

REPORT TO: Community and Infrastructure Services Committee

DATE OF MEETING: February 13, 2023

SUBMITTED BY: Carlos Reyes, Interim Director Engineering, 519-741-2200 ext. 7974

PREPARED BY: Eric Riek, Project Manager, 519-741-2200 ext. 7330

WARD(S) INVOLVED: 4

DATE OF REPORT: January 18, 2023

REPORT NO.: DSD-2022-188

SUBJECT: Biehn Drive and Sanitary Trunk Sewer Extension Class
Environmental Assessment (EA) – Environmental Study Report

RECOMMENDATION:

That the Biehn Drive and Trunk Sanitary Sewer Extension Class Environmental Assessment (EA) - Environmental Study Report (ESR), prepared by BT Engineering, dated January 18, 2023, be received; and,

That the Biehn Drive and Trunk Sanitary Sewer Extension Environmental Study Report (ESR), be filed with the Ministry of the Environment Conservation and Parks (MECP) for the mandatory thirty (30) day review period as required by the Environmental Assessment (EA) Act.

REPORT HIGHLIGHTS:

- The purpose of this report is to determine the most appropriate alignment for the Biehn Drive and Sanitary Trunk Sewer extension from the current terminus to future Robert Ferrie Drive.
- The key finding of this report is the recommendation of Alternative 1 (**See Figure 1**) as the preferred road and sewer alignment for Biehn Drive and the Biehn Drive Trunk Sanitary Sewer.
- The financial implications are Biehn Drive and Sanitary Trunk Sewer Extension was included in the Development Charge Background Study, 2019. This project has full-funding available as of 2022 in the capital forecast and is fully funded by Development Charges.
- Community engagement included two virtual public information meetings with the first meeting taking place April 20th, 2021. The second virtual public information meeting took place on November 17th, 2021. In addition, the project was presented to the Kitchener Environmental Committee on June 17th, 2021 and October 21, 2021. Lastly, the project was presented to the Regional Environmental Committee on November 29, 2021.
- This report supports the delivery of core services.

EXECUTIVE SUMMARY:

The City of Kitchener (City) has undertaken a Schedule C Class Environmental Assessment (EA) Study to develop a transportation plan for the extension of Biehn Drive westerly to the Robert Ferrie Drive extension in the City of Kitchener. The Biehn Drive extension will include municipal services including a trunk sanitary sewer, storm sewer/ditches and watermain. The Study has developed and evaluated alternatives for the alignment of the Biehn Drive extension, intersection locations/type and municipal services while minimizing environmental, social, and cultural impacts of the project. Biehn Drive is a Major Collector Road in the City of Kitchener Official Plan. The previous sanitary sewer network has been constructed to accommodate the future service areas to connect directly to Biehn Drive. No other alternative exists for the sanitary sewer network other than to connect to Biehn Drive.

BACKGROUND:

Since the mid-2000's the road network and municipal servicing for the Doon South and Brigadoon areas in the City of Kitchener have planned for area development and evolving transportation needs. Several planning documents including the Official Plan and Transportation Master Plan (TMP) have identified the need to extend Biehn Drive westerly to the Robert Ferrie Drive extension and ultimately to Strasburg Road.

The Biehn Drive Extension would be a major collector road, as identified in Schedule B of the City of Kitchener's Official Plan Amendment. This link would accommodate vehicles to and from the Brigadoon community and would help mitigate cut-through traffic on local streets within the community. A collector road collects traffic from local roads within the community and provides connectivity to higher tier arterial roads, including Strasburg Road.

Future development within the Doon South and Brigadoon communities requires a defined alignment for the extension of Biehn Drive to Robert Ferrie Drive as part of the area road network and to accommodate municipal services. The sanitary sewer network must connect to Biehn Drive.

To determine the road alignment, this Study has considered the natural, social environments and the future land use in the Study Area. The extension of Biehn Drive and the associated municipal servicing has been a longstanding part of the integrated plan for the Brigadoon neighbourhood.

The initial screening of alternatives for the new Biehn Drive Extension intersection at future Robert Ferrie Drive suggests that a roundabout is the preferred option. Similarly, the Robert Ferrie Drive EA, 2014, recommended a roundabout at this intersection.

