

WELCOME

Public Information Centre (PIC) #2
Municipal Class Environmental Assessment Schedule 'C'

Arterial Roads Within Highway 427 Industrial Secondary Plan (Area 47)
Part A Roadways – Coleraine Drive and Arterial A2

Date: November 14, 2019

Time: 6:00 pm to 8:00 pm

Location: Gore Meadows Community Centre - Community Room
10150 The Gore Rd, Brampton, ON L6P 0A6

Welcome to the Public Information Centre

Tonight, we invite you to....



Your feedback is important and will be incorporated and considered in the design process!

Comment Deadline is **November 29, 2019**

Study Area and Structure

Study Area

- Located in the northeast area of the City of Brampton
- Strategically located at the York/Peel Boundary and close to Highway 427, the CP Railway Terminal and the future GTA West Corridor.

Study Structure

This Schedule 'C' Class Environmental Assessment is being carried out in two parts, as illustrated in the figure right and further explained below. Technical studies were completed for both Part A and B at the same time. **This PIC is only for Part A roadways.**

FOCUS OF THIS PUBLIC INFORMATION CENTRE

PART 'A' ROADWAYS

Part 'A' roadways will be owned and operated by the Region of Peel.

They include:

- Arterial A2 – a new 6 lane north-south roadway that connects Major Mackenzie Drive to Mayfield Road.
- Coleraine Drive – an existing roadway which will be widened to 4 lanes and be upgraded to include curb and gutter and multi-use pathways.

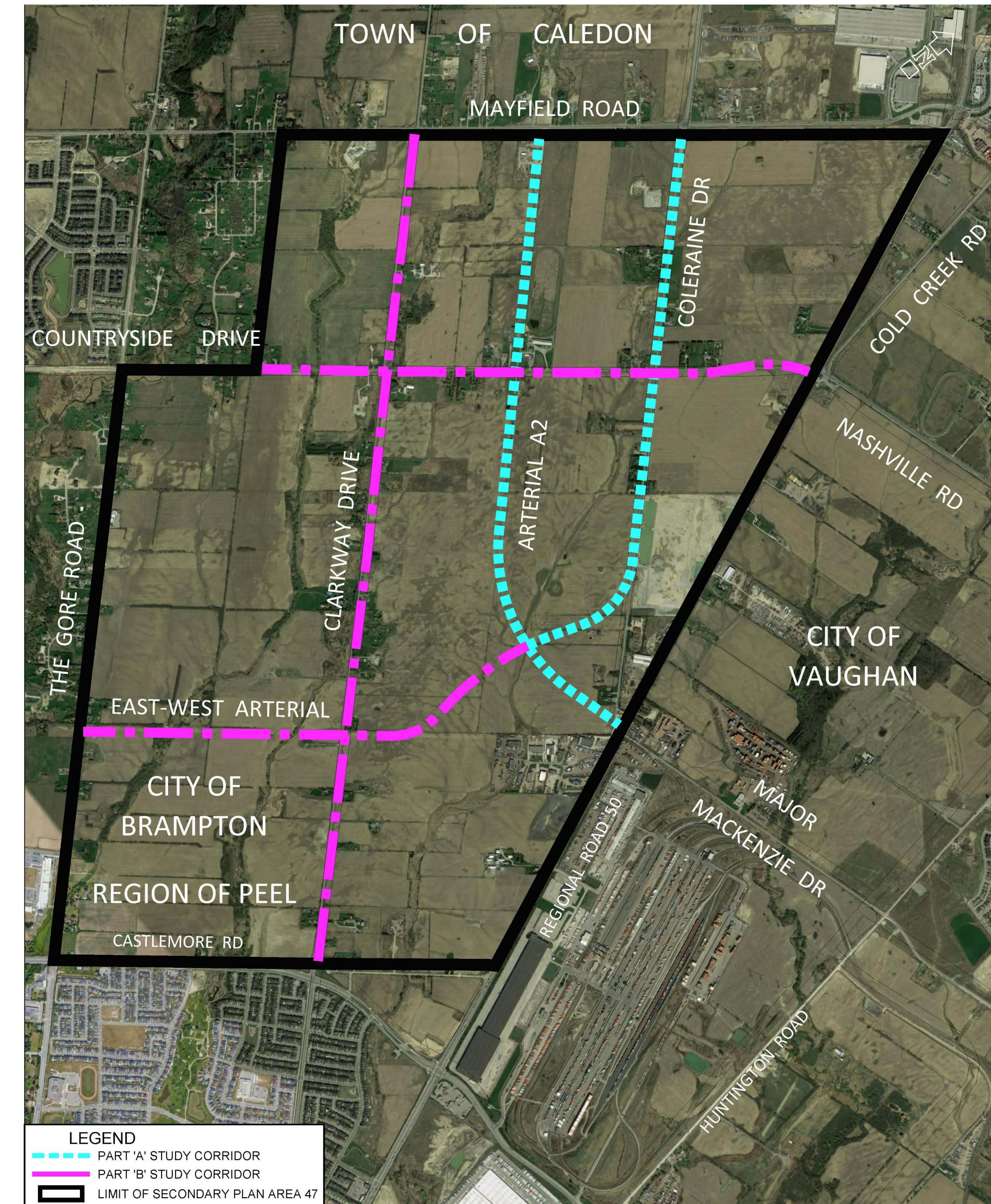
PUBLIC INFORMATION CENTRE FOR THESE ROADS TO BE HELD IN MID 2020

PART 'B' ROADWAYS

Part 'B' roadways will be owned and operated by the City of Brampton.

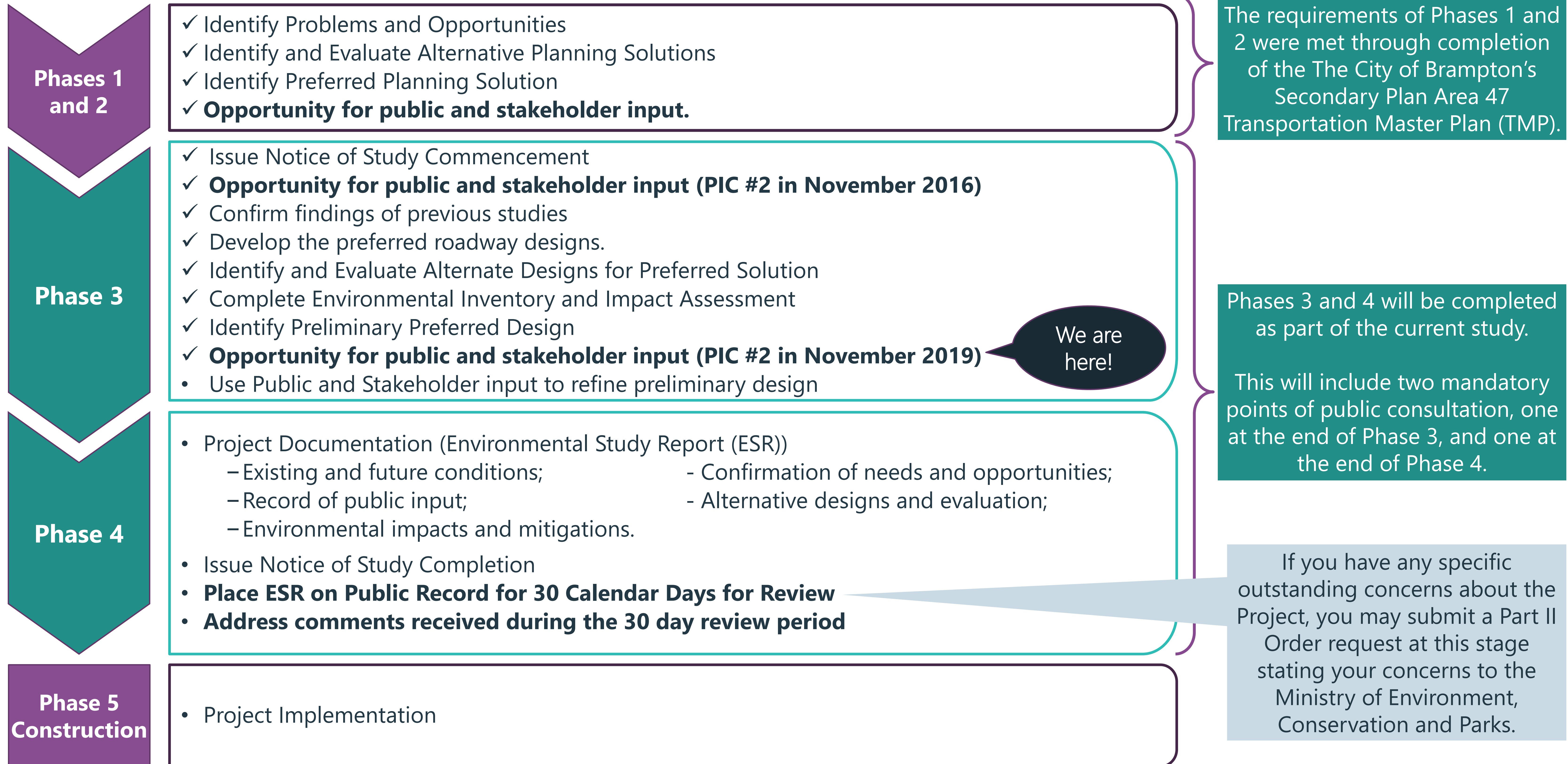
They include:

- Countryside Drive - an existing roadway which will be widened to 4 lanes and be upgraded to include curb and gutter and multi-use pathways.
- Clarkway Drive – an existing roadway which will have portions widened to four lanes and upgraded to include storm sewers, sidewalks and cycle lanes
- East-West Arterial – a new four lane roadway connecting The Gore Road to Arterial A2.



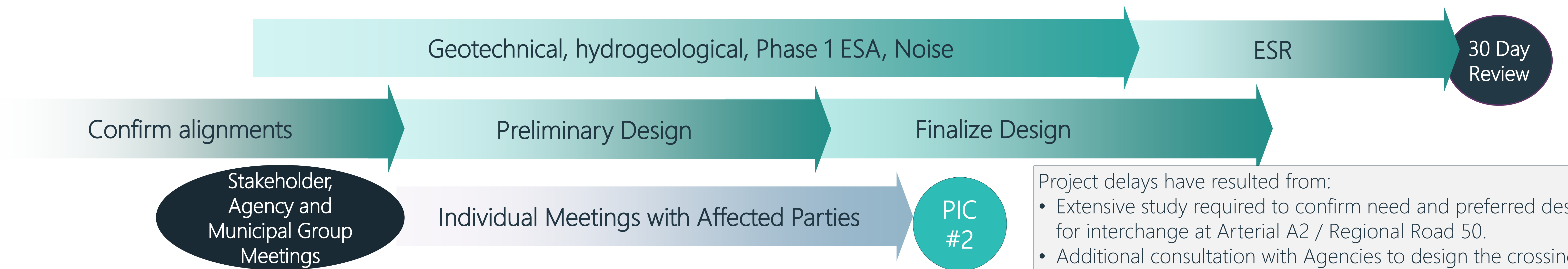
Environmental Assessment Process

The current study is being completed as two coordinated Schedule 'C' Municipal Class Environmental Assessments (one for regional roads and one for city roads). The Class EA process is regulated by the Ministry of the Environment, Conservation and Parks and is followed to make sure environmental impacts are identified and mitigated, and that the public is informed of major works being completed in their community.



Project Timelines

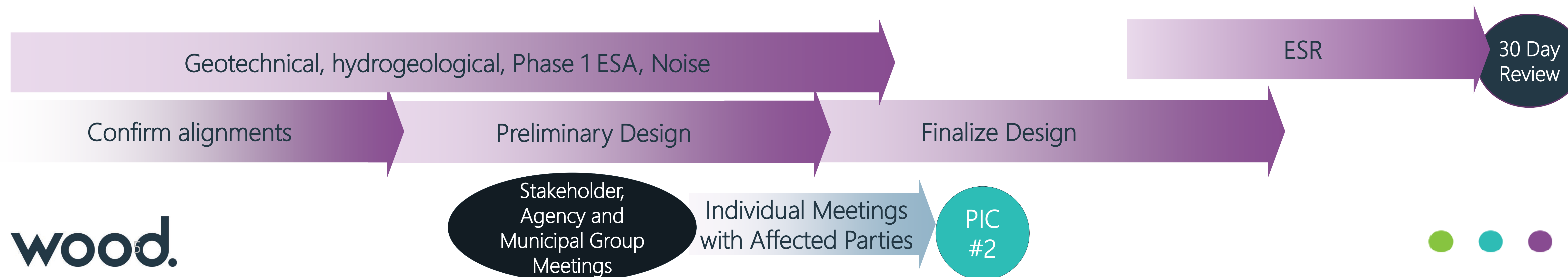
PART A ROADWAYS 2019-2020 (Arterial A2 & Coleraine Drive)



Project delays have resulted from:

- Extensive study required to confirm need and preferred design for interchange at Arterial A2 / Regional Road 50.
- Additional consultation with Agencies to design the crossings of Rainbow Creek.
- Timelines to receive creek models from external sources
- Timelines to receive permissions to enter.
- Consideration of additional design alternatives brought forward by stakeholders.

PART B ROADWAYS 2019-2020 (TENTATIVE) (Countryside Drive, Clarkway Drive, East-West Arterial)



Problem and Opportunity Statement

Problem or Opportunity Identified at Start of Study	How that Problem or Opportunity Has Been Addressed Through This Study
Provide enhanced inter-regional connectivity	Significant improvements to the existing intersections along Regional Road 50, at the York/Peel boundary will provide better movement between the Regions. In the future, Arterial A2 will be continued further north – potentially connecting to Emil Kolb Parkway and improving connection into Caledon.
Provide access to proposed development	A new east-west (East-West Arterial) and north-south (Arterial A2) arterials will improve access.
Address anticipated traffic capacity issues resulting from extension of Highway 427 to Major Mackenzie Drive, as well as development of the study area	Two new arterial roads are being added and existing arterial roads are being widened in preparation for development traffic. Arterial A2 has been aligned to provide a better connection between Major Mackenzie Drive, Mayfield Drive and the future GTA West.
Improve roadway geometrics to meet or exceed City and Regional standards	The ‘bumps and dips’ on existing roads will be improved to meet or exceed design standards. Skewed intersections, including Coleraine Drive at Regional Road 50, will be corrected to improve safety.
Provide transit, pedestrian and cycling facilities	All arterial roadways within the study area will have either sidewalks and cycle lanes, or multi-use pathways on both sides to make it much safer for cyclists and pedestrians to move through the transportation network. Space has also been reserved for bus bays at all major intersections and the space between the back of the curb and the sidewalk on all roads is wide enough for bus pads and shelters.
Improve traffic, pedestrian and cyclist safety	A ‘Vision Zero’ assessment was completed for intersections within the study area. This information was used to identify a preferred design that minimizes risks to road users.
Improve intersection safety and operations	The current study recommends installing traffic signals at all major intersections. Right and left turning lanes are also being recommended to reduce wait times at intersections.
Design watercourse crossings to enhance hydraulics, stream function and fisheries and wildlife passage	Wherever possible, new or replacement bridges will be designed to accommodate natural stream processes (erosion/meander) and allow for passage of fish and wildlife.
Address structural deficiencies	All bridges and structural culverts on study roads are currently in good condition, however several are too small to allow for animal passage or to convey design storms (leading to flooding). Any existing bridges that are not currently large enough to accommodate the Regional design storm will be increased to the extent practical (while limiting impacts to nearby properties).
Improve pavement conditions	All roadways impacted by the current study have been identified for full reconstruction. Wherever possible, existing road surfaces will be pulverized and used as part of the road base to reduce environmental impacts.

What We Heard During PIC # 1

Primary Comments from Stakeholders at PIC #1	How that input influenced the preferred design
Concerns of the impact of GTA West corridor on design of road network	The arterial road network within SP47 has been designed to include flexibility for future extension of Arterial A2 to connect to GTA West north of the study area – if and when GTA West gets built. More information is provided on a later display panel.
Preference of a T-intersection at Mayfield Road and Arterial A2	Based on our analysis, we are recommending a T-intersection of Arterial A2 and Mayfield Road.
Some of the intersections within the study area have issues with alignment and sightlines	We are addressing the alignment issues at intersections of Coleraine Drive and Countryside Drive with Regional Road 50. All major intersections will be signalized and have improved sight distances, signs, lighting, and pavement markings.
Questions on the final alignment of Rainbow Creek	There's a later panel that discusses this. We've designed the roads and bridges according to future plans for Rainbow Creek.
Concerns of the impacts on the proposed park at the east end of the East-West arterial.	The preferred design is respectful of the boundaries set for the planned Community Park at Countryside Drive and East-West Arterial.
Concern about accessing residential properties if the roadway is widened to 4 lanes.	If your property is located away from an intersection, proposed concrete medians will have a break in them to allow you to move there and wait for a break in traffic before making a left turn (like a center left turn lane). If you're near an intersection, this may be different. More information will be available once the Access Management Plan is completed.
Concern that the rich history of the area is not being considered	While difficult to incorporate history into roadway design, interpretive panels will be recommended near key views and heritage properties. Portions of Clarkway Drive (not part of this PIC) will also retain its rural character.
Concern that digital copies are not accessible to the elderly who own properties in the area	Thanks for the great feedback. We've brought hard copies of more detailed information to share tonight. Please ask at the sign-in desk if you need a hard copy.
Concern that Coleraine Drive will be used more than Arterial A2 as it is the only roadway that ties into the large Canadian Tire property in Bolton/Caledon	Arterial A2 will eventually continue north and relieve the traffic on Coleraine Drive. Timing for this extension is not known at this time.

Existing and Future Land Use

Secondary Plan Area 47 is the last significant greenfield area within the City of Brampton. The study area is close to the future convergence point of three of the most important transportation/goods movement corridors within the Greater Golden Horseshoe – Highway 427, GTA West (future), and the CN Rail Line. As such, the comprehensive planning, design and integration of the arterial roads network is critically important.

