

WATERFRONTToronto



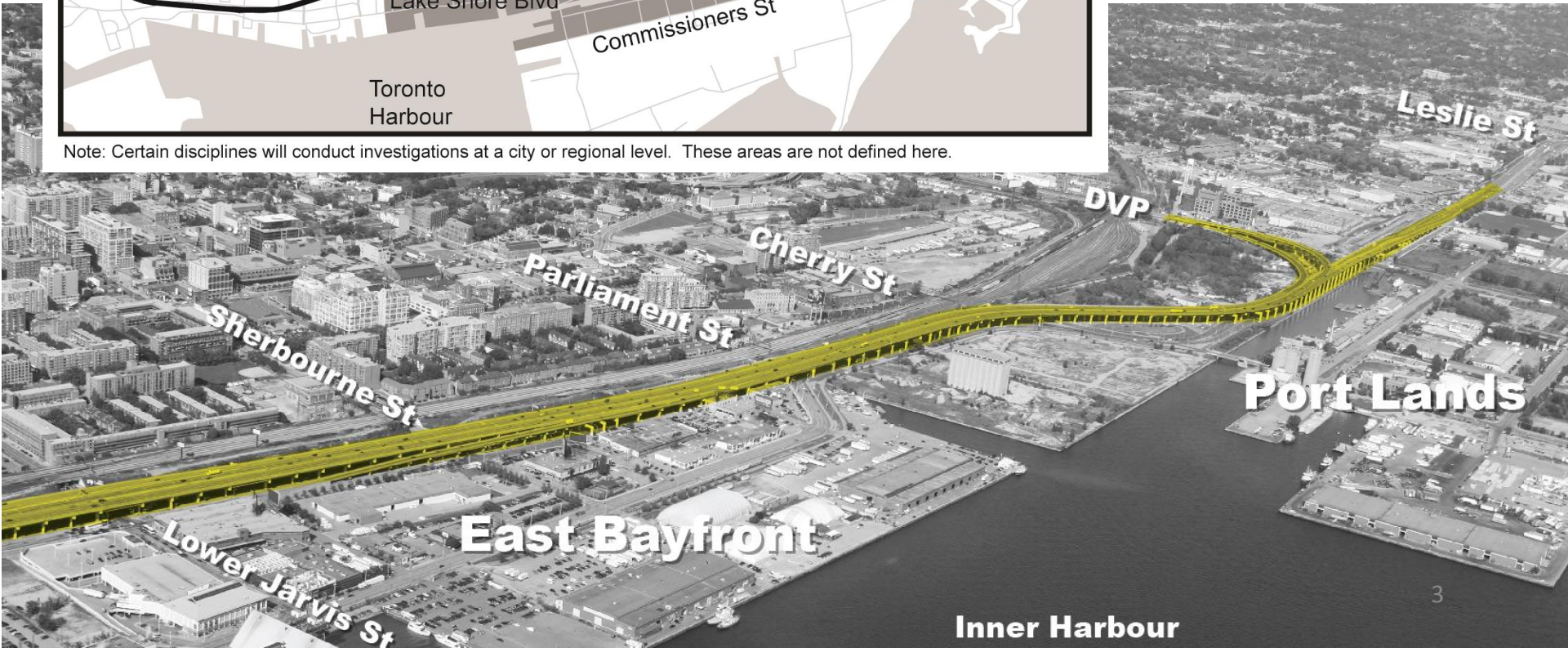
Gardiner East of Jarvis

**Gardiner Expressway East
& Lake Shore Boulevard Reconfiguration
Environmental Assessment
& Urban Design Study**

What area are we studying?

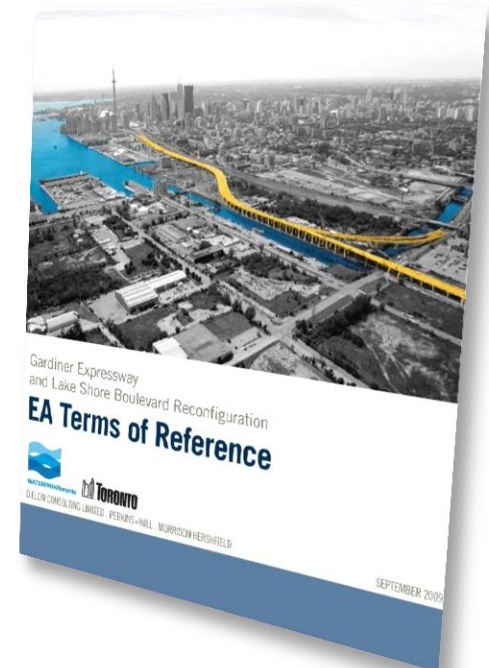


Note: Certain disciplines will conduct investigations at a city or regional level. These areas are not defined here.



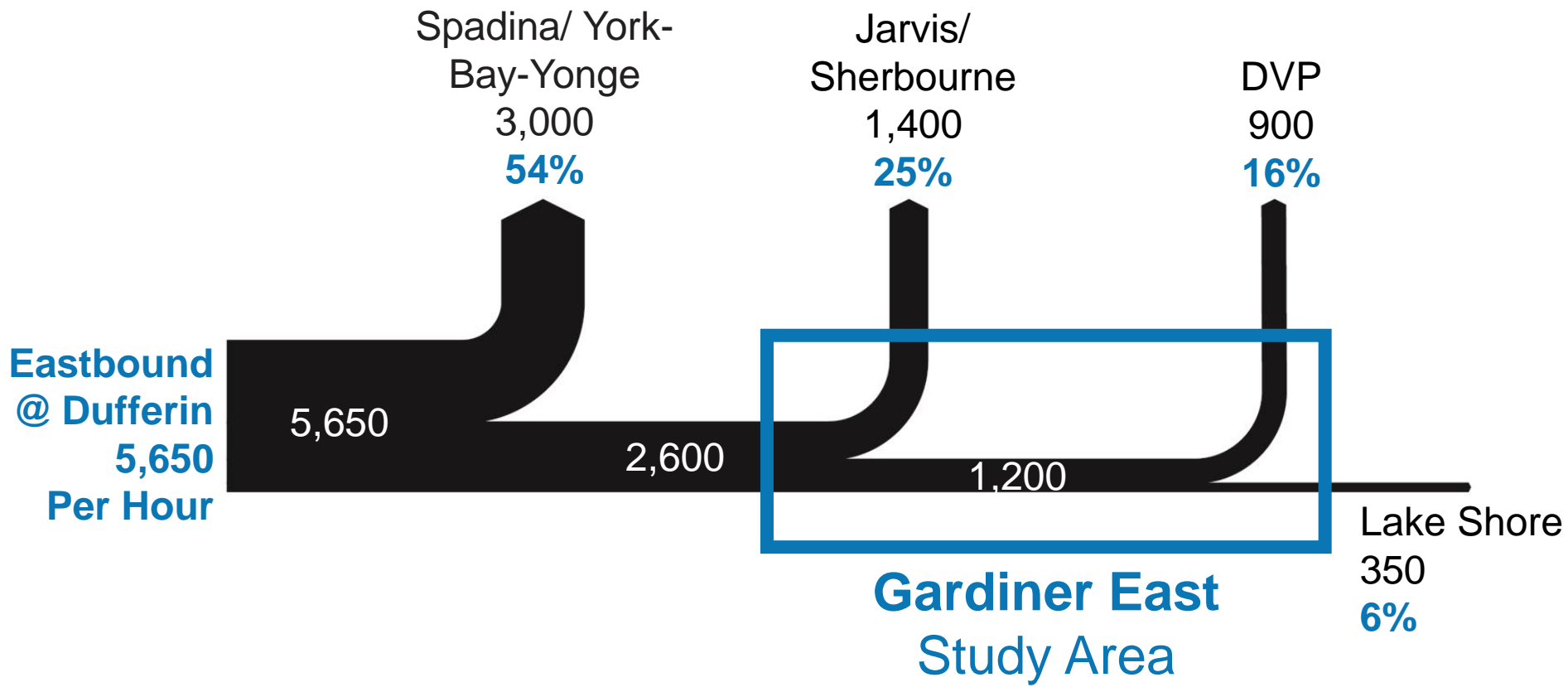
EA Goals

- 1** Revitalize the Waterfront
- 2** Reconnect the City with the Lake
- 3** Balance Modes of Travel
- 4** Achieve Sustainability
- 5** Create Value

