Welcome!
City of Kitchener
Biehn Drive Extension
Class Environmental Assessment

Thank you for participating in the Online Public Information Centre (PIC) for the City of Kitchener’s Class Environmental Assessment (EA) for the extension of Biehn Drive and the sanitary trunk sewer.

At the present time, the Province of Ontario has implemented restrictions on public gatherings to deal with the COVID-19 pandemic. As a result, this Public Information Centre is relying on web-based communications. Should you have any questions regarding the study, please contact the City or Consultant Project Managers.

There is an opportunity at any time during the Class EA process for interested persons to provide written input. Any comments received will be collected under the Environmental Assessment Act and, with the exception of personal information, will become part of the public record.

Comments can be submitted by emailing stevenj.taylor@bteng.ca and/or eric.riek@kitchener.ca by November 29, 2021.
Purpose of Public Information Centre

The purpose of this meeting is to:

- Present the evaluation of alternatives.
- Obtain comments on the Technically Preferred Alternative.
- Obtain comments on the proposed mitigation plan.
- Identify any remaining areas of concern.
Introduction

The City of Kitchener has retained BT Engineering Inc. to undertake an Environmental Assessment (EA) Study for the extension of Biehn Drive from its current terminus to the future Robert Ferrie Drive Extension. The Study includes the extension of the trunk sanitary sewer, watermain and storm sewers to Robert Ferrie Drive, to serve areas to the south.

The City has completed Phases 1 and 2 of the Municipal Class EA through the Transportation Master Plan, which has been reviewed and summarized in this study. Phases 3 and 4 of the Municipal Class EA are being completed by developing and evaluating alternative designs and completing the Environmental Study Report, while proactively involving the public and stakeholders in defining a recommended plan for improvements.

This Study is being completed as a Schedule C undertaking, based on the range of anticipated effects, and the proposed infrastructure extension will be completed as a Schedule B. The Study Design Report describing the study process has been made available for agency and public comments and on the website.
EA Study Area

Legend

Local Study Area

Broader Study Area

Based on comments from PIC No. 1
Municipal Class Environmental Assessment

Phases 1 and 2 completed during Transportation Master Plan Update

Phases 3 and 4 to be completed during this EA Study

NOTE: This flow chart is to be read in conjunction with Part A of the Municipal Class EA

Schedule C Process
Background Studies

The following studies have been completed that are relevant to this study:

1. Brigadoon Community Plan (1989);
2. Official Plan Amendment No. 98 (1991);
3. Doon South – Brigadoon Transportation Network and Corridor Study (McCormick Rankin, 1994);
4. Kitchener Planning and Development Staff Report PD95/51 (1994);
5. Updated Brigadoon Community Plan (2005);
6. Kitchener Integrated Transportation Master Plan (2013);
7. Robert Ferrie Drive Extension Environmental Assessment (2014); and

These reports are available online for review upon request. Please contact the identified Project Managers to arrange for review.
Background Information

- Community Plans for the Doon South and Brigadoon areas have established the need for the extension of Biehn Drive.
- This has been documented in the Official Plan and Transportation Master Plan.
- The new road link will accommodate all modes of transportation (vehicles, trucks, pedestrians and cyclists).

Why is the project needed?

- Needed to evenly distribute traffic to the arterial road network.
- Multiple connections to arterial roads reduce the traffic volumes in any one neighbourhood and the travel time, and improve access for emergency services.
- Currently, existing traffic from Biehn Drive must travel through adjacent neighbourhoods.
- To provide a sanitary and water service corridor.

Why is it being implemented now?

- Strasburg Road has been constructed and will provide a western arterial street to service the community.
- With implementation of the proposed Biehn Drive extension, traffic will not have to take a circuitous route through neighbourhoods to reach the arterial road network.
- Required to accommodate future development.
Existing Conditions
Official Plan – Integrated Transportation System

Source: City of Kitchener Official Map 11 Integrated Transportation System, 2014
Natural Environment

Overview:

- Strasburg Creek Provincially Significant Wetland
- Intermittent overland flow through the wetland
- Strasburg Creek
- Wildlife habitat
- Specimen trees
Well Head Protection Area

https://maps.grandriver.ca/web-gis/public/?theme=MYP&bbox=542091,4802909,545343,4804695
Preliminary Design
Alternatives
Preliminary Alignment Alternatives
Alternative 4 added following PIC No. 1
## Coarse Screening of Alignment Alternatives