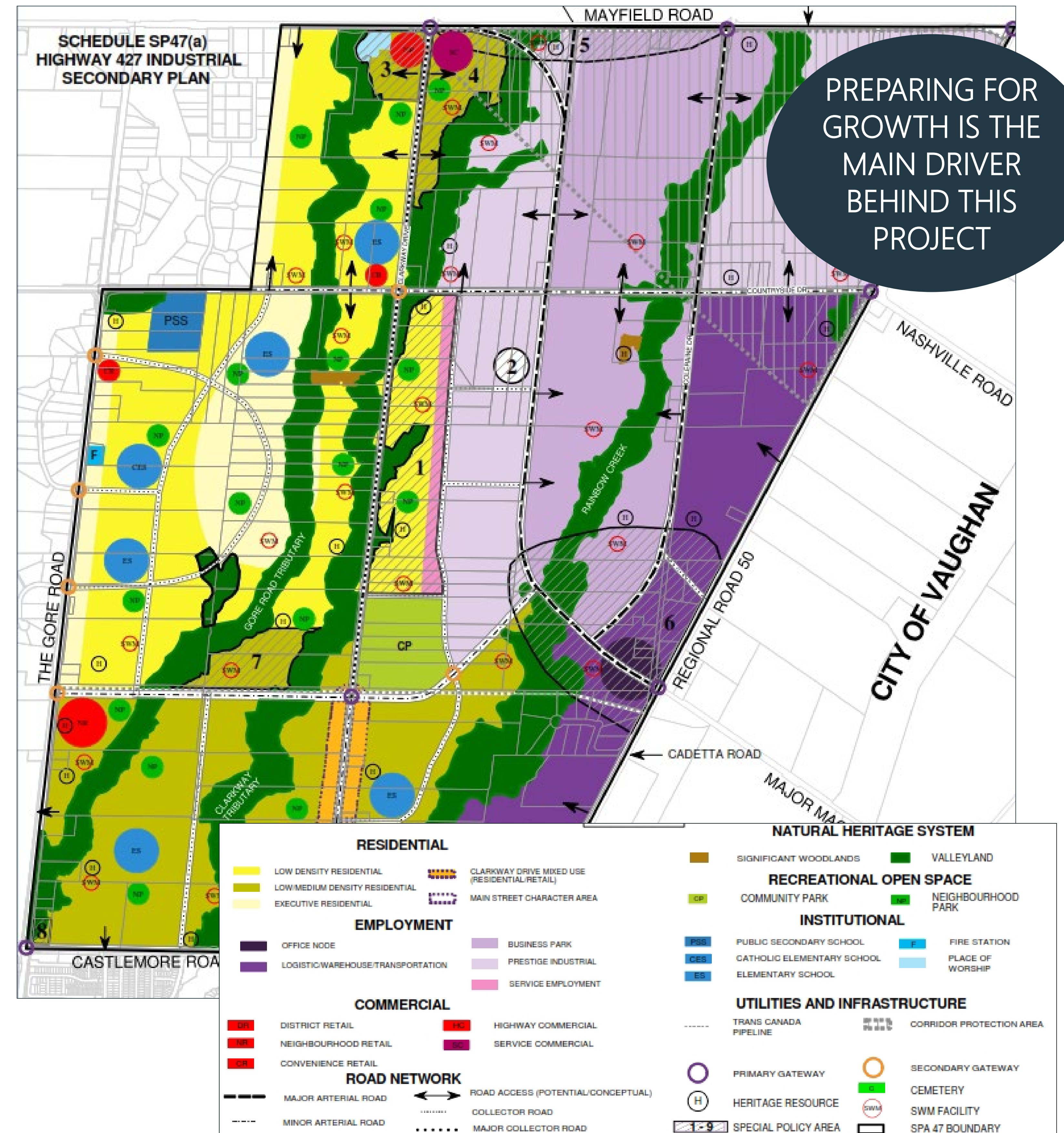
EXISTING LAND USE

- Primarily agricultural and rural residential
- Some industrial and commercial developments
- Currently less than 100 households and 300 jobs within study area
- Identified as residential, industrial and Corridor Protection Areas in the City of Brampton’s Official Plan

FUTURE LAND USE

- The entire study area is subject to the recommendations of the Secondary Plan for Special Policy Area 47 (Official Plan Amendment), illustrated in the figure to the right

Growth Area	Population			Employment		
	2021	2031	2041	2021	2031	2041
SP 47	5,080	23,480	25,970	1,960	9,960	13,650
Brampton	686,800	836,800	888,600	244,030	292,430	321,960

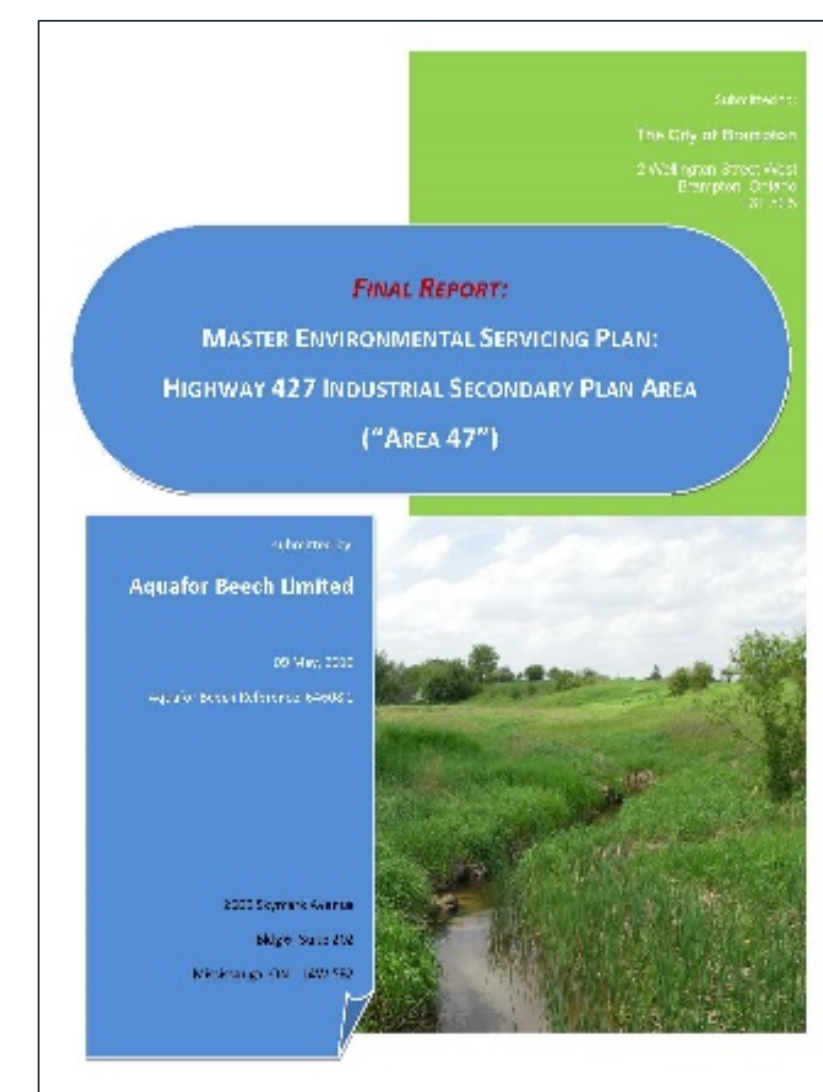


Planning and Policy Context

The current study builds on the following earlier consultative planning and policy studies:



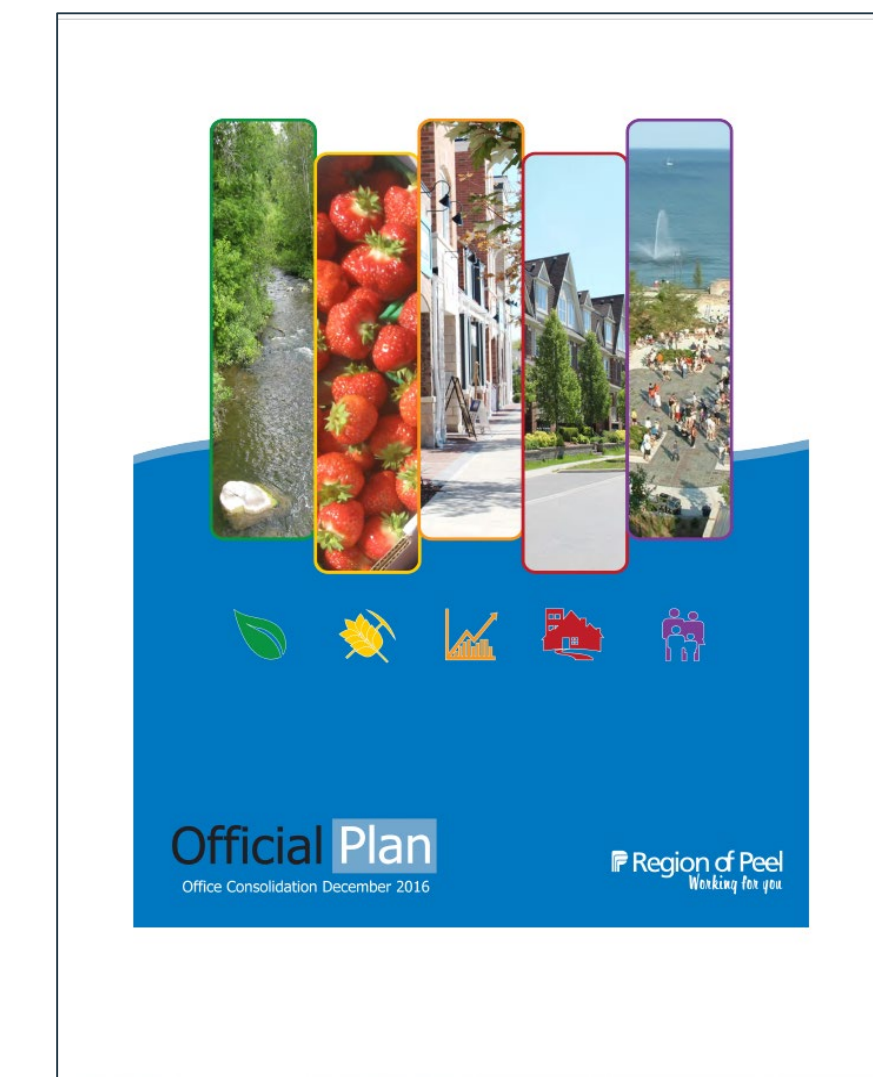
Forecasts Peel's population growth to 1.97M and employment growth to 970k by 2041.



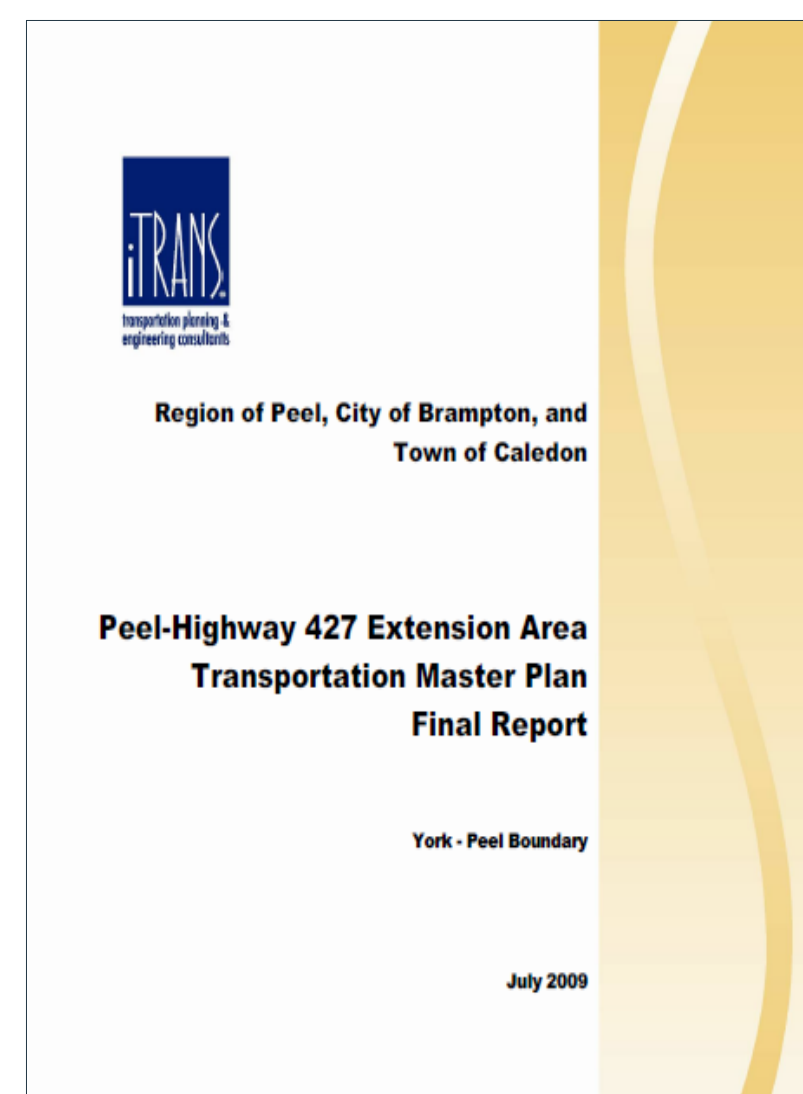
Identifies stormwater & natural heritage management strategies for future development



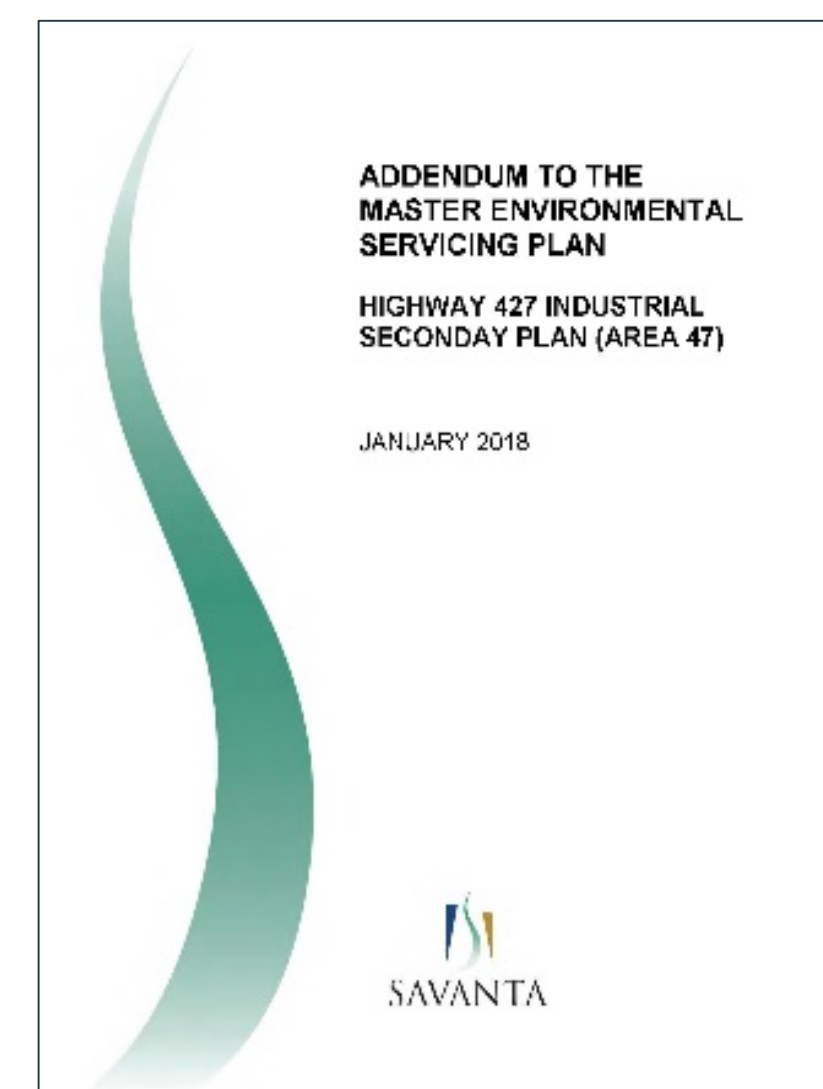
Forecasts the City of Brampton population and employment.



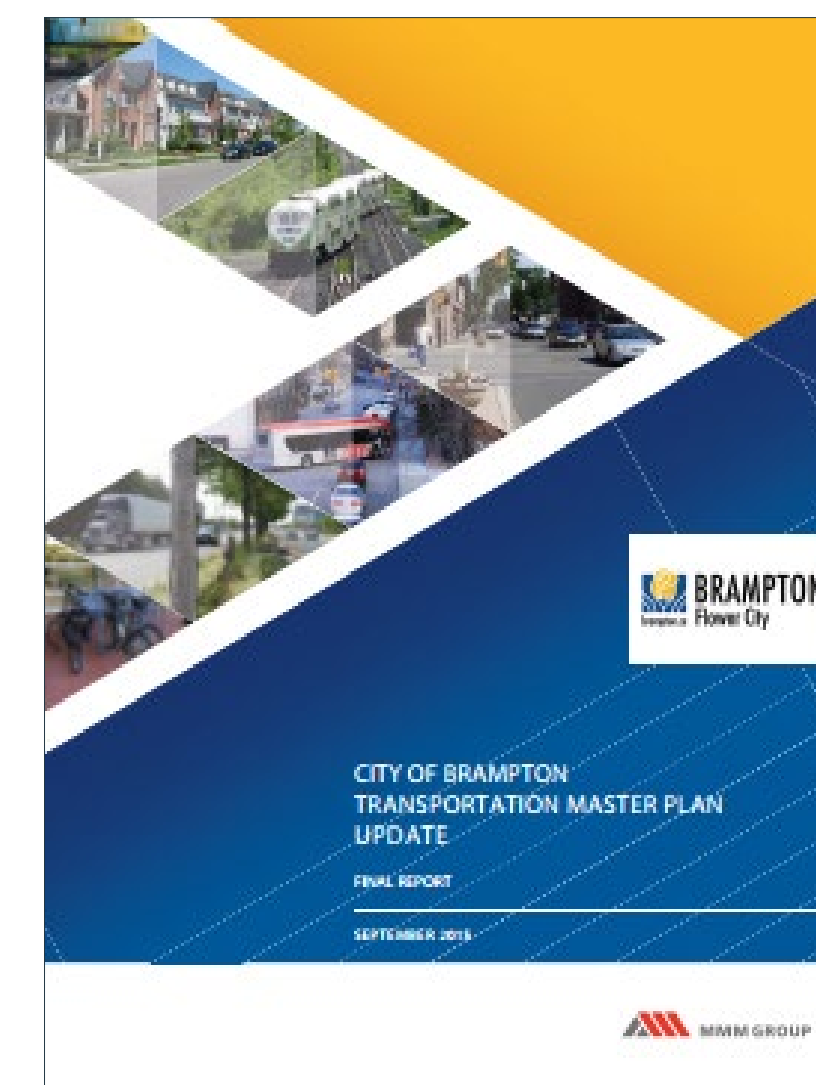
Identifies Regional population and employment growth



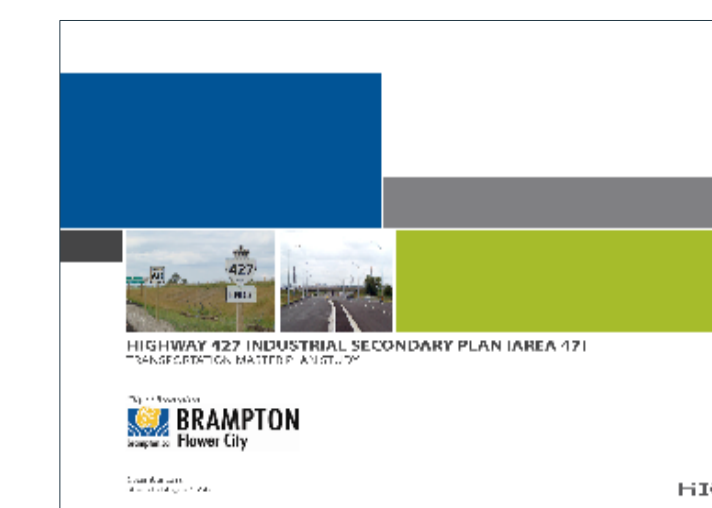
Recommends Arterial A2 and identifies intersection issues along Regional Road 50.



