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Appendix D

Natural Environment Report

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Natural Environment Report

Peel Region

60735416

September 2026

This report includes references to the *Endangered Species Act, 2007 (ESA)*, which was the applicable provincial legislation at the time of data collection and completion of this report. As of March 30, 2026, the ESA has been repealed and replaced by the Species Conservation Act, 2025 (SCA) and its supporting regulations. The ecological findings and characterization presented in this report remain valid based on the information available at the time of the assessment. However, any regulatory interpretation, permitting requirements, approval processes, or compliance obligations should be reviewed and confirmed under the legislative framework in effect at the time of Detailed Design.

AECOM

Peel Region

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Executive Summary

Peel Region has launched an accelerated water and wastewater infrastructure delivery program, known as "FLOW Central Brampton," which includes the Kennedy Road Sanitary Trunk Sewer Municipal Class Environmental Assessment (MCEA) study. This program aims to address immediate water and wastewater infrastructure needs in Central Brampton. AECOM has been retained by Peel Region to carry out the Schedule "C" MCEA process, evaluating various routes for the Kennedy Road Sanitary Trunk Sewer. Additionally, AECOM is responsible for preparing a Natural Environment Report (NER) as part of the MCEA process.

The NER, which demonstrates compliance with municipal, provincial, and federal environmental laws, policies, and guidelines, focuses on short-list route alternatives: two North routes, from Bovaird Drive West along the Orangeville-Brampton Railway (OBR) and McLaughlin Road north to Old School Road; and two South routes from Kennedy Road to Bovaird Drive West and Kennedy Road to Vodden Street/OBR to Bovaird Drive West. The NER includes a description of the existing environmental conditions based on background information and ecological field investigations consisting of windshield surveys along the short-list route alternatives; and an analysis of the potential natural environment impacts of the alternate routes.

Following a comprehensive environmental analysis, a preferred route was identified consisting of routes N1 and S2. The preferred route was divided into Segments 1, 2, and 3. Ecological surveys were conducted along each segment to document natural heritage features, assess potential impacts on the natural environment, and determine mitigation and avoidance measures. The ecological surveys included Ecological Land Classification surveys and Aquatic Habitat assessments.

An analysis of the Significant Wildlife Habitats (SWH) within the Study Area was completed along the preferred route. No confirmed Significant Wildlife Habitats were found, but several candidate habitats were identified, including:

- Seasonal Concentration Areas: Candidate SWH for Turtle Wintering Areas, Bat Maternity Colonies, Amphibian Breeding Habitat (Woodlands and Wetlands), and Species of Conservation Concern (SOCC) habitat.
- Specialized Wildlife Habitat Considered Significant Wildlife Habitat: Candidate Amphibian Breeding Habitat (Woodland).
- Habitat for Species of Conservation Concern:
  - Candidate Terrestrial Crayfish Habitat.
  - Candidate habitat for SOCC and Rare Wildlife Species: American Bumble Bee, Barn Swallow, Monarch, Yellow-banded Bumble Bee, Snapping Turtle

From the background data and field data collected during the detailed field investigations, potential Species at Risk occurring within the Study Area of the preferred

route were determined. Nine species were judged to have a medium potential of occurring in the Study Area. They are:

- Candidate Habitats:
  - Red-headed Woodpecker
  - Eastern Red Bat
  - Eastern Small-footed Myotis (Eastern Small-footed Bat)
  - Hoary Bat
  - Little Brown Myotis (Little Brown Bat)
  - Northern Myotis (Northern Long-eared Bat)
  - Butternut
- Confirmed habitats:
  - Redside Dace (Fletchers Creek)
  - Black Ash

Analysis of the Fish habitats within the Study Area determined the presence of:

- Year-round, direct fish habitat: WC-01, WC-04, WC-05, WC-07, WC-08, WC-12, WC-13, WC-34, WC-35.
- Potential seasonally direct fish habitat: WC-06, WC-06a, WC-09, WC-10, WC-11, WC-33, if access for fish is feasible during periods of flow.