The planned extension will improve local access to Strasburg Road to safely and reliably accommodate all modes of transportation including vehicular, pedestrian, cyclist, and provide access to future transit connections. Defining the future road and municipal servicing plans concurrently allows subsequent land use plans to be completed by developers by providing certainty in the horizontal and vertical alignment of the municipal street right-of-way (ROW).

The EA Study provides the opportunity to:

- improve accessibility to the local community by providing additional network links;
- define a multi-modal transportation plan to support travel within the local neighbourhoods;
- accommodate the required and previously planned sanitary sewer extension; and,
- allow development to proceed on lands that currently require the roadway ROW to be defined prior to developing the land use plan.

REPORT:

BT Engineering completed a preliminary design of the Technically Preferred Alignment (TPA) and the Environmental Study Report (ESR) for the Biehn Drive and Trunk Sanitary Sewer.

As part of the preliminary design of the new TPA (see **Figure 1** below) and based on input from the public, agencies and Indigenous Communities; the project team had the opportunity to refine the alignment further based on the following criteria:

Through the Provincially Significant Wetland (PSW), the cross section (see **Figure 2**) will be identical to the cross section beyond the PSW, except that it will be revised to:

- Remove the Multi use trail (MUT) from the north (west) side of the road and replace with a sidewalk on the west side of the road
- Allow for a 14 m ROW through the wetland
- No Parking within the PSW
- Provision for a wildlife passage culvert within the PSW
- Lighting with full cut off fixtures
- Opportunity to enhance naturalization of PSW Adjacent Lands

Outside the wetland, the cross section (see Figure 2) will be reduced to 23.5 m through the subdivision, reducing the width of the boulevard on the east side to accommodate the MUT.

The new TPA was refined based on discussions with the directly affected landowners, and developed to the Preliminary Design level of detail, including road geometry, cross-sections, drainage and stormwater management, municipal services and other utilities, and intersection design.

An existing conditions assessment (including Traffic Analysis, Natural Environment, Socio-Economic Environment, Cultural Environment, Transportation and other Municipal Infrastructure); the development and assessment of conceptual alignment alternatives; selection of the Technically Preferred Alignment; Preliminary Design of the new Technically Preferred Alignment; commitments to environmental protection, mitigation and monitoring and additional investigations associated with the Preliminary Design scheme; and the conduct and results of the stakeholder consultation program have been documented in the Environmental Study Report.

