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DATE: November 4, 2011

REPORT TITLE: LAKE FILL FEASIBILITY STUDY AND THE LAKEVIEW WATERFRONT  
CONNECTION  
CAPITAL PROJECT 12-1509  
CITY OF MISSISSAUGA, WARD 1

FROM: Dan Labrecque, Commissioner of Public Works

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**RECOMMENDATION**

That the Region of Peel and City of Mississauga initiate joint negotiations with the Province of Ontario to obtain ownership or use of water lots owned by Ontario Power Generation and Ministry of Natural Resources, in-kind or for nominal costs;

And further, that the Region of Peel enter into a joint initiative with the City of Mississauga, Credit Valley Conservation and Toronto and Region Conservation Authority to undertake an Environmental Assessment, to evaluate the use of excavated fill from Capital Infrastructure Projects in the Region of Peel to create an estimated 85 acres of waterfront parkland in the City of Mississauga;

And further, that Credit Valley Conservation lead the Environmental Assessment in the estimated amount of \$2.5 million (excluding applicable taxes) and Peel provide oversight, including managing the finances under Capital Project 12-1509.

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**REPORT HIGHLIGHTS**

- The Lake Fill feasibility study has been completed as approved under Council Resolution 2011-590.
- The project will be beneficial by allowing the recreation of coastal and terrestrial habitat, provide public waterfront access while connecting isolated parks along the water front.
- The unknown value of water lots owned by Ontario Power Generation (OPG) and the Ministry of the Natural Resources if not provided in-kind could make the project financially challenging.
- OPG may also be seeking compensation for interim stock piling of material on their property.
- The volume of material needed will have to come from a greater area than just Mississauga for the project to have an earlier completion date and would benefit from material coming from all Peel projects, including Development in the Cities of Mississauga and Brampton where drive distance is more to another disposal site.
- Proceeding to the Environmental Assessment comes with some financial risk based on unknown land costs and, if unsuccessful, any stock piled material will have to be moved twice at considerable expense.
- The estimated cost for the Environmental Assessment are approximately \$2,500,000; Design fees estimated at \$1,000,000 and Construction costs between \$35,000,000 to \$41,000,000 funded through tipping fees, offset by cost saving from reduced trucking on projects.

**DISCUSSION**

**1. Background**

The Region of Peel initiated a feasibility study with Credit Valley Conservation (CVC), Toronto and Region Conservation Authority (TRCA) and the City of Mississauga to review the viability of utilizing fill excavated from various Public Works projects to create a new waterfront connection in Mississauga, under Council Resolution 2011-590. The feasibility study has now been completed, which reviewed waterfront enhancements, fill requirements, technical issues, cost estimates and other considerations.

**a) Waterfront Enhancements**

Excavated fill generated from Public Works Development projects could be lake filled to create an estimated 85 acres of land near the G. E. Booth (Lakeview) Wastewater Treatment Facility and the adjacent Ontario Power Generation (OPG) lands. Currently the area has little environmental significance, including: little to no remaining coastal wetland habitat; isolated or degraded pockets of terrestrial habitat, isolated waterfront parks at Lakefront Promenade and Marie Curtis Park, and poor use of south shore of the G.E. Booth (Lakeview) Wastewater Treatment Facility due to relative isolation. The newly created Lakeview Waterfront Connection (LWC) would result in improved waterfront access, creation of a variety of coastal habitats and a new trail, approximately 1.6 kilometers in length, which would allow for pedestrian traffic and various park activities.

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**b) Fill Requirements**

The creation of 85 acres of parklands requires approximately 2 million cubic metres of fill. An estimated 500,000 cubic metres of fill will be generated from Peel projects in Mississauga from 2012 to 2022, while City of Mississauga projects are expected to generate 500,000 cubic meters in the year 2103, from their Bus Rapid Transit (BRT). There is a risk that enough fill cannot be found in Mississauga alone. The proposed intensification found in the Downtown 21 plan may lead to new sources of fill from the deep excavation of condominiums and office towers, but detailed information is not available at this time.