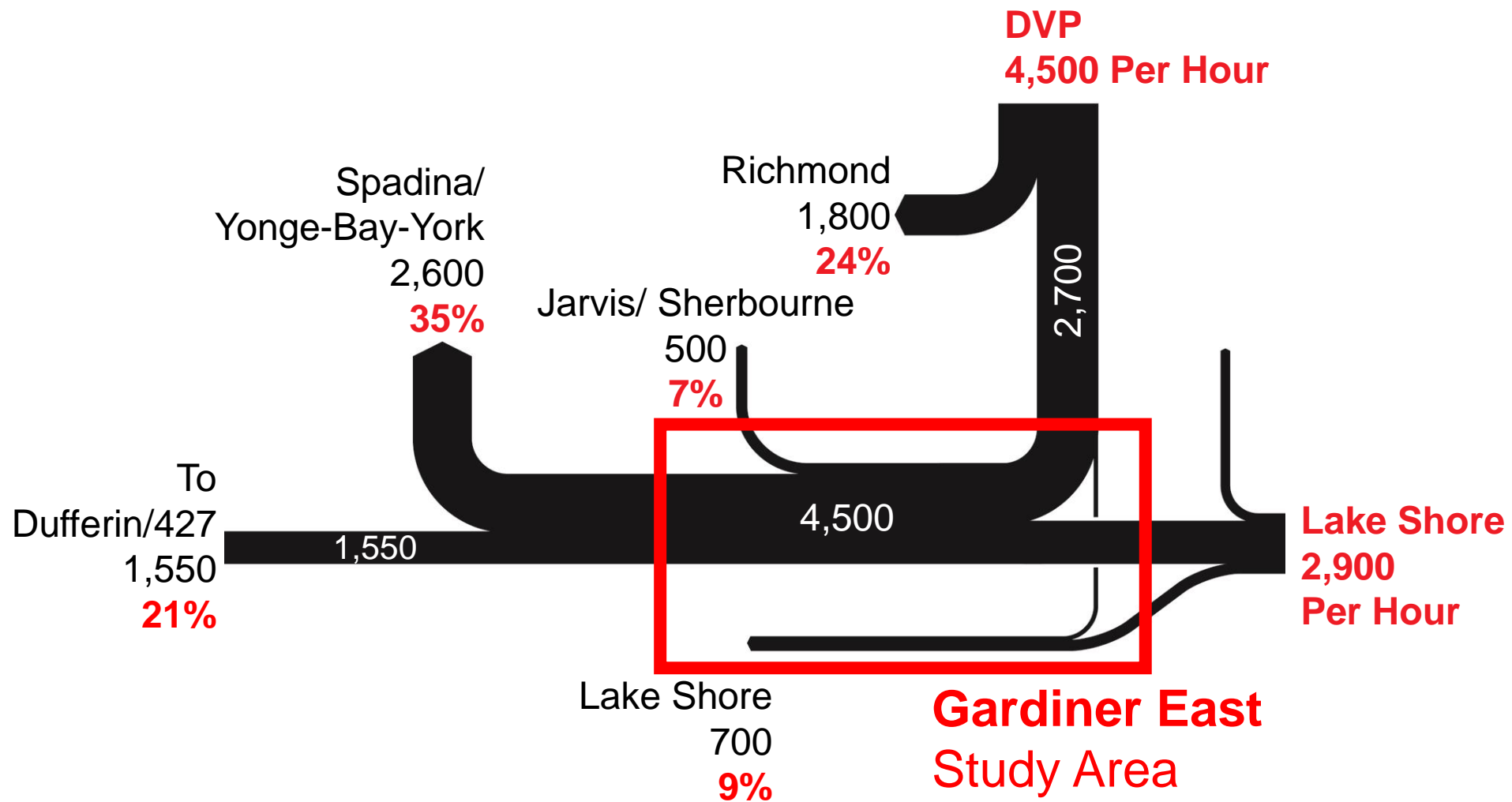


Gardiner East in Context

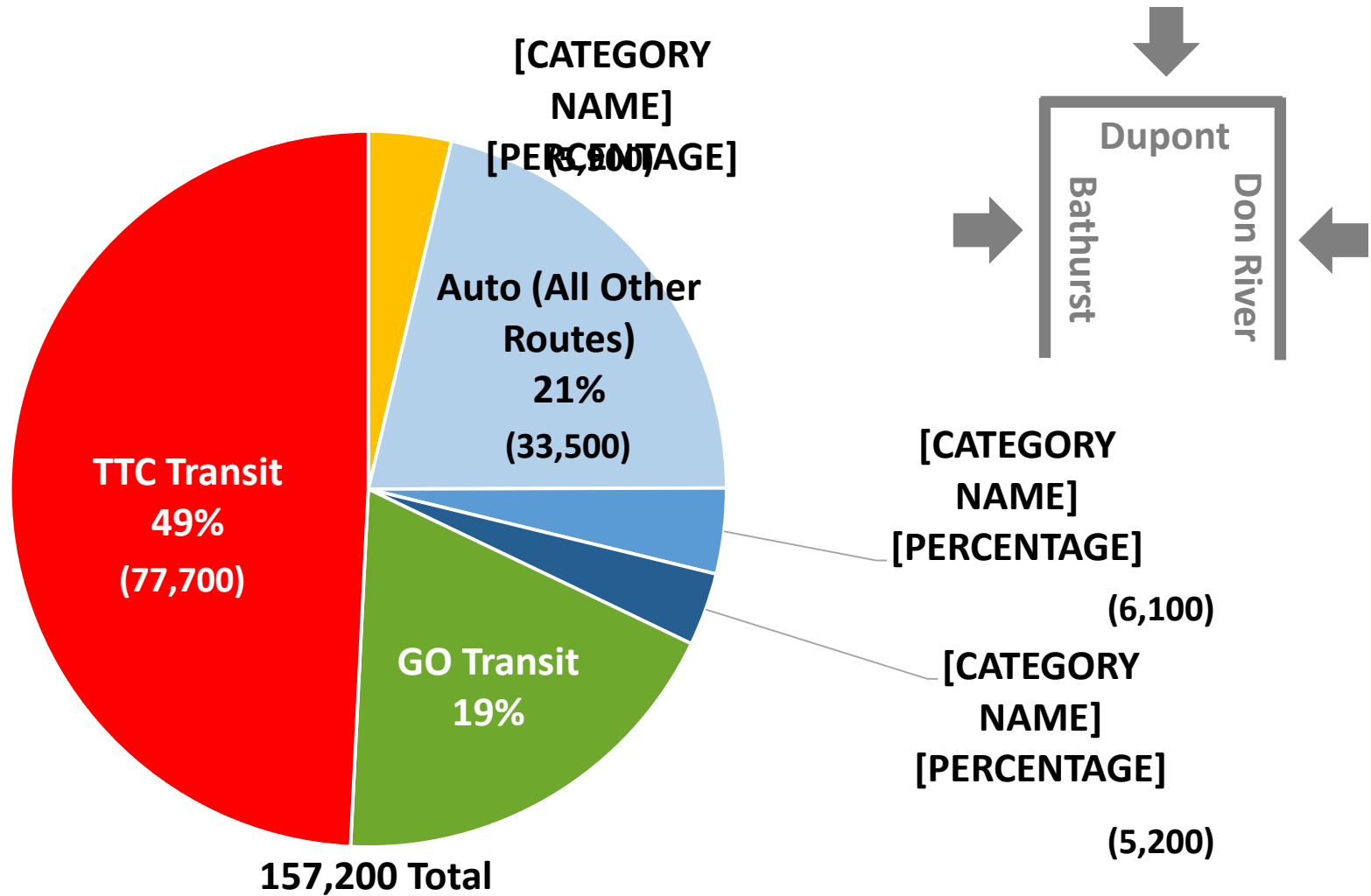
Downtown vs Through Trips (AM Peak Hour Eastbound)



Downtown vs Through Trips (AM Peak Hour Westbound)



How Commuters get Downtown (AM Peak Hour 2011)

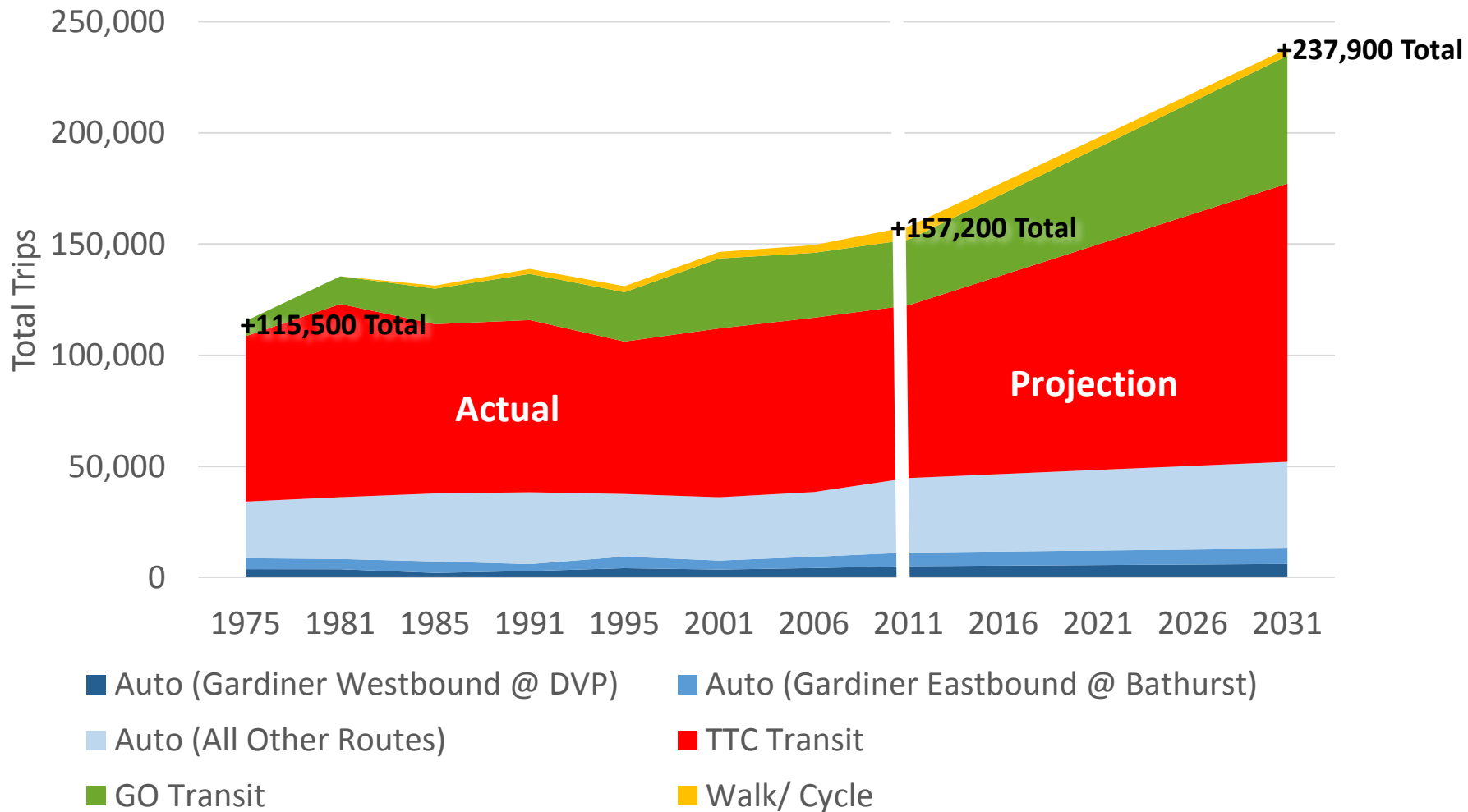


Source: AM Peak Hour Inbound to Downtown: Transportation City Cordon Count (2011)

Downtown: Defined as Bathurst to Don River and Waterfront to the rail corridor north of Bloor

Transportation Demand Growth

AM Peak Hour Inbound to Downtown



Source: AM Peak Hour Inbound to Downtown: 1) Transportation City Cordon Count (1975-2011); 2) Transportation Model EMME2 Forecast (2011-2031); 3) 2006 Transportation Tomorrow Survey (TTS) for Walk/Cycle Mode and Other Data;

Downtown: Defined as Bathurst to Don River and Waterfront to the rail corridor north of Bloor

Gardiner East Passes Through Five Emerging Neighborhoods

2.4km - Gardiner Expressway East Elevated Structure

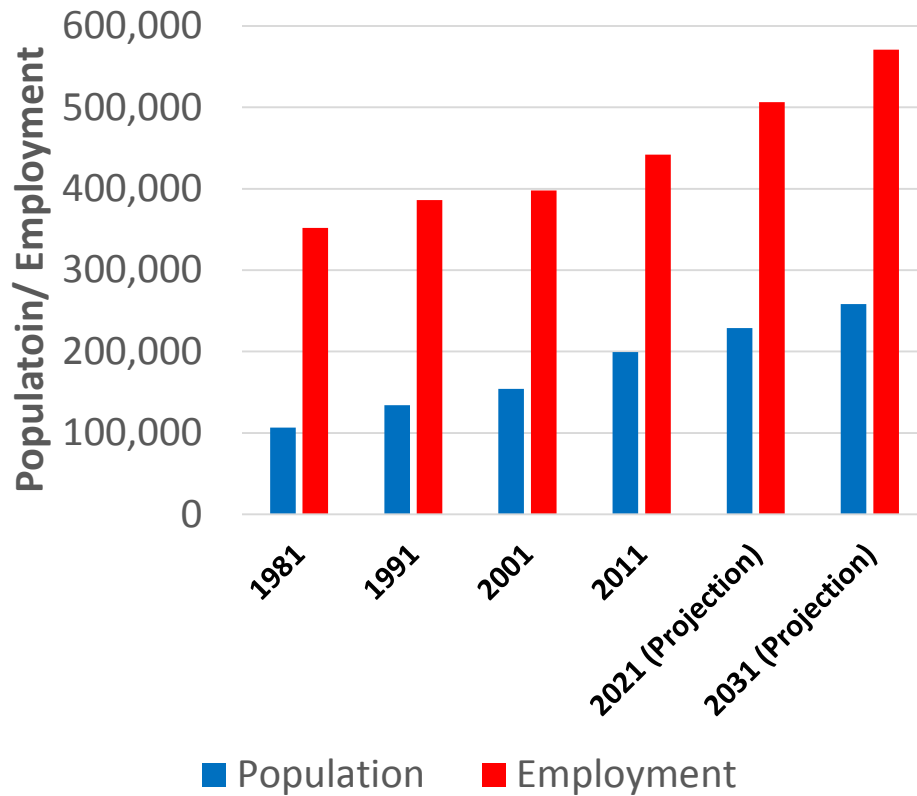
e.g. King to Bloor

4.2km – Lake Shore Blvd E (Yonge to Leslie)

e.g. Ossington to Jarvis



Downtown Population & Employment Growth



Source: Downtown Employment/ Population: 1) Census Canada (1981-2011); and 2) Employment/ Population City's Flash Forward Report (2011-2031).