<table>
<thead>
<tr>
<th>Screening Criteria</th>
<th>Alternative 1: Connect to Robert Ferrie Drive east of Hydro Tower</th>
<th>Alternative 2: Connect to Robert Ferrie Drive west of Hydro Tower</th>
<th>Alternative 3: Strasburg Road Connection</th>
<th>Alternative 4: Connect Biehn Drive to Robert Ferrie Drive – Via Caryndale Drive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does this alternative satisfy forecast traffic demand, improve safety, and address all modes of transportation?</td>
<td>Provides a north-south connection to Robert Ferrie Drive. Accommodates all modes. Reduces cut-through traffic on Biehn Drive.</td>
<td>Provides a north-south connection to Robert Ferrie Drive. Accommodates all modes. Reduces cut-through traffic on Biehn Drive.</td>
<td>Provides a north-south connection to Strasburg Road. Accommodates all modes.</td>
<td>Provides a north-south connection to Strasburg Road. Accommodates all modes. However, there are increased levels of traffic on local roads.</td>
</tr>
<tr>
<td>Does the approach result in significant impacts to the natural environment?</td>
<td>Minor impacts to the woodlot/PSW (~0.3 ha).</td>
<td>Minor impacts to the woodlot/PSW (~0.3 ha).</td>
<td>Significant impacts to the woodlot/wetland (~1.3 ha).</td>
<td>No impacts.</td>
</tr>
<tr>
<td>Is the approach affordable for the City to implement?</td>
<td>No significant difference.</td>
<td>No significant difference.</td>
<td>Higher cost - requires an intersection onto Strasburg Road (arterial).</td>
<td>Affordable alternative.</td>
</tr>
<tr>
<td>Does this alternative comply with the recommendations of the City’s planning documents (i.e., TMP, OP, KGMP)</td>
<td>This alternative complies with the recommendations of the City’s planning documents.</td>
<td>This alternative complies with the recommendations of the City’s planning documents.</td>
<td>Does not comply with the recommendations of the Official Plan or Growth Management Plan. Based on the previous design and construction of the Strasburg Road and roundabout within the Study Area, this previous alternative is no longer considered feasible.</td>
<td>This alternative does not comply with the recommendations of the City’s planning documents.</td>
</tr>
<tr>
<td>Recommendation:</td>
<td>✓</td>
<td>✓</td>
<td>✗</td>
<td>✓</td>
</tr>
</tbody>
</table>

**Recommendation:**
- Alternative 1: Carry forward for further evaluation
- Alternative 2: Carry forward for further evaluation
- Alternative 3: Do not carry forward
- Alternative 4: Carry forward for further evaluation
Alignment
Alternative 1
Connect Biehn Drive to Robert Ferrie Drive – East Alignment
Alignment Alternative 2
Connect Biehn Drive to Robert Ferrie Drive – Central Alignment
Alignment Alternative 4
Connect Biehn Drive to Robert Ferrie Drive – Via Caryndale Drive
Analysis and Evaluation Alignment Alternatives

The analysis and evaluation of the alternatives has been undertaken using a quantitative evaluation methodology. Seven global evaluation factor were considered:

- Transportation
- Natural Environment
- Cultural Environment
- Socio-Economic Environment
- Land Use and Property
- Engineering
- Cost

- The factor groups are made up of measurable criteria (sub-factors) used to identify relevant benefits and impacts.
- They define a unit of measure and the relative differences between alternatives.
- Evaluation data was collected from literature reviews of background documentation and environmental inventories completed for this project.
- The results are presented on the following exhibits and documented in the Analysis and Evaluation Report, available upon request.
Evaluation - Global Factor Weights and Sub-factor Weights

**TRANSPORTATION 31%**
- Supports Urban Transit Service 7.9%
- Improved Emergency Response 6.5%
- Roadway Safety – Supports Area Traffic 16.9%
- Efficiency of Travel 19.3%
- Compatibility with Integrated Transportation Master Plan 7.7%
- Safety of School Zone 14.1%
- Bicycle and Pedestrian Safety - Conflicts with Planned Hydro Corridor Multi-Use Trail 4.9%
- Personal Security of Pedestrians and Cyclists 6.7%
- Intersection Spacing 16.0%

**NATURAL ENVIRONMENT 30%**
- Wildlife Habitat 15.1%
- Accommodating Wildlife Movement 11.9%
- Provincially Significant Wetlands (PSW) Removed 49.5%
- Groundwater Infiltration 23.5%

**SOCI-ECONOMIC ENVIRONMENT 10%**
- Community Disruption to Biehn Drive North 21.0%
- Community Disruption to Biehn Drive South 50.0%
- Community Disruption to Caryndale 29.0%

**LAND USE AND PROPERTY 14%**
- Supports the City of Kitchener’s Official Plan 56.0%
- Efficient Utilization of Land 29.5%
- Crossing of the Hydro Corridor 14.5%

