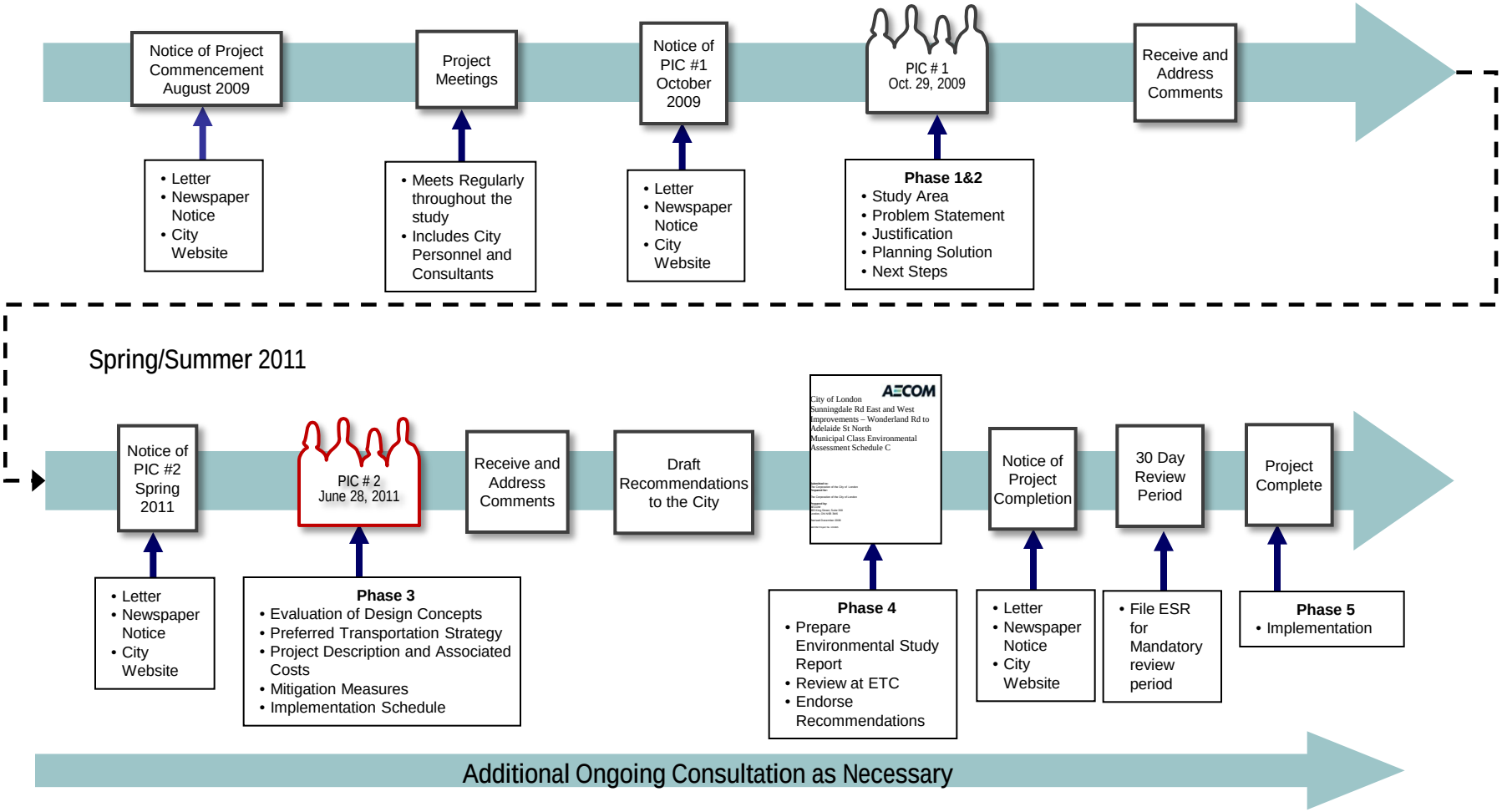
Sunningdale Road Improvements
Wonderland Road North to Adelaide Street North
Class Environmental Assessment

Tuesday, May 29, 2012

London CANADA

AECOM



WHERE WE ARE IN THE PROCESS

Sunningdale Road Improvements
Wonderland Road to Adelaide Street
Class Environmental Assessment (Schedule C)

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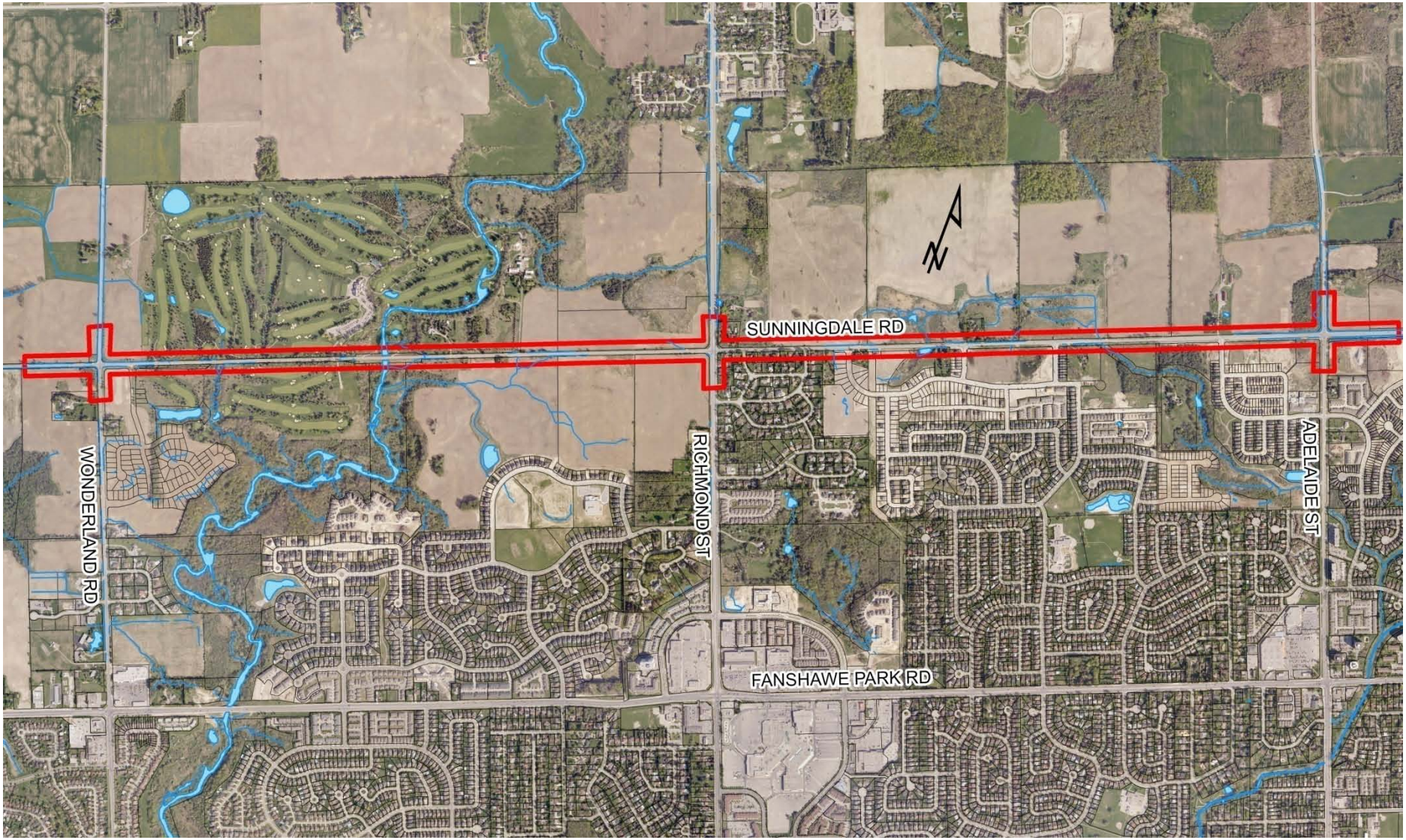

