

Technical Memorandum

To: Dorin Newton, P.Eng., M.Eng., Jacobs, Engineering
From: Dana Couture, Senior Ecologist, LGL Limited
Date: July 15, 2022
Re: Natural Heritage Evaluation of Preferred Alternative – Etobicoke Creek Trunk Sewer Class EA

1.0 Introduction

LGL Limited (LGL) has been retained by Jacobs to provide natural sciences support for the Schedule C Municipal Class Environmental Assessment (EA) for improvements and upgrades to the Etobicoke Creek Trunk Sewer in Brampton, Ontario. As the project involves a realignment of the existing sewer, a Natural Heritage Investigation was completed to evaluate alternatives and make recommendations for mitigation of impacts at the preferred location.

Refinements to the alignment and shaft locations have been proposed, and as such, a review of the proposed refinement was completed by LGL. This technical memorandum presents the evaluation for potential natural heritage impacts of the revised preferred alternative and is provided as an update to the Natural Sciences Report (LGL May 2021). Further natural heritage investigations will also be required at detailed design, such as tree inventories and more detailed aquatic habitat investigations

1.1 Project Summary

The Region of Peel (Region) intends to address future capacity needs and alleviate issues with the current alignment of the Etobicoke Creek Trunk Sewer. Issues include sewer surcharging, hydraulic restrictions, and aged infrastructure in the vicinity of the abandoned Wastewater Treatment Plant.

The preferred alternative chosen was Alternative 4, the deep trunk option. It starts at Kennedy Road at Etobicoke Creek and is to be installed via

microtunneling to the east side of Dixie Road. It will then be installed via open cut to Derry Road (see **Figures 1a and 1b**).

2.0 Natural Heritage Existing Conditions

The following is a summary of the Natural Heritage updates for the new shaft locations. A field investigation was conducted on May 10, 2022 to review the new shaft locations and update the Ecological Land Classification (ELC) for the areas that were not covered during the original investigation in 2019/20. Natural vegetation communities identified within these were classified according to the ELC for Southern Ontario: First Approximation and Its Application (Lee et al. 1998) and TRCA Community nomenclature.

2.1 Shaft 1

No updates were required for this shaft as the area was covered by surveys in 2019. The shaft is just east of Kennedy Road (see **Figure 1a**). ELC in the area is a mix of cultural meadow, deciduous willow swamp, and deciduous forest. As part of detailed design, opportunities to further avoid and minimize environmental impacts will be investigated.

2.2 Biscayne Shaft

This is a new shaft location that was included in the field review (see **Figure 1a**). The Biscayne Shaft is proposed within a cultural meadow community, situated above the top of bank of the Etobicoke Creek valley. The top of valley tablelands in this area have been planted with restoration planting beds. A former access road is evident through the forest to the trail in the valley, but it is currently blocked with logs and debris, presumably to discourage further use as to minimize erosion. The route is also grown over with dense staghorn sumac (*Rhus typhina*) (see Photo appendix). The forested sloped contain several large trees suitable for bat habitat, but none were identified in the proposed shaft footprint. As part of detailed design, opportunities to further avoid and minimize environmental impacts will be investigated. Further investigations such as a tree survey may be required at detailed design should the final design require tree removals.

2.3 Shaft 2

Refinement of Shaft 2 details resulted in a minor shift in footprint (see **Figure 1a**). It is now in a meadow just west of Highway 410. The meadow is bounded by sumac and a row of spruce at the top of berms, and the area is contained within the chain link fence of the manufacturing facility. It is likely part of the site's storm water management infrastructure. There is evidence of a coyote den in

the area, and evidence was noted of wildlife use accessing the site under the fence.

2.4 Shaft 3

Shaft 3 has shifted slightly to the east (see **Figure 1a**). It is in the same cultural woodland unit as the previous shaft 3 location. This area was previously part of the old wastewater treatment plant.

2.5 Shaft 4

Shaft 4 has also been shifted to the east (see **Figure 1a**). It was previously located in an open water wetland unit. It has been shifted to east of Tomken Road, in a previously disturbed area. A portion of the shaft compound is within a cultural woodland unit.

2.6 Shaft 5

Shaft 5 has been shifted further east (see **Figure 1b**). It has been situated in a disturbed area. A portion of the compound is within a willow lowland deciduous forest.

A large willow tree with cavities suitable to support bat maternal roosting was observed (see Photo appendix). Further investigations or mitigation may be required at detailed design should this tree require removal, and project activities must ensure compliance with the Endangered Species Act, 2007.

