Mississauga Road, Old Main Street, Bush Street, Olde Base Line Road, and Winston Churchill Boulevard Class EA

Public Information Centre #2

Wednesday, November 20, 2013
Caledon Country Club, 2121 Olde Base Line Road, Caledon

HDR

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Welcome

- Please sign in and take a feedback form
- If you have any questions our team is available to help you
- Place your completed feedback form in the Comment Box, or send it to:

Gino Dela Cruz
Project Manager
Gino.DelaCruz@peelregion.ca

Asha Saddi
Technical Analyst
asha.saddi@peelregion.ca

by **Wednesday, December 4, 2013**.

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What we heard at PIC#1

- **Maintain rural character & countryside scenic quality**
- Minimize potential property impacts
- Preserve historic fences and features
- Preserve natural environment
- Maintain existing vertical alignment and cross-section
- Address poor pavement conditions
- Address excessive speeds
- Address signage clutter
- Accommodate all road users through a multi-modal approach
- Improve sightlines

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Purpose of PIC #2

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

- Provide a project update on
  - What has been done to date
  - What we have heard
- Present the
  - Alternative design concepts developed by the study team
  - Evaluation of alternative design concepts
  - Preliminary recommended design concept
- Discuss Next Steps
- Ask for your input

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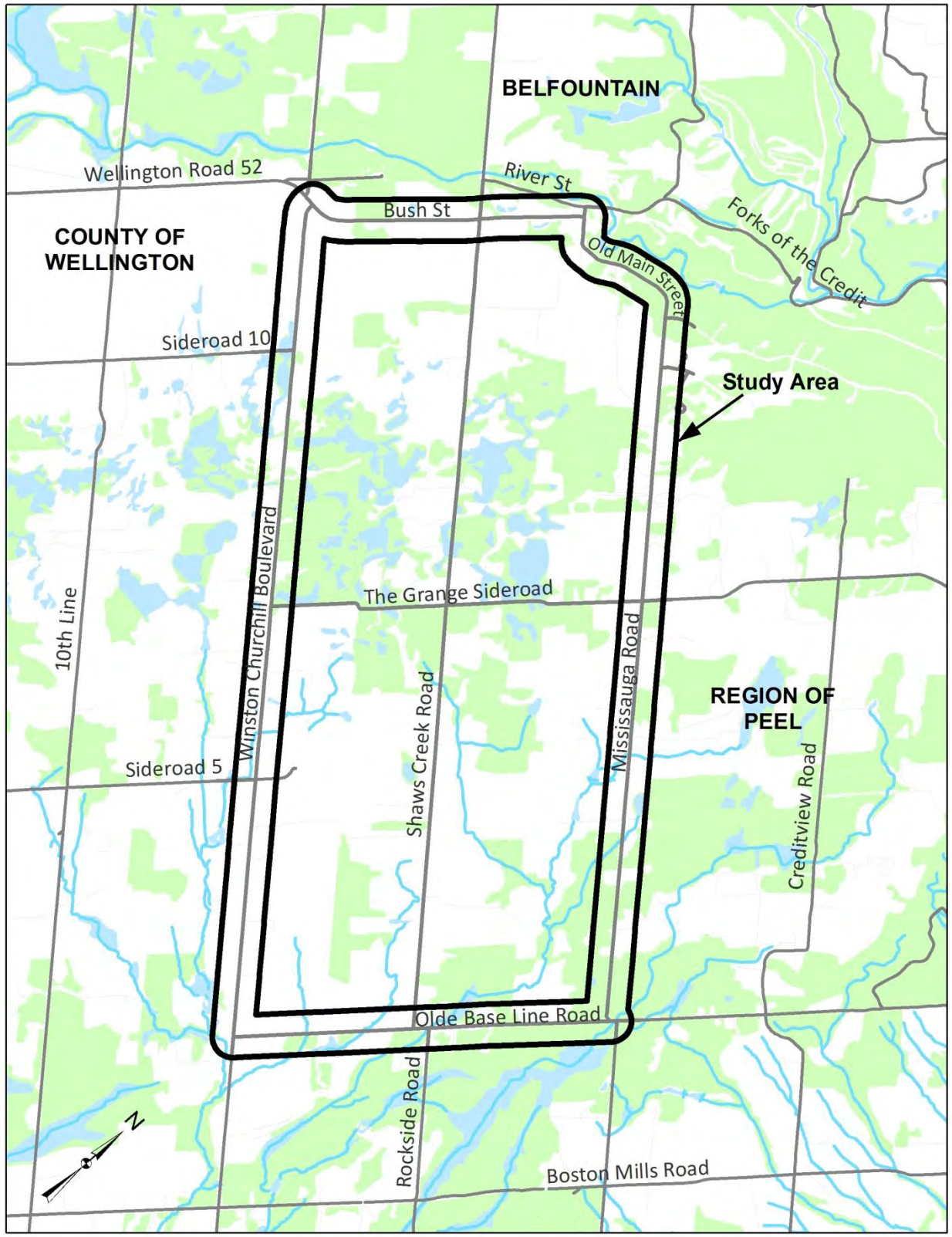
Beyond the Municipal Class EA Process

Additional Points of Public Contact	Phases	Mandated Points of Public Contact
CWG Meeting Fall 2012 Open House Fall 2012	**PHASE 1: PROBLEM OR OPPORTUNITY** ☑ Identify and describe the problem and opportunities	Notice of Study Commencement
CWG Meeting Spring 2013	**PHASE 2: ALTERNATIVE SOLUTIONS** ☑ Identify alternative solutions to the problem ☑ Inventory the natural, social, economic & cultural environments ☑ Identify the impacts of the alternative solutions after mitigation ☑ Evaluate the alternative solutions with consideration of environmental and technical impacts ☑ Identify a recommended alternative solution(s)	PIC#1 Spring 2013 • **Needs and Justification** • **Planning Alternative Solutions** • **Evaluation of Planning Alternative Solutions** • **Preliminary Recommended Solution**
CWG Meeting Fall 2013	**PHASE 3: ALTERNATIVE DESIGN CONCEPTS FOR THE PREFERRED SOLUTION** ❑ Identify alternative designs to implement the preferred solution ❑ Inventory the natural, social, economic & cultural environments ❑ Identify the impacts of the alternative designs after mitigation ❑ Evaluate alternative designs with consideration of the impacts (preliminary recommendation made) ❑ Confirm the recommended design concept	We are here PIC#2 Fall2013 • **Alternative designs for the preferred solution** • **Evaluation of alternative design concepts** • **Preliminary 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	Notice of Study Completion and Filing the ESR 
	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	

In addition to the mandated points of public contact, the Region has chosen to organize a **Community Working Group (CWG)** for the study.

Study Area



The Study Area consists of:

- Bush Street
- Winston Churchill Boulevard
- Mississauga Road / Old Main Street
- Olde Base Line Road

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Our Vision

The Region is focused on ensuring the existing and future road network meets the changing needs of all users in a safe, efficient, sustainable and environmentally friendly manner

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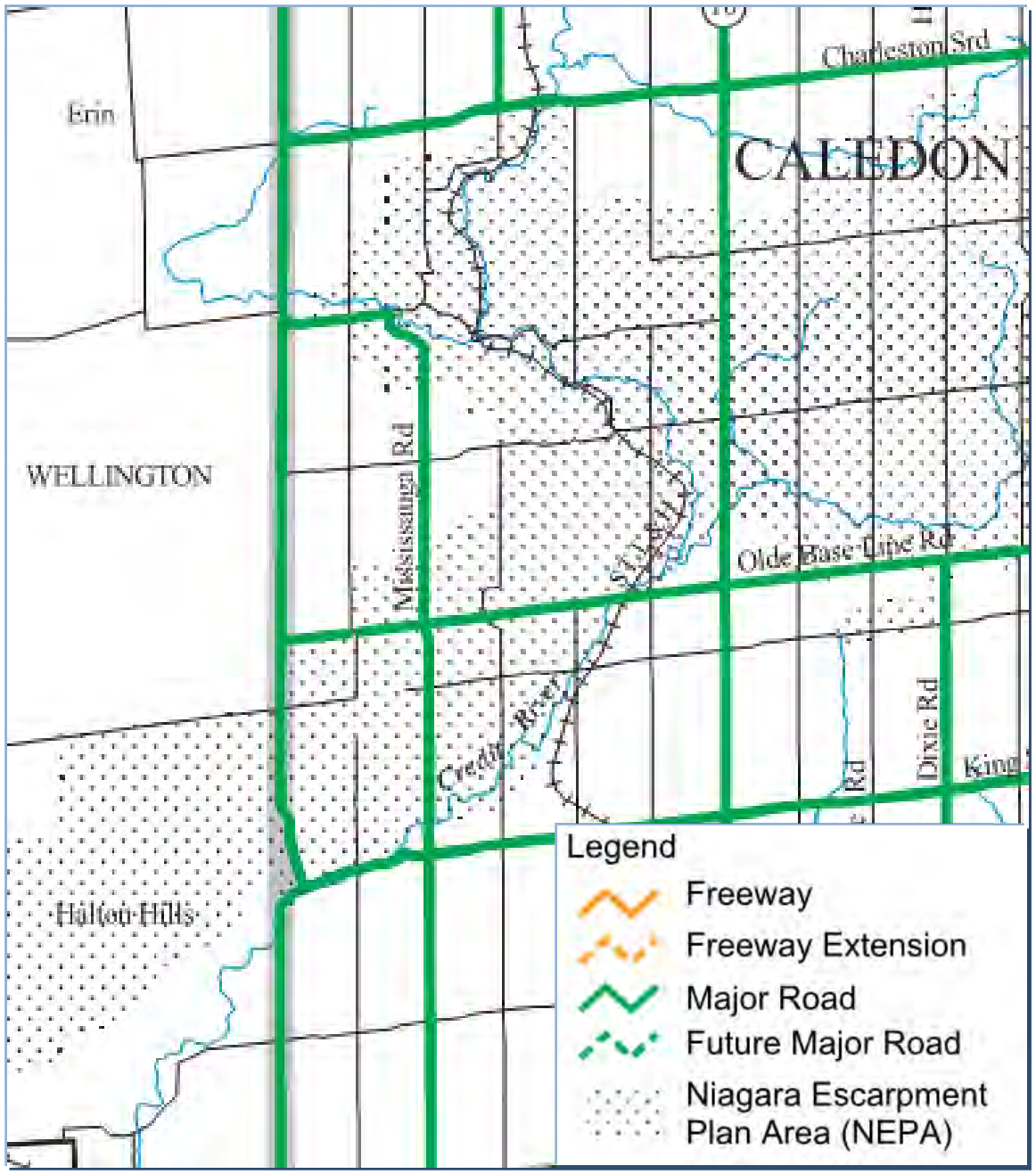
Role and Function of Regional Arterial Roads



Region of Peel Official Plan – Schedule E

General Objectives of Peel's Transportation System

- To achieve a safe convenient and efficient movement of people and goods in the Region Support the provision of improved transportation mobility to all residents, employees and visitors
- Promote and encourage all sustainable modes of transportation to provide mobility and choice
- Minimize adverse environmental impacts caused by transportation
- Support a transportation system that enhances economic growth in the Region
- Ensure Regional transportation infrastructure is sustainable and that practices and performance measures are in place to maintain a safe and efficient Regional transportation network

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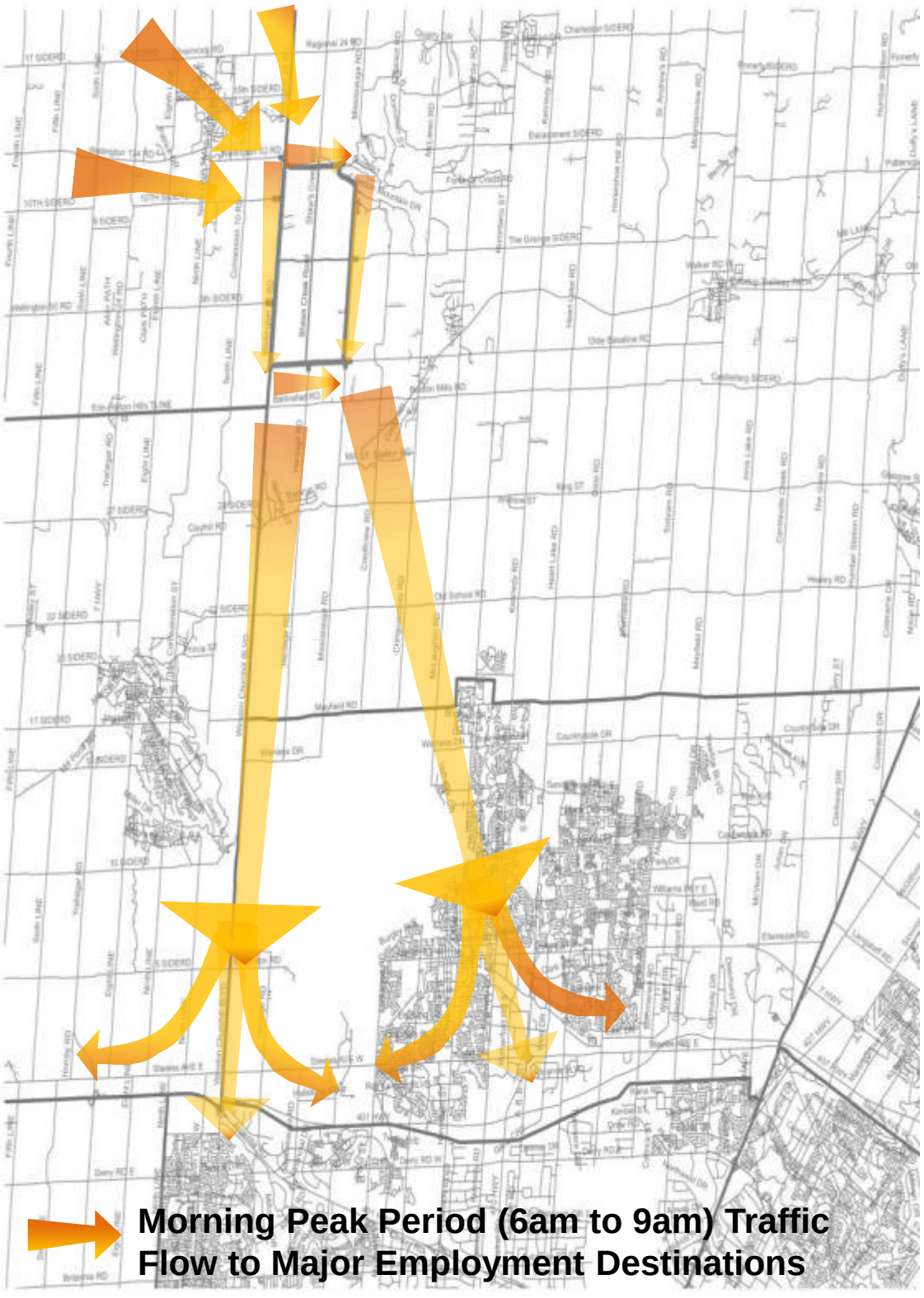
Broader Transportation Network



The roads in the study area provide connections to major employment destinations.

