

Welcome!

City of Kitchener

Biehn Drive Extension

Class Environmental Assessment

Thank you for participating in the 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.

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 July 4, 2024.



Purpose of Public Information Centre (PIC)

The purpose of this meeting is to:

- ▶ Present the findings of additional investigations, completed since PIC 2:
 - ▶ Black Ash tree inventory
 - ▶ Geotechnical
 - ▶ Transportation
- ▶ Obtain comments on the Recommended Plan.
- ▶ Obtain comments on the proposed mitigation plan.
- ▶ Identify any remaining areas of concern.

Introduction

The City of Kitchener 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 and watermain to Robert Ferrie Drive, to serve areas to the south.

The City of Kitchener as part of this EA completed Phases 1 and 2 of the Municipal Class EA through the Transportation Master Plan. The study is now in Phases 3 and 4 of the Municipal Class EA which involves 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.

The focus of this PIC is additional environment, geotechnical and hydrogeological investigations and the Doon South Area Transportation Study Update. This PIC will also present the Construction Staging Approach and the Recommended Plan for the municipal services and transportation projects, as well as mitigation measures.

Problem and Opportunity Statement

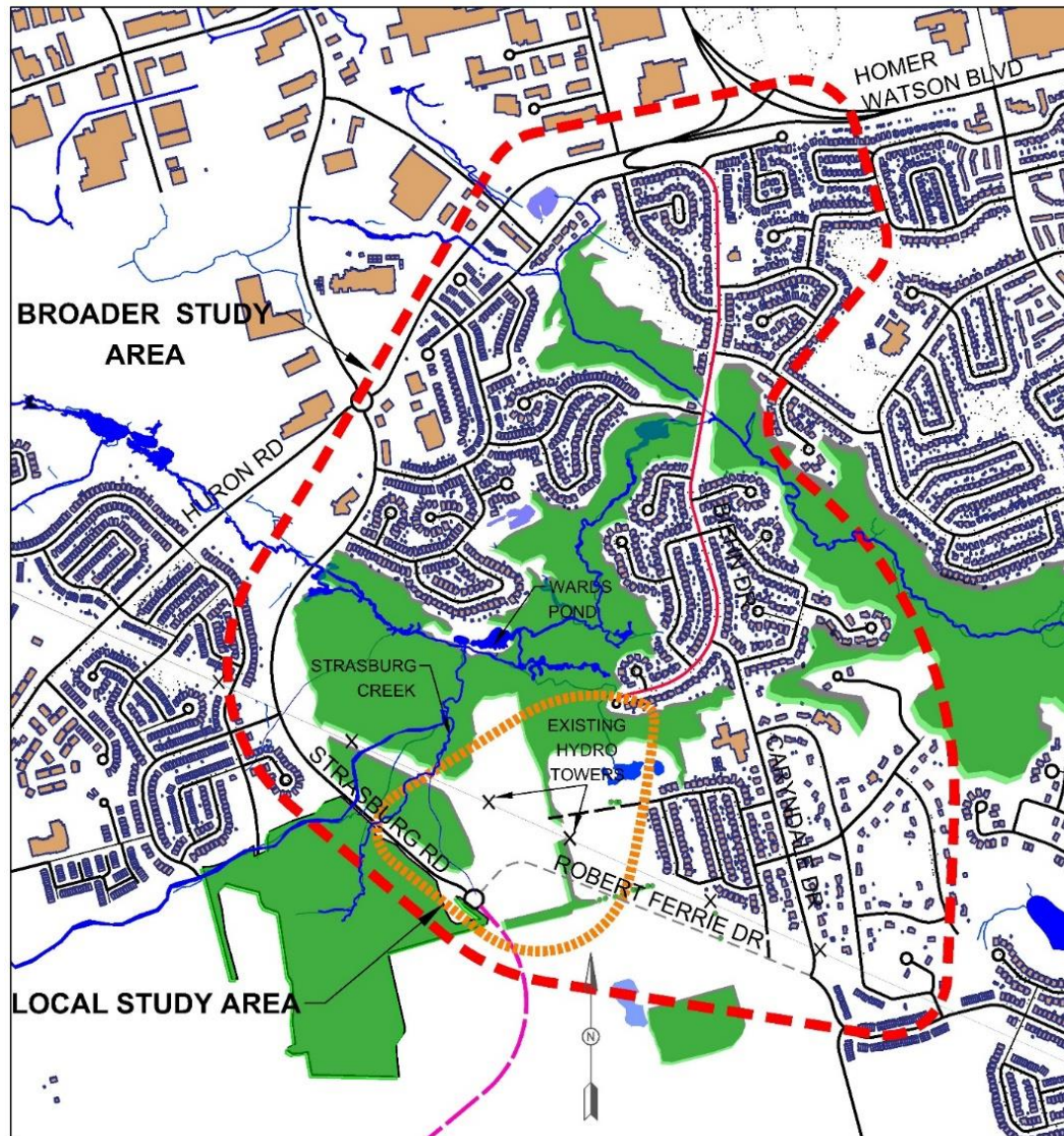
The planned extensions of Strasburg Road and Robert Ferrie Drive combined with new development will result in changes to the traffic demands and patterns within the Doon South and Brigadoon communities. To address those changes, the City of Kitchener Transportation Master Plan and Official Plan have identified an extension of Biehn Drive from its current terminus to Robert Ferrie Drive. The Study has revisited the need for an extension of Biehn Drive and evaluated potential alignment alternatives if an extension of Biehn Drive is still recommended. The Study has considered the natural, social environments and the future land use in the Study Area. The study is assessing the road network to provide safe, reliable transportation access to communities within Doon South and Brigadoon considering vehicular, pedestrian, cycling and truck routes. The road project is being completed as a Schedule C undertaking.

The Project 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; and
- Allow development to proceed on lands that currently require the infrastructure requirements to be defined prior to developing the land use plan.

In parallel, the City is planning for new municipal services that are required to serve future development to the south. The future watermain and sanitary trunk sewer crossing of the Provincially Significant Wetland (PSW) from the existing services at the end of Biehn Drive are being completed as a Schedule B project.