Strategy for reconfiguration and significant improvement to the Rainbow Creek corridor.



Identifies city road network needs to 2041, including road widening and construction of arterial roads within SP47.



Identifies road network requirements within SP47 Area










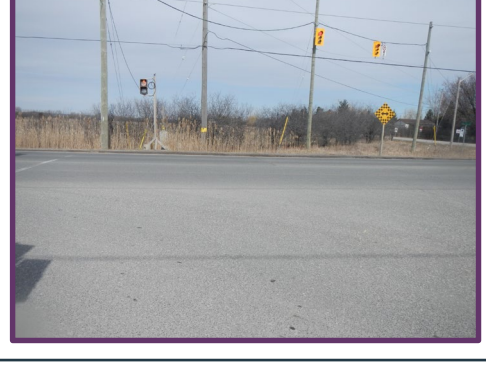


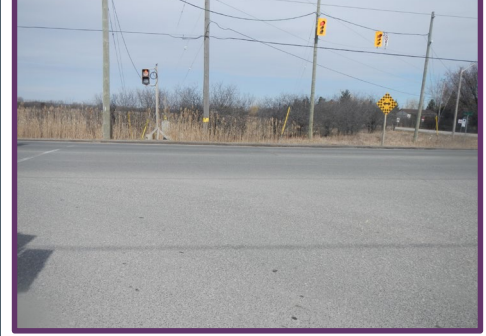



Brampton's Vision to 2040, includes recommendations for multi-modal transportation networks, green spaces, and a focus on active living

Transportation Safety

Opportunities to Improve Transportation Safety

Opportunities to improve existing safety conditions were identified through both site investigation and statistical analysis of crash data. Road reconstruction projects like this provides opportunities to implement potential safety improvements.

Observed Conditions		Potential Safety Improvements	
Roadside slopes are steep with little to no shoulder meaning vehicles that drive off the road may not be able to recover.			Both Coleraine Drive and Arterial A2 will be designed and built with what is called an 'urban' cross-section, meaning ditches will be replaced with flat boulevards to beyond the clear zone and the roads will have curb and gutter.
Fixed objects (wooden poles, culverts, etc.) are located close enough to the road to be a hazard.			The proposed cross-sections are wide enough that hydro poles will be located far enough from the road that they don't pose a hazard.
Some existing guiderail are not compliant with current standards.			Guiderail warrant analysis will be done as part of preliminary design (before the end of this project). Proper steel beam guiderail systems will be designed for wherever they are needed.
Lack of proper pedestrian, cyclist, and transit facilities within the study area. This includes several worn crosswalks at signalized intersections.			Multi-use pathways will be provided on both sides of Coleraine Drive and Arterial A2. Bus bays will be provided at all major intersections, with enough space to fit bus pads/shelters where needed.
Push buttons and audible tones at traffic signals do not all meet requirements of the Accessibility for Ontarians with Disabilities Act (AODA)			AODA-compliant traffic signals will be installed at all signalized intersections.
Alignment of existing intersections like Coleraine Drive at Regional Road 50 do not meet current design standards and need to be corrected.			The intersection of Coleraine Drive and Regional Road 50 is being replaced by an improved 90 degree intersection between Arterial A2 and Regional Road 50.
Truck restrictions on Coleraine Drive do not allow trucks for commercial use.			Roads will be designed to allow truck movements

Traffic Operations

Detailed traffic studies were completed to identify existing and potential future (2041) issues with mobility along the arterial roads within Secondary Plan Area 47. Once issues were identified, the traffic and transportation design teams worked together to develop and test practical solutions and arrive at a preferred design for optimum traffic operations.

Future Traffic Conditions Without Proposed Improvements

The SP47 Transportation Master Plan (SP47 TMP, 2013) examined anticipated traffic operations within the study area both without, and with, a series of alternative improvement solutions. As illustrated below, if no additional arterial road capacity is added, drivers will experience significant travel delays throughout the network within the next 10 years.

LOS	Description of Operations	LOS	Description of Operations
A	Little to no delay at intersections	D	Frequent queuing and delay (< 55 sec/vehicle)
B	Minimal delay	E	Significant delay and queuing, occasionally vehicles may need to wait for a second green
C	Some queuing and delay (<35 sec/vehicle)	F	Intolerable delays and queues.

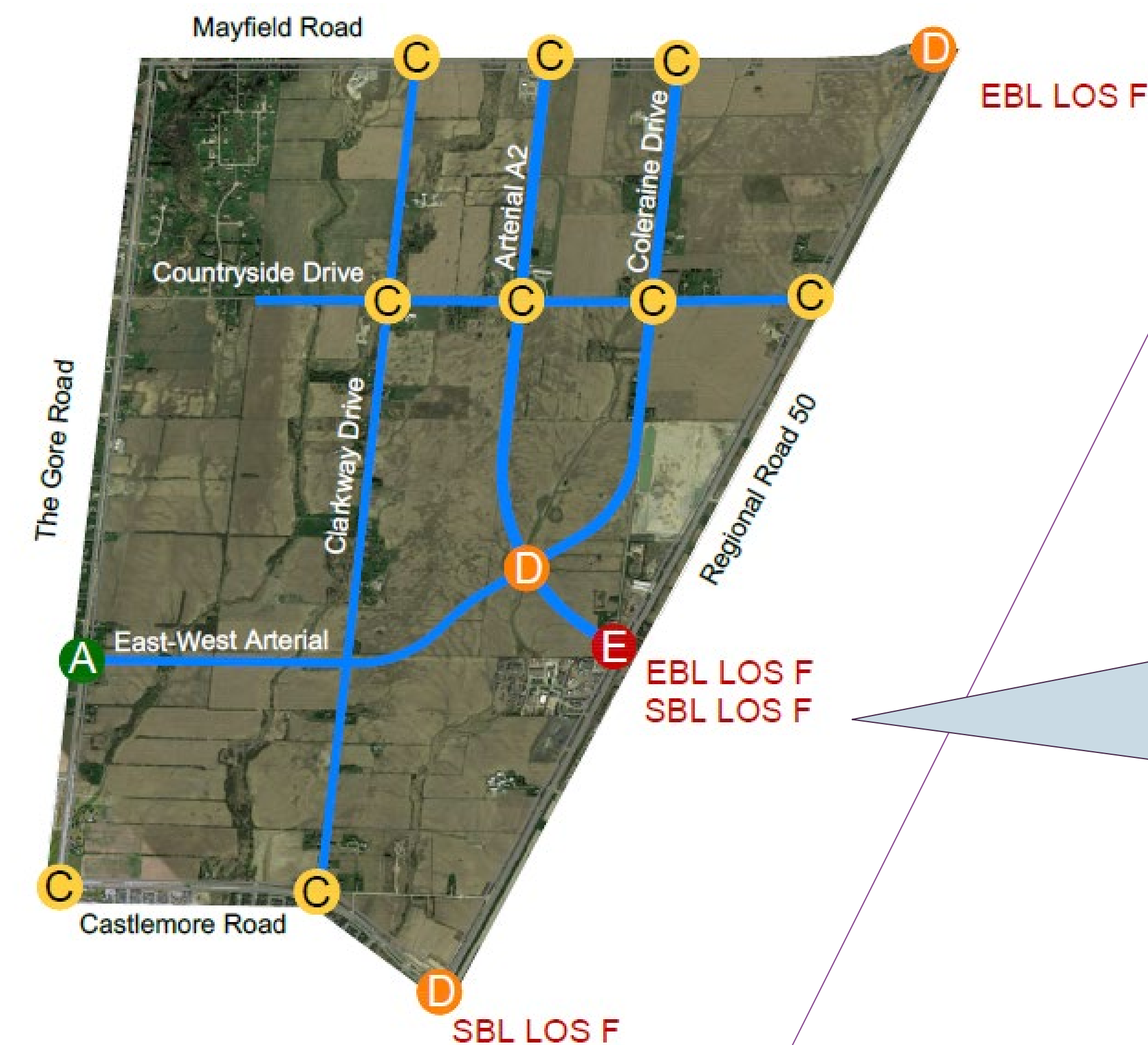


Study Area Roads in 2031 Without Network Improvements

Future Traffic Operations With Proposed Improvements

The following transportation network improvements were recommended through the SP47 Transportation Master Plan to address existing and anticipated (development) traffic operation issues:

- Construction of **new** arterial roadways
 - Arterial A2, ultimately with 3 lanes in each direction
- Widening of existing Coleraine Drive, to have 2 lanes in each direction
- Provision of dedicated right and left turn lanes at major intersections
- Traffic signals at all major intersections

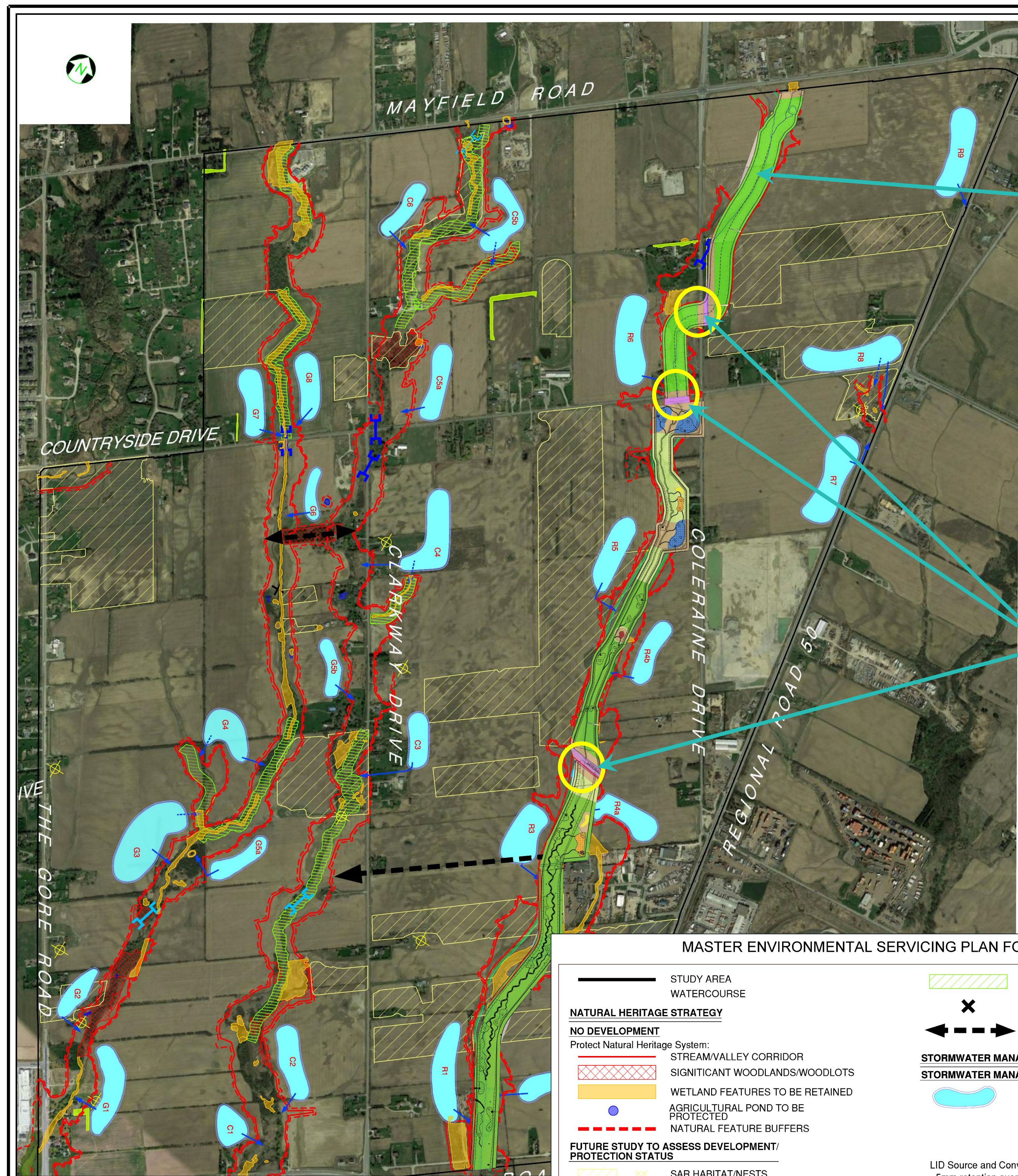


Recommended Arterial Road Network in 2041 (Per Current Class EA)

Operations can be further improved through adjustments to traffic signals.

Significant work was done to find a solution to improve the operation of this intersection. This includes providing an interchange by 2041.

Master Environmental Servicing Plan & Addendum



The Master Servicing Plan Addendum proposes amendments to the Rainbow Creek floodplain and significant improvements to the Natural Heritage System. The Addendum Plan has been overlaid on that from the original MESP.

Bridges over Rainbow Creek will be designed for this future condition.

MASTER ENVIRONMENTAL SERVICING PLAN (MESP)

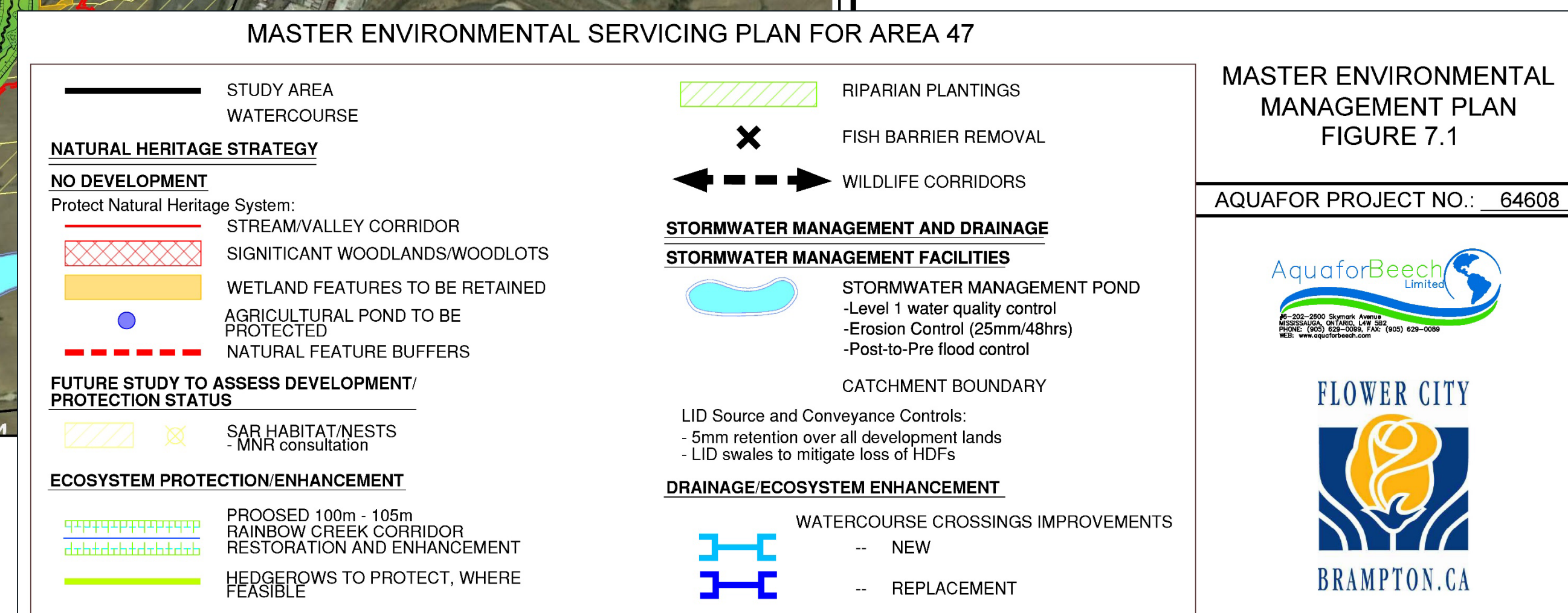
A Master Environmental Servicing Plan (MESP) was completed for the entirety of the Secondary Plan area to guide overall development. The MESP identified environmental features and constraints and provided a set of rules for what cannot be impacted and how the must compensate for areas that will be impacted must be compensated by the City/Region/Developers.

MESP ADDENDUM – RAINBOW CREEK

In its existing condition, Rainbow Creek has a very wide, shallow floodplain that would need to be avoided when nearby land is developed. To increase developable land, Rainbow Creek is being realigned and the floodplain is being narrowed. In exchange for loss of floodplain as well as natural feature loss in other parts of SP47, the natural corridor along the creek will be significantly improved. This will include widening and deepening of the creek channel to provide flood storage, as well as planting of native vegetation and creation of habitat for animals like turtles. The MESP Addendum is ongoing and subject to TRCA approval.

HOW IS THE CLASS EA AFFECTED BY THESE STUDIES?

Bridges over Rainbow Creek have been designed for its future, improved condition. This includes providing higher, wider openings to allow for more light and animal movement under the bridges. The MESP also provides guidance on how any loss of sensitive species habitat is to be compensated, and how many trees must be planted for every one that is lost.



