



## STAFF REPORT ACTION REQUIRED

### Rapid Health Impact Assessment on the Alternative Solutions for the Gardiner Expressway and Lake Shore Boulevard East Reconfiguration

<b>Date:</b>	May 15, 2015
<b>To:</b>	Board of Health
<b>From:</b>	Medical Officer of Health
<b>Wards:</b>	28 and 30
<b>Reference Number:</b>	

#### SUMMARY

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The way cities are built shapes the lives and health of the people who live in them.

At its meeting of May 13, 2015, the Public Works and Infrastructure Committee considered the report from the Deputy City Manager, Cluster B, Gardiner Expressway and Lake Shore Boulevard East Reconfiguration Environmental Assessment (EA) and Integrated Urban Design Study - Updated Evaluation of Alternatives. The report identified two alternatives – Remove and Hybrid – as viable alternatives for the configuration of this important transportation corridor in the City. The Committee recommended that City Council make a decision on a preferred Gardiner East Environmental Assessment (EA) alternative.

Phase One of the EA evaluated alternatives using four lenses: transportation and infrastructure, urban design, environment and economics. At the request of the Chair of the Board of Health (BOH), Toronto Public Health (TPH) undertook a rapid Health Impact Assessment (HIA) by adding a health lens to the findings of the Alternative Solutions Evaluation – Interim Report – Addendum prepared for the EA to assess the relative impacts on health of the two alternatives.

There are many factors to consider when deciding the preferred option for the reconfiguration of the Gardiner Expressway. TPH's HIA indicates that the Remove alternative is expected to provide more health benefits overall and fewer adverse health impacts compared with the Hybrid alternative. Phase Two of the EA will consider alternative designs for the preferred solution. Including a health lens in the second phase

will help ensure that potential health benefits are realized and negative health impacts minimized for either of the options selected.

## **RECOMMENDATIONS**

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### **The Medical Officer of Health recommends that:**

1. The Board of Health request City Council to consider the findings of Toronto Public Health's Rapid Health Impact Assessment when deciding on the preferred alternative for the Gardiner Expressway and Lake Shore Boulevard East reconfiguration; and
2. The Board of Health request City Council to include a health lens in Phase 2 of the Gardiner Expressway and Lake Shore Boulevard East Reconfiguration Environmental Assessment.

### **Financial Impact**

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

## **DECISION HISTORY**

At its meeting of May 13, 2015, the Public Works and Infrastructure Committee adopted the report from the Deputy City Manager, Cluster B, EA and Integrated Urban Design Study - Updated Evaluation of Alternatives. The Committee recommended that City Council make a decision on a preferred EA alternative.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.PW4.1>

This report was prepared at the request of the Chair of the BOH (see attached Appendix 1) to inform the BOH and City Council on the health implications of the options for the reconfiguration of the Gardiner Expressway and Lake Shore Boulevard East.

## **ISSUE BACKGROUND**

The Gardiner Expressway and Lake Shore Boulevard form an important transportation corridor that provides both access to downtown Toronto and a southern bypass for vehicles travelling across the city. Current problems in the eastern end of the corridor include a deteriorated expressway that needs major repairs, as well as a waterfront that is disconnected from the rest of the city. There is an opportunity to revitalize the eastern waterfront through the construction of new buildings, neighbourhood streets and public realm.

### **The Official and Central Waterfront Plans**

Toronto's Official Plan, approved by Council in 2002, provides a policy framework to manage the city's growth and development. It promotes the revitalisation of Toronto's waterfront, well-designed connections between the city and the lakefront as well as employment and economic policies to support a growing urban population.

Creating dynamic and diverse new communities, removing barriers/making connections, promoting a clean and green environment, and building a network of waterfront parks and public spaces are core principles of the Central Waterfront Secondary Plan approved by Council in 2003. The Secondary Plan anticipates new mixed-use development and employment and population growth in the waterfront area.

### **The Environmental Assessment**

To help identify the preferred solution, Waterfront Toronto and the City have retained external consultants to undertake an environmental assessment (EA). The EA is considering the potential impacts of various options on transportation, urban design, the environment and the economy. The goals of the EA are to: Revitalize the waterfront, reconnect the city with the lake, balance modes of travel, achieve sustainability and create value.