Potential impacts from the proposed works on the natural heritage features in the Study Area include:

- Damage and disturbance to natural features, terrestrial wildlife, fish and their habitat within and adjacent to the Project Area.
- Increased sedimentation and erosion potential.

Avoidance and mitigation measures, such as restricting activity to times outside sensitive periods for local or significant wildlife species, installing wildlife exclusion measures, maintaining erosion and sediment control, following clean machinery and equipment practices, and developing a contingency plan for frac-outs, have been recommended to address these impacts. Compensation measures, including planting native trees and shrubs, are also recommended to offset potential impacts to edge and riparian habitats.

The anticipated permits and approvals required for the project include submissions to Fisheries and Oceans Canada (DFO), the Ministry of the Environment, Conservation and Parks (MECP), and relevant conservation authorities (Toronto and Region Conservation Authority (TRCA) and Credit Valley Conservation (CVC)) before construction. As the project progresses into the detailed design phase, further work is recommended to fully assess potential effects on natural heritage features, species at risk, and to address policy requirements. This includes targeted field investigations, permitting and agency consultation, preparation of environmental management plans, environmental constraint inputs into detailed design, and reporting updates to support permit applications and agency submissions.

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1. Introduction

The current sanitary trunk sewers in the City of Brampton (Brampton) lack sufficient capacity to meet projected demands. Peel Region must increase sewer capacity by 2030 to support planned development in central Brampton and parts of the Town of Caledon (Caledon). To address this, Peel Region is planning to build a new large sanitary trunk sewer, to move wastewater, by gravity, to future and existing trunk sewer systems to increase conveyance capacity in central Brampton and southern Caledon.

This lack of capacity to meet projected demands is based on Bill 23, the "More Home Built Faster Act", requiring the Region of Peel to upgrade their water and wastewater infrastructure. Bill 23 impacts the Region's water and wastewater infrastructure by:

- Accelerating housing targets from the planned timeline of 2051 to 2031.
- The provincial target is to build more than 245,000 residential units in local municipalities; of which 113,000 in Brampton and 13,000 in Caledon apply.

To address the accelerated demand requirements, a Kennedy Road Sanitary Trunk Sewer (STS) is proposed, approximately 19 kilometre long sewer, 1,500 to 2,100 millimetres in diameter, running from Old School Road and Hurontario Street (Caledon) to the future Etobicoke Creek Sanitary Trunk Sewer at Kennedy Road South (Brampton). A 1,200 millimetres Queen Street STS from Rutherford Road North to this proposed Kennedy Road STS is also included in the project scope.

To meet the Provincial housing targets for Brampton and Caledon and address the need for increased wastewater capacity by 2030, the Region has launched the Kennedy Road Sanitary Trunk Sewer Municipal Class Environmental Assessment study. The Kennedy Road Sanitary Trunk Sewer Project is a critical wastewater project as part of the overall "FLOW Central Brampton" infrastructure delivery program. Following the 2024-amended Schedule C process set by the Municipal Engineers Association, this study will develop recommendations to ensure reliable sanitary services for existing and future growth while building flexibility for long-term wastewater management and conveyance capacity expansion. The Environmental Assessment (EA) study will include comprehensive public and stakeholder consultations, an evaluation of alternatives, and impact mitigation measures, ensuring a transparent, reproducible decision-making process.

AECOM has been retained by Peel Region to complete the Schedule "C" MCEA process to evaluate various routes for the Kennedy Road STS. As part of the MCEA process, AECOM has also been retained to complete a Natural Environment Report (NER). This document is the NER and it includes details on the natural environment data and criteria that were considered along with other aspects of the environment (social cultural etc.) in the MCEA evaluation of the various routes.

The Phase 1 Interim Report (AECOM 2025a) documented the first phase of the MCEA process, including background review and development of the Study Area. The Phase 2 Interim Report (Draft) (AECOM, 2025b) documented the preferred servicing strategy and identified a short-list of alternative STS routing options (short-list route alternatives) based on constructability and environmental impacts. The Phase 2 report presented the evaluation criteria for each route, and summarized the advantages, disadvantages, and key considerations for each short-list route alternative from which a preferred route was chosen. This NER refers to both the Phase 1 and Phase 2 Interim Reports, as well as updates provided in the Phase 3 Interim Report (Draft) (AECOM, 2026) and provides additional details on the natural environment considerations.