2.7 Shaft 6

Shaft 6 is a new shaft (see **Figure 1b**). The construction of the sewer east of Shaft 5 was originally proposed to be completed by open-cut, however refinement of the preferred alternative has allowed for the microtunnelling to be extended to east of Dixie Road. This reduces the length of open cut construction required, and in turn reduces the potential for environmental impacts. This shaft location is in a parking lot, with some areas of manicured lawn.

2.8 Open Cut Section

The section of the trunk sewer to be installed via open-cut has been reduced significantly with the revised plans (see **Figure 1b**). The open cut section extends from shaft 6 east of Dixie Road and south to Derry Road. The open-cut section is entirely within a cultural meadow and manicured lawn. Two crossings of Etobicoke creek tributaries are required. One is a permanent watercourse, the second is an intermittent feature.

The area between shafts 5 and 6 was previously determined to be disturbed. It has now been reclassified as a cultural meadow.

3.0 Impact Assessment and Preliminary Mitigation Measures

Potential impacts identified are in the form of vegetation and tree removals, wildlife habitat removal and aquatic habitat impacts for construction of the Etobicoke Creek Trunk Sewer. Mitigation measures were proposed in the previous report (LGL May 2021). Further mitigation is proposed below, including the need for more detailed natural heritage investigations, and the need for restoration plans.

Wildlife and wildlife habitat in the project area is considered tolerant to human disturbance given the proximity to and ongoing influence of urban landscapes. There are potential direct impacts to wildlife habitat from vegetation removal within the construction disturbance limits sewer alignment for the proposed preferred alternative. Preliminary mitigation measures are recommended accordingly.

Impacts to aquatic habitat are also identified as the alignment have crossings of Etobicoke Creek and/or tributaries. Potential impacts can be mitigated through appropriate mitigation measures such as erosion and sediment control measures and use of tunneling technologies (new alignment includes more microtunneling and reduces open cut requirements).

3.1.1 Potential Impacts to Aquatic Habitats and Communities

The proposed works have the potential for direct impacts to fish or fish habitat. Etobicoke Creek and its tributaries will be crossed a total of 12 times. The main branch of Etobicoke Creek will be crossed 8 times by microtunneling. The Open cut crossing proposed in the previous alternative has been eliminated. Tributaries of Etobicoke Creek will be crossed 4 times, 2 by microtunneling, and two by open cut, east of Dixie Road. One of these open-cut crossings is of an intermittent feature that can be crossed in the dry. Impacts at these crossings will be investigated at the detailed design stage of the project, to refine mitigation recommendations and inform project planning and permitting. No aquatic species at risk are found in this watercourse, therefore no further investigations for aquatic SAR are anticipated.

Open cut crossings have the potential to result in erosion and sedimentation of adjacent habitats and degradation of aquatic environs, if unmitigated. Further, the project study area lies mostly within the Etobicoke Creek floodplain. Indirect

effects are not expected for fish and fish habitat in Etobicoke Creek with the implementation of erosion and sediment controls to prevent the suspension and/or run-off of soils (or other deleterious substances) from reaching the Creek. A mitigation plan will be required at detailed design to ensure impacts to aquatic habitat are mitigated. This plan will include sediment and erosion control measures as well as requirements for restoration of any impacted aquatic habitat, particularly in areas of open cut construction. This plan will also detail requirements for setbacks for vehicle refueling, spill control, etc.

3.1.2 Potential Impacts to Vegetation and Vegetation Communities

There will be impacts to vegetation and vegetation communities. Table 1 summarizes the potentially impacted vegetation communities based on the preliminary shaft designs and an estimated 16.5m wide open cut area along centerline of the presented sewer alignment. The table also shows the difference in impacts the new alignment and shaft locations have when compared to the previous alignment. This assessment will need to be refined at Detailed Design to include more details on storage, staging, access and potential dewatering requirements. Detailed restoration plans will be required at the Detailed Design stage of the project.

The total area disturbed for this project has been reduced by 8344m² since LGL last reviewed the impacts. This includes avoiding disturbance to open aquatic wetlands (OAO), some deciduous forests (FOD7-4 and 7-a), and a marsh community (MAM2-5). While it appears from this table that there is more disturbance to the cultural meadow community, this is partially due to a reclassification of the disturbed area east of Shaft 5 from disturbed to cultural meadow.