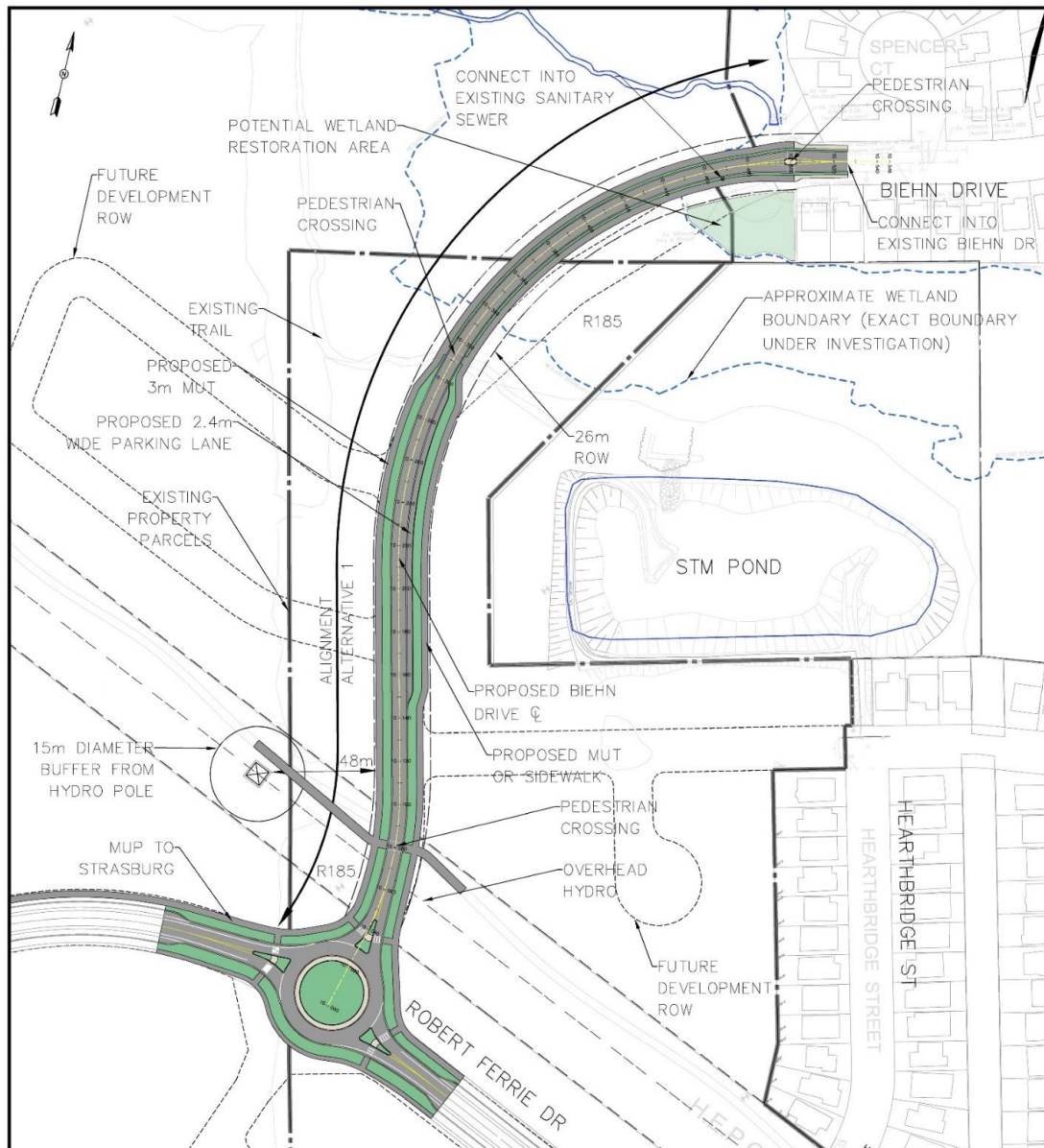


Figure 1 – Technically Preferred Alignment

Problem Statement

Future development within the Doon South and Brigadoon communities requires a defined alignment for the extension of Biehn Drive to Robert Ferrie Drive as part of the area road network and to accommodate municipal services. The sanitary sewer network must connect to Biehn Drive.

To determine the road alignment, this Study has considered the natural, social environments and the future land use in the Study Area. The extension of Biehn Drive and the associated municipal servicing has been a longstanding part of the integrated plan for the Brigadoon neighbourhood. The planned extension will improve local access to Strasburg Road to safely and reliably accommodate all modes of transportation including vehicular, pedestrians, and cyclists, and provide access to potential future transit. Defining the future road and municipal servicing plans concurrently allows subsequent land use plans to be

completed by developers by providing certainty in the horizontal and vertical alignment of the municipal street right-of way.

