Welcome

Welcome to the second Public Information Centre (PIC) meeting for the Ross/Collier/Bayfield Streets and Bell Farm Road Class EA studies. This follows the initial public consultation completed during the Multi-Modal Active Transportation Master Plan (MMATMP), which included the first PIC.

Please sign in on the attendance sheet and obtain a comment sheet at the registration desk.

Should you have any questions regarding the presentation materials, background reports or any other aspect of the study, please speak to the City or Consultant study team members in attendance.

We encourage your input/feedback on the material being presented on the display boards. Please deposit completed comment sheets in the comment box or mail / fax / e-mail to the address at the bottom of the form by December 7, 2016.

There is an opportunity at any time during the EA process for interested persons to provide written input.

Any comments received will be collected under the Environmental Assessment Act and Freedom of Information and Privacy Act and, with the exception of personal information, will become part of the public record.
**Study Objectives and Background:**

**Objective of this PIC:**
- Engage public, stakeholders and agencies early in the study process to seek input on preliminary alternative design concepts.
- Through early public engagement, facilitate the development of the alternative design solutions.
- Seek input to identify potential community priorities and/or concerns pertaining to transportation improvements identified as part of these studies.

**Overall Study Objectives:**
- Develop alternative design solutions for the preferred solutions identified in the Multi-Modal Active Transportation Master Plan (completed Phases 1 & 2 of the Class EA process)
- Identify the location, extent and sensitivity of affected environments
- Assess the design alternatives given the potential environmental impacts
- Seek public input and comments
- Identify a preferred design solution
- Establish measures to mitigate adverse impacts as required
- Satisfy the requirements for Phases 3 & 4 of the Municipal Class EA Process

**Ongoing Studies/Activities**
- Tree Inventory / Survey
- Cultural Heritage Assessment
- Natural Heritage Assessment
- Stage 1 Archaeological Assessment
- Traffic Analysis
- Geotechnical Investigation
- Topographic, Legal and Utility Surveys
- Drainage and Stormwater Management
Both projects are being undertaken as Schedule ‘C’ Municipal Class EA’s in accordance with the Municipal Class Environmental Assessment process. A copy of this document is available at the Resource Table. The data and reports produced for the study will be documented in Environmental Study Reports (ESR) for each project.
As part of the City’s planned population growth from 145,000 to 210,000 and 101,000 jobs by 2031, the City’s Multi-Modal Active Transportation Master Plan (MMATMP) was developed to serve as the City’s roadmap in developing a well-balanced transportation network to serve its future needs and development through 2031.

The MMATMP was developed to provide a transportation system that:

• is safe, efficient and accessible with choices in mobility
• fosters the use and development of a sustainable transportation network
• provides a public transit system that can offer a real alternative to the private automobile
• provides a network of on-road and off-road pedestrian and cycling facilities that allow the use of active transportation modes as an alternative to the automobile

As 40% of the noted growth is designated to occur within existing developed areas, road widenings are required to implement active transportation and provide adequate capacity. Specific recommendations for each project will be detailed in subsequent panels.
Active Transportation (AT):
AT is any form of human-powered transportation. Walking, cycling, wheeling, in-line skating and skateboarding are all forms of active transportation. AT can also involve combining modes such as walking/cycling with public transit.

AT infrastructure being considered (in addition to sidewalks):

<table>
<thead>
<tr>
<th>AT Infrastructure</th>
<th>Notes</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bicycle Lanes and Buffered</td>
<td>A bicycle lane is a portion of a roadway which has been designated by pavement markings and signage for the exclusive use of cyclists (OTM, Book 18).</td>
<td>![Example](source: OTM Book 18)</td>
</tr>
<tr>
<td>Bicycle Lanes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shared Lanes / Sharrows</td>
<td>Shared Lanes: Markings are placed on the travel lane and generally indicate where cyclists should travel (OTM, Book 18). Sharrows: “Sharrow” is the term used for shared roadway lane markings or shared lane arrows. A sharrow consists of two white chevron markings and a bicycle stencil. Sharrows are intended to guide cyclists as to where they should ride within a travel lane shared by both motorists and cyclists. They are an optional treatment and are context specific (OTM, Book 18).</td>
<td>![Example](source: OTM Book 18)</td>
</tr>
</tbody>
</table>
Project Purpose:
This project will determine the preferred alternative design solution based on the MMATMP recommendations, identify property requirements, enhance pedestrian safety and examine options to create a gateway feature into the downtown.

