

GARDINER EXPRESSWAY AND LAKE SHORE BOULEVARD EAST RECONFIGURATION

Environmental Assessment and Urban Design Study

Final – Chapter 9: Conclusions and Next Steps

January 2017



WATERFRONToronto



TORONTO



Contents

9.0	Conclusions and Next Steps	9-1
9.1	Commitments to Future Work	9-3
9.1.1	Detailed Design	9-3
9.1.2	Construction Detour Route Review	9-6
9.1.3	Coordination with Other Infrastructure and Planning Projects ..	9-7
9.1.4	Public Realm Implementation Strategy	9-8

9.0 Conclusions and Next Steps

Waterfront Toronto and the City of Toronto (City), the project co-proponents, have jointly undertaken this Individual Environmental Assessment Study to determine the future of the eastern portion of the elevated Gardiner Expressway and Lake Shore Boulevard from approximately Lower Jarvis Street to approximately Leslie Street. The study was undertaken in response to calls to consider reconfiguration options for this corridor that would better balance modes of transportation and create new and improved connections between the city and the lake. As well is the recognition that the condition of the eastern expressway deck is nearing the end of its service life and requires full rehabilitation. The study process was made up of two overarching components:

1. An Individual Environmental Assessment pursuant to the Ontario *Environmental Assessment Act* to assess proposed changes to the existing eastern section of the elevated Gardiner Expressway and Lake Shore Boulevard; and
2. An urban design review that yields a vision for the future of the area occupied presently by the eastern section of the elevated Gardiner Expressway and Lake Shore Boulevard.

This unique integrated study process has focused on completing a comprehensive technical analysis to generate a preferred undertaking that is rooted in strong city-building objectives. As a result of this EA process, which included a thorough examination of alternative solutions and alternative designs, the Hybrid 3 alternative was identified as the preferred undertaking. This includes:

- 1) The removal of the existing expressway east of Cherry Street and the construction of a new expressway link with the Don Valley Parkway (DVP).
- 2) The construction of a realigned Lake Shore Boulevard from Cherry Street to Don Roadway with new ramps to and from the Gardiner Expressway and the replacement of the Lake Shore Boulevard bridge over the Don River.
- 3) Reconstruction of Lake Shore Boulevard east of the Don River to Logan Avenue.
- 4) Implementation of public realm improvements in the corridor from approximately Jarvis Street to approximately Leslie Street.

During the course of this EA, an assessment of effects of the undertaking has been completed and mitigation and enhancement measures have been recommended. In completing the effects assessment, consideration was given to climate change, cumulative effects and effects on source water protection areas.

The overall advantages and disadvantages of the Gardiner East project were also determined and compared against the “Do Nothing” Alternative. The negative net effects of the Gardiner East undertaking will largely occur during construction and are temporary. These negative effects are considered to be offset by the positive contributions of the project, including the opportunity to develop the Keating Channel Precinct with direct access to the water; the creation of new public realm space, contributing to the creation of a better connected waterfront; the accommodation or enhancement of other major projects such as the Don Mouth Naturalization Project (DMNP) and Port Lands and South of Eastern Area redevelopment; the provision of additional trees/plantings within the Lake Shore Boulevard corridor; opportunities for improved north–south connections between the city and the waterfront; the accommodation of major private–sector development projects including the First Gulf development; and the promotion of alternative modes of transportation through the development of a high–quality multi–use pathway.

The Need for a Decision

A final decision on the Gardiner East EA is imperative. The elevated Gardiner structure was constructed in sections between 1955 and 1966. The deck and concrete barriers east of Jarvis Street are in poor condition and are considered to be at the end of their service life. The effects of weathering, winter salting, and the loads imposed daily by an estimated 110,000 vehicles, particularly on the steel–reinforced concrete elevated section, have taken their toll on the structure.

Recognizing that implementation of the preferred EA alternative design would not likely commence until 2020, Toronto City Council has authorized \$14 million of interim repairs to make this eastern portion of the structure safe and extend its service life to 2020. These repairs consisted of: temporary timber bracing under the deck; localized concrete deck repairs; and repair and replacement of severely deteriorated parapet walls.

Even with City Council's endorsement of Hybrid 3 confirmed, lengthy timelines are required to: complete the Environmental Assessment process, including approval from the Ontario Minister of the Environment and Climate Change; undertake detailed design; prepare construction tender documents; and procure the necessary construction contractor(s).

After decades of uncertainty and numerous costly studies on the future of the Gardiner/Lake Shore corridor, agreement and decisive action are needed with respect to the eastern segment of the expressway, which has considerable potential for redevelopment and positive change.