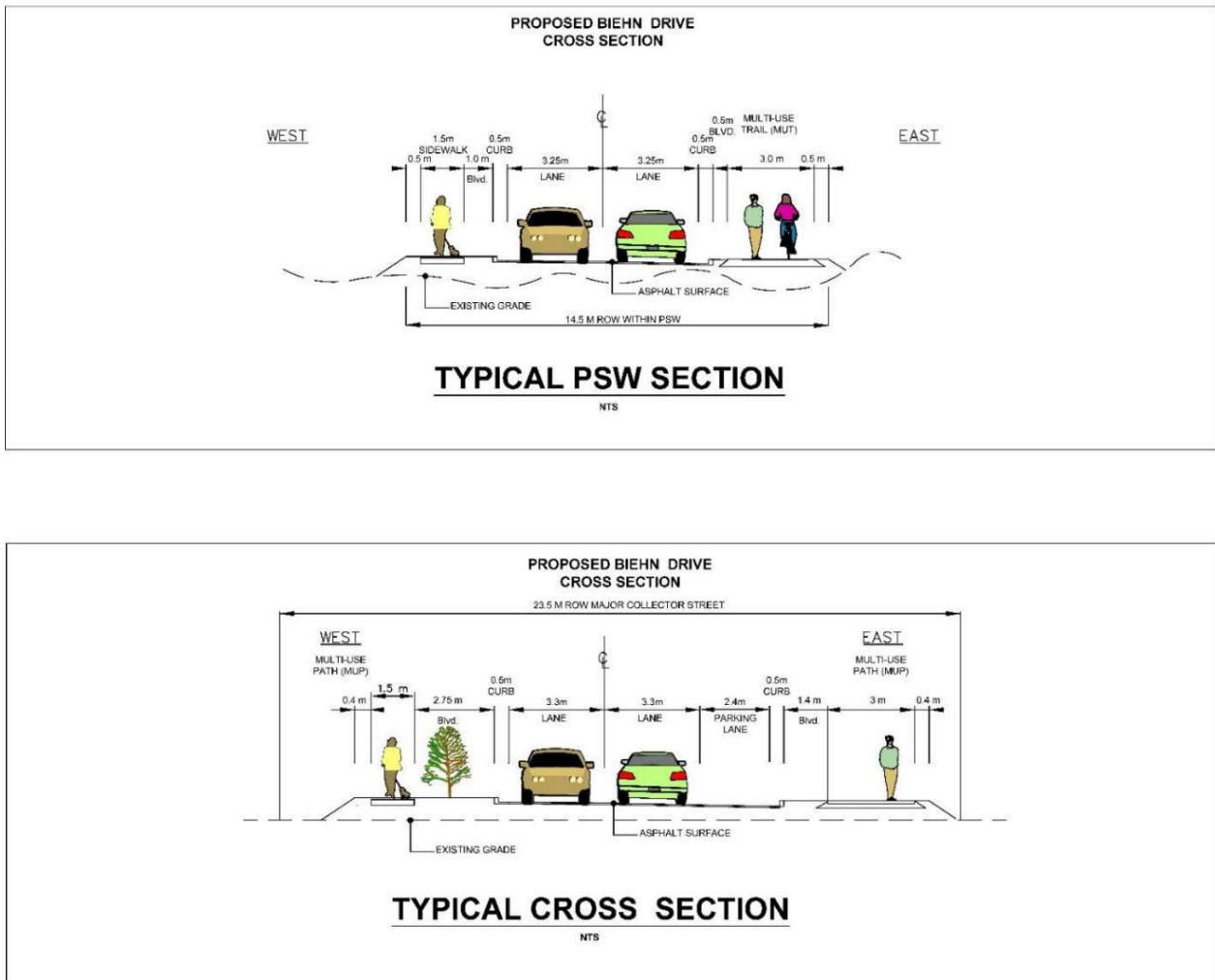


Figure 2 – Typical Cross Section Through Wetland and Outside the Wetland

The EA Study provides the opportunity to: improve accessibility to the local community by providing additional network links; define a multi-modal transportation plan to support travel within the local neighbourhoods; accommodate the required and previously planned sanitary sewer extension; and allow development to proceed on lands that currently require the roadway right of way (ROW) plan to be defined prior to developing the land use plan.

Study Area

The study area is illustrated in **Figure 3**. The “Local Study Area” extends from the current terminus of Biehn Drive, approximately 60 m west of Spencer Court, southerly to the future Robert Ferrie Drive Extension. The “Broader Study Area” includes the surrounding areas to consider traffic effects in adjacent neighbourhoods as well as broader alternatives through adjacent neighbourhoods.