Problem Statement:
As 40% of the City’s growth is designated to occur as infill and intensification, it is critical that the City’s existing transportation links are optimized to accommodate this growth. The intersection is not operationally efficient and can contribute to queuing on Collier Street and Bayfield Street. In addition, there are no pedestrian crossing facilities between Sophia Street and Dunlop Street.

Opportunity Statement:
There is an opportunity to develop a preferred design solution that improves traffic operations, pedestrian safety and the streetscape/aesthetics of this intersection. This solution will support future land use and redevelopment in the study area.

Municipal Infrastructure Needs:
To ensure underground infrastructure lifecycle requirements align with the reconstruction of the intersection and adjacent streets, the following improvements are proposed.

<table>
<thead>
<tr>
<th>Street Section</th>
<th>Road Structure Condition</th>
<th>Water</th>
<th>Sanitary</th>
<th>Storm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ross Street – Toronto St to Bayfield St</td>
<td>Good</td>
<td>Replace 30m of 150mm DI (installed 1934)</td>
<td>250mm PVC, remaining service life: 60 years*</td>
<td>300-375mm, remaining service life: 102 years*</td>
</tr>
<tr>
<td>Collier Street – Bayfield St to Clapperton St</td>
<td>Fair</td>
<td>Replace 60m of 100mm CI (installed 1925)</td>
<td>No sanitary sewer on this section of Collier Street</td>
<td>300mm, remaining service life: 90 years*</td>
</tr>
<tr>
<td>Bayfield Street – Ross St to Clapperton St</td>
<td>Poor</td>
<td>Replace 65m of 250mm CI (installed 1925)</td>
<td>600mm, remaining service life: 70 years* 250mm, remaining service life: 50 years 1</td>
<td>1800mm, remaining service life: 70 years*</td>
</tr>
</tbody>
</table>

* Capacity to be confirmed; improvements will be identified where required. Minor in-situ rehabilitation may be recommended to extend service life.
1- vitrified clay sewer, rehabilitation may be required via in-situ techniques (relining), to be confirmed during implementation.
Ross / Collier / Bayfield Streets Class EA
Study Area and Existing Conditions

Study Area

Existing Conditions

Collier Street at Clapperton Street
Existing signalized intersection.

Collier Street east of Bayfield Street
Narrow boulevard and angled parking on Collier Street.

Bayfield Street and Collier Street
Vacant property on NE intersection quadrant.

Bayfield Street at Ross Street
Urbanized 2-lane cross-section with sidewalks.

Bayfield Street looking South towards Collier Street

Ross Street west of Bayfield Street
Urbanized 2-lane cross-section with sidewalks.

Ross Street west of Maple Avenue
Buildings on south side of Ross Street located at property line.

Ross Street west of Maple Avenue
Residential and commercial land use.

Bayfield Street at Worsley Street (source: Google Maps)

Bayfield Street at Worsley Street (source: Google Maps)

Bayfield Street north of Ross Street
4-Lane urbanized cross-section with sidewalks.
City of Barrie Transportation Study – Read, Voorhees & Associates Ltd, April 1999
This City-wide transportation study recommended that Ross and Collier Street be realigned to eliminate the existing jog by realigning Collier Street to the north. The study stated that the realignment “would provide a major improvement and is strongly recommended”.

This transportation study focusing on the downtown and waterfront identified the realignment of Ross and Collier Street as part of the preferred alternative. The study recommended future consideration to determine the preferred intersection alignment.

Staff Report #ENG033-06 – Ross-Collier-Bayfield Street Intersection Municipal Class EA Selection of Preferred Alternative
Council endorsed the intersection realignment for planning purposes as illustrated below:
## 2031 Vehicle Lane Requirements

<table>
<thead>
<tr>
<th>Cross-Section</th>
<th>ROW</th>
<th>No. of Lanes</th>
<th>Sidewalks</th>
<th>Bicycle Facilities</th>
<th>Parking</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ross/ Collier/ Bayfield Intersection</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing Condition</td>
<td>20m</td>
<td>2 + LTL</td>
<td>1.2m</td>
<td>On Road</td>
<td>No</td>
</tr>
<tr>
<td><strong>MMATMP Recommendation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Realign Intersection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ross Street</td>
<td>27m</td>
<td>2 + TWLTL</td>
<td>Both Sides</td>
<td>Buffered Bike Lanes</td>
<td>No</td>
</tr>
<tr>
<td>Existing Conditions</td>
<td>30m</td>
<td>2 + LTL</td>
<td>1.5m – 2.5m</td>
<td>On Road</td>
<td>Yes, both sides</td>
</tr>
<tr>
<td><strong>MMATMP Recommendation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collier Street</td>
<td>30m</td>
<td>2 + TWLTL</td>
<td>Both Sides</td>
<td>Buffered Bike Lanes</td>
<td>To be assessed</td>
</tr>
<tr>
<td>Existing Conditions</td>
<td>20m</td>
<td>2</td>
<td>1.2 – 1.5m</td>
<td>On Road</td>
<td>Yes, west side</td>
</tr>
<tr>
<td><strong>MMATMP Recommendation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bayfield Street</td>
<td>20m</td>
<td>2</td>
<td>Both Sides</td>
<td>Buffered Bike Lanes</td>
<td>No</td>
</tr>
</tbody>
</table>