STUDY AREA

Sunningdale Road Improvements
Wonderland Road to Adelaide Street
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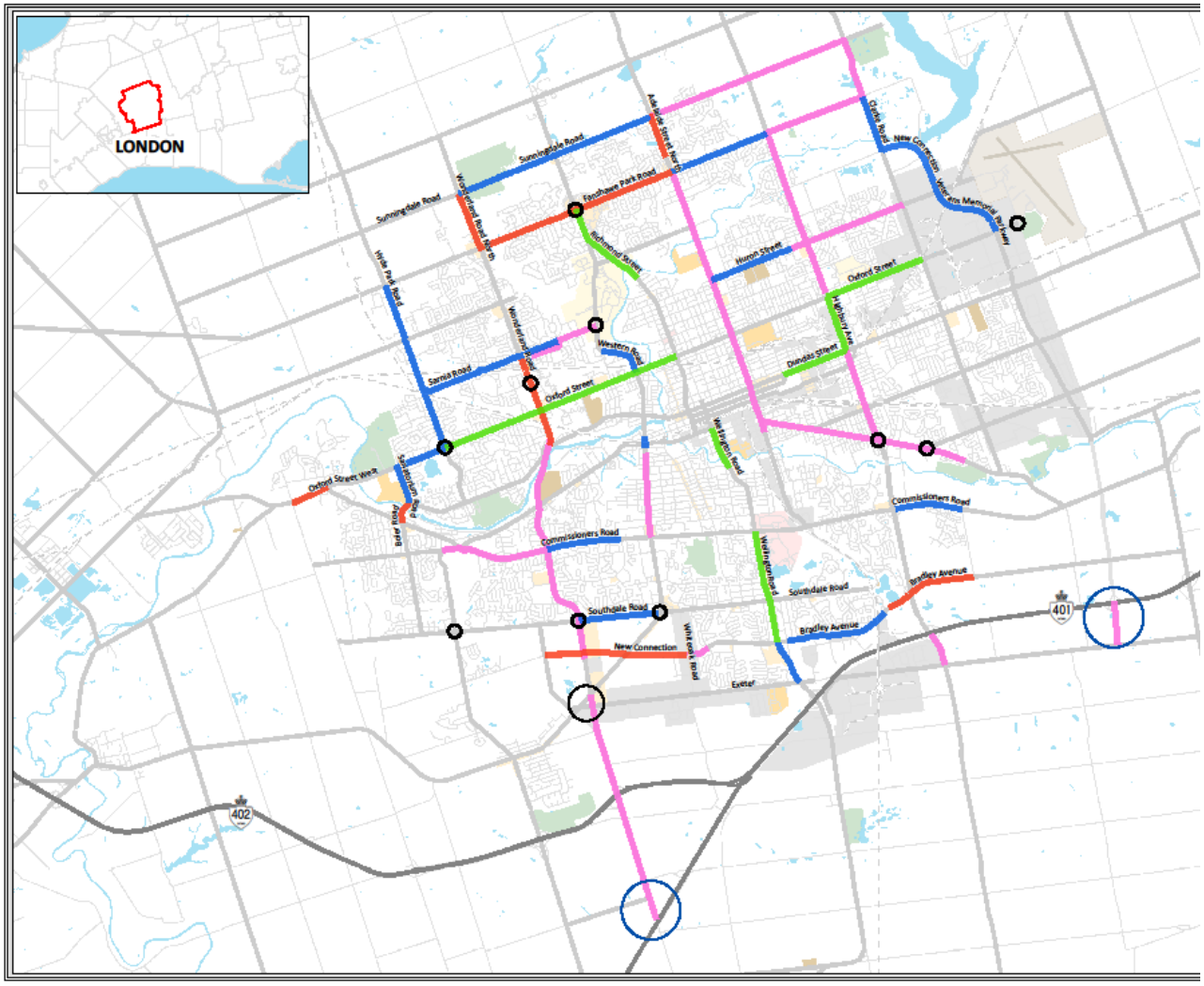
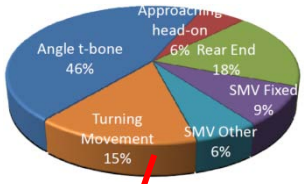


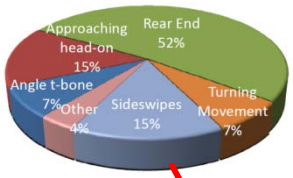
Map Document: (C:\Projects\LondonGIS\Apr_2012\BaseMap.mxd)
4/23/2012 – 11:31:48 AM

A Snap shot of the Future(from the TMP)

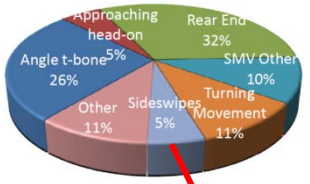
Based on 33 Collisions (2005-2010)