EA Study Area



Legend

Local Study Area ● ● ● ● ● ● ● ●

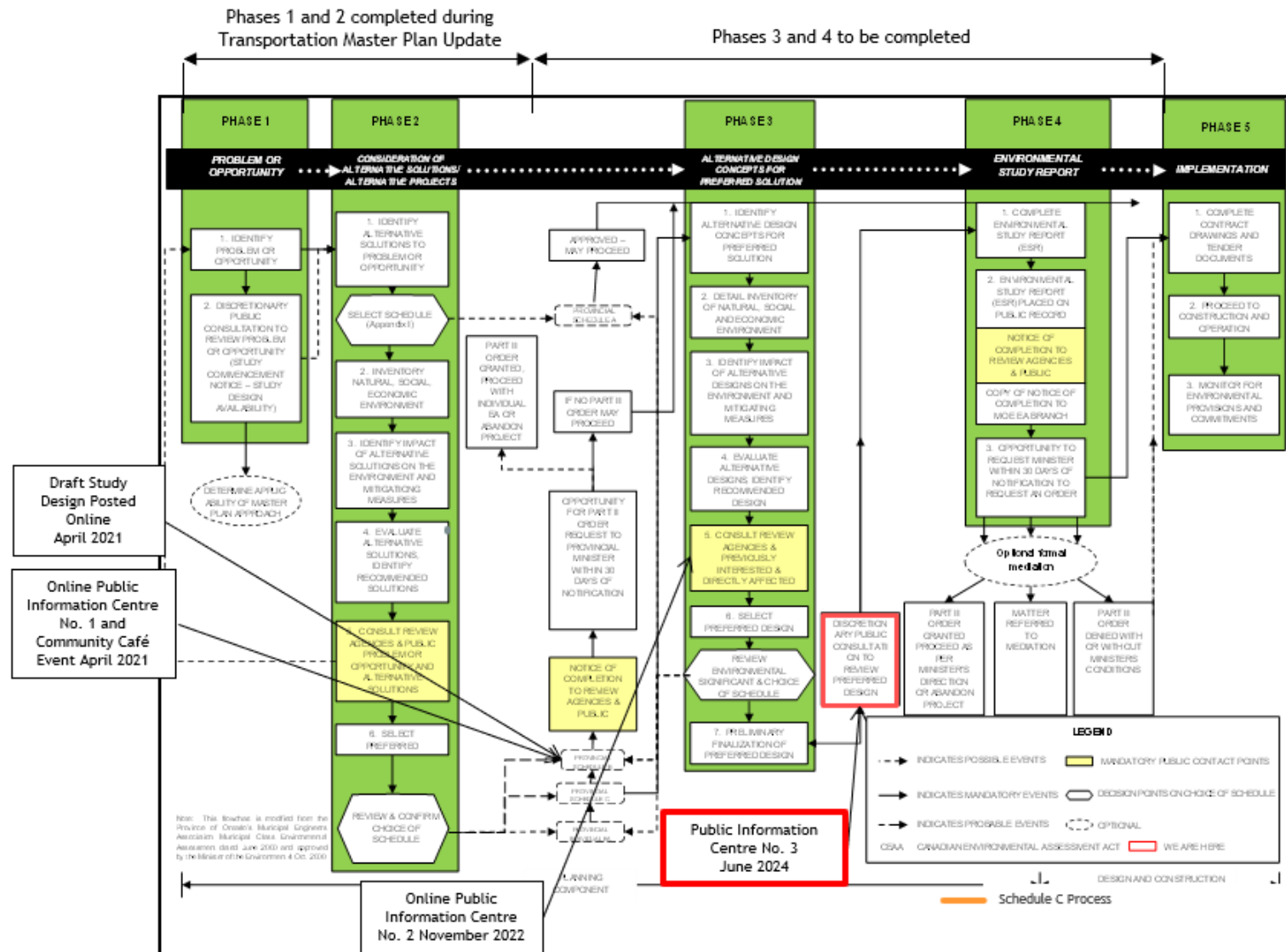
Broader Study Area — — — — — — — —

Based on comments from PIC No. 1

Municipal Class EA

- ▶ Road improvements are being completed as a Schedule C undertaking, based on the range of anticipated effects.
- ▶ Proposed municipal services extension is being completed as a Schedule B activity.
- ▶ The Class EA process is shown on the next exhibit.
- ▶ This study was initiated following the Municipal Class EA, 2015.

Municipal Class Environmental Assessment Process



Alternative Planning Solutions

Screening Criteria	Do Nothing	TDM	Use of Existing Local Roads	Limit Development	Extend Biehn Drive (Road and servicing corridor)
Transportation	Does not address forecast traffic demand. Results in increased volumes on local roads.	May reduce vehicular demand by mode shift or work at home but will not eliminate need for new or improved infrastructure.	Local roads not designed to accommodate increased volumes. Caryndale Drive is not designated as a major collector and as such should not be expected to carry additional traffic.	May reduce vehicular demand by reducing the number of trips generated by development but does not address existing demands and/or background growth.	Accommodates all modes of transportation.
Municipal Services (Water and Trunk Sanitary Sewer for future development)	Does not accommodate future development.	Does not accommodate future development.	Does not accommodate future development.	Does not accommodate future development.	Accommodates future development.
Environmental	No impacts.	No or low impacts. Low impacts may be associated with active transportation projects/ improvements (i.e. sidewalks, bike lanes).	Low impacts. Creates disruption to properties on local roads that would experience an increase in traffic.	No impacts.	Low to High Servicing: Low Roadway: High environmental effect possible with new corridor. Magnitude of effects will depend impact on Provincially Significant Wetland (PSW) and Species at Risk (SAR) tree species.
City Planning Objectives	Does not meet objectives/ recommendations in City Planning document or support the Provincial Places to Grow Act requirement to create additional development areas (including municipal services).	Supports objective to encourage active transportation and alternate modes. Does not support the Provincial Places to Grow Act requirement to create additional development areas (including municipal services).	Does not meet objectives/ recommendations in City Planning documents. Does not support the Provincial Places to Grow Act requirement to create additional development areas (including municipal services).	Does not meet objectives/ recommendations in City Planning documents. Does not support the Provincial Places to Grow Act requirement to create additional development areas (including municipal services).	Supports the recommendations for the extension of Biehn Drive in OP and TMP. Supports the Provincial Places to Grow Act requirement to create additional development areas (including municipal services).
Recommendations	✗ Not recommended but carried forward as a baseline to compare other alternatives.	✓ Recommended as a complementary solution. This is not a standalone solution.	Following PIC No. 1 there was public support to carry forward this alternative. This is not a standalone solution. See Extend Biehn Drive which is a combination of Use of Local Roads and a New Municipal Servicing Corridor. ✓	✗ Not recommended.	✓ Recommended to be carried forward for further study, for both municipal services and a transportation connection.