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### 2031 Active Transportation (AT) Network

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**Legend**
- Vehicle Lanes - 2031
  - Lanes (2 + 1 HOV) per Direction (plus Continuous Median or TWLTL)
  - Lanes per Direction plus Continuous Median
  - Lanes per Direction plus LTL, at Some driveway/Streets
  - Lanes per Direction plus LTL, at Some driveway/Streets
  - Lanes per Direction plus Continuous Median or TWLTL
  - Lanes per Direction per LTL, at Some driveway/Streets
  - Lanes per Direction per LTL, at Some driveway/Streets
  - Lanes per Direction plus Continuous Median or TWLTL
- Lane per Direction
- Lane per Direction plus Continuous Median or TWLTL
- Lane per Direction per LTL, at Some driveway/Streets
- Lane per Direction

**Colors**
- One Additional Lane per Direction May Be Required (Some Requires Additional ROW)
- Additional ROW Suggested Beyond 2031
- Additional TWLTL May Be Required Second 2031 (Some Requires Additional ROW)
- Additional Lane Per Direction and a TWLTL May Be Required (Some Require Additional ROW)

**Legend**
- Green: bike
- Red: bus
- Blue: pedestrian
- Orange: road
- Green: pedestrian

**Project Area**
Realignment Need:
- Improve east–west traffic movement in the downtown
- Provide an alternative to Dunlop Street and Simcoe Street
- Provide pedestrian crossings on Bayfield Street for Ross and Collier

Primary Realignment Alternatives:

Optimize Existing Intersection
- Existing alignment/geometrics would remain the same
- Implement signalization; may require overhead signals hung via cables
- Close proximity of intersections would negatively affect traffic operations

Street Realignment
- Ross Street could be realigned south or Collier Street could be realigned north
- Signalization would be implemented
- Large skew angle of intersection reduces visibility and is an impediment to signalization (below Transportation Association of Canada desirable guidelines)

Roundabout
As an alternative to signalization, a roundabout provides a number of significant benefits:
- **Gateway Feature**: opportunity to develop a gateway feature into the downtown
- **Improve Safety**: lower speeds and fewer points of conflict between vehicles reduces the potential for serious crashes and injury (IIHS notes a 75% reduction in collisions that cause injury or death)
- **Lower speeds**: unlike at a green light at an intersection, vehicles need to slow down to use a roundabout, reducing the likelihood of a serious crash
- **Higher capacity**: a high volume of vehicles turning left is handled better by a roundabout than by a left-turn signal at a traditional intersection
- **Fewer stops and shorter delays**: yielding at the entry of a roundabout takes less time than waiting for a green light at an intersection or for a gap in traffic at a stop sign
- **Less idling and air pollution**: fewer delays reduces fuel consumption and improves air quality by reducing emissions
- **Lower maintenance costs**: roundabouts eliminate maintenance and electricity costs associated with traffic signals
Driving a roundabout
- Slow down as you approach the roundabout.
- View direction signage to plan exit leg of roundabout.
- Choose the correct entry lane (viewing pavement markings and signage).
- Watch and yield to pedestrians crossing the roadway when approaching or exiting a roundabout.
- Traffic in the roundabout has the right-of-way (treat roundabout as a one-way street).
- Do not stop within roundabout.
- Give large vehicles extra space to manoeuver.
- Always signal your exit.

Positions and Signaling within a Roundabout
- Drivers must signal to turn right
- Drivers must signal to exit the roundabout
- Drivers must signal to change lanes and should check their rear view mirror and blind spot.
- When travelling past two or more exits on the roundabout drivers can signal left

Bicycling Through A Roundabout as a vehicle
- Start in the right lane.
- Yield to all traffic in all lanes of the roundabout. Do not enter beside a driver already in the roundabout.
- Stay in the outer lane as you pass the first exit. Ride in the middle of the lane. Don't hug the curb.
- As you approach the second exit, signal right.
- Exit from the outer lane into the right lane.

Bicyclist as a Pedestrian
- Use the ramp that leads to the sidewalk.
- Dismount and walk your bicycle.