Bush Street (Regional Road 11), Mississauga Road / Old Main Street (Regional Road 1), Winston Churchill Boulevard (Regional Road 19), and Olde Base Line Road (Regional Road 12) are all part of the Peel Region arterial road network.

Winston Churchill Boulevard (Regional Road 25) is also part of the Wellington County arterial road network.

The roads in the study area also provide connections to tourist destinations in the immediate and surrounding area.

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Problem Statement

Work to date has confirmed similar issues identified in the 2010 study.

Existing problems on the study area roads (Mississauga Road/Old Main Street, Bush Street, Winston Churchill Boulevard and Olde Base Line Road) consist of:

- Deficient pavement conditions
- Deficient drainage
- Deficient sightlines
- Safety for all road users, including safety of wildlife




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Needs Assessment

Assessment done to date has identified issues in the following theme areas:

- Traffic and Road Safety
  - Improve safety for all road users – motorists, cyclists, pedestrians
  - Reduce collisions with animals
  - Address excessive speeds – cars, trucks, motorcycles
- Asset Management and State of Good Repair
  - Address poor conditions of the roadway pavement
  - Address drainage deficiencies
- Maintain Existing Character
  - Retain existing number of travel lanes
  - Retain existing vertical alignments where safe
  - Minimize impacts on natural, heritage, and cultural features

There is a recognition that users may have competing interests and needs

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Theme #1

Traffic and Road Safety

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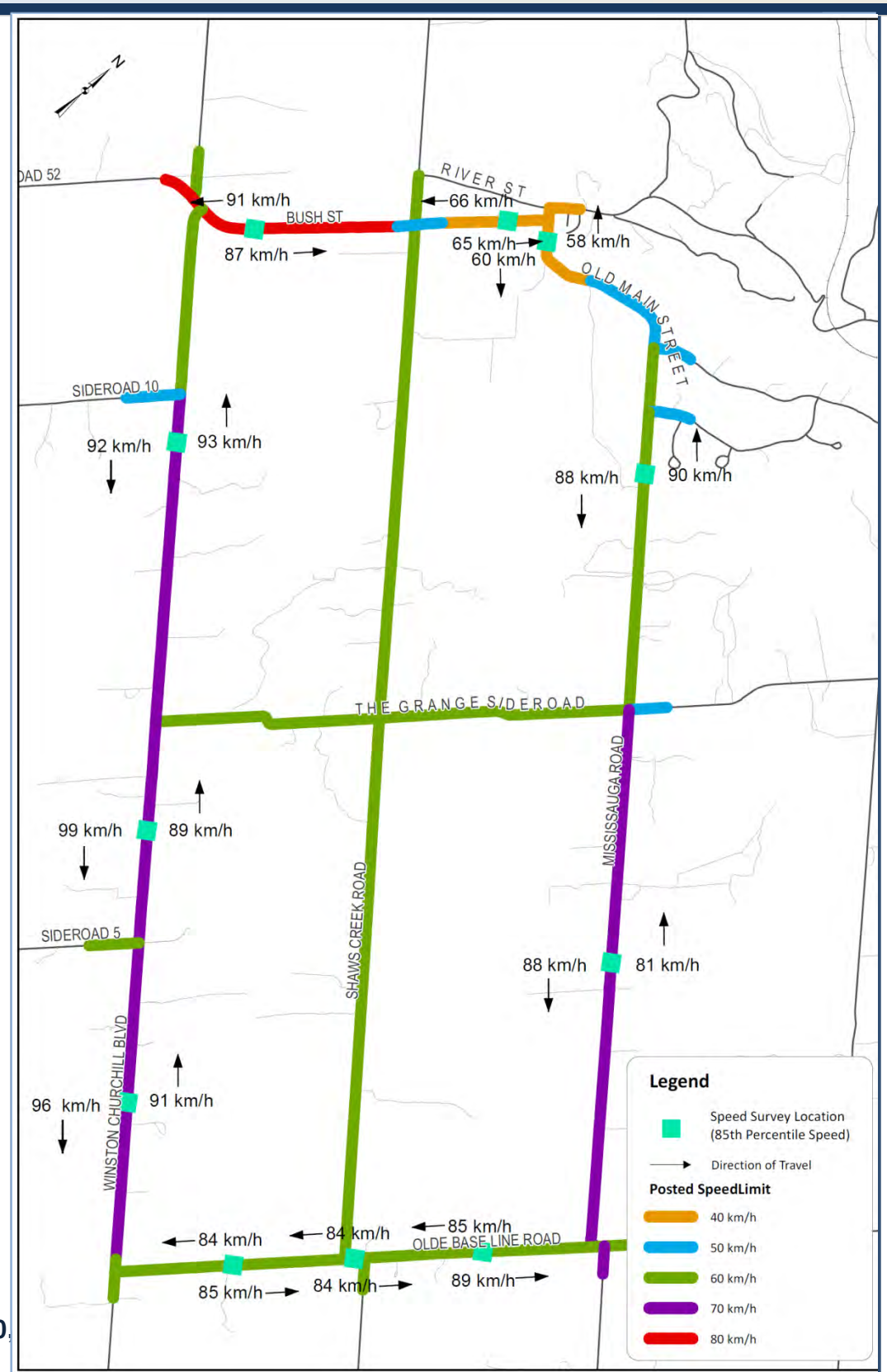
November 20, 2013

Traffic Speeds



Speed surveys indicate that traffic generally travels at higher speeds than the posted speed limits.

Road segments where the 85th percentile speeds are more than 20 km/h over the posted speed limits include:

- Olde Base Line Road
- Mississauga Road between The Grange Sideroad and Woodlands Court
- Winston Churchill Boulevard
- Bush Street in the Village of Belfountain

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Collisions by Road Segment / Intersection

Number of Collisions by causal factor from January 1, 2006 to December 31, 2010 within Study Area

Location	Multiple Motor Vehicles[1]			Single Motor Vehicle and Cyclist(s)[2]			Single Motor Vehicle and Pedestrian(s)[2]			Single Motor Vehicle and Animal(s)[2]			Single Motor Vehicle Only, Involving Off-Road Objects[3]		
	Property Damage Only	Non-Fatal Injury	Fatal	Property Damage Only	Non-Fatal Injury	Fatal	Property Damage Only	Non-Fatal Injury	Fatal	Property Damage Only	Non-Fatal Injury	Fatal	Property Damage Only	Non-Fatal Injury	Fatal
Intersection of Olde Base Line Rd and Mississauga Rd	6	1	-	-	-	-	-	-	-	2	-	-	1	-	-
Mississauga Rd Between Olde Base Line Rd and Bush St	7	-	-	-	1	-	-	-	-	8	-	-	5	1	-
Intersection of Mississauga Rd and Bush St	2	-	-	-	-	-	-	-	-	2	-	-	-	-	-
Bush St Between Mississauga Rd and Winston Churchill Blvd	1	-	-	-	-	-	-	-	-	2	-	-	-	-	-
Intersection of Bush St and Winston Churchill Blvd	1	-	-	-	-	-	-	-	-	1	-	-	2	1	-
Winston Churchill Blvd Between Bush St and Olde Base Line Rd	1	1	-	-	-	-	-	-	-	5	-	-	2	-	-
Intersection of Winston Churchill Blvd and Olde Base Line Rd	1	-	-	-	-	-	-	-	-	2	-	-	-	1	-
Olde Base Line Rd Between Winston Churchill Blvd and Mississauga Rd	1	-	-	-	-	-	-	-	-	8	-	-	2	-	-
Total Collisions	**20**	**2**	**-**	**-**	**1**	**-**	**-**	**-**	**-**	**30**	**-**	**-**	**12**	**3**	
	22			**1**			**0**			**30**			**15**		

Notes:
1) 'Multiple Motor Vehicles' collisions include collisions cause by, but did not necessarily collide with multiple motor vehicles.
2) 'Single Motor Vehicle' collisions involving cyclists, pedestrians, or animals, include collisions caused by, but did not necessarily collide with the external factor. (Ex. A collision in which a vehicle swerved to avoid an animal and thus collided with the guardrail, was considered a 'Single Motor Vehicle and Animal' collision).
3) 'Single Motor Vehicles Only, Involving Off-Road Objects' collisions include collisions in which vehicles lost control due to external factors (not including motor vehicles, cyclists, pedestrians, or animals), and the single motor vehicles ended up in the ditch, or collided with stationary objects such as guiderails or posts.

Source: Collision information provided by Peel Region's Safety group.

Highest number of collisions are on:

- Mississauga Road between Olde Base Line Road and The Grange Sideroad
- Olde Base Line Road between Winston Churchill Boulevard and Mississauga Road

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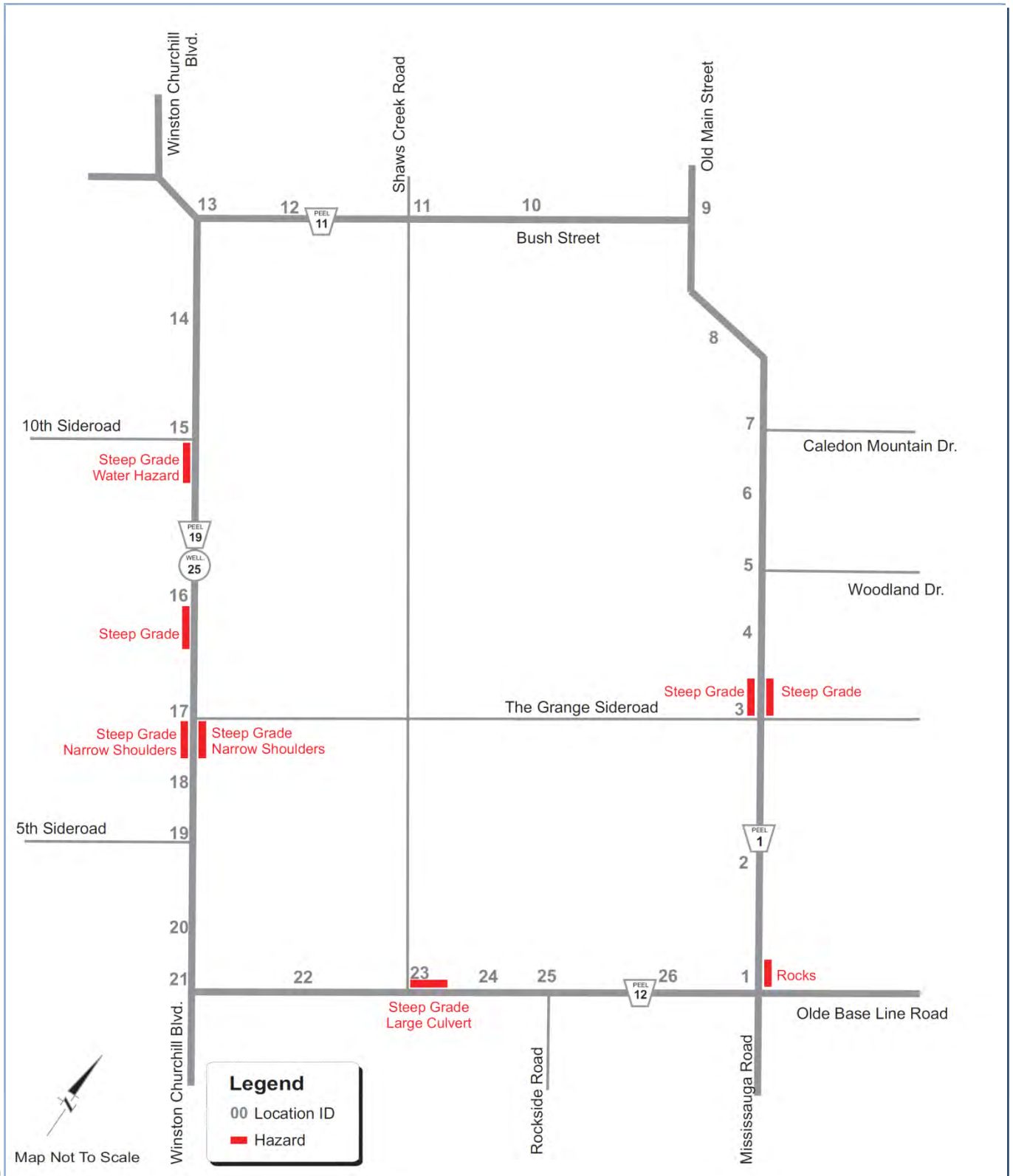
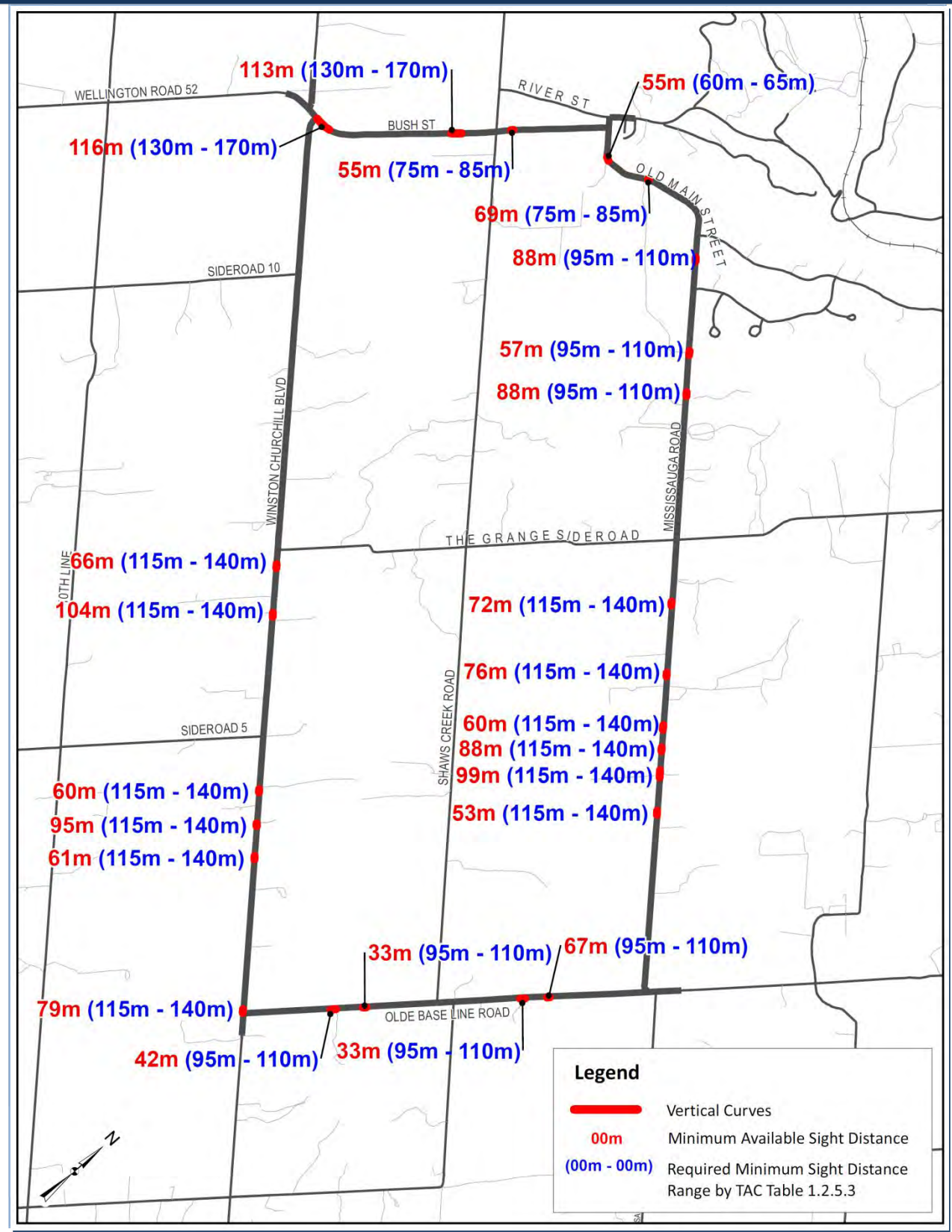
Roadside Hazards



