

WONDERLAND ROAD SOUTH MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT

### STUDY OVERVIEW

- Wonderland Road South is the primary gateway from Highways 401 and 402 to Central London and is the 'spine' of the Southwest Plan Area.
- Class Environmental Assessment (EA) and Preliminary Design Study for improvements to Wonderland Road South, from Southdale Road to Highway 401.
- Implements the Transportation Master Plan (TMP) and the Southwest Area Secondary Plan (SWAP)
- Provides north-south transportation capacity necessary to support the planned growth, support regional and local transportation needs and improve connectivity to Highways 401 and 402.
- This study also includes a Scoped Environmental Impact Study (EIS).
- Represents long-term planning, with implementation of some aspects of the recommended improvements occurring in 15 to 20 yrs. Therefore the current study is mainly intended to identify right-of-way requirements and protect property.

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### MUNICIPAL CLASS EA PROCESS & STUDY SCHEDULE

<b>Phase 1: Problem and Opportunity</b> <input checked="" type="checkbox"/> Identify and describe problems and opportunities	<b>Notice of Study Commencement</b> July 2013
<b>Phase 2: Alternative Planning Solutions</b> <input checked="" type="checkbox"/> Identify alternative planning solutions to the problem <input checked="" type="checkbox"/> Inventory the natural, social, economic and cultural environments <input checked="" type="checkbox"/> Assess and evaluate the planning alternatives with consideration of environmental and technical impacts <input checked="" type="checkbox"/> Identify a Preliminary Preferred Planning Solution	<b>PIC # 1 January 23, 2014</b> <ul style="list-style-type: none"> <li>Transportation Needs</li> <li>Evaluation of Planning Alternative Solutions</li> <li>Preliminary Preferred Planning Solution</li> <li>Preliminary Road Cross-Section Concept Alternatives</li> </ul>
<b>Phase 3: Alternative Design Concepts for the Preferred Planning Solution</b> <input checked="" type="checkbox"/> Confirm the Preferred Planning Solution <input checked="" type="checkbox"/> Identify road cross-section and design concept alternatives <input checked="" type="checkbox"/> Inventory the natural, social, economic and cultural environments (continue from Phase 2) <input checked="" type="checkbox"/> Assess and evaluate the design alternatives with consideration of environmental and technical impacts <input checked="" type="checkbox"/> Identify a Preliminary Preferred Design <input checked="" type="checkbox"/> Confirm the Preferred Design as the Recommended Plan	<b>PIC # 2 December 11, 2014</b> <ul style="list-style-type: none"> <li>Cross-Section and Design Alternatives</li> <li>Evaluation of alternative cross section and design concept alternatives</li> <li>Preliminary Preferred Design</li> </ul>
<b>Phase 4: Environmental Study Report</b> <input checked="" type="checkbox"/> Complete the Environmental Study Report (ESR) that documents all of the activities undertaken and the decision-making process through Phases 1, 2 and 3 <input checked="" type="checkbox"/> Notify the public and government agencies of completion of the ESR and of the Part II Order provision in the EA Act <input type="checkbox"/> Place the ESR on public record for at least 30-calendar days for public review and comment	<b>Notice of Study Completion</b> Summer 2015
<b>Phase 5: Implementation (Long-Term)</b> <input type="checkbox"/> Proceed to detailed design of the project <input type="checkbox"/> Property acquisition and utility relocation <input type="checkbox"/> Initiate Construction and monitor for environmental provisions and commitments	

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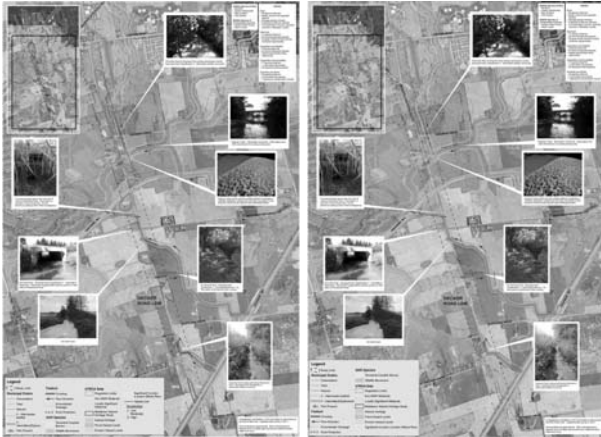
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### EXISTING CONDITIONS - Socio-Economic and Heritage