Downtown: Defined as Bathurst to Don River and Waterfront to the rail corridor north of Bloor

EA Process

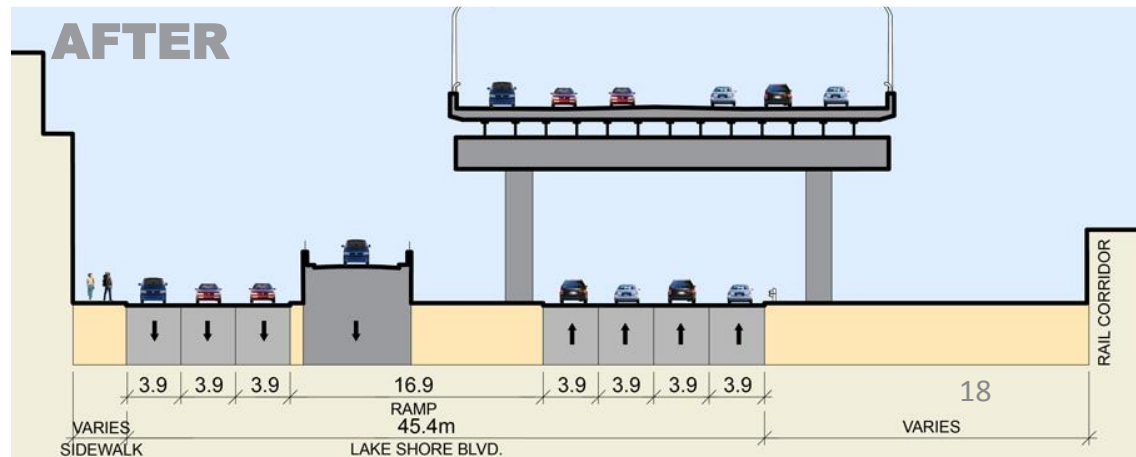
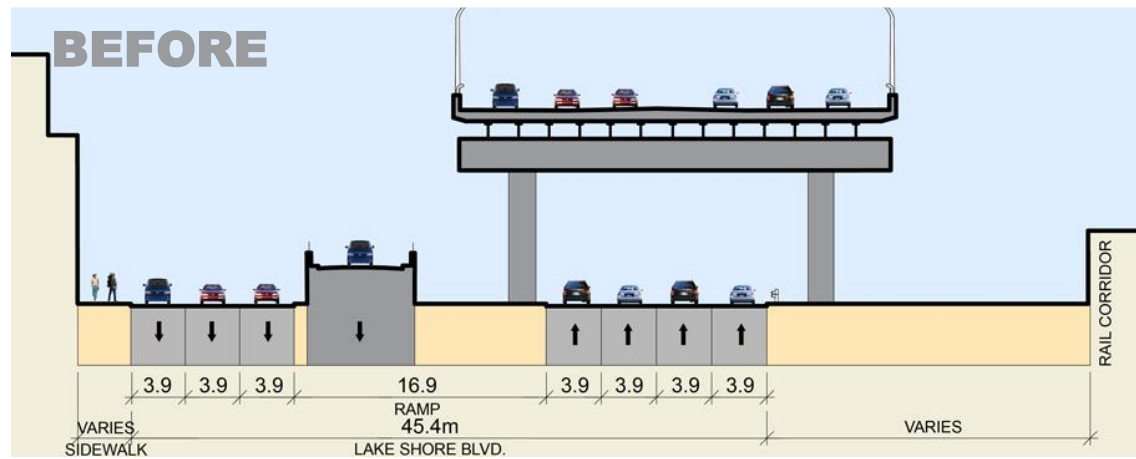
Refinement of the
Four Alternatives

What we Heard in Feb 2014

- 250 attended February 4, 2014 meeting + online webcast/ survey's. Consultation round not complete yet.
- 60% indicated support for the **Remove** alternative
 - cost-effectiveness; creation of opportunities for future public (e.g., parks and greenspace) and private redevelopment (e.g., commercial and residential buildings); improved accessibility to the waterfront; and the opportunity to enhance public transit and alternative modes of transportation.
- 11% indicated support for **Maintain** and 5% for **Improve**
 - need to keep existing highway capacity, mitigate pollution from idling vehicles, and maintain the movement of goods and services. Concerns were also expressed about the potential for traffic displacement with the remove option.
- 4% indicated support for the **Replace** alternative (approximately 4%)
 - citing safety as a key benefit.
- 20% provided general feedback on the evaluation results and/or advice to the project team and did not express clear support for any of the alternatives.
- Many participants indicated that investments in public transit should be prioritized
- Participants expressed concern about removing the elevated highway if long-term transit assumptions in the modeling and study are not realized.

Maintain the elevated expressway

- Move ahead with the Gardiner East rehabilitation program
- Reconstruct deck of expressway
- Realign Lake Shore Blvd through the Keating Precinct (east of Cherry St., south of the rail corridor)



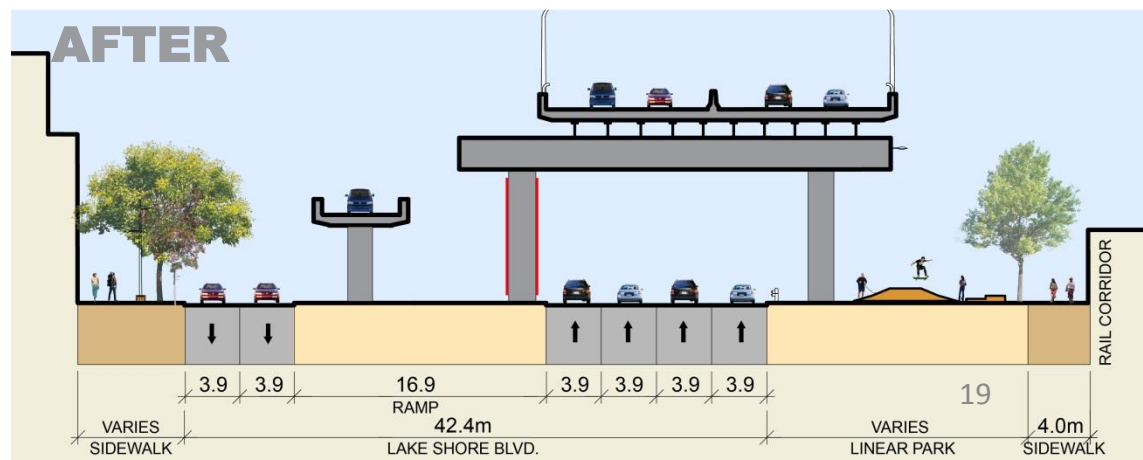
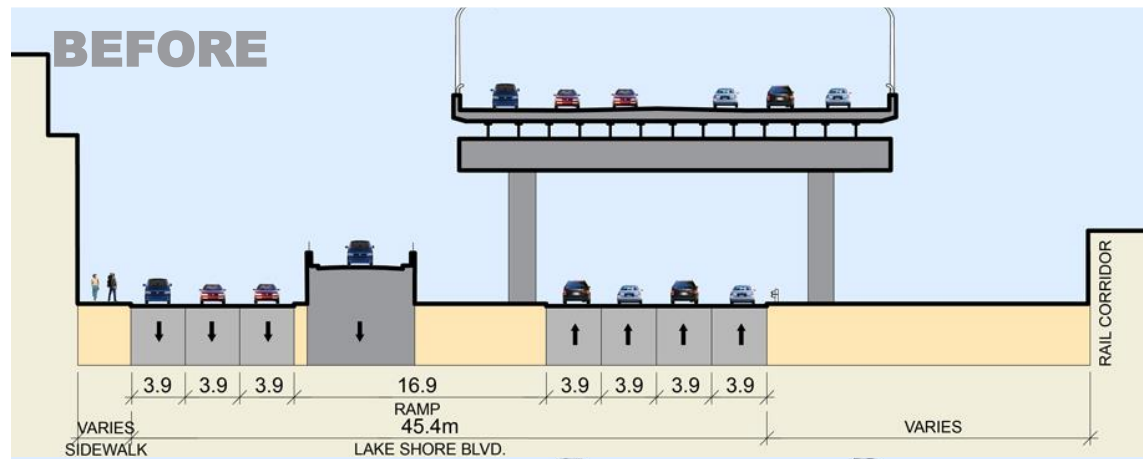
Improve the urban fabric while maintaining the existing expressway

Previous Plan

- Relocate and rebuild Lake Shore Blvd under the Gardiner
- Rebuild Gardiner deck with 4 lanes; open in the middle

Revised Plan

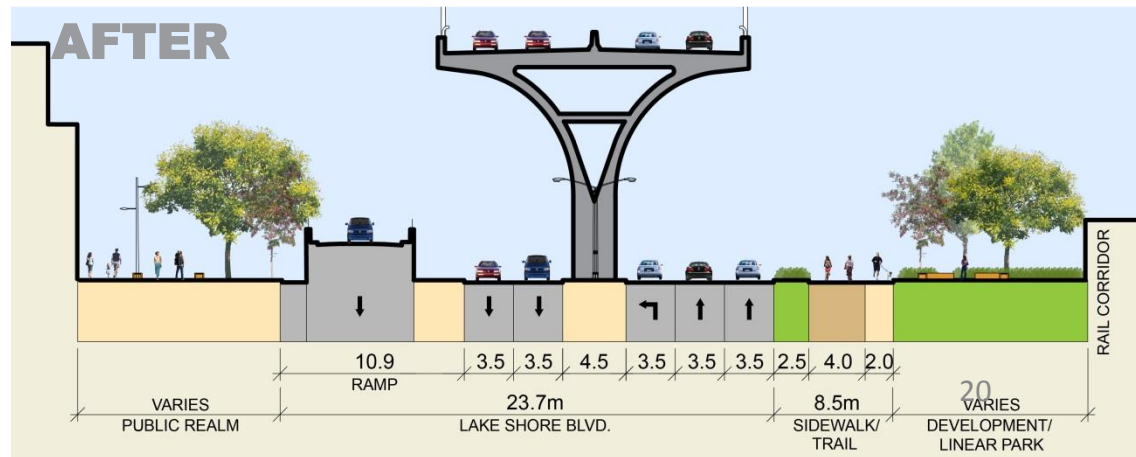
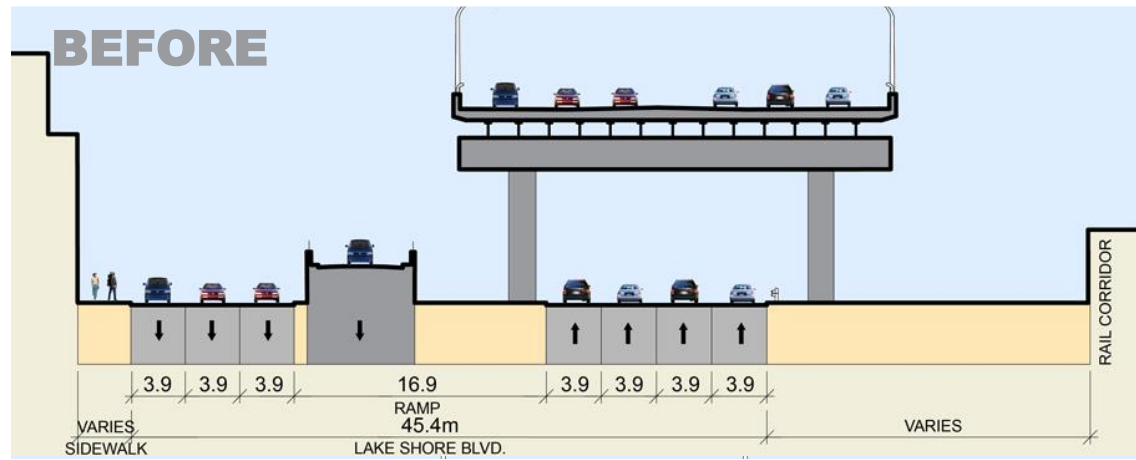
- Rebuild Gardiner deck with 4 lanes; open to the south side
- Lake Shore largely stays as is with:
 - Intersection improvements
 - Removal of southern eastbound lane east of Jarvis St
- New east-west walking and cycling trail