Brampton and Caledon may likely be able to provide the remainder of the material. TRCA staff believe that locating fill will be a relatively easy undertaking, based on their experience with several other lake filling projects. There is always the risk of an economic slow down, which could decrease the demand for deep excavation work from the condominium and commercial real estate sectors, thereby reducing the supply of available fill. Bringing in suitable fill from a larger area will allow the project to be completed with early benefits to the environment and residents of South Mississauga.

**c) Technical Issues**

The feasibility study raised certain technical issues that require further investigation during the Environmental Assessment (EA) phase. G.E. Booth (Lakeview) Wastewater Treatment Facility is located on the east side of the OPG piers and lake filling near the plant's outfall could limit access for maintenance and repairs if needed. Another concern is the potential impact to the Lakeview Water Treatment Plant. The intakes are not designed to withstand additional loadings during the placement of new fill, however, are in the proposed beach area, so not anticipated to be a significant issue. Also changes to the shoreline configuration could shorten the length of the intake, therefore, impacting raw water quality. Engineering solutions to mitigate the above noted risks can be developed upon further study and not anticipated to be a significant issue.

**d) Park Ownership and Maintenance**

At this time it has not been established who will own the new waterfront park and who will maintain it. TRCA has provided a study to the City of Mississauga detailing alternative funding mechanisms for the long-term operations and maintenance of the park. Comprehensive discussions will take place during the EA phase, should the project proceed, to determine management and funding options.

**e) Potential Greenhouse Gas Savings**

Fill generated from Region projects are currently disposed at landfill sites in Milton and as far north as Barrie. When comparing carbon dioxide generated by transporting fill excavated in Mississauga to Lakeview, versus haulage to Milton, the savings is significant at approximately 16,000 tonnes. The savings is even greater when assuming a landfill in Barrie is used at an estimated 43,500 tonnes of carbon dioxide. The assumptions can be found in Table 1.

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<b>Source</b>	<b>Disposal site</b>	<b>Anticipated volume (cubic metres)</b>	<b>Total Travel (km)</b>	<b>CO<sub>2</sub> (tonnes)</b>
Dixie/Dundas	Lakeview	1,000,000	1,200,000	3,000
Dixie/Dundas	Milton	1,000,000	7,600,000	19,000
Dixie/Dundas	Barrie	1,000,000	18,600,000	46,500

**f) Cost Estimates**

Costs for the environmental assessment are an estimated \$2.5 million. This is based on CVC and TRCA staff acting as the project managers, while working with a consultant with specialized disciplines. Two separate EAs are required to meet both Provincial and Federal legislation.

The total costs to develop the Lakeview Water Front Connection, using fill, range from \$35 to \$41 million. There are a number of unknown variables that will have a major impact on the project, which need to be resolved before a decision can be made as to whether the project should proceed.

**i) Water Lots**

The waterfront connection covers an estimated area of 34.25 hectares of water lots. While Peel and CVC own some of the water lots, the remaining areas are owned by Ontario Power Generation (OPG) and the Ministry of Natural Resources (MNR). The Province has established a policy to receive market value when disposing of crown land. Based on TRCA's experience with waterfront projects, rates per acres have ranged from \$2,000 to as high as \$86,000. The rationale used by MNR for the substantial price range is unclear. However, pricing may be negotiable based on the habitat and biodiversity gains expected from the project.

<b>Cost per Acre</b>	<b>MNR - 41.1 acres</b>	<b>OPG - 17.4 acres</b>	<b>Potential Cost</b>
\$ 2,000	\$ 82,000	\$ 35,000	\$ 117,000
\$ 86,000	\$ 3,500,000	\$ 1,500,000	\$ 5,000,000

At the present time, it is unknown whether OPG has an official policy for water lots. However, Peel assumes that both OPG and MNR will use a similar pricing structure to determine potential project costs. Project costs range from \$117,000 to as high as \$5,000,000.

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**ii) Haulage and Disposal Fees versus LWC Project Costs**

Approximately 2 million cubic metres of fill is necessary to complete the LWC. Peel and Mississauga, alone, may not be able to generate this amount based on their 10 year capital plans. Disposal options are becoming more limited and many of Peel's contractors are no longer able to dispose material in Milton and are seeking other sites, some as far as Barrie.

