

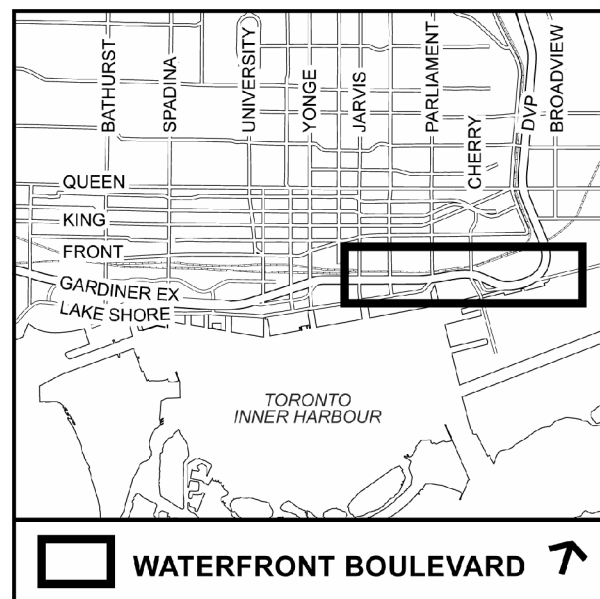
Environmental Assessment for Creation of a Waterfront Boulevard and Removal of the Gardiner Expressway East from Jarvis

Date:	June 16, 2008
To:	Executive Committee
From:	Richard Butts, Deputy City Manager
Wards:	All
Reference Number:	P:\2008\ClusterB\WF\ec08004

SUMMARY

On June 12, 2008, the Waterfront Toronto (WT) Board of Directors approved a resolution recommending to the City that an individual environmental assessment (EA) be undertaken to remove the eastern section of the Gardiner Expressway from Jarvis Street including the remaining Lake Shore East ramp and to replace it with an at-grade 2.4 km Waterfront Boulevard through East Bayfront and the Lower Don Lands to east of the Don River. This report seeks Council authority to implement WT's recommendations.

Removal of the eastern section of the Gardiner supports the revitalization of East Bayfront, the Lower Don Lands and the West Don Lands, and the naturalization of the Don River Mouth. It creates improved streetscapes, cycling and pedestrian connections, parks and public spaces by removing the large overhead road structure that currently prevents realization of the full potential of these future waterfront communities.



The “Waterfront Boulevard” proposal is more affordable, practical and implementable than the earlier “Great Street” option proposed by WT, which saw removal of the Expressway east from Spadina Avenue.

WT’s recommendation is that an individual EA be undertaken, with the City and WT acting as co-proponents in this process. Proceeding with this EA allows it to be coordinated with ongoing planning and EA initiatives associated with naturalization of the Don River and revitalization of the Lower Don Lands. Staff would report on funding for implementation of the preferred EA alternative at the same time as the preferred alternative is presented to Council.

A companion report to Executive Committee, ‘Environmental Assessment for Changes to York and Bay Ramps of Gardiner Expressway’, addresses ramp improvements at these locations to improve pedestrian flow and view corridors between the downtown core and the waterfront.

RECOMMENDATIONS

The Deputy City Manager whose responsibilities include Waterfront Revitalization recommends that City Council:

1. Authorize the City to act as co-proponent with Waterfront Toronto to undertake an individual environmental assessment (EA) of Waterfront Toronto’s (WT) proposal that the elevated Gardiner Expressway from approximately Jarvis Street to east of the Don Valley Parkway including the remaining Lake Shore Boulevard East ramp be removed and an at-grade waterfront boulevard be created;
2. Authorize creation of a Steering Committee of WT and City officials, co-chaired by the Deputy City Manager whose responsibilities include Waterfront Revitalization, and the President and Chief Executive Officer of Waterfront Toronto, to oversee and direct all aspects of the EA process;
3. Defer the total rehabilitation of the Gardiner Expressway east from Jarvis Street, except for essential works required to provide safe operating conditions, and direct the General Manager, Transportation Services to adjust the 2009 Capital Program submission and 2010 to 2013 Capital Works Plan accordingly;
4. Direct the Executive Director, Technical Services to conduct annual, detailed condition surveys of the Gardiner Expressway east from Jarvis Street to identify the minimum maintenance required to maintain safe operating conditions, and to make appropriate adjustments to the annual maintenance spending, until such time as City Council makes its decision on the future of this section of the Expressway;

5. Request that the Waterfront Project Director, when reporting to Council in the Fall of 2008 on the updated Long Term Funding Plan for Waterfront Revitalization, ensure that:
 - (a) the \$11 million currently earmarked for a Gardiner EA be advanced from 2013 to 2009; and
 - (b) recommendations be made as to how funds currently earmarked for the Front Street Extension be reallocated to other approved public realm initiatives within the Waterfront in consultation with other governments and Waterfront Toronto;
6. Request the Waterfront Project Director, in partnership with Waterfront Toronto and in consultation with the government partners to report on options for funding implementation of the preferred EA alternative at the same time as the preferred alternative is presented to Council for consideration;
7. Request that the EA address climate change, place an emphasis on place making, high quality urban design, and further analysis of traffic impacts;
8. Request that the EA address previous Council directions for east of the Don River regarding greening the median of Lake Shore Boulevard East and creating a “Grand Boulevard” and, rezoning the Parks and Open Space Area on the north side of Lake Shore Boulevard East from the Don Valley Parkway to Coxwell to “G”;
9. The EA comply with policies of the Official Plan, Central Waterfront Secondary Plan and South of Eastern Secondary Plan to support the retention of adjacent employment lands and restrict large format, stand alone retail stores and/or power centres; and
10. Authorize and direct appropriate City officials to take the necessary action to give effect thereto.

