



## MEMO

**TO:** Bob Koziol, P.Eng.  
**FROM:** Aaron Small, P.Eng.  
**SUBJECT:** Lower Yonge Precinct Area Utility Conflicts and Relocation Plan  
**DATE:** July 11, 2017

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WSP has been retained by Waterfront Toronto and the City of Toronto to prepare an Environmental Study Report and Functional Design for the redevelopment of the Lower Yonge Precinct to fulfill the Environmental Assessment requirements under Schedule 'C' of the Municipal Class EA Phase 3 and 4. The Lower Yonge Precinct is an area of approximately 9 hectares generally bounded by Yonge Street to the west, Lower Jarvis Street to the east, Lake Shore Boulevard East to the north and Queens Quay East to the south. The Environmental Assessment study includes a broader study area which investigates the reconfiguration of Harbour Street between York Street and Yonge Street, and Yonge Street between Lake Shore Boulevard and Front Street. The study also explores the potential connection of Church Street to Cooper Street via a tunnel crossing of the existing rail corridor north of the Lower Yonge Precinct.

The purpose of this Memorandum is to identify potential conflicts and relocation of existing subsurface utilities within the study area resulting from the reconfiguration of existing roadways as part of the redevelopment of the Lower Yonge Precinct. Preliminary, high level cost estimates to perform these relocations are also provided for public services.

### Background

During Phases 1 and 2 of the Municipal Class EA Study, a Transportation Master Plan was completed which resulted in the recommendation of the following key initiatives for the Lower Yonge Precinct:

1. Convert Harbour Street to two-way operations east of York Street
2. Eliminate the eastbound Bay Street on-ramp to the Gardiner Expressway
3. Shorten the eastbound Lower Jarvis Street off-ramp from the Gardiner Expressway
4. Eliminate the Harbour Street S-curve at Yonge Street and normalize the Yonge Street / Harbour Street and Yonge Street / Lake Shore Boulevard intersections
5. Extend Harbour Street to Lower Jarvis Street
6. Provide an additional eastbound lane on Lake Shore Boulevard East from Yonge Street to Lower Jarvis Street
7. Extend Cooper Street to Church Street

8. Construct a new north – south street ('New' Street) connecting Queens Quay East to Lake Shore Boulevard, between Cooper Street and Lower Jarvis Street

As described in the Lower Yonge Precinct Municipal Class Environmental Assessment and Public Realm Concept Study - Public Information Centre Report (dated June 23, 2016), several alternative road design cross sections for each of the streets within the precinct were developed to address these recommendations. An evaluation of these alternatives was completed based on a set of evaluation criteria and a preliminary preferred alternative was selected for each roadway. The preliminary preferred alternatives have been incorporated into a proposed road network design, which forms the basis for this analysis of potential conflicts and existing utility relocations.

### **Assumptions**

For the purpose of our analysis, we have assumed:

1. Future planting / furnishing zones identified in the preliminary preferred alternative cross-sections will contain soil cells which will extend from surface to 2m below surface. It is assumed that existing watermain and/or private utilities located within these areas will be in conflict and should be relocated.
2. The City of Toronto has completed a SUE Quality Level B investigation across the majority of the study area. It is assumed that the subsurface utility location data resulting from this investigation supersedes the City's PUC mapping and as such the SUE data has been used to identify potential conflicts between existing public and private utilities and proposed road alignments and planting zones
3. Where SUE Quality Level B data was not available, the City's PUC mapping has been used.
4. An allowance of an additional 10m has been included in all noted relocation lengths to allow for the approach required to connect relocated utilities to existing infrastructure at each conflict zone.
5. Preliminary estimated costs to relocate public utilities have been provided as part of this analysis. It is assumed that the private utility companies will provide costs to relocate their respective infrastructure to the City during detail design. Cost sharing for private utilities will be based on the current agreements between the Utility Company and the City.

### **Summary of Required Utility Relocations**

The table below provides a summary of the existing utility relocations identified as part of this analysis. For each conflict, the type, quantity and location of the utility is described as well as the reason for the relocation. Refer to **Figures 1 to 6** included with this memo for further details on each conflict.

Street	From/To	Description of Conflict	Estimated Cost to Relocate
Harbour	York St. to Bay St.	8 catchbasins (CB's) require relocation to match new road alignment.	\$20,000
		260m of Street Lighting Conduit within existing south boulevard should be moved to accommodate road widening.	Cost to be provided by private utility company
		115m of 300mm diameter watermain (WM) within the north boulevard from Bay Street to 115m west of Bay Street will be in conflict with the proposed 1.8m wide planting / furnishing zone.	\$230,000
		20m of Toronto Hydro Electric Systems (THES) cable in south boulevard conflicts with the proposed 1.8m wide planting / furnishing zone.	Cost to be provided by private utility company
	Bay St. to Yonge St.	6 CB's require relocation to match new road alignment.	\$15,000
		180m of Street Lighting Conduit within existing south boulevard should be relocated to accommodate new road alignment and planting / furnishing zone.	Cost to be provided by private utility company
		225m of Street Lighting Conduit within existing north boulevard should be relocated to accommodate new road alignment.	Cost to be provided by private utility company
		90m of 300mm WM from Yonge Street to 90m west of Yonge St. in conflict with proposed 1.8m wide planting zone.	\$180,000
	Yonge St. Freeland St.	No conflicts – new right of way	-
	Freeland St. to Cooper St.	No conflicts – new right of way	-
	Cooper St. to New St.	No conflicts – new right of way	-