Supplemental Investigations

2024 Doon South Community Area Transportation Study Findings

The City of Kitchener undertook an independent transportation review of the previous Doon South – Brigadoon Transportation Network and Corridor Study (McCormick Rankin, 1994), recommendations and the transportation conclusions presented as part of the EA. The transportation review, undertaken by Paradigm Transportation Solutions Limited, provided the following conclusions and recommendations:

- ▶ Caryndale Drive is functioning as a major neighbourhood community collector but is classified as a minor neighbourhood collector street. It provides the only westerly connection between Biehn Drive and Robert Ferrie Drive.
- ▶ Caryndale Drive in combination with Biehn Drive and Robert Ferrie Drive provides the only continuous route through the western area of the Doon South neighbourhood between New Dundee Road and Huron Road.
- ▶ The future extension of Robert Ferrie Drive west to Strasburg Road, and the extension of Strasburg Road south to New Dundee Road is likely to redistribute traffic volumes on Caryndale Drive
- ▶ The extension of Biehn Drive to Robert Ferrie Drive is justified to ensure Caryndale Drive correctly serves its function as a minor neighbourhood collector street, as described in the City of Kitchener Official Plan and provides an alternate route around the Caryndale Drive corridor.

The extensions of Robert Ferrie Drive to Strasburg Road and Strasburg Road to New Dundee Road will provide an alternative north-south route with access to Highway 401. Without the planned extension of Biehn Drive an increase in traffic on Caryndale Drive from within the Brigadoon Neighbourhood should be anticipated.

Black Ash

- ▶ Black Ash (approximately 21 trees found within the right-of-way)
 - ▶ Identified as Endangered under the *Endangered Species Act, 2007* (ESA) due to the threat of the Emerald Ash Borer (EAB).
 - ▶ Ontario regulation 6/24 and 7/24 were filed on January 24, 2024, and they came into force on January 26, 2024 to protect the Black Ash in areas where notable Emerald Ash Borer (EAB) caused mortality is occurring which includes the City of Kitchener within the Region of Waterloo.
 - ▶ In addition, habitat protection will apply for a radial distance of 30 metres around each healthy tree identified above.

The Black Ash Inventory is available on the resource table.



A close-up photograph of the bark of an ash tree. The bark is heavily textured and shows extensive damage from Emerald Ash Borer (EAB) larvae. On the left side, there are several overlapping, semi-circular, light-colored patches of wood, which are the remains of the bark after it has been eaten away. To the right of these patches, there is a vertical crevice in the bark. Inside this crevice, a pale, yellowish, segmented larva is visible, partially exposed. The overall color of the wood is a warm, reddish-brown.

EAB larvae and exposed larval galleries under the bark of an ash tree

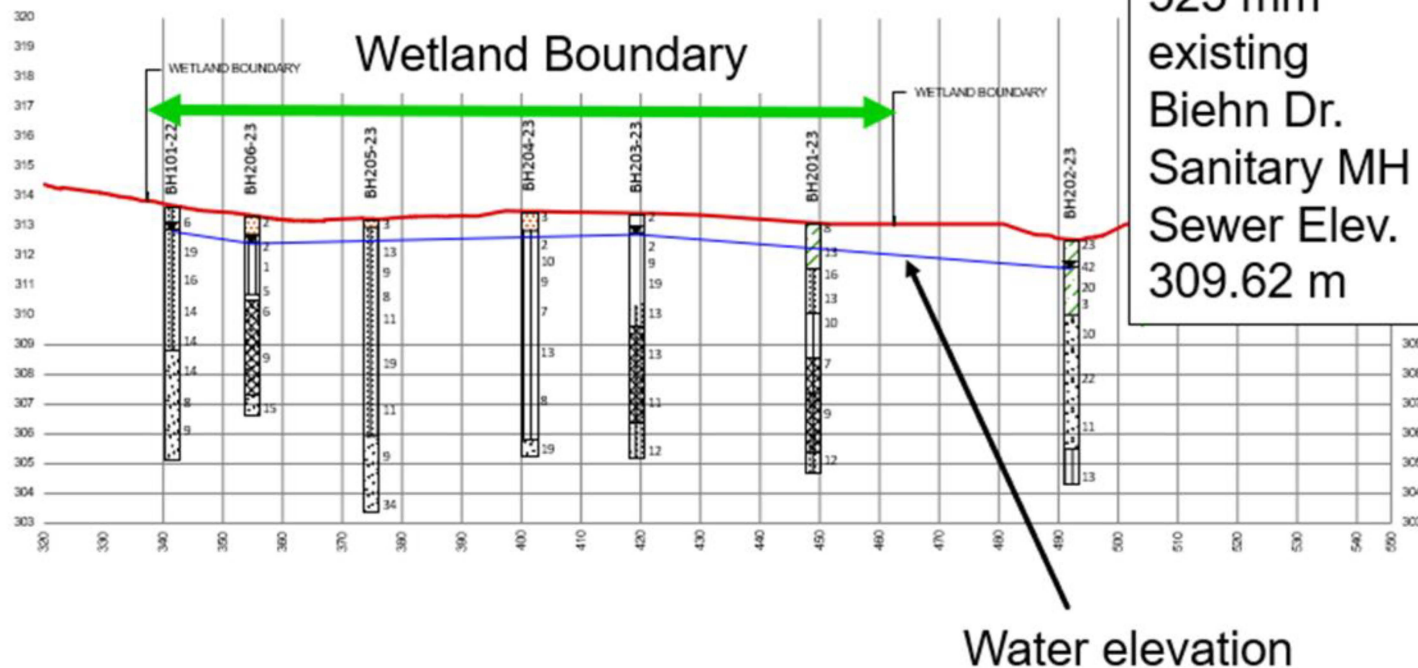
Geotechnical Investigation (2024)

- ▶ Subsurface conditions consist of a peat or fill underlain by a sand to silty sand soil with silt and sand deposits.
- ▶ Wetland area consisted of a black peat material containing high amounts of organic material, with an average thickness of 0.8 metres.
- ▶ A Permit to Take Water (PTTW) or registration in the Environmental Activity and Sector Registry (EASR) will likely be required;
- ▶ Trunk sewer pipe construction to be performed in drier seasons; and
- ▶ Microtunnelling is the preferred method within the wetland area;
- ▶ Roadway to have geotextile to stabilize the poor subgrade; and
- ▶ Elevate roadway through wetland area to reduce groundwater impact.

The report is available on the resource table.



Geotechnical Soil Profile



GEOTECHNICAL
INVESTIGATION
BT ENGINEERING
Biehn Drive
Kitchener, Ontario

LEGEND



Notes:
1. Survey completed by Landbros Inc. December 1, 2020.
2. Elevations of the plot are relative to the datum indicated on the drawing by 5.00m.