The natural environment data collection was completed in phases that corresponded to phases of the MCEA process. A background data review and the results of a windshield survey were used to evaluate the relative scale of potential natural environment impacts associated with each of the four short-list route alternatives. This relative natural environment ranking was used in the MCEA process, along with information on other environmental factors, to select a preferred route. Additional natural environment data were then collected for the preferred route to develop a better understanding of the potential impacts and to recommend general mitigation measures. As the design of the Project progresses, more detailed and site-specific natural environment mitigation measures will be developed.

1.1 Study Purpose and Objectives

This NER is part of the documentation required under the MCEA. The NER documents the consideration of the natural environment throughout the MCEA process as reflected in the various Interim Reports and will be updated as the MCEA process progresses.

The objectives of the natural environment work done as part of the MCEA include:

- to evaluate the potential for impacts on the natural environment associated with the Project including the proposed short-list route alternatives (reasonable routing options) and the preferred route,
- to contribute to the overall analysis of the alternative options and the selection of a preferred route,
- to contribute to the detailed design of the STS and connections following the preferred route and any necessary refinements,
- to recommend mitigation measures to reduce the impacts of construction and operation on the natural environment, and
- to identify natural environment permits and approvals required to build and operate the STS.

The key objectives of the short-list route alternatives natural environment evaluation include:

- Document the existing conditions (aquatic and terrestrial) based on background information and a windshield ecological field investigation of natural heritage features,
- Identify potential occurrences of Species at Risk (SAR) and SAR habitat, and
- Evaluate potential impacts on natural heritage features for each alternative and confirm the preferred route.

The key objectives of the preferred route natural environment evaluation include:

- Conduct a detailed ecological evaluation of the natural heritage features and conditions along the preferred route,
- Identify significant natural heritage features including potential SAR habitat and SAR occurrences in the Study Area,
- Conduct an impact assessment based on the identified natural heritage features, and provide mitigation/avoidance measures and monitoring requirements to minimize environmental impacts for the proposed works, and
- Identify the anticipated authorizations, permits, and approvals required for the Project.

