



Streetscape Design

Town of Whitchurch-Stouffville | Downtown Main Street

September 6 & 12, 2022

-- Outline

STREETSCAPE

- Tree Plan
- Downtown Streetscape
- Streetscape Model
- Streetscape Furniture

TRANSPORTATION

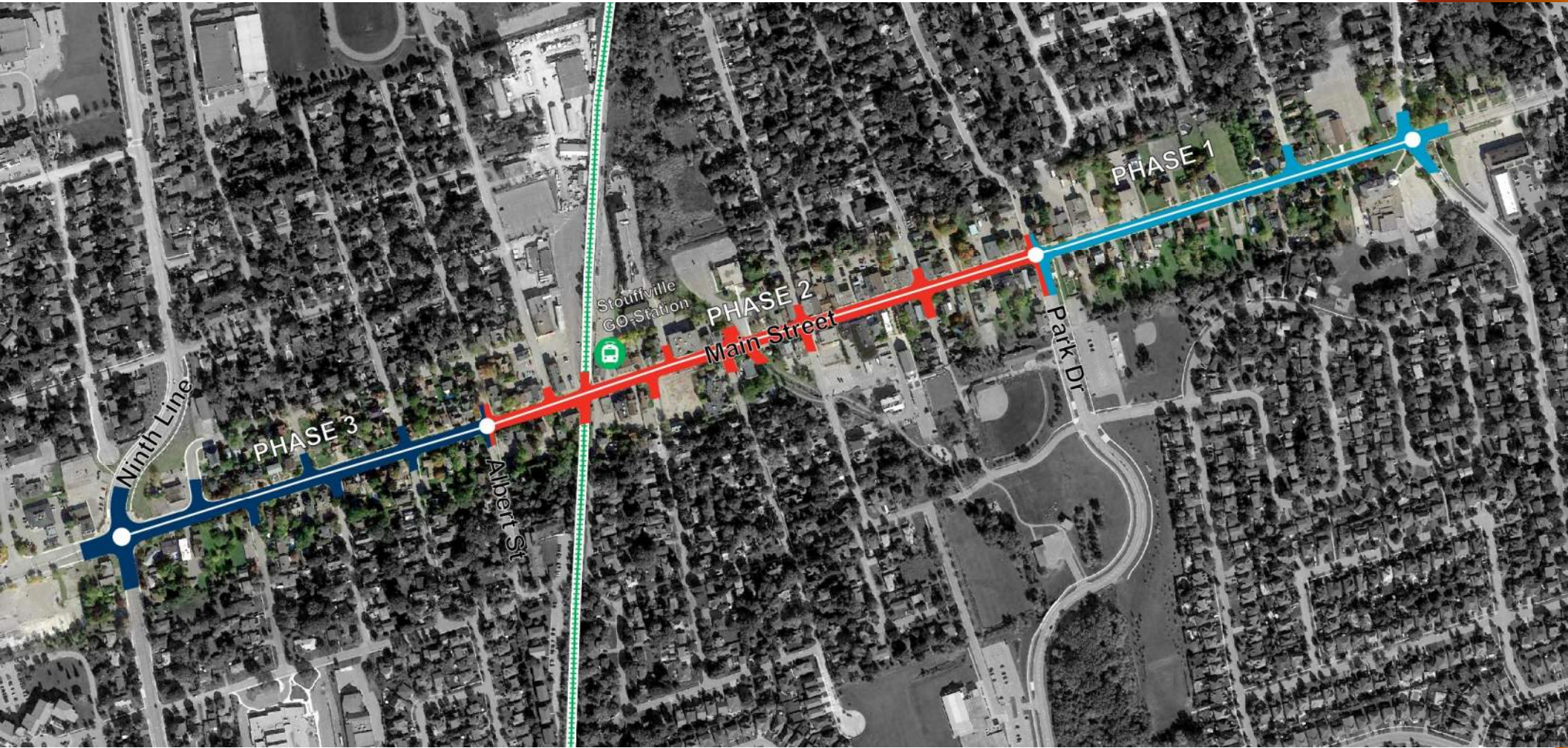
- GO Station Pedestrian Crossing
- Parking

UTILITIES

- Wet Utilities (Watermain, Sanitary, and Storm Sewer)
- Aerial Utilities (Hydro, Rogers, and Bell)

-- Downtown Stouffville

Phase II – Albert Street to Park Drive



Streetscape

-- Downtown Streetscape

Tree Plan – Existing / Removed / Proposed Quantity

- Existing Trees 43
- Preserved 30
- Removed 13
- New Trees 50

-- Downtown Streetscape

Japanese Tree Lilac (white flowers)



Height: 25 feet

Spread: 20 feet

Sunlight: full sun

Hardiness Zone: 3a

Description:

A first rate accent tree adorned with frothy upright panicles of creamy white flowers in early summer; interesting steel-gray bark and a dense, upright habit, an ideal choice for small home landscapes; needs full sun and well-drained soil.

-- Downtown Streetscape

Red Spire Ornamental Pear (white flowers)



Height: 40 feet

Spread: 25 feet

Sunlight: full sun

Hardiness Zone: 6a

Description:

A tall accent tree covered in attractive white flowers in spring followed by small inedible fruit, good fall color and a beautiful and symmetrical pyramidal shape, very ornamental and resistant to fireblight.