PROFILE CROSS SECTION

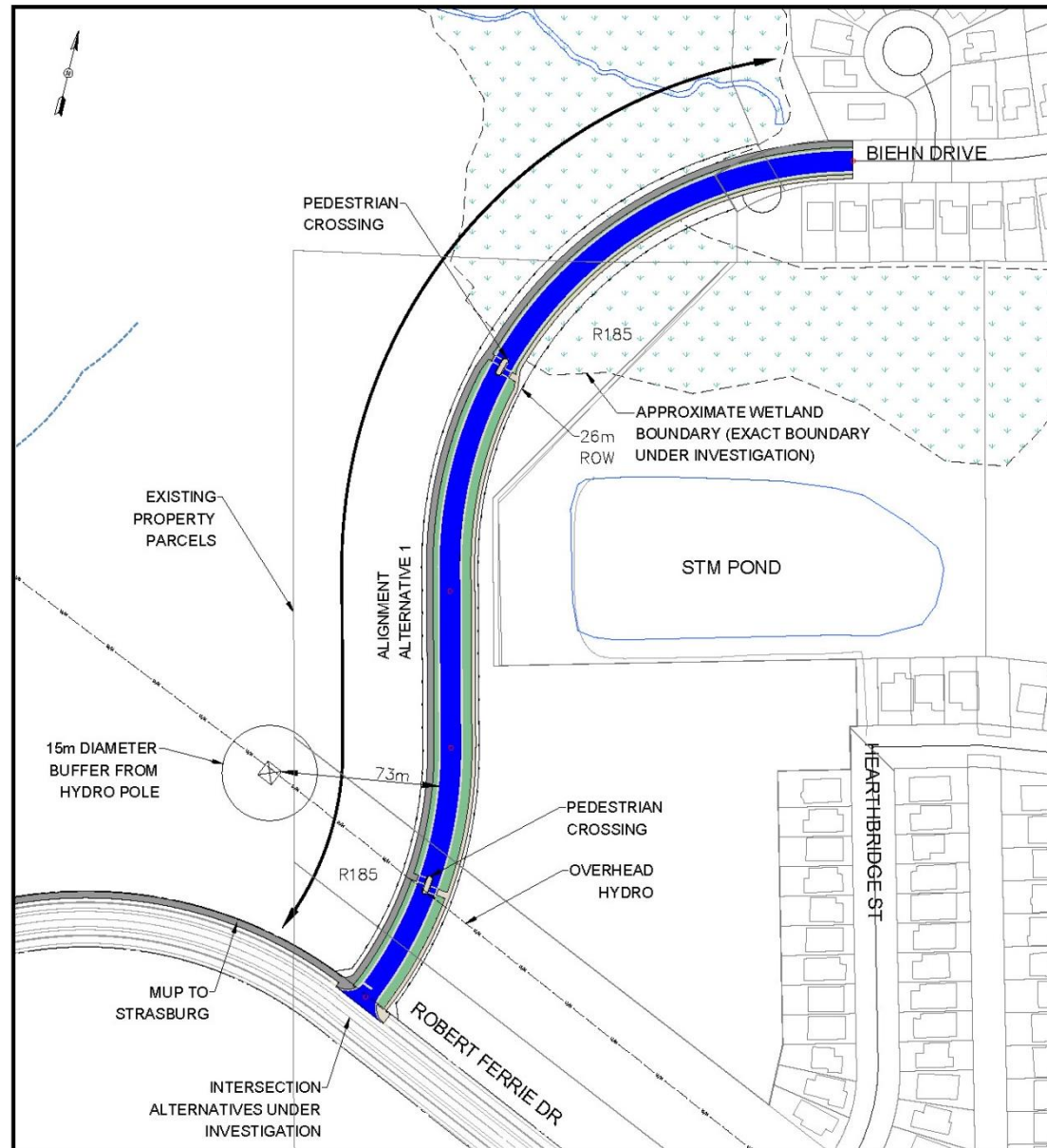
Geotechnical Recommendations

The recommendations for the dewatering assessment included the following item:

- ▶ The proposed trenchless installation methods (Micro-tunnelling/Directional drilling) is suitable and preferred for the placement of sewer and watermain infrastructure beneath the Strasburg Creek Wetland complex, based on hydrogeologic conditions assessed across the area.