**COSTS 6%**
- Capital Costs 100.0%

**ENGINEERING 9%**
- Accommodating Stormwater Management 23.3%
- Biehn Drive Stormwater Enhancement 23.8%
- Sanitary Sewer Alignment 34.6%
- Overland Stormwater Route 18.3%
Alignment Alternatives - Scores

Technically Preferred Alternative Alternative 1
## Sensitivity Testing

<table>
<thead>
<tr>
<th>Alternatives</th>
<th>WEIGHT</th>
<th>Score:</th>
<th>Alt 1</th>
<th>Alt. 2</th>
<th>Alt. 4</th>
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<tbody>
<tr>
<td>FACTORS</td>
<td></td>
<td></td>
<td>76.40</td>
<td>45.02</td>
<td>48.88</td>
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<tr>
<td>Ranking</td>
<td></td>
<td></td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>TRANSPORTATION</td>
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<tr>
<td>High</td>
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<td>2</td>
<td>3</td>
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<tr>
<td>Low</td>
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<td>1</td>
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<tr>
<td>NATURAL ENVIRONMENT</td>
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<tr>
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<tr>
<td>SOCIO-ECONOMIC ENVIRONMENT</td>
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<tr>
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<tr>
<td>Low</td>
<td>10.00%</td>
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<tr>
<td>LAND USE AND PROPERTY</td>
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<td>COST</td>
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</tbody>
</table>
# Cross Section Alternative Evaluation

Alternatives were developed to reflect the City of Kitchener’s Complete Streets guidelines.

<table>
<thead>
<tr>
<th>Evaluation Criteria</th>
<th>Alternative 1 – 26 m ROW with Multi-use Trail ✓</th>
<th>Alternative 2 – 26 m ROW with Bike Lanes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Transportation</td>
<td>MUTs are preferred by the greatest proportion of cyclists (interested but concerned). Greater network continuity for cyclists with the future MUT along the Hydro corridor and potential to connect to the MUTs along Strasburg Road</td>
<td>Better accommodates pedestrians by separating pedestrians and cyclists Increased conflict between cyclists and access to/from parked vehicles</td>
</tr>
<tr>
<td>Traffic Calming</td>
<td>The reduced pavement width would better promote lower travel speeds</td>
<td>Wider asphalt surface would be less effective in reducing travel speeds</td>
</tr>
<tr>
<td>Impacts to Natural Environment / Storm Water Quality</td>
<td>All alternatives considered equal.</td>
<td>All alternatives considered equal.</td>
</tr>
<tr>
<td>Impacts to Developable Lands</td>
<td>All alternatives considered equal.</td>
<td>All alternatives considered equal.</td>
</tr>
<tr>
<td>Cost</td>
<td>MUTs are more cost effective to construct with reduced pavement thickness and granulars</td>
<td>Wider roadway pavement structure increases construction cost</td>
</tr>
</tbody>
</table>
Preferred Cross Section

PROPOSED BIEHN DRIVE CROSS SECTION
26 M ROW MAJOR COLLECTOR STREET

WEST
MULTI-USE TRAIL (MUT)
0.5 m CURB
3 m
3.3 m LANE
0.5 m CURB
3.3 m LANE
2.4 m CURB
3 m
EAST
MULTI-USE TRAIL (MUT)

ASPHALT SURFACE

CROSS SECTION
ALTERNATIVE 1

PROPOSED BIEHN DRIVE CROSS SECTION
26 M ROW MAJOR COLLECTOR STREET

WEST
MULTI-USE TRAIL (MUT)
0.5 m
3.0 m
1.0 m CURB
33 m LANE
0.5 m CURB
33 m LANE
0.5 m CURB
3.0 m
0.5 m
EAST
MULTI-USE TRAIL (MUT)

EXISTING GRADE
±18 M MAXIMUM DISTURBED AREA WITHIN PSW

TYPICAL PSW SECTION
Preliminary Design Alternatives

- Two (2) Sanitary Sewer Alignment Alternatives were considered.
- The Preferred Sanitary Sewer alignment matches the Preferred Road Alignment Alternative 1.
Preliminary Design Alternatives

- Sanitary Sewer service area
Preliminary Design Alternatives
Intersection Alternatives
Biehn Drive and Robert Ferrie Drive
Traffic Projections

The proposed extension of Biehn Drive is projected to:

• Carry an average of 2500–3000 vehicles/day, well within its capacity as a major collector road,

• Result in a more balanced redistribution of area traffic volumes, providing relief (reducing the traffic volumes) on other area roads including Caryndale Drive and the north segment of Biehn Drive, which are both currently overutilized.