Financial Impact

The Council-approved Long Term Funding Plan for Waterfront Revitalization earmarks \$11 million to undertake an EA for removal of a portion of the elevated Gardiner Expressway. In the current plan, these funds are projected to be expended in 2013. Staff recommends that the funding be brought forward to 2009 and be included in the 2009 Capital Budget submission for Waterfront Revitalization to enable immediate implementation of the proposed EA process.

The expenditure impact on the Transportation Services capital works plan is estimated to be \$4 million per year during the EA phase to maintain the structure in a safe and serviceable condition. The cost reduction as a result of recommended deferral of total

rehabilitation of the Gardiner Expressway east from Jarvis Street is expected to be off-set by potential increase in maintenance of alternate traffic routes. The EA process is anticipated to last approximately three years. Future anticipated cash flows will be amended, as required, and reflected in the pending 2009-2013 capital budget submission during the third quarter of 2008. Annual inspections will be carried out to adjust maintenance and rehabilitation funding needs during the course of the EA. It is further anticipated that the recommendation for Technical Services to conduct annual surveys to identify the minimum maintenance required to achieve safe operating conditions of the Gardiner Expressway east from Jarvis Street will not have any incremental budget impact.

The cost of removing the eastern section of the elevated Expressway from Jarvis is estimated to be \$200.0 million to \$300.0 million and will be confirmed as part of the EA process. City staff, in partnership with WT officials and in consultation with the other government partners on Waterfront Revitalization, will explore funding options throughout the EA process and report to Council with recommendations at the same time as the preferred EA alternative is presented for consideration.

WT's "Waterfront Boulevard" proposal for the Gardiner Expressway does not include the Front Street Extension which enables funds currently earmarked for Front Street Extension in the Waterfront Capital Budget to be reallocated to other approved waterfront initiatives in the public realm. Staff will report to Council in the Fall of 2008 on proposed reallocations in the context of the updated Long-Term Funding Plan for Waterfront Revitalization.

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

DECISION HISTORY

On June 12, 2008, the Board of Directors of WT unanimously endorsed a resolution to commence an EA and urban design study for the removal of the elevated Gardiner Expressway east from Jarvis Street and the creation of an at-grade waterfront boulevard, and to request the City of Toronto to endorse the proposed approach and be an EA co-proponent (see Attachment No. 1).

ISSUE BACKGROUND

The F.G. Gardiner Expressway extends approximately 18 km from the Queen Elizabeth Way at Highway 427 to past the Don Valley Parkway. It is owned and maintained by the City of Toronto.

The 7 km elevated section of the Gardiner Expressway was completed in 1965 and runs from Dufferin Street to east of the Don Valley Parkway. It is a six-lane controlled access highway with three lanes in each direction, that carries roughly 200,000 cars per day west of the downtown core and 120,000 cars per day east of Lower Jarvis Street.

Lake Shore Boulevard, a six-lane arterial road, is located underneath the elevated Gardiner for about 2/3 of its length and has 13 ramp connections to the Gardiner. East of Lower Jarvis Street, the elevated Gardiner is approximately 10.4 m above grade and is over Lake Shore Boulevard. It runs along the south side of the rail corridor until Cherry Street where it swings south to the north side of Keating Channel and then north on a flyover to connect with the Don Valley Parkway. Another leg of the elevated Gardiner continues approximately 0.4 km east from the flyover past the Don River on a ramp that joins Lake Shore Boulevard at grade near Bouchette Street.

Numerous studies and task forces have proposed schemes for the removal or alteration of the elevated Gardiner structure over the years. Following earlier studies by the former City of Toronto and Metropolitan Toronto, in 1990-91, the Royal Commission on the Future of the Toronto Waterfront (Crombie Commission) suggested the removal of the entire elevated Gardiner Expressway and its replacement with a network of tunnels and surface roads.

From 1999 to 2003, a 1.3 km section of the Gardiner east of the Don River, between Bouchette Street and Leslie Street ('Leslie Street Ramp'), was dismantled at a cost of \$38 million. Parkland, public art and pedestrian and cycling trails were built along the exposed section at Lake Shore Boulevard East.

In 2001, the Toronto Waterfront Revitalization Task Force ('Fung Task Force') proposed that the remainder of the elevated Gardiner expressway be replaced. It recommended a highway tunnel west of Spadina Avenue and a network of surface arterial roads east of Spadina. It also recommended construction of the Front Street Extension from Dufferin Street to Bathurst Avenue and widening of the Richmond/Adelaide ramps at the Don Valley Parkway.

In 2003, the City asked WT to examine opportunities for the re-design of the Gardiner/Lakeshore corridor in support of waterfront revitalization. WT reviewed three basic alternatives to the existing expressway: 'Replace' 'Transform' and 'Great Street'.

The 'Replace' option involved the replacement of the entire elevated expressway east of Dufferin Avenue past the Don River with a combination of tunnels and at-grade roads, similar to the recommendations of the Fung Task Force. The 'Transform' option retained the elevated expressway, enhanced it with the removal of ramps, addition of architectural features and relocation of Lake Shore Boulevard from beneath it. The 'Great Street' option called for replacing the elevated expressway east of Spadina Avenue with at-grade streets similar to University Avenue.

