

Municipal Class Environmental Assessment

Steeles Avenue from
Chinguacousy/Mavis Road to
Winston Churchill Boulevard

PUBLIC INFORMATION CENTRE # 2

Date: June 5, 2013
Location: Roberta Bondar Public School
30 Pantomine Blvd.
Time : 6:30 p.m. – 8:30 p.m.

1

Welcome

- Please sign in and take a comment sheet
- If you have any questions our team is available to help you
- Place your completed comment sheets in the Comment Box, or, send them to:
Gino Dela Cruz
Project Manager
Gino.DelaCruz@peelregion.ca

by June 20, 2013

2

Purpose of Public Information Centre #1

The purpose of this Public Information Centre (PIC) is to:

- Explain the Municipal Class Environmental Assessment process
- Present the information on the technical studies that have been completed to date
- Present the preferred design for the widening of Steeles Avenue and proposed mitigation measures
- Ask for your input and comments on the preferred design alternative and
- Explain what will happen next



3

Municipal Class EA Process

Phases

Phase 1: PROBLEM OR OPPORTUNITY

- Identify and describe the problem and opportunities

Phase 2: Alternative Solutions

- Identify alternative solutions to the problem
- Inventory the natural, social, economic & cultural environments
- Identify the impact of the alternative solutions after mitigation
- Evaluate the alternative solutions with consideration of environmental and technical impacts
- Identify a recommended alternative solution

Phase 3: Alternative Design Concepts for the Preferred Solution

- Confirm preference for recommended solution
- Identify alternative designs to implement the preferred solution
- Inventory the natural, social, economic & cultural environments
- Identify the impact of the alternative designs after mitigation
- Evaluate alternative designs with consideration of the impacts (preliminary recommendation made)
- Confirm the recommended design concept

Phase 4: Environmental Study Report

- Complete an Environmental Study Report (ESR) which sets out all of the activities undertaken to date through Phases 1, 2 & 3
- Notify the public and government agencies of completion of the ESR and of the PART II Order provision in the EA Act
- Place ESR on public record for 30 calendar days for review

Phase 5: Implementation

- Proceed to design and construction of the project
- Property acquisition and utility relocation
- Initiate construction as appropriate
- Monitor for environmental provisions and commitments

Notice of Study Commencement

PIC#1 November 7, 2012

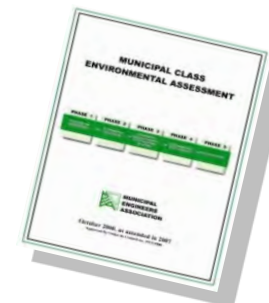
- Needs and Justification
- Planning Alternative Solutions
- Evaluation of Planning Alternative Solutions
- Preliminary Recommended Solution

PIC#2 (June 5, 2013)

- Alternative designs for the preferred solution
- Evaluation of alternative design concepts
- Preliminary recommended design concept

We are here

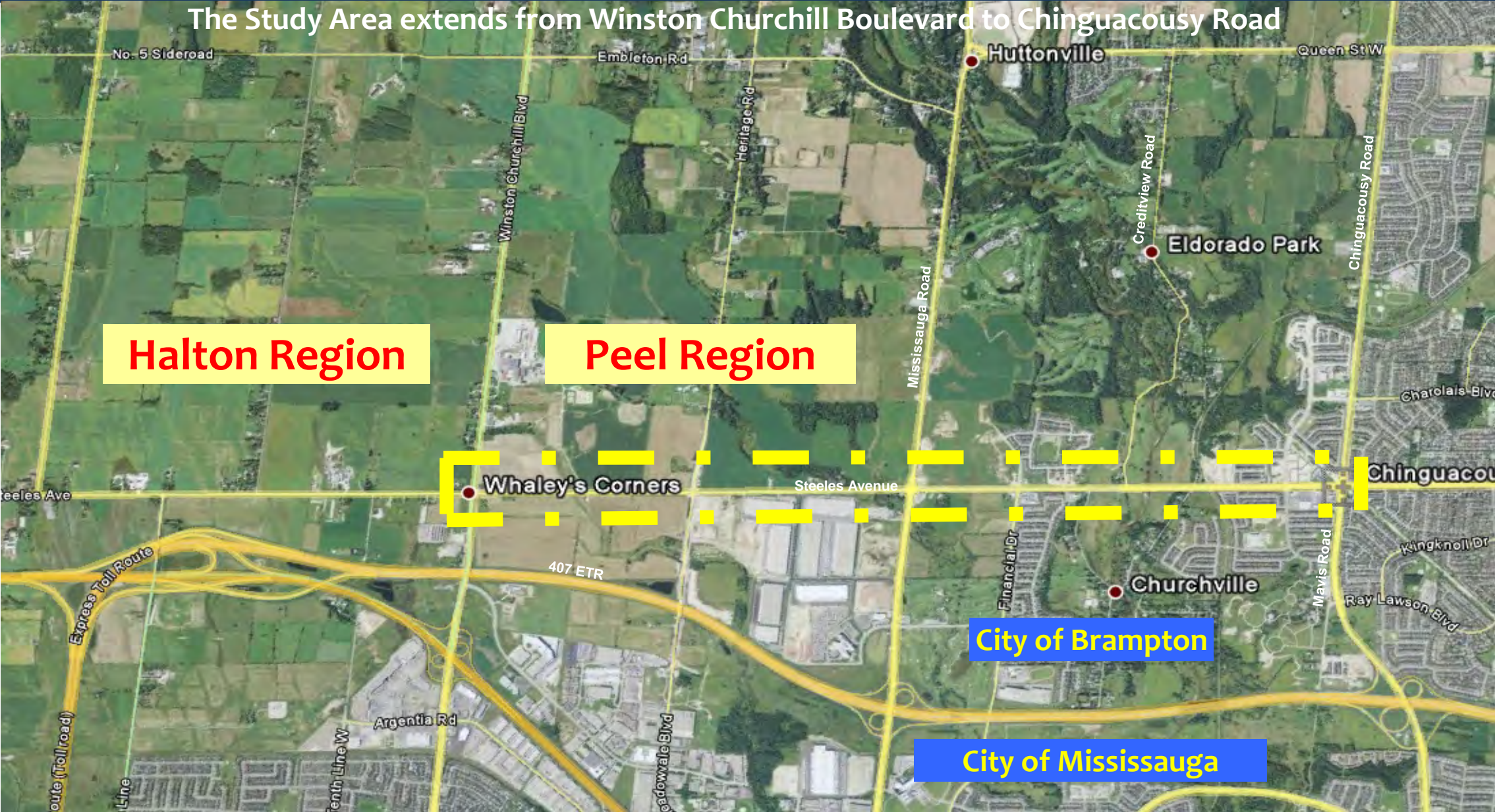
Notice of Study Completion and Filing the ESR