A roundabout is proposed at the intersection of Biehn Drive and Robert Ferrie Drive:

• Consistent with the approved plan identified in the Robert Ferrie Drive Class Environmental Assessment

• Due to the proximity to Strasburg Road (to limit queuing) and to accommodate pedestrian crossings

• To accommodate access to future development south of Robert Ferrie Drive.
Technically Preferred Alternative
Preferred Alignment Alternative

[Diagram of preferred alignment alternative with various annotations including existing trail, proposed 3m MUT, proposed 2.4m wide parking lane, potential wetland restoration area, connect into existing sanitary sewer, approximate wetland boundary (exact boundary under investigation), etc.]

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## Mitigation Table

<table>
<thead>
<tr>
<th>Issue/Concern Potential Effects</th>
<th>Concerned Agency</th>
<th>Proposed Mitigation (prevent, lessen or remedy potential detrimental environmental effects)</th>
</tr>
</thead>
</table>
| Loss of Provincially Significant Wetland (PSW) | GRCA            | • Wetland Restoration in vacant lot on Biehn Drive.  
• Narrowing of roadway through PSW.  
• Utilize Best Management Practices and limit disturbance to wetlands and vegetation.  
• Limit vegetation removal, where feasible.  
• Protect vegetation to remain using tree protection. |
| Wildlife Crossing             | GRCA            | Provide equalization culverts and permanent, directional wildlife fencing to permit wildlife passage across roadway. |
| Groundwater                   | MECP            | Avoid draw-down of water table by ensuring the bottom of granulars are above original ground. |
| Fish Habitat: downstream impacts to Strasburg Creek cold water fish habitat | GRCA, NDMNRF   | • Provide erosion and sediment controls.  
• Minimize the delivery of sediments and associated pollutants to receiving watercourses.  
• Minimize the impact of road salt on the local vegetation and receiving watercourses.  
• Minimize the impact of increased flows on receiving watercourses.  
• Minimize potential erosion within the drainage system, and within the local receiving watercourses. |
## Mitigation Table

<table>
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</thead>
</table>
| SAR                             | MECP            | • Undertake targeted, specialized SAR surveys during Detail Design as required depending on species conservation status designations as they exist at that time. At this time, no SAR have been identified in the Study Area.  
• Ensure the design and construction complies with the *Endangered Species Act* (ESA, 2007) |
| Migratory Birds                 | NDMNRF          | Any clearing and grubbing should be completed outside of the active breeding bird season of April 1 to August 31.  |
| Turtles and Turtle Habitat      | NDMNRF          | • Install silt fencing before turtle nesting season (May 15 to Sept. 30).  
• Protect and buffer active nests.  
• Avoid groundwater alteration in nearby wetlands between October 1 and April 1 during turtle hibernation.  |
| Water Quality and Stormwater    | MECP            | Provide a Stormwater Management Plan.  |
| Significant Woodlots            | NDMNRF          | Avoid specimen trees and limit tree clearing.  |
## Mitigation Table

<table>
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<th>Proposed Mitigation (prevent, lessen or remedy potential detrimental environmental effects)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noise</td>
<td>City</td>
<td>Municipal Noise By-laws are to be followed during construction adjacent to residential areas.</td>
</tr>
</tbody>
</table>
| Traffic calming               | City             | • Narrowing of cross section  
• Reduced lane widths  
• Provision of a roundabout to assist in controlling speeds |
| Lighting                      | GRCA            | Provide cut-off lighting through PSW.                                                   |
| Utilities                     |                  | Liaison during detail design.                                                           |
| Changes to Emergency Services |                  | Liaison during detail design.                                                           |
Next Steps
Next Steps

Following this Public Information Centre we will:

❖ Review all online Public Information Centre comments and prepare a Summary Report
❖ Develop refinements to the Technically Preferred Alternatives (if required) based on public comments
❖ Prepare the Environmental Study Report (ESR)
❖ Initiate 30-day public review period of the ESR
Your Involvement

How can you remain involved in the Study?

❖ Request that your name/e-mail be added to the Study Mailing List
❖ Provide an online comment
❖ Contact the Municipality’s representative or the consultant at any time. Contact information is available below.

Thank you for your participation in this online Public Information Centre. Your input into this study is valuable and appreciated.

All information is collected in accordance with the *Freedom of Information and Protection of Privacy Act*.

For More Information Please Contact:

Steve Taylor, P.Eng.  
BT Engineering Inc., Project Manager  
Email: stevenj.taylor@bteng.ca  
Phone: 519-672-2222

Eric Riek, C.E.T.  
City of Kitchener, Project Manager  
Development Engineering  
Email: eric.riek@kitchener.ca  
Phone: 591-741-2200 ext. 7330

Please submit any questions or comments to the contacts listed above by **November 29, 2021**.