Table 1: Impact Assessment by Ecological Land Classification

ELC Code	Total Area previous alignment (m2)	Total Area New Alignment (m2)	Difference
CUM1-1	11119	13310	2191
CUM1-1/CUP2	511	0	-511
CUW1	1989	2103	113
Disturbed	3001	0	-3001
FOD4	928	1687	760
FOD5	0	409	409
FOD7-3	1678	289	-1389
FOD7-4	766	0	-766
FOD7-a	2067	0	-2067
M	2036	1367	-660
MAM2-2	2318	44	-2273
MAM2-5	137	0	-137
MAM2-a	366	257	-109
OA0	680	0	-680
SWD4-1	800	574	-226
TOTAL	28394	20050	-8344

Mitigation for impacts to vegetation and vegetation communities includes the revision of the preferred alternative construction plans to reduce length of the open-cut section of the project. Any further opportunities to reduce impacts will be investigated at detailed design. Tree surveys will be required in the vicinity of the shaft compounds and portions of the open-cut areas where tree impacts are possible. A restoration plan will be developed to restore the areas following the completion of the construction phase.

3.1.3 Potential Impacts to Wildlife and Wildlife Communities

Access into the Etobicoke Creek Valley could affect wildlife activity (through avoidance, noise which may disrupt calls/communication, direct conflict with equipment), result in the spread of non-native species through seed dispersal by hikers/path pedestrians. Wildlife habitat may be affected through direct vegetation removals, as well as the temporary construction disturbance.

However, due to the prevalence of existing paved pathways and trail use within the valley and woodland and the urban tolerant wildlife present, impacts in this regard are expected to be minor in relation to the existing uses.

Based on previous consultation with the MNRF and MECP on similar projects, the potential for SAR bat impacts can be mitigated through the application of

timing windows for tree clearing activities, minimizing the extent of tree removals on the project and bat habitat enhancement included in restoration efforts. SAR bat impacts may require further screening or consultation with the MECP at the detailed design stage.