4

Study Area

The Study Area extends from Winston Churchill Boulevard to Chinguacousy Road



Halton Region

Peel Region

City of Brampton

City of Mississauga

5 Study Objectives and Organization

Study Objectives

- Identify problems and opportunities
- Develop planning alternative solutions and a preferred solution
- Develop and evaluate design concepts for the preferred solution
- Complete a functional design for the preferred concept
- Prepare a formal Environmental Study Report (ESR) documenting the study findings and recommendations



Strategic Plan and Term of Council Priorities for 2011-2014

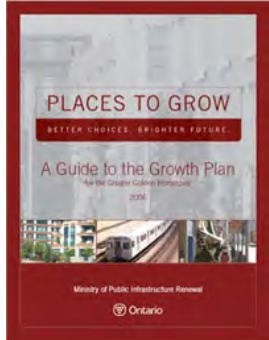
This Environmental Assessment supports a number of actions and initiatives related to transportation and environment in the Region's Strategic Plan Goals and Actions and the Term of Council Priorities.



- **Environment**
Protect, enhance and restore the environment
- **Transportation**
Support and influence sustainable transportation systems
- **Public Safety**
Ensure a safe Peel community

7

Planning and Policy Context



Provincial Places to Grow

- Forecasts Peel's population to grow to 1.6 million by 2031

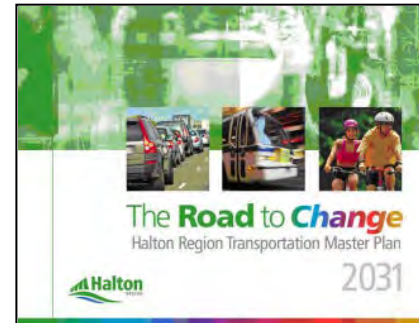


Peel Long Range Transportation Plan

- Identifies the need for capacity improvements along Steeles Avenue to support growth

Region of Peel Official Plan

- Provides a framework for guiding growth and development in Peel



Halton Region Transportation Master Plan 2031

- Recommends the widening of Steeles Avenue to four lanes plus two dedicated bus lanes by 2028

2009 Transportation and Transit Master Plan (TTMP)

- Acknowledges the need for improvements to this section of Steeles Avenue

2006 Brampton Official Plan

- Designates the area north and south of the study area for growth and development to accommodate 30,000 people and 25,000 employment through the Bram West Secondary Plan



8

Traffic Study & Problem/ Opportunity

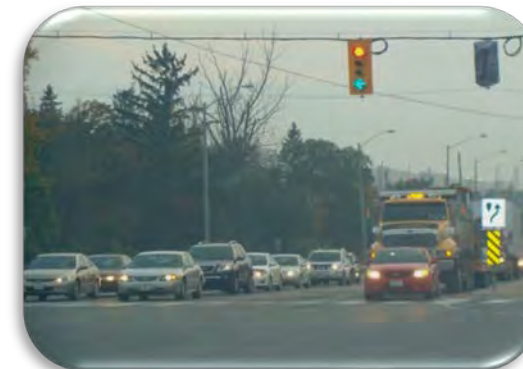
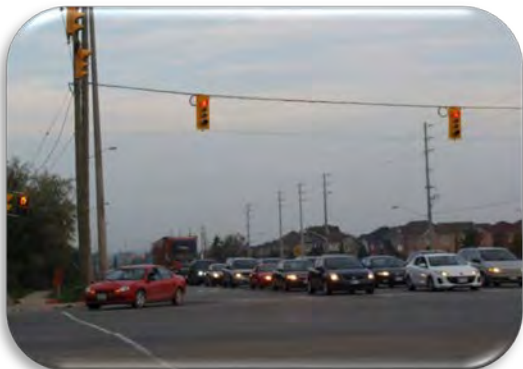
Traffic Study

Steeles Avenue is currently operating with some delays and congestion at intersections during peak hours. An increase of 30,000 residents and 25,000 employees is projected in the Bram West area by the year 2031. Improvements are required to address existing traffic congestion and future congestion from anticipated growth in the area.

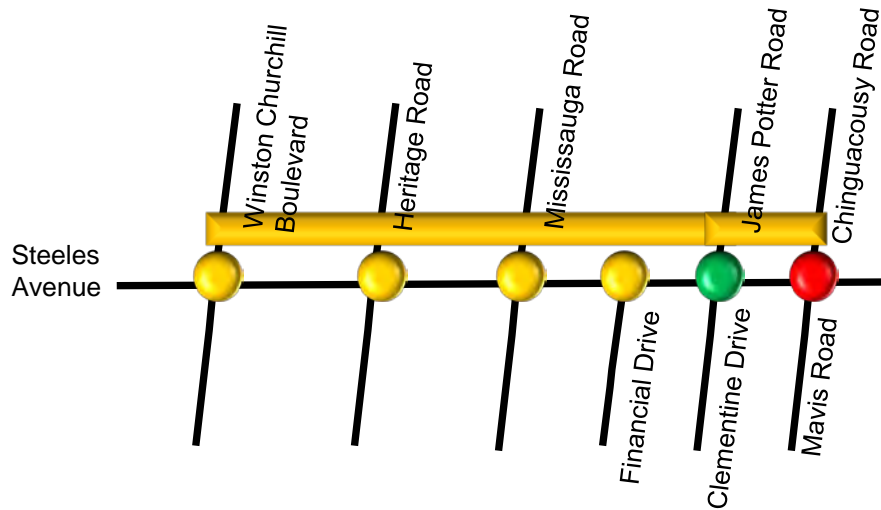
Problem/Opportunity

Improvements are needed along the Steeles Avenue corridor in order to accommodate:

- existing and future traffic demands;
- future transportation network improvements;
- transit system expansion along the corridor;
- pedestrian and cyclist movements through the corridor, and,
- drainage deficiencies and opportunities for stormwater management.