Roadside hazards include hydro poles, steep slopes, and rock cuts. The Study will consider options to improve safety at roadside hazard locations.

Vertical Alignment:
Stopping Sight Distance Deficiencies



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Sight Distances at Driveways

At many driveways, sight distances are inadequate.

Fully Meets Minimum Standards	Yes	No	TOTAL
Stopping Sight Distance	163 (88%)	21 (12%)	184 (100%)
Minimum Turning Sight Distance	83 (45%)	101 (55%)	184 (100%)
Desirable Turning Sight Distance	60 (33%)	124 (67%)	184 (100%)

Based on Transportation Association of Canada (TAC) design standards.

Stopping Sight Distance is based on drivers on the main road approaching driveways.
Turning Sight Distance is based on drivers turning left or right from their driveways.

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Theme #2

Asset Management and State of Good Repair

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Pavement and Drainage Conditions

- The preliminary findings from the geotechnical investigations completed to date reveal that structural capacity and strength of all roads are in poor condition and are expected to continuously deteriorate.
- The main cause to pavement distress is attributed to variable granular thickness along roadways with a non-uniform base and sub-base materials.
- Shoulder granular is also thinner than the sub-base below the roadway which affects the drainage of the base leading to frost heave and rutting.
- Some of the pavement deficiencies identified throughout the study area include:
  - Wheel tracking and rutting
  - Transverse and longitudinal meander and mid-lane cracking
  - Alligator pavement edge cracking



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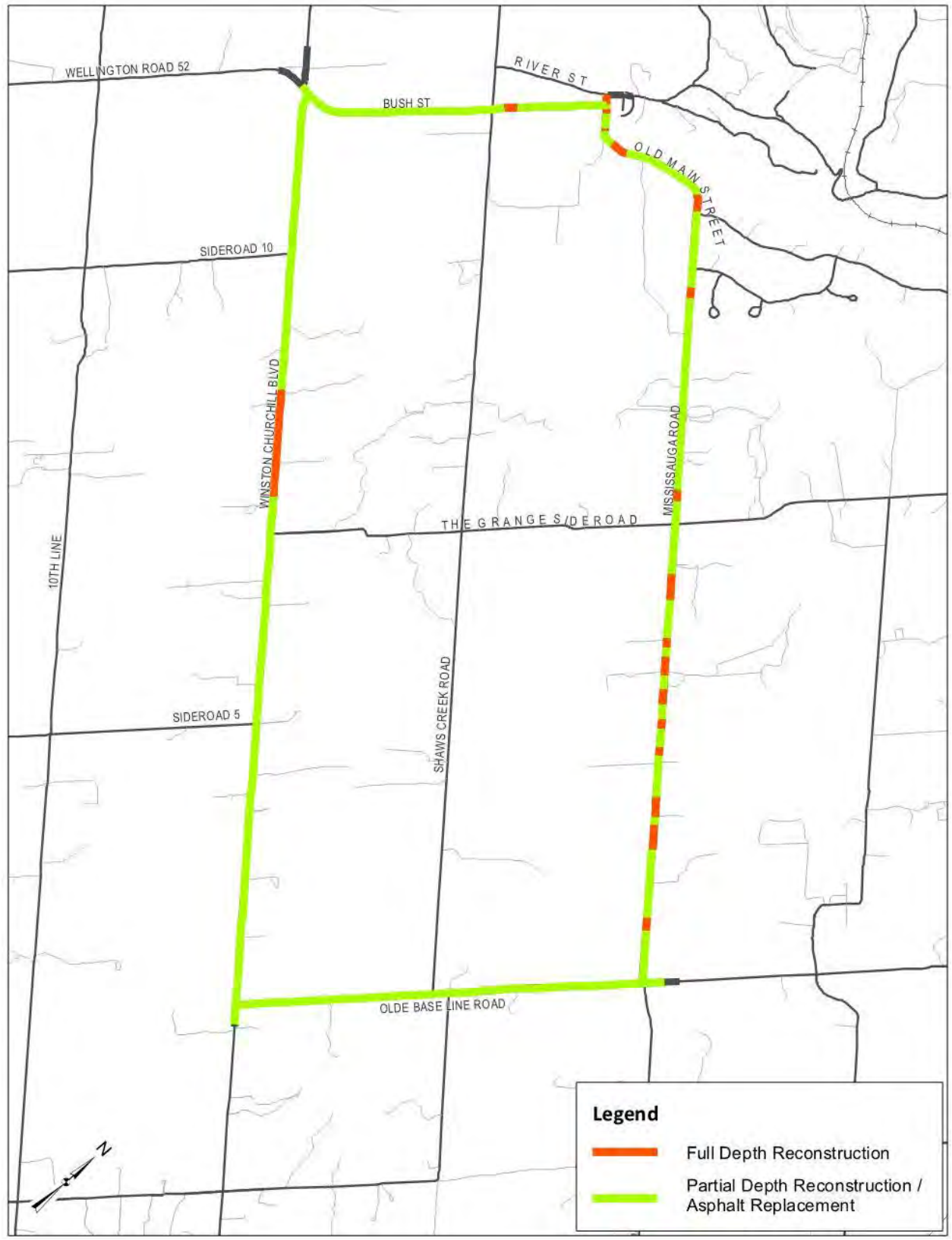
Pavement and Drainage Conditions by Roadway

Roadway	Existing Conditions / Pavement Deficiencies	
Mississauga Road/Old Main Street	•Granular thickness of base and sub-base highly variable •"Bathtub" construction – granular under shoulder is thinner than under the roadway •Wheel tracking rutting •Slight alligator pavement edge cracking	•Moderate alligator transverse cracking •Longitudinal meander and mid-lane cracking •Inadequate / sub-standard ditches •Ponding and vegetation along shoulders
Bush Street	•Granular thickness of base and sub-base highly variable	•Centreline and transverse cracking •Deficient structural capacity and stability
Winston Churchill Boulevard	•Granular thickness of base and sub-base highly variable •Deficient structural capacity and stability •Medium severity raveling	•High severity large area alligator cracking •Localized depressions •Shallow bedrock does not allow for drainage under roadway
Olde Base Line Road	•Granular thickness of base and sub-base highly variable •Medium and high severity cracking •Frost heave and temperature related deterioration	•Localized depressions •Water logging due to top permeable layers and bottom relatively impermeable silty clay •Shallow bedrock does not allow for drainage under roadway

Geotechnical Recommendations



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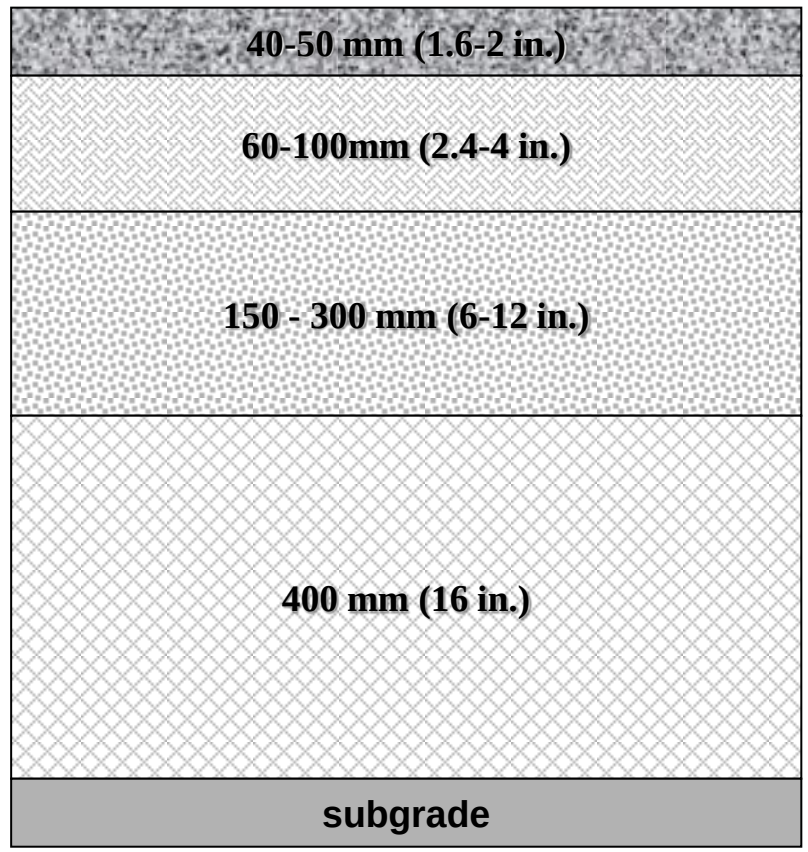
Recommended Pavement Structures

Geotechnical Investigations completed to date have recommended the following typical pavement structure to address the deficient pavement conditions:



Surface Course

Binder Course

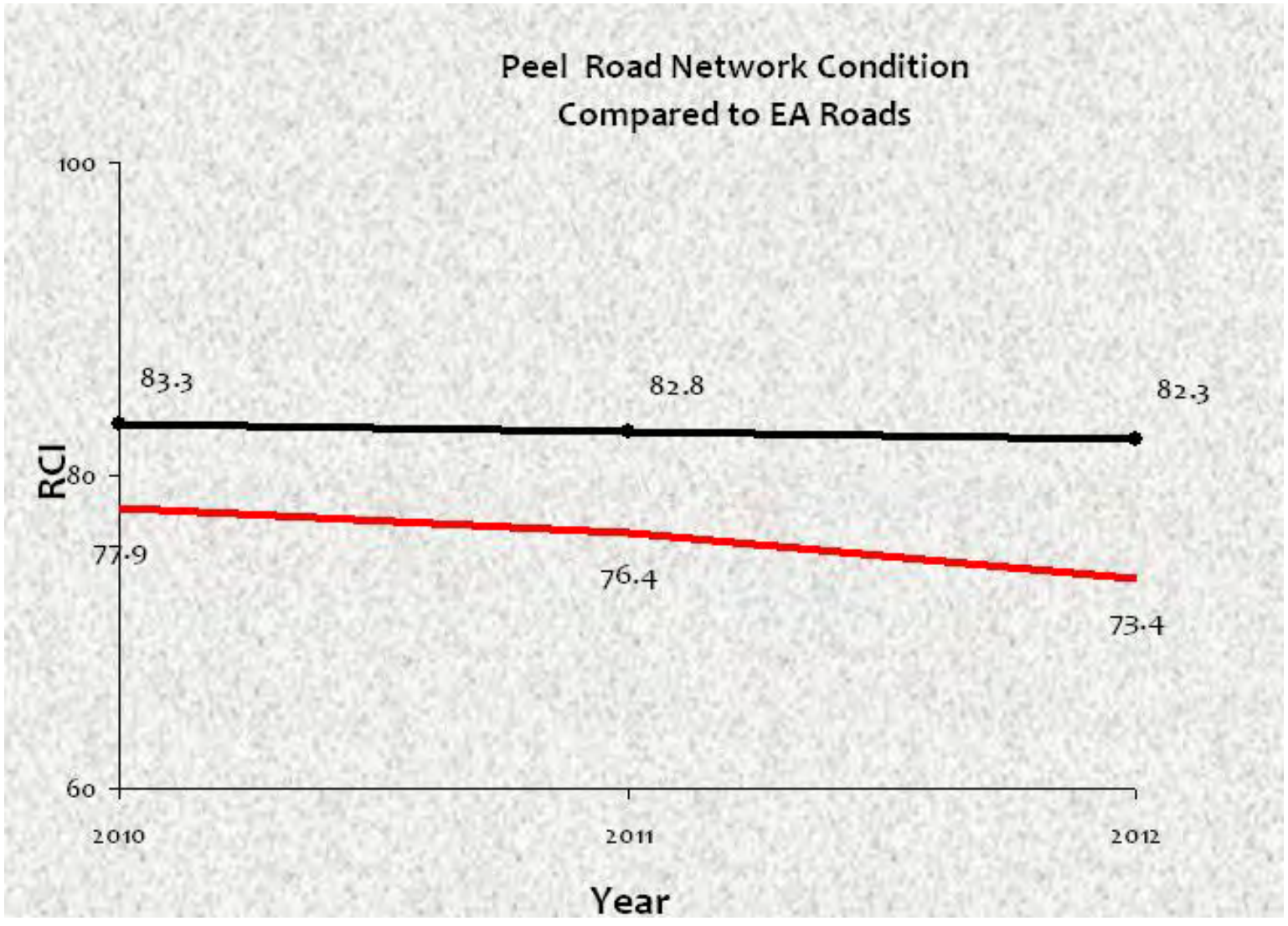
Granular A Base

Granular B Sub-base

* Note: The pavement recommendations will be confirmed in the subsequent phases of this study.