Natural Environment - Terrestrial

Existing Conditions

Vegetative Communities

- Mainly agricultural fields, maintained lawns and hedgerows
- Some cultural meadows, thickets, savannahs and woods
- Marshes are found throughout, with most containing invasive species
- No identified Areas of Natural or Scientific Interest (ANSI)

Findings

- Species identified through desktop survey: 8 reptiles, 11 amphibian 36 species of birds, 42 species of mammals
- Red Squirrel reported during field surveys
- American Toad, Green Frog, Northern Leopard Frog and Eastern Gartersnake identified through Master Environmental Servicing Plan

Species at Risk (SAR)

- Bobolink
- Barn Swallow
- Caspian Tern



Bobolink



Barn Swallow



Caspian Tern

Preliminary Mitigation Measures

- Minimize removal of natural materials such as herbaceous plants and woody debris
- Stabilize and re-vegetate all areas of disturbed / exposed soil
- Consider use of eco-passages, where suitable to reduce crossing hazards for reptile and amphibian species.
- Any trees to be removed will be clearly identified and use tree protection fencing.
- Use temporary matting to reduce disturbance to wetland
- All disturbed areas of the work site shall be stabilized and re-vegetated and/or treated with appropriate erosion protection materials.
- Discourage birds from nesting during construction activities by using netting, rubber matting or noise deterrent devices
- Any proposed work activities in migratory bird habitat is recommended to be undertaken outside of the active breeding season (April 1 to August 31.)

Terrestrial Enhancement Opportunities

- Place vegetation at culvert inlets and outlets which will encourage wildlife crossing and remove crossing barriers such as culvert grading, log jams or fencing



Natural Environment - Aquatic

Existing Conditions

Rainbow Creek

- Classified as a small riverine warmwater system that lacks specialized fish species, piscivores and mussels
- Historical information reveals previous re-alignment and straightened for agricultural purposes
- Lands adjacent to Rainbow Creek have been maintained under active agricultural pre-dating 2004
- Limited wildlife habitat exists within Rainbow Creek corridor.



Preliminary Mitigation Measures

- Design and install culverts to prevent creation of barriers to fish movement.
- Manage flows for specific aquatic habitat management. Avoid impacts to fishes by excluding fish from the work area or moving fish.
- Design and implement standard Erosion and Sediment control (ESC) measures to contain construction zone, manage site drainage/runoff and prevent erosion of exposed soils and migration of sediment.
- Properly operate, store, and maintain equipment, vehicles, and associated materials to avoid impact to the watercourse.
- Keep clearing of riparian vegetation to a minimum
- Design and implement a containment plan to isolate all work above water to reduce air-borne contaminants and avoid impacts to watercourse
- Minimize the removal of natural materials such as herbaceous plants, woody debris, and rocks from the banks or the shoreline of the watercourse
- Re-vegetate all areas of disturbed / exposed soil, where possible
- Restore riparian vegetation, banks and waterbody bed / substrates to pre-construction state or better

Aquatic Enhancement Opportunities

- Shading should be enhanced to maintain or cool water temperatures by planting shrubs along the channel banks
- Enhance watercourse buffers through riparian restoration and revegetation
- Protection of the natural areas that exist to provide refuge for fish species
- Timing Restrictions: in-water works conducted between July 1 and March 31 due to warmwater fish habitats per TRCA/MNRF/DFO guidelines.

Stormwater Management

Existing Conditions

- Study area is rural in nature. Roadways consist of asphalt lanes, gravel shoulders and road-side ditches.
- No storm sewers or formal stormwater management currently present.
- Two (2) existing culvert/bridge crossings.
- Drainage exits the rights-of-way at either tributary crossings, or local drainage draws.

Proposed Conditions

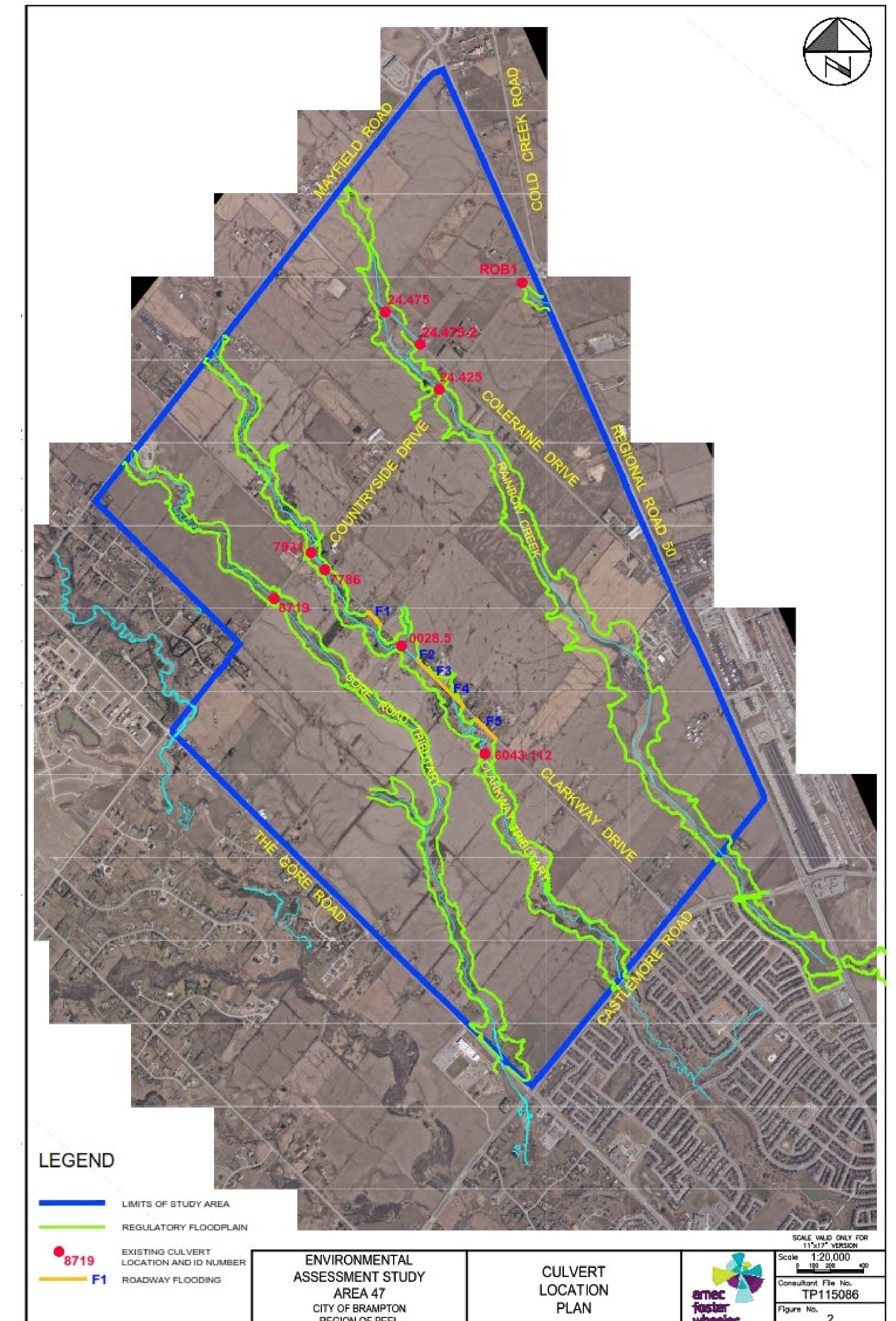
- Urbanized right-of-way with multiple travel lanes and multi-use paths.
- Storm sewer system draining to formal stormwater management infrastructure.
- Three (3) culvert/bridge crossings sized to convey the Regional Storm event.
- Consideration for Low Impact Development features within right-of-way limits



Example of roadside LID (Bioswale)



Example of roadside LID (Rain Garden)



Fluvial Geomorphology

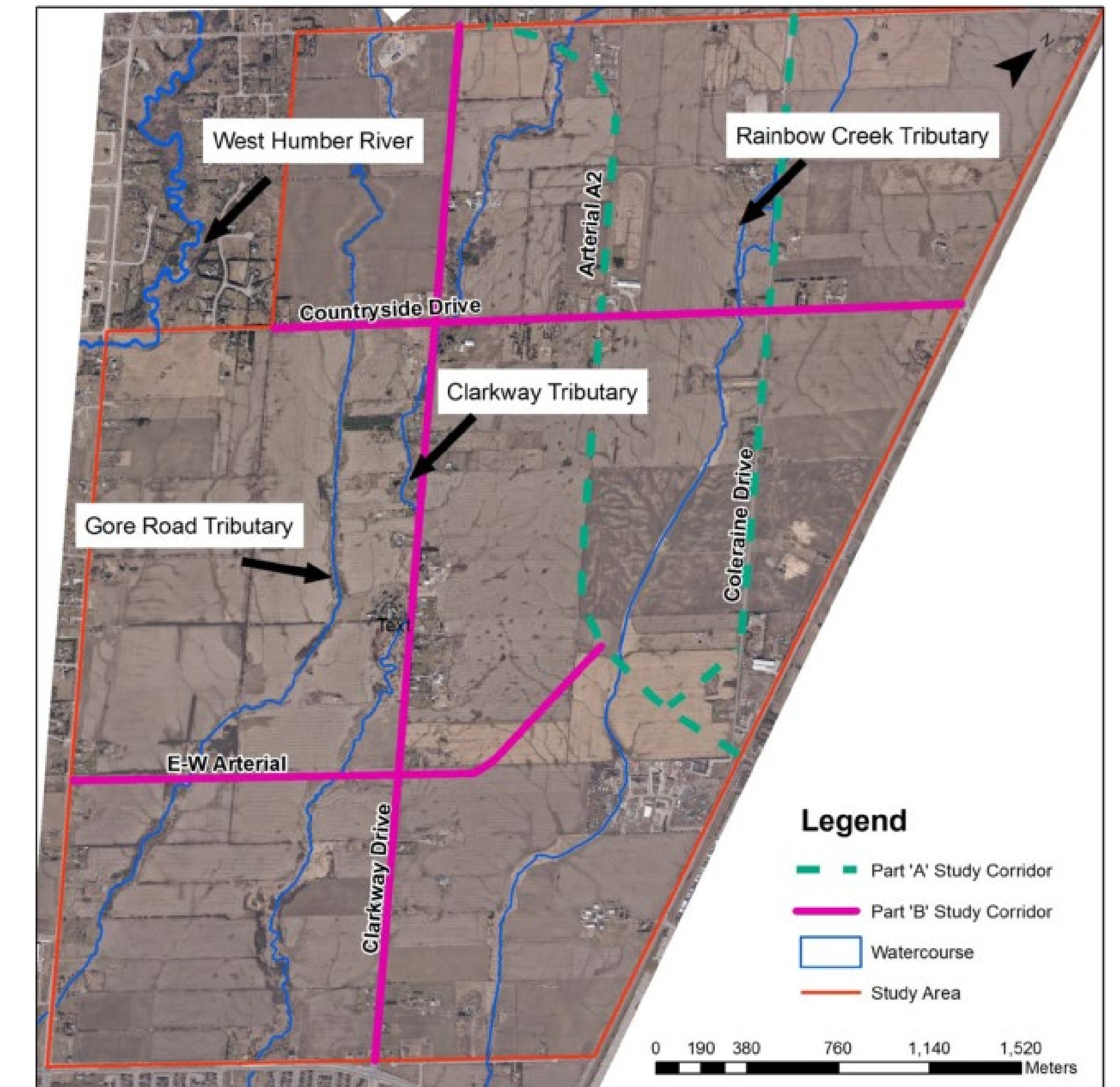
Existing Conditions

Field observations

- Between 1978 and 2004, a number of industrial developments within the study area impacted the watercourses, including; development off Highway 50 channelized at Rainbow Creek Tributary
- Rainbow Creek: Low to intermitted flow observed in June 2016
- Rainbow Creek tributary drains to the main branch of Rainbow Creek and then to its confluence with the Humber River.
- Master Environmental Servicing Plan (MESP) recommends the restoration /enhancement of Rainbow Creek

Recommendation

- Existing structures should be replaced/resized instead of extended in areas where road widening is to occur



Reach R-4: Broad swale feature within agricultural field. Channel reach occupies topographic low with limited riparian function.



Reach R-5: Riparian conditions immediately upstream from Countryside Drive crossing. Channel is narrow long grasses dominates morphology.



Reach R-6: Coleraine Drive culvert, extensive sedimentation impedes downstream flow along southside of Coleraine.

Contamination Overview Study

The Contamination Overview Study is being conducted to identify properties on, or near, the alignment which may be sources of soil and ground water contamination that may affect construction. These properties typically include:

- Current and former retail petroleum stations
- Landfill sites
- Industrial operations
- Known spills on properties or roadways
- Auto wreckers and automobile/truck service facilities
- Dry cleaners
- Public works yards

The Contamination Overview Study is based on information obtained from a variety of sources including:

- Aerial photographs
- Business directories
- Fire insurance plans
- Insurance reports
- Private and public databases
- Government records (Ecolog, ERIS)
- Maps
- Interviews
- Site visits

The ongoing study is not yet complete. Some preliminary findings are included in the figure to the right.

Preliminary Recommendation

- Properties requiring additional investigation during detailed design will be identified on completion of this study.

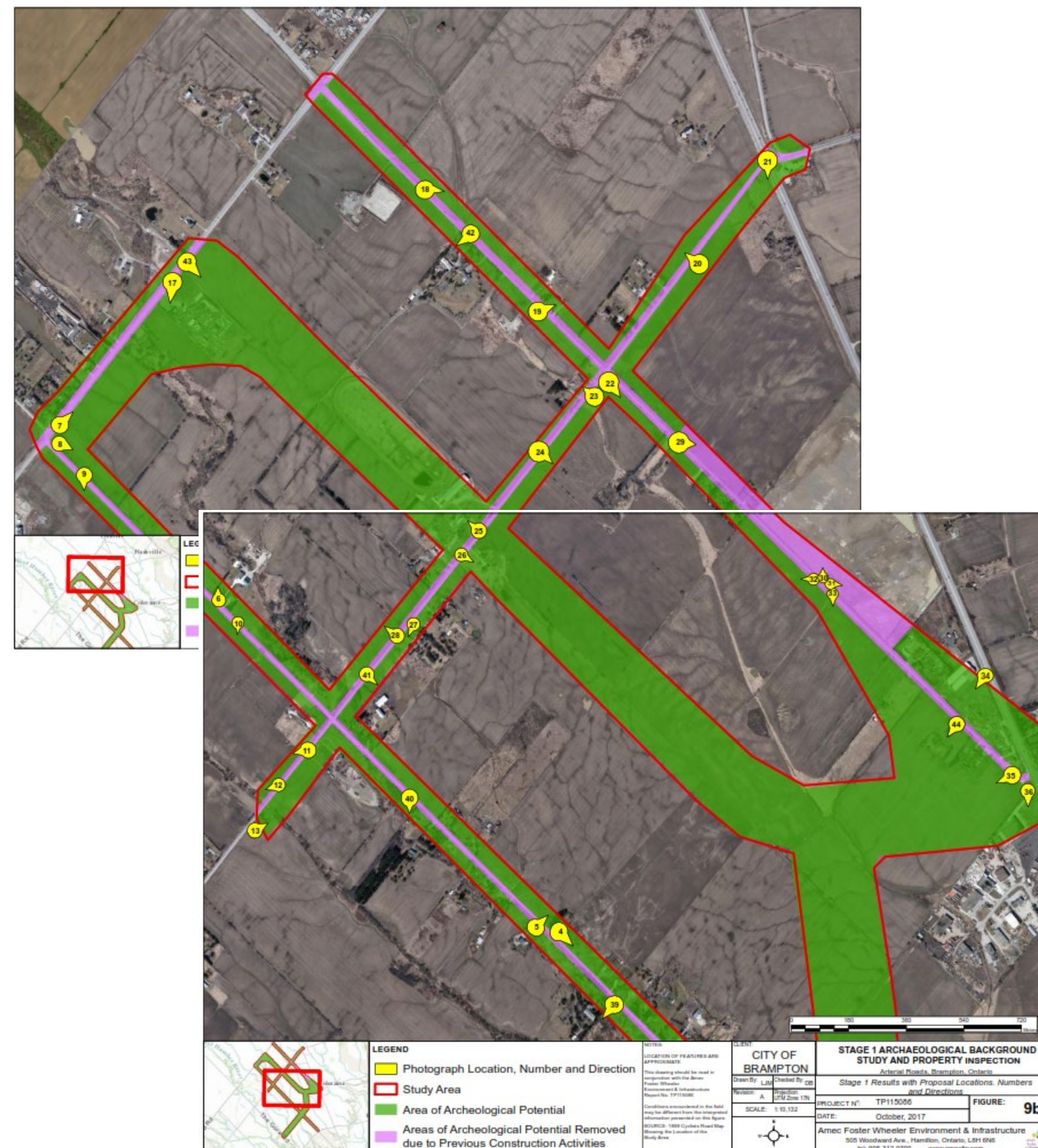
Archaeology

Findings

- 84% of land adjacent to the study corridors exhibit archaeological potential as identified in the report and seen in the maps below.

Recommendations

- Stage 2 Archaeological Assessment recommended in areas of archaeological potential. This will be deferred to detailed design.