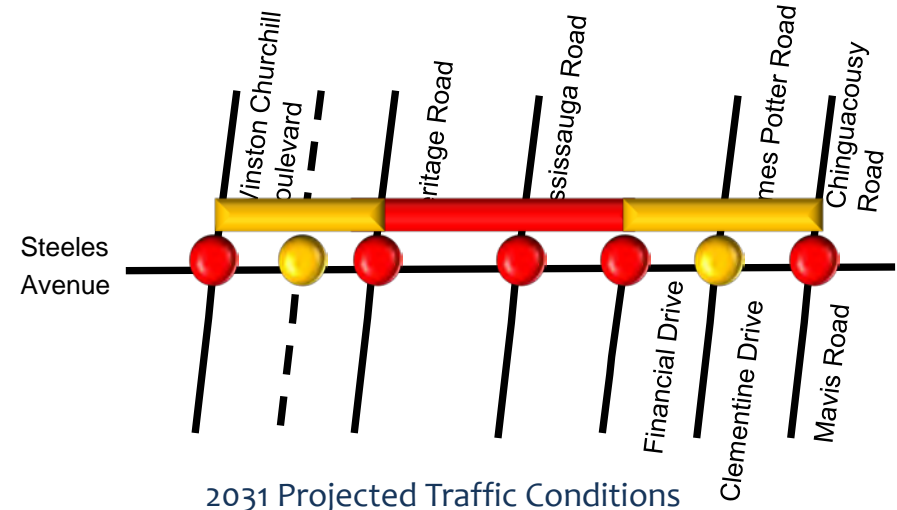


Traffic Study Overview (AM Peak Hours)



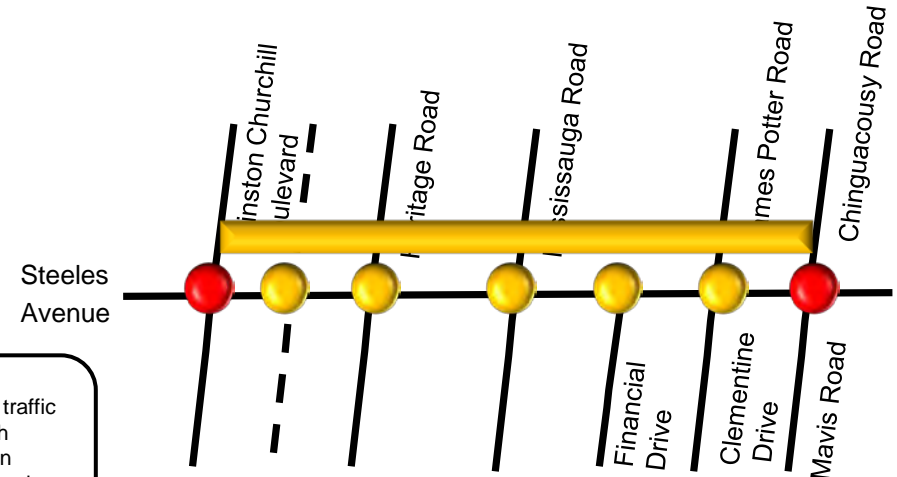
Existing Traffic Conditions

Level of congestion **with no** improvements to the Road



2031 Projected Traffic Conditions

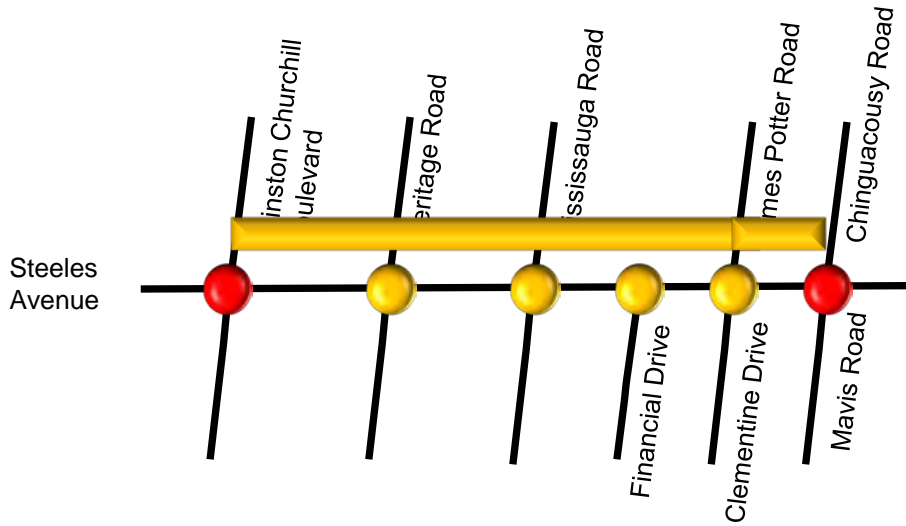
Level of congestion **with** improvements to the Road



2031 Projected Traffic Conditions

	Represents congested conditions with slow operating speeds, high delays, and extensive queues at intersections		Represents moderate congestion where small increases in volume can reduce operating speeds and increase delays and queues at intersections		Represents stable traffic flow conditions with modest reduction in operating speeds and minimal delays at intersections
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Traffic Study Overview (PM Peak Hours)



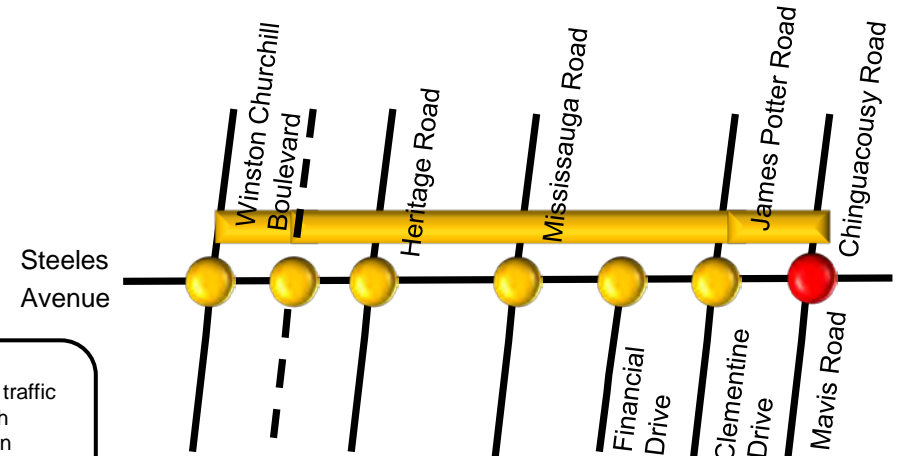
Existing Traffic Conditions

Level of congestion **with no** improvements to the Road



2031 Projected Traffic Conditions

Level of congestion **with** improvements to the Road



2031 Projected Traffic Conditions

Represents congested conditions with slow operating speeds, high delays, and extensive queues at intersections	Represents moderate congestion where small increases in volume can reduce operating speeds and increase delays and queues at intersections	Represents stable traffic flow conditions with modest reduction in operating speeds and minimal delays at intersections