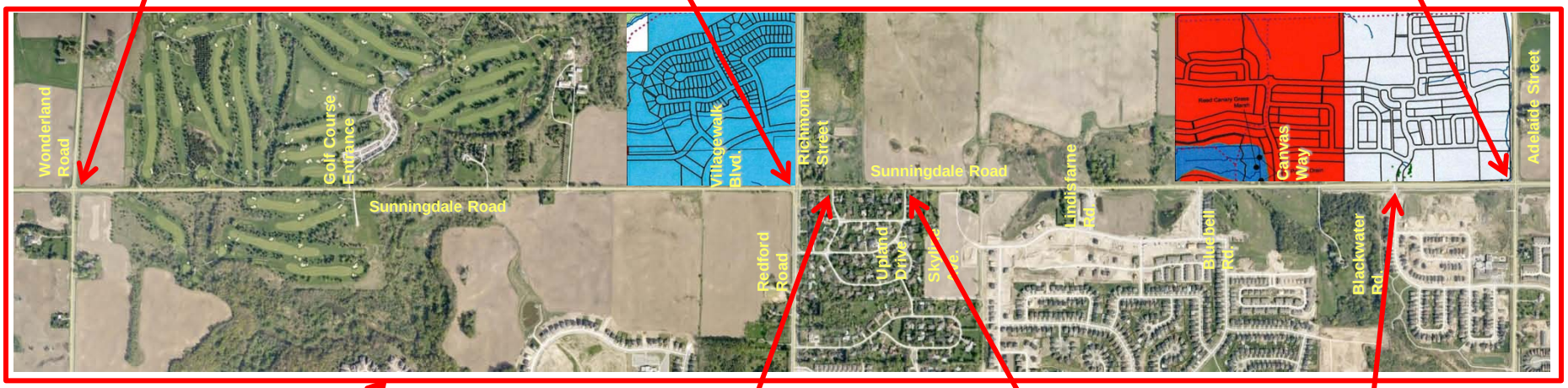


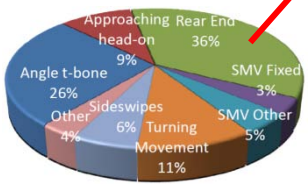
Based on 27 Collisions (2005-2010)



Based on 19 Collisions (2005-2010)







Based on 84 Collisions (2005-2010)

Based on 2 Collisions (2005-2010)

Based on 2 Collisions (2005-2010)

Based on 1 Collision (2005-2010)

Collision Characteristics - Intersections

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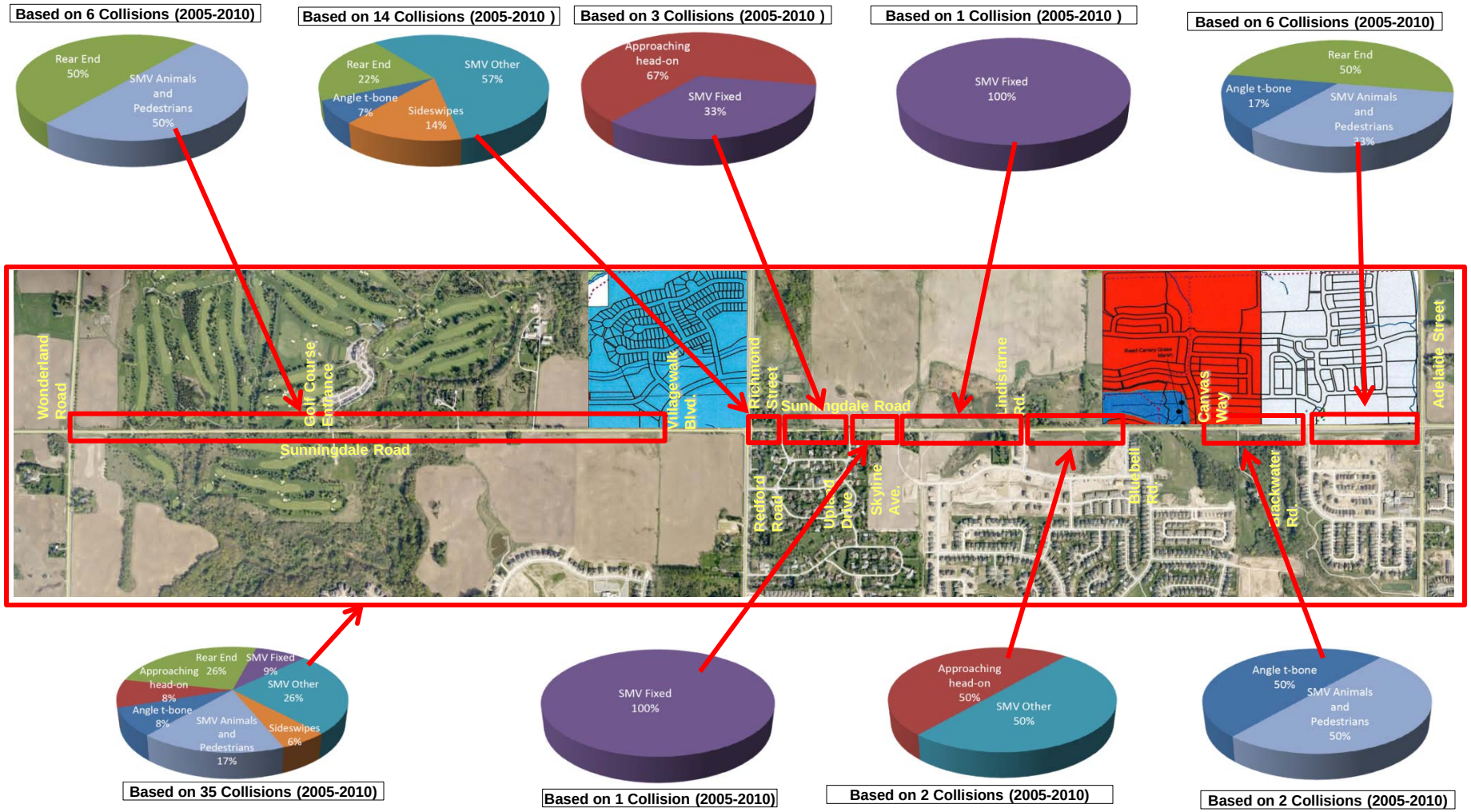

Collision Characteristics – Mid-Blocks

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- Roundabouts are safer than signal controlled
- In general, roundabouts substantially reduce congestion and delays
- Roundabouts allow U-turns
- Compared to intersections, Roundabouts operate more efficiently
- Efficiency is gained by a direct response from the driver to the traffic conditions without any restrictions set by traffic signals
- Less Noise due to breaking and acceleration
- Need less electricity

Benefits of Roundabouts

Signalized Traffic Control

Nodes

Four Lane Cross Section, Two through lanes in each direction, exclusive left and right turn lanes to be considered

Mid Block

An undivided cross section with a two-way-left-hand-turn lane as a centre lane and two through lanes along a bike lane in each direction

Horizontal Alignment

A. Widen along Existing Centre line
B. Centre line shifted to the North
C. Centre line Shifted to the South
D. Mix of North and South Shift of Centre line

Cross Section Type

A. Standard Cross Section (36m ROW two through lanes, one bike lane, one left and one right turn lane in each direction at the nodes. Two through lanes and a bike lane in each direction and a two way turn lane at the midblock).
B. Reduced Standards (intersections 30 ROW midblock 26.9m ROW-if restricted to right-in/right-out).