Bicycle Lane Transitions into a Roundabout
Pedestrian Crossing at a Roundabout

- Use the sidewalks and crosswalks around the outside of the roundabout. Do not cut across the middle of the roundabout.
- Point your finger across the crosswalk to say to drivers you intend to cross. Look and listen for a safe gap in traffic.
- Step up to the curb. Look at the drivers. You decide when to step out and go.
- Start to cross as soon as you are sure the driver intends to slow or stop to yield the crosswalk to you.
- Watch for a driver coming in the next lane. Make sure that the driver sees you.
- Keep watching all the way across.
- Wait on the splitter island for a safe gap in traffic before crossing to the other side of the road.
- Step up to the curb. Keep pointing your finger across the crosswalk to say to drivers that you intend to cross.

Accessibility for Visually Impaired:
The following list of recommendations helps ease navigation for persons with visual impairments:

- Walkway edges should be well defined
- Separate sidewalks from curbs to prevent crossing to the centre island
- Use tactile walking surface indicators (TWSI) at the beginning and end of each sidewalk
- Use TWSI on either side of splitter islands
- Consider contrasting colors or architectural features to identify crossing locations
- Provide sufficient lighting
- Consideration of mid-block audible crossings
Permissive Truck Routes
- Bayfield Street (north of Collier Street)
- Collier Street

Design Vehicle
- Assessing WB-19, WB-20 and WB-20.5 Transport Truck

Truck Movements in Roundabouts
- Roundabouts include aprons that allow wheel tracking from larger vehicles
- Aprons are textured to discourage motorists in light vehicles from mounting the apron
- Larger roundabout diameters facilitate larger vehicles with less apron wheel tracking
- Roundabouts being considered will include an assessment of the ability of emergency vehicles and buses to navigate the roundabout without the need to utilize the truck apron.
- All alternatives carried forward will accommodate heavy truck turning maneuvers on permissive routes. An assessment of turning movements on non-permissive routes will be completed.

Truck Turning Movement Figure
- The figure to the left illustrates wheel tracking for a WB-20.5 heavy truck.
- Red lines illustrate the truck movement, blue lines illustrate wheel tracking of the trailer
Gateway Feature

- Roundabouts can provide an aesthetic gateway feature for the City’s downtown
- Features can range from simple landscaping to more complex features including art pieces or statues

Carmel Arts & Design District, USA

Bend, Oregon, USA

Sussex Drive, Ottawa, CAN

Des Moines, Iowa, USA

Federal Way, Washington, USA

Pemberton, British Columbia, CAN
Preliminary Alternative Concepts:
Alternative concepts have been generated and shortlisted through a coarse screening process that identified 14 alternative concepts. Alternatives that could not be implemented due to geometric constraints or required excessive land acquisition were screened out. The alternative concepts presented will be further evaluated as part of the Class EA process. An additional screening process may occur to reduce the number of alternatives that will be fully evaluated.

Realignment Concepts:
The realignment options have identified both roundabout and conventional intersection controls. For each type of control, the alignments have considered realigning either Ross Street or Collier Street. By identifying all feasible geometric alignments, the EA study is able to assess the range of property impacts, safety and traffic operations (vehicular, cyclist and pedestrians). The roundabout concepts presented vary in diameter, ranging from 35 m to 45 m inscribed circle diameter and number of approach legs. The traffic safety and operational performance and environmental effect will be measured in the next phase of the EA study.

<table>
<thead>
<tr>
<th>Range of Roundabout Inscribed Circle Diameters</th>
<th>Under Design Consideration</th>
</tr>
</thead>
<tbody>
<tr>
<td>35 m Diameter Roundabout (Accomodates large trucks on Bayfield)</td>
<td>40 m Diameter Roundabout (Accomodates large trucks on Bayfield)</td>
</tr>
</tbody>
</table>

Accommodates most truck movements. Accommodates all truck movements.
Study Area 2 Intersection Alternatives

The long list of intersection alternatives includes the following:

<table>
<thead>
<tr>
<th>Alternative ID</th>
<th>Description</th>
<th>Carried Forward</th>
<th>Revised Alternative ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Existing Geometrics and Traffic Control (Do Nothing – Baseline Scenario)</td>
<td>✓</td>
<td>Alternative A</td>
</tr>
<tr>
<td>0</td>
<td>Existing alignment with improved signalization</td>
<td>✓</td>
<td>Alternative B</td>
</tr>
<tr>
<td>1A</td>
<td>Realignment of Ross to Collier with a signalized intersection</td>
<td>✓</td>
<td>Alternative C</td>
</tr>
<tr>
<td>1B</td>
<td>Four-leg roundabout, relocation of intersecting roadways</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>1C</td>
<td>Four-leg roundabout, relocation of intersecting roadways</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>1D</td>
<td>Four-leg roundabout, relocation of intersecting roadways</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>1E</td>
<td>Three-leg roundabout</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>1F</td>
<td>Three-leg roundabout</td>
<td>✓</td>
<td>Alternative E</td>
</tr>
<tr>
<td>1G</td>
<td>Three-leg roundabout</td>
<td>✓</td>
<td>Alternative F</td>
</tr>
<tr>
<td>2A</td>
<td>Realignment of Ross to Collier with a signalized intersection</td>
<td>✓</td>
<td>Alternative D</td>
</tr>
<tr>
<td>2B</td>
<td>Roundabout with relocation of intersecting roadways</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>2C</td>
<td>Roundabout with relocation of intersecting roadways</td>
<td>✓</td>
<td>Alternative G</td>
</tr>
<tr>
<td>2D</td>
<td>35 m roundabout with relocation of intersecting roadways</td>
<td>✓</td>
<td>Alternative H</td>
</tr>
<tr>
<td>3</td>
<td>Block roundabout</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Roadway realignment of Ross and Collier using one-way east/west roadways with provision for green space or parking</td>
<td>×</td>
<td></td>
</tr>
</tbody>
</table>

Based on an analysis of these initial alternatives, Alternatives A, 0, 1A, 1F, 1G, 2A, 2C and 2D are recommended to be carried forward as they have geometric space available to accommodate individual legs of the roundabout and provide sufficient left turn storage and/or accommodate turning movements. Roundabout Alternatives carried forward may have a 35 m, 40 m or 45 m radius.

See Resource Table for screening analysis.
ROSS / COLLIER / BAYFIELD STREETS CLASS EA
Intersection Realignment – Preliminary Alternative Concepts

ALTERNATIVE CONCEPT A
EXISTING GEOMETRICS AND TRAFFIC CONTROL (DO NOTHING)
✓ -Preliminary Recommendation to Carry Forward

ALTERNATIVE CONCEPT B
EXISTING GEOMETRICS WITH SIGNALIZATION
✓ -Preliminary Recommendation to Carry Forward
Ross / Collier / Bayfield Streets Class EA
Intersection Realignment – Preliminary Alternative Concepts

**ALTERNATIVE CONCEPT C**
ROSS-COLLIER REALIGNMENT WITH SIGNALIZATION
✓ -Preliminary Recommendation to Carry Forward

**ALTERNATIVE CONCEPT D**
ROSS-COLLIER REALIGNMENT WITH SIGNALIZATION
✓ -Preliminary Recommendation to Carry Forward
Ross / Collier / Bayfield Streets Class EA
Intersection Realignment – Preliminary Alternative Concepts

ALTERNATIVE CONCEPT E
ROSS-COLLIER REALIGNMENT WITH THREE LEGGED ROUNDBOOUT
- Preliminary Recommendation to Carry Forward

ALTERNATIVE CONCEPT F
ROSS-COLLIER REALIGNMENT WITH THREE LEGGED ROUNDBOOUT
- Preliminary Recommendation to Carry Forward
ROSS-COLLIER REALIGNMENT WITH FOUR LEGGED ROUNDABOUT (45m DIAMETER)

- Preliminary Recommendation to Carry Forward

NOTE: ROUNDABOUT INSCRIBED CIRCLE DIAMETER OF 35-45m TO BE INVESTIGATED.

ALTERNATIVE CONCEPT H
ROSS-COLLIER REALIGNMENT WITH FOUR LEGGED ROUNDABOUT (35m DIAMETER)

- Preliminary Recommendation to Carry Forward

NOTE: ROUNDABOUT INSCRIBED CIRCLE DIAMETER OF 35-45m TO BE INVESTIGATED.
Ross Street (Toronto Street to Bayfield Street) Alternative Concepts:
Alternatives are being studied that would facilitate the implementation of the MMATMP recommendations. The alternatives that are being considered on Ross Street between Maple Avenue and Bayfield Street would be considered interim as this section is directly influenced by the intersection realignment.