<b>Landfill Site</b>	<b>Haulage and Disposal Cost per Load</b>	<b>Peel costs based on 200,000 loads</b>
Milton	\$157	\$31,360,000
Barrie	\$251	\$50,200,000

It could cost Peel anywhere from \$31 to \$50 million to dispose of fill from its infrastructure projects. The assumptions used to determine these costs include a cost of \$40 per load tipping fee, haulage based on an 80 minute round trip to Milton, haulage based on a 2 hour and 25 minute round trip to Barrie, no major changes to the capital plan and no inflation costs.

Depending on the scenario used, the cost of haulage and disposal can either completely offset the costs for the LWC or a funding gap remains.

<b>Landfill Site</b>	<b>Peel costs based on 200,000 loads</b>	<b>LWC \$35 Million Cost</b>	<b>Savings/ Shortage</b>	<b>LWC \$41.75 Million Cost</b>	<b>Savings/ Shortage</b>
Milton	\$31,360,000	\$35,860,000	-\$4,500,000	\$41,750,000	-\$10,390,000
Barrie	\$50,200,000	\$35,860,000	\$14,340,000	\$41,750,000	\$8,450,000

If Peel assumes that all fill generated from infrastructure projects will be disposed in Milton, the assumed haulage/disposal costs would not financially support the LWC for both the low and high cost estimates of the project. However, assuming all fill was being sent to Barrie, the LWC project becomes financially sustainable for both cost estimates.

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**iii) OPG Lands**

In addition to the potential water lot costs, the LWC requires construction access to the OPG lands. Additionally, depending on the timing of certain capital works projects, stockpiling fill prior to construction may be necessary in order to obtain fill within Mississauga. Negotiations with OPG have not been initiated to determine access/stockpiling costs, but the study assumes \$1,345,000 based on access fees, fencing and equipment needs.

Another uncertainty is the potential contamination on the OPG site. OPG has indicated that hydrocarbons are present but the level of hydrocarbons and whether any other contaminants are present are unknown. CVC and TRCA will need permission from OPG to access the lands to complete necessary field testing. It is essential to know that site can be remediated in a reasonable manner and that contaminants will not be released into the newly created habitats.

The Region of Peel will continue to be an engaged stakeholder with interest in part of Inspiration Lakeview, since the OPG lands are directly adjacent to the GE Booth (Lakeview) Wastewater Treatment Facility.

**2. Project Benefits**

Although there are a number of areas that require further investigation, the benefits of the projects can clearly be substantiated. These include ecological and community benefits.

**a) Ecological Gains**

Significant ecological improvements from the LWC are expected. Approximately 35 hectares of new wildlife and bird habitat, ranging from forest to wetland habitats, will be created. Specifically 5.5 hectares of fill will be used on the south side of the Lakeview Generating Station to create a series of headlands with cobble beaches to improve habitat for a variety of fish species. The majority of the fill will be used to create 30 hectares from the eastern side of the intake channel to the current outlet at Applewood Creek. A variety of wetland habitats will be created. The new wetlands will provide a stepping stone habitat for Species of Conservation Concern and will replace lost historical wetlands.

Terrestrial habitat will be created on the east side of the pier resulting in a total of 11 hectares of meadow habitat and 9 hectares of upland forest. The new upland forest will increase the amount of forest cover in the local area and improve natural linkage long the shoreline to the forested areas to the east.

The design of the LWC is also expected to notably increase nutrient uptake by macrophyte vegetation, thereby reducing the amount of locally generated algae.

**b) Community Access**

In addition to ecological gains, there are a number of benefits to the local community. The LWC objectives include increasing the connectivity of the public lands on the waterfront and improving public access to the waterfront for recreational purposes. New north-south connections for people from Lakeshore Road to the waterfront and east-

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west connections between the Marie Curtis Park and Lakefront Promenade will be created through a series of recreational trails.

Park amenities would feature opportunities for fishing, canoeing/kayaking, beach access and hiking and cycling activities. The LWC would integrate with other City of Mississauga initiatives such as the Waterfront Parks Strategy, Cycling Master Plan, Parks and Natural Areas Strategy and Inspiration Lakeview.