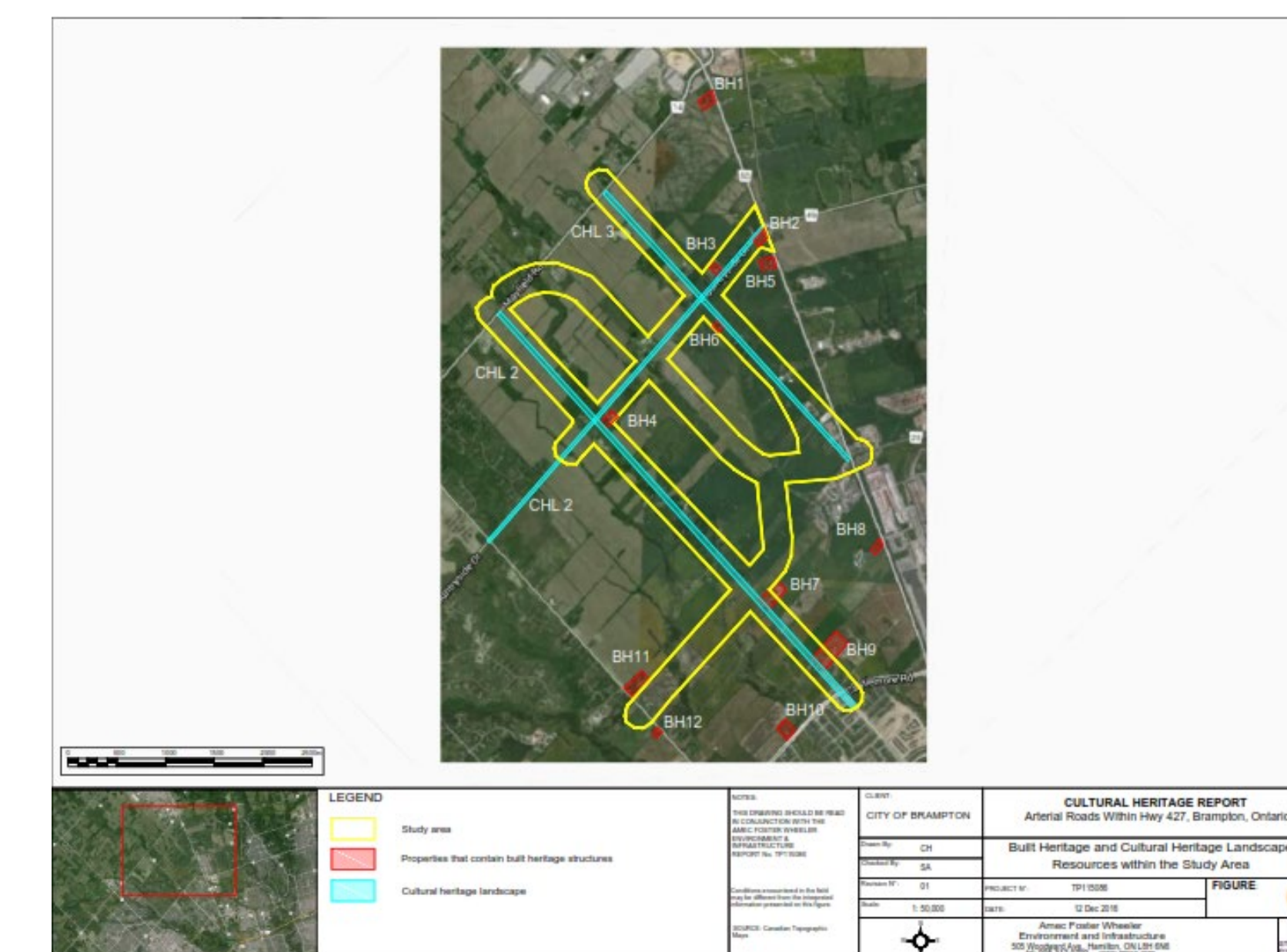
Built & Cultural Heritage

Findings for all of SP47

- 15 Cultural heritage resources identified as having heritage interest or value
- 12 built heritage resources
- 3 cultural heritage landscape resources
- 2 Designated heritage properties (10955 Clarkway Drive (BH 4) and 10300 The Gore Road (BH 12))
- 10 built heritage resources listed by the City of Brampton with BH 6
- All heritage properties apply to part A roads.

Preliminary Recommendations for Potentially Impacted Properties

- The rural character should be maintained as much as possible
- Heritage documentation prior to road improvements
- Construction fencing and tree hoarding adjacent to heritage resource
- Standard road construction techniques, excluding all avoidable construction techniques that could cause structural damage to heritage resources
- Replacement trees should replicate current trees



Ongoing Technical Studies/Preliminary Design

The following studies are still ongoing:

Geotechnical Investigation

- Foundational investigations for bridges and culverts (structures & retaining walls)
- Slope stability analysis for embankments
- Existing pavement condition analysis
- Pavement design alternatives
- Roadway cut and fill operations
- Chemical analysis and disposal requirements of surplus materials



Hydrogeological

- Existing conditions - identification of wells, description of watershed boundary or catchment area(s), land use, existing drainage, existing culverts and structures, regulatory flood plain, and environmental sensitivities.
- Determine water well or aquifers impacts and mitigation measures
- Identification of potential water bearing formations that may be impacted
- Impacts to groundwater
- Evaluation of proposed construction methods
- Need for dewatering, depressurization, and/or sumping
- Borehole logs and water level measurements in monitoring wells
- A headwater streams assessment
- Servicing or relocation of servicing (e.g. sanitary sewer, water-main, storm-sewer) where a watercourse crossing is located

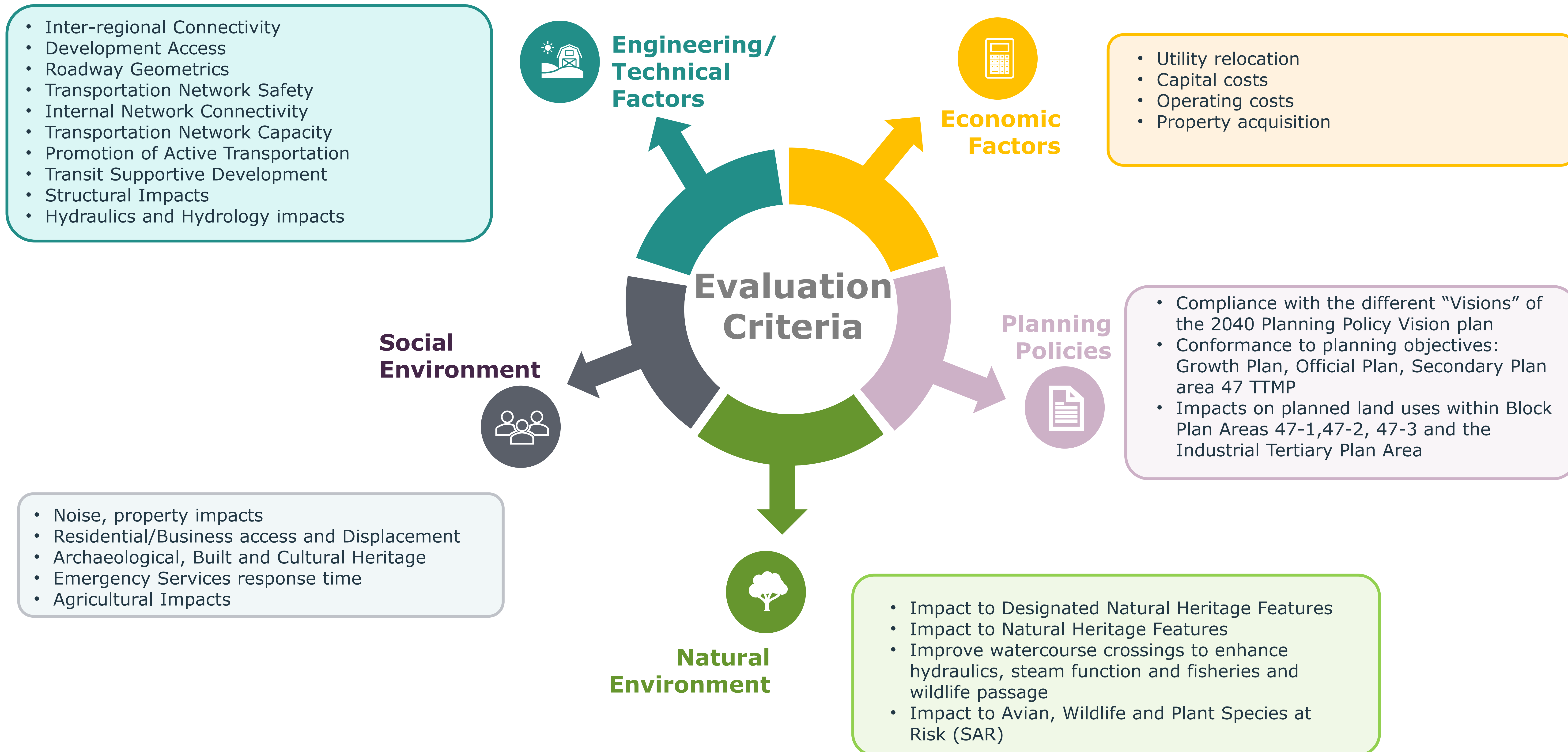
Noise Report

- Determine noise impacts and mitigation measures
- Determine noise wall height, location and other physical parameters for the proposed wall
- Consultation with adjacent residents to determine noise mitigation measures.

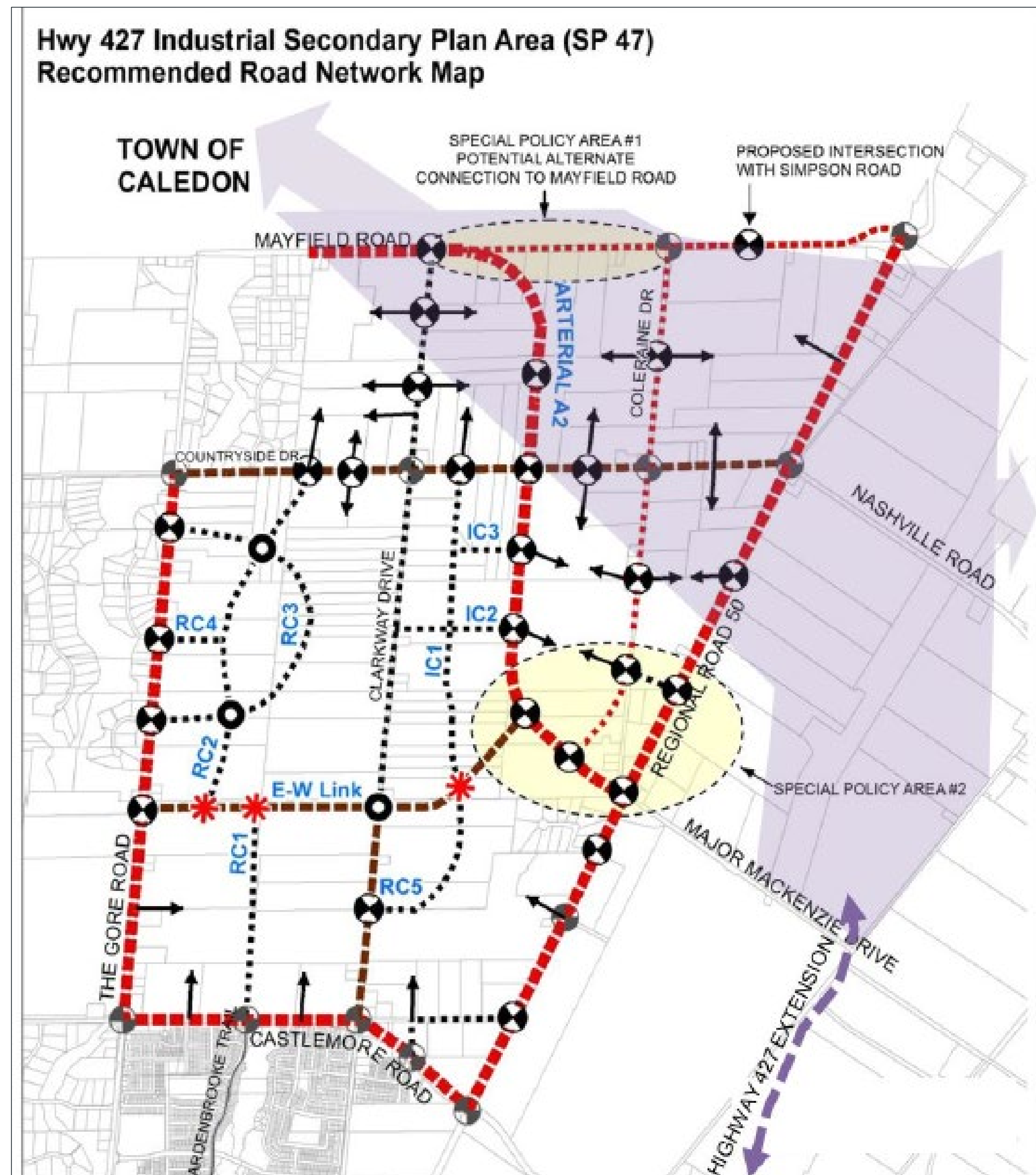


Evaluation Criteria

All alternatives were measured against a set of detailed evaluation criteria, which are listed below. All criteria were considered to carry equivalent weight; however, sensitivity analysis was also done to make sure the recommendations wouldn't change if factors such as 'cost' were weighted more heavily.



Design Alternatives – Special Policy Areas



Secondary Plan Road Network

Two transportation network 'Special Policy Areas' were identified in the SP47 Transportation Master Plan as requiring additional, more detailed, evaluation as part of the Class EA process:

Special Policy Area #1 identifies potential alternative intersections of Arterial A2 with Mayfield Road. Lands within this area shall be protected from development until the intersection of Arterial A2 with Mayfield Road has been determined as part of an EA ...

"Road segments and intersections within the Special Policy Area #2 require... more in-depth functional analysis to determine network/operational solutions including intersection spacing, connectivity to the municipal and regional road network, intersection geometry and controls. It is anticipated that such in-depth assessment will be completed [as part of an EA] study for Arterial A2. Lands within Special Policy Area #2 shall be protected from development until the locations of these intersections and the arterial road alignment ..have been determined as part of the EA..."

HDR, Highway 427 Industrial Secondary Plan (Area 47) Transportation Master Plan Study, 2014., Reference Section 7.1.

The preliminary preferred configuration for arterial roadways within the Special Policy Areas has been identified through detailed analysis completed as part of the current study.

This includes both the alignment of roadways, and recommendations regarding future construction of an interchange at the junction of Arterial A2 and Regional Road 50. Future details are provided on the following slides.

Special Policy Area 1 – Design Alternatives



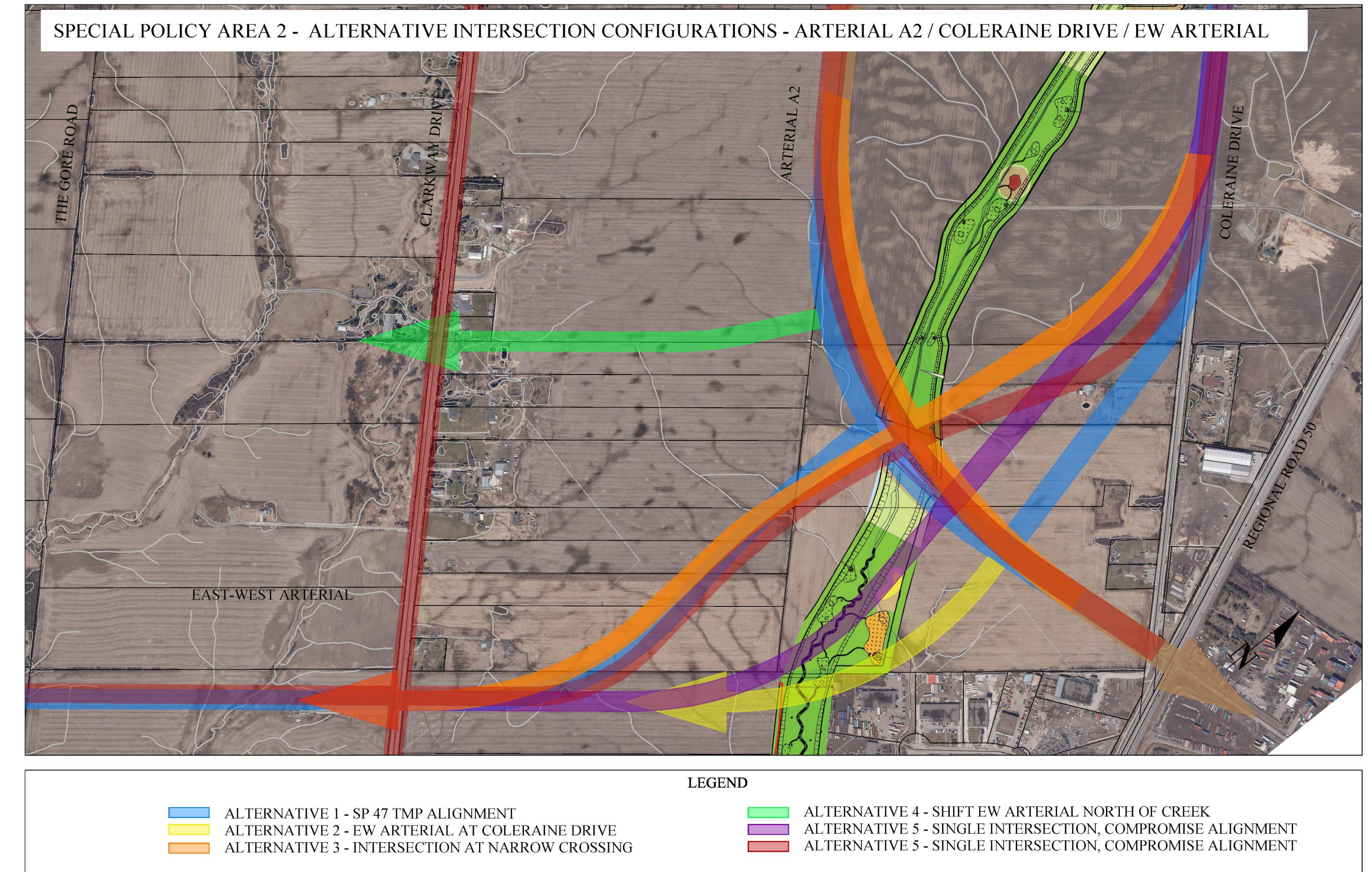
Criteria	Alternative 1 TMP Alignment	Alternative 2 Realign Mayfield	Alternative 3 T-Intersection	Alternative 4 Realign A2 to the East
Social Environment	 <ul style="list-style-type: none"> Impacts 2 Residences. Road will be closer to residences, and increases noise levels. Minimal Impact to Agriculture. 	 <ul style="list-style-type: none"> Impacts 2 Residences and 1 Business. Road will be further from residences, and reduces noise levels. Minimal Impact to Agriculture. 	 <ul style="list-style-type: none"> Impacts 2 Residences. Road will be closer to residences, and increases noise levels. Minimal Impact to Agriculture. 	 <ul style="list-style-type: none"> Significant variance from Master Plan. Impacts 2 Residences. Significant Agricultural Property Impacts
Economic Factors	 <ul style="list-style-type: none"> Relocation of 200m of overhead wires. New bridge with >28.5m span. 2,450m of new roadway. 1 signalized intersection 12.7ha of property required, 2 residential properties. 	 <ul style="list-style-type: none"> Relocation of 1,000-1,500m of overhead wires. New bridge with >28.5m span. 2,850m of new roadway. 1 signalized intersections 14ha of property required, 2 residential and 1 commercial properties. 	 <ul style="list-style-type: none"> Relocation of 60m of overhead wires. No new bridge required. 2,000m of new roadway. 1 signalized intersection 10.7ha of property required, 2 properties. 	 <ul style="list-style-type: none"> Relocation of ~1,500m of overhead wires. No new bridge required. 3,000m of new roadway. 2 signalized intersections 14.6ha of property required, including 2 residential properties.
Natural Environment	 <ul style="list-style-type: none"> Requires new bridge crossing of Clarkway Creek Tributary. Crossing location is identified as direct fish habitat. 	 <ul style="list-style-type: none"> Requires new bridge crossing of Clarkway Creek Tributary. Crossing location is identified as direct fish habitat. 	 <ul style="list-style-type: none"> No significant environmental features are impacted. 	 <ul style="list-style-type: none"> No significant environmental features are impacted.
Engineering/ Technical	 <ul style="list-style-type: none"> Complex intersection design would not offer good pedestrian and vehicular safety/wayfinding. 4,200m³ of linear infrastructure constructed within floodplain. New creek crossing required. Access to 6 properties significantly impacted. 	 <ul style="list-style-type: none"> Intersection would be located on a curve, not preferred. 4,200m³ of linear infrastructure constructed within floodplain. New creek crossing required. Access to 6 properties significantly impacted. 	 <ul style="list-style-type: none"> Traditional intersection design offers ease of operation and clear visibility. No existing creek crossings impacted. Access to 4 properties significantly impacted. 	 <ul style="list-style-type: none"> Intersection would be located on a curve, not preferred. No existing creek crossings impacted. Access to 4 properties significantly impacted.
Planning Policies	 <ul style="list-style-type: none"> Alignment matches one of the two short-listed alternatives from the TMP. Limited impact on development potential of the area. 	 <ul style="list-style-type: none"> Similar to alternatives identified in the TMP. Limited impact on development potential of the area. 	 <ul style="list-style-type: none"> Alignment matches one of the two short-listed alternatives from the TMP Least impactful to development potential of the area. 	 <ul style="list-style-type: none"> Alternative not presented in the TMP Significantly changes the block sizes and development potential of the area.
Summary	 <ul style="list-style-type: none"> Intersection design not preferred New creek crossing required High capital cost 	 <ul style="list-style-type: none"> Intersection design not preferred New creek crossing required High capital cost 	 <ul style="list-style-type: none"> Preferred Option Least impacts to creek and property. Traditional intersection design 	 <ul style="list-style-type: none"> Significant agricultural property impacts Relocate overhead wires. Divides several properties.