Roundabout Traffic Control

Nodes

Single Lane Roundabout at Wonderland and two lane Roundabout at Adelaide and Richmond (short term); Two Lane Roundabout at all nodes (Long Term)

Mid Block

Divided cross section with two through lanes and a bike lane in each direction; also a right in/right out traffic control for cross roads. Potential for fully divided cross section (right in right out only)

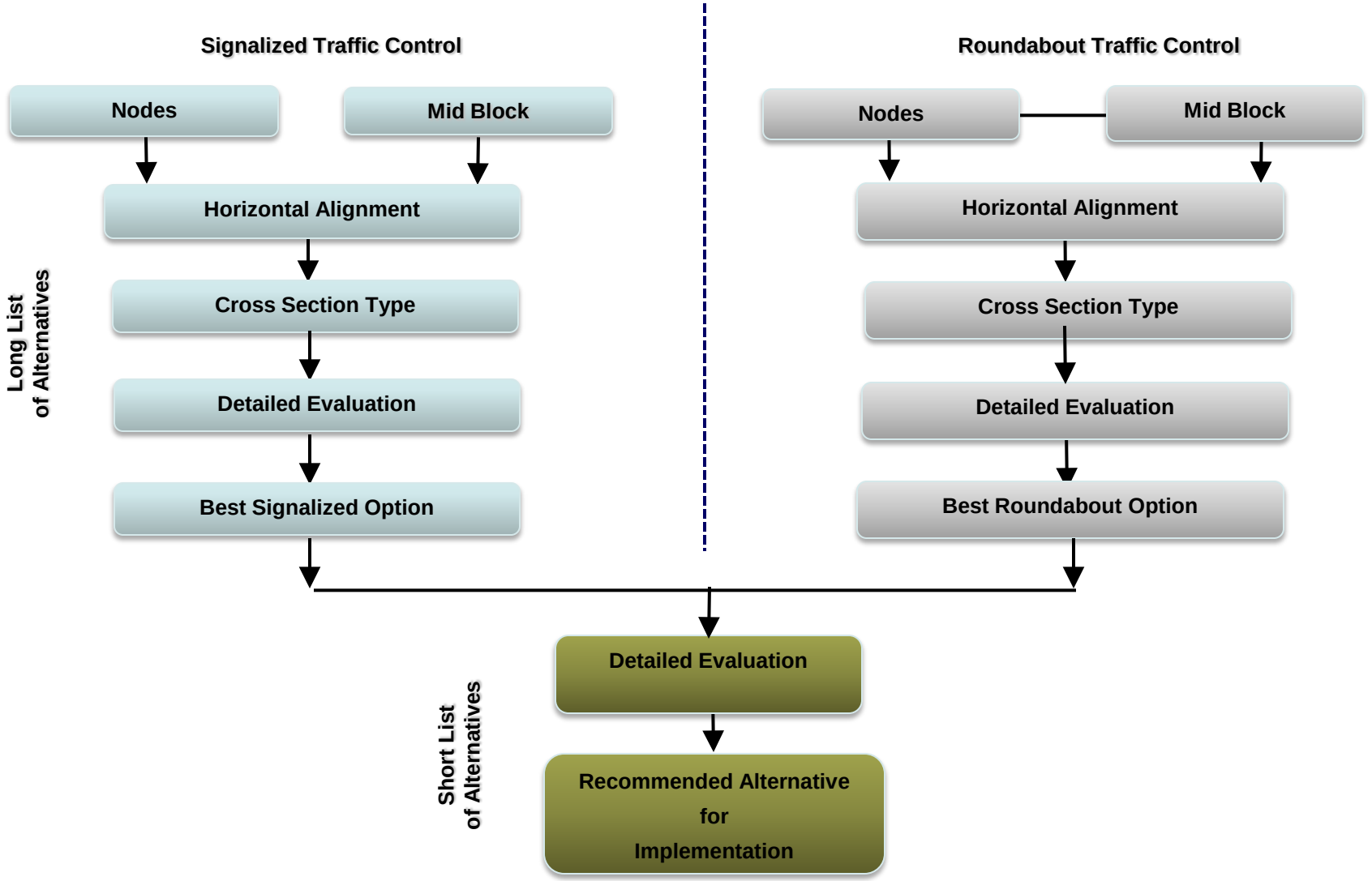
Horizontal Alignment

A. Widen along Existing Centre line
B. Centre line shifted to the North
C. Centre line Shifted to the South
D. Mix of North and South Shift of Centre line

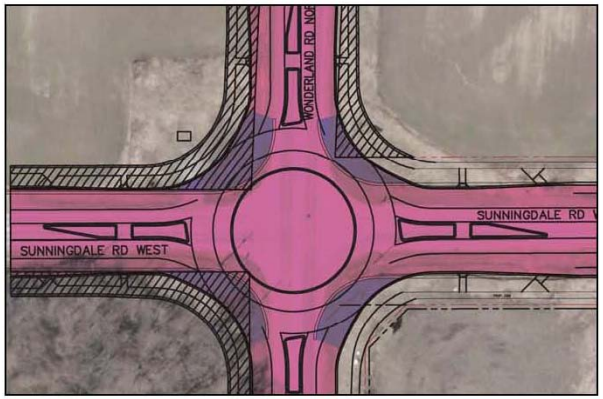
Cross section Type

A. Standard Cross Section – 59.4m ROW . Midblock variable ROW
B. Reduced Standards (24m ROW at nodes and 22.9 at mid-block-if restricted to right-in/right-out).