In 2004, WT selected the "Great Street" as the option worthy of further consideration. The proposal was for a 10-lane two-way road between Spadina and Simcoe, a pair of 5-lane one-way roads from Simcoe to Jarvis, and an 8-lane two-way road east from Jarvis. The estimated cost was approximately \$780 million (2005), including Front Street

Extension and widening the Richmond-Adelaide ramps. The EA, design and construction process was estimated by WT to take up to 14 years.

In 2004 and 2005, WT conducted further detailed analysis of the traffic impact, constructability, structural engineering, construction staging, costing, economic impact and other aspects of the “Great Street”.

<http://www.waterfrontoronto.ca/dynamic.php?first=43fa75b221b08&second=4644b9f62b745&third=442ee40e416d7>

A later review of the WT studies by the Waterfront Secretariat, Transportation Services, City Planning and Finance staff indicated that the cost of the “Great Street” had risen to at least \$1.2 billion (2007). The cost increase reflected several factors including inflation, higher road construction costs, and additional costs for extra noise, dust, vibration and traffic mitigation due to recent residential development along the Gardiner corridor in the central area of the City.

In 2007, WT and City staff collaborated to find a more affordable solution to the redesign of the Gardiner that improved the quality of the public realm, the pedestrian environment and access to the waterfront. The result of this review was WT’s current “Waterfront Boulevard” proposal for removal of the eastern section of the Expressway, combined with a City staff proposal for ramp modifications in the central section which are the subject of a companion report that will be before Executive Committee on June 26, 2008. The preliminary cost estimate of Gardiner removal east from Jarvis is \$200M to \$300M and will be confirmed as part of the EA process.

Unlike the WT “Great Street” proposal for removal of the Gardiner east of Spadina, the “Waterfront Boulevard” proposal does not include Front Street Extension. “Waterfront Boulevard” would dismantle only the section of the Gardiner from Jarvis east of the downtown core. Traffic access from the west to and from downtown via the Gardiner is largely unaffected as it can continue to use the Spadina, York/Bay/Yonge and Jarvis ramps. Front Street Extension would have diverted some Gardiner traffic to downtown from the west to north of the rail corridor to offset the reduced traffic capacity with removal of Gardiner east of Spadina.

COMMENTS

Policy Context

Council has approved a number of policies to address climate change and guide land use and development that are relevant to the proposal to remove the Gardiner Expressway east from Jarvis. Staff recommends that the proposed Gardiner EA reflect and comply with these various policies to achieve the vision of the “Waterfront Boulevard”.

Climate Change, Clean Air and Sustainability Energy Action Plan

The City's Climate Change Plan sets out the actions by the City to reduce the release of greenhouse gases and improve local air quality. City initiatives relating to transportation are included in the Sustainable Transportation Implementation Strategy which is tied to the Transit City Plan, the Bike Plan, the TTC Ridership Growth Strategy and the Walking Strategy. These initiatives will accelerate projects that support a long-term vision of a sustainable transportation system and complement WT's sustainability strategy for the waterfront.

Official Plan

Policies of the Official Plan support a reduction in auto dependency and greater reliance on walking, cycling and transit to fulfill transportation needs. As the Gardiner Expressway is shown on the Urban Structure and Street Right-of-Way Maps (Maps 2 and 3) of the Plan, amendments to the Plan will be required in order to remove the Gardiner east from Jarvis.

Central Waterfront Secondary Plan

Removing barriers and making connections is a core principle of the Council-approved Central Waterfront Secondary Plan. One of the "big moves" identified in the Plan is the redesign of the Gardiner corridor.

The Secondary Plan describes the elevated Gardiner as "a major physical barrier that cuts off the city from the waterfront". It calls for improvements to the road system and GO and TTC services to ensure the success of a redesigned Gardiner corridor. The Plan also promotes a "Transit First" approach to redevelopment in the waterfront. Transit improvements along the Gardiner corridor such as new GO lines, improvements to Union Station, Waterfront East LRT service to the West Don Lands, East Bayfront, Port Lands, and extension of the Waterfront West LRT are anticipated in the Secondary Plan.

The Roads Plan (Map A) of the Secondary Plan shows the existing Gardiner Expressway and Front Street Extension as part of the road system in the waterfront. The Plan, however, notes that both the Gardiner/Lakeshore Corridor and Front Street Extension are to be subject to further study. Amendment of the Secondary Plan will be required for Waterfront Toronto's proposal to remove the Gardiner east from Jarvis to be implemented.

Staff will report further on the coordination of amendments to the Official Plan and Waterfront Secondary Plan when the EA terms of reference is submitted to Council for approval.

(a) East Bayfront

East Bayfront is located immediately south of the Gardiner between Jarvis and Parliament Streets. The East Bayfront precinct plan, endorsed by Council in 2005, provides for approximately 7,000 residential units and 92,900 m² of commercial space.

The precinct plan identifies the Gardiner as a major constraint to revitalization of the precinct and supports its removal. It states "...as long as the Gardiner remains as an elevated expressway at the northern edge of the precinct, it will form a barrier along the north-south passages and impact the built form of new development along that edge. The true potential of the East Bayfront, and indeed Toronto's relationship with its waterfront, is best realized if the Gardiner was removed and the corridor reconfigured as a proper boulevard ..."