Pavement structure granular materials must conform to OPSS (Ontario Provincial Standard Specification) specifications.

Ride Condition Index (RCI)



- Black line represents projected network RCI for all Regional Roads.
- Red line represents projected RCI for the roads in the study area.

- The Ride Condition Index (RCI) is a quantitative number that represents the overall condition and quality of a Regional road network.
- The RCI aggregates the rating of many types of road defects including cracking, rutting, potholes and surface quality into one measurable number.
- Study area roads are below the network average and are deteriorating faster than the network average and will likely be below the level of service (72) for roads in the next 3- 5 years.

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Theme #3

Maintain Existing Character

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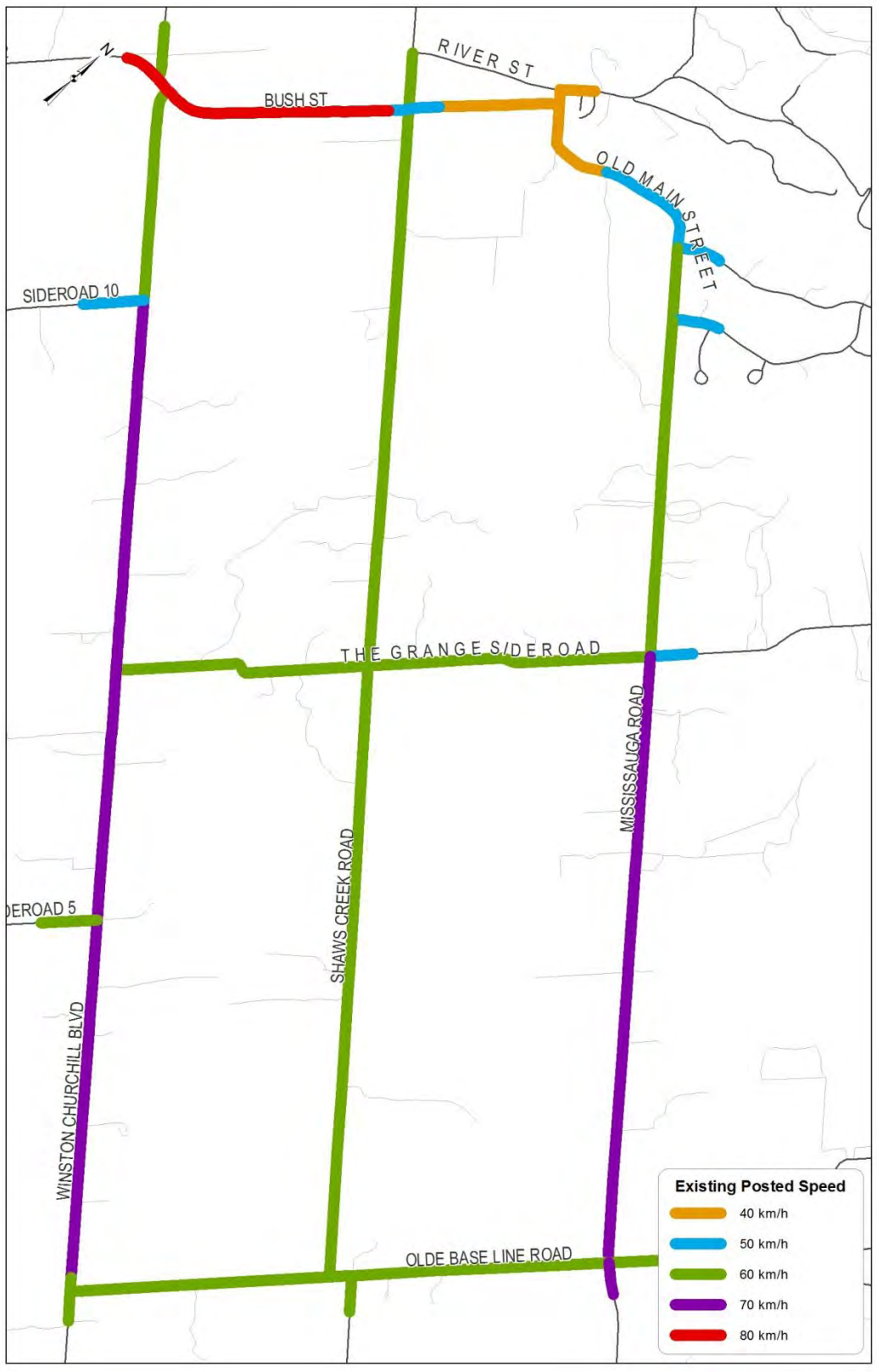
Key Design Principles

- Maintain two lane cross-section
- Minimize profile changes
- Maximize utilization of right-of-way space
- Minimize property impacts
- Minimize impacts to existing driveways
- Promote Active Transportation

Existing and Proposed Posted Speeds



In general, a reduction in posted speeds throughout the study area is proposed.

This will address deficient stopping sight distance and driveway sightlines, while minimizing changes to the existing profiles.

Belfountain Village Design Domain

Design Element	TAC Standards	Existing	Recommended Cross-Section
Speed Limit	Minimum 50 km/h design speed required for 40 km/h posted speed	Existing alignment generally conforms with design standards	Retain 40 km/h posted speed limit. Design conforms with design standards
Number of lanes based on existing and future traffic	2	2	2
Travel Lane width	3.3 - 3.7 m	3.2-3.7 m	3.3m
Shoulder / buffer width	1.5 m paved shoulder	0.5-2.7m shoulder (of which 0.2-2.0 m is paved)	1.7 m paved shoulder on Old Main Street, east of the Community Centre; 0.5 m mountable curb separates 1.7 m sidewalk from vehicle zones on Bush Street and Old Main Street north of the Community Centre
Cycling facility	1.5 m minimum (paved)	None	1.7 m paved shoulder east of the Community Centre
Drainage	Adequate drainage is required	Inadequate drainage	Underground infrastructure to provide adequate drainage

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Bush Street Design Domain

Design Element	TAC Standards	Existing	Recommended Design
Speed Limit	Minimum 60-90 km/h design speed required for 50-80 km/h posted speed	Deficient. Vertical alignment provides design speed of 50 km/h	50-70 km/h posted speed limit with a 60-80 km/h design speed
Number of lanes based on existing and future traffic	2	2	2
Travel Lane width	3.5 - 3.7 m	3.2-3.8 m	3.5 m
Shoulder / buffer width	1.5 m paved shoulder	1.3-3.5 m shoulder (of which 0.2-1.5 m is paved)	1.7 m paved shoulder
Cycling facility	1.5 m wide (paved)	None	1.7 m paved shoulder
Drainage	Adequate drainage is required	Substandard ditches are damaging the pavement	Proper ditches to provide adequate drainage and protect the pavement

Mississauga Road Design Domain

Design Element	TAC Standards	Existing	Recommended Design
Speed Limit	Minimum 60-80 km/h design speed required for 50-70 km/h posted speed	Deficient. Vertical alignment provides design speed of 30 – 50 km/h	50-60 km/h posted speed limit with a 60-70 km/h design speed
Number of lanes based on existing and future traffic	2	2	2
Travel Lane width	3.5 - 3.7 m	3.3-3.5 m	3.5 m
Shoulder / buffer width	1.5 m paved shoulder	0.5-2.3 m shoulder (of which 0-2.3 m is paved)	1.7 m paved shoulder
Cycling facility	1.5 m wide (paved)	None	1.7 m paved shoulder
Drainage	Adequate drainage is required	Substandard ditches are damaging the pavement	Proper ditches or underground infrastructure to provide adequate drainage

Winston Churchill Boulevard Design Domain

Design Element	TAC Standards	Existing	Recommended Design
Speed Limit	Minimum 70-80 km/h design speed required for 60-70 km/h posted speed	Deficient. Vertical alignment provides design speed of 40 – 60 km/h	60 km/h posted speed limit with a 70 km/h design speed
Number of lanes based on existing and future traffic	2	2	2
Travel Lane width	3.5 - 3.7 m	3.1-3.6 m	3.5 m
Shoulder / buffer width	1.5 m paved shoulder	1.2-3.0 m shoulder (of which 0-1.0 m is paved)	1.7 m paved shoulder
Cycling facility	1.5 m wide (paved)	None	1.7 m paved shoulder
Drainage	Adequate drainage is required	Substandard ditches are damaging the pavement	Proper ditches or underground infrastructure to provide adequate drainage

Olde Base Line Road Design Domain

Design Element	TAC Standards	Existing	Recommended Design
Speed Limit	Minimum 70 km/h design speed required for 60 km/h posted speed	Deficient. Vertical alignment provides design speed of 30 – 50 km/h	50 km/h posted speed limit with a 60 km/h design speed
Number of lanes based on existing and future traffic	2	2	2
Travel Lane width	3.3 - 3.7 m	3.4-3.5 m	3.5 m
Shoulder / buffer width	1.5 m paved shoulder	0.4-0.8 m unpaved shoulder	1.7 m paved shoulder
Cycling facility	1.5 m wide (paved)	None	1.7 m paved shoulder
Drainage	Adequate drainage is required	Substandard ditches are damaging the pavement	Proper ditches or underground infrastructure to provide adequate drainage

Natural Feature Constraints - Woodlands, Wetlands and Designated Policy Areas

Figure 5a

Belfountain Transportation EA

Natural Feature Constraints - Woodlands, Wetlands and Designated Policy Areas

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

0 100 200 300 400 500 Meters

November 18, 2013. Project No: NRSI-1337.
UTM Zone 17, NAD 83 Scale: 1:17,000 (at 11x17")

Legend

- Study Area
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Waterbody
- Significant Woodland (>10ha)
- Core Area Woodland (>16ha)
- ANSI, Life Science
- Environmentally Sensitive Area (ESA)
- Provincially Significant Wetland (PSW)
- Non-Provincially Significant Wetland (PSW)
- Butternut Observation

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Natural Feature Constraints - Fish and Wildlife Habitat

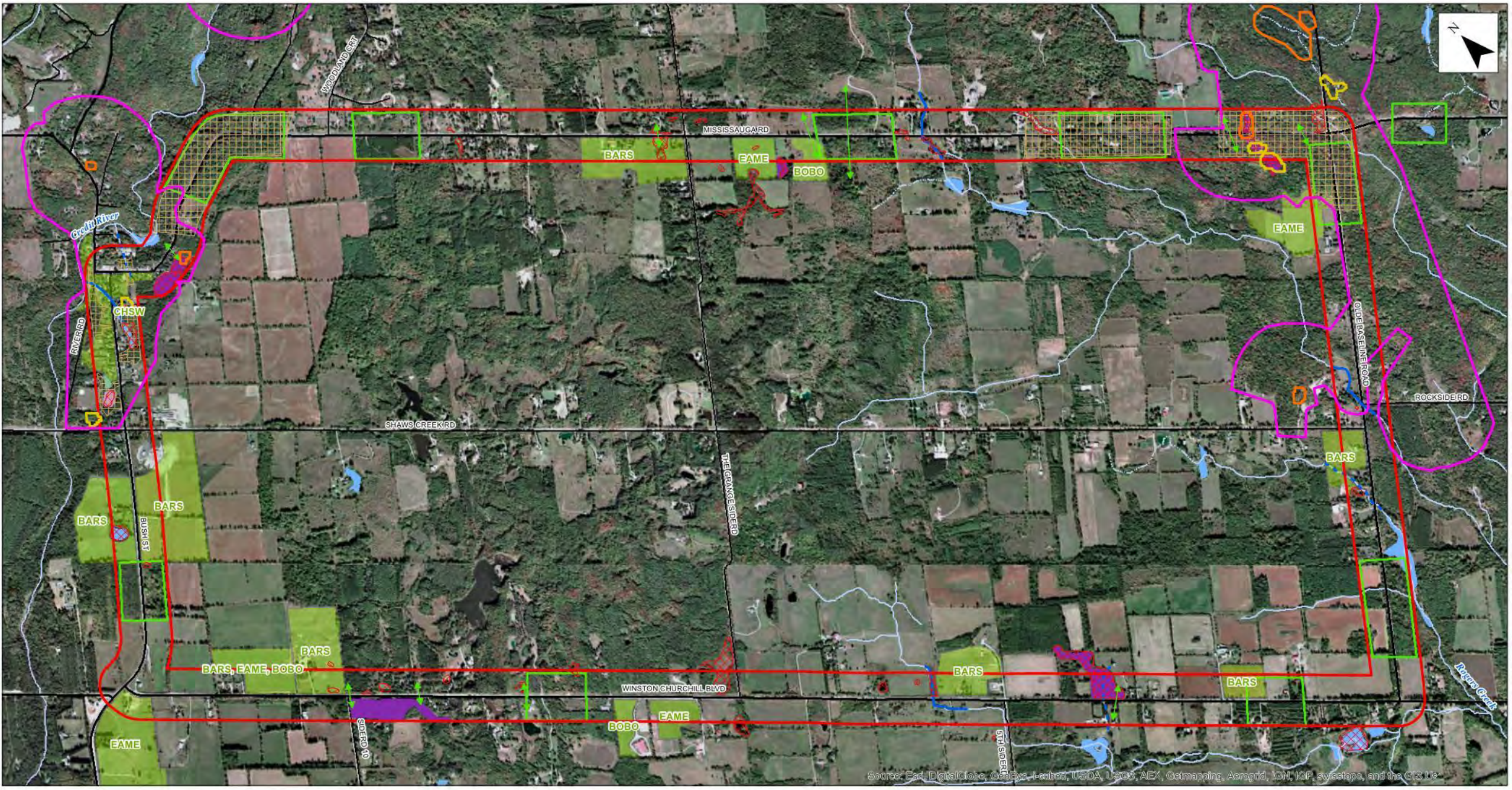

Figure 5b

Belfountain Transportation EA

Natural Feature Constraints - Fish and Wildlife Habitat

NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

0 100 200 300 400 500 Meters

November 15, 2013. Project No: NRSI-1337
UTM Zone 17, NAD 83 Scale: 1:17,000 (at 11x17")