9.1 Commitments to Future Work

The following discusses future work required to advance the project to the construction stage. Key future work items, as discussed below include: detailed design work, completion of a detailed constructability and staging plan, the need to consider the advancement of other projects and plans in the project area, Keating Precinct Plan update, and Public Realm Plan development.

9.1.1 Detailed Design

The preferred alternative has been developed to a conceptual level of detail sufficient to identify likely impacts and to recommend mitigation measures to address those impacts. This included completion of conceptual plans and profiles of the preferred alternative, the illustration of lane configurations and approximate alignments of the new ramps, setting approximate road/ramp and bridge deck widths, identifying representative locations of new piers/columns to support the new bridge decks and resolving general lane arrangements and intersection layouts on the new Lake Shore Boulevard and Don Roadway alignments. Further, a high level construction staging option was developed that illustrates the kind of construction phasing and temporary works that may be necessary to implement the project. It will be necessary to advance the design of the preferred undertaking through the completion of detailed design work. The following highlights some key considerations that will need to be taken into account in the development of the detailed design.

Metrolinx Rail Bridge

To maximize the amount of northerly shift for the DVP Ramps through the Keating Channel Precinct for the Hybrid 3 preferred design, the development of the required ramp and Don Roadway exit/entrance treatments was initiated north of the Metrolinx Bridge. This resulted in the need to accommodate a wider treatment with shoulders and a greater separation between the DVP lanes and the Don Roadway lanes in both north and south directions at the bridge location. In addition, the locations available for the placement of new piers with the preferred alternative do not line-up with the existing pier locations. With the current preferred layout, if a new centre pier is located between the future southbound and northbound lanes, it would be situated approximately in the centre of the existing northbound lanes of the DVP. This will require the development of a staging plan that minimizes traffic disruption. Further, it is understood that Metrolinx requires that the impact to operating rail lines during construction be minimized.

New Gardiner – Don Valley Parkway Crossing Ramps of Don River

It will be necessary to more accurately locate and size the new ramp elements that cross the Don River. This will enable any potential floodplain impacts to be confirmed and addressed in coordination with the TRCA. The recommended profile for the new DVP ramps has been configured so that it reaches an appropriate height before crossing over the river. This was determined through flood conveyance modelling and through discussions with the TRCA. The height is based on achieving a similar elevation to the recommended height of the TRCA proposed Valley Wall Feature to be located immediately to the east of the Don Roadway that will provide flood protection. Other revisions to the ramps may be warranted to accommodate the Don Mouth sediment management activities once confirmed by TRCA.

Further, the EA developed approximate sizes and locations of the new Gardiner–DVP ramp columns/piers in and adjacent to the Don River. Although the preferred alternative will result in only two piers in the Don River, it will result in the placement of two new DVP ramp bridge abutments and approximately 10 new bridge piers within the immediate river regulatory flood plain. Of the alternative designs considered, the TRCA indicated a preference for the Hybrid 3 alignment as it is most removed from the area planned for sediment management in the Don River mouth. It is acknowledged that the detailed design work will need to be undertaken in a coordinated manner with the DMNP team, including those involved with the ongoing work related to the Don River sedimentation facility.

Don Roadway

Don Roadway will continue to provide an essential local connection to and from the Don Valley Parkway and provide enhanced access to the First Gulf development area to the east (also known as East Harbour) as well as the Port Lands to the south. It will also be used as a DVP detour route during some stages of construction. Single entrance/exit lanes are proposed at the north end to and from the DVP, widening to five lanes at the intersection with Lake Shore Boulevard. It will be necessary to finalize the lane arrangement to assess property requirements and determine general detour layout aspects and related considerations of TRCA's Valley Wall Feature proposed along the east side of the road as well as other changes that might be required to Don Roadway to accommodate the DMNP. For this item, coordination with TRCA, First Gulf and other property owners will be required. This coordination will focus on identifying and confirming 1) the required configurations of road lanes and intersections, road grades and other road design elements taking into consideration the access requirements of the planned development and ongoing city planning studies; and 2) any additional land needed on the east side of the existing Don Roadway to accommodate both the Don Roadway realignment and the potential integration of the TRCA Valley Wall Feature.