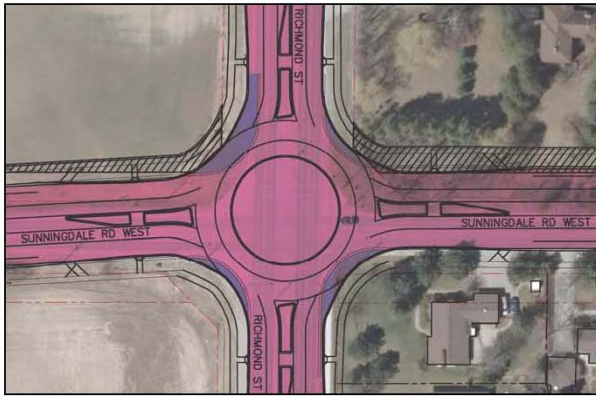
SUMMARY: DESIGN ALTERNATIVES



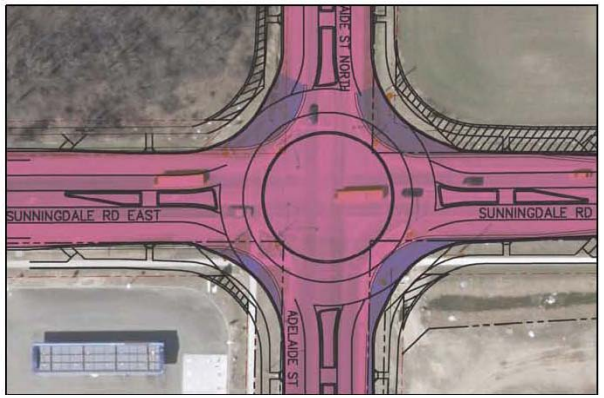
SUMMARY: DESIGN ALTERNATIVES



Wonderland Road @ Sunningdale Road

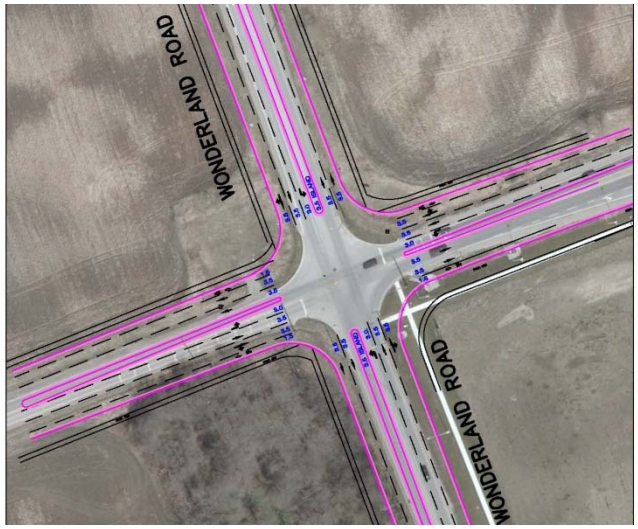


Richmond Street @ Sunningdale Road

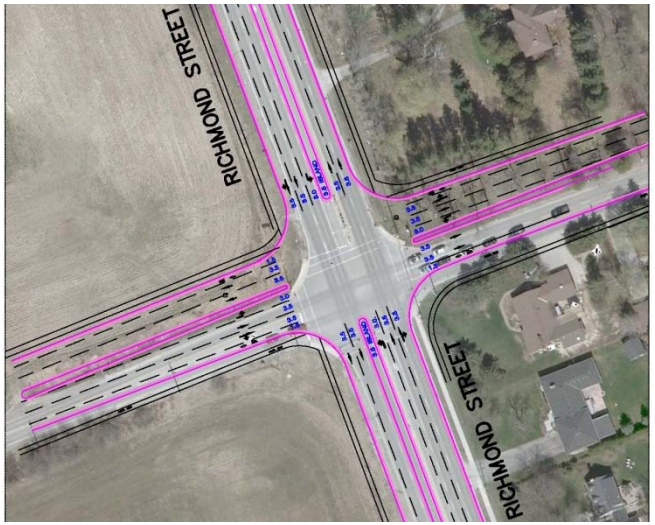


Adelaide Street @ Sunningdale Road

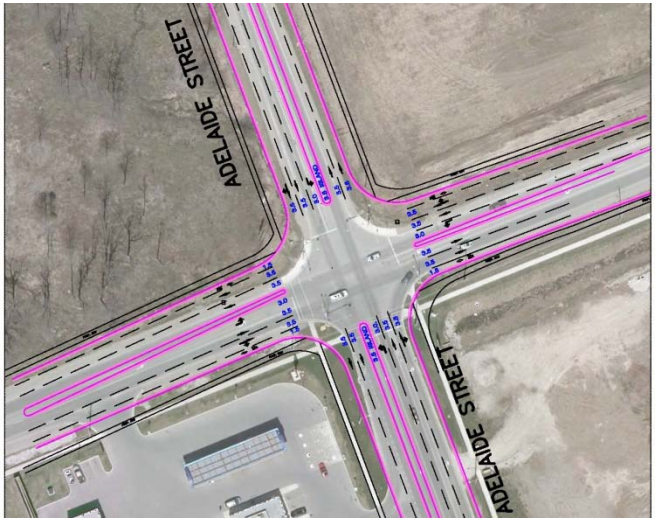
SUMMARY: DESIGN ALTERNATIVES (Intersections)