Replace with a new expressway

No Changes Since last Presented

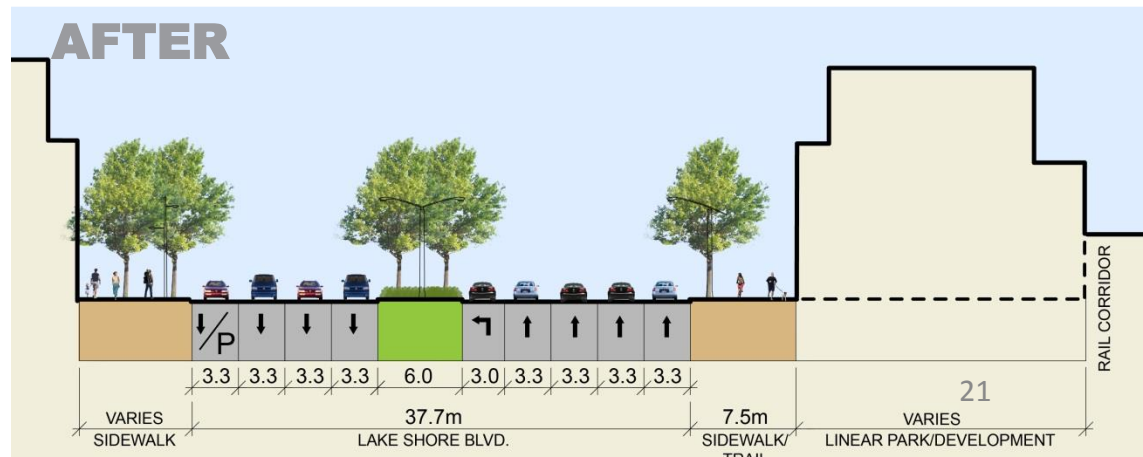
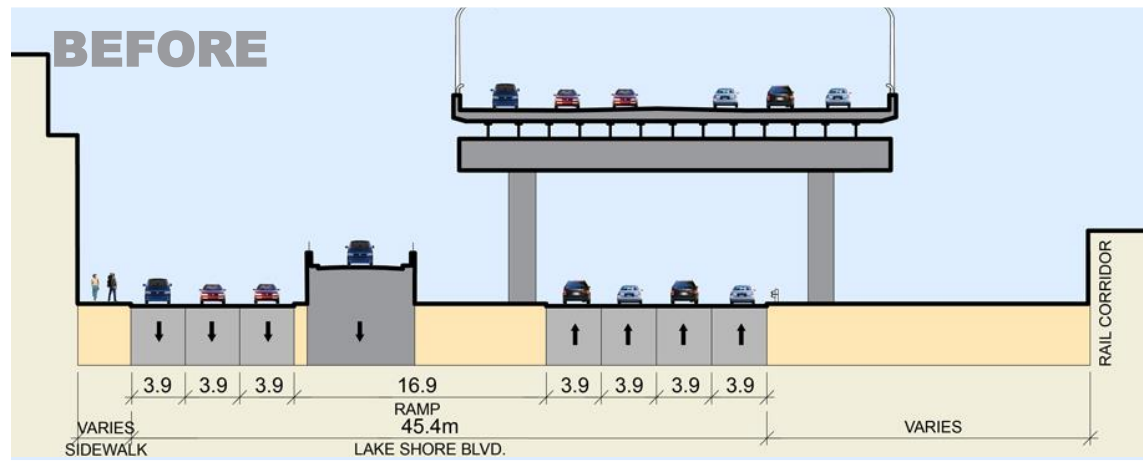
- New elevated 4-lane expressway, ending at Don River
- Single column design, 5m higher
- 4-lane Lake Shore Boulevard
- Opens up land for public realm, parks, green space and increased development
- Opens up more light and air at street level



Remove the elevated expressway and build a new boulevard

Revised Plan with a Two Sided Street

- Improved cross section to allow for an 8 lane boulevard with potential development along 85% of the north and south side of the street
- North side development provides a buffer from rail corridor
- Opens up entire ground level to light and air
- Extensively treed boulevard



EA Process

Evaluating Alternatives

Case Studies



- Many cities (e.g. **Buffalo, Washington**) have invested in rehabilitating elevated expressways as functional single use infrastructure
- Costs range widely depending on type of construction and local conditions.



- A number of cities (e.g. **New York, Louisville**) have invested in improved lighting and public realm to reduce impact of overhead expressways
- Costs range widely depending if structure is in need of repair



- A number of cities (e.g. **Boston, Seattle**) have elected to replace elevated expressways with below grade tunnels
- Boston replaced expressway with an street level park
- Tunnel options are typically more than \$1 billion/ km

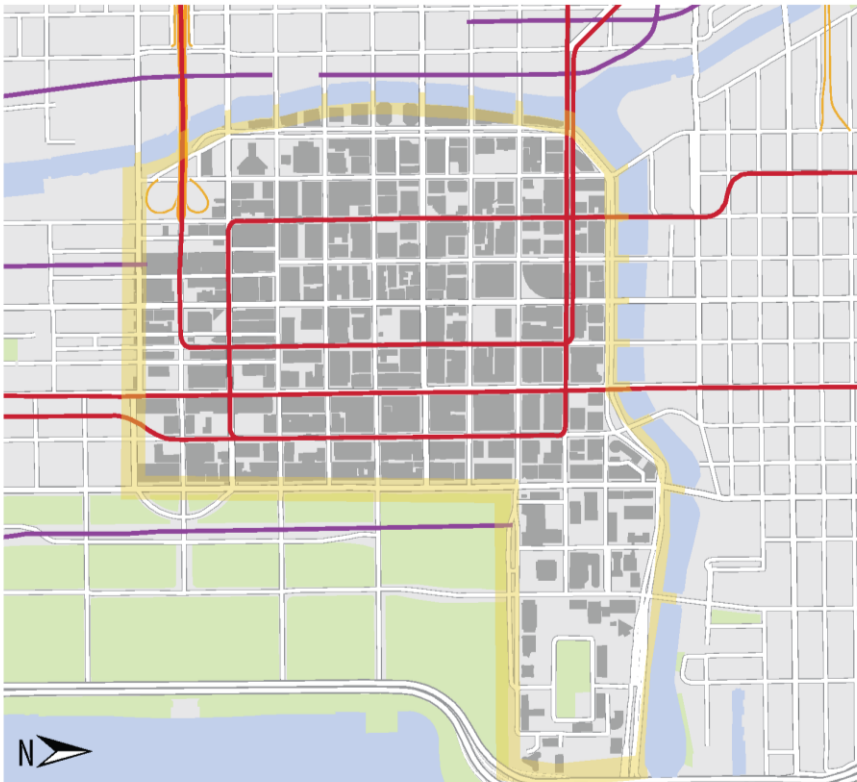


- A number of cities (e.g. **New York, San Francisco, Seoul**) have removed urban expressways with positive neighborhood and real estate benefits
- Remove options are typically around \$100 million/ km

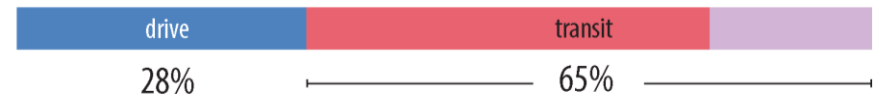
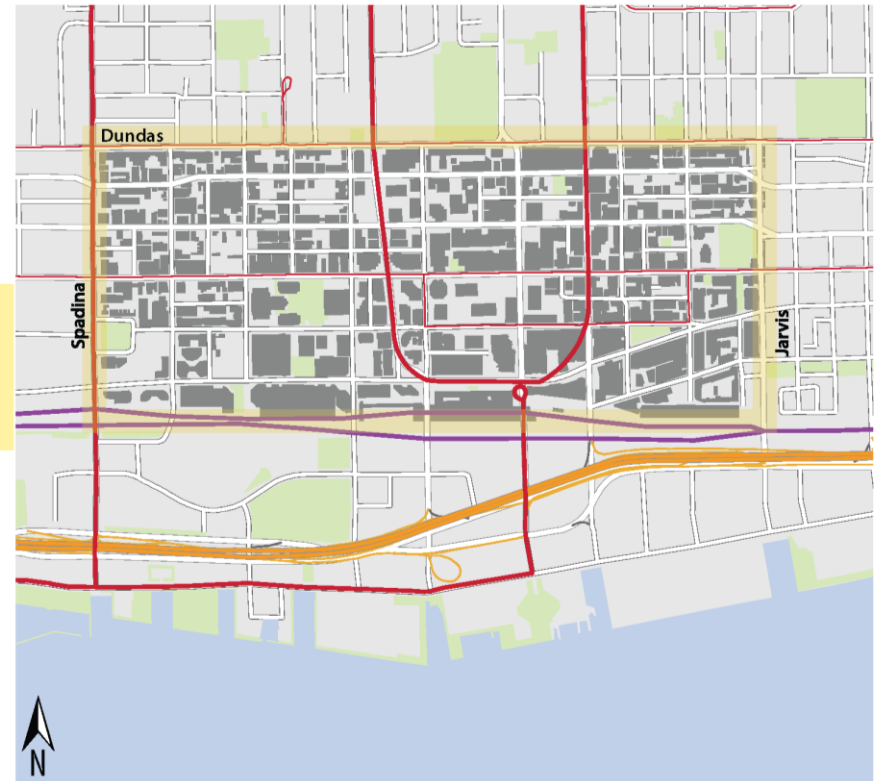
Case Study - Chicago

Comparable to Toronto's CBD in terms of size and mode split.