Street	From/To	Description of Conflict	Estimated Cost to Relocate
	New St. to Lower Jarvis St.	No conflicts – new right of way	-
Bay	Harbour St. to Lake Shore Blvd.	No conflicts – no change to road alignment proposed. No planting proposed.	-
Yonge	Queens Quay East to Harbour St.	2 double catchbasins (DCB's) and 4 CB's require relocation to match new road alignment.	\$16,000
		100m of 300mm WM within the east boulevard will be in conflict with the proposed planting / furnishing zone.	\$200,000
		100m of street lighting conduit within the east boulevard will be in conflict with the proposed planting / furnishing zone.	Cost to be provided by private utility company
		65m of existing 1950mm x 2250 mm storm sewer will be beneath the future curb and planting / furnishing zone along the west side of the Road allowance. (Public Utilities Coordination Committee (PUCC) drawing indicates sewer is 2.0m deep).	\$325,000
	Harbour St. to Lake Shore Blvd.	4 CB's require relocation to match new road alignment.	\$10,000
		50m of Bell duct from 20m south of the intersection of Yonge St and Lake Shore Blvd. to 70m south of the intersection of Yonge St and Lake Shore Blvd is in conflict with the proposed 1.8m wide planting / furnishing zone.	Cost to be provided by private utility company
		60m of 300mm WM from the intersection of Yonge and Harbour to 60m north of Harbour is in conflict with the proposed 1.8m wide planting / furnishing zone.	\$120,000
		9 CB's require relocation to match new road alignment.	\$22,500

Street	From/To	Description of Conflict	Estimated Cost to Relocate
	Lake Shore Blvd. to The Esplanade	30m of Street lighting conduit will be in conflict with the proposed 1.8m wide planting / furnishing zone.	Cost to be provided by private utility company
		130m of 300mm WM along east boulevard will be beneath future east curb alignment. TW may want to relocate to within pavement.	\$260,000
	The Esplanade to Front St.	No conflicts - no change to road alignment proposed. No planting proposed.	-
Freeland	Queens Quay East to Harbour St.	6 CB's require relocation to match new road alignment	\$15,000
		45m of 300mm WM from QQE to 45 north of QQE will be in conflict with future planting / furnishing zone along the west side of the road allowance.	\$90,000
		45m of existing 600mm storm sewer is within the proposed planting / furnishing zone along the west side of the Road allowance from Harbour St to 45 m south of Harbour St. PUC section indicates sewers are 1m deep.	\$160,000
		45m of existing 300mm sanitary sewer is within the proposed planting / furnishing zone along the west side of the Road allowance from Harbour St to 45 m south of Harbour St. PUC section indicates sewers are 1m deep.	\$135,000
	Harbour St to Lake Shore Blvd.	6 CB's require relocation to match new road alignment.	\$15,000
		50m of existing 525mm storm sewer within the proposed planting / furnishing zone along the west side of the road allowance from Harbour St to 50 m south of Harbour St. PUC section indicates sewers are 1m deep.	\$175,000
		50m of existing 300mm sanitary sewer within the proposed planting / furnishing zone along the west side of the road allowance from	\$150,000

Street	From/To	Description of Conflict	Estimated Cost to Relocate	
		Harbour St to 50 m south of Harbour St. (PUC section indicates sewers are 1m deep.)		
Cooper	Queens Quay East to Harbour St.	4 CB's require relocation to match new road alignment	\$10,000	
		80m 675mm storm sewer should be relocated to match new road alignment. Conflict with proposed planting zone and development block.	\$290,000	
	Queens Quay East to Harbour St.	80m of 300mm sanitary sewer should be relocated to match new road alignment. Conflict with proposed planting zone and development block.	\$240,000	
		80m of Bell conduit will conflict with new road alignment and will encroach on the adjacent development block.	Cost to be provided by private utility company	
		80m of gas main will conflict with new road alignment and will encroach on the adjacent development block.	Cost to be provided by private utility company	
	Harbour St to Lake Shore Blvd.	4 CB's require relocation to match new road alignment.	\$10,000	
		60m of Bell conduit within east boulevard from Harbour St. to 60m north of Harbour St will conflict with proposed planting / furnishing zone.	Cost to be provided by private utility company	
		105m of existing 300mm watermain on west side of the road will be beneath future west curb alignment. TW may want to relocate to within pavement.	\$210,000	
	New	Queens Quay East to Harbour St.	No conflicts - new road allowance	-