There are two phases within this EA. The first analyses the preferred alternative solution. The addendum to the Alternative Solutions Evaluation Interim Report for the Gardiner East EA and Urban Design Study compares two options: Remove (Figure 1) and Hybrid (Figure 2). Both have been identified as viable EA alternatives. (See <http://www.toronto.ca/legdocs/mmis/2015/pw/bgrd/backgroundfile-79867.pdf>)

City Council is being asked to decide on the preferred alternative. Once City Council has identified the preferred alternative, the second phase of the EA will go into more detail on potential specific designs for the preferred solution. Once the final design is identified, Waterfront Toronto and the City will submit the final report to the Ministry of the Environment and Climate Change for approval.



**Figure 1: Remove (Boulevard) Alternative**



Source: Alternative Solutions Evaluation – Interim Report – Addendum – May 2015

**Figure 2: Hybrid Alternative**



Source: Alternative Solutions Evaluation – Interim Report – Addendum – May 2015

## COMMENTS

### The Healthy City

The way cities are built shapes the lives and health of the people who live in them. In October 2011, the BOH adopted the report *Healthy Toronto by Design*, which outlined the factors that make a healthy city, which are described below.

(<http://www.toronto.ca/legdocs/mmis/2011/hl/bgrd/backgroundfile-41333.pdf>)

A city's built environment influences levels of physical activity by encouraging or discouraging walking, cycling, playing in parks, driving cars or taking public transit. Compact neighbourhoods with a good mix of land uses and streets designed for all users make it easier for people to maintain health through physical activity. Better access to transit also increases the likelihood of physical activity. Accessible and affordable public transit improves access to employment, education, food, recreation and other services, which are all important for health. This is especially important for individuals and families living on a low income.

The transportation system impacts health directly through injuries, air pollution and noise, and indirectly by influencing levels of physical activity, facilitating access to services, and supporting social cohesion.

Green space – particularly trees, but also grass, perennial plants, shrubs and other vegetation – provide benefits to health by improving air and water quality. Green space also helps reduce the health impacts of climate change. Public spaces provide an opportunity for exercise, physical activity and relaxation all of which contribute to health. Parks help create stable neighbourhoods and strengthen community development, which helps make communities healthier.

More prosperous, inclusive and equitable cities foster health. With sufficient income people are also able to improve their access to health and social services, afford quality childcare, and have the time and resources to participate in cultural and health promoting activities. Improving socio-economic conditions of individuals and communities also helps the performance of the economy as a whole.

### The Active City

In May 2014 the BOH adopted the report *Active City: Designing for Health*, a collaboration between Toronto Public Health, City Planning and Transportation Services. (<http://www.toronto.ca/legdocs/mmis/2014/hl/bgrd/backgroundfile-69334.pdf>) The report outlined 10 design principles to guide changes to neighbourhoods, streets and buildings that when followed create an urban environment that allows people of all ages and abilities to incorporate physical activity in to their daily routines without extra costs for physical exercise. An Active City:

1. Shapes the built environment to promote opportunities for active living;
2. Has a diverse mix of land uses at the local scale;

3. Has densities that support a good provision of local services, retail, facilities and transit;
4. Uses public transit to extend the range of active modes of transportation;
5. Has safe routes and facilities for pedestrians and cyclists;
6. Has networks which connect neighbourhood, to city-wide and region-wide routes;
7. Has high quality urban and suburban spaces that invite and celebrate active living;
8. Has opportunities for recreational activities and parks that are designed to provide for a range of physical activities;
9. Has buildings and spaces that promote and enable physical activity; and
10. Recognizes that all residents should have opportunities to be active in their daily lives.

### **Health Impact Assessment**

TPH's HIA framework considers a wide range of factors that can have either a positive or negative impact on health: environmental factors (such as air pollution, built environment, noise, green space, and water quality); social and economic factors (such as income, economic security, food security, and housing); lifestyle factors (such as nutrition and physical activity); access to services (such as access to health services, parks, recreation, and transit); and equity.