Chicago ★



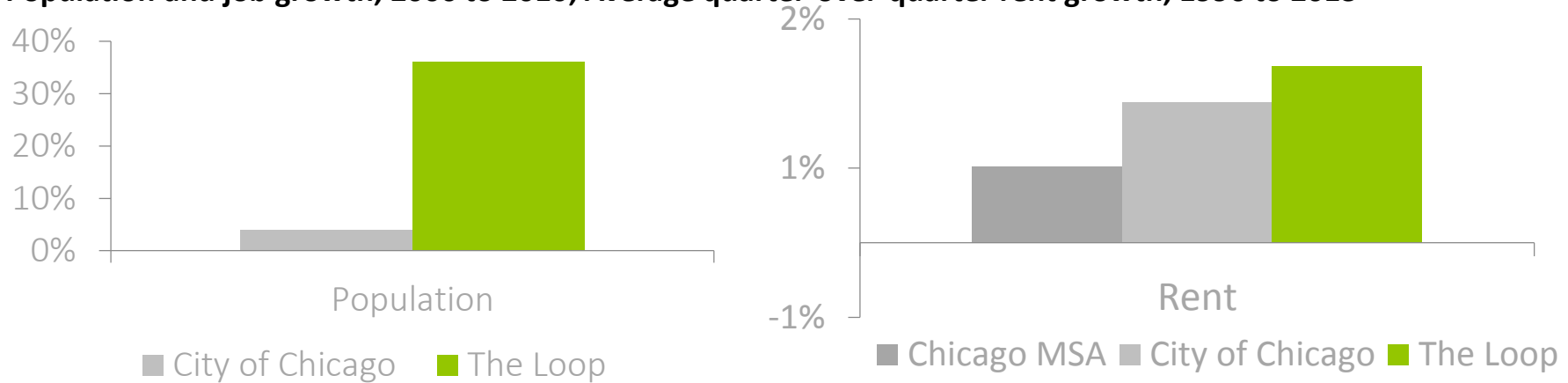
TORONTO 🍁



Case Study - Chicago

The Loop has thrived with existing transportation access.

Population and job growth, 2000 to 2010; Average quarter-over-quarter rent growth, 1996 to 2013

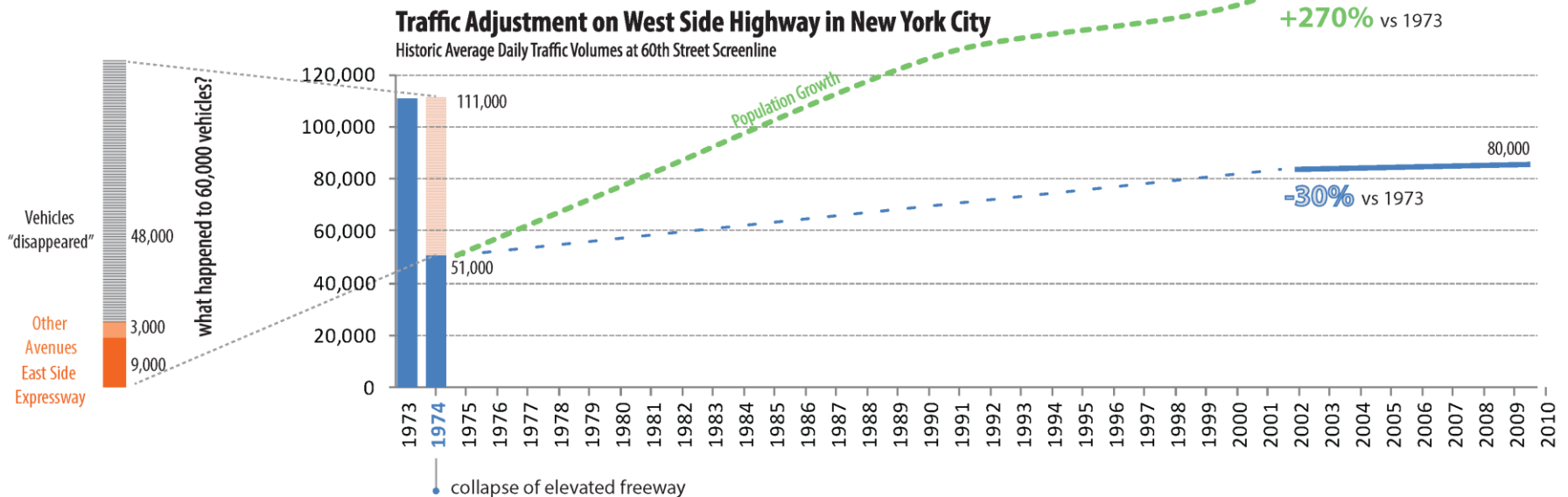


Office vacancy, 1996 to 2013



Case Study – Route 9A New York

Over three decades, New York City transformed its West Side Highway into a surface boulevard.



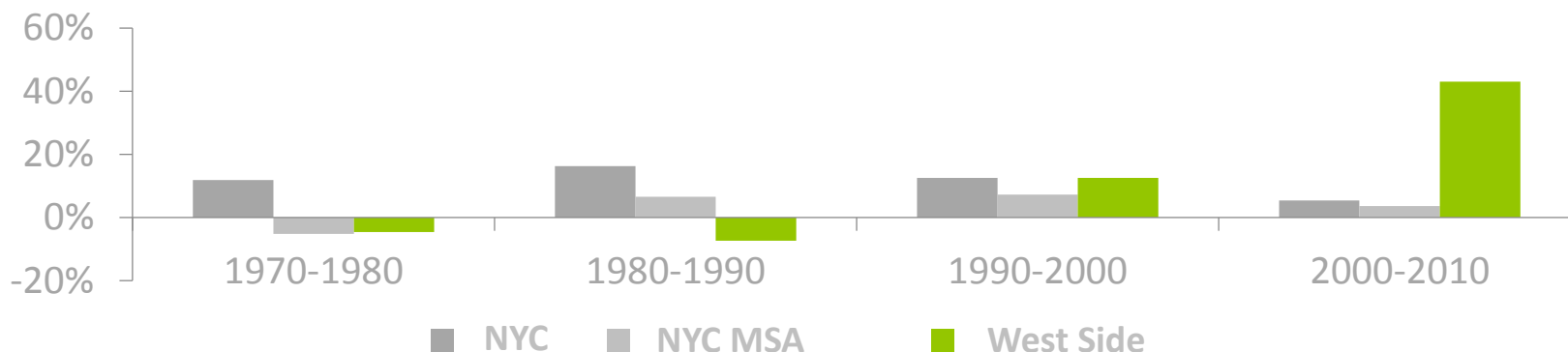
Over the three decades after the elevated freeway was abandoned development boomed.

Population grew by 270% while traffic in the corridor has stabilized at only 70% of the pre-collapse highway volumes.

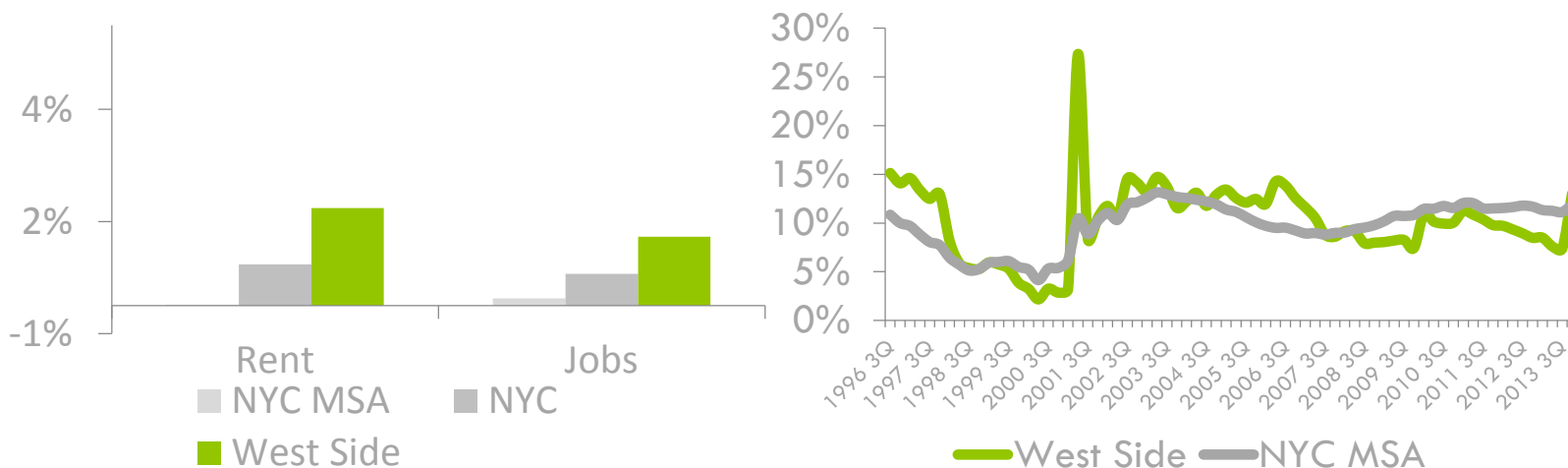
Case Study – Route 9A New York

Growth on the West Side has outpaced the rest of New York City.

Population growth by decade



Average quarter-over-quarter rent growth, 1996-2013; Job growth, 2002-2012; Vacancy, 1996-2013



Transportation Model

Assumptions – 2031 and beyond

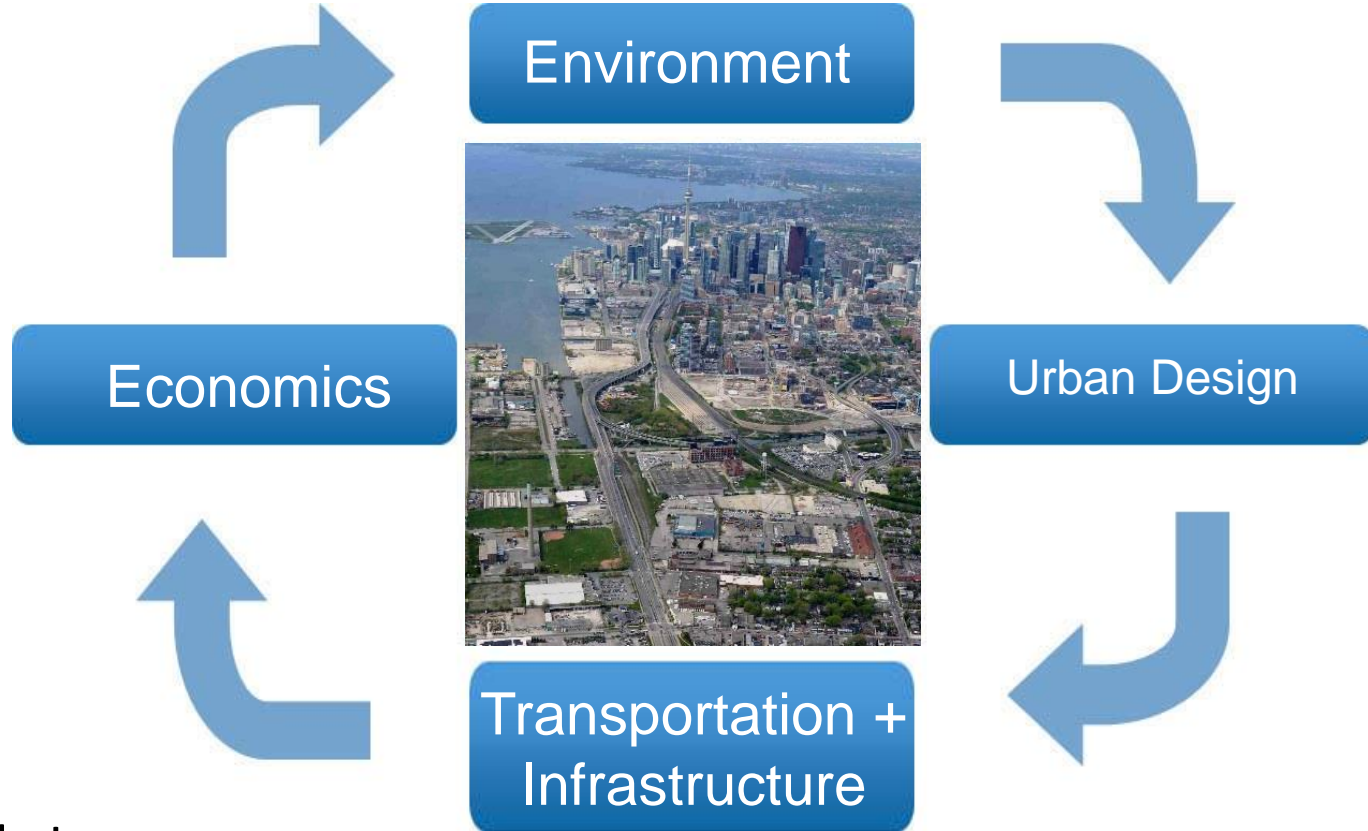


- Auto and transit modeling based on a 2031 scenario, including estimated growth
- Modeling assumed the following in downtown:
 - Full build out of the waterfront including the Port Lands over the next 40-50 years
 - City population growth of 30%
 - City employment growth of 30%
 - Increase of downtown trips of 50%
- Projected split between autos, transit, cycling and walking