-- Downtown Streetscape

Hedge Maple



Height: 35 feet

Spread: 30 feet

Sunlight: full sun / partial shade

Hardiness Zone: 5a

Description:

A very common shrub throughout Europe where it is used as a hedge, tolerates pruning very well; also nice as a shade tree; one of the most adaptable of the maples to a wide range of growing conditions.

-- Downtown Streetscape

American Hornbeam



Height: 30 feet

Spread: 25 feet

Sunlight: full sun / partial shade

Hardiness Zone: 3b

Description:

A beautiful and underused native woodland tree; very interesting gray bark is almost muscular in appearance, makes a strong winter statement; also excellent blend of fall colors and curious hop-like fruit; good small multipurpose shade tree.

-- Downtown Streetscape

Ironwood



Height: 30 feet **Spread:** 20 feet

Sunlight: full sun / partial shade

Hardiness Zone: 3a

Description:

An underused small native woodland tree with exceptionally strong wood, tolerates shade very well; interesting hop-like seeds in late summer, layered habit of growth, flaking bark; very low maintenance, but somewhat slow growing.

-- Downtown Streetscape

Globe black locust



Height: 45 feet

Spread: 30 feet

Sunlight: full sun / partial shade

Hardiness Zone: 4a

Description:

A colorful and open shade tree with very fragrant and showy chains of white flowers in spring, bright yellow foliage has reddish spines; very adaptable, does well in poor soils; tends to sucker and form colonies of trees, good for large-scale naturalizing.

-- Downtown Streetscape

Soil Cell for new trees



-- Streetscape

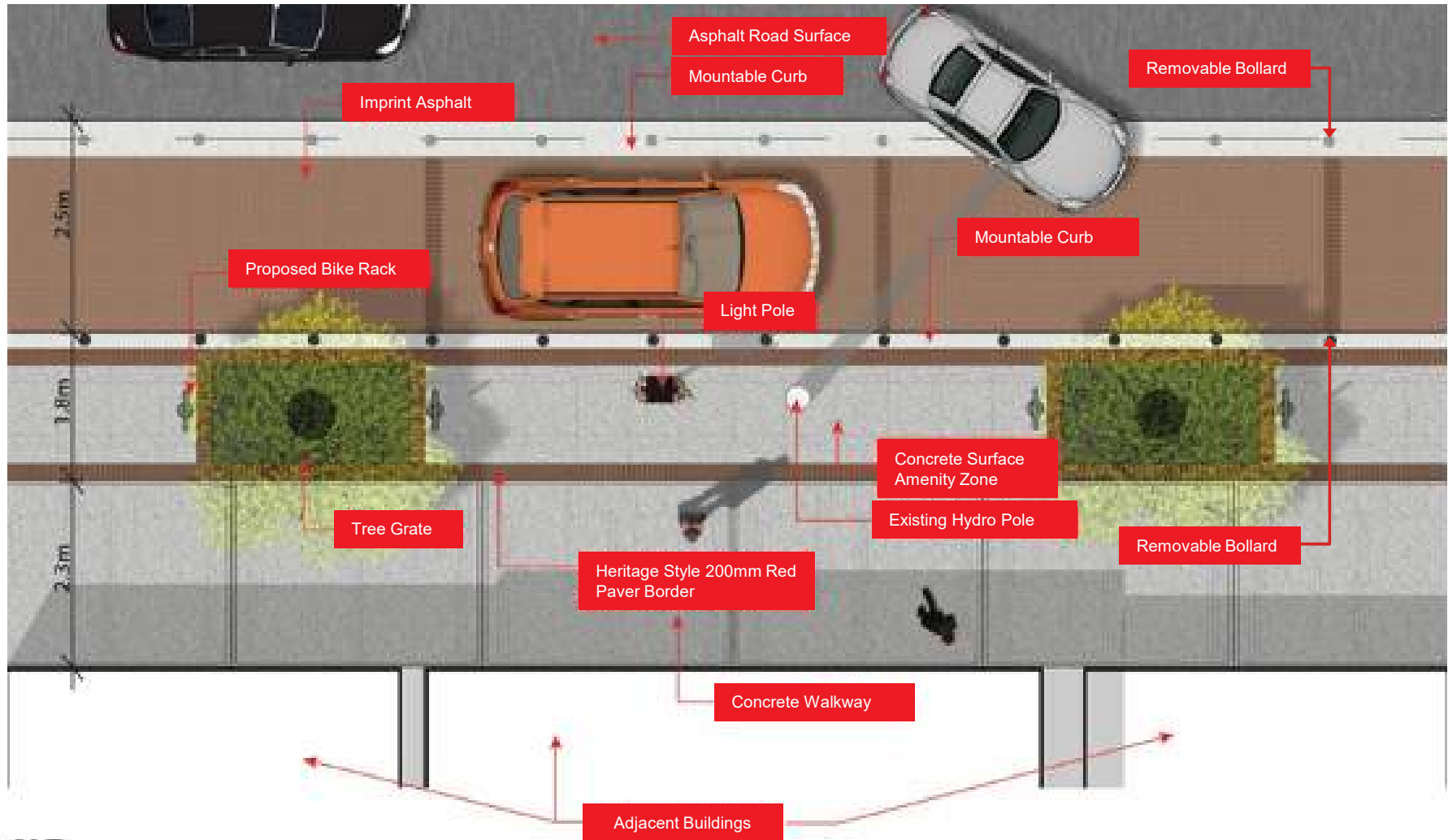
Gateway & Banner at both entries to Downtown

- Custom design of the banner, support structure (poles) & base.
- The pole could be with or without light.
- Base of the pole should be decorative with red brick/stone veneer to match the heritage character.