For this rapid HIA, TPH evaluated the criteria identified for the four lenses used in the EA: transportation and infrastructure, urban design, environment and economics. These are a subset of the criteria in the HIA framework. The results of the Alternative Solutions Evaluation - Interim Report - Addendum of the EA were assessed against the factors known to promote health to determine which option would have the least negative health impact or greatest benefit for health. Not all of the criteria examined in the EA have an impact on health. Table 1 highlights the EA criteria that are most relevant for the comparison of potential health impacts between the Remove and Hybrid alternatives and provides a high level summary of the HIA. Appendix 2 provides a detailed comparison of the health impacts associated with the Remove and Hybrid alternatives, and how they differ in terms of health benefits or negative health impacts.



**Table 1: Health Impact Assessment Summary**

<b>Criterion</b>	<b>Option with the greatest health benefit or least negative health impact</b>	<b>Comment</b>
<b>Transportation and Infrastructure</b>		
<b>Transit Availability</b>	Both	Both options are similar in terms of impacts on access to transit.
<b>Pedestrian Movements</b>	Remove	The Remove option allows for a more pedestrian friendly infrastructure that promotes walking.
<b>Cycling Infrastructure</b>	Both	Both options offer an opportunity for 4,200 metres of new cycling infrastructure from Yonge to Leslie Street.
<b>Road Safety</b>	Remove	The Remove option provides greater road safety for pedestrians, cyclists and motorists.
<b>Urban Design</b>		
<b>Planning Objectives</b>	Remove	The Remove option better achieves the Central Waterfront Secondary Plan principles.
<b>Urban Realm</b>	Remove	The Remove option better enhances the streetscape through more public space.
<b>Built Form</b>	Remove	The Remove option provides more opportunities for a mix of retail and other uses.
<b>Environment</b>		
<b>Social and Health Impacts</b>	Remove	The Remove option is better for health due to smaller climate change impacts and less air pollution.
<b>Natural Environment Impacts</b>	Remove	The Remove option provides more and better opportunities to create new natural habitat.
<b>Economics</b>		
<b>Global and Regional Competitiveness</b>	Hybrid	The Remove option may make the downtown less attractive for employers and employees due to concerns about increased travel time.
<b>Local Employment</b>	Remove	The Remove option provides for a greater number of new jobs in the study area.

**Transportation and Infrastructure Considerations**

The EA estimated that "the Remove (Boulevard) results in an average approximate increase of approximately 52 seconds per vehicle trip over the Hybrid in the AM peak hour." This difference is not expected to have an impact on health.

The EA identified the Remove option as equally preferred from the point of view of impacts on cycling and transit, and a preferred option related to the pedestrian environment and safety of pedestrian, cyclists and motorists. Safe cycling and walking environments and access to public transit are associated with higher levels of physical activity which is important to maintain health. Transit also improves access to factors which are important for health, such as employment, services, and healthy food.<sup>1</sup> Safer roads reduce the number of injuries due to collisions.<sup>2</sup> Overall, the Remove option is anticipated to be better for health for the transportation lens.

### **Urban Design Considerations**

The EA identified the Remove alternative to be the preferred option for urban design as it creates an opportunity to transform the urban fabric of the corridor including a tree-lined boulevard, more parks and public spaces, and other features that create a more walkable and cycling friendly community. This provides a unique opportunity to create a neighbourhood in conformity with the Active City principles and thus promote physical activity. Physical activity helps to prevent premature deaths related to chronic diseases such as heart attacks, strokes, diabetes and some types of cancers including colon and breast cancer.<sup>3</sup>

### **Environmental Considerations**

In the environmental lens, the EA identifies that the Remove option is preferred because it would result in lower greenhouse gas emissions (12 percent) and fewer releases of air pollutants due to the lower vehicle kilometers travelled in the transportation system. The Remove option would also create more opportunities for enhancing natural areas.