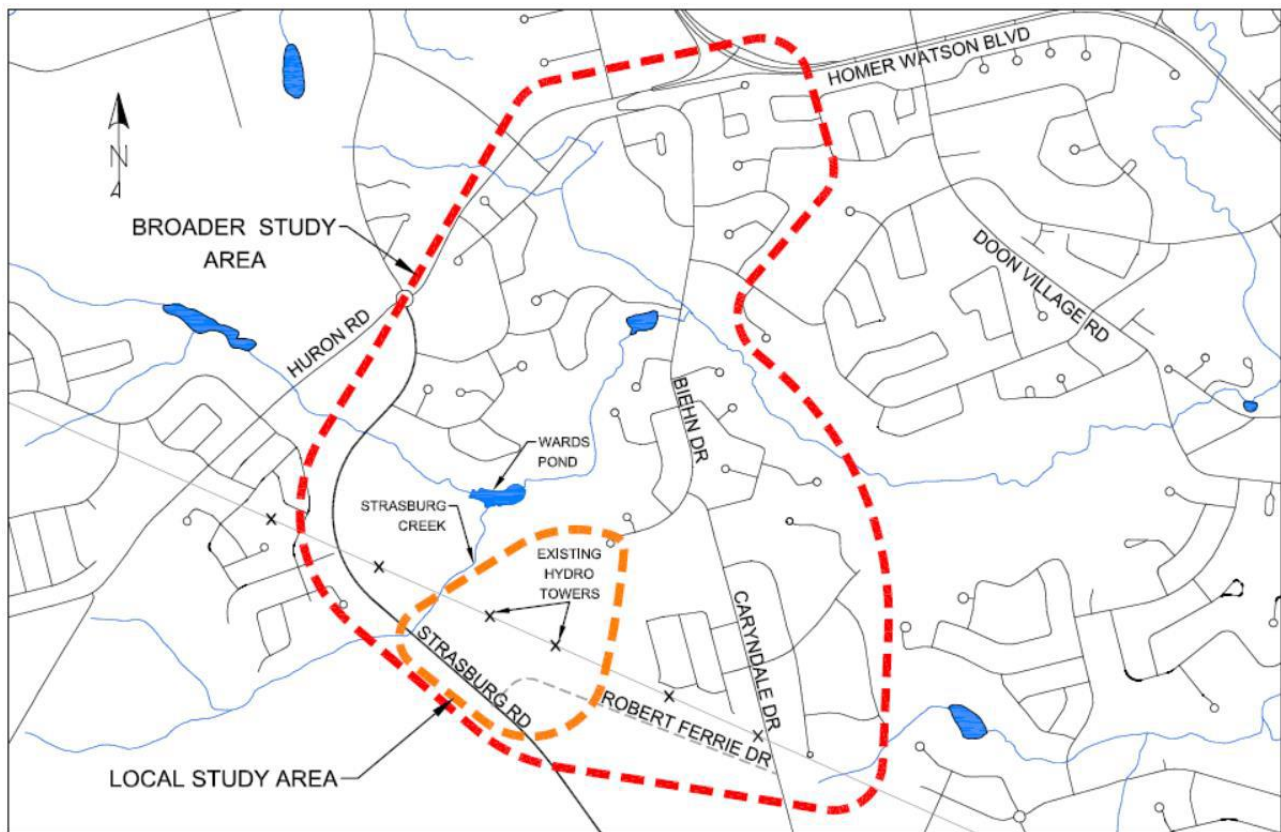


Figure 3: Study Area

Municipal Class EA Process

This project was undertaken to satisfy the Provincial EA Act following the “Municipal Class Environmental Assessment” process for a Schedule C project as amended by the Municipal Class EA 2015. This document specifies the procedures required to plan specific road projects according to an approved provincial planning process.

The Class EA process was undertaken in a series of phases commencing with problem identification and culminating in the filing of this ESR.

The Class EA process includes an evaluation of all reasonable alternatives and the selection of a preferred alternative(s) with acceptable effects (including avoidance and mitigation of any residual adverse effects) on the natural and social/cultural environments.

The Municipal Class EA process involves five phases:

Phase 1: Identify the Problem

Phase 2: Alternative Solutions

Phase 3: Alternative Design Concepts for the Preferred Solution

Phase 4: Environmental Study Report (ESR)

Phase 5: Implementation

Identification and Evaluation of Alternatives

The evaluation of alternatives was completed in a two-step process. The initial step was to consider and validate previous decisions of the Transportation Master Plan as alternative planning solutions. For this study, the alternative planning solutions included:

- Alternative 1 – Do Nothing
- Alternative 2 – Transportation Demand Management (TDM)
- Alternative 3 – Use of Existing Local Roads
- Alternative 4 – Limit Land Use Development
- Alternative 5 – Extend Biehn Drive

Based on the preliminary review of Alternative Planning Solutions, Use of Existing Local Roads and Extend Biehn Drive were recommended for further evaluation. Transportation Demand Management was not carried forward as a standalone solution but will be incorporated with the preferred alternative as part of the recommended plan.