In September, 2006, Council adopted the East Bayfront zoning by-law. The lands on the south side of the Gardiner (and Lake Shore Boulevard) between Lower Jarvis and Small Streets were rezoned to CR(h) except for the east side of Sherbourne Street which was zoned G. The maximum building height for the CR(h) lands is 46 m, with a 120m height limit at the southeast corner of Lower Jarvis Street, the southwest corner of Lower Sherbourne Street and the southwest corner of Bonnycastle Street.

In adopting the zoning by-law, Council resolved to allow, upon a final decision on the design and function of the Gardiner and at the request of abutting landowners, a review of the precinct plan and zoning for adjacent development focusing on changes to its built form and use provided the review is "density neutral".

<http://www.toronto.ca/legdocs/2006/agendas/council/cc060925/te7rpt/cl017.pdf>

(b) Lower Don Lands

The Lower Don Lands is a large precinct encompassing several new neighbourhoods and the re-located mouth of the Don River. It is bounded by Parliament Street, the rail corridor, the Don Valley Parkway/Don Roadway and the Ship Channel in the Port Lands. Preliminary analysis for WT indicates that the Lower Don Lands might accommodate up to 10,000 residential units and 10,000 jobs. Community facilities being considered in the Lower Don Lands include an elementary school, day care, library and recreation centre.

The first precinct plan for the Lower Don Lands is being prepared by WT for a new community north of the Keating Channel where the Gardiner is located. A Class EA Master Plan is being prepared for the roads, transit and municipal services (water, stormwater, sanitary) for the precinct and the rest of the Lower Don Lands. The schedule set by the Ontario Municipal Board for appeals filed by local landowners, requires that the precinct plan and Class EA for north of Keating Channel be presented to Council for endorsement by fall, 2009.

The Don Mouth Naturalization and Flood Protection EA, led by the TRCA for WT, has identified a preliminary preferred EA alternative which would extend the Don River

south and west within the Lower Don Lands so its mouth will be near Polson Quay rather than at its current location at Keating Channel.

A framework plan is being developed by WT to coordinate the precinct plans, Don Mouth EA and infrastructure EAs in the Lower Don Lands. A Gardiner EA process will need to be coordinated with these initiatives. It is expected that the recommended Steering Committee to be co-chaired by the Deputy City Manager whose responsibilities include the Waterfront and the President and Chief Executive Officer of Waterfront Toronto will oversee, direct and coordinate this process.

The elevated Gardiner crosses over the proposed new North Keating community. As a result, parks, public spaces, community facilities, development sites and the Lower Don River channel are affected by noise, shadows, views and other impacts of the Gardiner. The expressway piers restrict the alignment and design options for Lake Shore Boulevard, Cherry Street, Parliament Street and local streets in the precinct. The current concept plan for North Keating proposes to relocate Lake Shore Boulevard to the north so it will not be under the Expressway. Removal of the Gardiner will enable the consideration of a greater range of road alignment and urban design options for the North Keating neighbourhood.

Both the Lower Don Lands and East Bayfront are largely undeveloped at this time and, as a result, will benefit greatly from removal of the eastern section of the Expressway. Development in East Bayfront, south of Queens Quay, is already underway with TEDCO's Corus building, First Waterfront Place. Development to the east and north within East Bayfront is imminent. The immediate launch of a Gardiner EA is critical to ensuring full realization of the place making potential in these new communities.

(c) West Don Lands

The West Don Lands is separated from the Gardiner by the railway corridor. The precinct plan for West Don Lands, endorsed by Council in 2005, provides for a new mixed use community with approximately 6,000 residential units. Although the rail corridor has a greater impact on the West Don Lands, the Gardiner is visible and has an acoustic presence in the south portion of the precinct. It also impedes north/south connections from West Don Lands to the Lake through East Bayfront and Lower Don Lands.

(d) South of Eastern and Port Lands

Employment lands flank the ramped section of the elevated Gardiner east of the Don River, where it transitions to Lake Shore Boulevard East.

On the north side of the eastern Gardiner ramp (and Lake Shore Boulevard East) is the Keating Rail Yard, and north of that are employment lands, comprising the west end of the South of Eastern Employment Area which extends east of the Gardiner ramp. South of the Gardiner ramp are other employment lands located in the north portion of the Port Lands district.

The lands on the north side of the elevated Gardiner east of the Don River are designated as Parks and Open Spaces Areas in the Official Plan. Lands further north of this are designated Employment Areas and this general area is within an Employment District identified in the Urban Structure Map of the Official Plan. In September, 2006, Council adopted an Official Plan Amendment, under appeal to the Ontario Municipal Board, which prohibits “power centres” in the South of Eastern Employment District.

In January, 2008, Council also adopted a Secondary Plan that applies to the South of Eastern Employment Area. The South of Eastern Secondary Plan, also under appeal before the Ontario Municipal Board, includes policies to maintain and strengthen the economic health and vitality of the South of Eastern Employment Area. Relevant to potential removal of the adjacent section of the elevated Gardiner Expressway is Policy 4.3 which states that “New street intersections and driveway access points to and from the north side of Lake Shore Boulevard will be limited and only be considered if they are consolidated to serve a shared use among properties.” The Secondary Plan provides for consideration of limited retail and service uses that support the primary economic function of the District. Small scale stores and services are generally limited to 300m².

At the time of the adoption of the Secondary Plan, Council requested City Planning staff to report back to Toronto and East York Community Council on the option to rezone the Parks and Open Space areas on the north side of Lake Shore Boulevard East to “G”, and on the options for greening the median of Lake Shore Boulevard east of the Don River and creating a “Grand Boulevard” along the corridor. Staff has not yet reported on these requests. <http://www.toronto.ca/legdocs/mmis/2008/cc/decisions/2008-01-29-cc16-dd.pdf> (page 56).