Transit Assumptions

- Modeling results show that new transit lines are required to meet projected travel demands under any alternative (Maintain, Improve, Replace, Remove)
- Planned transit lines included in the transportation model include:
 - Relief Line
 - East Bayfront LRT/ Broadview Streetcar Extension
 - GO Service improvements

Evaluation Approach



- 4 Study Lenses
 - 16 Criteria Groups
 - 60 Measures
- Comparison of Relative Advantages & Disadvantages for each Criteria group

Evaluation: Transportation & Infrastructure

Auto Travel Times

Turning Restrictions

Safety

Construction

Cycling

Pedestrian Crossings

Transportation Capacity

Auto Travel Times

Actual & Projected Inbound Travel Times AM Peak Hour Average

	2001	2012	2031 Maintain	2031 Improve	2031 Replace	2031 Remove
A to D	40 min	45 min	50 min	55 min	55 min	60 min
B to D	20 min	25 min	30 min	35 min	35 min	40 min
C to D	20 min	20 min	25 min	25 min	30 min	30 min
E to D	25 min	25 min	25 min	30 min	30 min	30 min



Kipling/Lake Shore

Maintain	Improve	Replace	Remove
Preferred	Moderate Preferred	Moderate Preferred	Less Preferred

Turning Restrictions

- Currently about 10 turning restrictions in the corridor
- Improve alternative will reduce the number of restricted turns to between 3 and 6
- Replace and Remove will have no or limited turning restrictions thus improving local access to/ from the downtown core



Lake Shore Blvd E @ Sherbourne St

Maintain	Improve	Replace	Remove
Less Preferred	Moderate Preferred	Preferred	

Road Segments (along Lake Shore) Collisions 2007-2011

Yonge to Jarvis	86
Jarvis to Sherbourne	128
Don Rd to Carlaw	82

Intersections (along Lake Shore) Collisions 2007-2011

Jarvis	278
Sherbourne	92
Don Rd	149
Carlaw	161

- The intersections of LSB/ Jarvis; LSB/ Sherbourne and LSB/Don Roadway are among the top 20% in the city of intersections on major urban arterial roads in terms of number of collisions between 2007 and 2011.



Maintain	Improve	Replace	Remove
Less Preferred	Moderate Preferred	Preferred	Preferred

Maintain (6 years)

- Close 2 Gardiner travel lanes **(6yrs)**
- Demolish and rebuild deck in segments
- Closure of Lake Shore travel lanes at times

Improve (6 years)

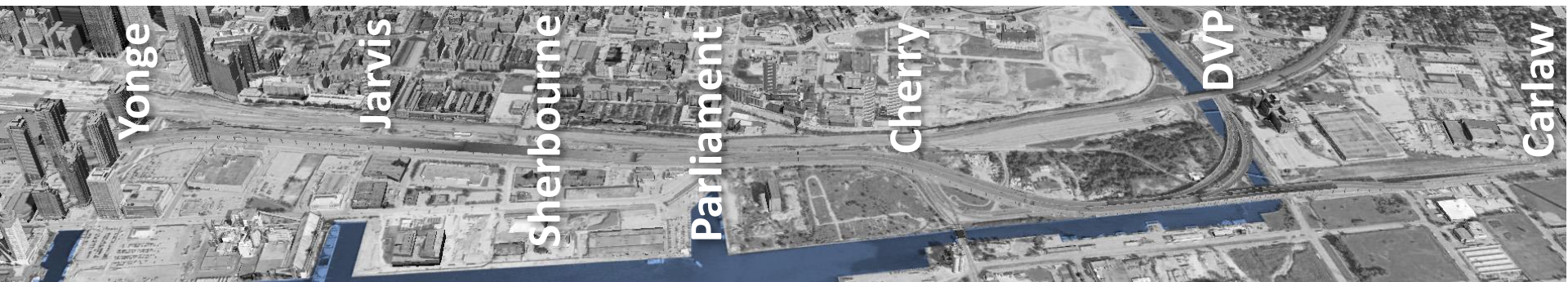
- Close 2 Gardiner travel lanes **(6yrs)**
- Demolish and rebuild deck in segments
- Closure of Lake Shore travel lanes at times

Replace (8 years)

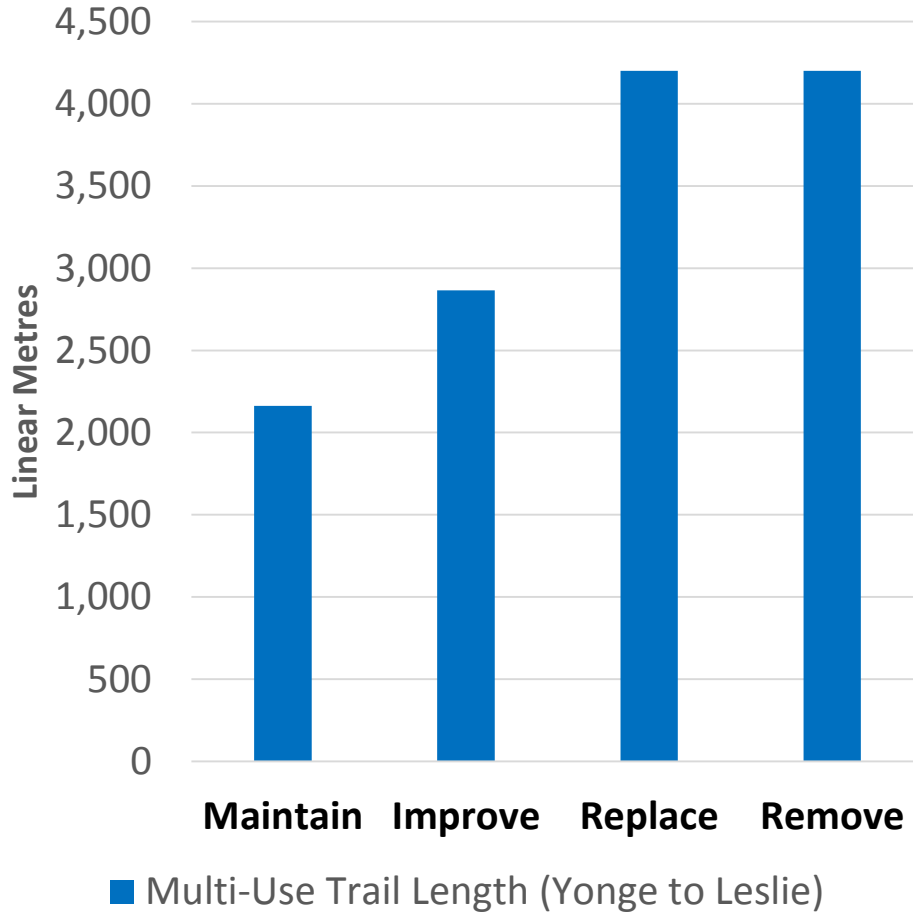
- Close Gardiner/ Lake Shore corridor for majority of construction **(8yrs)**
- Construct new structure

Remove (6 years)

- Pre-build on/off ramps and re-align Lake Shore (Cherry and DVP)
- Close 3 Gardiner travel lanes in two stages and demolish **(3yrs)**
- Complete Lake Shore between Jarvis and Cherry



Maintain	Improve	Replace	Remove
Preferred	Preferred	Less Preferred	Moderate Preferred



Maintain	Improve	Replace	Remove
Less Preferred	Moderate Preferred	Preferred	Preferred 37

Pedestrian Crossings

Crossing Distances

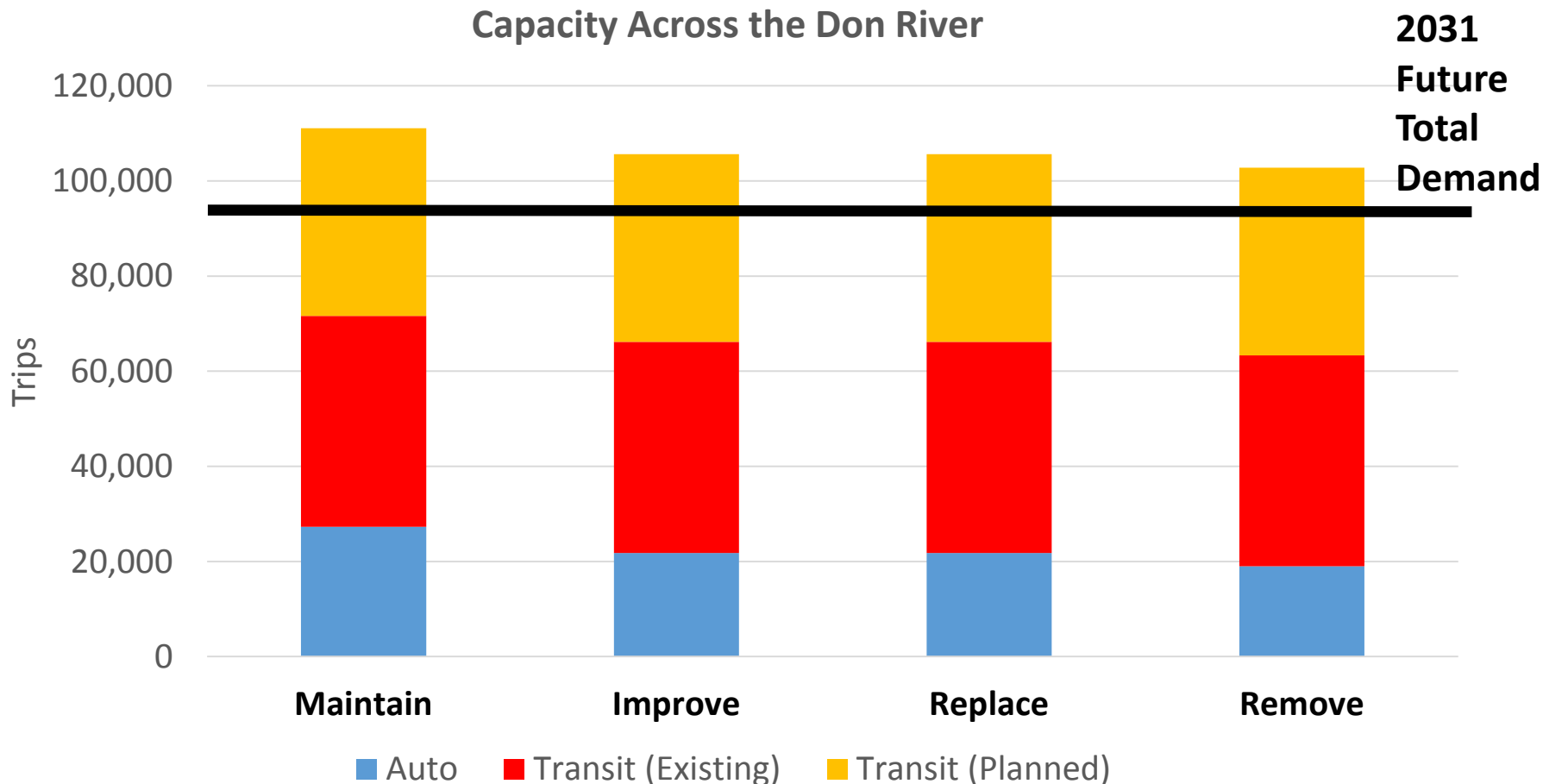
Maintain	Improve	Replace	Remove
35-45.4m	35-42.4m	22.5m	38m