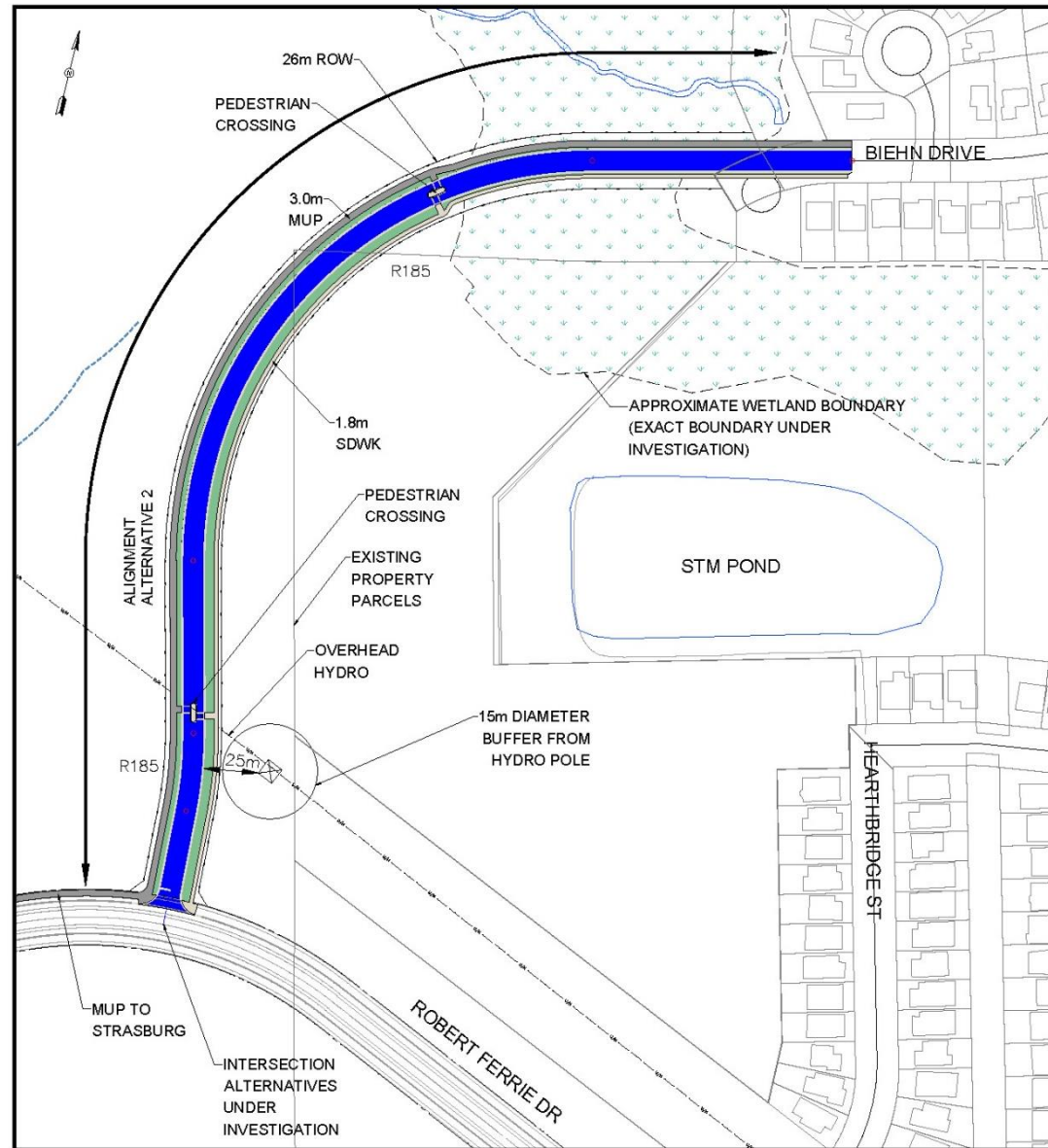
Alignment Alternative 1

Connect Biehn
Drive to Robert
Ferrie Drive – East
Alignment



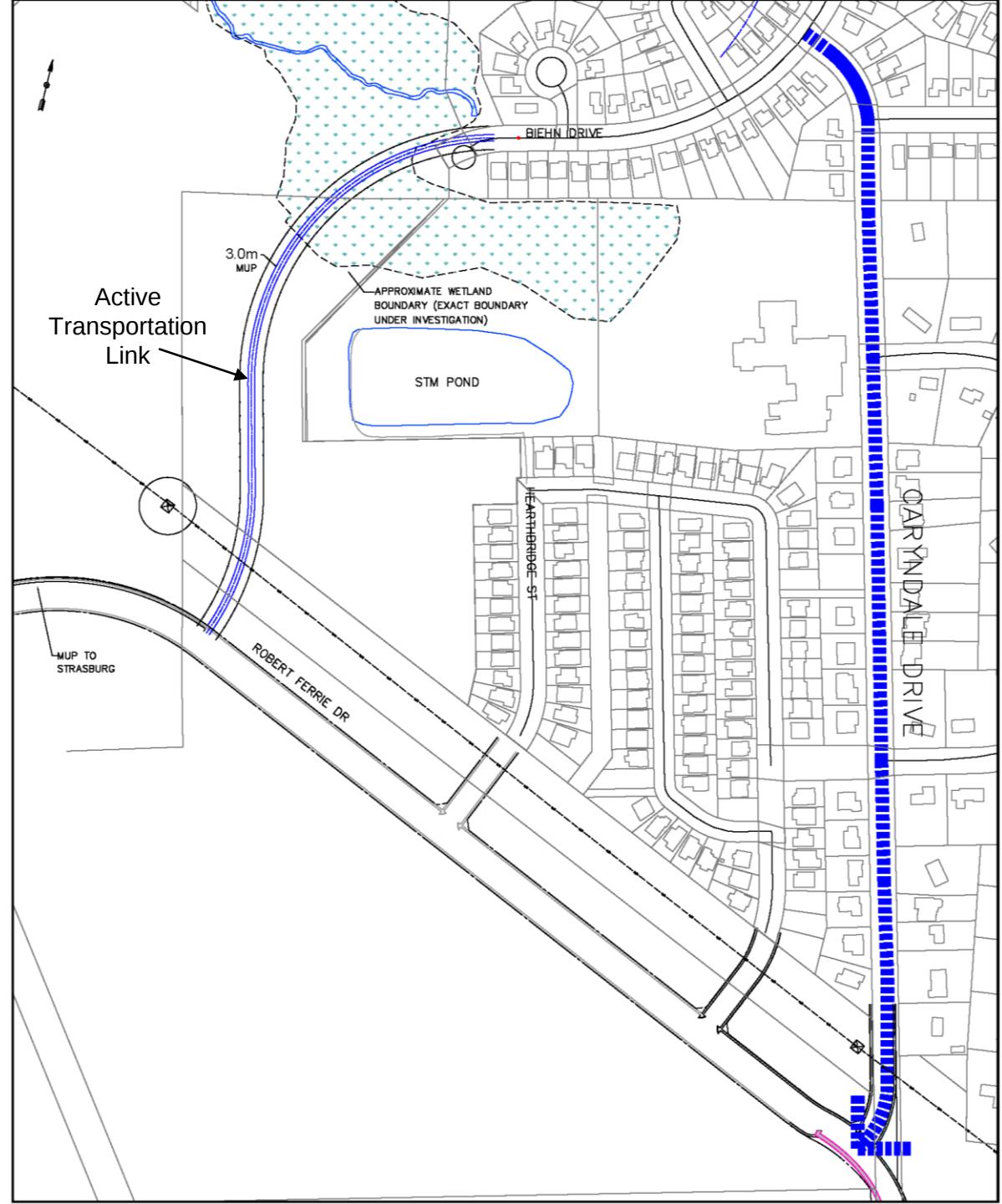
Alignment Alternative 2

Connect Biehn
Drive to Robert
Ferrie Drive –
Central Alignment