The lands south of the Gardiner (and Lake Shore Boulevard East) in the Port Lands are designated Regeneration Area in the Official Plan and the Central Waterfront Secondary Plan. The Secondary Plan policies for Regeneration Areas provide for mixed-use development subject to the preparation of precinct implementation strategies. A precinct planning process has not been initiated for this area of the Port Lands adjacent to the Gardiner as it is expected to remain in use for employment purposes while the adjacent Lower Don Lands precincts are revitalized as mixed use communities. Policy P43 of the Central Waterfront Secondary Plan applies to this area of the Port Lands. It states that “Large scale, stand-alone retail stores and/or “power centres” are not part of the vision for the Central Waterfront.”

The WT proposal to undertake an EA for removal of the Gardiner Expressway east from Jarvis and create a waterfront boulevard is consistent with Council’s direction to staff to examine the creation of a greened median and “Grand Boulevard” on Lake Shore

Boulevard east of the Don River. Staff recommends that the EA for Gardiner removal address these previous Council directions and comply with policies of the Official Plan, Central Waterfront Secondary Plan and South of Eastern Secondary Plan to support the retention of adjacent employment lands and restrict large format, stand-alone retail stores and/or power centres.

Proposal Description

A preliminary concept for removal of the Gardiner east from Jarvis, shown in Attachment 2, indicates the following elements:

- Remove elevated Gardiner so that it is at grade from Jarvis eastward
- Construct new or enhance on/off ramps in the vicinity of Jarvis
- Reconstruct Lake Shore Boulevard as an 8 lane road from Jarvis through to Bouchette where the Gardiner has already been removed
- Construct new ramps from Lake Shore Boulevard to the Don Valley Parkway

Rationale Supporting Proposal

Quality of Place

The greatest benefit of removing the elevated section of the Gardiner east from Jarvis is to improve the quality of the urban spaces in East Bayfront and Lower Don Lands, along the Lower Don River and eastward on Lake Shore Boulevard. It will create the opportunity to achieve design excellence and outstanding new communities and public spaces in the East Bayfront and Lower Don Lands precincts of the waterfront as they are revitalized.

The elimination of the elevated structure will dramatically improve the public realm of the existing Gardiner/Lakeshore corridor east of downtown by replacing it with a 2.4 km long waterfront boulevard through East Bayfront, the Lower Don Lands and east of the Don River. This new urban boulevard will provide more open, pedestrian friendly, green and attractive streetscapes. It will improve the quality of adjacent public spaces and the frontages of abutting development parcels. A more optimal layout and design of the public space and street system, Don River valley and municipal servicing will be more possible than with the Gardiner in place.

The existing Gardiner Expressway has been widely criticized for being incompatible with its urban context that has evolved since its construction from an industrial port area to new waterfront communities and public spaces. The area under the Expressway, and in particular the north south streets under it are subject to health and safety issues such as bird guano, litter blown off the expressway, ice, snow and water cascading down, and

noise, dust and grime. A lack of sunlight results in challenging conditions for landscaping. There is a noise bounce and magnification factor in areas where Lake Shore Boulevard East is below the Expressway.

The unsignalized right turn channels, curved off ramps with yield to motorist conditions, and motorist priority traffic light signals act as a deterrent for pedestrians and cyclists. The bike path on the north side of the Gardiner Expressway between Parliament Street and Cherry Street does not meet engineering standards due to the narrow width created by the Gardiner Expressway pillars.

Because of these factors, many developers request to include above grade parking in building proposals that abut the Expressway. Above grade parking is often unsightly, results in a disconnection between building and street activities and reduces pedestrian safety since there are fewer 'eyes on the street'. The pillars and ramps result in pedestrian crosswalks being prohibited in locations such as the west side of Lower Jarvis Street at Lake Shore Boulevard.

Benefits in Other Cities

A number of major cities across North America and Europe have dismantled expressways in recent years. After completion, those initiatives received significant public support and generated considerable economic and tourism benefits.

Two examples include the Embarcadero Freeway in San Francisco and the West Side Highway in New York. When a section of the Embarcadero Freeway was removed after an earthquake, a six-lane boulevard was built and new transit capacity added. Property values of lands nearby increased 30 to 40 percent and traffic gridlock did not materialize as feared. The removal of the West Side Highway, an elevated expressway on the west side of Manhattan, resulted in the creation of a surface urban boulevard. The area was transformed from a depressed area to a desirable urban neighbourhood with significant increases in land value.

Traffic Analysis

(a) Great Street- Traffic Analysis

In support of its proposal for the larger "Great Street" in 2004, Waterfront Toronto conducted detailed simulations of traffic operations throughout the downtown area for various options considered at that time. These simulations were prepared under the direction of Dr. Baher Abdulhai, Assistant Professor and Director of the Intelligent Transportation Systems Centre in the University of Toronto's Department of Civil Engineering.

The methodology used was the most sophisticated micro-simulation analysis currently available that incorporates detailed information on all existing road characteristics, traffic control parameters, individual driver behaviour and individual vehicle performance characteristics. Although the current proposal for modifying the Gardiner/Lake Shore corridor was not modelled at that time, the 'Great Street' option that was modelled from Spadina Avenue east was very similar.