Preferred Planning Solution

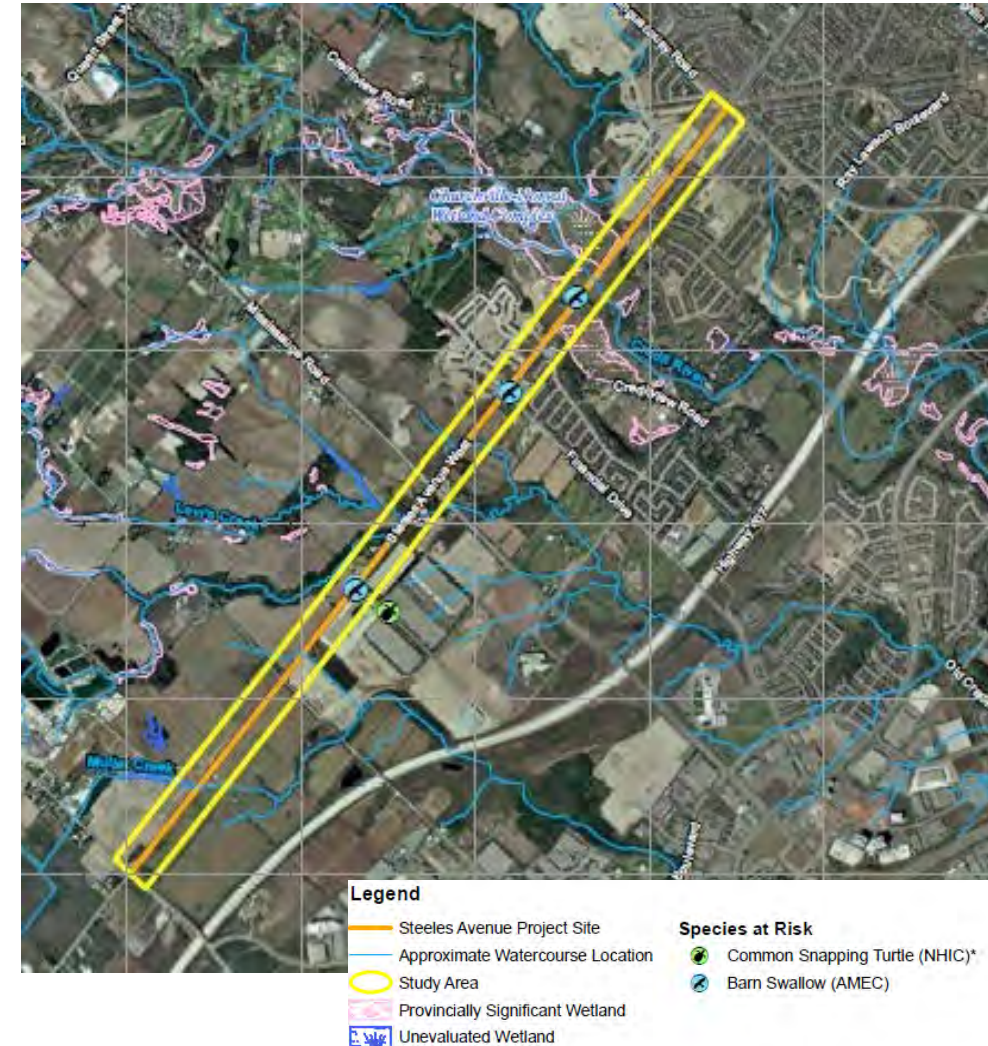
Based on consultation with the community and agencies and following review of technical studies, the Region has confirmed the recommended planning solution:

A combination of transit service improvements, travel demand management and widening of Steeles Avenue with intersection improvements to increase capacity.

The preferred planning solution will address the problem statement developed for the Steeles Avenue corridor, while minimizing environmental impacts. It also supports the recommendations of Peel's Active Transportation Plan.

Terrestrial Resources

- The study area has experienced considerable habitat disturbance and fragmentation
- Currently pockets of forested lands, open space, and developed lands define the study area
- A Species at Risk, the **Barn Swallow** (listed as “Threatened”), was observed at three locations
- The Credit River valley is designated as a regional Life Science ANSI and is located within Peel’s Greenlands System as a Core Area
- Provincially Significant Churchville-Norval Wetland Complex covers approximately 75 ha² and is located to the north and south of Steeles Avenue.
- Levi’s Creek Provincially Significant Wetland Complex is located primarily north of Steeles Avenue, within approximately 15-30 m of Steeles Avenue



