

## **Preliminary Construction Staging Overview Lakeshore Rd East Reconstruction and Streetscape Project**

January 26, 2015

### **Introduction**

The proposed reconstruction of Lakeshore Road East extends from Navy Street to Allan Street in downtown Oakville. The existing roadway is a 4 lane urban roadway with 3.65m lanes and 4.8m wide boulevards to existing buildings. The boulevard comprises 1.40m lockstone boulevard with decorative light standards and trees and 3m wide concrete sidewalk.

It is proposed that the pavement width be reduced to include 2 thru lanes at 4.0 m width and a 2.2m parking lane including a 0.3m wide concrete gutter. The scope of work will include complete reconstruction of road surface and boulevard and potential for the replacement water and wastewater mains. Water and wastewater services would be replaced from the new mains to street line (face of building). Existing underground utilities (gas, hydro, and telecommunications) will need to be assessed for potential replacement/upgrade.

The boulevard width will include new decorative light standard, soil cell installation for curb side trees, a 1.8m concrete sidewalk and 2.0m concrete separation to adjacent buildings.

### **Construction Period**

The approximate 0.8km road and utility project will require a minimum of two construction seasons.

### **Maintenance of Traffic**

Maintenance of traffic is not recommended on Lakeshore Road East during construction. On similar downtown projects in the City of Toronto, the city maintained 2 lanes of traffic on projects that have a 4 lane road surface and where the project involved no underground utility work. If utility replacement such as water and wastewater mains are required, especially with services, the disruption to traffic will be significant and will extend the time to complete the project.

For the reconstruction of Lakeshore Road East, the road width is being reduced and there is not sufficient space for a 2 lane staged construction.

## APPENDIX B

To minimize the construction period adjacent to downtown businesses, it is preferred the work be staged in two phases under full road closures. In year one, Lakeshore Road East would be reconstructed from Navy Street to Dunn Street. In year two, Lakeshore Road East would be reconstructed from Dunn Street to Allan Street.

The utility and roadwork would be staged to reduce the time of block closures while always maintaining pedestrian access to both sides of the roadway.

### **Construction Staging Objectives**

Objectives in staging the work should include:

- Minimize the road closure period.
- Limit construction of each section to a one year period (February to November).
- Maintain traffic flow on adjacent streets functioning as a road detour.
- Provide and improve access to parking in rear lots and side streets.
- Identify delivery locations to businesses.
- Provide pedestrian access at all times to businesses.
- Maintain continuous operation of all on-site crews (i.e. sewer crew).
- Maintain safety of workers and pedestrians.
- Maximize work zone and provide material storage sites.

### **Construction Staging – Sequence of Work – Year 1 (Navy to Dunn)**

The sequence of work will commence at Navy Street.

#### **1. Watermain Installation (Blocks 1, 2 & 3)**

##### **a) Traffic Operation**

Traffic on Lakeshore Road East will be reduced to 2 lanes, one lane in each direction. The construction work area will occupy the other two lanes. Pedestrian traffic will be maintained on both sides of Lakeshore Road East. On completion of watermain, all lanes will be open.

##### **b) Scope of Work**

The trench will be saw cut for removal of concrete base and asphalt pavement. Excavation will be confined to trench box limits. After installation of watermain including granular bedding and cover, the trench will be backfilled with unshrinkable fill and repaved.

##### **c) Schedule**

The installation should take 15 to 20 working days with another 10 working days for testing.



### 2. Removal of Pavement and Road Base, Construct Sanitary Sewer and Services (Block 1 – Navy Street to Thomas Street)

#### a) Traffic Operation

Complete closure of Lakeshore Road East from Navy Street to Thomas Street. Maintain pedestrian traffic on existing sidewalk. Install crowd control barriers between work area and pedestrians.

#### b) Scope of Work

The Contractor shall excavate and remove existing road base with asphalt surface followed by installation of sanitary sewer. The sewer backhoe shall also install the short services for water and sanitary flow. The longer services should be completed by second backhoe and crew.

#### c) Schedule

The installation of water services and sanitary sewer and services would require a 25 to 30 working day construction period.

### 3. Construct Roadwork (Block 1 – Navy Street to Thomas Street) and Commence Sanitary Sewer / Services in Block 2– (Thomas Street to George Street).

#### a) Traffic Operation

Two blocks of Lakeshore Road East will be closed to traffic. Access will be maintained on cross-street except for sanitary sewer crossing.

#### b) Scope of Work

Over 30 working days, the Contractor will construct the granular base, concrete base and boulevards in Block 1. In week 1, the south half of the road (thru lane and parking) will be constructed. In week 2, the north half will be constructed. Pedestrian traffic is maintained on the existing sidewalk. Once the pavement structure is completed, pedestrians will be moved to the road surface. Construction will commence on the new boulevard. Access to businesses will be bridged over the poured sidewalk. Each side will take 10 to 15 working days to complete soil cells, lighting and sidewalk.

The sanitary sewer crew shall move to Block 2 (Thomas Street to George Street), remove concrete road base and asphalt and install new sanitary sewer services and water.

c) Open Block 1 to Traffic

4. Construct Road Work in Block 2 and Sanitary Sewer / Services in Block 3 (George Street to Dunn Street)

a) Traffic Operation

Block 1 has been opened to traffic. Block 2 and 3 will now be closed to traffic. Cross traffic will be maintained on side streets except for sanitary sewer crossing.

b) Scope of Work

Over the next 30 working days, the sanitary sewer crews will complete the sanitary sewer and services in Block 3 (George Street to Dunn Street). In Block 2, the Contractor will construct the granular base, concrete base and boulevards. The scope of work is similar to section 3.

c) On completion of roadwork and boulevard, open Block 2 to traffic.