Trip time between specific locations was one of the key performance measures for the transportation networks modelled in 2004. For the 'Great Street' option, the 2004 results of the micro-simulation predicted average trip times for motorists travelling between Queen Street East at Woodbine Avenue and King Street West at Bay Street would increase by approximately 1 minute. The reverse trip would increase by approximately 4 minutes. Similarly, the predicted average trip time between the Don Valley Parkway at Dundas Street East and the intersection of King Street West and Bay Street was predicted to increase by approximately 3 minutes, and the reverse trip by 1 minute. Overall, the simulation concluded that removing the elevated expressway would result in lower overall network levels of service, but that the impact was not severe enough to dismiss exploring the other potential benefits of the "Great Street" scheme.

(b) Current Proposal- Traffic Analysis

Waterfront Toronto's current proposal is similar to the former 'Great Street' proposal but on a smaller scale. It is therefore anticipated that it would have similar operating characteristics: lower network level of service but not severe enough to dismiss it. This assumption was tested with information from the EMME/2 model used by City Planning to project future travel demands and assess potential transportation network upgrades.

Although it is not a micro-simulation model and does not reflect absolute travel times, the EMME/2 model can produce similar performance measures on a network basis for relative comparisons between options. Looking at the same origins and destinations described above, and evaluating three different scenarios for the potential traffic capacity of an at-grade boulevard in place of the elevated Gardiner Expressway east from Jarvis Street, the EMME/2 model also showed relatively minor changes in predicted travel times between existing conditions and any of the three scenarios. While a more detailed analysis should be undertaken in the proposed EA study, these results support Waterfront Toronto's earlier analysis and conclusion that an at-grade boulevard design east from Jarvis Street can result in a satisfactory overall network level of service.

Another significant prediction of the EMME/2 analysis was the level of travel diversion associated with some options for the replacement of the elevated Gardiner. The 'Waterfront Boulevard' option with the lowest traffic capacity tested resulted in up to 1,700 daily vehicle trips being diverted from the Gardiner/Lake Shore corridor. Although this was factored into the network level of service analysis and does not change the conclusions from that perspective, it does highlight the need to specifically analyze it

during the proposed EA study. Further, solutions developed through the EA study should incorporate the possibility of diverting vehicle trips to other modes of travel, such as transit. Modelling undertaken on EMME/2 did not consider the increased transit use expected to result from significant public investment in transit expansion initiatives.

(c) City Experience with Traffic Simulation/Prediction

City staff is very familiar and confident in the use of simulation models to assist in making decisions on potential large-scale modifications to the City's transportation infrastructure. Such models have been used on many other projects, including the dismantling of the Gardiner Expressway east of the Don River. On that project, simulation models predicted that the modified Lake Shore Boulevard could accommodate all vehicular traffic that had been using both the Gardiner and Lake Shore Boulevard combined, with only minor increases in overall travel time through the corridor. Pre and post construction traffic data collected by Transportation Services have shown these predictions to be accurate.

“Transit First”

The Central Waterfront Secondary Plan states that: “...Modifications to the road and transit infrastructure outside (the Gardiner) corridor will be required to ensure the success of any expressway redesign. These modifications will have to be identified and substantially in place prior to reconfiguring the corridor.” (P1)

Significant transit planning is currently underway that will result in additional transit infrastructure and operations to augment and support changes to the elevated Gardiner Expressway.

Environmental assessment (EA) studies are currently underway or recently completed for ten TTC projects in proximity to the Gardiner corridor and Toronto waterfront. GO Transit has a \$1 billion expansion program underway that will upgrade services on several existing rail lines, including Lake Shore West and East, as well as operational improvements at Union Station. The City is also embarking on a comprehensive program to revitalize the Union Station passenger terminal building and ensure passenger handling capacity is in place to accommodate the anticipated near doubling of GO Transit ridership following completion of expansion initiatives.

These transit initiatives respond to the Central Waterfront Secondary Plan's “Big Moves”, “Transit City” and related policies, by providing opportunities to travel by transit and reducing dependency on the automobile for travel within the waterfront corridor.

As noted in the following table, the majority of these projects are slated to be completed within a ten year time period, which coincides with the estimated timing to reconfigure the Gardiner corridor east.

Agency/Initiative	Current Status	Estimated Time Frame for Construction Completion
<p>TTC/City 'Transit City' Initiatives</p> <ul style="list-style-type: none"> • Waterfront West <ul style="list-style-type: none"> - Ex Place to Dufferin Loop - Dufferin to Roncesvalles - Park Lawn Loop - Parklawn to Long Branch • Kingston Road Streetcar • Bremner Boulevard Transit • Don Mills Bus Rapid Transit <p>City/TTC/WT Initiatives</p> <ul style="list-style-type: none"> • Waterfront East <ul style="list-style-type: none"> - West Don Lands LRT - East Bayfront LRT - Port Lands LRT - Union Station Second Platform Project <p>GO Transit Initiatives</p> <ul style="list-style-type: none"> • Lake Shore West Corridor Improvements • Lake Shore East Corridor Improvements • Stouffville Line Upgrade • Georgetown Line Upgrade • Union Station Signal Upgrades • Union Station Platform Upgrades <p>City Initiatives</p> <ul style="list-style-type: none"> • Union Station Concourse Upgrades • New Union Station Northwest PATH 	<p>EA Near Complete EA Underway EA Complete EA Underway EA Underway EA Underway EA Underway</p> <p>EA Complete EA Underway EA Commencing Study Complete</p> <p>EA Complete EA Complete EA Complete Underway Underway Underway</p> <p>Study Underway EA Near Complete</p>	<p>4 yrs 6 yrs 2 yrs 7 yrs 5-10 yrs 7 yrs 8 yrs</p> <p>3 yrs 5 yrs tbd* 5 yrs</p> <p>2 yrs 2 yrs 1 yr tbd* 1 yr 2 yrs</p> <p>tbd* 5 yrs</p>