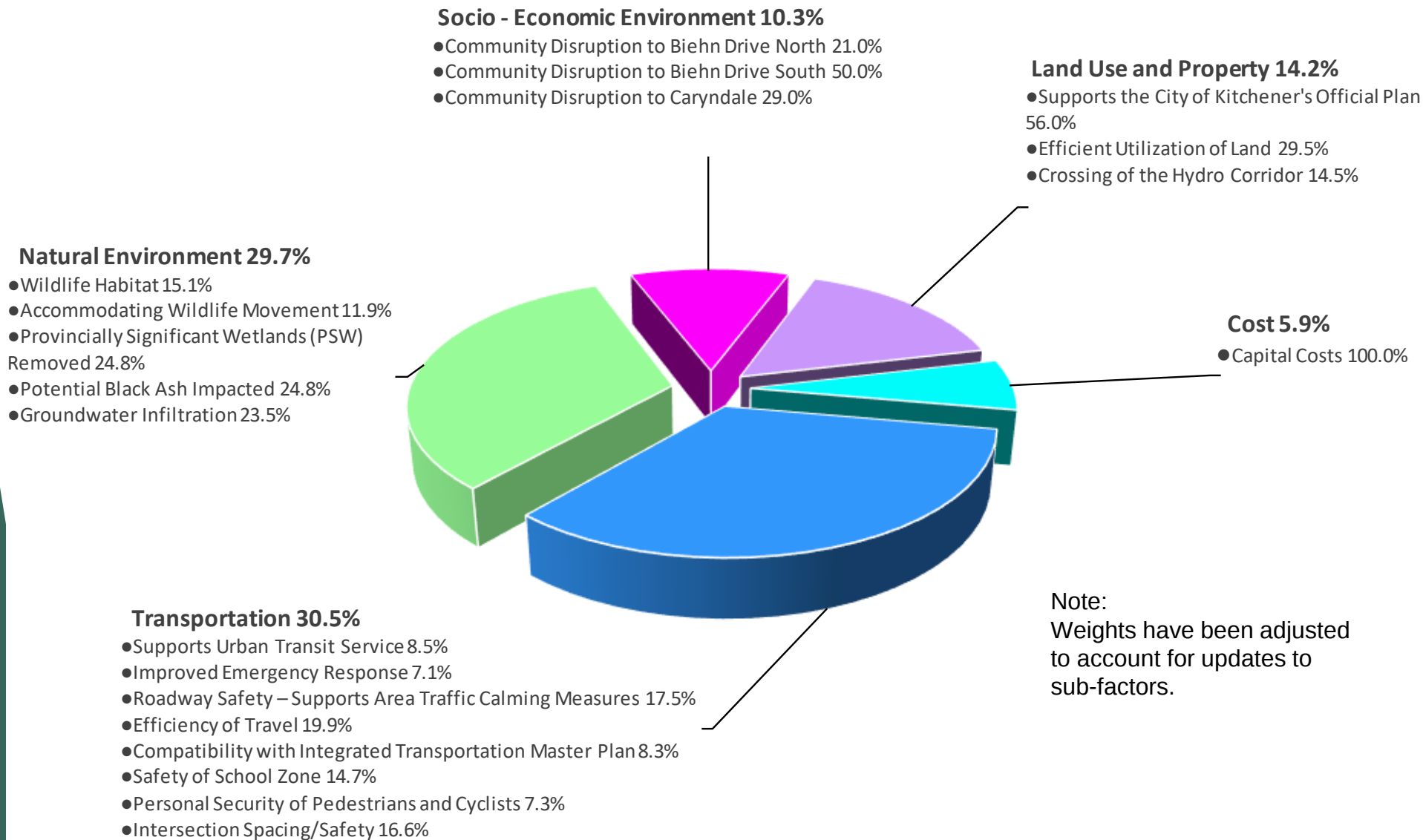


Alignment Alternative 4

Connect Biehn
Drive to Robert
Ferrie Drive – Via
Caryndale Drive

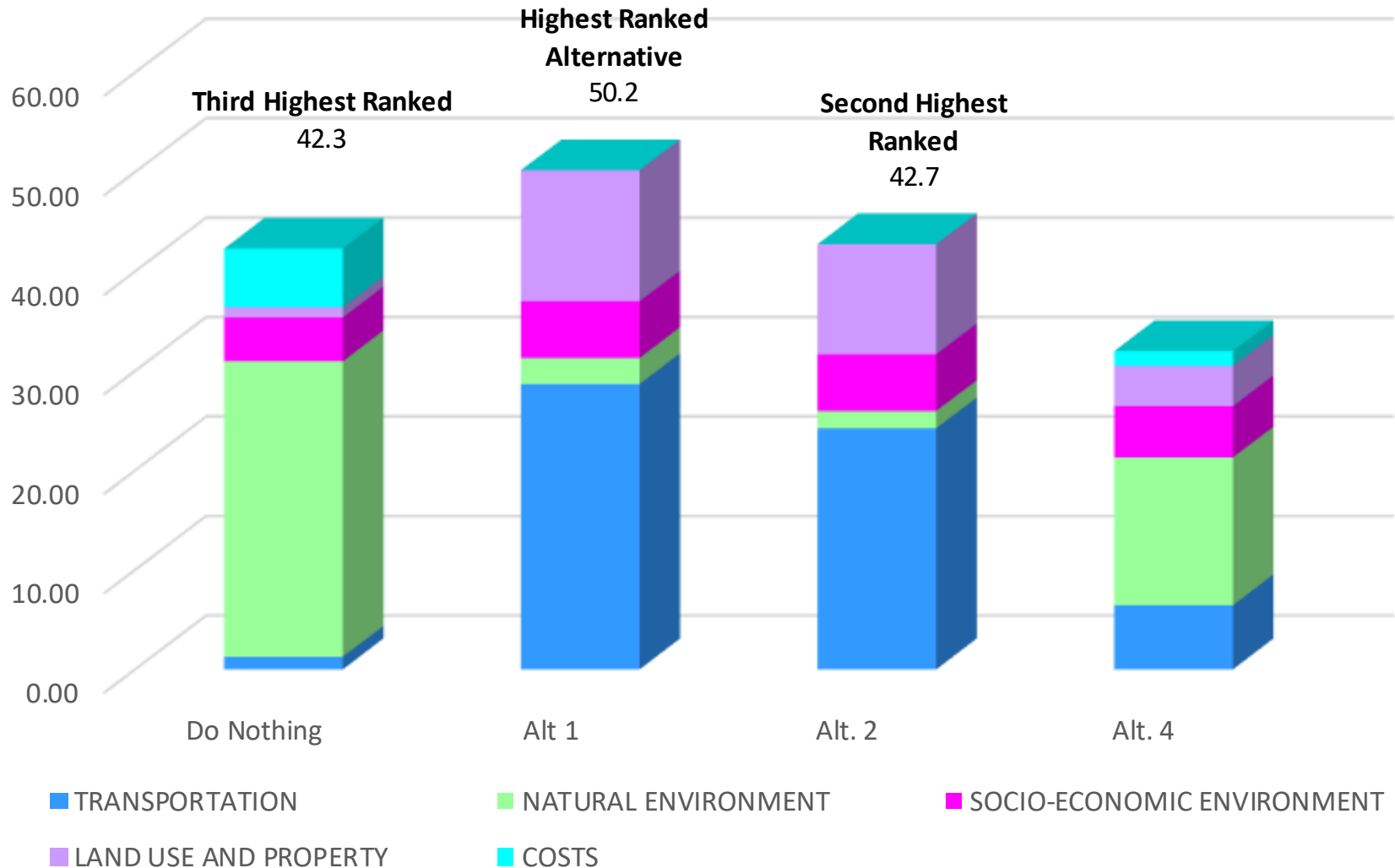


Global Factor and Sub-factor Weights



Alternative Totals

(Average Weights of Evaluation Team)