13

Impact Assessment – Fisheries and Fish Habitat

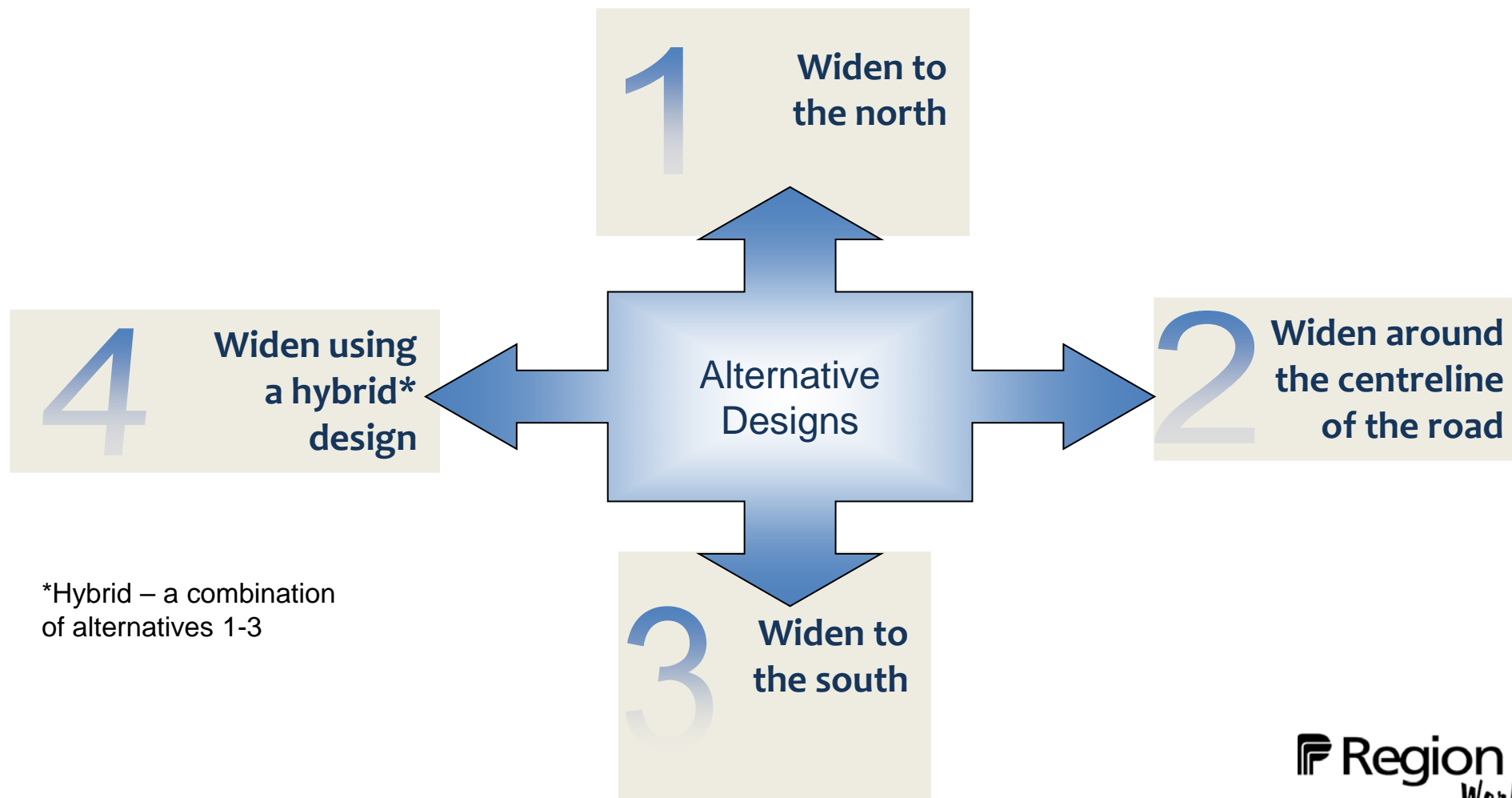
- The tributaries that cross the study area vary in sensitivity
- Levi's Creek Crossing (C3) and Churchville Tributary (8B) are classified as Redside Dace Recovery Habitat. ESA permitting will be required
- Due to the presence of Redside Dace at tributary C3, vegetation and ground disturbance will be minimized where possible
- Crossing C4 has been buried at Steeles Avenue according to approved development plans
- All design concepts will be evaluated with consideration to Ministry of Natural Resources guidelines and legislation



Legend	
	Culvert Location
	Steeles Avenue Project Site
	Approximate Watercourse Location
	Zone of Investigation
	Provincially Significant Wetland
	Unevaluated Wetland
Aquatic Species at Risk	
	Redside Dace Present (MNR, 2012)
	Redside Dace Protected (MNR, 2012)
	Redside Dace Probable (NHIC, 2012)*

Alternative Design Concepts

Four alternative design concepts were developed to accommodate the ultimate six lane widening of Steeles Avenue.



*Hybrid – a combination of alternatives 1-3

Design Alternatives

Category	Criteria	Criteria Indicators	Alternative 1 Widen to the North	Alternative 2 Widen around the Centreline	Alternative 3 Widen to the South	Alternative 4 A hybrid* approach
Engineering	Constructability	Ability to minimize construction constraints & complexity	Yellow	Yellow	Yellow	Green
		Ability to facilitate phasing requirements	Yellow	Yellow	Yellow	Yellow
	Transportation	Ability to maximize road capacity	Green	Green	Green	Green
	Overall Safety	Ability to improve vehicular safety along corridor	Yellow	Yellow	Yellow	Yellow
	Stormwater Management	Ability to address water quantity and quality in ROW.	Yellow	Yellow	Yellow	Yellow
	Utility Conflicts	Ability to minimize effects on utilities within ROW	Yellow	Yellow	Yellow	Yellow
Natural Environment	Terrestrial Features	Adverse effects on terrestrial species and habitats	Yellow	Yellow	Yellow	Yellow
		Potential to enhance local terrestrial communities.	Yellow	Yellow	Yellow	Yellow
	Aquatic Features	Adverse effects on Levi's and Mullet Creek	Red	Yellow	Yellow	Yellow
		Potential to minimize impact to aquatic features	Red	Yellow	Yellow	Yellow
Drainage	Ability to minimize infringement into floodplain	Yellow	Yellow	Yellow	Yellow	
Socio-Economic Environment	Property Requirements	Amount of property required (hectares)	Green	Green	Green	Green
	Accessibility to Properties	Ability to maintain/maximize access	Yellow	Yellow	Yellow	Yellow
		Ability to accommodate future development.	Yellow	Yellow	Yellow	Yellow
	Business Operations	Ability to minimize adverse effects on businesses	Yellow	Yellow	Yellow	Yellow
		Ability to enhance business attractiveness	Yellow	Yellow	Yellow	Yellow
	Active Transportation	Ability to maximize sidewalks and a multi-use trail	Yellow	Yellow	Yellow	Yellow
Ability to meet pedestrian requirements		Yellow	Yellow	Yellow	Yellow	
Cultural Environment	Archaeological Resources	Potential for disruption of archaeological resources.	Yellow	Yellow	Yellow	Yellow
	Built Heritage & Cultural Landscapes	Potential disruption of heritage/cultural landscapes	Yellow	Yellow	Yellow	Yellow
Cost	Capital and Operating Costs	Cost of construction and operating costs	Yellow	Yellow	Yellow	Yellow



The preferred design is Alternative 4 – A hybrid approach

*Hybrid – a combination of alternatives 1 - 3

Based on consultation with the community and agencies and following review of technical studies, the Region has confirmed the recommended planning solution:

Alternative 4:
Widen Using a Hybrid Design

This alternative will allow for targeted road designs at high constraint areas, which achieve the Region's policy and planning goals, while minimizing environmental impacts.

Review of Design Alternatives at Specific Sensitive Locations

1. Mullet Creek Crossing

- The crossing is corroded and has a limited lifespan.
- Animal passage requirements are satisfied under existing conditions.
- From a geomorphic and hydraulic perspective, the crossing is deficient.