tbd* – to be determined through further study

Capital and Maintenance Costs

The estimate of the potential capital cost for the removal of the Gardiner east from Jarvis Street is approximately \$200 to \$300 million. The cost was estimated using unit costs for

project elements that were updated to reflect the most recent contract prices obtained for similar types of work. City staff generally agrees with the WT cost estimate for long-term planning purposes. Applying these updated figures to the former 'Great Street' proposal for Gardiner removal east from Spadina, City staff estimate the 'Great Street' cost at \$1.2 billion. Therefore the current "Waterfront Boulevard" proposal is approximately 1/4 of the cost of the original 'Great Street' option.

Maintenance costs were addressed generally when Waterfront Toronto analyzed the original 'Great Street' option in 2005. As an input to a net cost analysis, Waterfront Toronto identified a present value of the annual cost of maintaining the elevated Gardiner east of Spadina Avenue in perpetuity at approximately \$200 million. This figure was based on an average annual maintenance cost and inflation and cost of borrowing rates at that time. Were a decision to be made to retain and maintain the Expressway in its existing form for the foreseeable future, a total rehabilitation program could cost as much as \$45 million over the next three years and \$90 million over the next ten years. This is approximately 1/3 of the cost of removing this section of the Expressway to create the Waterfront Boulevard.

During the proposed EA study, as was the case with the Gardiner East Dismantling EA, a life cycle cost analysis should be used to determine the net costs of any options developed for the Gardiner east from Jarvis Street. This method will calculate a net present value for all options including the "status quo" option, which incorporates all future construction and maintenance costs, and credits residual value remaining in the infrastructure assets at the end of the life cycle period.

This process will include the identification and incorporation of the costs for the more immediate rehabilitation needs on the existing Gardiner east of Jarvis Street. Depending on the final decision and timing of whether or not to make any significant changes to the Gardiner, it will be necessary to spend a minimum of \$3 million to \$4 million per year during the proposed EA study to maintain the Expressway in a safe operating condition.

Next Steps

The potential removal of the Gardiner Expressway east from Jarvis requires approval under the Environmental Assessment Act. Although a Class EA process is available for municipal road projects, an Individual EA process is proposed to provide the opportunity for consultation and analysis prior to establishing the scope of the EA. The City would act as an EA co-proponent with WT. The EA process would take approximately 3 to 5 years. A Federal EA (CEAA) would also be required if federal funding is provided for the project and can be initiated later in the process. Other Federal approvals would be required under the Navigable Waters and Fisheries Acts and other legislation, for any new bridges over the Don River.

A more detailed study process and public consultation strategy than required by the EA Act will be developed. This may include interim reports to the Waterfront Toronto Board

of Directors and Council at key decision points in the process, to inform them on public feedback throughout the course of the study, and provide an opportunity for Council to provide direction prior to the selection of a preferred design.

The EA studies would be taken to a preliminary design level of detail to more fully address the feasibility and costs of the preferred alternative. This will reduce the risk of cost escalations or scope increases after the environmental assessment is complete.

The EA analysis would include the design of changes to other roads to support the changes to the Gardiner Expressway, the inclusion of transit improvements required, the identification of urban design elements, and the development of traffic management and construction staging plans.

Specific considerations to be addressed in the EA include the location of ramps, possible improvements to the Richmond/Adelaide ramps, coordination with Don Mouth EA/Lower Don Lands precinct plan/EAs, traffic impacts, construction staging, north/south pedestrian crossings and treatment of the north flankage along the railway. An individual EA allows all of these issues to be considered.

A steering committee of WT and City officials, co-chaired by the Deputy City Manager whose responsibilities include Waterfront Revitalization and the President and Chief Executive Officer of Waterfront Toronto, is proposed to oversee and direct all aspects of the EA process. The steering committee will address project scope, cost implications and resource requirements. City staff will play an active role in the EA process given its technical expertise, previous experience with the removal of the section of the Gardiner east of the Don River ('Leslie Street ramp') and responsibility for maintaining and operating the City's transportation assets.

Conclusions

The removal of the elevated Gardiner Expressway east from Jarvis is consistent with City and WT objectives for waterfront revitalization. It would be a major improvement to the quality of Toronto's waterfront, especially East Bayfront along its Lake Shore Boulevard frontage, and the neighbourhoods in the Lower Don Lands north of Keating Channel. Transit and transportation initiatives identified in the Official Plan as a pre-requisite to redesign of the Gardiner corridor are underway.

The proposal to remove the Gardiner east from Jarvis is more implementable than the full "Great Street" scenario for Gardiner removal east from Spadina. As a smaller scale project, it is more affordable and achievable. It is a standalone project but does not preclude other possible changes to the Gardiner in the future.

Staff recommend that Council authorize the start of the EA for removal of the Gardiner east from Jarvis. A preliminary review by WT and City staff indicates that this change to Gardiner is technically feasible from a transportation perspective and desirable to achieve urban design objectives.