CVC and TRCA have had some preliminary consultations with the public to gauge the level of interest in the LWC and responses were in favor of the additional parks and recreational amenities.

**c) Miscellaneous**

There are several additional benefits that can be reviewed in more detail during the EA phase. There may be an increase in tourism in the area by the enhancement of recreational opportunities. A recent study completed by CVC indicated that residential property values rise by 3 to 4 percent when located to green space, therefore benefitting the local neighbourhoods. The proposed shoreline configuration may have mitigating impacts to property damages by buffering the effects of storms or other extreme events. The LWC promotes the advancement of the Mississauga waterfront and aligns with Inspiration Lakeview. Also, with contractors having a local disposal site for fill, thereby reducing haulage costs, Peel may receive more competitive bids for its construction projects.

**3. Comparison to Other Waterfront Parks**

The LWC is comparable to other waterfront projects in both price and ecological benefits. Although certain costs have not been finalized, the cost per hectare of waterfront created for LWC, using the higher end cost of \$41.86 million, the cost per hectare is \$1,230,000.

<b>Project Name</b>	<b>Summary</b>	<b>Area (hectare)</b>	<b>Cost</b>	<b>Cost per hectare</b>
Mimico Waterfront Linear Park (2008), Toronto	Creation of a linear park amenity on Lake Ontario between Humber Bay Park West and Norris Crescent Parkette	3.5	\$9 million	\$2,570,000
Port Union Waterfront Park (2006), Toronto	Improvement in public access to waterfront and enhancement of terrestrial and aquatic habitats	13.5	\$18 million	\$1,330,000
Humber Bay Park (1984), Toronto	Recreational waterfront facility and aquatic and terrestrial habitat enhancements	149	\$6.6 million	\$44,000

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**4. Proposed Direction**

The Region of Peel and City of Mississauga should initiate negotiations with the Province immediately to acquire ownership, or use, of the water lots at no charge or on a nominal cost basis because of the major ecological improvements and the numerous benefits to the local community.

While there is risk on water lots and stock piling material in advance of the EA being completed, we would recommend proceeding at this time. This is due to major infrastructure projects proceeding in Mississauga that would benefit Peel and contribute to this project.

**FINANCIAL IMPLICATIONS**

Funding will be available upon approval of the 2012 Capital Budget under project 12-1509 for \$2.5 million.




Dan Labrecque  
Commissioner of Public Works

**Approved for Submission:**



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D. Szwarc, Chief Administrative Officer

 For further information regarding this report, please contact Mark Schiller at extension 4394 or via email at [mark.schiller@peelregion.ca](mailto:mark.schiller@peelregion.ca)