The recommendation for this crossing is to replace the existing structure with a 12.0m span x 2.2m x 51.0m precast open footing arch culvert.



2. Steeles Avenue at BramWest Parkway

- The recommended alternative is to shift the roadway to the north.
- This alternative was selected to avoid impacts to the above ground gas infrastructure on the south side.



3. Levi's Creek Crossing

- The crossing is in excellent condition structurally.
- Existing culvert dimensions are sufficient for animal passage.
- From a geomorphic and hydraulic perspective, the crossing is deficient.

The recommendations for this crossing is to replace the existing structure with a 20m span x 2.9m x 38.5m box beam open footing bridge.



Review of Design Alternatives at Specific Sensitive Locations

4. #1556 Steeles Avenue

- The front yard is supported with a retaining wall immediately adjacent to the roadway.
- The recommended alternative is to maintain the road alignment and widen symmetrically, resulting in encroachment into the property and removal of the wall.
- Property purchase will be required. Full buyout may be necessary.



5. Churchville Heritage District

At this time, various alternatives have been assessed and the Project Team is working with the City of Brampton in developing a preferred design for this intersection.

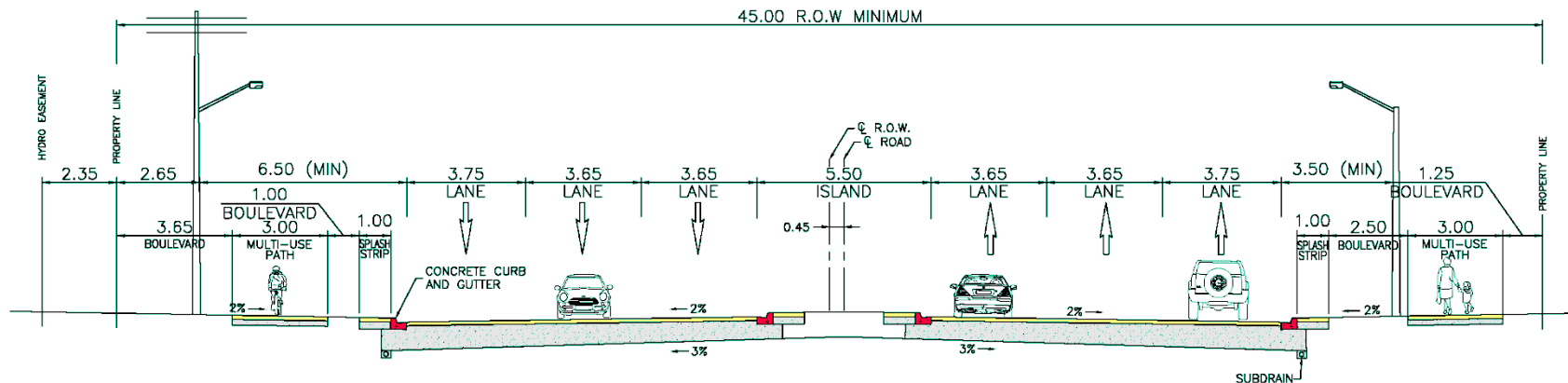


19

Preliminary Typical Cross-Sections

Key Design Considerations:

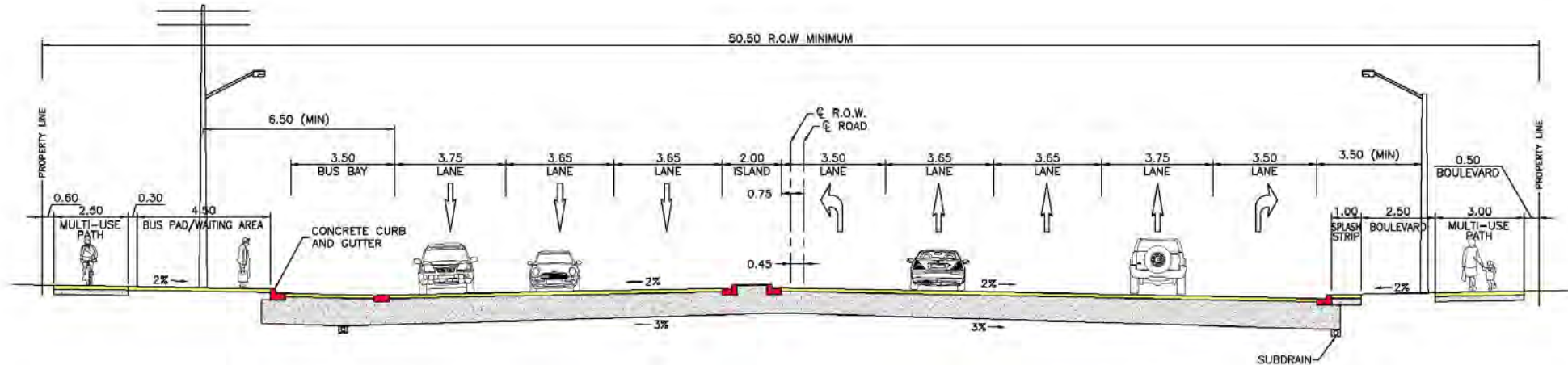
- an urban cross section with curb and gutter;
- A posted speed limit of 80 km/hr (design speed of 90 km/hr);
- The addition of left and right turn lanes as required;
- A 3.0 m wide multi-use path on both sides* of Steeles Avenue;
- Accommodation for ZUM Transit facilities, and
- A landscape design to follow Region of Peel Streetscaping Toolbox standards.



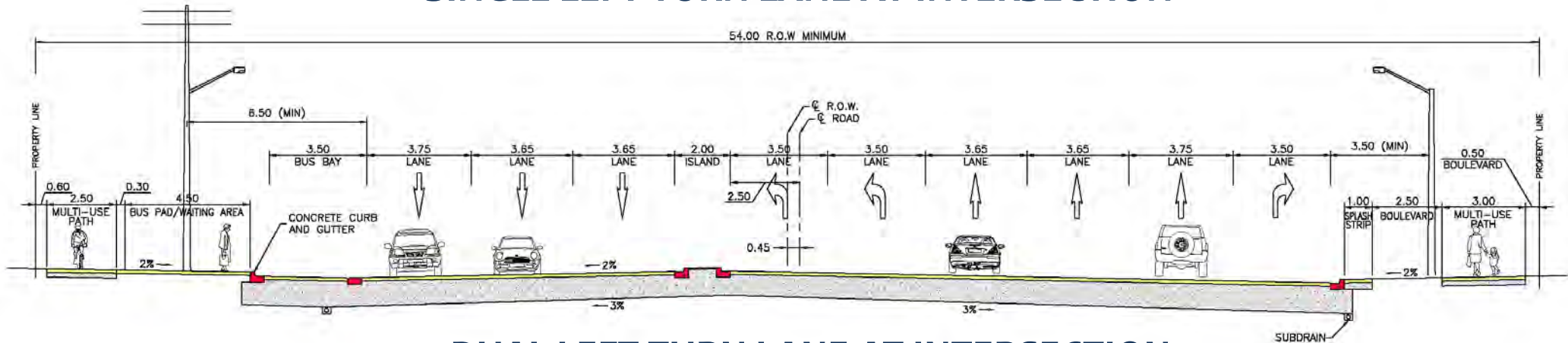
*One multi-use path will be built independently of the proposed Steeles Avenue road widening