Evaluation

Do Nothing	Alternative 1: Extend Biehn Drive to Robert Ferrie Drive east of Hydro Tower	Alternative 2: Extend Biehn Drive to Robert Ferrie Drive west of Hydro Tower	Alternative 4: Existing Caryndale Drive and a Multi-Use Path crossing the PSW
Not recommended. The Do Nothing alternative fails to address the traffic volume and safety concerns along Caryndale Drive which should be expected to increase when the extension of Strasburg Road to New Dundee Road provides an alternative access to Highway 401. Caryndale Drive will continue to accommodate a higher volume of traffic and forced to function as a major collector street. The limited number of Black Ash trees in the PSW will continue to decline due to the Emerald Ash Borer.	Recommended as the Preferred Design Alternative 1 is the best-balanced alternative. It provides the best transportation performance while minimizing natural and social environmental impacts. A limited number of Black Ash trees have been identified along the corridor however the city's best efforts to combat the Emerald Ash Borer has had limited success. The crossing of a PSW is accepted by the Provincial Policy Statement for transportation and utility corridors.	Not recommended. Although this alternative provides comparable transportation performance to Alternative 1 the environmental impacts are much greater.	Not recommended. Caryndale Drive, classified as a minor neighbourhood collector street, will be forced to function as a major collector street. The neighbourhood was not designed for Caryndale Drive to continue to carry increasing volumes of vehicle traffic.

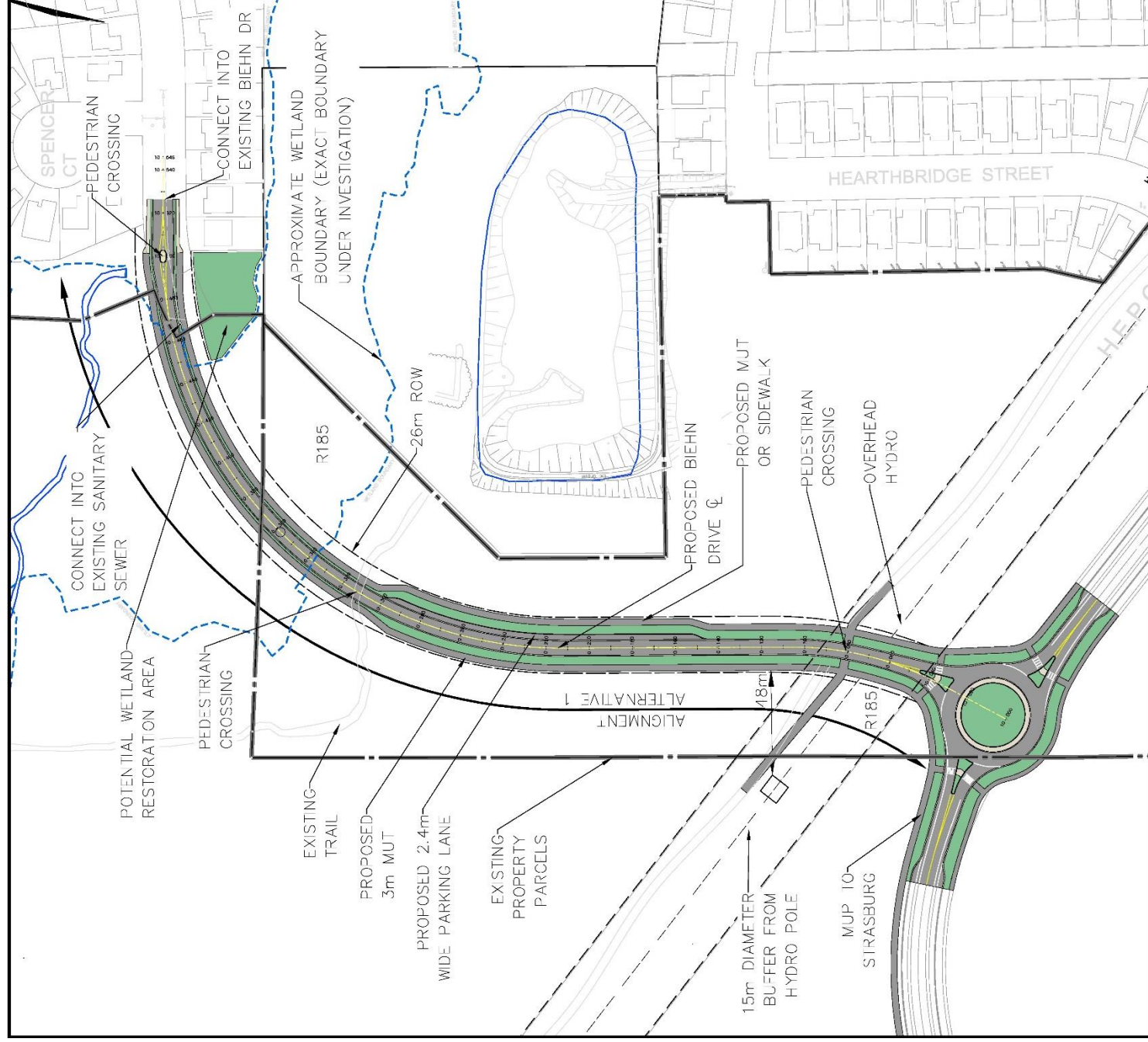
Conclusions and Recommendations

- ▶ The following are updated 2024 preliminary recommendations from the EA based on new data sources that included, the geotechnical investigation, the 2023 field inventory of ash trees, the history of the EAB through North America and the Doon South Community Area Transportation Study:
 - ▶ Based on the 2023 geotechnical investigations it is feasible for the sanitary sewer and watermain without surficial construction to cross the PSW. The use of open cut or trenchless construction for the sanitary sewer and the watermain to be determined during detail design.
 - ▶ The 2024 Doon South Community Area Transportation Study confirmed the recommendations of the current Transportation Master Plan, 2013 reflected in the Official Plan, 2019, for the long-term use of Biehn Drive and its extension as a major collector in the City.
 - ▶ The 2024 provincial designation of the Black Ash trees as a Species at Risk (SAR) is now reflected in the recommendations.