-- Downtown Streetscape

Typical Streetscape



-- Streetscape – Mountable Curb

On-street parking – Curb between parking & pedestrian zone

Mountable Curb

- Advantage: Parking can easily be converted into outdoor patio and be part of pedestrian zone during events
- Disadvantage: Less safe



-- Streetscape – Amenity Zone

Concrete Paving with Pavers for Accent



-- Downtown Streetscape

Typical Planting Bed - Precedent



-- Downtown Streetscape

Clock Tower - Precedent



-- Downtown Streetscape

Typical Non-Signalized Pedestrian Crossing - Precedent



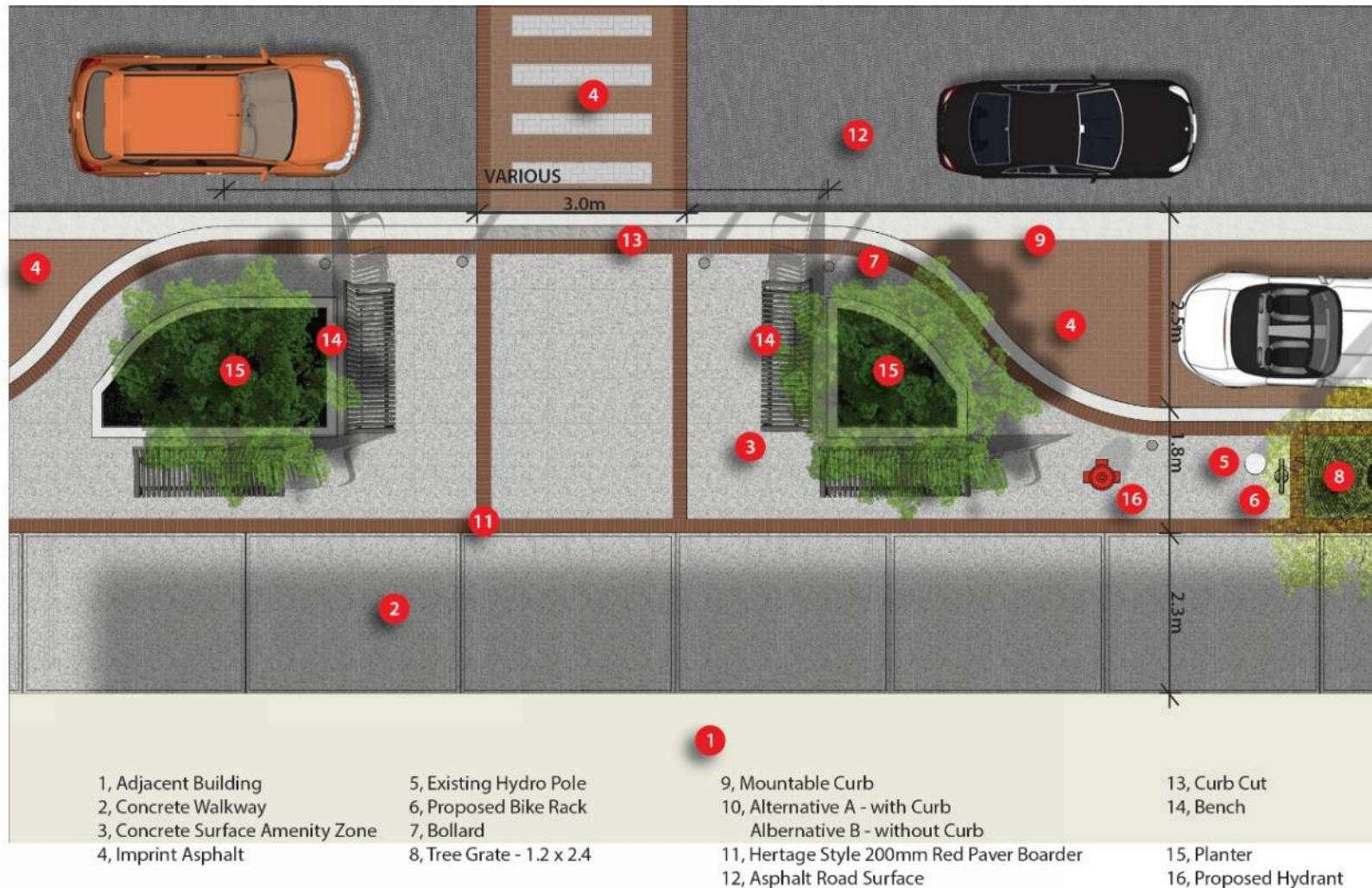
-- Streetscape – Crosswalk

Imprint Asphalt Using Red Herringbone Pattern



Streetscape - Bumpouts

Mountable Curb Throughout



-- Downtown Streetscape

Large Bump-out Precedent



-- Downtown Streetscape

Large Bump-out Precedent



-- Downtown Streetscape

New and Existing Trees



-- Streetscape – Amenity Zone

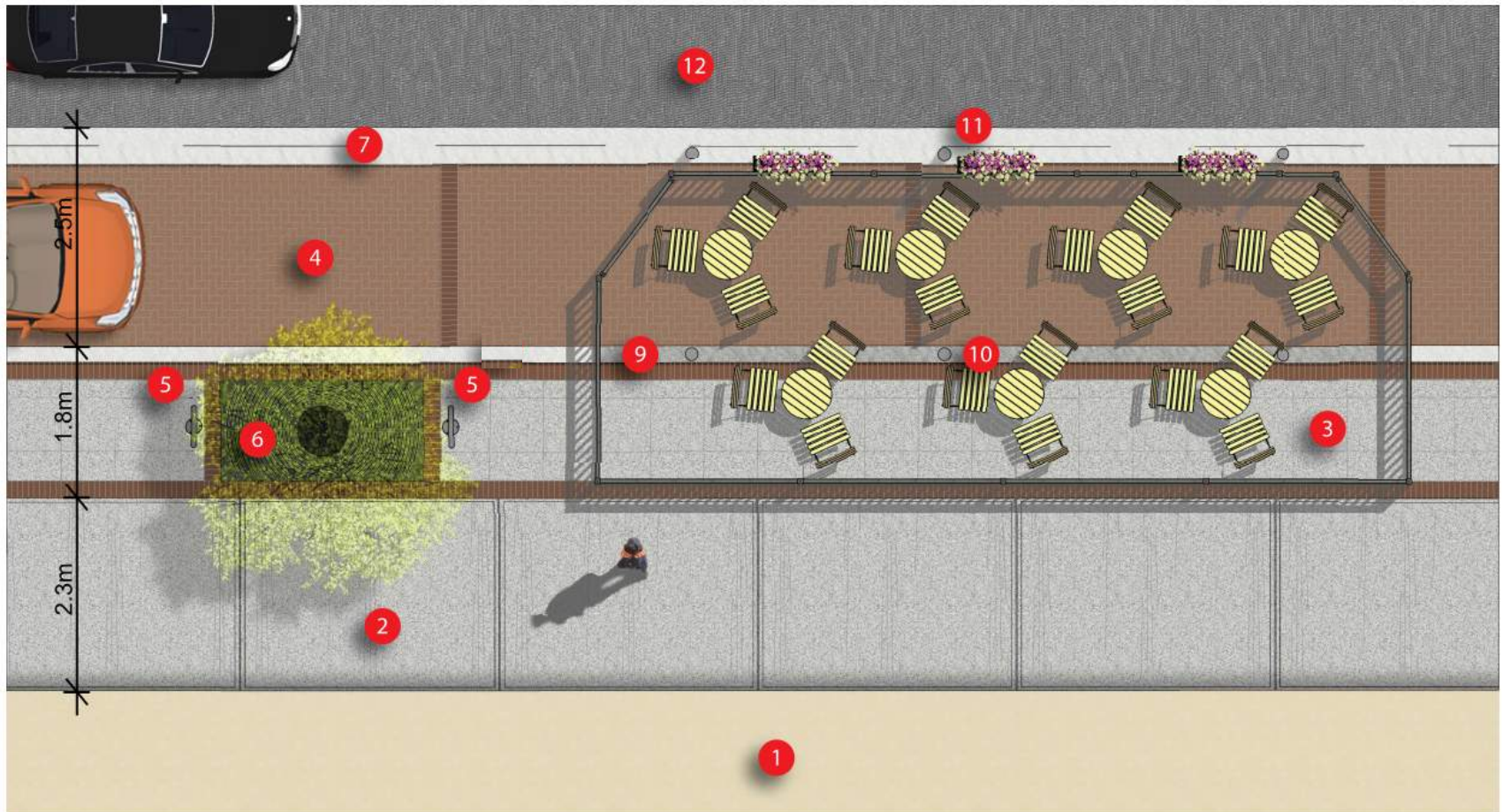
Concrete Paving with Pavers for Accent



Streetscape – Patio Extension

Option 1

Proposed mountable curb with removable bollards would allow flexible creation of temporary patios