<table>
<thead>
<tr>
<th>Cross-Section</th>
<th>ROW</th>
<th>No. of Lanes</th>
<th>Sidewalks</th>
<th>Bicycle Facilities</th>
<th>Parking</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ross Street</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing Conditions</td>
<td>20m</td>
<td>2 + LTL</td>
<td>Both Sides</td>
<td>On Road</td>
<td>No</td>
<td>South side buildings located near the existing property line</td>
</tr>
<tr>
<td>Alternative 1 – MMATMP Recommendation</td>
<td>27m</td>
<td>2 + TWLTL</td>
<td>Both Sides</td>
<td>Buffered Bike Lanes</td>
<td>No</td>
<td>MMATMP 27m arterial cross-section</td>
</tr>
<tr>
<td>Alternative 2 – Reduced ROW</td>
<td>25m</td>
<td>2 + TWLTL</td>
<td>Both Sides</td>
<td>Bike Lanes</td>
<td>No</td>
<td>MMATMP 25m Major Residential Collector with Bike Lanes cross-section</td>
</tr>
<tr>
<td>Alternative 3 – Existing ROW</td>
<td>20 m</td>
<td>2 + TWLTL</td>
<td>Both Sides</td>
<td>Shared Lanes</td>
<td>No</td>
<td>Mitigative cross-section to be accommodated within the existing ROW</td>
</tr>
</tbody>
</table>

The City of Barrie
Collier Street (Bayfield Street to Clapperton Street) Alternative Concepts:
Alternatives are being studied that would facilitate the implementation of the MMATMP recommendations as an interim condition in consideration of the future intersection realignment.

<table>
<thead>
<tr>
<th>Cross-Section</th>
<th>ROW</th>
<th>No. of Lanes</th>
<th>Sidewalks</th>
<th>Bicycle Facilities</th>
<th>Parking</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collier Street</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing Conditions</td>
<td>30m</td>
<td>2 + LTL</td>
<td>Both Sides</td>
<td>On Road</td>
<td>Yes</td>
<td>North side – 3 parallel parking stalls South side – 7 angled parking stalls</td>
</tr>
<tr>
<td>Alternative 1 – MMATMP</td>
<td>30m</td>
<td>2 + LTL</td>
<td>Both Sides, Minimum 2.0m width</td>
<td>Buffered Bike Lanes</td>
<td>No</td>
<td>MMATMP 27m arterial cross-section</td>
</tr>
<tr>
<td>Recommendation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternative 2 – Bike Lanes</td>
<td>30m</td>
<td>2 + LTL</td>
<td>Both Sides, Minimum 2.0m width</td>
<td>Bike Lanes</td>
<td>Yes – 1 side</td>
<td>South side angled parking to be converted to parallel parking. MMATMP 27m Major Employment Collector with parking on one side cross-section.</td>
</tr>
</tbody>
</table>

![Diagram of Alternative 1](Image1)

![Diagram of Alternative 2](Image2)
Bayfield Street (Ross Street to Collier Street) Alternative Concepts:
Alternatives are being studied that would facilitate the implementation of the MMATMP recommendations as an interim condition in consideration of the future intersection realignment.

<table>
<thead>
<tr>
<th>Cross-Section</th>
<th>ROW</th>
<th>No. of Lanes</th>
<th>Sidewalks</th>
<th>Bicycle Facilities</th>
<th>Parking</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bayfield Street</td>
<td>Existing Conditions</td>
<td>20m</td>
<td>2 + LTL*</td>
<td>Both Sides</td>
<td>On Road</td>
<td>West side – 6 parallel parking stalls</td>
</tr>
<tr>
<td></td>
<td>Alternative 1 – MMATMP Recommendation</td>
<td>20m</td>
<td>2 + LTL</td>
<td>Both Sides, Minimum 2.0m width</td>
<td>Buffered Bike Lanes</td>
<td>Due to ROW width constraints, parking would need to be removed to implement buffered bike lanes.</td>
</tr>
</tbody>
</table>

* Not painted.
Bell Farm Road Class EA

Project Purpose:
This project will determine the preferred design solution based on the MMATMP recommendations that can be integrated as part of future renewal works in this corridor.

As part of the City’s commitment to the health of Lake Simcoe and its watercourses this project will examine options to implement (‘retrofit’) stormwater management (SWM) in this corridor. Implementing SWM will help improve the environment by treating stormwater to remove pollutants and by controlling flows that can cause watercourse degradation through erosion. Implementing SWM is recommended in the City’s Comprehensive Stormwater Management Master Plan.

Problem Statement:
Bell Farm Road is approaching the end of its service life and requires reconstruction. The existing section of the road with a rural cross-section does not have sidewalks or storm water management. To accommodate growth, the MMATMP recommends this road be widened to increase traffic capacity and provide active transportation facilities.

Opportunity Statement:
To address recommendations of the MMATMP and complete necessary renewal activities, there is an opportunity to replace and upgrade municipal infrastructure in a cost effective and environmentally sustainable manner.