- Existing crossing are interrupted by free-turn lanes
- Improve eliminates most free-turn lanes and regularizes intersections
- Remove has a shorter crosswalk walking distance than University Ave (46m)
- Crossing distances vary widely amongst all the options, while the majority of pedestrians can cross the corridor in one stage in all four alternatives

Maintain	Improve	Replace	Remove
Less Preferred	Moderate Preferred	Preferred	Preferred 38

Capacity Across the Don River



Source: AM Peak Hour Westbound at Don River Transportation Cordon (Lake Shore to Bloor): 1) Transportation Model EMME2 Forecast (2011-2031); 2) 2006 Transportation Tomorrow Survey (TTS) for Walk/Cycle Mode and Other Data; and 3) Employment/Population City's Flash Forward Report (2011-2031).

Maintain	Improve	Replace	Remove
Equally Preferred			

Evaluation: Environment

Social & Health

Natural Environment

Cultural Resources

	Maintain	Improve	Replace	Remove
Noise Level (Decibels dBA)	69-78	68-78	67-77	61-70
Local Air Quality (NOx emissions t/yr)	336	335	313	300
Local AQ (PM2.5 emissions t/yr)	32.5	30	29	27.4
Regional Air Quality Burden	0.25%	0.25%	0.25%	0.24%
Regional Greenhouse Gas (GHGs)	0.28% to 0.29%			0.24%



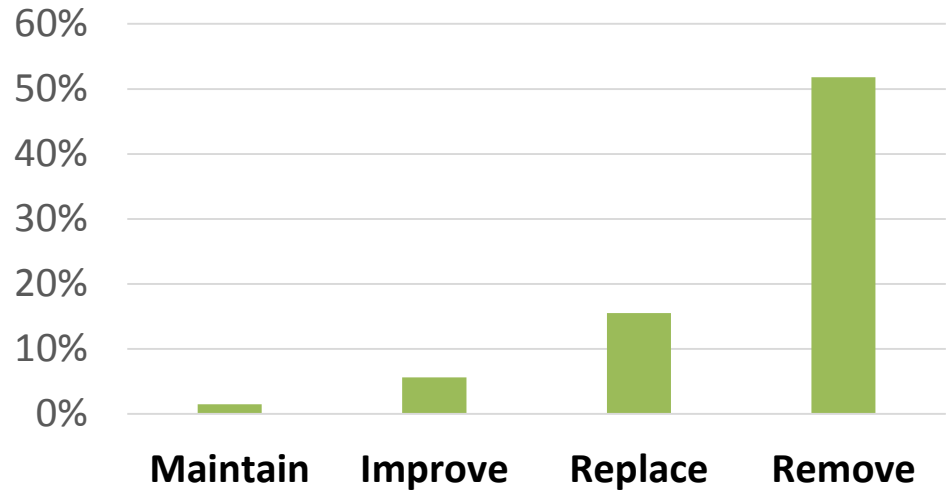
Source: Air Quality, Noise and Greenhouse Gas Modeling for Gardiner East EA Project

Maintain	Improve	Replace	Remove
Less Preferred	Moderate Preferred	Moderate Preferred	Preferred

Natural Environment

- Remove allows greatest access to sunlight, opportunities for tree planting, natural vegetation and greatest tree canopy
- Remove and Replace have least paved area which results in lowest water diversion into storm sewers
- City policy target of 33% tree coverage

Tree Coverage in Corridor



Maintain	Improve	Replace	Remove
Less Preferred	Less Preferred	Moderate Preferred	Preferred

- Maintain and Improve result in the least disruption to known archaeological resources
- No impacts to First Nations or cultural landscapes

**Maintain**

Preferred

Improve

Preferred

Replace

Less Preferred

Remove

Moderate Preferred

Evaluation: Urban Design

Consistency with Official Plan

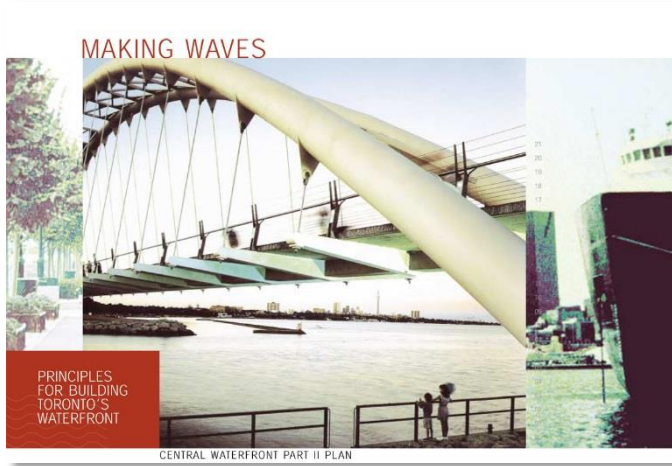
View Corridors

Rail Corridor

Compatibility with Neighborhood Plans

Public Realm & Streetscape

Street Fronts



Central Waterfront Secondary Plan Principles

Maintain Improve Replace Remove

Removing Barriers

Least Least Somewhat Most

**Building a Network of Spectacular
Waterfront Parks and Public Spaces**

Least Least Somewhat Most

**Promoting a Clean and Green
Environment**

Least Least Somewhat Most

**Creating Dynamic and Diverse New
Communities**

Least Least Least Most

Maintain	Improve	Replace	Remove
Less Preferred	Less Preferred	Moderate Preferred	Preferred

View Corridors (East-West)

Lake Shore Blvd E @ Sherbourne St



Maintain



Replace



Improve



Remove

View Corridors (East-West)

Gardiner Expressway @ Sherbourne St



View Corridors (North-South)

Lake Shore Blvd E @ Parliament St



Maintain



Replace



Improve



Remove

Rail Corridor



Maintain

Improve

Replace

Remove

Equally Preferred

Compatibility with Neighborhood Plans

View Looking North Don River & Keating Channel (Don Mouth Naturalization)

Maintain & Improve



Remove



Maintain

Improve

Replace

Remove

Less Preferred

Less Preferred

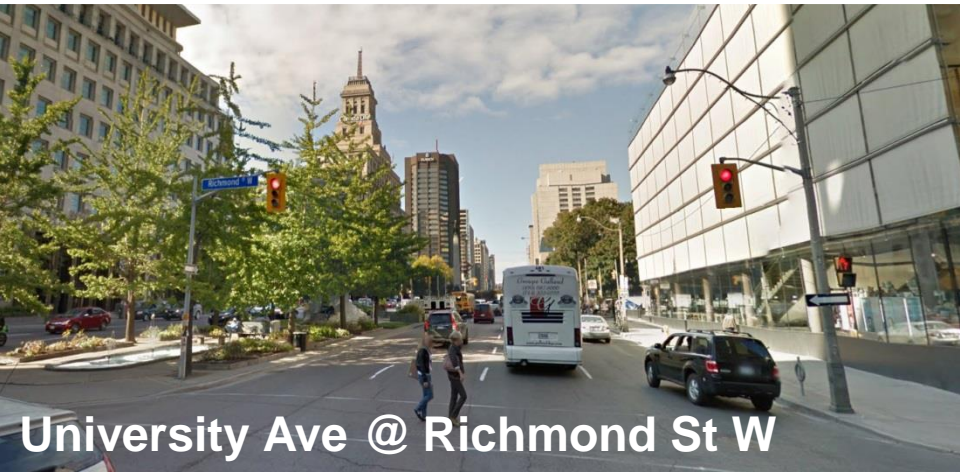
Moderate Preferred

Preferred

Maintain	Improve	Replace	Remove
Less Preferred	Less Preferred	Moderate Preferred	Preferred



Lake Shore Blvd E @ Parliament St

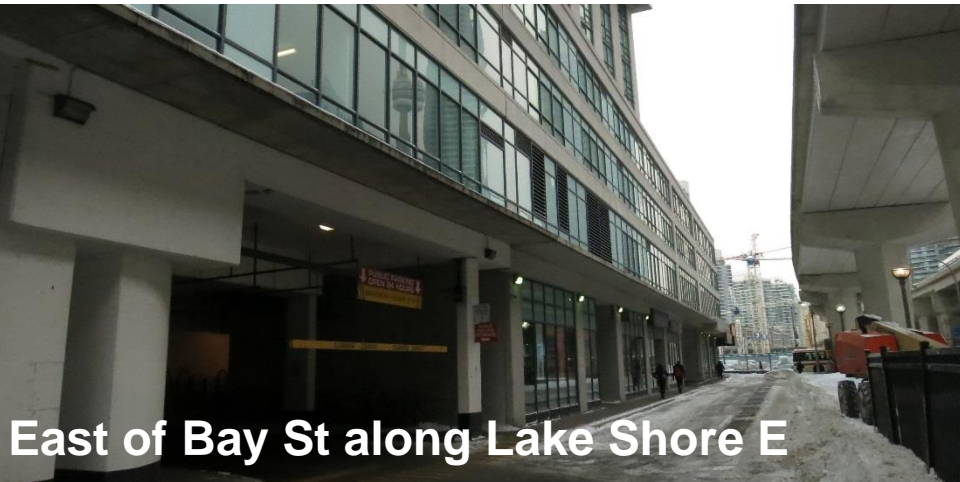


University Ave @ Richmond St W

- Quality of experience for pedestrians, cyclists and drivers along Lake Shore
- Many examples of busy streets with healthy neighborhoods and retail activity: Paris, New York, San Francisco
- Traffic and thriving neighborhoods are not mutually exclusive

Maintain	Improve	Replace	Remove
Less Preferred	Less Preferred	Moderate Preferred	Preferred 51

Street Fronts



East of Bay St along Lake Shore E



Spadina Ave @ Richmond St W

Maintain, Improve, Replace

- 4-5 stories of garages and garage entrances, limited retail opportunities, few pedestrians

Remove

- Ground floor retail, shops, office/ residential lobbies, patios and greater pedestrian activity
- Remove creates the most opportunities for active pedestrian spaces such as outdoor patios

Maintain	Improve	Replace	Remove
Less Preferred	Less Preferred	Less Preferred	Preferred 52