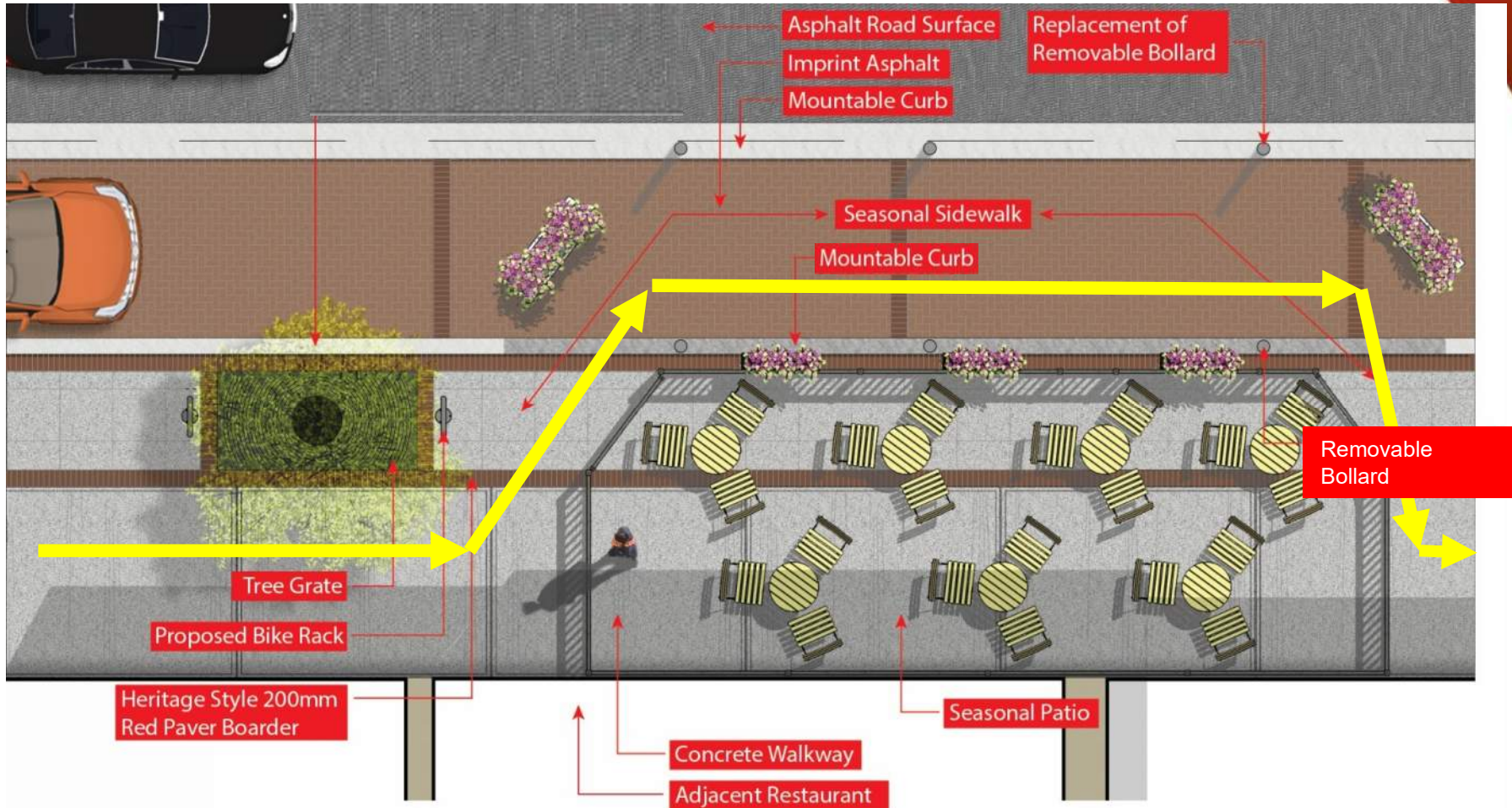
- 1, Adjacent Restaurant
- 2, Concrete Walkway
- 3, Seasonal Patio
- 4, Imprint Asphalt

- 5, Proposed Bike Rack
- 6, Tree Grate - 1.2 x 2.4
- 7, Mountable Curb

- 9, Mountable Curb
- 10, Placement of Removable Bollard
- 11, Removable Bollard
- 12, Asphalt Road Surface

Streetscape – Patio Extension

Option 2



-- Streetscape – Tree Guard and Grate

Vendors: GreenBlue Urban, Canaan Inc.



Material

Textured Powder Coat, Galvanized,
Smooth Powder Coat

Dimensions

1.2 x 1.2 m, 33 lbs (14.9 kg)

Cost

CAD 1500 +

Streetscape – Material Comparison



Composite

- Only Slats is composite
- Not available in Black
- CAD 1700 +

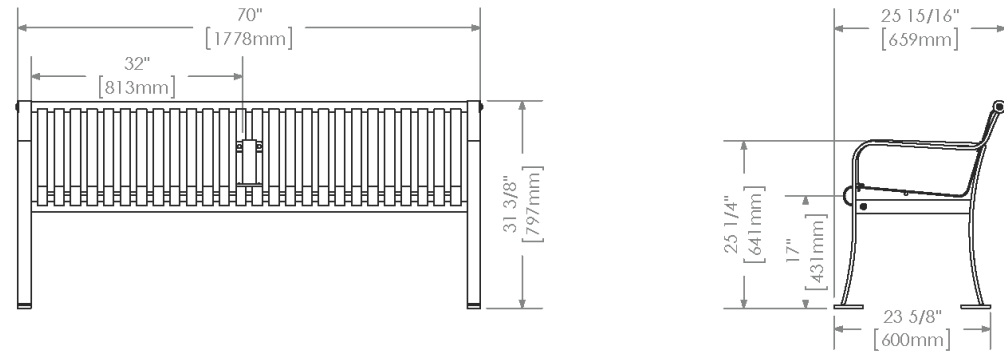


Metal (Powder coated)

- Easy to customize
- Available in Black
- CAD 1300+

Streetscape – Benches

Vendor: Maglin



Material

Bench ends are made from solid cast aluminum. The seat employs flat bar straps and H.S. steel tube.

Dimensions

Height 79.7 cm

Depth 65.9 cm

Length 177.8 cm

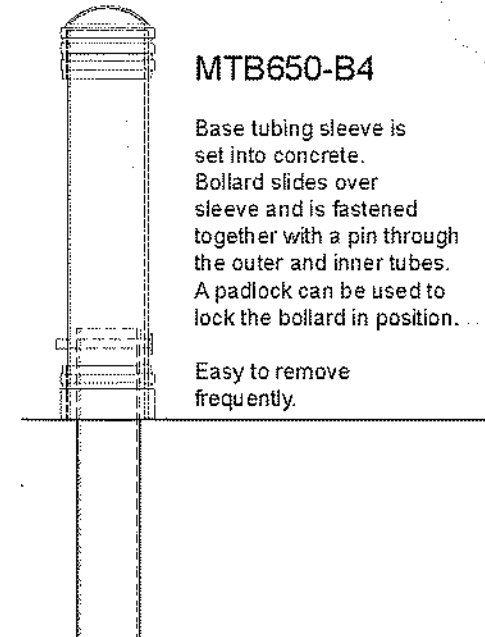
Seat 64.2 cm

Cost

CAD 1300 +

Streetscape – Removable Bollards

Vendor: Maglin



MTB650-B4

Base tubing sleeve is set into concrete. Bollard slides over sleeve and is fastened together with a pin through the outer and inner tubes. A padlock can be used to lock the bollard in position. ...