- Within the Urban Growth Boundary (UGB), existing land use is comprised of retail / commercial and industrial with remaining agricultural areas intended to transition to urban land use.
- Continued development and intensification within the UGB will be guided by the policies of the Southwest Area Secondary Plan (SWAP) – dominated by the Wonderland Road Enterprise Corridor.
- Outside of the Urban Growth Boundary, land use is characterized by crop production and other agricultural operations / agri-business and will remain as such.
- There are no Built Heritage Resources present that are on the City of London Heritage Register or are listed /designated under Part IV of the Ontario Heritage Act.
- Two built features of heritage interest and 11 Cultural Heritage Landscapes (roadscape, farm complexes, and agricultural landscapes) have been identified.

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### EXISTING CONDITIONS – Natural Heritage



### DESIGN ALTERNATIVES – 2-Step Evaluation Approach

The design alternatives encompassed two aspects:

**Road Cross-Section Concepts** – to identify a preferred arrangement of vehicular travel lanes, sidewalks, boulevards, bicycle lanes etc.

Road cross-section concepts were developed for two distinct segments of the Wonderland Road corridor based on the different lane requirements within each segment to meet future travel demand:

- Southdale Road to Dingman Drive; and
- Highway 402 to Highway 401.

Wonderland Road from Dingman Drive to Highway 402 will be a transitional area from the 6-lane cross section in the north, through the Highway 402 interchange, to a 4-lane cross section between Highways 402 and 401.

**Road Widening Alternatives** – the evaluation of the means by which road widening can be achieved.

The evaluation was carried out in a stepwise manner, with the road cross-sections being assessed first to establish road right-of-way requirements and the road widening approach developed afterward, based on the preferred cross-section.

### ROAD WIDENING ALTERNATIVES

Key considerations and constraints:

- Impacts to adjacent properties and accesses including: existing commercial developments, active development applications, residences and community centres/places of worship;
- Impacts to adjacent natural features including the Lambeth Forest ESA, Dingman Creek corridor and the Locally Significant Wetland;
- Continued agricultural and agri-business activities outside of the Urban Growth Boundary including field access, ease of movement of farm vehicles, and the existing Sugar Bush;
- Design and operations – for example, considering future reduced speed limit in the urban area, road design standards and geometric design criteria that ensure alternatives are reasonable, feasible and safe.

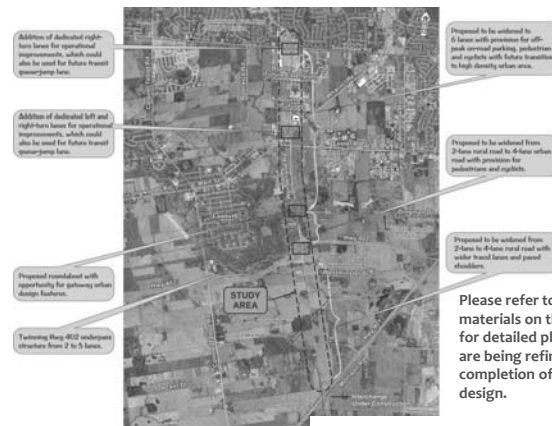
Initially, conceptual plans were developed to widen Wonderland Road South:

- on existing centreline;
- to the east only (i.e., holding westerly property line)
- to the west only (i.e., holding easterly property line)

For much of the study area, there are existing constraints located along both sides of Wonderland Road. Therefore, it was not considered reasonable to develop alternatives that widen “strictly” to the east or west, or on the existing centreline.