Authored By: Janice Hatton

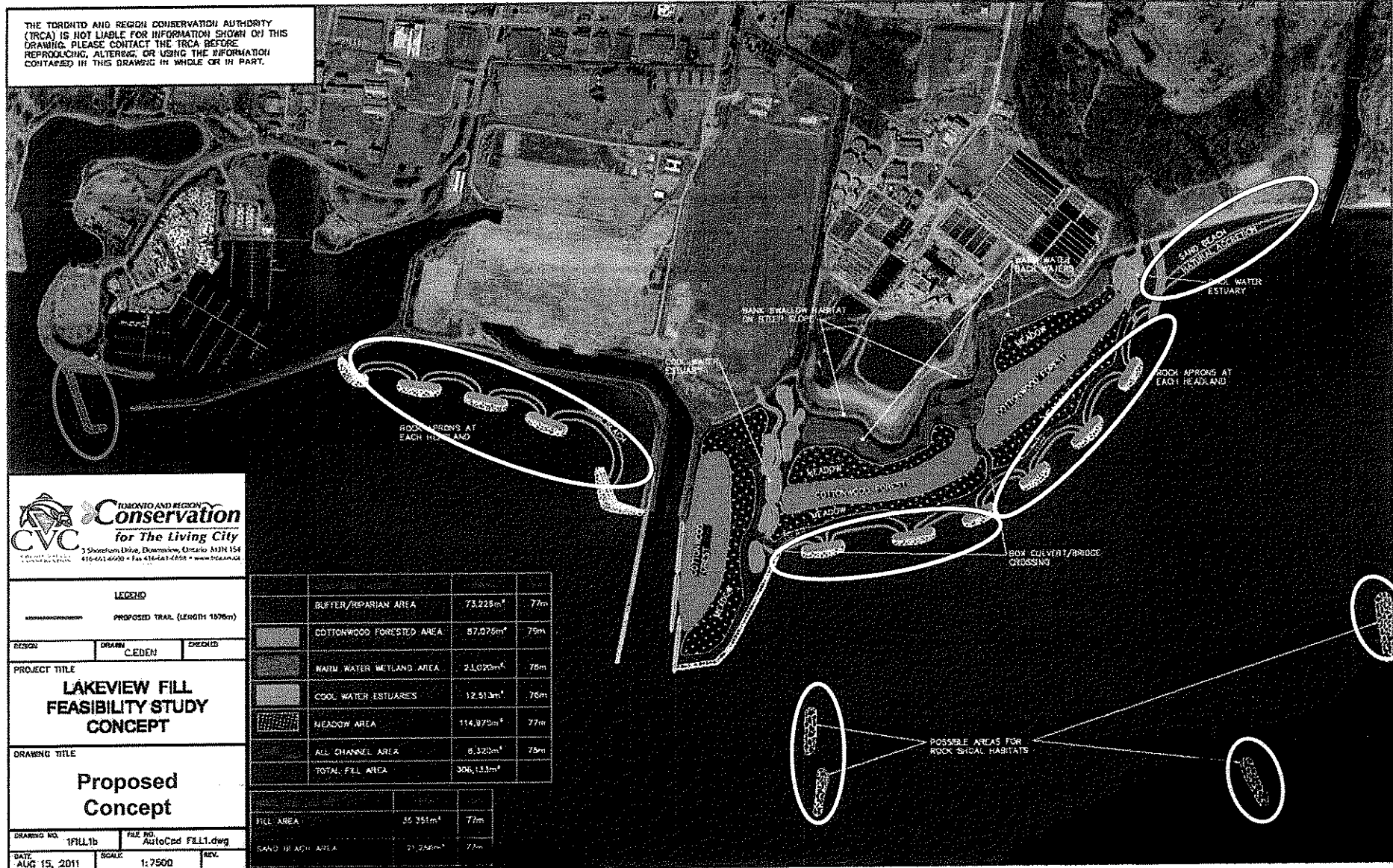
c. Legislative Services



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**APPENDIX I**

PW-E3-9



THE TORONTO AND REGION CONSERVATION AUTHORITY (TRCA) IS NOT LIABLE FOR INFORMATION SHOWN ON THIS DRAWING. PLEASE CONTACT THE TRCA BEFORE REPRODUCING, ALTERING, OR USING THE INFORMATION CONTAINED IN THIS DRAWING IN WHOLE OR IN PART.

**Conservation**  
 for The Living City  
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**LEGEND**

PROPOSED TRAIL (LENGTH 1076m)

DESIGN	DRAWN	CEDEN	CHECKED
PROJECT TITLE			
<b>LAKEVIEW FILL FEASIBILITY STUDY CONCEPT</b>			
DRAWING TITLE			
<b>Proposed Concept</b>			
DRAWING NO.	TRILL1b	FILE NO.	AutoCad FILL1.dwg
DATE	AUG 15, 2011	SCALE	1:7500
REV.			

BUFFER/RIPARIAN AREA	73,225m <sup>2</sup>	77m
COTTONWOOD FORESTED AREA	87,075m <sup>2</sup>	79m
WARM WATER WETLAND AREA	21,020m <sup>2</sup>	76m
COOL WATER ESTUARIES	12,513m <sup>2</sup>	76m
MEADOW AREA	114,979m <sup>2</sup>	77m
ALL CHANNEL AREA	6,320m <sup>2</sup>	75m
<b>TOTAL FILL AREA</b>	<b>306,133m<sup>2</sup></b>	
FILL AREA	36,751m <sup>2</sup>	77m
SAND BEACH AREA	21,256m <sup>2</sup>	77m