Legend

- Study Area
- Primary Road
- Secondary Road
- Permanent Watercourse
- Intermittent Watercourse
- Waterbody
- Northern Flying Squirrel High-Denisty Areas
- Amphibian Crossing
- Direct Fish Habitat
- Indirect Fish Habitat
- Amphibian Breeding SWH
- Species at Risk (SAR)

Jefferson Salamander Habitat

- Confirmed
- Potential
- Regulated Habitat

Significant Wildlife Habitat

- Western Chorus Frog Habitat
- Turtle Overwintering SWH
- Deer Movement Corridor SWH

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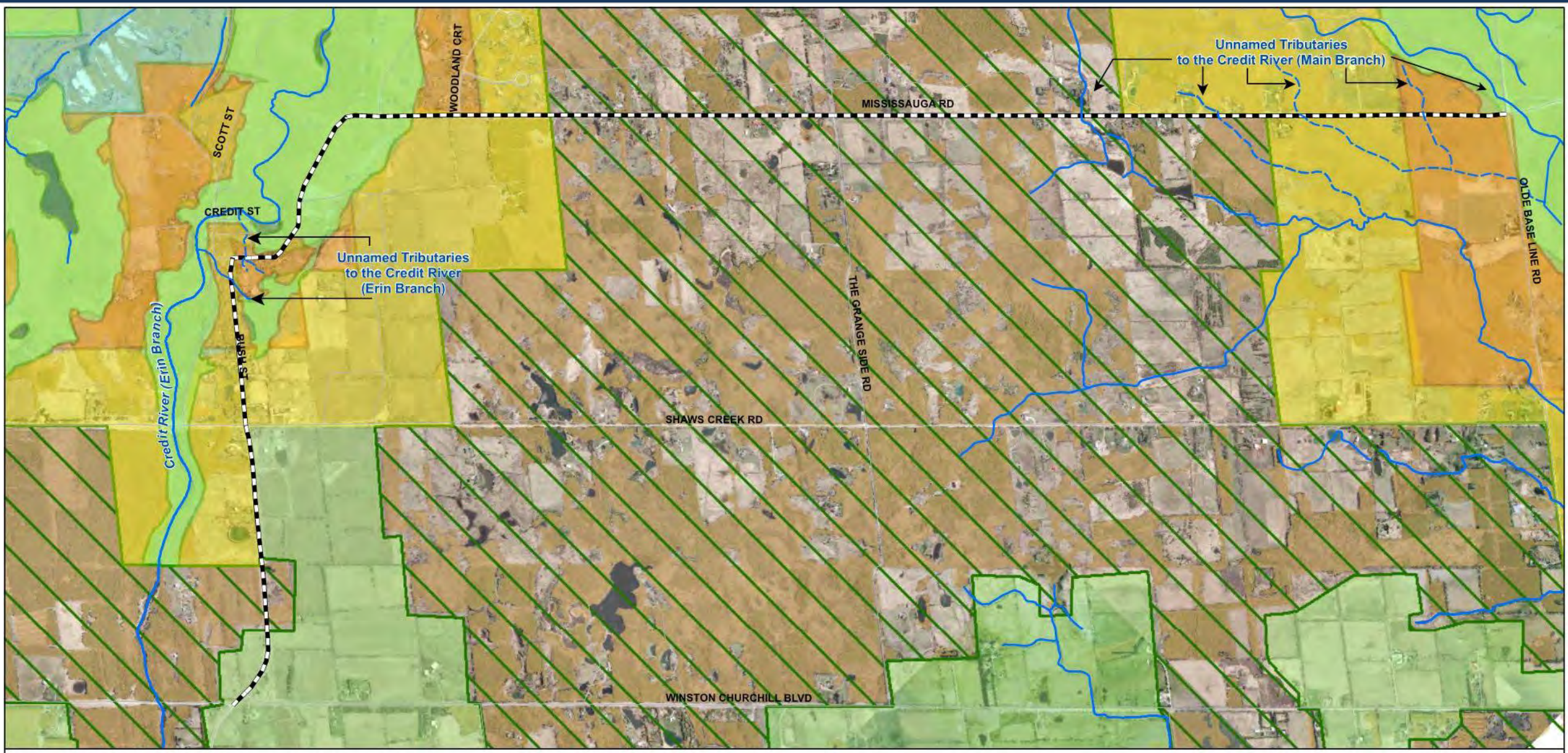
Environmental Policy Areas



Bush Street and Mississauga Road Class EA
Figure 4: Environmental Policy Areas

Legend

- Roads
- Watercourse
- Ephemeral Watercourse
- Study Alignment

Niagara Escarpment Plan

- Escarpment Natural Area
- Escarpment Protected Area
- Escarpment Rural Area
- Escarpment Recreational Area

Greenbelt Designations

- Greenbelt Protected Countryside
- Greenbelt Natural Heritage System

Region of Peel

- Core Areas of the Greenland System

1:17,000

0 300 600 900

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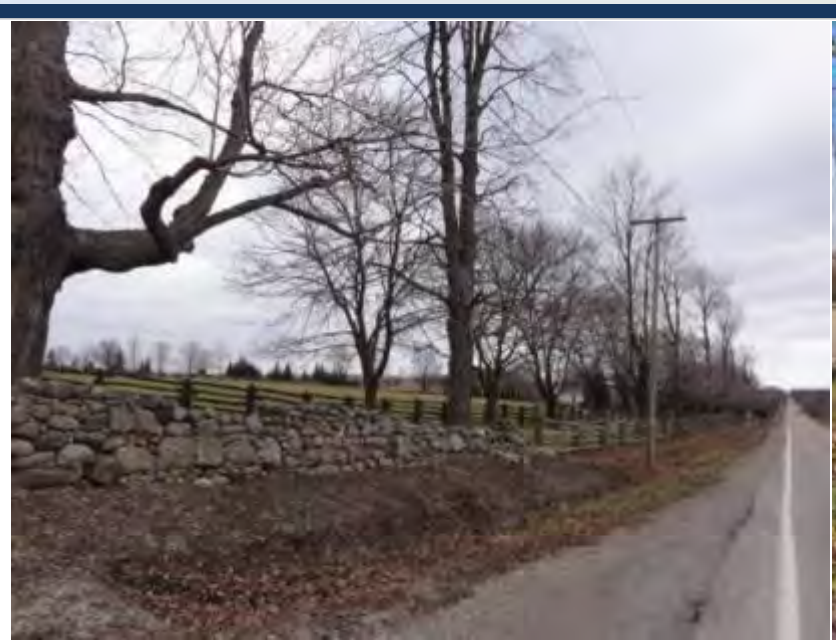
Archaeological Assessment



Stone wall, cedar fence on Winston Churchill Boulevard

Boulder fence and cedar rail fence, Shaw's Creek and Olde Base Line

Cedar fence along Bush

Stone fence - Mississauga Road at The Grange

Winston Churchill Boulevard – low/wet and sloping beyond the road

Northwest view towards Bush – potential for archaeological significance in field

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Built / Cultural Heritage

Mississauga / Bush

- 48 identified resources
- 4 designated under Ontario Heritage Act
- 23 listed by Town of Caledon
- Another 11 listed with high significance

Olde Baseline / Winston Churchill

- 21 identified resources
- None designated under Ontario Heritage Act

Belfountain Community Cemetery

Modern fence and fields adjacent to Olde Base Line Rd looking west

Belfountain Village Church

Belfountain Community Hall

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Preliminary Design / Evaluations

Refer to corridor-specific stations

Design Criteria

	DESIGN STANDARDS	DESIGN STANDARDS	DESIGN STANDARDS	DESIGN STANDARDS	**DESIRED** DESIGN STANDARDS (highly unlikely to be achieved)	REFERENCE
HIGHWAY CLASSIFICATION	RAU 50	RAU 60	RAU 70	RAU 80	RAU 90	
MINIMUM STOPPING SIGHT DISTANCE	60-65 m	75-85 m	95-110 m	115-140 m	130-170 m	(TAC – page 1.2.5.4 Table 1.2.5.3)
MIN. EQUIV. VERTICAL CURVE (WITH ILLUMINATION)[1]	6-7 - CREST 5-6 –SAG (Comfort)	10-13 - CREST 8-9 –SAG (Comfort)	16-23 - CREST 10-12 –SAG (Comfort)	24-26 - CREST 12-16 –SAG (Comfort)	32-53 - CREST 15-20 –SAG (Comfort)	(TAC – page 2.1.3.6 Table 2.1.3.2) (TAC-Page 2.1.3.9. Table 2.1.3.4)
MIN. EQUIV. VERTICAL CURVE (WITHOUT ILLUMINATION)[2]	6-7 - CREST 11-12 –SAG (Headlight Control)	10-13 - CREST 15-18 –SAG (Headlight Control)	16-23 - CREST 20-25 –SAG (Headlight Control)	24-26 - CREST 25-32 –SAG (Headlight Control)	32-53- CREST 30-40 –SAG (Headlight Control)	(TAC – page 2.1.3.6 Table 2.1.3.2) (TAC-Page 2.1.3.9. Table 2.1.3.4)
MAXIMUM GRADIENT	8-10%	8-10%	8-10%	8-10%	8-10%	(To reflect prevailing conditions and maintain existing rural character)
MINIMUM CURVATURE	90 m	130 m	190 m	250 m	340 m	(TAC – page 2.1.2.13 Table 2.1.2.6)
SUPERELEVATION (ON CURVE)	6%	6%	6%	6%	6%	(TAC – page 2.1.2.3)
LANE WIDTH	3.3-3.7 m	3.3-3.7 m	3.5-3.7 m	3.5-3.7 m	3.5-3.7 m	(TAC – page 2.2.2.1 Table 2.2.2.1)
SHOULDER WIDTH	1.50 m min (Paved) 2.0 m (Unpaved)	1.50 m min (Paved) 2.0 m (Unpaved)	1.50 m min (Paved) 2.0 m (Unpaved)	1.50 m min (Paved) 2.0 m (Unpaved)	1.50 m min (Paved) 2.0 m (Unpaved)	(Region of Peel's Road Characterization Study, Rural Road with 30 m ROW)
SHOULDER WIDTH ON SIGNED BICYCLE ROUTE	2.0 m desirable 1.2 m minimum	2.0 m desirable 1.2 m minimum	2.0 m desirable 1.2 m minimum	2.0 m desirable 1.2 m minimum	2.0 m desirable 1.2 m minimum	(OTM BOOK 18 Table 4.2)
DRAINAGE ZONE	8.0 m	8.0 m	8.0 m	8.0 m	8.0 m	(Region of Peel's Road Characterization Study, Rural Road with 30 m ROW)
DESIGN SPEED	50 km/h	60 km/h	70 km/h	80 km/h	90 km/h	
POSTED SPEED	40 km/h	50 km/h	60 km/h	70 km/h	80 km/h	

NOTE 1: CROSS-SECTION ELEMENT WIDTHS MAY CHANGE DEPENDING ON AVAILABLE ROW WIDTHS
NOTE 2: ALTHOUGH HIGHER DESIGN SPEEDS ARE DESIRABLE, THEY MAY NOT BE ACHIEVABLE DUE TO EXISTING TERRAIN

[1] Applies only at some locations
[2] Applies for the majority of the study area

Region of Peel
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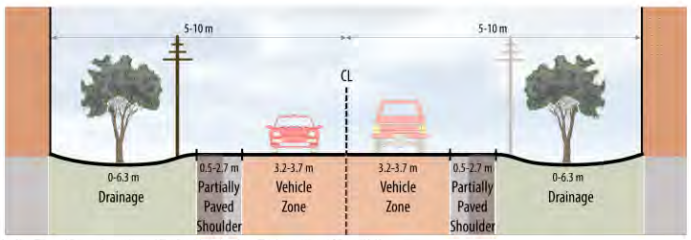
Belfountain Village Cross-Sections

DO NOTHING



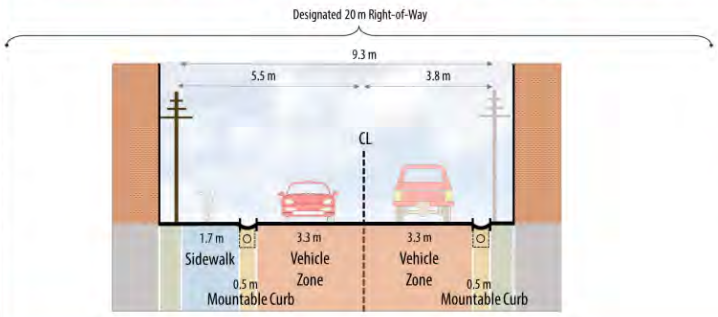
Note: Total right-of-way is predominantly 20 m; paved portion of shoulder ranges from 0.2-2.0 m; majority of above ground utilities run on one side of the road and cross over between sides