Generation of Preliminary Design Alternatives

A “long list” of preliminary design alternatives was generated, based on identified needs, to ensure consideration of a wide range of transportation alternatives (i.e. all reasonable alternatives are considered). The preliminary alternatives were categorized under 3 groups:

- a. Alignment Alternatives (road and sanitary sewer and municipal services)
- b. Cross Section Alternatives
- c. Intersection Alternatives

Preliminary design alternatives were developed for each group of alternatives. These alternatives were presented to the public at the PIC’s and was expanded based on comments received from the public.

The Project Team participated in and reviewed the analysis and evaluation for all alternatives. The Technically Preferred Alternative (TPA) was presented to the public at the second PIC

Recommended Plan

After Public Information Centre (PIC) No.2, the TPA was subject to refinements based on community input.

The Biehn Drive extension recommended plan includes:

- New 2-lane road connecting the current Biehn Drive terminus to the future Robert Ferrie Drive
 - Alignment will be east of the Hydro Tower
 - Cross section will include 3.3 m lanes with curb/gutter (0.5 m)
- Active transportation improvements will include:
 - 3.0 m MUT on the east side of the road from Robert Ferrie Drive to the wetland (see Statement of Flexibility Section **Error! Reference source not found.**)
 - 1.5 m sidewalk on the west side from the Hydro Easement to Biehn Drive.
 - Boulevard (varying width, minimum 0.5 m)
 - Pedestrian crossings at:
 - The Hydro easement
 - The south edge of the wetland

- Roundabout at the intersection of Biehn Drive and Robert Ferrie Drive (per the recommendations of the Robert Ferrie Drive Environmental Assessment)
- Installation of municipal services beneath the road alignment including:
 - Sanitary trunk sewer (525 mm diameter)
 - Storm sewer
 - Watermain
- Natural environment mitigation including:
 - Construction of one or more concrete box culverts with a 1.0 m span and 1.0 m rise for the provision of wildlife passage under the Biehn Drive extension in the area of the Strasburg Creek PSW (final sizing, design and number of crossings to be defined in detail design).
 - Implementation of permanent wildlife fencing
 - Stormwater quality control of northern outlet to the PSW (oil grit separator)
 - Target desirable compensation for wetland loss including:
 - 10:1 tree replacement
 - 1:1 wetland replacement (on-site)
 - 2:1 wetland replacement (off-site)
 - The feasibility for compensation to be reviewed with the future determination of the offsets from the PSW to development lands as an opportunity for naturalization and well as the re-naturalization of the removal of the existing cul-de-sac on Biehn Drive.

Staff recommend that the Biehn Drive and Sanitary Trunk Sewer Environmental Study Report (ESR) prepared by BT Engineering, dated April 2022, be received.

Further, staff recommend that the Biehn Drive and Sanitary Trunk Sewer Environmental Study Report (ESR) be filed with the Ministry of the Environment Conservation and Parks (MECP) for the mandatory thirty (30) day review period, as required by the Environmental Assessment (EA) Act. This will provide the opportunity for the public and agencies to review the document and provide comments to the Ministry of the Environment Conservation and Parks (MECP) and City, if any.

STRATEGIC PLAN ALIGNMENT:

This report supports the delivery of core services.

FINANCIAL IMPLICATIONS:

Capital Budget – The recommendation has no impact on the Capital Budget. Funds are currently available from Development Charges.

Operating Budget – The recommendation has no impact on the Operating Budget.

COMMUNITY ENGAGEMENT:

INFORM – This report has been posted to the City's website with the agenda in advance of the council / committee meeting.

CONSULT –The public consultation approach used several techniques to proactively involve the public. In addition, the study was carried out in consultation with staff from the City of Kitchener, external agencies, and other stakeholders.