Municipal Infrastructure Needs:
To ensure underground infrastructure lifecycle requirements align with a reconstructed road, the following improvements are proposed.

<table>
<thead>
<tr>
<th>Street Section</th>
<th>Road Structure Condition</th>
<th>Water</th>
<th>Sanitary</th>
<th>Storm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bell Farm Road – West</td>
<td>Poor</td>
<td>Replace 200mm DI (installed 1972)</td>
<td>250mm AC, remaining service life: 75 years*</td>
<td>New SWM system to be installed</td>
</tr>
<tr>
<td>Section</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bell Farm Road – East</td>
<td>Fair</td>
<td>Replace 200mm DI (installed 1972)</td>
<td>250mm AC, remaining service life: 75 years*</td>
<td>Partial SWM exists.* New SWM to be installed where required.</td>
</tr>
<tr>
<td>Section</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Capacity to be confirmed; improvements will be identified where required. Minor in-situ rehabilitation may be recommended to extend service life.

Stormwater Management (SWM):
New SWM systems will be designed to provide quantity and quality control as well as assess opportunities to implement low impact development practices.
Bell Farm Road – West & East Sections

<table>
<thead>
<tr>
<th>Cross-Section</th>
<th>ROW</th>
<th>No. of Lanes</th>
<th>Sidewalks</th>
<th>Bicycle Facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Section</td>
<td>26m</td>
<td>2</td>
<td>None</td>
<td>On Road</td>
</tr>
<tr>
<td>East Section</td>
<td>26m</td>
<td>4</td>
<td>Both Sides (not continuous)</td>
<td>On Road</td>
</tr>
</tbody>
</table>

Study Area

Existing Conditions

Bell Farm Road, east of St. Vincent Street

Bell Farm Road, west of Duckworth Street

Bell Farm Road at St. Vincent Street

Bell Farm Road at St. Vincent Street (source: Google Maps)

Bell Farm Road, east of Alliance Boulevard

Bell Farm Road, west of Duckworth Street (source: Google Maps)

Bell Farm Road, east of Alliance Boulevard (source: Google Maps)

Bell Farm Road, east of St. Vincent Street (source: Google Maps)
Bell Farm Road Class EA – MMATMP Recommendations

2031 Vehicle Lane Requirements

- **West Section**
  - **Existing Conditions**: 26m, 2 lanes, no sidewalks, none
  - **MMATMP Recommendation**: 26m, 2 lanes, 2-way left turn lane

- **East Section**
  - **Existing Conditions**: 26m, 4 lanes, both sides continuous
  - **MMATMP Recommendation**: 29m, 4 lanes, both sides

---

2031 Active Transportation (AT) Network

- **Trans-Canada Trail**
  - Major OT Pathway
  - Standard OT Pathway
  - Buffered Bike Lanes
  - Identify Route (Bike Trail) Link
  - Bike Lanes

- **Roadway Cycling Facilities**
  - Buffered Bicycle Lanes
  - Bike Pathway
  - Bike Lanes
  - Bike Lanes
  - Bike Lanes

- **MMATMP Recommendation Comparison Table**

<table>
<thead>
<tr>
<th>Cross-Section</th>
<th>ROW</th>
<th>No. of Lanes</th>
<th>Sidewalks</th>
<th>Bicycle Facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Section</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing Conditions</td>
<td>26m</td>
<td>2</td>
<td>None</td>
<td>On Road</td>
</tr>
<tr>
<td>MMATMP Recommendation</td>
<td>26m</td>
<td>2 + Two-way Left Turn Lane</td>
<td>Both Sides</td>
<td>Bike Lanes</td>
</tr>
<tr>
<td>East Section</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing Conditions</td>
<td>26m</td>
<td>4</td>
<td>Both Sides (not continuous)</td>
<td>Bike Lanes</td>
</tr>
<tr>
<td>MMATMP Recommendation</td>
<td>29m</td>
<td>4</td>
<td>Both Sides</td>
<td>Buffered Bike Lanes</td>
</tr>
</tbody>
</table>
Bell Farm Road (West Section) Alternative Concepts:
Alternatives are being studied that would facilitate the implementation of the MMATMP recommendations.