Special Policy Area 2 – Design Alternatives (Roads)

Design Issues and Constraints Within Special Policy Area 2 (SPA2)

Selection of preferred road alignments and intersection details within SPA2 were deferred by the SP47 TMP as the available traffic models were **unable to solve traffic issues** at the proposed Regional Road 50 /Arterial A2 intersection, and the **MESP Addendum** had yet to be completed.

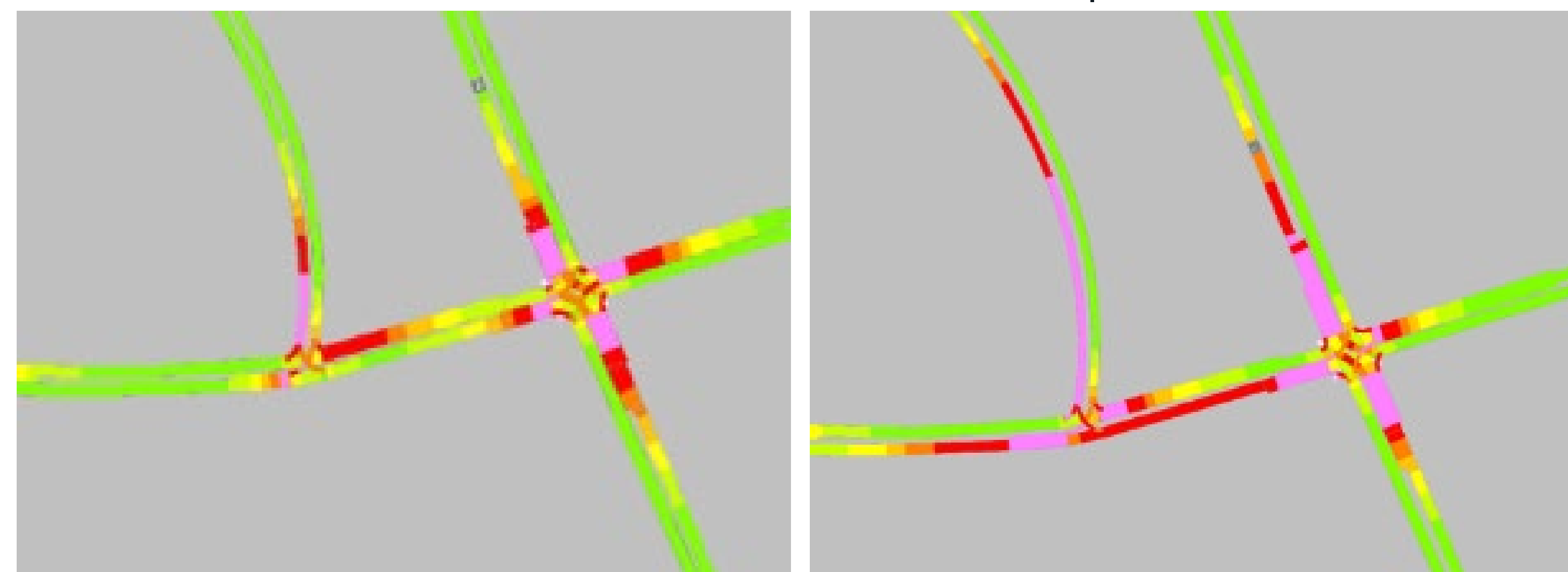
While a number of alternative designs were considered within SPA2 (see figure to the right), the detailed traffic model developed for the Class EA indicated that to keep traffic moving within this area, the intersection of Coleraine Drive and Arterial A2 would need to be moved to at least 600 m from Regional Road 50 – almost in line to with the Arterial A2/East-West Arterial intersection. To minimize impacts on planned land uses west of Arterial A2, the Coleraine Drive and East-West Arterial Intersections were then combined into a single four-way intersection.



TRAFFIC ISSUES ASSOCIATED WITH CLOSENESS OF COLERAINE DRIVE AND REGIONAL ROAD 50 INTERSECTIONS (SP47 TMP CONFIGURATION)

2041 a.m. Peak Period

2041 p.m. Peak Period



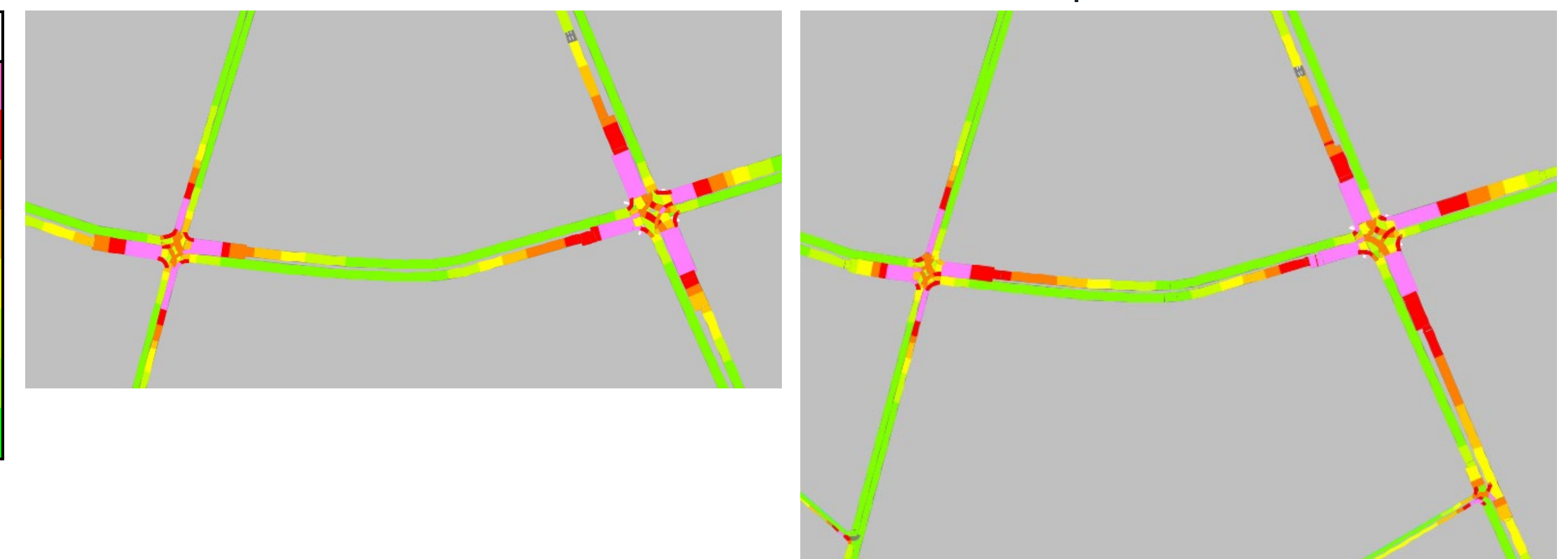
Traffic from one intersection not affecting the other, however there are significant wait times at Coleraine Drive.

Traffic backing up from the Reg. Rd. 50 intersection is causing vehicles not be able to get through the signal at Coleraine Drive.

SIGNIFICANT OPERATIONAL IMPROVEMENTS REALIZED THROUGH MOVING COLERAINE DRIVE WESTERLY APPROXIMATELY LEAST 600 m

2041 a.m. Peak Period































2041 p.m. Peak Period



Both intersections working at acceptable levels.

Reg. Rd. 50 intersection is operating poorly, however it is not having an influence on traffic at the Coleraine/East-West intersection.

Special Policy Area 2 – Evaluation of Road Alternatives

Criteria	Alternative 1 TMP Alignment	Alternative 2 Realign East-West Arterial	Alternative 3 Single Intersection Over Creek	Alternative 4 Shift East-West Arterial North	Alternative 5 Single Intersection East of Creek
Social Environ.	 <ul style="list-style-type: none"> 1 residential building impacted Median impact on agricultural properties 	 <ul style="list-style-type: none"> 1 residential building impacted Limited impact on agricultural properties 	 <ul style="list-style-type: none"> Limited impact on agricultural properties 	 <ul style="list-style-type: none"> 3 residential buildings impacted Limited impact on agricultural properties 	 <ul style="list-style-type: none"> 1 residential building impacted Significant impact on agricultural properties
Economic Factors	 <ul style="list-style-type: none"> 12.5ha of property required for new roads Median property acquisition cost 	 <ul style="list-style-type: none"> 13.1ha of property required for new roads Median property acquisition cost 	 <ul style="list-style-type: none"> 13.9ha of property required for new roads Median property acquisition cost 	 <ul style="list-style-type: none"> Significant property required for new road alignment that varies significantly from Secondary Plan. 	 <ul style="list-style-type: none"> 13.3ha of property required for new roads Median property acquisition cost
Natural Environ.	 <ul style="list-style-type: none"> Single creek crossing 140m of natural heritage system crossing 	 <ul style="list-style-type: none"> Two creek crossings 380m of natural heritage system crossing 	 <ul style="list-style-type: none"> Single, wide crossing of Rainbow Creek 290m of natural heritage system crossing 	 <ul style="list-style-type: none"> Single creek crossing 140m of natural heritage system crossing 	 <ul style="list-style-type: none"> Two creek crossings 450m of natural heritage system crossing
Technical Engineering	 <ul style="list-style-type: none"> Significant traffic queueing on A2 and not compatible with interchange at RR50 New crossing of Rainbow Creek required – minor water flow impacts Existing Coleraine will need to be dead-ended. 	 <ul style="list-style-type: none"> Significant traffic queueing on Coleraine and E-W Arterial and not compatible with interchange at RR50 2 New crossings of Rainbow Creek required. Existing Coleraine will need to be dead-ended. 	 <ul style="list-style-type: none"> Compatible with RR50 interchange and addresses traffic queues New crossing of Rainbow Creek – moderate water flow impacts Existing Coleraine will need to be dead-ended. 	 <ul style="list-style-type: none"> Significant traffic queueing on A2 and not compatible with interchange at RR50 New crossing of Rainbow Creek required – moderate water flow impacts Existing Coleraine will need to be dead-ended. 	 <ul style="list-style-type: none"> Partially addresses traffic queueing on RR50 and may be compatible with the RR50 interchange 2 New crossings of Rainbow Creek – minor flow impacts Existing Coleraine will need to be dead-ended.
Planning Policies	 <ul style="list-style-type: none"> Configuration is what was illustrated in the SP47 TMP. 	 <ul style="list-style-type: none"> Would impact development in Block 47-1 	 <ul style="list-style-type: none"> Impacts to Industrial Area 	 <ul style="list-style-type: none"> Significant impacts to 47-1, 47-2 and 47-3 	 <ul style="list-style-type: none"> Impacts to Block 47-3 and Industrial Area
Summary	 <ul style="list-style-type: none"> Does not address traffic issues at Regional Road 50. 	 <ul style="list-style-type: none"> Does not address traffic issues at Regional Road 50. Two creek crossings required. 	 <ul style="list-style-type: none"> Preferred Option Addresses traffic issues at Regional Road 50. Single creek crossing. 	 <ul style="list-style-type: none"> Does not address traffic issues. Alignment varies significantly from what was illustrated in the Secondary Plan. 	 <ul style="list-style-type: none"> Does not fully address traffic issues at Regional Road 50. Two creek crossings required.

Special Policy Area 2 – Design Alternatives (Crossing)

Single Intersection in Proximity to Rainbow Creek

Locating the single intersection between Arterial A2/Coleraine Drive/East-West Arterial a minimum of 600 m from Regional Road 50 puts it in very close proximity to the Natural Heritage System for Rainbow Creek. A series of design alternatives was developed and assessed to arrive at a preferred location and design for the Rainbow Creek crossing.

Design Alternatives

The location of the crossing is constrained by:

- Tie-ins with existing roadways (Major Mackenzie Drive, Coleraine Drive)
- Rainbow Creek and its associated Natural Heritage System (NHS)
- Commitments made with respect to the Community Park at the intersection of Clarkway Drive and East-West Arterial
- Desire to keep industrial properties between Coleraine Drive and Rainbow Creek NHS suitably sized/shaped for industrial development

Based on these constraints, two road crossing configurations were short-listed:

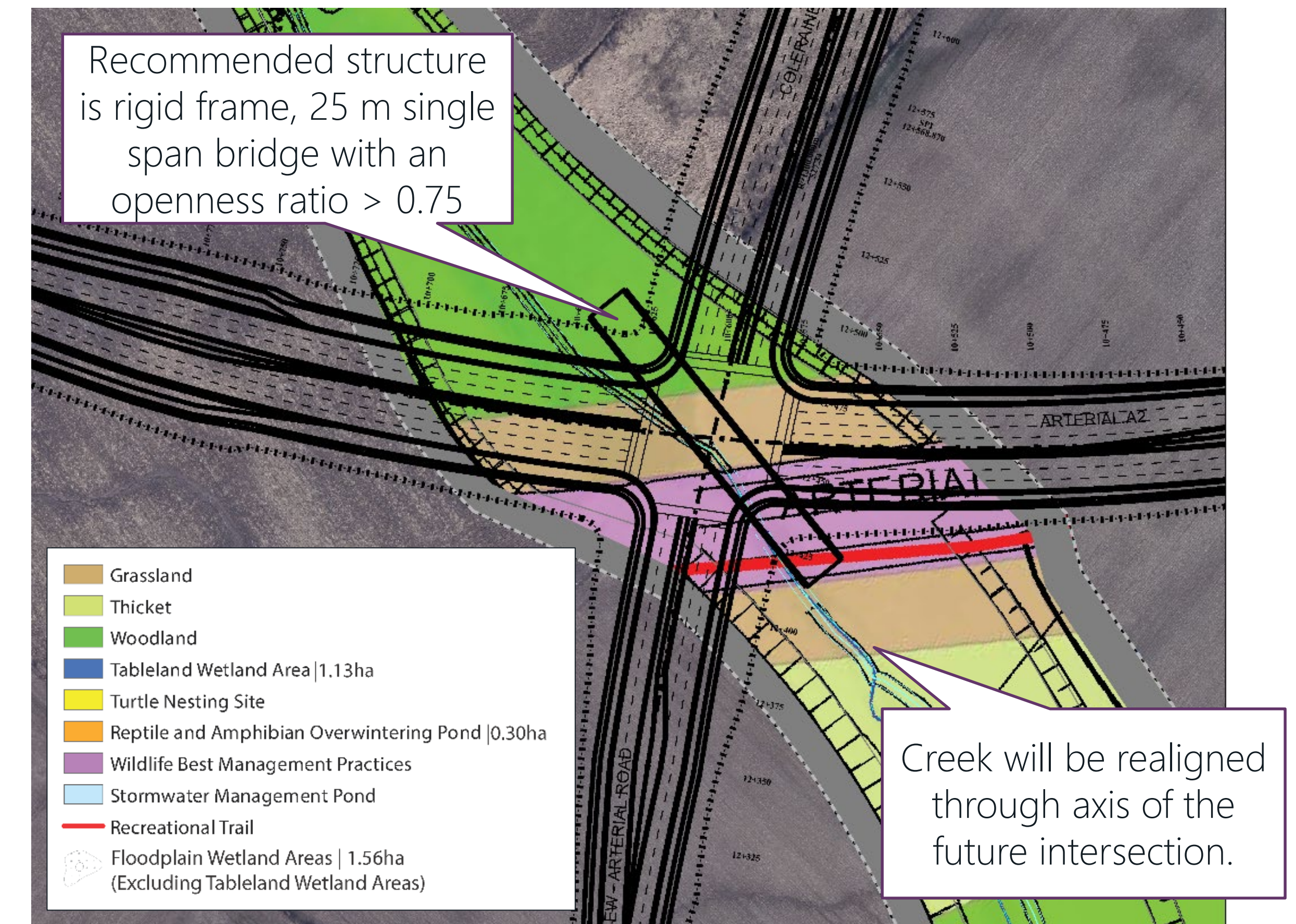
1. Single intersection over Rainbow Creek, with the north-south axis of the intersection approximately aligned with the existing creek – Single Bridge.
2. Single intersection immediately to the west of the Rainbow Creek NHS – Two Bridges

Locating the intersection east of the Rainbow Creek NHS was screened out as it would result in significantly longer segments of roadway being located within the NHS.