The EA process included circulating a draft Study Design describing the proposed methodology for the Class EA at the start of the study. The draft Study Design was circulated to external agencies and was available to the general public through posting on the City website. The Study Design circulation was completed as an optional public consultation step (1.2 of the Municipal Class EA Planning and Design Process).

A combined Community Café/Public Information Centre Event and a Public Information Centre were held during the study to present the project, the assessment of alternatives and the Technically Preferred alternative. Based on community input, an additional alternative was added and carried forward through the evaluation. These meetings were an integral component of the study – seeking input and comments from the local community/stakeholders.

Engagement was undertaken with First Nations communities as part of the study. This included sharing archaeological studies and a field review of the final recommended alternative with Six Nations of the Grand River.

Community engagement included two virtual public information meetings with the first meeting taking place April 20th, 2021. The second virtual public information meeting took place on November 17th, 2021. In addition, the project was presented to the Kitchener Environmental Committee on June 17th, 2021 and October 21, 2021. Lastly, the project was presented to the Regional Environmental Committee on November 29, 2021.

PREVIOUS REPORTS/AUTHORITIES:

- September 1989, City Council approved the Brigadoon Community Plan. The Community Plan was processed concurrently with amendments to the Official Plan which established a collector and arterial road network for the Community. The importance of connecting the Brigadoon Community to Strasburg Road was recognized and three collector road connections were proposed at that time including the extension of Biehn Drive. Approved transit routes included Biehn Drive, Strasburg Road and Huron Road. The Biehn Drive extension has been carried forward in all subsequent versions of the City of Kitchener Official Plan.
- February 1994, McCormick Rankin on behalf of the City of Kitchener completed the report “Doon South - Brigadoon Transportation Network and Corridor Study”. The report recognized the need to comprehensively plan a road network to accommodate growth associated with a large geographic area. The process was undertaken in the form of the Environmental Assessment Act. The report recommended several interrelated transportation corridor network improvements and reaffirmed the need for the Biehn Drive extension. Kitchener Planning and Economic Development Committee approved the report and further recommendations dated June 20, 1994 which among other matters, directs an amendment to the Kitchener Official Plan to incorporate the collector road network which includes Biehn Drive.
- The Brigadoon Community Plan was updated and approved by Kitchener City Council on June 29, 2004. The updated Community Plan provides for the extension of Biehn Drive to Strasburg Road and recognizes Strasburg Road as a 26 metre wide secondary arterial road.

- In June 2013, the final “Kitchener Integrated Transportation Master Plan” was approved. The master plan informed the approval of the City’s current “in effect” Official Plan. Biehn Drive extension is identified as a major community collector street. Biehn Drive is shown as extending in a southwesterly direction and connecting to Strasburg Road.
- City Planning Staff Report (CSD-14-037) prepared in support of the Official Plan Amendment (OPA) and environmental assessment (EA) for the Robert Ferrie Drive extension (June 2014) includes the following conclusion: *“In order to continue improving the traffic and transportation needs in the Brigadoon and Doon South communities the Transportation studies done as part of the Integrated EA and OPA process confirmed that the extension of Biehn Drive is necessary to meet the current and projected transportation needs of the Brigadoon/Doon South Communities. It is therefore also recommended that the EA process for the extension of Biehn Drive commence as soon as possible and further that it be concurrent with the EA for the extension of sanitary sewer services along Biehn Drive.”*
- March 2019, LPAT’s partial approval of Official Plan Amendment No. 103. The integrated transportation system policies of the Official Plan are supported by the City’s Transportation Master Plan. Map 11 (Integrated Transportation System) of the in-effect Official Plan identifies the approved Robert Ferrie Drive alignment and confirms that Biehn Drive will be extended from its current terminus southerly and connect to Robert Ferrie Drive. The final alignment of Biehn Drive is to be constructed within the corridor identified on Map 11.
- *Municipal Act, 2001*
- *Planning Act*

APPROVED BY: Justin Readman, General Manager, DSD

ATTACHMENTS:

Attachment A – Environmental Study Report (ESR), City of Kitchener Biehn Drive
Municipal Class Environmental Assessment January 2023