Typical existing cross-section

- ✓ No impacts to properties, natural environment, or built/cultural heritage features
- ✗ Does not accommodate all road users on narrow paved shoulder
- ✗ Inadequate drainage

9.3 m PLATFORM SEMI-RURAL ROAD WITH SIDEWALK

PREFERRED (Bush between Shaws Creek and Old Main Street)

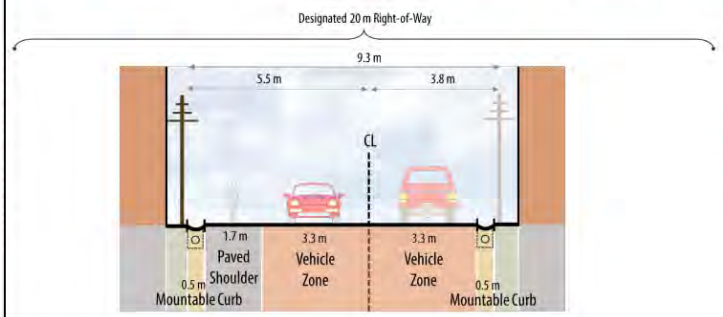


Semi-rural cross-section with sidewalk to accommodate pedestrians on constrained ROW

- ✓ Minimized impacts to properties, natural environment, and built/cultural heritage features
- ✗ Higher construction cost than Do Nothing but comparable to other semi-rural options
- ✗ Does not accommodate parking
- ✗ No dedicated bicycle zones
- ✓ Dedicated pedestrian zones on one side of the street
- ✓ Safer pedestrian environment from dedicated zones
- ✓ Addresses drainage deficiencies through underground infrastructure (catch basin and subdrain under curb)

9.3 m PLATFORM SEMI-RURAL ROAD WITH PAVED SHOULDER

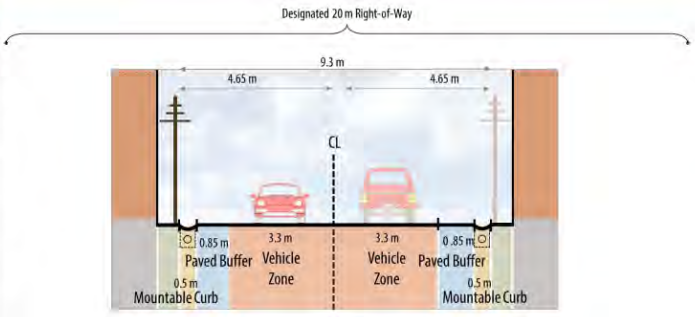
PREFERRED (Old Main Street east of the Community Centre)



Semi-rural cross-section with paved shoulder to accommodate all road users on constrained ROW

- ✓ Minimized impacts to properties, natural environment, and built/cultural heritage features
- ✗ Higher construction cost than Do Nothing but comparable to other semi-rural options
- ✗ Does not accommodate parking
- ✓ Dedicated bicycle and pedestrian zones, but only on one side of the street
- ✓ Safer cycling and pedestrian environment from dedicated zones
- ✓ Addresses drainage deficiencies through underground infrastructure (catch basin and subdrain under curb)

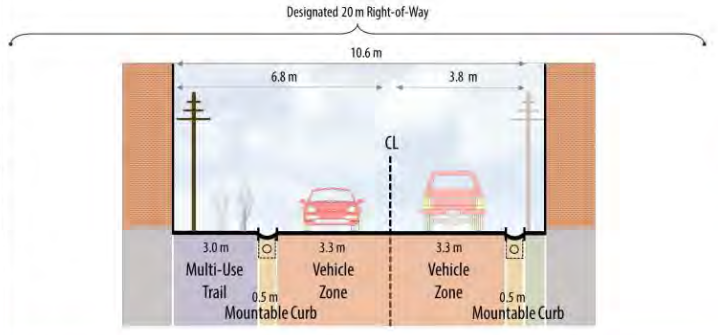
9.3 m PLATFORM SEMI-RURAL ROAD WITH NARROW PAVED BUFFER



Semi-rural cross-section with narrow paved buffers on constrained ROW

- ✓ Minimized impacts to properties, natural environment, and built/cultural heritage features
- ✗ Higher construction cost than Do Nothing but comparable to other semi-rural options
- ✗ Does not accommodate parking
- ✗ Does not accommodate all road users on narrow paved buffers
- ✓ Addresses drainage deficiencies through underground infrastructure (catch basin and subdrain under curb)

10.6 m PLATFORM SEMI-RURAL ROAD WITH MULTI-USE TRAIL

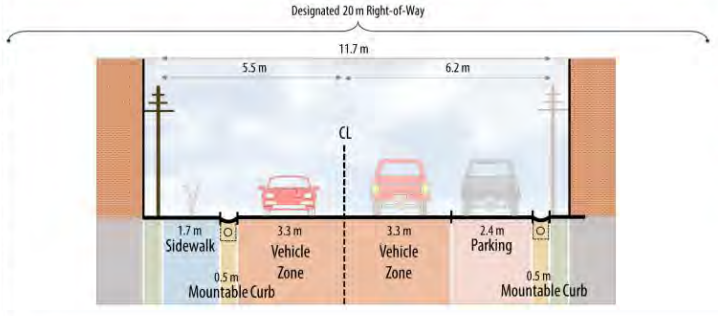


Semi-rural cross-section with paved multi-use trail to accommodate all road users

- ✗ Potential impacts to properties, natural environment, and built/cultural heritage features
- ✗ Higher construction cost than Do Nothing but comparable to other semi-rural options
- ✗ Does not accommodate parking
- ✓ Dedicated bicycle and pedestrian zones
- ✓ Safer cycling and pedestrian environment from dedicated zones
- ✓ Addresses drainage deficiencies through underground infrastructure (catch basin and subdrain under curb)

11.7 m PLATFORM SEMI-RURAL ROAD WITH SIDEWALK AND PARKING

PREFERRED (Old Main Street between Bush and the Community Centre)

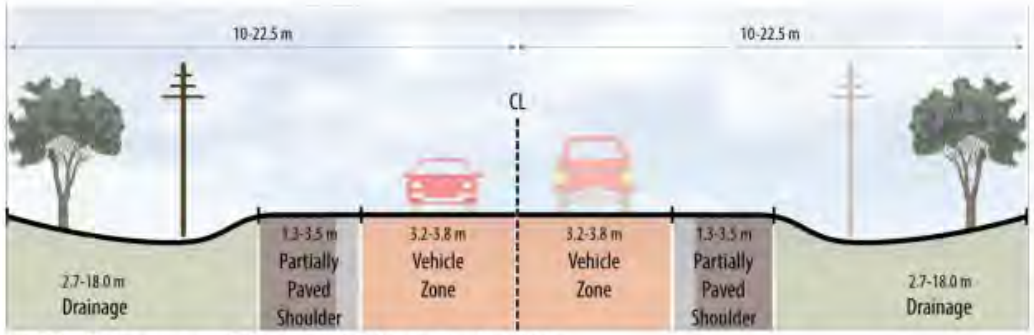


Semi-rural cross-section with sidewalk and parking

- ✗ Potential impacts to properties, natural environment, and built/cultural heritage features, but minimized where possible
- ✗ Higher construction cost than Do Nothing but comparable to other semi-rural options
- ✓ Accommodates parking
- ✗ No dedicated bicycle zones
- ✓ Dedicated pedestrian zones on one side of the street
- ✓ Safer pedestrian environment from dedicated zones
- ✓ Addresses drainage deficiencies through underground infrastructure (catch basin and subdrain under curb)

Bush Street Cross-Sections

DO NOTHING

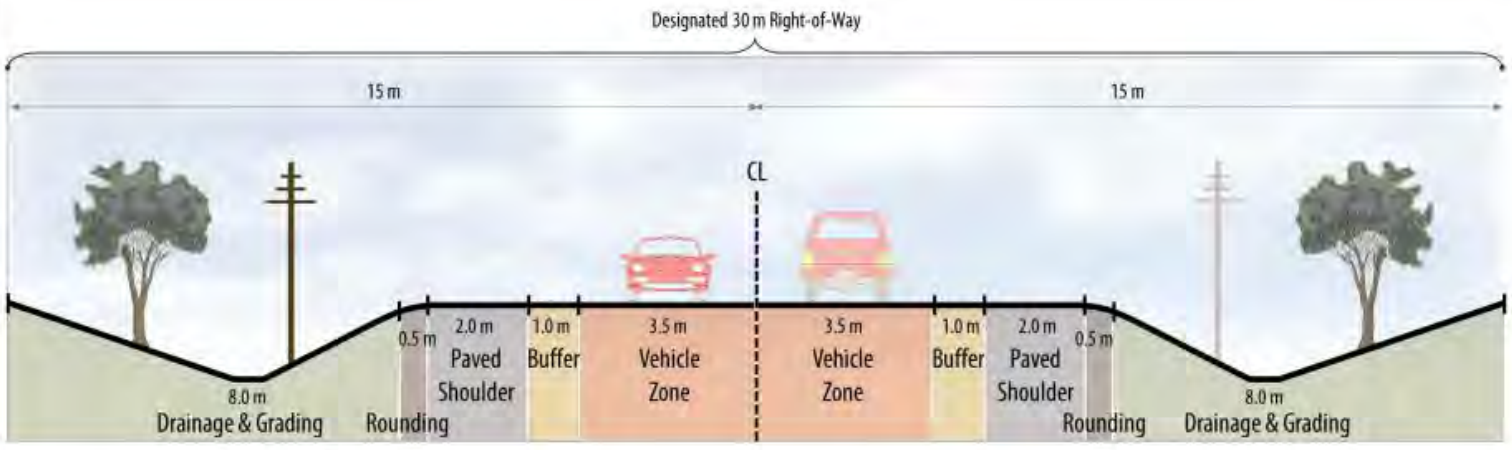


Note: Total right-of-way is predominantly 30 m; paved portion of shoulder ranges from 0.2-1.5 m; majority of above ground utilities run on north side of the road and crosses over between sides

Typical existing cross-section

- ✓ No impacts to properties, natural environment, or built/cultural heritage features
- ✗ Does not accommodate all road users on unpaved shoulders
- ✗ Inadequate drainage

14m PLATFORM RURAL ROAD

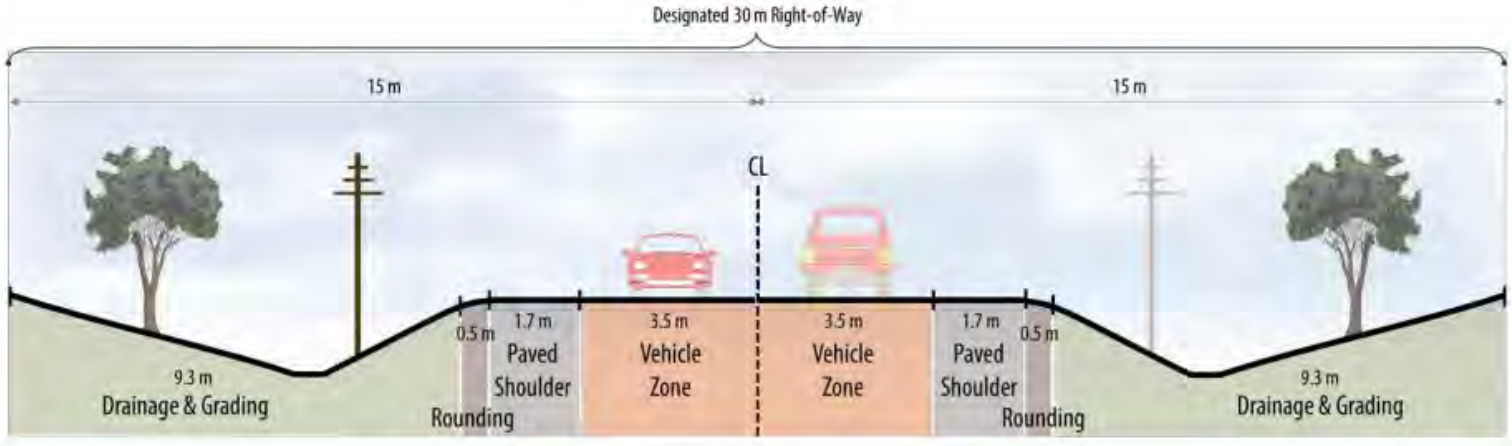


Accommodates all road users on 30m ROW with paved shoulder and buffer

- ✗ Potential impacts to properties, natural environment, and built/cultural heritage features along some segments of the corridor
- ✗ Higher construction cost than Do Nothing and 11.4m Platform Rural Road
- ✓ Accommodates all road users on wider paved shoulder
- ✓ Safer cycling and pedestrian environment as a result of buffer zone
- ✓ Accommodates agricultural vehicles on wider pavement
- ✓ Retains rural character and countryside scenic quality
- ✓ Addresses drainage deficiencies

11.4m PLATFORM RURAL ROAD

PREFERRED

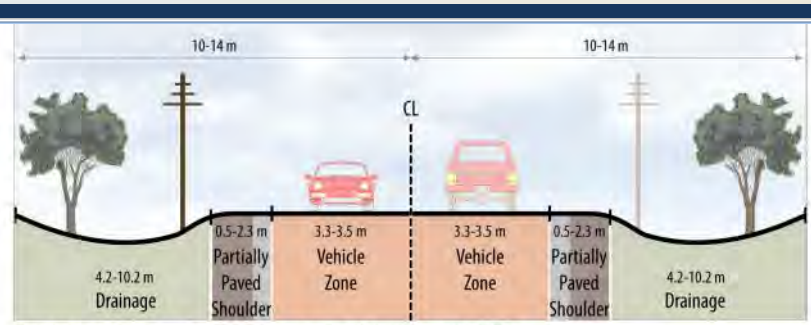


Accommodates all road users on 30m ROW with narrow shoulder (no buffer) and allows for more extensive grading within ROW