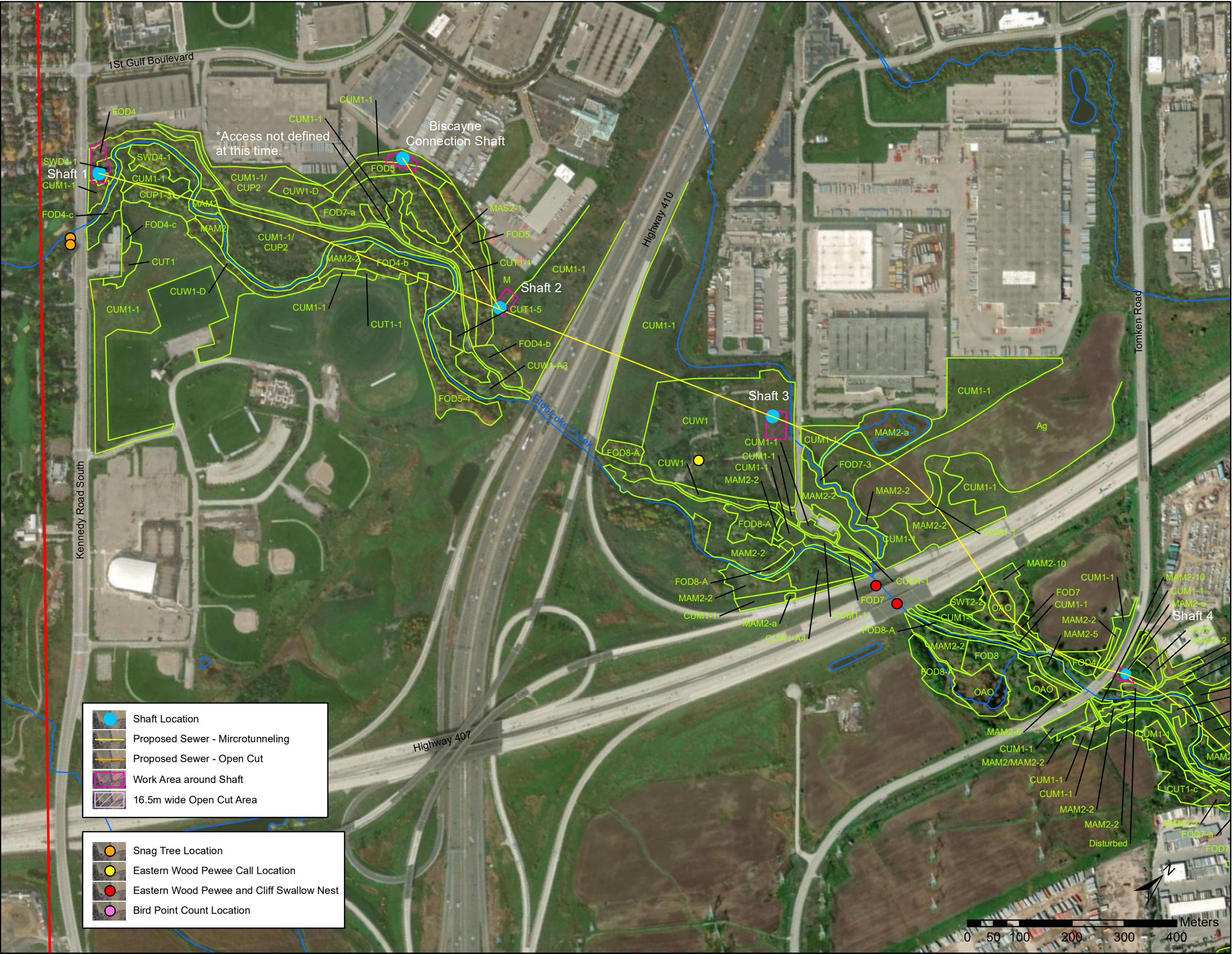
4.0 Summary

In summary, the revisions made to the alignment of the preferred alternative and the shift of the shafts has resulted in fewer impacts to the natural heritage features in the study area as many of the shafts have been shifted out of sensitive features. The extension of the microtunneling construction to east of dixie road will also reduce natural heritage impacts significantly. It is recommended that further refinement of the shaft enclosure design be undertaken at detailed design in order to reduce potential impacts even further.

5.0 References

LGL Limited. May 2021. Etobicoke Creek Trunk Sewer Improvements and Upgrades Class Environmental Assessment. Natural Sciences Report.

Appendix



LEGEND

- Study Area
 - ELC Communities (LGL)
 - Watercourse (LIO)
 - Waterbody (LIO)
- ELC Communities
- FOD4 Dry-Fresh Deciduous Forest
 - FOD4-b Dry-Fresh Manitoba Maple Deciduous Forest
 - FOD4-c Dry-Fresh Black Locust Deciduous Forest
 - FOD5 Dry-Fresh Sugar Maple-Beech Deciduous Forest
 - FOD5-2 Dry-Fresh Sugar Maple Deciduous Forest
 - FOD5-4 Dry-Fresh Sugar Maple - Ironwood Deciduous Forest
 - FOD7 Fresh-Moist Lowland Deciduous Forest
 - FOD7-2 Fresh-Moist Ash Lowland Deciduous Forest
 - FOD7-3 Fresh-Moist Willow Lowland Deciduous Forest
 - FOD7-4 Fresh-Moist Black Walnut Lowland Deciduous Forest
 - FOD7-a Fresh-Moist Manitoba Maple Lowland Deciduous Forest
 - FOD8 Fresh-Moist Poplar-Sassafras Deciduous Forest
 - FOD8-A Fresh-Moist Cottonwood Coastal Deciduous Forest
 - MAM2 Mineral Meadow Marsh
 - MAM2-2 Reed-canary Grass Mineral Meadow Marsh
 - MAM2-5 Narrow-leaved Sedge Mineral Meadow Marsh
 - MAM2-10 Forb Mineral Meadow Marsh
 - MAM2-a Common Reed Mineral Meadow Marsh
 - MAM2-1 Cattail Mineral Shallow Marsh
 - SWD4-1 Willow Mineral Deciduous Swamp
 - SWT2-2 Willow Mineral Thicket Swamp
 - OA Open Aquatic
 - CUP Plantation
 - CUP1-3 Black Walnut Deciduous Plantation
 - CUP2 Mixed Plantations
 - CUP3-3 Scotch Pine Coniferous Plantation
 - CUS Cultural Savannah
 - CUT1 Mineral Cultural Thicket
 - CUT1-1 Sumac Deciduous Thicket
 - CUT1-5 Raspberry Deciduous Thicket
 - CUT1-c Exotic Deciduous Thicket
 - CUW1 Mineral Cultural Woodland
 - CUW1-A3 Native Deciduous Successional Woodland
 - CUW1-A4 Fresh-Moist Cottonwood Tall Treed Woodland
 - CUW1-D Hawthorn Successional Woodland
 - CUM1-1 Dry-Moist Old Field Meadow
 - Ag Agriculture
 - M Manicured

Contains information licensed under the Open Government Licence – Ontario.
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Etobicoke Creek Trunk Sewer Improvements and Upgrades
Proposed Sewer