The design will widen the road at locations that “best fit” the current road location and surrounding land uses. “Best fit” locations were evaluated and selected to improve the existing roadway alignment, minimize environmental impacts, avoid significant physical constraints and permit traffic maintenance during construction.

### RECOMMENDED PLAN - Summary



Please refer to the PIC 2 materials on the City's website for detailed plans. These Plans are being refined as part of the completion of the Preliminary design.



### RECOMMENDED PLAN OVERVIEW

- Widen Wonderland Road South to 6-lanes from Southdale Road West to Dingman Drive with provision for off-peak on-road parking, pedestrians and cyclists, and wide median and boulevards provide for enhanced landscaping opportunities;
- Widen Wonderland Road South to 4-lanes from Highway 402 to Highway 401, with wider travel lanes and paved shoulders;
- Transition from the 6-lane to the 4-lane roadway between Dingman Drive and Highway 402;
- Intersection improvements including dedicated turn lanes to improve operations at Southdale Road West, Wharncliffe Road South and Exeter Road; and
- Roundabout at Dingman Drive with an opportunity for a gateway urban design feature;
- Future signalized intersections at Kilbourne Road (new), Highway 402 North Ramp, Highway 402 South Ramp, Westminster Drive, and Decker Drive;
- Twinning of the Highway 402 bridge to the west to accommodate a total of 5-lanes over Highway 402;
- Minor modifications to Highway 402 ramps to tie into the widened Wonderland Road South; and
- Improvements to Westminster Road intersection including a slight shift east of the intersection;
- Realignment of two Municipal Drains within the proposed road right-of-way: CB Smith Drain and Krasnicki Drain.



### PRELIMINARY PREFERRED ALTERNATIVE – More details of Key Components

#### Southdale Road West and Highway 402

- reconstruction of Wonderland Road South to an Interim 4-lane, and Ultimate 6-lane urban cross-section from Southdale Road West to Dingman Drive;
- minor alignment shift of the existing Wonderland Road South between Bradley Avenue and Wharncliffe Road South to maintain London Transit operations at the London Transit terminal;
- improvement of existing intersections with signalization and the addition of dedicated turning lanes where appropriate;
- incorporation of active transportation facilities within the corridor to support pedestrian/cycling activity, including a 1.8 m on-road bike lane with 1.0 m buffer and 2.0 m sidewalk on each side of Wonderland Road South;
- flexibility to use the outside lane for off-peak on-road parking or as a long-term future designated HOV lane between Southdale Road West to Hamlyn Street; and
- provision of a wide median (5 m) where feasible in the corridor, for enhancement of the streetscape and attractiveness of corridor with street trees, lighting, signage and gateway features;
- a 2-lane roundabout at Dingman Drive;
- an opportunity for a gateway feature or public art display within the roundabout, announcing the entrance to the City.

#### Highway 402 and Highway 401

- reconstruction of Wonderland Road South to a widened Interim 2-lane rural cross-section, and Ultimate 4-lane rural cross-section;
  - the Interim 2-lane road includes 3.5 m travel lanes, 1.5 m paved shoulder and 1.5 m gravel shoulder;
  - the Ultimate 4-lane road includes 3.5 m travel lanes, 1.5 m paved shoulder and 1.5 m gravel shoulder;
- minor shifts in the alignment of Wonderland Road South based on existing constraints along the corridor;
- improvement of intersection operations with signalization and the addition of auxiliary turning lanes where appropriate;
- localized realignment of Municipal Drains, within the road right-of-way to accommodate the road improvements.