Easy to remove frequently.

Material

Decorative top and base are cast aluminum.

Dimensions

Height 84 cm

Tube Diameter 16.8 cm

Cost

CAD 800 +

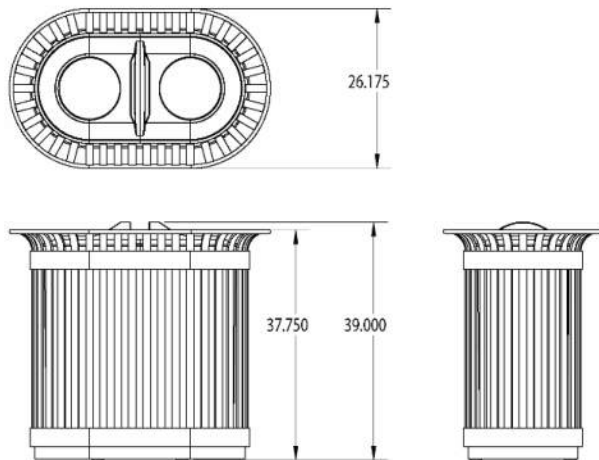
Streetscape - Waste Receptacle

Vendor: Maglin



Material

The recycling station frame is constructed using heavy duty steel flatbar. 2 - 20 gallon commercial grade plastic liners and black molded plastic lid.



Dimensions

Height 96.0 cm

Width 66.5 cm

Depth 109.0 cm

Cost

CAD 2100 +

Streetscape – Bike Racks

Vendor: Maglin



Material

The bike rack is constructed using H.S. steel tube and an aluminum top casting.

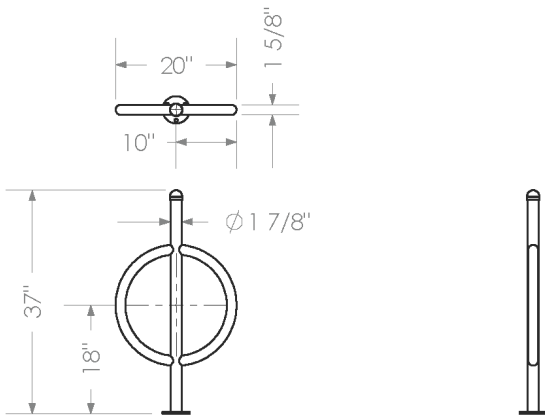
Dimensions

Height 94 cm

Width 50.8 cm

Cost

CAD 300 +



Streetscape – Light Poles



Design Recommendations

- Maintain existing heritage style and height (to avoid conflict with overhead utilities)
- All existing streetlights will be replaced
- Provision to include banners and hanging baskets

-- Streetscape – Collection

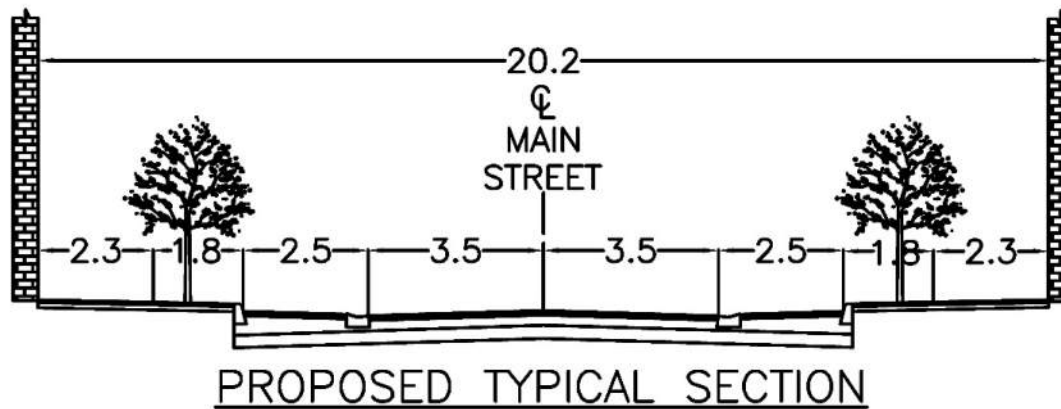
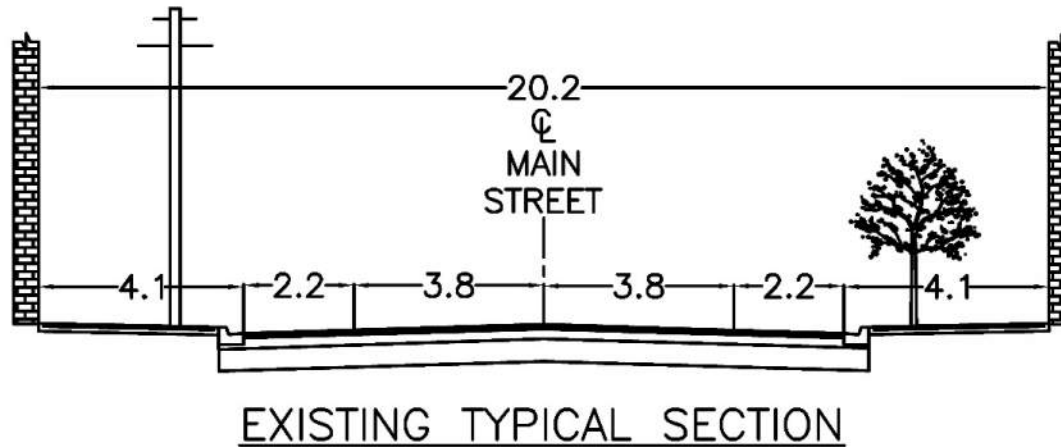
Potential Street Furniture