Conclusions and Recommendations

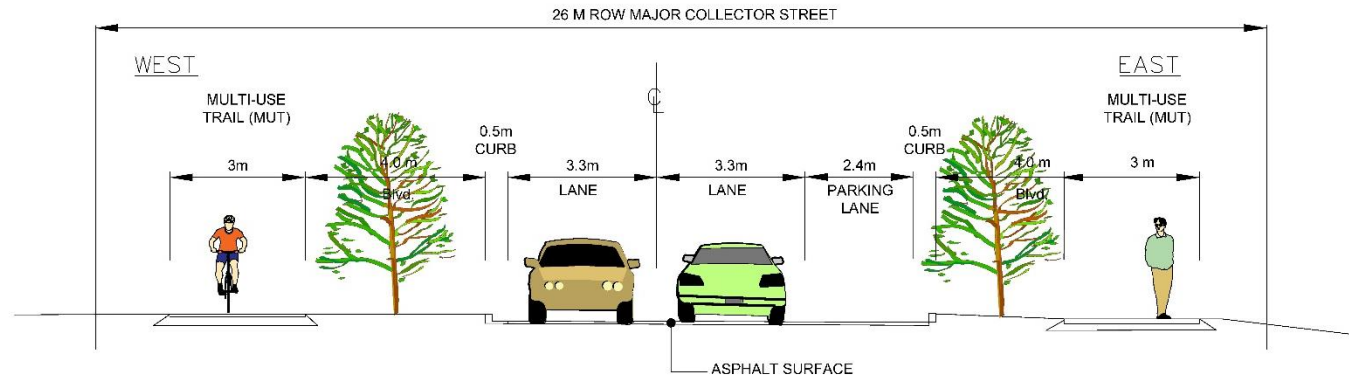
- ▶ The following is the preferred approach for the planned improvements:
 - ▶ The health of the Black Ash trees are to be monitored.
 - ▶ Development south of the PSW be permitted to proceed.
 - ▶ That a right-of-way continue to be protected at the intersection of Biehn Drive and Robert Ferrie Drive for a future roundabout.
 - ▶ The land acquisition should include the Right-of-Way required for municipal services and a road corridor.
 - ▶ The alignment of the servicing corridor for the trunk sanitary sewer and watermain to follow the alignment for the road corridor.
 - ▶ If Black Ash trees are impacted due to construction, the City will compensate for the loss. Compensation to be determined by Ministry of Environment Conservation and Parks.

Preferred Design

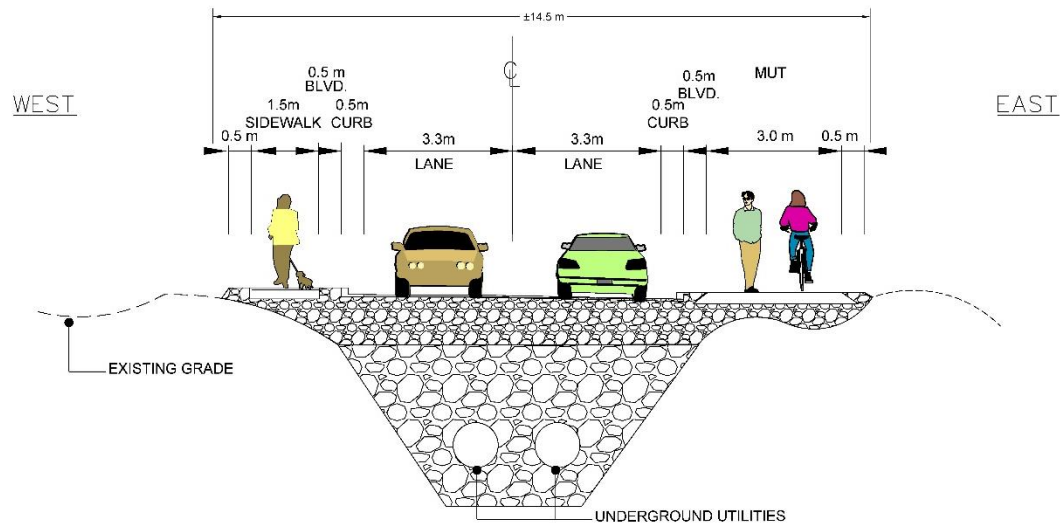


Recommended Cross Sections

**PROPOSED BIEHN DRIVE
CROSS SECTION**



**PROPOSED BIEHN DRIVE CROSS SECTION
THROUGH WETLAND**



MUNICIPAL SERVICES TO BE INSTALLED USING MICROTUNNELING FOR THE
SANITARY SEWER AND DIRECTIONAL DRILLING FOR THE WATERMAIN.

Mitigation Table

Issue/Concern Potential Effects	Concerned Agency	Proposed Mitigation (prevent, lessen or remedy potential detrimental environmental effects)
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 to the greatest extent possible.
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

Issue/Concern Potential Effects	Concerned Agency	Proposed Mitigation (prevent, lessen or remedy potential detrimental environmental effects)
SAR	MECP	• Undertake targeted, specialized SAR surveys during Detail Design as required depending on species conservation status designations as they exist at that time. • Ensure the design and construction complies with the <i>Endangered Species Act</i> (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	MNRF	Avoid specimen trees and limit tree clearing.

Mitigation Table

Issue/Concern Potential Effects	Concerned Agency	Proposed Mitigation (prevent, lessen or remedy potential detrimental environmental effects)
Noise	City	Municipal Noise By-laws are to be followed during construction adjacent to residential areas.
Management of Surplus Materials	MECP	OPSS 180 apply MECP “Management of Excess Materials in Road Construction and Maintenance Guidelines”. Management and Disposal of Wet Soils.
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.

Municipal Services Recommendations

- ▶ Based on geotechnical investigations in 2023, the feasibility of subsurface construction of municipal services has been verified.
- ▶ Measures to avoid impacts to the PSW include:
 - ▶ Microtunnelling of the sanitary sewer under the PSW.
 - ▶ Directional drilling of the watermain under the PSW.
- ▶ This construction avoids environmental impacts and any potential draw down of the water table.



Microtunnelling launch shaft

Next Steps

Following this Public Information Centre we will:

- ▶ Review all Public Information Centre comments and prepare a Summary Report.
- ▶ Develop refinements to the Recommended Plan (if required) based on public comments.
- ▶ Presentation to Council on September 16, 2024 prior to 30-day public review period.
- ▶ Finalize 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 **July 4, 2024**.