- ✓ Some potential impacts to properties, natural environment, and built/cultural heritage features along some segments of the corridor, but minimized where possible
- ✓ Lower construction cost than 14m Platform Rural Road
- ✓ Accommodates all road users on paved shoulder
- ✓ Safer cycling and pedestrian environment from paved shoulder
- ✓ Accommodates agricultural vehicles on wider pavement
- ✓ Retains rural character and countryside scenic quality
- ✓ Addresses drainage deficiencies

Mississauga Road Cross-Sections

DO NOTHING

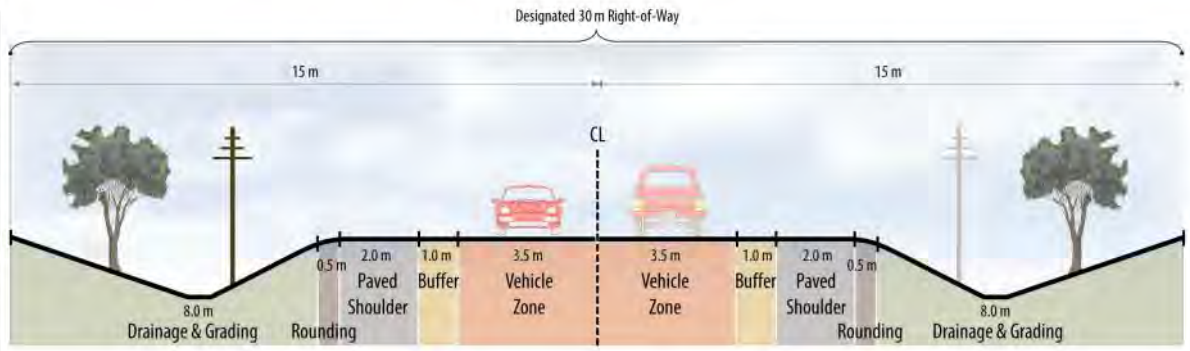


Note: Total right-of-way is predominantly 20 m; paved portion of shoulder ranges from 0-2.3 m; majority of above ground utilities run on one side of the road and crosses over between sides

Typical existing cross-section

- ✓ No impacts to properties, natural environment, or built/cultural heritage features
- ✗ Does not accommodate all road users on unpaved shoulder
- ✗ Inadequate drainage

14m PLATFORM RURAL ROAD

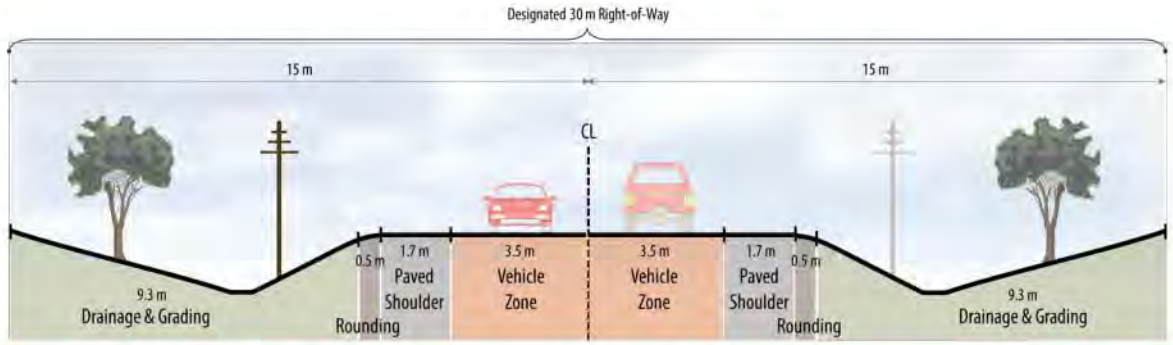


Accommodates all road users on 30m ROW with paved shoulder and buffer

- ✗ Potential impacts to properties, natural environment, and built/cultural heritage features throughout corridor
- ✗ Higher construction cost than Do Nothing and 11.4m Platform Rural Road
- ✓ Significantly lower construction cost than Semi-Rural option
- ✓ Accommodates all road users on wider paved shoulder
- ✓ Safer cycling and pedestrian environment as a result of buffer zone
- ✓ Accommodates agricultural vehicles on wider pavement
- ✓ Retains rural character and countryside scenic quality
- ✓ Addresses drainage deficiencies

PREFERRED (where feasible)

11.4m PLATFORM RURAL ROAD

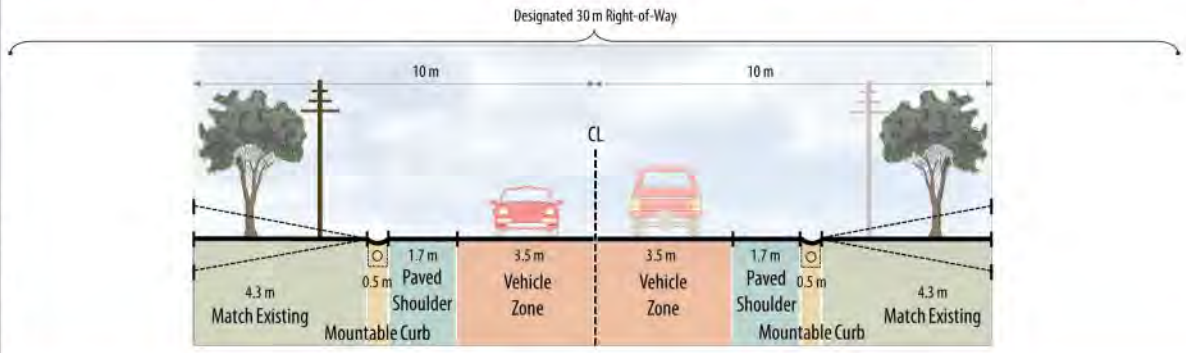


Accommodates all road users on 30m ROW with narrow shoulder (no buffer) and allows for more extensive grading within ROW

- ✗ Potential impacts to properties, natural environment, and built/cultural heritage features throughout corridor, but minimized where possible
- ✓ Lower construction cost than 14m Platform Rural Road, and significantly lower construction cost than Semi-Rural option
- ✓ Accommodates all road users on paved shoulder
- ✓ Safer cycling and pedestrian environment from paved shoulder
- ✓ Accommodates agricultural vehicles on wider pavement
- ✓ Retains rural character and countryside scenic quality
- ✓ Addresses drainage deficiencies

PREFERRED (where Rural option results in significant impacts beyond existing ROW)

11.4m PLATFORM SEMI-RURAL ROAD

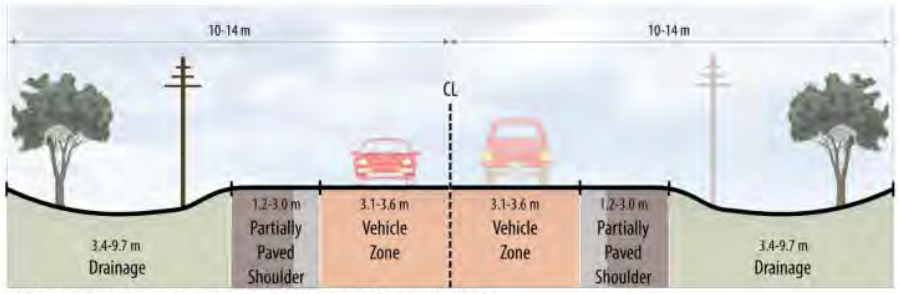


Accommodates all road users with semi-rural cross-section on constrained ROW

- ✓ Minimized impacts to properties, natural environment, and built/cultural heritage features where possible
- ✗ Significantly higher construction cost that Rural Road options due to underground infrastructure
- ✓ Accommodates all road users on paved shoulder
- ✓ Safer cycling and pedestrian environment from paved shoulder
- ✓ Accommodates agricultural vehicles on wider pavement
- ✗ Significant changes to rural character and countryside scenic quality
- ✓ Addresses drainage deficiencies through underground infrastructure (catch basin and subdrain under mountable curb)

Winston Churchill Boulevard Cross-Sections

DO NOTHING

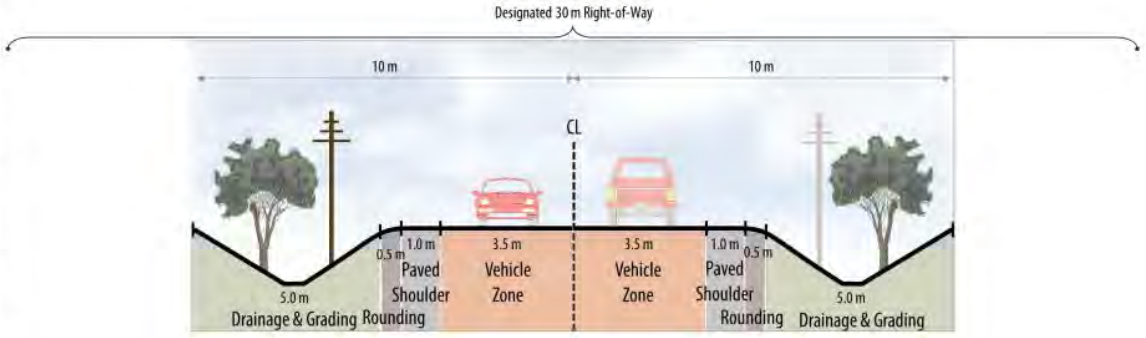


Note: Total right-of-way is predominantly 20-23 m; paved portion of shoulder ranges from 0-1.0 m; majority of above ground utilities run on east side of the road and crosses over between sides

Typical existing cross-section

- ✓ No impacts to properties, natural environment, or built/cultural heritage features
- ✗ Does not accommodate all road users on unpaved shoulders
- ✗ Inadequate drainage

10m PLATFORM RURAL ROAD

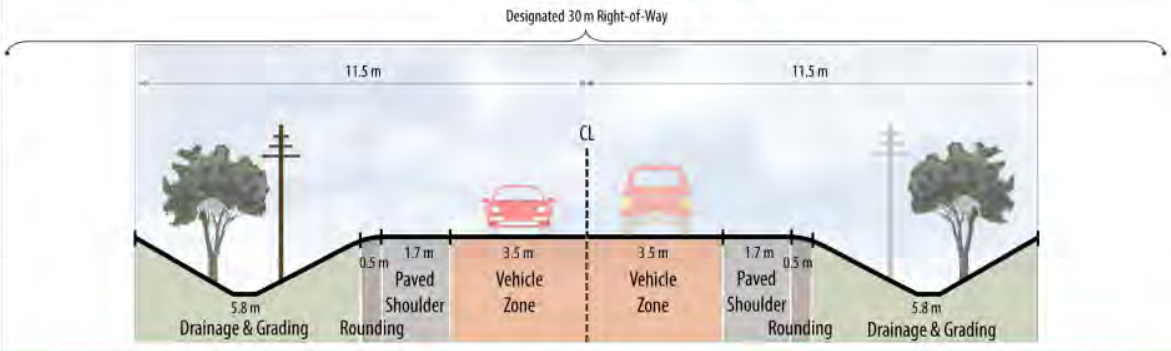


Constrained ROW with narrow paved shoulder (no buffer) and allows for moderate grading within ROW

- ✓ Some impacts to properties, natural environment, and built/cultural heritage features along segments of the corridor, but minimized where possible
- ✓ Higher construction cost than Do Nothing, but lower than 11.4 Platform Rural Road, and significantly lower than Semi-Rural options
- ✗ Does not accommodate all road users on narrow paved shoulder
- ✗ Does not accommodate agricultural vehicles as well as other options
- ✓ Retains rural character and countryside scenic quality
- ✗ Addresses drainage deficiencies, but drainage/grading might extend beyond existing ROW

PREFERRED (where feasible)

11.4m PLATFORM RURAL ROAD

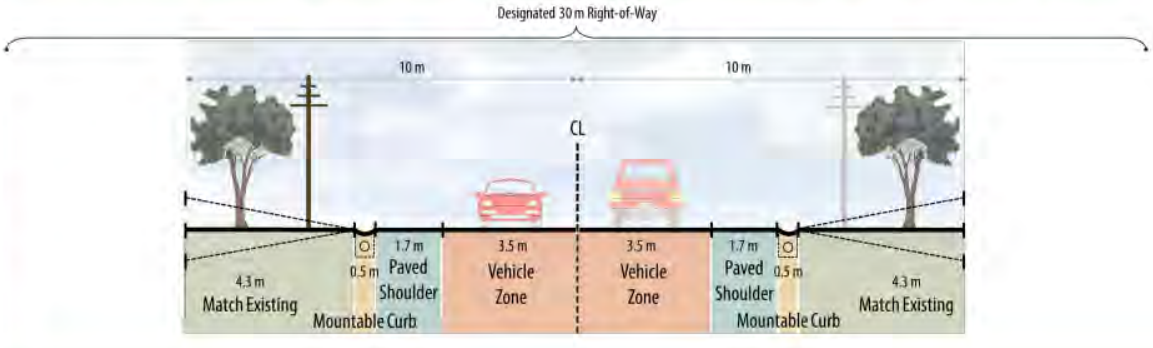


Accommodates all road users with paved shoulder (no buffer) and allows for moderate grading within ROW

- ✗ Impacts to properties, natural environment, and built/cultural heritage features throughout corridor
- ✓ Higher construction cost than Do Nothing, 10m Platform Rural Road, but significantly lower than Semi-Rural options
- ✓ Accommodates all road users on paved shoulder
- ✓ Safer cycling and pedestrian environment from paved shoulder
- ✓ Accommodates agricultural vehicles on wider pavement
- ✓ Retains rural character and countryside scenic quality
- ✗ Addresses drainage deficiencies, but drainage/grading might extend beyond existing ROW

PREFERRED (where Rural option results in significant impacts beyond existing ROW)