Transportation

-- Typical Cross Section

Downtown Main Street



-- Pedestrian Cross Over

Precedent



-- Pedestrian Cross Over

With Pedestrian Signal



Recommended Location – Option 2

- Located between Lloyd Street and Freel Lane (approx. 65m from the GO Station).
- The least amount of parking stalls are lost at this location.
- Provides a crossing location closer to the retirement residences.

-- Pedestrian Cross Over

Evaluate Options

OPTION #	ADVANTAGE	DISADVANTAGE
1	<ul style="list-style-type: none">• Provides safe crossing location for pedestrians to cross Main Street• Located 25m closer to the GO Station	<ul style="list-style-type: none">• 2 potential parking stalls will be lost to provide pedestrian crossing• Additional potential parking stalls would need to be removed to relocate bus bay on south side• Multiple driveways in vicinity of pedestrian crossing could lead to potential safety problems
2 (Recommended)	<ul style="list-style-type: none">• Provides safe crossing location for pedestrians to cross Main Street• Located closer to retirement residences	<ul style="list-style-type: none">• 25m further away from the GO Station than Option 1

-- Parking

North Side Parking Summary

North Side Parking Stalls	
Section	Number of Stalls Gained or Lost
Albert Street to Edward Street	0
Edward Street to Freel Lane	-3
Freel Lane to Mill Street	-2
Mill Street to Church Street	-5
Church Street to Park Drive	-2
Total Parking (North Side)	12 Spaces Lost

-- Parking

South Side Parking Summary

South Side Parking Stalls	
Section	Number of Stalls Gained or Lost
Albert Street to Blake Street	+1
Blake Street to Lloyd Street	-4
Lloyd Street to O'Brien Avenue	+1
O'Brien Avenue to Market Street	-2
Market Street to Church Street	+1
Church Street to Park Drive	-2
Total Parking (South Side)	5 Spaces Lost

-- Parking

Total Parking Summary

Total Impact to Parking Stalls

Total Parking (North Side)	12 Spaces Lost
Total Parking (South Side)	5 Spaces Lost
Total Impact to Parking	17 Spaces Lost

- Total Parking Stalls Available – 83 Spaces

Reasons for loss of parking:

- Curb extensions / bumpouts
- Bus maneuvering room

Reasons for additional parking:

- Fewer driveways at Pace on Main Condominium
- Fire hydrant removal

Utilities

-- Watermain

- **Existing**

- Cast iron unlined pipe, 100-200 mm dia.
- Installed in 1950s
- Location
 - Primary WM: Curb lane on south side of road
 - Secondary WM: Boulevard behind the north side curb.

- **Proposed**

- Replace existing throughout with PVC pipe (incl. valves, service connections)
- Pipe size TBD through modelling (200-300 mm dia. anticipated)
 - Ensure adequate pressure and fire flows
- Verify spacing of fire hydrants
- Abandon existing watermain

-- Sanitary Sewer

Existing

- Vitrified clay, 200mm dia.
- Location: curb lane on north side of road

Proposed

- Replacement throughout with 250mm/300mm PVC pipe
- Replacement of service laterals with PVC pipe
- Diameter will include capacity for future redevelopment/intensification

-- Storm Sewers

- **Existing**

- Existing 600 mm dia. concrete pipe from Albert St to Stouffville Creek
- Existing 375 mm dia. CSP pipe from Mill St to Stouffville Creek
 - To be replaced with concrete pipe
- Located in the middle of the road
- Drainage high point located at the Clock Tower
- Stouffville Creek crosses Main Street in box culvert. Town's 2014 *Structure Inventory Assessment Report* indicates existing box culvert is in good condition.

- **Proposed**

- Maintain existing storm sewer with minor replacements and adjustments as needed
- Install new catch basins at the road sag at the creek crossing

- - Aerial Utilities

- **Existing Aerial Utilities (Hydro, Bell and Rogers)**
 - Located on south side of Main Street (in line with streetlighting)
 - Several aerial crosswires throughout Main Street to provide service connections on north side
 - Hydro: Main Street primary and Burkholder/Sunset primary lines are on separate circuits and connect to separate transformers (redundancy and emergency looping)
- **Proposed Design Alternatives**
 1. Maintain existing aerial utilities
 2. Relocate crosswires to underground
 3. Relocate all aerial services to underground
 4. Reroute aerial to the south of Main Street
 5. Reroute aerial to the north of Main Street



-- Aerial Utilities

Evaluate Relocation Alternatives

ALTERNATIVE	NOTES / DISCUSSION
1. Maintain existing aerial utilities	<ul style="list-style-type: none">• Lowest cost alternative• Existing visual impact will be maintained
2. Relocate crosswires underground: Partial burial/relocation of crosswires to underground (including Rogers and Bell), with primary hydro lines to remain in place.	<ul style="list-style-type: none">• Requires working closely with Hydro One for relocation design• May be lower cost and may potentially remove most of the visual impact• Will require detailed coordination with Downtown business owners
3. Relocate all aerial services to underground: Full burial of all primary hydro lines and crosswires.	<ul style="list-style-type: none">• Most expensive alternative (~\$10M+), triggers the need to investigate alternatives• Requires working closely with Hydro One for relocation design• Will require detailed coordination with Downtown business owners• Difficult and expensive to make future hydro connections if aerial services are buried.

