this FBC are protected through program lifecycle, including the procurement process
- If significant changes are made to the program during procurement, an updated Full Business Case will be developed

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