Street	From/To	Description of Conflict	Estimated Cost to Relocate
	Harbour St. to Lake Shore Blvd.	No conflicts – new road allowance	-
Lower Jarvis	Queens Quay East to Harbour St.	75m of Rogers Cable and THES conduit within west boulevard will conflict with proposed planting / furnishing zone.	Cost to be provided by private utility company
	Harbour St. to Lake Shore Blvd.	80m of Rogers Cable and THES conduit within west boulevard will conflict with proposed planting / furnishing zone.	Cost to be provided by private utility company
Gardiner Off-ramp	Bullnose (at York St.) to Yonge St.	Street lighting for existing pathway will be removed.	Cost to be provided by private utility company
Lake Shore Boulevard	Bay St. to Yonge St. (PUCC Only)	No Conflicts – no planting proposed	-
	Yonge St. to Freeland St.	2 CB's require relocation to match new road alignment	\$5,000
		165m of 600mm storm sewer will conflict with the new layout of the development block following the removal of the on ramp at Yonge street	\$580,000
		85m 300mm of watermain will conflict with the new layout of the development block following the removal of the on ramp at Yonge street	\$170,000
		85m of THES conduit will conflict with the new layout of the development block following the removal of the on ramp at Yonge street	Cost to be provided by private utility company
		125m of Street Light Cable will conflict with the new layout of the development block following the removal of the on ramp at Yonge street	Cost to be provided by private utility company

Street	From/To	Description of Conflict	Estimated Cost to Relocate
	Freeland St. to Cooper St.	7 CB's require relocation to match new road alignment	\$17,500
		50m of THES conduit without future south boulevard from Freeland to 50m east of Freeland will conflict with proposed planting / furnishing zone.	Cost to be provided by private utility company
		115m of WM within future south boulevard from Cooper street to 115m west of Cooper St. will conflict with proposed planting / furnishing zone.	\$230,000
Lake Shore Boulevard	Cooper St. to New Street	9 CB's require relocation to match new road alignment.	\$22,500
		100m of WM within future south boulevard will conflict with proposed planting / furnishing zone.	\$200,000
	New Street to Lower Jarvis St.	4 CB's require relocation to match new road alignment.	\$10,000
Church Street	The Esplanade to Rail Corridor	3 CB's require relocation to match new road alignment.	\$7,500
		60m of 300mm WM within future east boulevard will conflict with proposed planting / furnishing zone.	\$120,000
		30m of Bell conduit within future east boulevard will conflict with proposed planting / furnishing zone.	Cost to be provided by private utility company
		45m of 375mm storm sewer within centre of roadway may conflict with new road profile approaching tunnel	\$135,000
		45m of 300mm sanitary sewer within centre of roadway may conflict with new road profile approaching tunnel	\$135,000





Street	From/To	Description of Conflict	Estimated Cost to Relocate
	Rail Corridor (Cooper St Tunnel) to Lake Shore Blvd.	Existing 3000mm concrete lined trunk sewer	
		45m of 375mm storm sewer within Lake Shore may conflict with new road profile approaching tunnel.	\$135,000
		45m of 300mm sanitary sewer within Lake Shore may conflict with new road profile approaching tunnel	\$135,000
		Allstream Utility Markups indicate 1 LEDCORE conduit and 1 Allstream owned fibre optic conduit located beneath the CN rail corridor which would be crossed by the proposed Cooper St Tunnel.	Cost to be provided by private utility company
Private Lane Extension to Bay St. (33 Bay St.)	Bay St. to Yonge St.	Storm sewer (size unknown) crosses laneway just east of Bay Street	Unknown
		THES conduit crosses laneway just east of Bay Street	Cost to be provided by private utility company
		Rogers Cable crosses laneway just east of Bay Street.	Cost to be provided by private utility company

### Conclusions

Based on the above noted conflicts, the total cost associated with relocating public utilities within the Lower Yonge Precinct is estimated to be about \$5,000,000. This is broken down further by each public utility type:

Watermains	\$2,010,000
Sanitary Sewers	\$ 795,000
Storm Sewers	<u>\$1,996,000</u>
TOTAL	\$4,801,000

The infrastructure noted above is owned by various entities. Each utility company and municipal agency will be required to prepare relocation plans during detail design to accommodate the proposed roadway improvements. Cost sharing is based upon established



formulae that include who owns the pipe / cable, when it was installed, when it was last moved, and other factors. Detailed cost sharing will be established during detail design.

Ownership of the various utilities are as follows:

Public Utilities

Watermains	Toronto Water
Sanitary Sewers	Toronto Water
Storm Sewers	Toronto Transportation Services

Private Utilities

Street lighting	Toronto Hydro-Electric Services
Traffic signals	Toronto Hydro-Electric Services
Power distribution	Toronto Hydro-Electric Services
Gas	Enbridge
Telephone	Bell Canada
Cable T.V.	Rogers

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