Lake Shore Boulevard and Rail Spur Crossing of the Don River

The future configuration of the Lake Shore Boulevard/Rail Spur crossing over the Don River was assessed as part of the Keating Channel Precinct Plan and Environmental Study Report (ESR). This earlier assessment assumed that the Gardiner Expressway (Logan Ramps) would continue to pass over Lake Shore Boulevard in this area and called for retaining the existing two-span bridge and adding three new spans to the west in order to increase the river passage under the bridge. The recommended layout and configuration is no longer appropriate as the required cross-section for Lake Shore Boulevard, as determined in the Gardiner East EA, is much wider than considered in the Keating Channel Precinct ESR, which maintained the existing four-lane Lake Shore Boulevard cross section. The recommendations for the new bridge now call for a seven-lane bridge with sidewalks/pathways on both sides. This will require the replacement of the existing bridge (including rail spur). The recommended new bridge, with seven lanes for Lake Shore Boulevard, accommodates the width of the river passage underneath the bridge as approved in the Keating Channel Precinct ESR and does not make changes to that part of the design: only the number of lanes for Lake Shore Boulevard (and therefore the width of the bridge itself to accommodate those lanes) will change.

In previous evaluations of various bridge treatments completed under the Keating Channel Precinct ESR (including one involving complete replacement of the existing bridge), the need to accommodate the existing Gardiner columns and overhead deck played an important role in the selection of the preferred option. The option to raise the Don River bridge profile to further accommodate flood conveyance could be explored by the DMNP EA team as the removal of the overhead expressway opens up this opportunity. The existing rail spur bridge over the Don River predates the Lake Shore Boulevard bridge but its abutments are in-line and connected to the abutments and piers of the roadway structure. The new rail spur bridge will likely be a separate bridge but, similar to the existing configuration, could share some structural elements with the new Lake Shore Boulevard bridge. The replacement of the Lake Shore Boulevard and rail spur bridge(s) will be considered in coordinated manner with the DMNP EA team in future detailed design activities.

Cherry Street Treatment

The recommended EA alternative was based on Cherry Street being shifted to its ultimate location and orientation west of the current intersection with Lake Shore Boulevard (as per the Lower Don Lands Master Plan and Keating Channel Precinct ESR). Additional work will be required to assess how the construction of planned Cherry Street realignment, including the Cherry Street/Lake Shore Boulevard intersection, should be coordinated between the implementation of the Gardiner East EA and the Port Lands Flood Protection project.

Safety Measures for Tight Ramps

Various safety audits and reviews were completed during the EA to address concerns with respect to traffic safety of the new Gardiner – DVP connection ramps. These freeway to freeway, directional ramps will have a design speed considerably lower than the adjoining roadways that they connect. A list of safety measures has been suggested for consideration to address the concerns. This work task will involve reviewing the suggested measures (and others if deemed appropriate) to provide recommendations.

9.1.2 Construction Detour Route Review

The general construction staging review completed during the EA recommended the implementation of a detour route that runs south of the existing corridor during the construction of the bridge and road works in the Keating Channel Precinct. This detour would also exist during the removal of the old bridge/ramp decks. A detailed road detour plan will need to be developed prior to construction initiation that considers:

- Extent of the detour including the location of the points where the detour route connects back to the existing Lake Shore Boulevard east and west of the Don River;
- The cross-section of the detour, including number of lanes, lane widths, bike path allowances, etc.;
- Keating Channel crossing of the detour route (either as a temporary bridge or using the future proposed Cherry Street crossing of the channel). Design aspects that need to be determined in discussion with TRCA, PortsToronto and other stakeholders regarding this crossing of Keating Channel include clearance requirements that may be needed for ongoing marine and maintenance activity in the channel;
- Bridge deck staging aspects associated with the west-end connection to the existing Gardiner structure at Bent #294. This is required to address traffic maintenance and lane reductions that will be required to complete the new bridge work at this location; and,
- Intersection layouts at cross roads.

In developing the plan for road detours during construction, the City and/or its agents will consult with interested local stakeholders, landowners, local businesses, and community groups to receive their input, inform them of the traffic management plan, and receive their feedback on the plan. Further, during construction there will be public notifications of construction activities and timing including road closures and detours. Consultation with local stakeholders and community groups will continue during the construction period.

Finally, in developing the traffic management plan, consideration will be made to the other infrastructure and planning projects that may have an overlapping construction period with the Gardiner Project. These other projects are described in the following report section.

9.1.3 Coordination with Other Infrastructure and Planning Projects

There are several infrastructure projects that are currently planned or in the planning stages in the immediate area of the proposed Gardiner works between the Don River and Cherry Street. Some of the elements of these plans are common to multiple projects and there is a need to coordinate construction activities to avoid conflicts. This includes City initiatives involving the Don River (as per the DMNP), planned works south of the Keating Channel (as per the Villiers Island Precinct Plan), implementation of the recommendations from the Don River and Central Waterfront Combined Sewer Outflow Project, and the ongoing Toronto Port Lands and South of Eastern TSMP. The coordination of the final planning recommendations, construction and implementation of all these plans is required on an ongoing basis. In addition, initiatives from other key area stakeholders will need to be considered and coordinated including those of Metrolinx, PortsToronto and private developers. Consultation activities completed throughout the EA included extensive coordination with stakeholders, agencies and project teams working in the Study Area as well as ongoing coordination with the Gardiner Expressway Strategic Rehabilitation team on implementation of Hybrid 3. This will need to continue during the detailed design and implementation planning stages through the various channels available to the City for coordinating large infrastructure projects. In addition, an inter-agency team has been formed to coordinate key Metrolinx, Gardiner Expressway, Port Lands and combined sewer overflow projects. The team includes representatives from the City of Toronto, Metrolinx, Infrastructure Ontario, and TRCA.