### PRELIMINARY PREFERRED ALTERNATIVE – More details of Key Components

#### Dingman Drive to Hwy 402

- Transition between the 6-lane urban road to the north and the 4-lane rural road to the south
- One southbound lane is dropped just north of the Dingman Drive roundabout intersection, and one northbound lane is added at the Dingman Drive roundabout intersection.
- The additional elements of the transition are as follows:
  - the existing 36 m road right-of-way is maintained south of the Dingman Drive roundabout intersection (the roundabout will require additional right-of-way);
  - a centre raised median will extend south from the roundabout to the Highway 402 north ramp terminal (4 m width at the roundabout and narrows to 2 m just north of Dingman Creek)
  - on-road bike lanes continue to through this section and south to Westminster Drive, however the 1.0 m buffers do not continue south of Hamlyn Street;
  - the sidewalks do not continue south of Dingman Drive, however there is an opportunity to connect the sidewalk to a future east-west multi-use trail in the vicinity of Dingman Drive / Dingman Creek.



### SUMMARY OF INTERSECTIONS

Intersecting Road	Existing Intersection	Future Intersection
Southdale Road West	Signalized	Signalized
Westwood Power Centre	Signalized	Signalized
Bradley Avenue	Signalized	Signalized
Kilbourne Road	N/A	N/A
Wharncliffe Road South	Signalized	Signalized
Exeter Road	Signalized	Signalized
Hamlyn Street	2-way Stop Control	Signalized
Dingman Drive	2-way Stop Control	Roundabout
Highway 402 North Ramp Terminal	2-way Stop Control	Signalized
Highway 402 South Ramp Terminal	2-way Stop Control	Signalized
Westminster Drive	2-way Stop Control	Signalized
Scotland Drive	2-way Stop Control	2-way Stop Control
Decker Drive	2-way Stop Control	2-way Stop Control

### IMPACTS TO SIGNIFICANT NATURAL HERITAGE FEATURES

A Scoped-EIS was undertaken to address the policies of Chapter 15 of the Official Plan. Field inventory was conducted from late June - late September 2013 and May - June 2014, subject to property access.

Sensitive/significant ecological features and functions were incorporated into the evaluation of alternatives and considered carefully along with social, cultural and technical factors.

Three areas characterized as 'high' sensitivity are proposed to be impacted by the Recommended Plan:

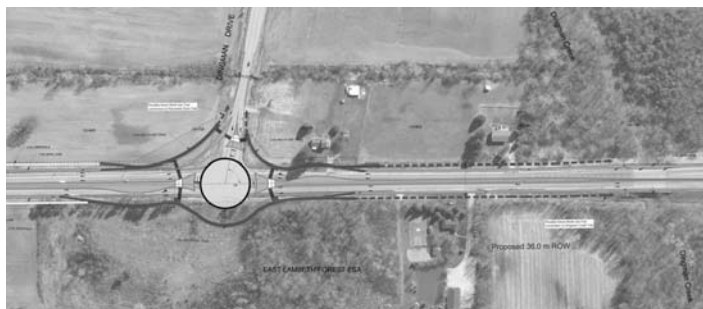
#### 1. East Lambeth Forest ESA at the Dingman Creek crossing structure

- o Dingman Creek crossing structure will require an extension on the east side of Wonderland Road by ~ 3 m to accommodate the 'ultimate' road cross section of 4 travel lanes and an extended Hwy 402 ramp (~10 to 15 year timeframe).
- o The Dingman Creek valley provides for habitat connectivity and wildlife movement opportunities between large forested areas east and west of Wonderland Road. Significant Wildlife Habitat is identified based on species observed, habitat characteristics and ecological functions.
- o The existing bridge had been built to accommodate additional lanes, however a slight widening will still be required to accommodate impacts to the Dingman Creek corridor. By widening to the east, impacts will be contained within the right-of-way and will be limited to vegetation communities and habitat that are more open/disturbed than on the west side.
- o Edge removal of adjacent Green Ash Mineral Deciduous Swamp will need to be verified during detailed design phase. Design considerations for the maintenance of wildlife passage will also be incorporated during detailed design.