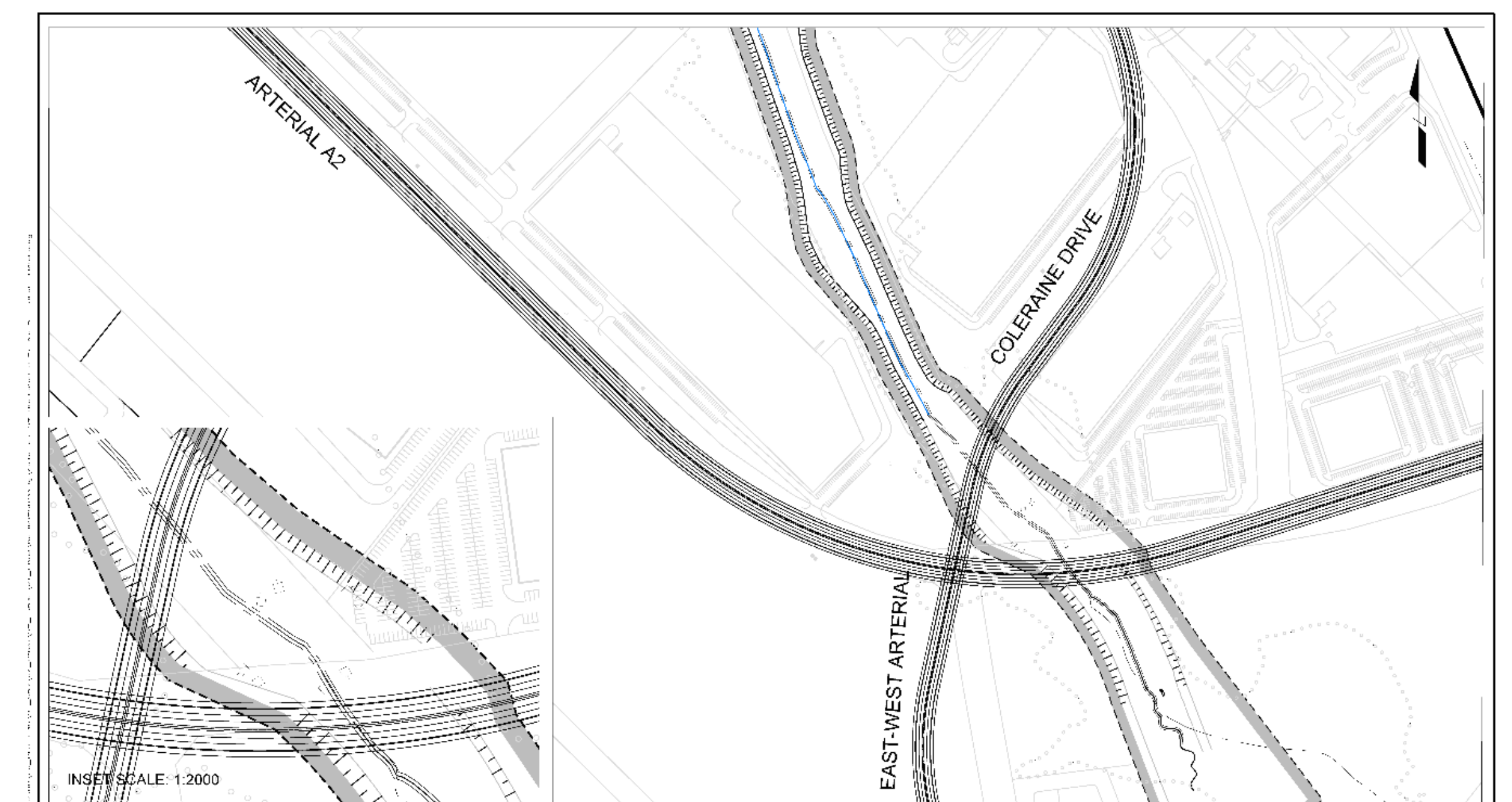
Preferred Alternative

Detailed evaluation of alternatives indicated ecological, flood, and creek flow requirements could be achieved through both short-listed alternatives; however, the cost of providing two separate structures was significantly more. As a result, Alternative 1 was identified as the preferred alternative.

Alternatives were assessed in consultation with Toronto Regional Conservation Authority, who provided Approval In Principle for the preferred design.



PREFERRED - Alternative Intersection Location Alternative 1 – Single Bridge



Short-Listed Intersection Location Alternative 2 – Two Bridges

Special Policy Area 2 – Design Alternatives (Interchange)

Grade-Separation

Even when the intersection of Coleraine Drive and Arterial A2 is moved further west and combined with the intersection with East-West Arterial, certain movements will still experience intolerable delays by 2041. This is related both to development with SP47 and the additional traffic that will result from extension of Highway 427 to Major Mackenzie Drive. As a result, the Region of Peel will be reserving property for construction of a future interchange at the junction of Major Mackenzie Drive and Regional Road 50 by 2041.

Design Alternatives

A total of 11 interchange alternatives were designed and evaluated. Three alternatives were short-listed:

1. At-Grade
2. Single Point Urban Interchange
3. Modified ParClo A

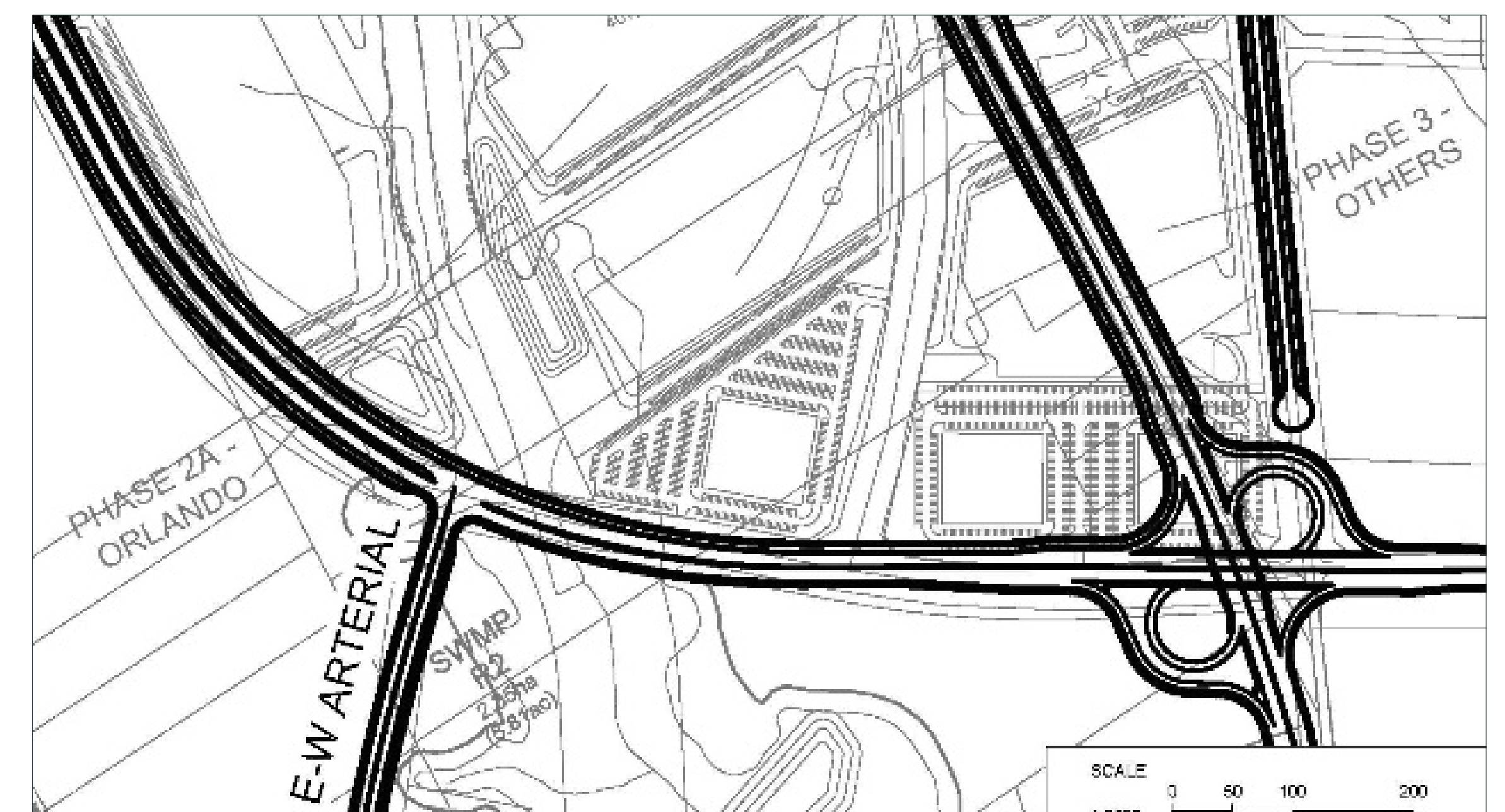
Detailed evaluation of alternatives was completed for both, and with the outcomes of key evaluation criteria summarized in the following table:

Evaluation Criteria	At-Grade	Single Point Urban Interchange	Parclo A
Impact to Development	✓	X	XX
Traffic Flow (2041)	X	✓	✓
Lifecycle Cost	✓	✓	XX
Area of infrastructure located within Rainbow Creek Natural Heritage System	X	X	✓
Constructability	✓✓	✓	X
Vulnerable User Safety	✓✓	✓	X



Alternative 1: Single Point Urban Interchange

- Regional Road 50 passes over Arterial A2/ Major Mackenzie Drive on a single span bridge
- All ramps, Arterial A2, and Major Mackenzie Drive remain at ground level
- Left turns are made at a signalized intersection under Regional Road 50
- All right turns are made on ramps.



Alternative 2: ParClo A

- Regional Road 50 passes over Arterial A2/ Major Mackenzie Drive on a single span bridge
- All right turns made on ramps
- No ability to make a "left turn" from Arterial A2/ Major Mackenzie Drive onto Regional Road 50

Special Policy Area 2 – Preferred Alternative (Interchange)

Grade-Separation – Preferred Design

The preferred design for the grade-separation (interchange) at Regional Road 50 and Major Mackenzie Drive / Arterial A2 is a **Single Point Urban Interchange (SPUI)**.

The Single Point Urban Interchange is the preferred option for a number of reasons:

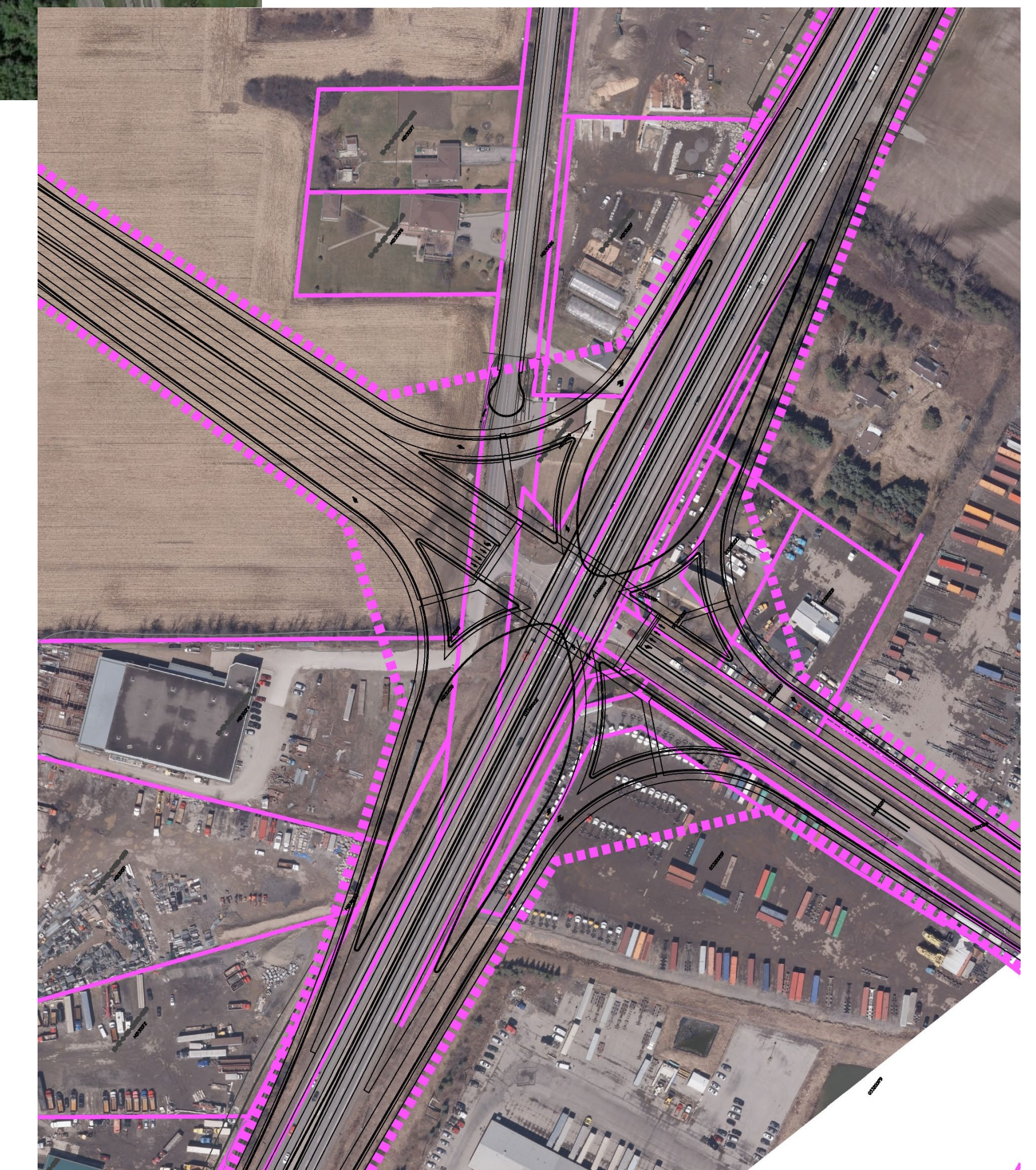
- Construction of this alternative can be deferred to 2041, allowing the intersection to be constructed at-grade until traffic volumes increase to a level that warrants action.
- It has the lowest life cycle cost of the options considered
- Supports active transportation facilities with crossings at a signalized intersection
- Allows the transportation network to exist in a configuration that is compatible with the road network.

It is not, however, without some challenges. These include:

- Impact to properties on both the York Region and Peel Region sides of Regional Road 50 (by 2041)
- Existing accesses will need to be reconfigured.
- The intersection of Cadetta Road and Regional Road 50 will need to be relocated further to the south, requiring extension of Cadetta Road.



This is an example of Single Point Urban Interchange currently in place in the City of Ottawa that is very similar to what is being proposed as part of this project.



Preliminary Preferred Interchange Design

Coleraine Drive - Alternative Alignments

Coleraine Drive will be improved from a two-lane rural roadway with ditches, to a four-lane urban roadway with curb and gutter, storm sewers, multi-use pathways on both sides of the road, and space for transit.

Widening will require property acquisition and have potential impacts to homes, businesses, creek crossings, environmental features and species at risk habitats.

The following widening alternatives were evaluated to arrive at a preferred solution (see next panel for evaluation summary).



Alternative 1 – Widen Evenly on Either Side of Existing Right-of-Way - **PREFERRED**



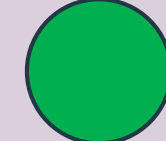

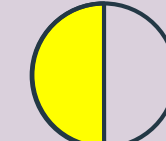
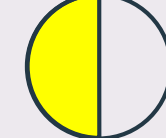
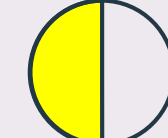



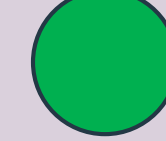
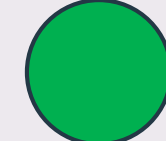
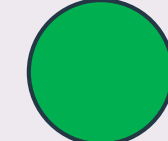






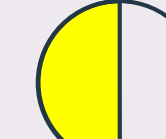
Alternative 2 – Widen to the East of Existing Right-of-Way



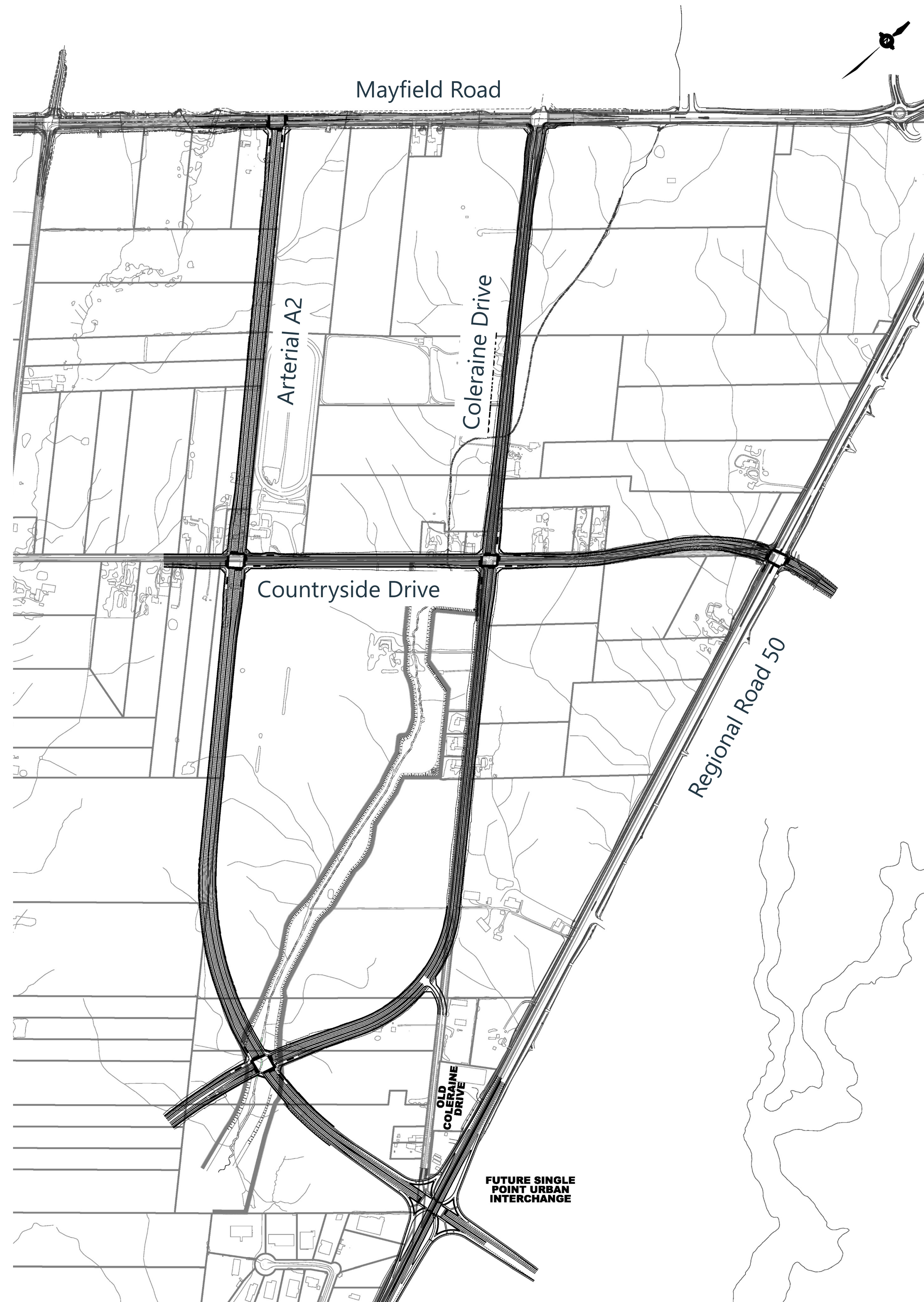
Alternative 3 – Widen to the West of Existing Right-of-Way