<table>
<thead>
<tr>
<th>Cross-Section</th>
<th>ROW</th>
<th>No. of Lanes</th>
<th>Sidewalks</th>
<th>Bicycle Facilities</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Section</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing Conditions</td>
<td>26m</td>
<td>2</td>
<td>None</td>
<td>On Road</td>
<td>Rural cross-section.</td>
</tr>
<tr>
<td>Alternative 1 – MMATMP</td>
<td>26m</td>
<td>2 + TWLTL</td>
<td>Both Sides</td>
<td>Bike Lanes</td>
<td>Cross-section recommended in the MMATMP.</td>
</tr>
<tr>
<td>Recommendation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternative 2 – Buffered</td>
<td>27m</td>
<td>2 + TWLTL</td>
<td>Both Sides</td>
<td>Buffered Bike Lanes</td>
<td>Provides buffered bike lanes to provide continuity with east section. Existing S-bend realigned to improve geometrics.</td>
</tr>
<tr>
<td>Bike Lane with Realignment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternative 3 – Mitigative</td>
<td>26m</td>
<td>2 + TWLTL</td>
<td>Both Sides</td>
<td>Bike Lanes</td>
<td>Minimizes impact to trees abutting residential area.</td>
</tr>
<tr>
<td>Option</td>
<td></td>
<td>(between</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Alliance Blvd)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The City of Barrie
Bell Farm Road (East Section) Alternative Concepts:
Alternatives are being studied that would facilitate the implementation of the MMATMP recommendations.

<table>
<thead>
<tr>
<th>Cross-Section</th>
<th>ROW</th>
<th>No. of Lanes</th>
<th>Sidewalks</th>
<th>Bicycle Facilities</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Section</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing Conditions</td>
<td>26m</td>
<td>4</td>
<td>Both Sides (not continuous)</td>
<td>On Road</td>
<td>Sidewalks are not continuous on both sides for this section of Bell Farm Road.</td>
</tr>
<tr>
<td>Alternative 1 – MMATMP Recommendation</td>
<td>29m</td>
<td>4</td>
<td>Both Sides</td>
<td>Buffered Bike Lanes</td>
<td>Cross-section recommended in the MMATMP.</td>
</tr>
<tr>
<td>Alternative 2 – Road Diet</td>
<td>26m</td>
<td>2 + TWTL</td>
<td>Both Sides</td>
<td>Buffered Bike Lanes</td>
<td>Replace outside lanes with buffered bicycle lanes. Traffic analysis to confirm feasibility and justification for right-turn lanes at Duckworth Street.</td>
</tr>
</tbody>
</table>

EAST ALTERNATIVE 1 - 29m R.O.W.

EAST ALTERNATIVE 2 - 26m R.O.W.

EAST ALTERNATIVE 2 - 26m R.O.W. (BEYOND INTERSECTION)
Next Steps:
• The project team will review public, stakeholder and agency comments from this PIC
• Complete all supporting studies
• Prepare draft Environmental Study Report (ESR)
• Shortlist alternative design solutions
• Fully evaluate alternative design solutions
• Identify a technically preferred alternative solution
• Hold a PIC in 2017 to present the technically preferred alternative solution to seek public input and comment
• Prepare the draft Final ESR
• Present recommendations to City Council for approval
• File Notice of Study Completion and complete 30-day public review period

How can you remain involved in this Study?
• On the comment sheet, please indicate if you would like to be kept informed of the project process including the next PIC.

Help shape decisions made in this Study:
• You can provide your comments by completing a comment sheet and dropping it in the comment box, or you are welcome to take it home and return it at a later date. Please submit your comments by December 7, 2016.
• If you would like more information or if you have any questions, concerns or comments, please contact:

Mr. Brett Gratrix, P.Eng.
City of Barrie, Engineering Department
70 Collier Street, 6th Floor, Barrie, ON L4M 4T5
Tel: (705) 739-4220 Ext. 5117, Fax: (705) 739-4247
Email: brett.gratrix@barrie.ca

Thank You For Participating

Comments and personal information regarding this project are collected under the authority of the Environmental Assessment Act to assist in decision making and to determine further public consultation needs relating to the project. Comments and opinions which do not constitute personal information, as defined by the Freedom of Information and Protection of Privacy Act, will be shared among the Ministry of the Environment and others as appropriate, and may be included in the study documentation which will be made available for public review. Personal information will remain confidential unless prior consent to disclose is obtained.
<table>
<thead>
<tr>
<th>Resource Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-Modal Active Transportation Master Plan</td>
</tr>
<tr>
<td>Bell Farm Road Study Design</td>
</tr>
<tr>
<td>Ross, Collier and Bayfield Streets Study Design</td>
</tr>
<tr>
<td>Bell Farm Road Land Use Plan Report</td>
</tr>
<tr>
<td>Ross, Collier and Bayfield Streets Land Use Plan Report</td>
</tr>
<tr>
<td>Bell Farm Road Arborist Report</td>
</tr>
<tr>
<td>Cultural Heritage Report</td>
</tr>
</tbody>
</table>