Keating Channel Precinct Plan and Keating Channel Precinct ESR Update

The Gardiner East EA results in a completely new alignment of the Gardiner Expressway through the Keating Channel Precinct. As such, there is an opportunity to design and implement a

different local road network and block configuration in the Keating Channel Precinct than is currently approved in the Keating Channel Precinct Plan. Council authorized that the Keating Channel Precinct Plan be revisited based on the opportunities available due to the realignment of the Gardiner Expressway through this area. This will include consideration of new opportunities for public realm, pedestrian and cycling connections. A City staff report to Committee and Council is expected following MOECC approval of the Gardiner East EA.

Related to the above, the Keating Channel Precinct Plan work assessed long term utility requirements to support a relocated Lake Shore Boulevard and future development in the area. The location of Lake Shore Boulevard between the Don River and Cherry Street proposed in this EA is consistent with the roadway realignment proposed in the Lower Don Lands Infrastructure EA and Keating Channel ESR. Servicing needs for the area as identified in the Precinct Plan recognized that most of the existing utilities were at or near the end of their service life and included the recommendation that implementing a series of utilidors could provide the best approach to future servicing.

The purpose of this additional work would be to develop a plan for the decommissioning of the bypassed Lake Shore Boulevard section, address utility conflicts and upgrading requirements, and future servicing needs leading to the development of an implementation strategy for the Keating Channel Precinct. This work requires coordination with the Don River and Central Waterfront Project which includes recommendations for servicing and stormwater management that would affect plans in this area.

9.1.4 Public Realm Implementation Strategy

Both the City of Toronto Official Plan and the Central Waterfront Secondary Plan provide policy direction for a high standard of public realm design within the Study Area, inclusive of (amongst others): the need for well-designed city streets, sidewalks and boulevards that act as public open spaces in their own right; recognition of a need to continually improve connectivity with the Lake Ontario shoreline as part of a comprehensive open space network; provision of new parks and open spaces that provide appropriate space and layout for recreational and community needs; and the creation of new city blocks and development lots at a size and configuration that promotes street-oriented development, and which allows for phased development.

In addition to these Council endorsed policies, the inclusion of "urban design" as one of four evaluation lenses used to evaluate alternative solutions and alternative designs, as well as the integration of an urban design study within the overall EA process, further reinforces the importance of the design and implementation of a high-quality public realm within the Study

Area. City Council has also authorized a public realm implementation phasing and funding strategy for the Gardiner East corridor.

The integrated urban design component of the Gardiner East EA recommends a number of public realm improvements within the 2.4-kilometre study area that reaches from approximately Lower Jarvis Street to Logan Avenue. Naturally, this large Study Area overlaps with, and/or is adjacent to, the study areas of numerous other city-building and waterfront revitalization initiatives. Examples include, but are not limited to:

- Gardiner Strategic Rehabilitation Plan;
- Lower Yonge Precinct Plan;
- East Bayfront Precinct Plan;
- Keating Channel Precinct Plan;
- Villiers Island Precinct Plan;
- Don Mouth Naturalization Project EA;
- Port Lands Flood Protection;
- Port Lands Planning Framework; and
- Port Lands and South of Eastern Transportation and Servicing Master Plan.

Delivery of the proposed Gardiner East EA public realm improvements will be realized in concert with the many initiatives listed above. Based on the recommendations of the Gardiner East EA for public realm improvements along the Gardiner-Lake Shore Boulevard corridor, a public realm implementation strategy will be prepared to identify how proposed public realm improvements can best be coordinated with other waterfront and city-building initiatives. Given the overlapping implementation timeframes of various waterfront precinct and transportation planning initiatives, a phasing plan will be created as part of the implementation strategy. The implementation strategy will also consider the timeline and staging of construction for the Gardiner East EA road works in order to find opportunities to align construction planning so that initial public realm improvements can be in place when the Gardiner East reconfiguration is operational. The strategy will also review the coordination of other City programs related to traffic safety, cycling and pedestrian infrastructure, civic improvement and public art that may be implementing complementary projects within or proximate to the Study Area