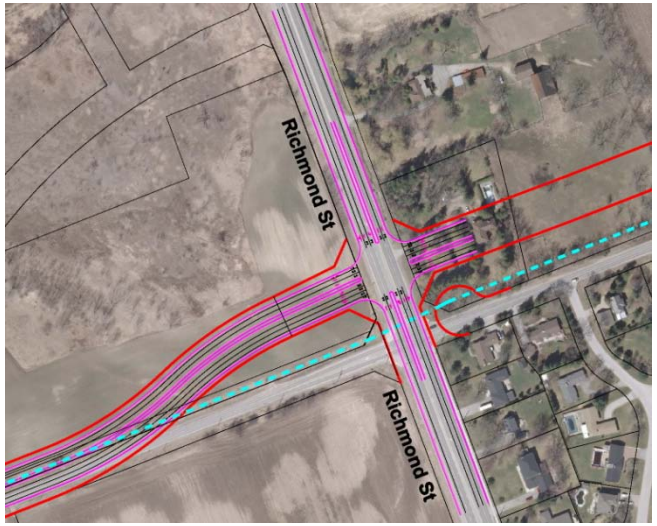
Wonderland Road @ Sunningdale Road



Richmond Street @ Sunningdale Road

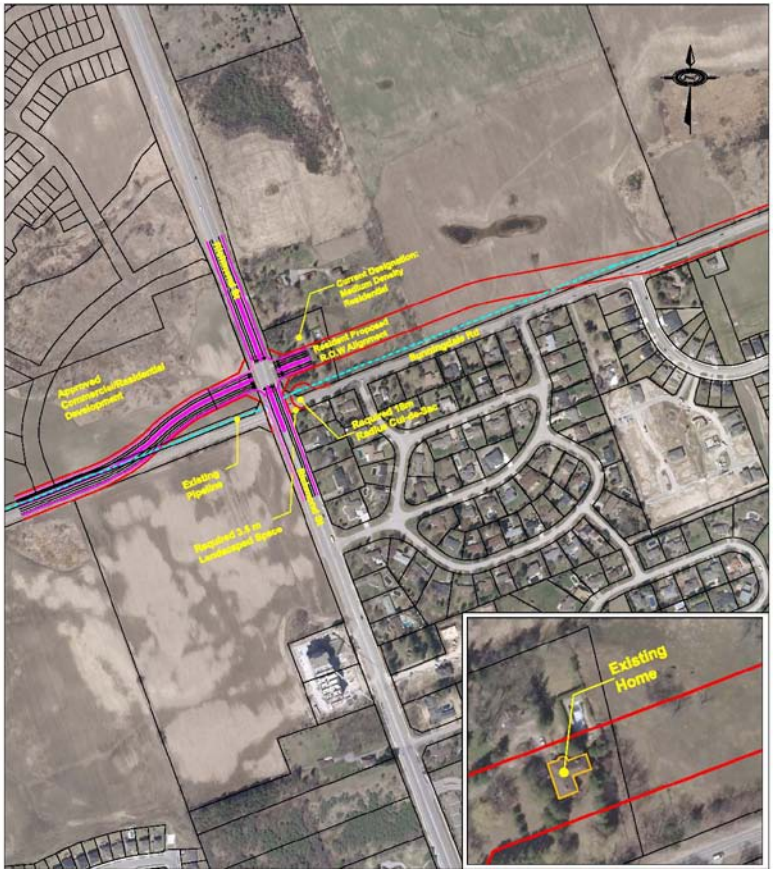


Adelaide Street @ Sunningdale Road



Richmond Street @ Sunningdale Road (Resident's Option)

DESIGN ALTERNATIVES (Signalized Intersections)



Landowner Concept

CATEGORY	DESCRIPTION OF DESIGN ALTERNATIVE: LANDOWNER ALTERNATIVE
CRITERIA	**HORIZONTAL ALIGNMENT A** **Centre line shifted to the north**
Social/Cultural **Potential effects to** • **Archeological and cultural Impacts** • **Public Health and Safety** • **Property impacts/acquisition** • **Aesthetics** • **Proximity Impacts**	• Property requirements (11.0 ha). • Archeological potential has been identified for a portion of the corridor on the north and south side of the existing alignment. • Increased traffic/noise due to extra length of road and breaking at curves. • Least impact to residence on south side of Sunningdale Road at Richmond street intersection. • Greatest encroachment to imperial oil pipeline asphalt coverage not acceptable. • Greatest impact of property to the north. • Conflicts with approved landuse development at the north west quadrant.
Natural Environmental **Potential effects to the natural environment:** • **Floodplain** • **Terrestrial Wildlife** • **Terrestrial Vegetation** • **Aquatic** • **Water Quality Impacts** • **Geology**	• Greatest potential for disturbance to planted trees. • Greatest disturbance to existing street trees - compensation *like for like* if removal required. • Potential for edge effects on bio-communities; and sedimentation/salt/sand runoff into ditches leading to water courses. • Largest amount of impervious pavement. • Extra length and turning circle means more stormwater.
Transportation/ Engineering **Ability to design construct and/ or operate:** • **Level of Service -Operation /efficiency** • **Design Standards** • **Access Considerations** • **Safety** • **Pedestrian Crossings** • **Compliance with policies of the Official Plan and Provincial Policy Statement** • **Current/Future Needs - phasing**	• Supports road network that will accommodate future travel demands at an acceptable level of service. • Meets City design standards and TAC but not the best alignment for driver reaction. • Potential for access impacts to land uses along the north side of the corridor. • Compensation measures required if road improvements encroach on vegetation communities. • Provides improvements to existing: ➢ Lane and shoulder widths including roadway geometrics; ➢ Safety performance improvements with the addition of traffic lanes. bike lanes, and sidewalks. ➢ Accommodation and increased safety for cyclists/pedestrians; ➢ Road base and pavement structure.
Economic **Complete project cost:** • **Initial Capital Cost** • **Property Acquisition Costs** • **Utility Relocation**	• Capital cost of grading higher as more cut and fill required off-of centerline • Property negotiations with owners on north side of road required • High impact of Imperial Oil pipe line • High impact on land owner to the north. • Potential maintenance issues with turn around. • Screening required for headlights from Old Sunningdale Road to Richmond Street. • Low impact on southern properties less, reducing work requirements on private property (drive way & side walk) • Standard cross-section allows for lower cost utility expansion in the future. • Diversion of road impacts utility corridors for hydro, Bell, Rogers, etc. • Impacts existing storm sewer. • Additional construction cost due to more material. • Loss of developable land.