Project	TA8907	Figure	1a
Date	June 2022	Prepared By:	KC
Scale	1:7,000	Verified By:	AHF



LEGEND

- Study Area
- ELC Communities (LGL)
- Watercourse (LIO)
- Waterbody (LIO)

- ELC Communities
- FOD4 Dry-Fresh Deciduous Forest
 - FOD4-b Dry-Fresh Manitoba Maple Deciduous Forest
 - FOD4-c Dry-Fresh Black Locust Deciduous Forest
 - FOD5 Dry-Fresh Sugar Maple-Beech Deciduous Forest
 - FOD5-2 Dry-Fresh Sugar Maple Deciduous Forest
 - FOD5-4 Dry-Fresh Sugar Maple - Ironwood Deciduous Forest
 - FOD7 Fresh-Moist Lowland Deciduous Forest
 - FOD7-2 Fresh-Moist Ash Lowland Deciduous Forest
 - FOD7-3 Fresh-Moist Willow Lowland Deciduous Forest
 - FOD7-4 Fresh-Moist Black Walnut Lowland Deciduous Forest
 - FOD7-a Fresh-Moist Manitoba Maple Lowland Deciduous Forest
 - FOD8 Fresh-Moist Poplar-Sassafras Deciduous Forest
 - FOD8-A Fresh-Moist Cottonwood Coastal Deciduous Forest
 - MAM2 Mineral Meadow Marsh
 - MAM2-2 Reed-canary Grass Mineral Meadow Marsh
 - MAM2-5 Narrow-leaved Sedge Mineral Meadow Marsh
 - MAM2-10 Forb Mineral Meadow Marsh
 - MAM2-a Common Reed Mineral Meadow Marsh
 - MAM2-1 Cattail Mineral Shallow Marsh
 - SWD4-1 Willow Mineral Deciduous Swamp
 - SWT2-2 Willow Mineral Thicket Swamp
 - OAO Open Aquatic Plantation
 - CUP Black Walnut Deciduous Plantation
 - CUP2 Mixed Plantations
 - CUP3-3 Scotch Pine Coniferous Plantation
 - CUS Cultural Savannah
 - CUT1 Mineral Cultural Thicket
 - CUT1-1 Sumac Deciduous Thicket
 - CUT1-5 Raspberry Deciduous Thicket
 - CUT1-c Exotic Deciduous Thicket
 - CUW1 Mineral Cultural Woodland
 - CUW1-A3 Native Deciduous Successional Woodland
 - CUW1-A4 Fresh-Moist Cottonwood Tall Treed Woodland
 - CUW1-D Hawthorn Successional Woodland
 - CUM1-1 Dry-Moist Old Field Meadow
 - Ag Agriculture
 - M Manicured

Contains information licensed under the Open Government Licence – Ontario.
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Etobicoke Creek Trunk
Sewer Improvements
and Upgrades
Proposed Sewer



Project	TA8907	Figure	1b
Date	June 2022	Prepared By:	KC
Scale	1:7,000	Verified By:	AHF

Photo Appendix



Photo 1: Shaft 1 location



Photo 2: Shaft 1, outfall in area of shaft compound



Photo 3: Shaft 1 Japanese knotweed.



Photo 4: Shaft 1, cultural meadow at south end of shaft compound.



Photo 5: Biscayne shaft view facing west.



Photo 6: Biscayne shaft area.

Photo Appendix



Photo 7: Biscayne shaft, old access blocked with logs.



Photo 8: Biscayne shaft view from bottom of access road.



Photo 9: Shaft 2, meadow.



Photo 10: Shaft 2, meadow view facing west from east fence line.



Photo 11: Shaft 3, cultural woodland.



Photo 12: Tributary along Westcreek Blvd at Shaft 3.

Photo Appendix



Photo 13: Shaft 4 disturbed area.



Photo 14: Shaft 4 Etobicoke Creek to the south of shaft location.



Photo 15: Shaft 4, potential access route.



Photo 16: Shaft 5 meadow and drainage ditch along fence line north of shaft location.



Photo 17: Shaft 5, area where water pools from drainage.



Photo 18: Shaft 5, large willow, candidate bat snag.

Photo Appendix



Photo 19: Shaft 6 parking lot.



Photo 20: Shaft 6 manicured park area.



Photo 21: Open-cut area facing south from Shaft 6.



Photo 22: Open-cut, meadow habitat.



Photo 23: Open-cut permanent tributary to cross.



Photo 24: Proposed open cut, intermittent tributary.