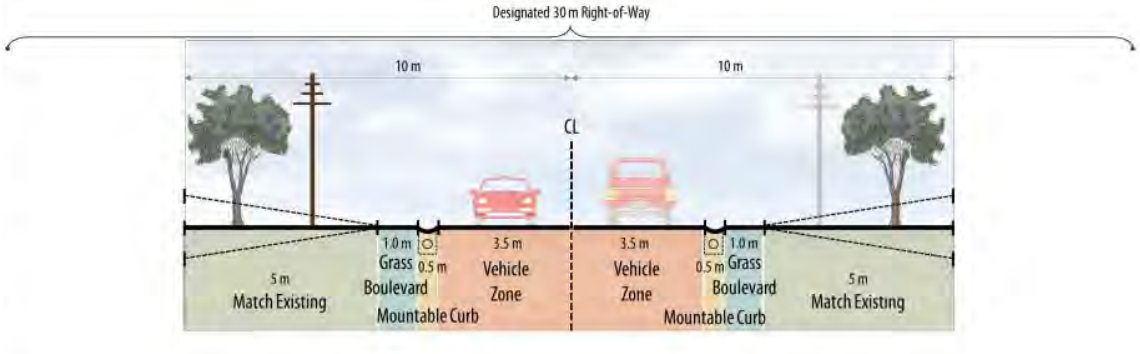
11.4m PLATFORM SEMI-RURAL ROAD



Semi-rural cross-section with paved shoulder to accommodate all road users on constrained ROW

- ✓ Minimized impact to properties, natural environment, and built/cultural heritage features where possible
- ✗ Significantly higher construction cost than Rural Road options due to underground infrastructure, and higher than 10m Platform Semi-Rural Road
- ✓ Accommodates all road users on wider paved shoulder
- ✓ Safer cycling and pedestrian environment from paved shoulder
- ✓ Accommodates agricultural vehicles on wider pavement
- ✗ Significant changes to rural character and countryside scenic quality
- ✓ Addresses drainage deficiencies through underground infrastructure (catch basin and subdrain under mountable curb)

10m PLATFORM SEMI-RURAL ROAD

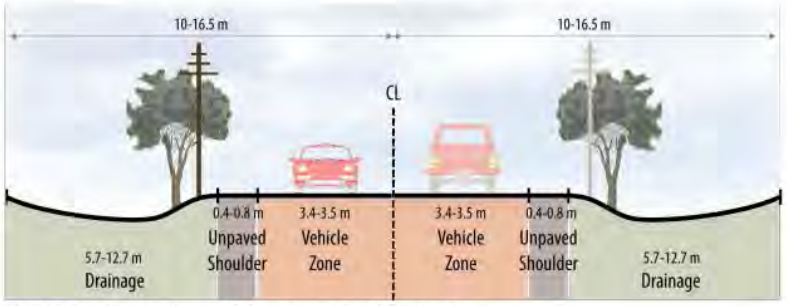


Semi-rural cross-section with narrow grass boulevard on constrained ROW

- ✓ Minimized impact to properties, natural environment, and built/cultural heritage features where possible
- ✗ Significantly higher construction cost than Rural Road options due to underground infrastructure, but lower than 11.4m Platform Semi-Rural Road
- ✗ Does not accommodates all road users on narrow grass boulevard
- ✗ Does not accommodates agricultural vehicles
- ✗ Significant changes to rural character and countryside scenic quality
- ✓ Addresses drainage deficiencies through underground infrastructure (catch basin and subdrain under mountable curb)

Olde Base Line Road Cross-Sections

DO NOTHING

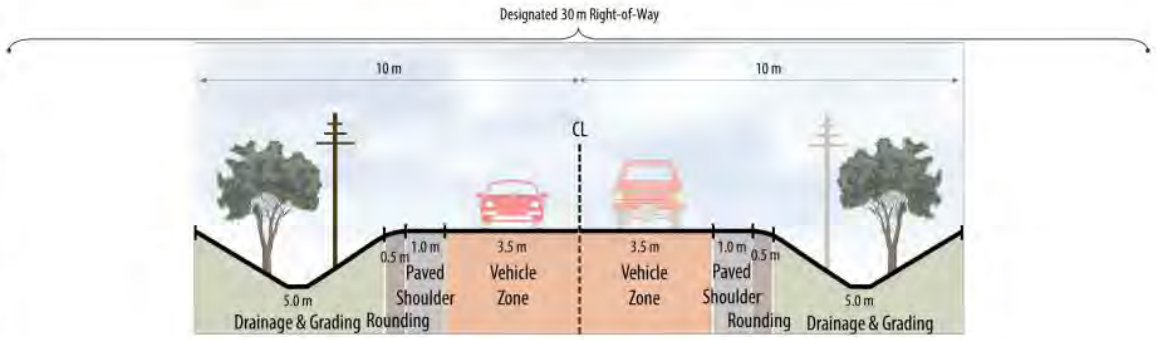


Note: Total right-of-way is predominantly 20-25 m; no paved portion of shoulder exists; majority of above ground utilities run on one side of the road and cross over between sides

Typical existing cross-section

- ✓ No impacts to properties, natural environment, or built/cultural heritage features
- ✗ Does not accommodate all road users on unpaved shoulders
- ✗ Inadequate drainage

10m PLATFORM RURAL ROAD

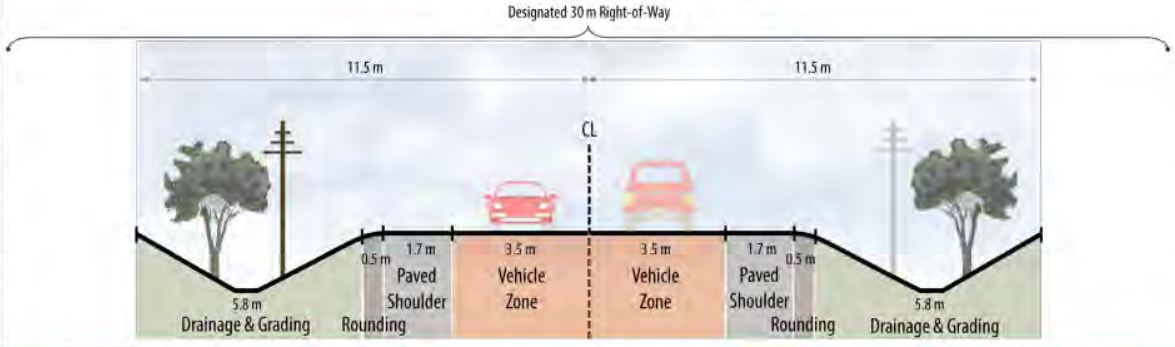


Constrained ROW with narrow paved shoulder (no buffer) and allows for moderate grading within ROW

- ✓ Some impacts to properties, natural environment, and built/cultural heritage features along segments of the corridor, but minimized where possible
- ✓ Higher construction cost than Do Nothing, but lower than 11.4 Platform Rural Road, and significantly lower than Semi-Rural options
- ✗ Does not accommodate all road users on narrow paved shoulder
- ✗ Does not accommodate agricultural vehicles as well as other options
- ✓ Retains rural character and countryside scenic quality
- ✗ Addresses drainage deficiencies, but drainage/grading might extend beyond existing ROW

11.4m PLATFORM RURAL ROAD

PREFERRED (where feasible)

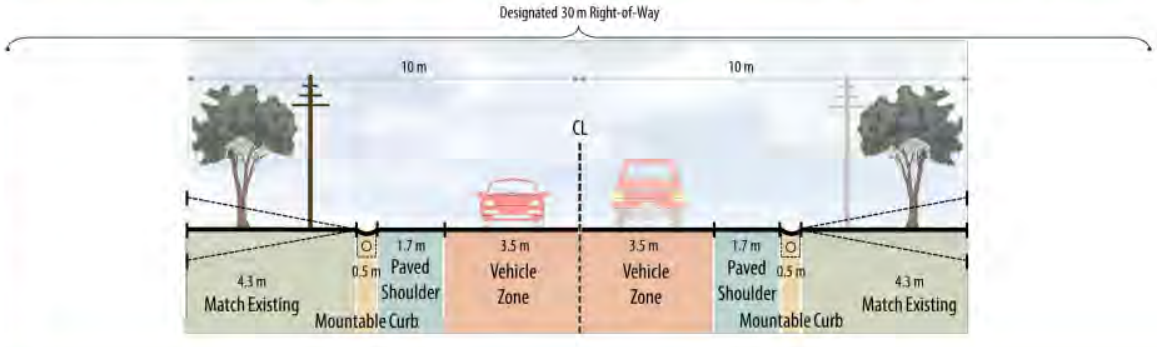


Accommodates all road users with paved shoulder (no buffer) and allows for moderate grading within ROW

- ✗ Impacts to properties, natural environment, and built/cultural heritage features throughout corridor
- ✓ Higher construction cost than Do Nothing, 10m Platform Rural Road, but significantly lower than Semi-Rural options
- ✓ Accommodates all road users on paved shoulder
- ✓ Safer cycling and pedestrian environment from paved shoulder
- ✓ Accommodates agricultural vehicles on wider pavement
- ✓ Retains rural character and countryside scenic quality
- ✗ Addresses drainage deficiencies, but drainage/grading might extend beyond existing ROW

11.4m PLATFORM SEMI-RURAL ROAD

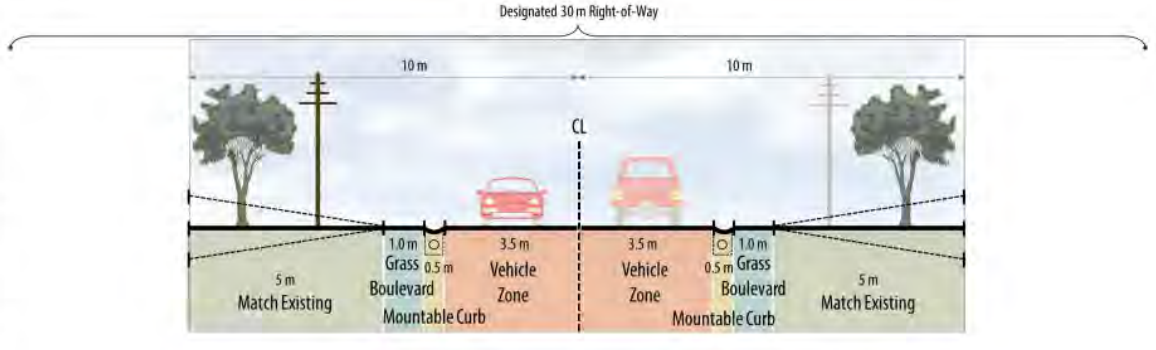
PREFERRED (where Rural option results in significant impacts beyond existing ROW)



Semi-rural cross-section with paved shoulder to accommodate all road users on constrained ROW

- ✓ Minimized impact to properties, natural environment, and built/cultural heritage features where possible
- ✗ Significantly higher construction cost than Rural Road options due to underground infrastructure, and higher than 10m Platform Semi-Rural Road
- ✓ Accommodates all road users on wider paved shoulder
- ✓ Safer cycling and pedestrian environment from paved shoulder
- ✓ Accommodates agricultural vehicles on wider pavement
- ✗ Significant changes to rural character and countryside scenic quality
- ✓ Addresses drainage deficiencies through underground infrastructure (catch basin and subdrain under mountable curb)

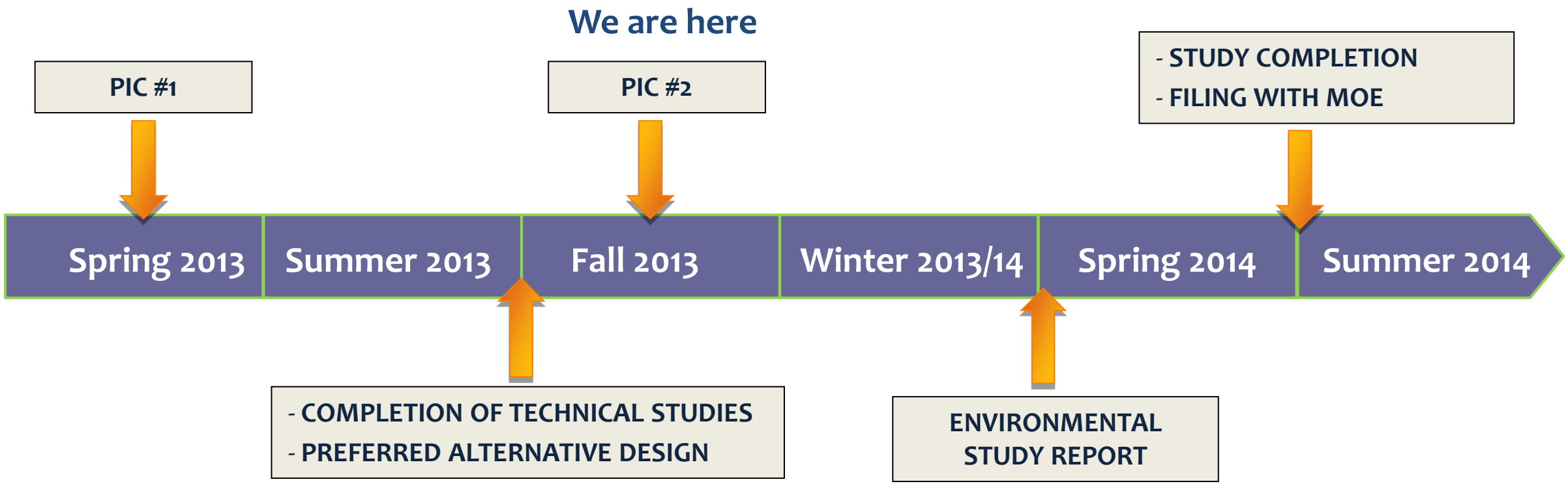
10m PLATFORM SEMI-RURAL ROAD



Semi-rural cross-section with narrow grass boulevard on constrained ROW

- ✓ Minimized impact to properties, natural environment, and built/cultural heritage features where possible
- ✗ Significantly higher construction cost than Rural Road options due to underground infrastructure, but lower than 11.4m Platform Semi-Rural Road
- ✗ Does not accommodates all road users on narrow grass boulevard
- ✗ Does not accommodates agricultural vehicles
- ✗ Significant changes to rural character and countryside scenic quality
- ✓ Addresses drainage deficiencies through underground infrastructure (catch basin and subdrain under mountable curb)

Next Steps / Schedule



Region of Peel
Working for you

Thank You

Please complete your feedback form and place it in the Comment Box, or send your comments by email/fax/mail to any of the following team members by **Wednesday, December 4, 2013**.

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

http://www.peelregion.ca/pw/transportation/environ-assess/mississauga-road-bush.htm

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Thank you for your participation