Concept Evaluation

Landowner Alternative

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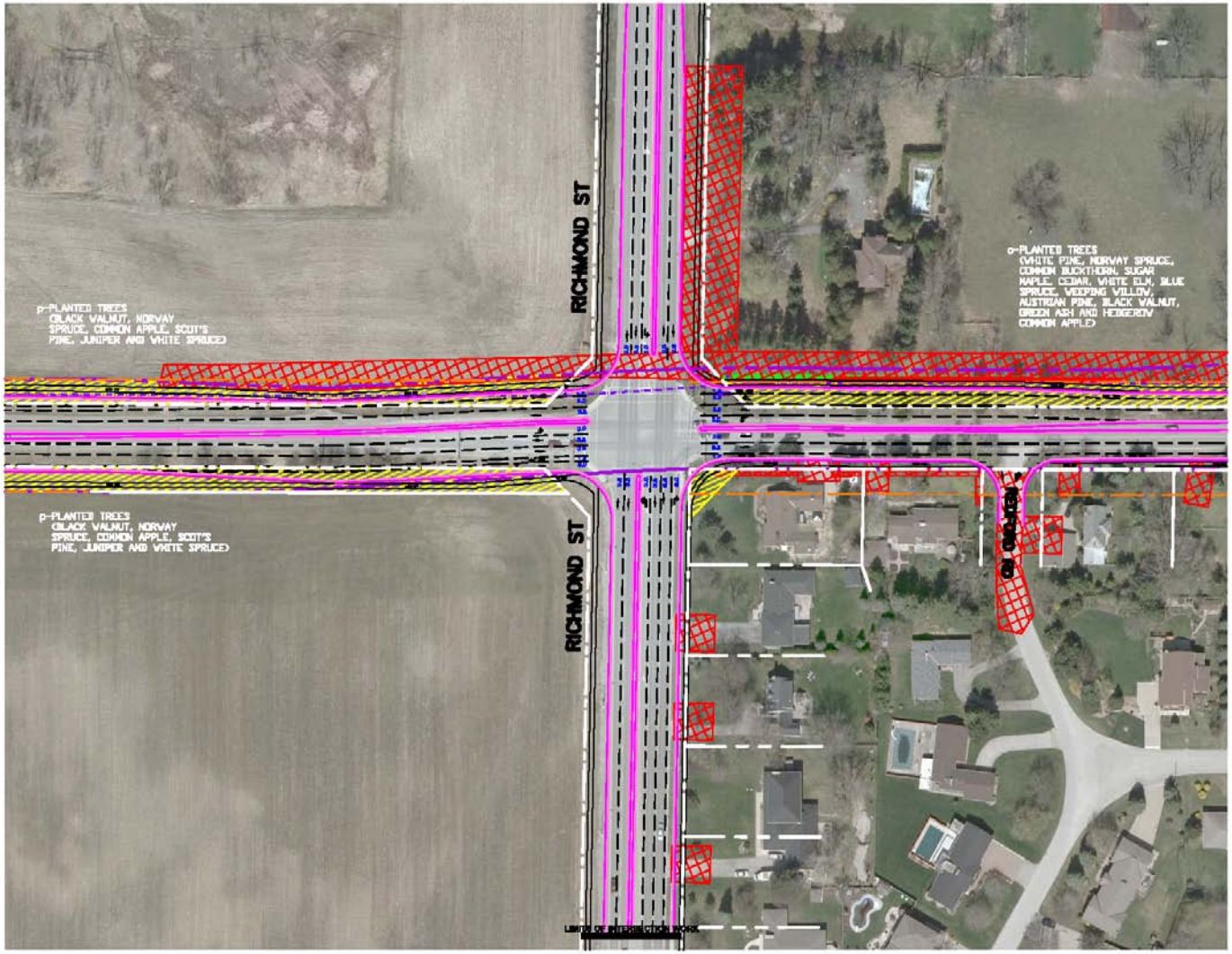

Final Impact of Design on Properties

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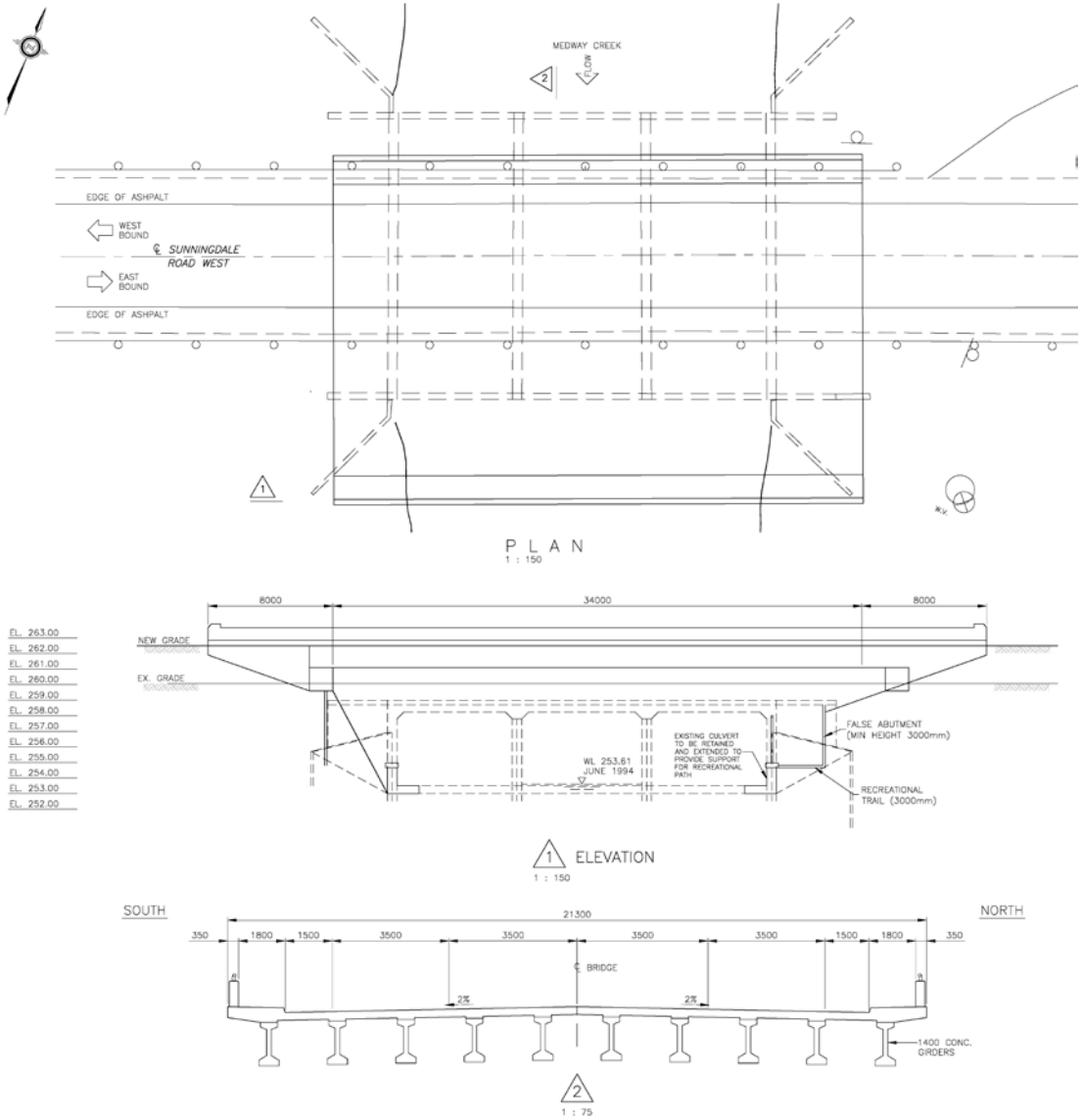
- Large buried Infrastructure exist in the ROW
- Some Property is built close to the edge of the ROW
- Existing farm land are being developed quickly
- Existing Significant Natural Areas
- Need to Replace Several Culverts