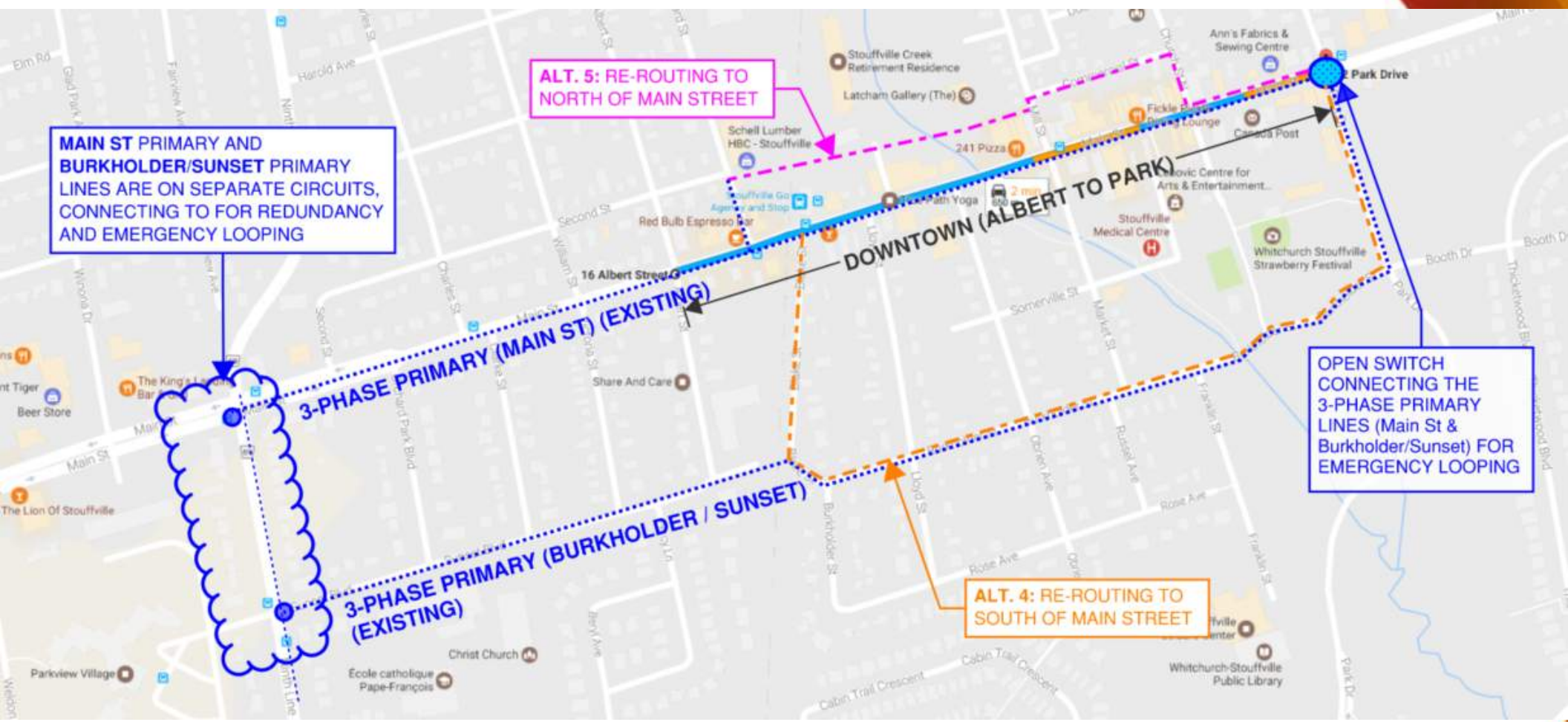
-- Aerial Utilities

Evaluate Relocation Alternatives

ALTERNATIVE	NOTES / DISCUSSION
<p>4. Reroute to south of Main Street (Blake-Burkholder-Park): Full re-routing of primary and secondary hydro services around the downtown area (down Blake St, across Burkholder St, up Park Dr), bringing new secondary connections up to transformer pads, with underground service connections to various buildings.</p>	<ul style="list-style-type: none"> • Requires working closely with Hydro One for relocation design • Would eliminate emergency looping in the local hydro grid • Will require detailed coordination with Downtown business owners • Would require the existing Burkholder/Sunset primary line to be upgraded (this may affect emergency looping) • In addition, run primary hydro service up from Burkholder Street, up Market Street to Main Street.
<p>5. Reroute to north of Main Street: From east to west as follows (all services buried):</p> <ul style="list-style-type: none"> - On Main St, from Park Dr to Church St N, - North on Church St N, - West on Commercial St, - Continue to Library Lane, - Continue west under creek, open space and Metrolinx / GO Station property, - Terminating at Edward St and Second St. 	<ul style="list-style-type: none"> • Easements would be required (from the creek to Edward St) • Virtually all areas would need buried services, since there is insufficient clearance for aerial services • Hydro One participation required to investigate feasibility of this alternative • This alternative may be as costly as the full burial along Main Street.

Aerial Utilities

Utility Relocation Alternatives #4 and #5



Questions?

Thank you!