Coleraine Drive– Evaluation of Alternatives (Roads)

Criteria	Alternative 1 Widen Right-of-Way Evenly to the East and West	Alternative 2 Widen Right-of-Way to the East	Alternative 3 Widen Right-of-Way to the West
Social Environment	 <ul style="list-style-type: none"> Aligns with Master Plan No impact on planned development Would infringe on property where a listed heritage building has been relocated 	 <ul style="list-style-type: none"> Minor variance from Master Plan Planned building and parking layouts within the Industrial Tertiary Plan area to be reconfigured Would infringe on property where a listed heritage building has been relocated 	 <ul style="list-style-type: none"> Minor variance from Master Plan Planned building and parking layouts within the Industrial Tertiary Plan area to be reconfigured Some impacts to three property lines and building fronts
Economic Factors	 <ul style="list-style-type: none"> Moderate property acquisition costs Significant impact on Hydro/Bell infrastructure 	 <ul style="list-style-type: none"> Significant property acquisition costs due to need to acquire a minimum of 1 residential property. Moderate impact on Hydro infrastructure 	 <ul style="list-style-type: none"> Significant property acquisition costs due to need to acquire a minimum of 3 residential properties. Significant impact on Hydro/Bell infrastructure
Natural Environment	 <ul style="list-style-type: none"> Minor impacts on nesting habitats (0.4ha) 	 <ul style="list-style-type: none"> Minor impacts on nesting habitats (0.6ha) 	 <ul style="list-style-type: none"> No impact on identified potential habitats which are all currently located east of Coleraine Drive.
Technical / Engineering			
	<ul style="list-style-type: none"> All three alternatives are evaluated equally for technical compliance 		
Planning Policies	 <ul style="list-style-type: none"> Alternative matches what was presented / assumed in preparation of the Secondary Plan. 	 <ul style="list-style-type: none"> Alternative has minor change from what was presented in the Secondary Plan. 	 <ul style="list-style-type: none"> Alternative has minor change from what was presented in the Secondary Plan.
Summary	 <ul style="list-style-type: none"> Preferred Option Aligns with what was proposed through the Secondary Plan Frontage impacts only to existing residential and commercial properties. 	 <ul style="list-style-type: none"> Impact to property with listed heritage building. Would require acquisition of at least one residential property. Would require reconfiguration of planned industrial development. 	 <ul style="list-style-type: none"> Would require acquisition of at least three residential properties. Would require reconfiguration of planned industrial development.

Preliminary Preferred Alternative



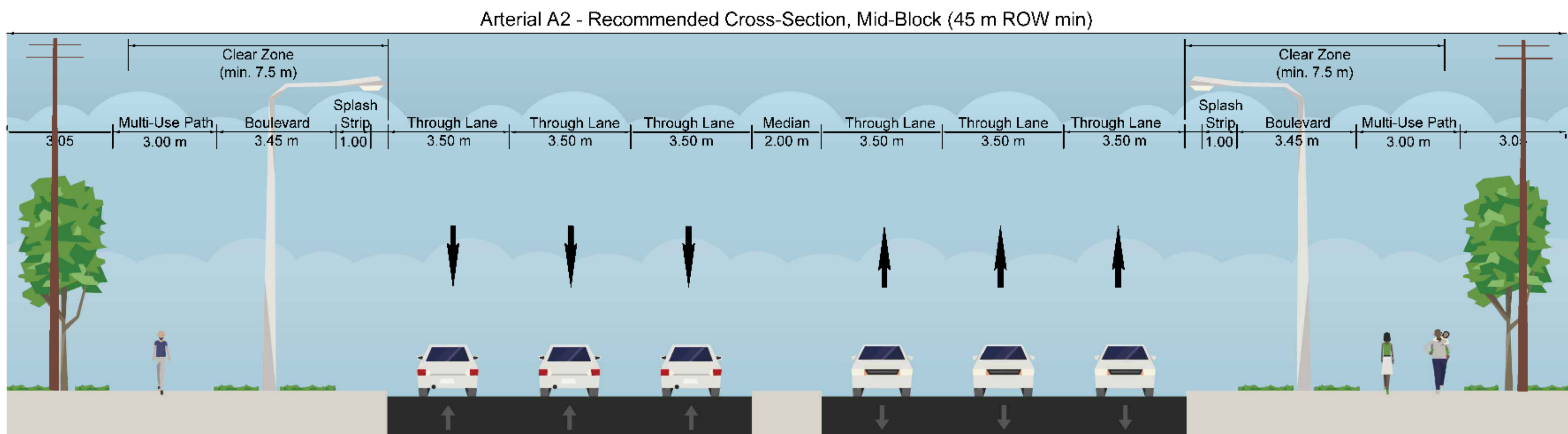
Arterial A2 – Preliminary Preferred Design

- Ultimate six lane cross-section from Regional Road 50 to Mayfield Road within a 45 m right-of-way
- 3.0 m wide multi-use pathways along entire length of both sides of the road
- Provisions for transit bays, pad, and shelters at all intersections
- Left and right turn lanes at all intersections
- Set along the west side of the dividing line between blocks to minimize property impacts to existing buildings/businesses on Countryside Drive
- Improved connection to Major Mackenzie Drive (alignment) relative to what was presented as part of the SP47 TMP
- Intersection with Regional Road 50 will be constructed at-grade (typical intersection) until traffic operations indicate the need for grade separation
- Intersection with Regional Road 50 will be converted to a single point urban interchange when traffic operations warrant

Coleraine Drive

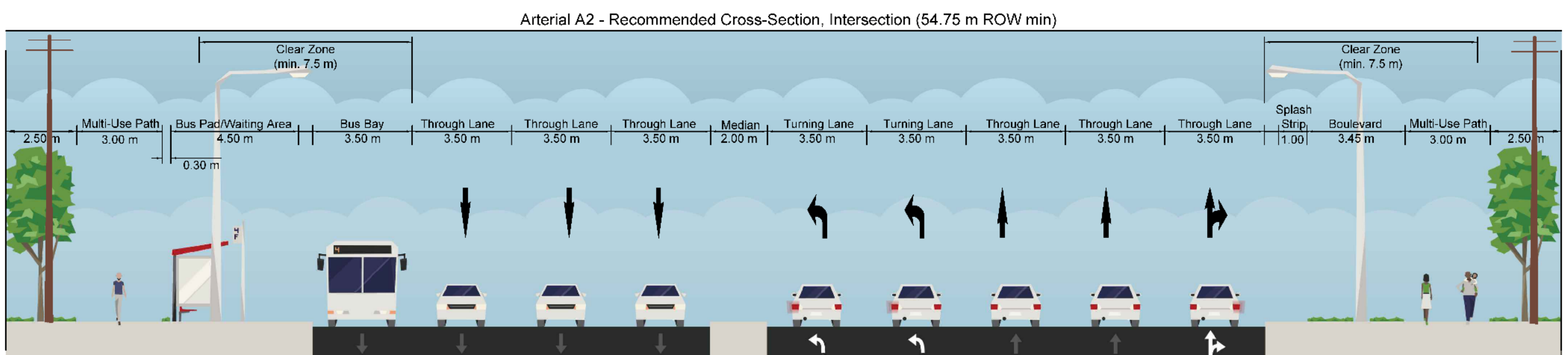
- Four lane cross-section from Arterial A2 to Mayfield Road within a 36 m right-of-way
- Widening to be done evenly either side of the existing road centerline
- Current intersection with Regional Road 50 to be disconnected and existing southern portion to be converted to a local access road with cul-de-sac, until the area is redeveloped
- Realigned at the south end to align with the intersection of Arterial A2 / East-West Arterial.

Design Alternatives – Cross-Sections



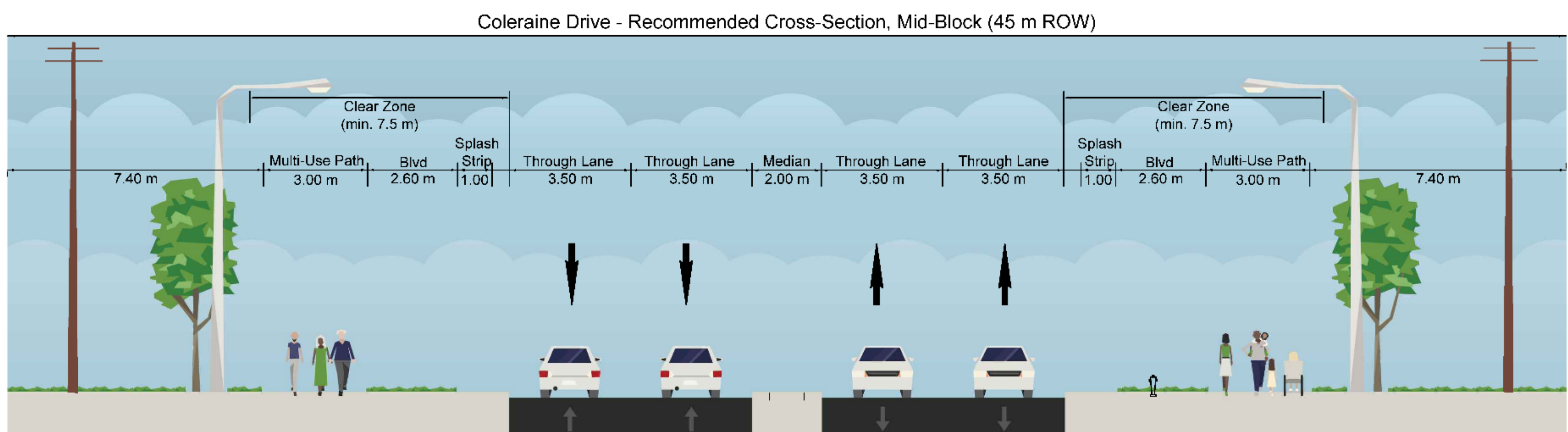
Arterial A2

- 6 lane cross-section
- Posted speed of 70 km/h
- Multi-use pathways will be provided on both sides of the roadway



Arterial A2

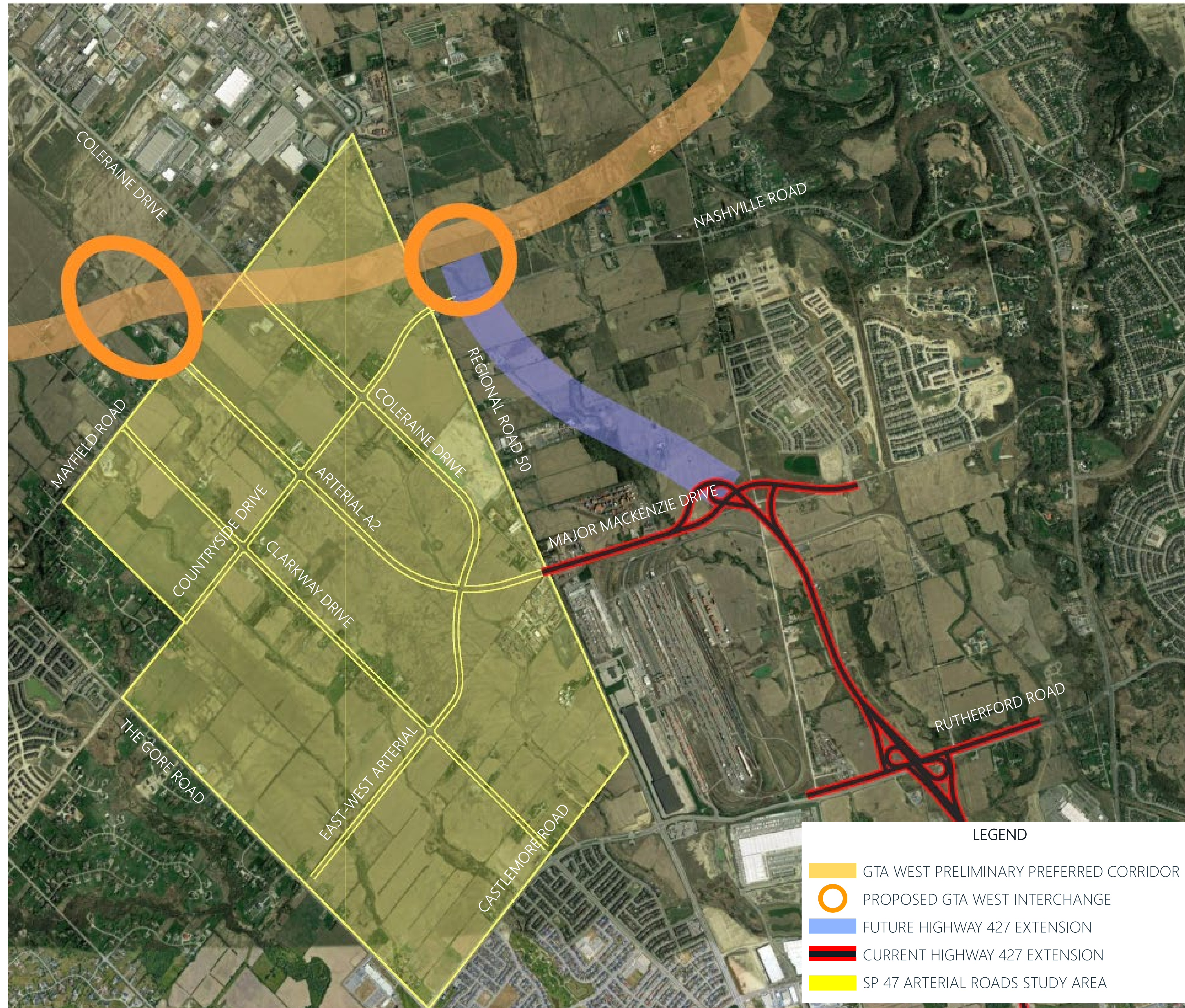
Major intersections on Arterial A2.



Coleraine Drive

- 4 lane cross-section
- Posted speed of 70 km/h
- Multi-use pathways will be provided on both sides of the roadway

Connection to GTA West



WHAT IS GTA WEST?

GTA West Study focuses on a new multimodal transportation corridor that will extend from Highway 400 in the east, to the Highway 401/407 interchange in the west, with provisions for a 400 series highway, transitway, and potential goods movement priority features. The Ministry of Transportation is currently undertaking the Stage 2 GTA West Study which will identify the route, determine interchange locations complete the preliminary design and environmental assessment. More information can be found on the project's website: www.gta-west.com

HOW DOES IT AFFECT THE SP47 ARTERIAL ROADS CLASS EA?

Traffic studies for the arterial roads within SP47 were completed under two conditions: (1) with GTA West built by 2041, and (2) GTA West built beyond 2041. The decision was made to design the road network with flexibility to connect to the future GTA West, but under the assumption that it would not be built within the next 20 years. This is considered a 'conservative' approach, that considers worst case traffic within SP47. Alignment of A2 north of Mayfield Road is subject to final location of GTA West Interchange

WHAT ARE THE TIMELINES FOR IMPLEMENTATION OF GTA WEST?

The GTA West Stage 2 Study planning and preliminary design phase will culminate in an Environmental Assessment (EA) Report. It is anticipated that the Final EA Report will be submitted to the Ministry of the Environment, Conservation and Parks by the end of 2022.

Following the review and approval of the EA Report, the corridor will be protected. Currently there is no commitment to a timeline for additional design and construction phase of project. The timing and duration of GTA West highway construction depends on numerous factors.

Thank-you for your Participation!

Next Steps

1. Your input is important! The project team will be finalizing the preliminary preferred designs based on feedback from this PIC, technical investigations, and consultation with technical and regulatory agencies.
2. Complete Technical Studies: Road Drainage, Geotechnical, Hydrological, Arborist Study, Noise, Utilities
3. Finalize the Preliminary Preferred designs, considering feedback received
4. Prepare and file the Environmental Study Report. The Environmental Study Report will be prepared and placed in public record for a 30 day period.
5. Issue a notice of study completion when the ESR is available for public review.

Comment
Deadline
November
29th

We Want to Hear From You!



Let us know what is most important to you, your family and/or your business.

Please complete the comment sheet and place it in the Comment Box or send your comments to one of the mailing or email addresses listed below.

Steve Ganesh, MCIP, RPP

Growth Management Strategist
Regional Planning and Growth Management
Division
Region of Peel

10 Peel Centre Drive, Suite A, 6th Floor
Brampton, ON L6T 4B9
Tel: 905-791-7800 ext. 7824
steve.ganesh@peelregion.ca

Mario Goolsarran, P.Eng.

Senior Project Engineer
Public Works and Engineering
City of Brampton

1975 Williams Parkway
Brampton, ON L6S 6E5
Tel: 905.874.5164 / TTY: 905.874.2130
mario.goolsarran@brampton.ca

John McGill, P.Eng.

Consultant Project Manager
Wood Environment & Infrastructure
Solutions

3450 Harvester Road, Suite 100
Burlington, ON L7N 3W5
Tel: 905-335-2353
john.mcgill@woodplc.com