OTHER DESIGN ISSUES



PREFERRED ALTERNATIVE: MEDWAY CREEK CROSSING

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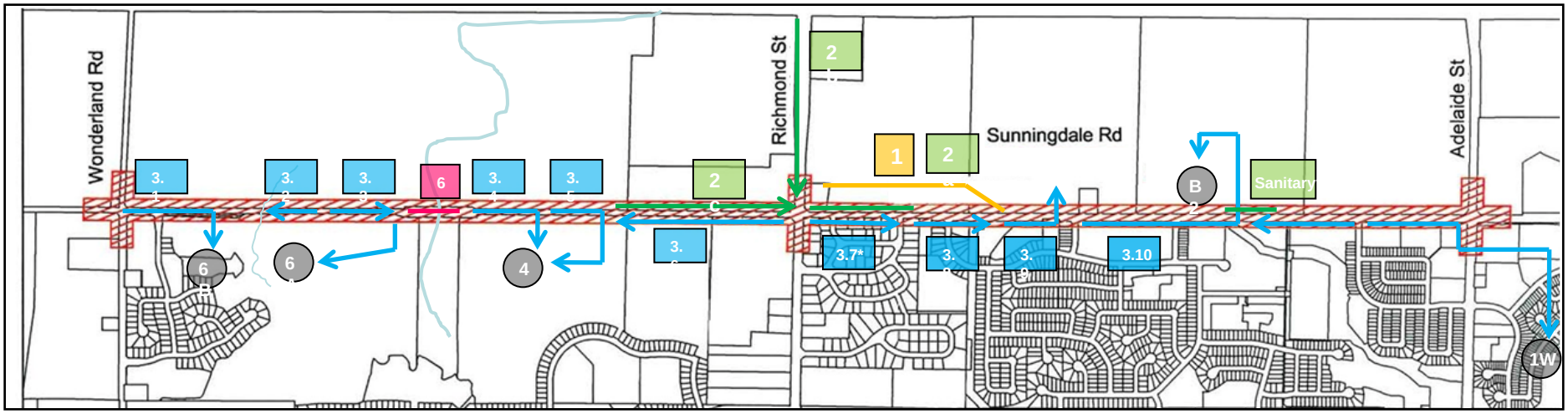

1. Relocation of Imperial Oil pipeline
2a. Potential sanitary service for existing residents in Richmond area as per the local improvement process of development
2b. Potential sanitary service for existing residents in Richmond area as per the local improvement process or development
2c. Potential sanitary service for existing residents in Richmond area as per the local improvement process or development
3. Local storm sewer for road drainage installation and potential outlet throughout figure (storm water erosion and sediment control to be implemented in detailed design)
4. Relocation of existing hydro poles and installation of street lights
5. Minor relocation of bell, cable TV, etc. (throughout the project)
6. Relocation of water main due to grade change at Medway Creek

INFRASTRUCTURE OPTIONS & ALTERNATIVES

Category of Consideration and Criteria	Rationale
Economic	
• Property Costs	• Property costs may vary by location and the number of landowners involved which may result in direct or indirect financial impact to the City. As the number of land owners increase per length of road the cost of negotiations increases as each individual owner may require individual appraisal, survey and negotiations
• Initial Capital Cost	• The cost of implementing the preferred alternative may result in a direct or indirect economic/financial impact to the City and/or proponent.
• Implementation Costs	• Implementation costs and/or temporary vs. permanent costs may result in a direct or indirect economic/financial impact to the City and/or proponents.
• Utility Relocation Costs	• Utility Relocation Costs associated with the preferred alternative may result in direct or indirect economic/financial impact to the City.

• **Social/Cultural**	
• Aesthetics	• Visual appearance with or without mitigation. • Material used for construction.
• Public Health and Safety	• Change in quality of life (increase level of service, reduced congestion and travel time.). • Safety and movement of pedestrians/ vehicular traffic.
• Access	• Pedestrian access. • Vehicular access.
• Proximity Impacts	• Vegetation removal, wind screening, shade on adjacent buildings and activities, etc. • Disruption during construction. • Change in land use/ layout due to property loss. • Change in property value. • Deposition of sediment on adjacent properties. • Effects on other utilities/relocation.
• Property Acquisition	• Area of land required, and its impact on usage of the property.
• Architectural and Cultural/Heritage Resources	• Disruption of site/structures having significant archaeological, historical, or architectural value.

EVALUATION CRITERIA

Natural Environment	
• Wildlife	• Reduction or deterioration of wildlife habitat. • Area of wildlife habitat affected. • Effects on wildlife habitat related to food and shelter. • Effects of contamination on wildlife. • Effects of timing of construction on spawning and breading periods. • Production of new habitat.
• Vegetation	• Removal or disturbance of significant trees and/or ground flora. • Area of terrestrial vegetation and woodlots affected (gross ha). • Changes in vegetation composition.
• Aquatic	• Change or removal of existing habitat. • Effects of timing of construction. • Lowering of water table.
• Floodplain	• Area of identified floodplains, conservation lands and recreational corridors affected (gross ha). • Change in use and related approval requirements.
• Water Quality	• Change in water quality downstream • Change in water temperature downstream • Interference with flows. • Contamination of surface watercourse • Increased surface runoff. • Sedimentation of adjacent water bodies due to construction • Change in form/function/location.
• Geology	• Slope stability. • Groundwater flow. • Infiltration. • Ground contamination.

EVALUATION CRITERIA

Transportation/Engineering	
• Design Standards	• Sight distance. • Geometrics: Consistency with prevailing design standards/guidelines (i.e. horizontal and vertical road alignments and roadway cross-section).
• Operational Efficiency	• Reduce traffic delays • Improve traffic capacity • Improve intersections and/or roadways to improve traffic operations. • Reduce conflicts by separation in time or space
• Access Considerations	• Changes to existing entrances (long term) • Access during construction (short term) • Grades
• Safety	• Pedestrian crossings • Vehicular • Roadside hazards
• Level of Service	• Impacts on future transportation
• To support the policies of the Official Plan/PPS	• Change in land use due to property loss. • Effects of relocation or removal of homes, businesses or institutions. • Conflicting uses.

EVALUATION CRITERIA

Thank You This Was a Great Project