5. Construct Roadwork in Block 3 (George Street to Dunn Street)

a) Traffic Operations

Blocks 1 and 2 are now open to traffic on base course asphalt. Block 3 will be closed to traffic while maintaining cross street traffic.

b) Scope of Work

Over the next 30 working days, the Contractor will construct the granular base, concrete base and boulevards in Block 3. The scope of work is similar to section 3.

c) On completion of roadwork and boulevard, open Block 3 to traffic.

**Construction Staging – Sequence of Work – Year 2 (Dunn to Allen)**

Construction operations would closely follow the methodology outlines in Year 1.

**Schedule**

The schedule of work is based on similar downtown Toronto projects including:

- Reconstruction of Bloor Street West – Lansdowne Avenue to Montrose Avenue which included pavement rehabilitation with complete boulevard restoration including tree pits. Length of roadway was 1.8km.



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- Reconstruction of Wellesley Street (Queens Park Crescent to Yonge Street) – Contract included complete road and boulevard reconstruction and new water services. Length of project was 0.7km.
- Reconstruction of Bay Street (Davenport to Bloor Street) - Contract included complete road reconstruction (concrete base with asphalt surface), and complete boulevard restoration including tree pits.
- Yorkville Avenue - Bay Street to Yonge Street which included concrete road base with lockstone surface, watermain replacement and boulevard restoration. Road was closed to through traffic.

These projects are similar in scope, construction operations and business / access constraints.

Based on the scope of work (sections 1 - 5) and proposed sequence of operation, a simplified bar schedule (Exhibit 1) is attached for reference.

### **Communication Plans**

The communication plan is a significant component of a successful project. In all downtown projects, Business Association Representative(s) have played a key role and assisted the Contractor / Municipality in communication with adjacent businesses and addressing or mitigating business concerns.

In one case, the Municipality retained a full time Business Association Representative to identify issues, to meet with and discuss the project schedule and scope of work and assist Contractors and Administration Staff addressing and / or mitigating business concerns. Discussions with the Business Association starts in detail design and continues through the complete construction period.

Other communication measures have included:

- Establish a downtown office.
- Attend and participate in weekly construction meetings.
- Maintain Town web page.
- Notification of adjacent business owners as contract proceed.
- Signing to encourage people to go downtown.

### **Other Comments / Issues**

Working in the downtown core raises different issues and construction problems that need to be addressed:

1. Construction adjacent to old structures raises issues associated with vibration which may damage the building structure.

### Mitigation

- Use unshrinkable fill in all trenches as backfill.
  - Avoid vibratory compaction. Use static compaction only.
  - Undertake a pre-construction inspections, including photos, written documentation and possible vibration monitoring in sensitive locations.
2. Carry out test holes prior to construction to confirm issues related to location and elevation of underground plant and possible conflicts with new infrastructure. This will avoid delays in the contract to relocate utility plant during construction. Carry out camera inspection of all sewer pipes.
  3. Avoid delays associated with utility relocation and approvals.

### Mitigation

- Complete utility work in advance of contract.
  - Ensure all approvals are in place.
4. Ensure utility owners are informed of the new infrastructure and install future ducts if required.
  5. Use of concrete base with asphalt overlay is the preferred pavement structure type for Lakeshore Road East through downtown.

## EXHIBIT 1

	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER
START UP										
WATERMAIN (BLOCK 1-3,2) INCLUDING TESTING										
ROAD CLOSURE - BLOCK 1										
PAVEMENT REMOVAL (MAINTAIN SIDEWALK) - BLOCK 1										
SANITARY SEWER - BLOCK 1										
SANITARY AND WATERMAIN SERVICES - BLOCK 1										
NAVY STREET INTERSECTION - 1 WEEK CLOSURE										
ROAD WORKS (OTHER ROAD/UTILITY CROSSING) - BLOCK 1										
BOULEVARDS (ELECTRICAL/SILVA CELLS) - BLOCK 1										
PAVING-BASE COURSE - BLOCK 1										
BLOCK 1 OPEN TO TRAFFIC										
BLOCK 2 CLOSED TO TRAFFIC										
PAVEMENT REMOVAL (MAINTAIN SIDEWALK) - BLOCK 2										
SANITARY SEWER - BLOCK 2										
SANITARY AND WATERMAIN SERVICES - BLOCK 2										
THOMAS STREET INTERSECTION - 1 WEEK CLOSURE										
ROAD WORKS (OTHER ROAD/UTILITY CROSSING) - BLOCK 2										
BOULEVARDS (ELECTRICAL/SILVA CELLS) - BLOCK 2										
PAVING-BASE COURSE - BLOCK 2										
BLOCK 3 OPEN TO TRAFFIC										
BLOCKS 3 CLOSED TO TRAFFIC										
PAVEMENT REMOVAL (MAINTAIN SIDEWALK) - BLOCK 3										
SANITARY SEWER - BLOCK 3										
SANITARY AND WATERMAIN SERVICES - BLOCK 3										
GEORGE STREET INTERSECTION - 1 WEEK CLOSURE										
ROAD WORKS (OTHER ROAD/UTILITY CROSSING) - BLOCK 3										
BOULEVARDS (ELECTRICAL/SILVA CELLS) - BLOCK 3										
DOWN STREET INTERSECTION - 1 WEEK CLOSURE										
PAVING-BASE COURSE - BLOCK 3										
BLOCK 3 OPEN TO TRAFFIC										
DECOMMISSIONING / CLEAN UP										