### IMPACTS TO SIGNIFICANT NATURAL HERITAGE FEATURES

#### 2. Woodland mosaic located along the west side of Wonderland Road near Dingman Drive

- o This feature is contiguous with the East Lambeth Forest ESA, forming part of a very large natural heritage / habitat mosaic.
- o Vegetation Communities impacted by edge encroachment are: Cultural Meadow and Swamp Maple Deciduous Swamp.
- o Significant Wildlife Habitat (SWH) is identified based on species observed, habitat characteristics and ecological functions. Also noted, potential for woodland raptor, bat maternity roosts amphibian breeding habitat.
- o The Project Team considered means of avoiding impacts to these natural areas. However, opportunities to avoid the natural areas on the west side by widening to the east are constrained by road geometric design requirements and limited distance / flexibility for adjusting road alignment between Highway 402 and Dingman Drive.
- o The proposed roundabout will result in minor edge impacts to the northeast 'tip' of this feature. Opportunities to shift the roundabout and road alignment are constrained by design criteria and limited flexibility for adjusting road alignment between Highway 402 and Dingman Drive.



### IMPACTS TO SIGNIFICANT NATURAL HERITAGE FEATURES

#### 3. Decker Drive Locally Significant Wetland

- o This feature encompasses the hydro corridor and surrounding woodland/wetland/plantation mosaic, south of Westminster Drive.
- o Habitat diversity deemed to be good.
- o Confirmed SWH confirmed observations of Eastern Wood Peewee and Wood Thrush. Potential for woodland raptor habitat and amphibian breeding habitat.
- o The proposed road widening will result in encroachment of ~ 16 m along the length of this feature on Wonderland Road. Approximately half of the area impacted is within the hydro corridor and is a 'managed' non-native thicket swamp.
- o The most sensitive areas impacted are two patches of Bur Oak mineral Deciduous Swamp (edge impacts) located north and south of the hydro corridor. Other areas impacted north and south of the hydro corridor include white pine plantation.
- o Opportunities to realign the road to avoid impacts to the LSW are significantly constrained by the hydro tower adjacent to the east side of the road and a residence just north of the hydro corridor.
- o The Project Team considered options to avoid the wetland: including a slight easterly shift to hold the west edge of road; and a new road alignment further east. Both options were deemed to have significant socio-economic impacts. Widening to the east would result in impacts to the residence and require relocation of the hydro tower located immediately adjacent to the road, at significant cost and resulting in additional impacts to the property. Road realignment (i.e., shifting the road further east) is constrained by road geometric requirements such that the realignment would impact the farm to the south, severing it from the surrounding farm fields, and create a new intersection location at Scotland Drive.



## STORMWATER MANAGEMENT

- An urban cross-section is proposed for Wonderland Road from Southdale Road to Highway 402. With an urban cross-section, drainage is conveyed through curb and gutter, catch basins and a storm sewer system.
- Quantity and quality control of runoff north of Highway 402 will primarily be provided through use of the ponds proposed in the Pincombe Drain Subwatershed Study. Where it is not feasible to convey runoff to these proposed ponds an oil-grit separator will be provided for water quality treatment.
- A rural cross-section is proposed south of Highway 402 to Highway 401. Stormwater conveyance and management in the rural cross-section will be provided in vegetated roadside embankments and ditches within the proposed road allowance.
- The Krasnicki Municipal Drain and C.B. Smith Municipal Drain will be realigned to facilitate the road widening. The realigned drains will be located within the existing or proposed road allowance.



## IMPLEMENTATION

The London 2030 Transportation Master Plan (TMP) projected timing for the widening of Wonderland Road is as follows:

- **Southdale Road to Exeter Road**      **15 to 20 years**
  - This segment is recommended to be widened to 6 lanes by 2033.
- **Exeter Road to Hwy 402**      **5 to 20 years**
  - This section is recommended for widening to 4 lanes in 2022.
  - In addition, based on the traffic analysis in this EA study, this section is recommended to be widened to 6 lanes by 2033.
- **Highway 402 to Highway 401**      **15 to 20 years**
  - This segment is recommended to be widened to 4 lanes in 2028.
- Un-signalized intersections will be reviewed periodically by the City, and signals will be implemented as warranted.