1.2 Study Area and Description of Short-list Route Alternatives

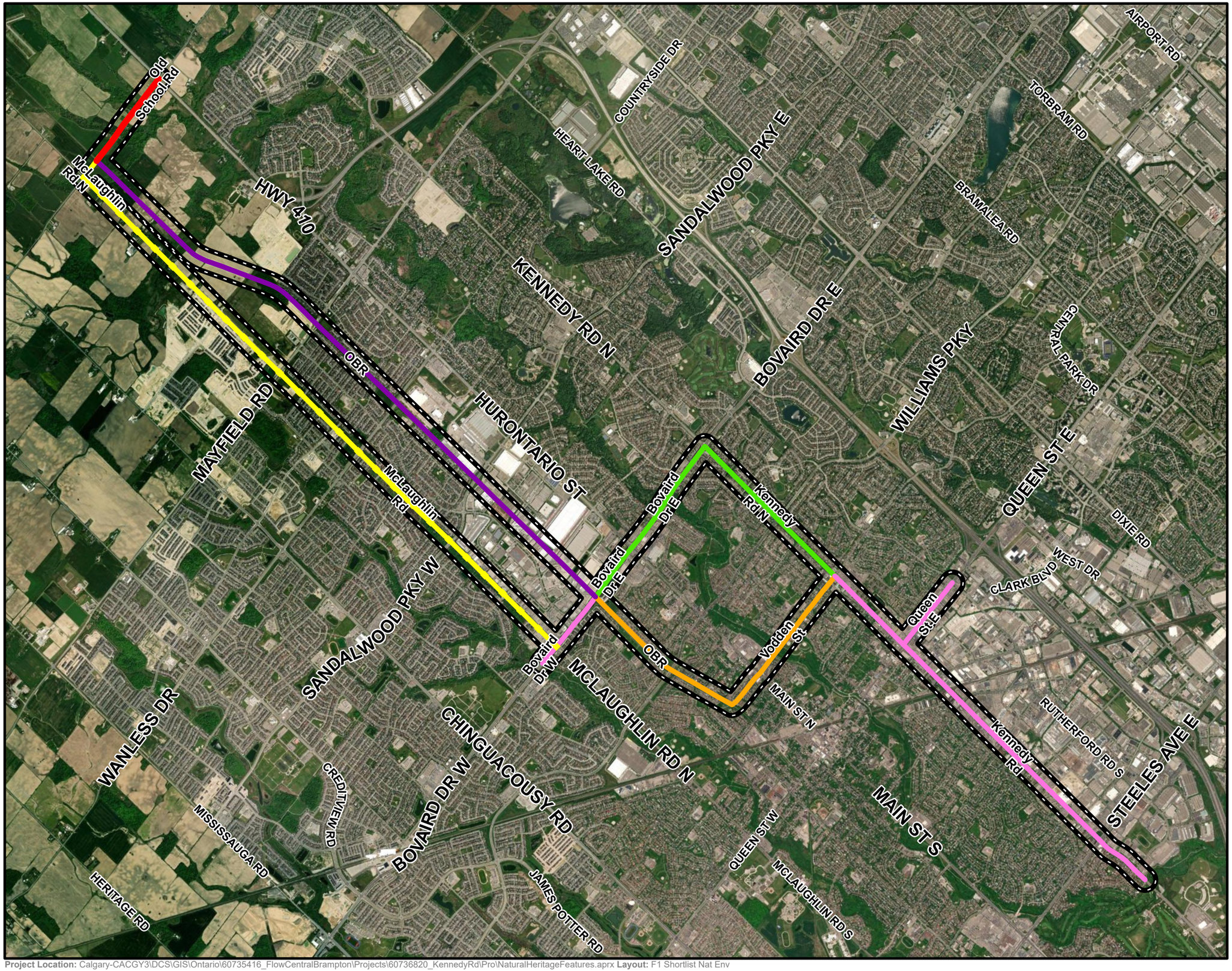
The General Study Area is primarily located in the central part of the City of Brampton, with the northern limits extending in the Town of Caledon, all within Peel Region. The proposed Kennedy Road STS is to extend approximately 19 kilometres from the future Etobicoke Creek Trunk Sewer Connection on Kennedy Road (City of Brampton) to the North Connection at the intersection of Hurontario Street and Old School Road (Town of Caledon). The General Study Area is bound by Old School Road in the north, and just south of Steeles Avenue in the south. Highway 410 forms the easterly border and Chinguacousy Road forms the westerly border of the Study Area.

The Kennedy Road STS Project includes two North Route (N1 and N2) options and two South Route (S1 and S2) options through Brampton and Caledon, potentially utilizing major roads and the abandoned Orangeville Brampton Railway (OBR) corridor. Table 1-1 describes each short-list route alternative. Figure 1 shows the boundaries of the Short-List of Sanitary Trunk Sewer Routes.

Table 1-1: Short-List of Sanitary Trunk Sewer Route Alternatives

Routes	Pathway	Municipality
S1	Kennedy Road North from future Etobicoke Creek Sanitary Trunk Sewer (STS) to Bovaird Drive including Bovaird Drive from Kennedy Road North to McLaughlin Road (including westerly connection to existing Fletchers Creek STS).	City of Brampton
S2	Kennedy Road from future Etobicoke Creek STS to Vodden Street, including Vodden Street from Kennedy Road to Orangeville-Brampton Railway (OBR) as well as OBR corridor from Vodden Street to Bovaird Drive (including westerly connection to existing Fletchers Creek STS).	City of Brampton
N1	OBR corridor from Bovaird Drive to Old School Road, including Old School Road from OBR corridor to Hurontario Street.	Town of Caledon, City of Brampton
N2	From Bovaird Drive north along McLaughlin Road to Old School Road and east along Old School Road to Hurontario Street.	Town of Caledon, City of Brampton

The natural environment Study Area for each route includes 120 metres of the lands adjacent to the route. Natural heritage features within the Study Areas were identified according to the Natural Heritage Reference Manual (NHRM) (Ministry of Natural Resources [MNR], 2010).