It is timely to proceed with the EA as it can be coordinated with other planning and EA initiatives to revitalize East Bayfront, the Lower Don Lands and the West Don Lands, and naturalize the mouth of the Don River.

This report was prepared by the City's Waterfront Secretariat, Transportation Services and City Planning Divisions in consultation with staff of Waterfront Toronto.

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SIGNATURE

Richard Butts, Deputy City Manager

ATTACHMENTS

Attachment 1 - Waterfront Toronto Resolution passed June 12, 2008
Attachment 2 - Waterfront Boulevard

Attachment 1

Waterfront Toronto Resolution passed June 12, 2008

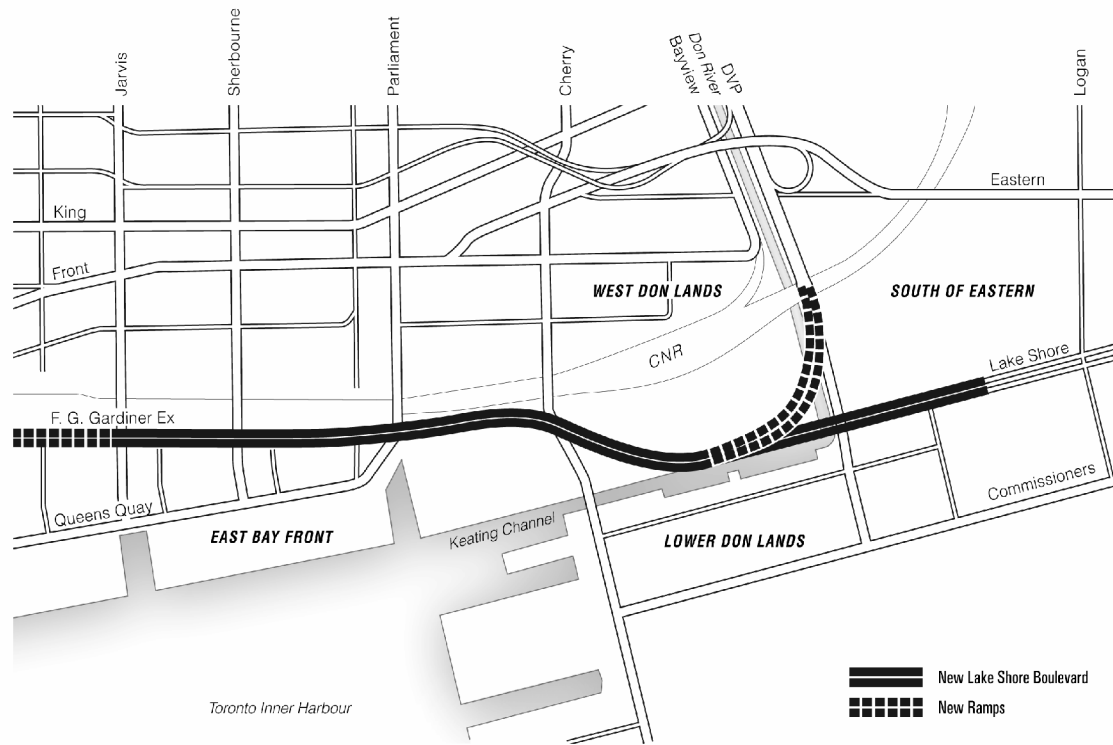
Whereas, the Board of Waterfront Toronto believes that:

- Reconnecting the City to its waterfront by removing barriers and improving north/south connections advances revitalization objectives;
- Leading with place-making urban design principles, including the creation of a “great street,” will improve the quality of life in the new communities being developed in East Bayfront and West Don Lands;
- Sustainable and intelligent city-building emphasizes transit-led solutions for growth;
- The Gardiner full replacement option is not financially feasible at this time.

Now therefore be it resolved that:

- Waterfront Toronto recommends commencing an environmental assessment and urban design study of the removal of the elevated Gardiner Expressway from Jarvis Street to the Don Valley Parkway and the remaining Lake Shore East ramp in a manner that:
 - a) Assists in overcoming the physical and visual barriers currently created by the nexus of road and rail infrastructure and opens up new and improved views and vistas and improved access;
 - b) Balances the needs of through traffic and circulation connecting the Don Valley Parkway, the remaining portion of the Gardiner and Lake Shore Boulevard and adjoining areas of the site with the need to produce high quality environments within the study area;
 - c) Reserves sufficient lands in appropriate configurations for the development of sustainable, mixed-use communities;
 - d) Facilitates multi-directional accessibility by all modes – vehicles, pedestrians, transit, cyclists - within the area and to the adjacent areas;
 - e) Contributes to place-making, strengthening and improving the public realm;
 - f) Results in a Great Street or Streets which have the dimensions, qualities and operational characteristics that invite pedestrian activity, encourage development with active ground level uses ideally on both frontages, and are crossable by pedestrians at frequent intervals;
 - g) Maintains or improves the flood protection strategies planned as part of the Don Mouth Flood Protection and Naturalization EA
- Waterfront Toronto seek Toronto City Council approval for the recommended approach and for the City to be a co-proponent with Waterfront Toronto in initiating an Individual Environmental Assessment;
- Funding for the project implementation be determined during the EA process;
- Funds from all governments currently reserved for Front Street Extension be reallocated to approved waterfront public realm projects.

Attachment 2 – Waterfront Boulevard



Waterfront Boulevard

Figure 1

Not to Scale
06/2008

File # ec08004