TYPICAL MIDBLOCK CROSS SECTION

Preliminary Typical Cross-Sections



SINGLE LEFT TURN LANE AT INTERSECTION



DUAL LEFT TURN LANE AT INTERSECTION

*One multi-use path will be built independently of the proposed Steeles Avenue road widening

Transit, Walking, Biking Improvements



Pedestrians

Walking will be encouraged through the addition of a multi-use path on both sides of Steeles Avenue.

Bicycles

A 3.0m wide multi-use path is planned for the north and south side of Steeles Avenue, allowing for bicycle traffic through the study area.



Transit

Brampton Transit has determined that Steeles Avenue is very important for transit service and will expand Züm bus services in the fall of 2015 into the study area. The Region will provide for far-side bus bays and queue jump lanes in its right-of-way.

Impact Assessment – Drainage

- New storm sewers are being proposed that will direct the water collected from the road to either an existing stormwater pond or other stormwater management measures, then directly or indirectly to creeks.
- Stormwater management will be in accordance with the Gateway West Subwatershed Study, and will provide:
 - Enhanced Water Quality
 - Erosion Control
 - Quantity Control
- The Stormwater quality objectives for this project will be accomplished by using a combination of grass swales, filter strips, bioretention, oil/grit separators and stormwater ponds.
- All water crossings have been reviewed using the requirements of the Region of Peel, CVC and the Ministry of Transportation to size the crossing structures.

Impact Assessment – Drainage

Watershed	Crossing No. and Watercourse Name	Sensitivity	Flow	Drainage Area (ha)	Existing Culvert	Hydraulic Capacity	Proposed Culvert
Credit River	C1/ Mullet Creek	Low	Permanent	489	3.23m by 2.16 Elliptical CSP	100 year	12 m by 2.0m by 51.0 m concrete span arch
	C2/ Mullet Creek Trib.	None	Dry	6.8	Ditch/ Sewer	100 year	No change
	C3/ Levi Creek	High	Permanent	714	9.2m by 2.6m open box culvert	10 year	20 m span bridge
	C4/ Levi Creek Trib.	None	Dry	80.6	3.6m by 1.2m box (sewer)	NA	No change
	B1/ Credit River	High	Permanent	NA	69.8m span bridge	Regional Storm	No change

Impact Assessment – Drainage



C1 – Mullet Creek
– Permanent Warm Water

C2 – Mullet Creek Tributary
– Ephemeral Ditch (Being placed within sewer)

C3 – Levi Creek and Tributary
– Permanent Cool Water

C4 – Levi Creek Tributary
– Ephemeral Ditch (Already placed in a sewer)

B1 – Credit River
– Permanent Coolwater

Impact Assessment – Terrestrial Ecology

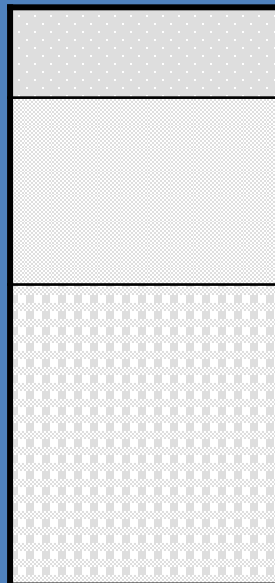
Vegetation Community / Land Use	Total Area Impacted by Permanent Disturbance	Total Area Impacted by Temporary Disturbance (i.e. grading)
	(m ²)	(m ²)
Agricultural	14,858	12,589
Cultural Meadow	6,595	4,448
Cultural Plantation	17	0
Cultural Thicket	1,222	2,288
Cultural Woodland	12	1,128
Mixed Forest	653	1,069
Commercial, Institutional	8,443	7,626
Residential	10,539	8,710
Transportation and Utilities (power generation, roads, RoW, railways, etc.)	1,910	723
Under Development/Construction	5,949	8,198
TOTAL AREA	50,198	46,775

Based on
preliminary
“worst case”
limits of
grading

Geotechnical Report

Recommendations for Existing Pavement

Mill top surface and overlay new asphalt



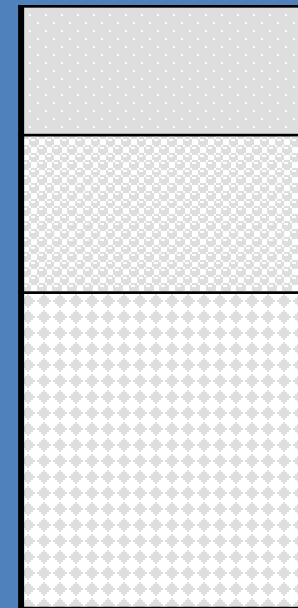
100mm New Asphalt

**Mill 70mm, maintain
remainder of existing
asphalt surface**

**650mm – 1028mm
Existing Granular Base**

Recommendations for Road Widening

Conventional Flexible Pavement



170mm Asphalt

**200mm Granular 'A'
Base**

**450mm Granular 'B'
Sub-Base**

Impact Assessment - Archaeological, Built & Cultural Heritage Reports

Stage 1 and 2 Archaeological

A Stage 1 archaeological assessment has concluded:

- Presence of 82 registered archaeological sites within 2 km;
- Proximity to water (Credit River and Levi's Creek);
- Possible in situ evidence may have survived, and
- 20% of the study corridor consists of undeveloped land.

A Stage 2 archaeological assessment will be conducted on lands outside of the current road platform but within the new proposed right-of-way before the start of detailed design.



Built and Cultural Heritage

Three significant cultural heritage resources were identified

- the Creditview Road Corridor Cultural Landscape;
- the Creditdale Farm, and
- the Churchville Heritage Conservation District.