- Study Area
- N1/N2
- N2
- N1
- S1
- S2
- S1/S2

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Kennedy Rd - Short-list Route Alternatives and Natural Environment Study Areas

0 0.5 1 1.5 2

Kilometers
Scale: 1:40,000

N

PN: 60735416	Figure 1
June 10, 2025	AECOM

Data Sources:
ESRI Canada, Government of Ontario

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F1 Shortlist Nat Env
Date Saved: June 10, 2025 **User:** WangS12

1.3 Applicable Environmental Legislation

Current legislation and policies which are relevant to terrestrial and aquatic ecosystems and this Project are outlined in Table 1-2.

Table 1-2: Relevant Legislation and Policies

Level	Legislation	Governing Authority	Relevant Information
Federal	Fisheries Act, 1985	Fisheries and Oceans Canada (DFO)	■ The federal *Interpretation Act* was amended on November 27, 2024, which repealed section 2.3 of the federal *Fisheries Act*. – The interpretation act was amended to indicate that all enactments inherently included the treaty rights of indigenous groups ■ The federal *Fisheries Act* was amended on June 21, 2019, to include new protections for fish and fish habitat. On August 28, 2019, revised Fish and Fish Habitat Protection Program (FFHPP) provisions came into effect. ■ The new provisions of the amended *Fisheries Act* include a return to the policies that were enforced prior to the 2012 amendments, focusing on the following key concepts: – Protecting all fish and fish habitat (i.e., the focus is no longer on only protecting Commercial, Recreational, and Aboriginal fisheries); – Restoring the previous prohibition against 'harmful alteration, disruption or destruction of fish habitat' (HADD); and – Restoring a prohibition against causing 'the death of a fish by any other means than fishing'. ■ In cases where activities are proposed in or near waterbodies and HADD of fish habitat or death of fish cannot be avoided and/or mitigated or the scope of work cannot be covered under a Standard or Code of Practice, proponents are asked to submit a request for review to DFO. Upon consultation with DFO, if death of fish and/or HADD of fish habitat cannot be avoided after the application of appropriate environmental protection and mitigation measures, an Authorization from DFO may need to be obtained.
Federal	Migratory Birds Regulations, 2022	Environment and Climate Change Canada (ECCC)	■ Intended to protect migratory birds, their eggs and their active nests. ■ Includes more than 395 migratory species of birds ■ Prohibits the possession, destruction and harm of migratory birds and / or their nests. ■ The nests of all migratory species are protected when they contain a live bird or a viable egg. ■ As per the Migratory Birds Regulation 2022, 18 species are known to reuse nests and the nests of these species receive year-round protection. Nests with year-round protection may be removed if they have been shown to be abandoned for the periods outlined in Schedule 1 or through permits if nest removal cannot wait until the end of the species-specific waiting periods
Federal	Species at Risk Act, 2002 (SARA)	Environment and Climate Change Canada - Canadian Wildlife Services (ECCC – CWS) DFO	■ SARA is intended to protect and ensure the recovery of Species at Risk (SAR) listed on Schedule 1 as Extirpated, Endangered and Threatened, and their critical habitats at a federal level. Schedule 1 of the SARA classifies SAR as follows: – Extirpated - a wildlife species that no longer exists in the wild in Canada, but exists elsewhere in the wild (SARA Registry, 2012). – Endangered - a wildlife species that is facing imminent extirpation or extinction (SARA Registry, 2012). – Threatened - a wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction (SARA Registry, 2012). – Special Concern - a wildlife species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats (SARA Registry, 2012). ■ SARA also informs management of species of Special Concern by identifying proactive measures to prevent them from becoming endangered or threatened. ■ This Act includes prohibitions against killing, harming, harassing, capturing or taking an individual of a SAR, prohibits the destruction of their critical habitats and can impose restrictions on development and construction projects. ■ Species listed as Extirpated, Endangered or Threatened under SARA are only protected on federal lands unless they are aquatic species or migratory birds listed on Schedule 1. The Governor and Council may issue an order for additional species listed as SAR under SARA to be protected on non-federal lands where critical habitat has been identified and other provincial or municipal legislation does not adequately protect the species.
Provincial	Environmental Assessment Act (EAA)	Ontario Ministry of the Environment, Conservation and Parks (MECP)	■ The Class Environmental Assessment for Municipal Infrastructure Projects also referred to as the Municipal Class Environmental Assessment (MCEA) specifies the process municipalities must follow to meet the requirements of the EAA for public infrastructure projects. ■ Projects are classified into Schedules with different requirements based on the anticipated level of environmental impact. ■ The Kennedy Road Sanitary Trunk Sewer Project has been classified as a Schedule C project and is subject to the full documentation and planning process as specified in the MCEA. ■ This report addresses the Natural Heritage Features component of the environment. Other components of the environment, such as social and cultural resources, are addressed in other components of the EA documentation.
Provincial	Endangered Species Act, 2007 (ESA)	Ontario Ministry of the Environment, Conservation and Parks (MECP)	■ In June 2025, the Province of Ontario enacted Bill 5, the Protecting Ontario by Unleashing our Economy Act, 2025, which introduced amendments to the ESA, and laid the groundwork for the forthcoming Species Conservation Act (SCA; not yet in effect). ■ Under the amended ESA, species are still listed as extirpated, endangered, threatened and special concern, prohibitions related to the killing and harming of endangered or threatened species and the damage or destruction of their habitat still apply. ■ Amendments to the ESA include the scoping of habitat protections, modification of species protections (i.e., harassment of a SAR is no longer prohibited), streamlining of permits and permitting requirements and the continuation of registration activities under current registry system – however without the option to register under the repealed Ontario Regulation (O. Reg.) 829/21 (Species Conservation Charge). ■ For this report, Extirpated, Endangered and Threatened Species are considered SAR and Special Concern species are considered *Species of Conservation Concern (SOCC)*.