Climate change is expected to result in various adverse impacts on health, including increased heat-related illness and mortality, degraded air quality leading to respiratory and cardiovascular outcomes, and increases in vector-borne diseases. Climate change will also increase the risk from extreme weather events such as flooding.<sup>4</sup> Reductions in greenhouse gas emissions will help mitigate the adverse health impacts related to climate change. Lower emissions of traffic-related pollutants will reduce the burden of illness from air pollution in Toronto.<sup>5</sup>

Natural areas contribute to health by cooling urban areas and reducing the impacts of extreme weather events.<sup>6</sup> Green space is also associated with increased physical activity, improved mental health, reduced cardiovascular and improved birth weights in children.<sup>7</sup>

### **Economic Considerations**

As noted in *Healthy Toronto by Design*, overall economic prosperity of a city is important for health. The EA notes that the Remove option may make downtown less attractive for employers and employees with a potential negative impact on the prosperity of the downtown. However, the EA also indicates the Remove alternative would provide for more local employment opportunities in the neighbourhood. Increased employment opportunities would be beneficial to health.



The experience in other cities shows that removal of expressways from central urban areas can result in an overall economic benefit due to the improved urban realm.<sup>8</sup> One potential negative impact of the revitalisation of neighbourhoods that occurs after the removal of expressways is gentrification.<sup>9</sup> However, appropriate public policies can mitigate this negative impact on equity.

### **Realizing the Health Benefits**

There are many factors to consider when deciding the preferred option for the EA. This HIA indicates that for the transportation and infrastructure, urban design and environment lenses used in the EA, the Remove alternative will likely offer more health benefits and result in fewer adverse impacts than the Hybrid alternative. Both alternatives offer economic benefits.

Including a health lens in Phase Two of the EA will help ensure that health benefits associated with the preferred alternative are realized and negative health impacts minimized in the final implementation of the project.

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## **SIGNATURE**

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Dr. David McKeown  
Medical Officer of Health

## **ATTACHMENT**

Appendix 1 – Memorandum from Councillor Mihevc, Chair, Board of Health  
(May 6, 2015)

Appendix 2 – Comparison of Health Impacts of the Remove and Hybrid Alternatives

## REFERENCES

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- <sup>1</sup> Toronto Public Health. (2011) *Healthy Toronto by Design*. Toronto.
- <sup>2</sup> Toronto Public Health (2014) *Active City: Designing for Health*. Toronto.
- <sup>3</sup> Warburton, D.E., Katzmarzyk, P.T., Rhodes, R.E., and Shephard R.J. (2007) Evidence-informed physical activity guidelines for Canadian adults. *Applied physiology, nutrition, and metabolism* (32/S2E): S16-S68.
- <sup>4</sup> Health Canada. (2008) *Human Health in a Changing Climate: A Canadian Assessment of Vulnerabilities and Adaptive Capacity*. Health Canada (Ottawa, ON).
- <sup>5</sup> Toronto Public Health. (2014). *Path to healthier air*. Toronto.
- <sup>6</sup> Cheng, J.J., and Berry, P. (2013) Health co-benefits and risks of public health adaptation strategies to climate change: a review of current literature. *International Journal of Public Health* (58/2): 305–311.
- <sup>7</sup> James, P., Banay, R.F., Hart, J.E., Laden, F. (2015) A review of the health benefits of greenness. *Environmental Epidemiology*. Published online 9 April 2015. DOI 10.1007/s40471-015-0043-7.
- <sup>8</sup> See for example: City of Seattle (2008) *Case Studies in Urban Freeway Removals*. In the *Urban Mobility Plan Briefing Book* <http://www.seattle.gov/transportation/briefingbook.htm> (Accessed 2015-05-11); and Institute for Transportation & Development Policy and EMBARQ (2012) *The Life and Death of Urban Highway*. NYIRDP, New York, N.Y.
- <sup>9</sup> Cervero, Robert, Kang, Junhee and Shively, Kevin (2007) *From Elevated Freeways to Surface Boulevards: Neighborhood, Traffic, and Housing Price Impacts in San Francisco*. Department of City and Regional Planning University of California, Berkeley. (Working Paper prepared for University of California Transportation Center).