Proposed Mitigation as follows:

- Encroachment on heritage properties will be minimized.
- Conduct a full heritage evaluation where properties are affected by recommended design



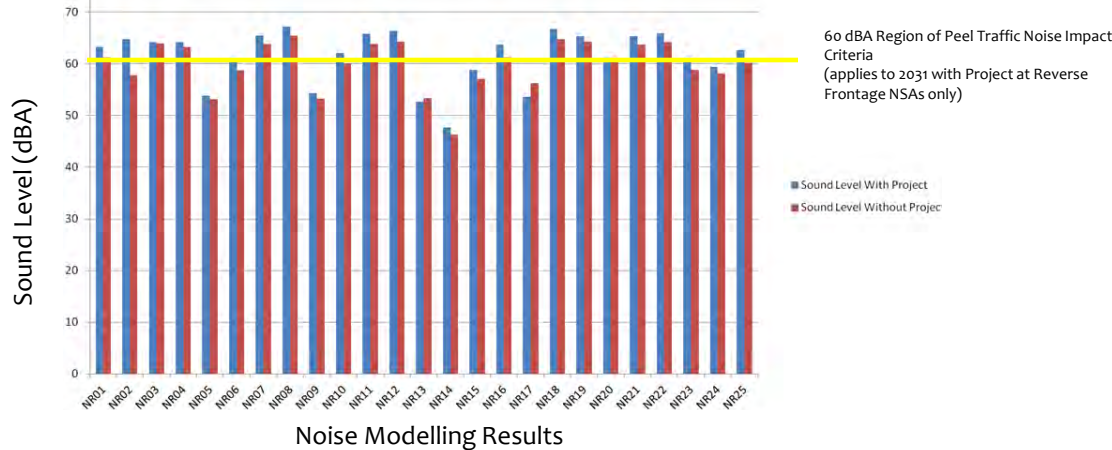
28

Noise Study

Noise modelling of the following scenarios was completed:

1. 2031 Without Project Conditions
2. 2031 With Project Conditions

Noise levels were modeled using a computerized program for the proposed road widening at the noise assessment receptor locations shown on the map.



Receptors	Sound Level with Project Exceeds 60 dBA (Peel 30-04)	Conclusions
5, 9, 13, 14, 15, 17, 24	No	Mitigation not warranted
1, 2, 3, 4, 7, 8	Yes	Mitigation to be provided through future subdivision development
6	Yes	Mitigation not required Abandoned house / commercial land use
12, 18	N/A	No mitigation required Noise level criteria does not apply to churches
10, 11, 12, 16, 19, 20, 21, 22, 23	Yes	Mitigation warranted, but may not be technically feasible or economical due to the following reasons: <ul style="list-style-type: none"> • Noise barrier walls exist at present • Increase in height of noise wall may result in only marginal improvements. Modifications are not warranted unless a 5 dBA improvement is realized • Modifications may not be cost effective Further review will be required

Guiding policies used in evaluation were the Region of Peel Policy W30-04 and Ontario Ministry of Transportation Environmental Guide for Noise.

Results of Air Quality Assessment:

Assessment was completed based on preliminary design information, traffic predictions, and anticipated land development within the study area up to year 2031.

- Levels of sulphur dioxide (SO₂), nitrogen oxides (NO_x), carbon monoxide (CO) inhalable particulates (PM₁₀) and respirable particulates (PM_{2.5}) were modeled and included expected concentration levels at the closest sensitive receptors.
- Emission rates were developed using modeling software based on the traffic data obtained from the 2013 traffic study.
- The analysis indicates that any increase in pollutants resulting from anticipated increased traffic volumes will be below the Ministry of the Environment's ambient air quality criteria.
- Predicted effects for NO_x decrease with time as older vehicles are removed from service. Emissions factors for the other target pollutants also decrease with time, but not enough to offset increased traffic volumes.

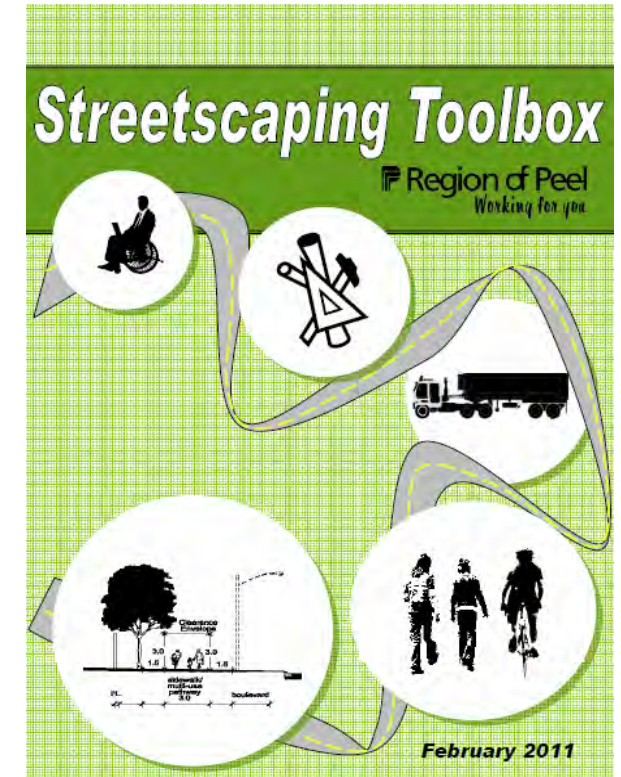
Landscape Plan

- landscaping plan will follow the guidelines for the Region's Streetscaping Toolbox and input from City of Brampton's Open Space, Design and Construction.
- A formal tree preservation /planting plan will be prepared in the detailed design phase.

Environmental Commitments

The Region will ensure :

- access to existing properties/entrances be maintained during and after construction; and,
- an overall benefit to the habitat of endangered species in the study area will be created.



- Receive public comments by June 20, 2013;
- Review and confirm preferred design alternatives and assessment in light of comments received from the public and agencies to date, and confirm or modify design,
- Confirm environmental commitments, and
- Prepare and File Environmental Study Report.

How Can You Provide Your Comments on the Project?

Please complete the comment sheet and place in the Comment Box or send your comments by email/fax/letter to either of the following project team members by **June 20, 2013**.

You can view tonight's information boards again on our website:

<http://www.peelregion.ca/pw/roads/environ-assess/index-bram.htm>



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Thank you for your participation