Evaluation: Economics

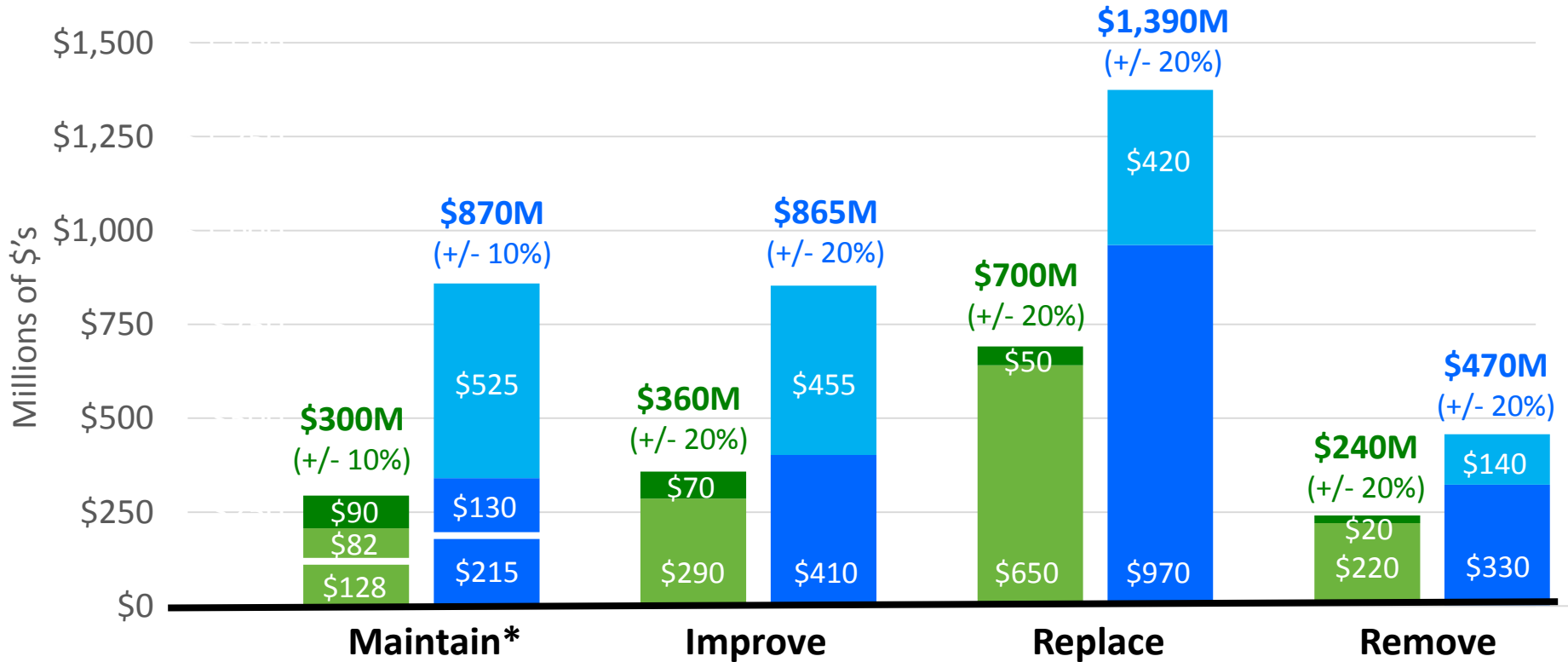
Costs (100 Year Lifecycle)

Revenues from Public Land Sales

Local Economics

Economic Competitiveness & Downtown Highways

Costs (100 Year Lifecycle)



Net Present Value
■ Capital Estimate
■ Operations & Maintenance Estimate

2013\$'s
■ Capital Estimate
■ Operations & Maintenance Estimate

*Capital cost for Maintain includes: 1) \$215M for Jarvis to DVP Ramps; 2) \$105M for Transitions (Yonge to Jarvis & DVP Ramps); 3) \$25M for Don Mouth Naturalization at Lake Shore and Don River Bridge

Maintain	Improve	Replace	Remove
Moderate Preferred	Moderate Preferred	Less Preferred	Preferred 54

Revenues from Public Land Sales



	Maintain	Improve	Replace	Remove
New Development Parcels (Acres)	0	0	5	10
New Development Area (Gross Square Feet)	0	0	1,900,000	2,800,000
New Revenue from Public Land Sales (NPV)	0	\$2M	\$65-70M	\$80-90M
New Revenue from Public Land Sales (2013\$)	0	\$3M	\$150-160M	\$220-\$240M

Maintain	Improve	Replace	Remove
Less Preferred	Less Preferred	Moderate Preferred	Preferred



Business Activity

- Limited retail and street level economic activity expected for Maintain & Improve
- Replace and Remove expected to have regular Toronto avenue street level retail, shops, restaurants, resulting in estimated 1,800 and 2,100 jobs respectively

Tourism

- Remove expected to have a positive impact on waterfront access and perception of the area

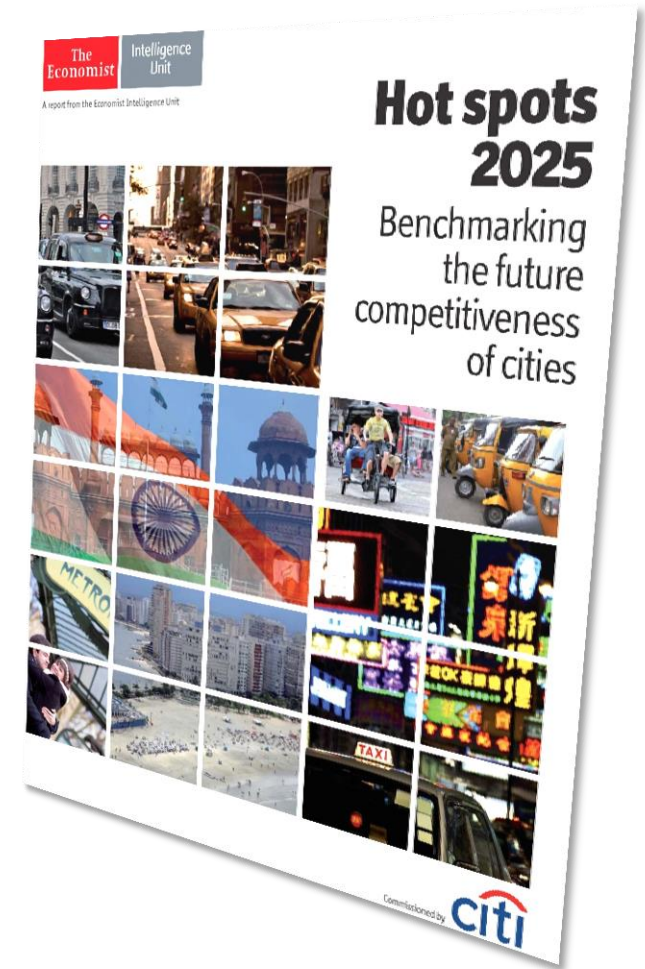
On Street Parking

- Parking possible for Remove on-Lake Shore during off-peak hours.

Maintain	Improve	Replace	Remove
Less Preferred	Less Preferred	Moderate Preferred	Preferred 56

Citigroup/ Economist Competitiveness Ranking (North American Cities on World List) 2013

City	Rank	CDB Through Highways
New York	1	Remove
Chicago	9	Never Built
Toronto	10	Under Study
Washington	14	Maintain
Los Angeles	17	Maintain
San Francisco	18	Remove
Boston	19	Replace
Houston	27	Maintain
Vancouver	28	Never Built
Dallas	32	Maintain
Atlanta	33	Maintain
Seattle	35	Replace
Montréal	36	Under Study
Miami	40	Maintain
Philadelphia	48	Improve



Maintain

Improve

Replace

Remove

Equally Preferred

Conclusion

Preliminary Evaluation Results

	Study Lens/ Criteria Group Summary	MAINTAIN	IMPROVE	REPLACE	REMOVE
TRANSPORTATION & INFRASTRUCTURE	Automobiles	Preferred	Moderately Preferred	Moderately Preferred	Least Preferred
	Transit	Preferred	Preferred	Preferred	Preferred
	Pedestrians	Least Preferred	Moderately Preferred	Preferred	Preferred
	Cycling	Least Preferred	Moderately Preferred	Preferred	Preferred
	Movement of Goods	Preferred	Preferred	Moderately Preferred	Least Preferred
	Safety	Least Preferred	Moderately Preferred	Preferred	Preferred
	Constructability	Preferred	Preferred	Least Preferred	Moderately Preferred
URBAN DESIGN	Planning	Least Preferred	Least Preferred	Moderately Preferred	Preferred
	Public Realm	Least Preferred	Least Preferred	Moderately Preferred	Preferred
	Built Form	Least Preferred	Least Preferred	Least Preferred	Preferred
ENVIRONMENT	Social & Health	Least Preferred	Moderately Preferred	Moderately Preferred	Preferred
	Natural Environment	Least Preferred	Least Preferred	Moderately Preferred	Preferred
	Cultural Resources	Preferred	Preferred	Least Preferred	Moderately Preferred
ECONOMICS	Regional Economics	Moderately Preferred	Moderately Preferred	Moderately Preferred	Moderately Preferred
	Local Economics	Least Preferred	Least Preferred	Moderately Preferred	Preferred
	Direct Cost and Benefit	Moderately Preferred	Moderately Preferred	Least Preferred	Preferred

Preferred	Moderately Preferred	Least Preferred
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Management Recommendation:

Management supports and endorses the evaluation results of the technical analysis of the Gardiner East Environmental Assessment and the recommendation that the **Remove** option, on balance, is the alternative that best meets the following four Evaluation Criteria Groups of the EA:

- **Transportation and Infrastructure** – The technical analysis concludes that all options require transit to support downtown and waterfront growth and further concludes that the “Remove” option best balances regional transportation needs and local access to the downtown and growing waterfront communities. The study notes, after taking in to account expected population and transit growth, by 2031 the “Remove” option would result in a significant delay (greater than 7 minutes) to only 1% of the daily trips (17,500 of 1,600,000 daily trips- all modes).
- **Urban Design** – The technical analysis concludes that the “Remove” option best meets the objectives of the City of Toronto Official Plan and Central Waterfront Secondary Plan principles, as well as plans for the Don Mouth Naturalization and Flood Protection EA and the five emerging waterfront communities (Lower Yonge, East Bayfront, Keating, Port Lands and South Riverdale) and will create a signature boulevard to support waterfront revitalization.
- **Environment** – The technical analysis concludes that the “Remove” option results in the lowest noise levels, local and regional air quality impacts and regional greenhouse gas emissions.
- **Economics** – The technical analysis concludes that the “Remove” option is the least costly alternative from a capital and lifecycle costing basis and provides the greatest revenue potential for public lands owned by the City of Toronto.

In addition, it is Management’s assessment that the “Remove” option is the option that best meets Waterfront Toronto’s waterfront revitalization objectives.

Resolution:

Be it resolved that the Board:

- a. supports and endorses the conclusions of the Gardiner Expressway & Lake Shore Boulevard Reconfiguration Environmental Assessment & Urban Design Study (the “Gardiner East EA”) and the identification of the “Remove” option as the preferred alternative;
- b. supports Management’s recommendation that the “Remove” option is also the alternative that best supports and enhances the revitalization of the Toronto waterfront, consistent with the statutory objects of the Corporation; and
- c. directs Management to contribute to a fact-based public debate on the issue and to continue to work with the City, as Co-Proponent, to finalize the Gardiner East EA based on the “Remove” option.