Level	Legislation	Governing Authority	Relevant Information
Provincial	Greenbelt Act, 2005 and Greenbelt Plan, 2017	Ministry of Municipal Affairs and Housing (MMAH)	■ The Plan contains land use designations that are divided into Protected Countryside lands and Urban River Valley lands. – The Natural Heritage System is a part of the Natural System within Protected Countryside lands. The Natural Heritage System protects ecologically sensitive and/or significant features and functions that provide connectivity throughout the Greenbelt. Where infrastructure crosses the Natural Heritage System, design and construction practices shall minimize negative impacts on and disturbance of features and functions of the Natural Heritage System and, where reasonable, maintain or improve connectivity. – A Natural Heritage Evaluation is required for site alteration within 120 metres (m) of key natural heritage features (i.e., habitat of endangered and threatened species, fish habitat, significant woodlands, wetlands, Significant Wildlife Habitat [SWH], sand barrens, savannahs, prairie, and alvars) within the Natural Heritage System. The evaluation must identify a vegetation protection zone which: ▪ Is of sufficient width to protect the key natural heritage feature or key hydrologic feature and its functions from the impacts of the proposed change and associated activities that may occur before, during and after construction and, where possible, restore or enhance the feature and/or its function; and ▪ Is established to achieve and be maintained as natural self-sustaining vegetation. ■ Lands outside the Natural Heritage System within Protected Countryside, require a 30 metre vegetation protective zone from the outside boundary of the following key natural heritage features and key hydrological features: wetlands, seepage areas and springs, fish habitat, permanent and intermittent streams, lakes and significant woodlands.
Provincial	Ontario Fish and Wildlife Conservation Act, 1997 (FWCA)	Ontario Ministry of Natural Resources (MNR)	■ Provides protection and regulation (i.e., ownership and possession, sale facilities, administrative, import/export, transportation) of habitat for wildlife in Ontario. ■ Includes protection for raptors and other bird species not protected under *Migratory Birds Convention Act* (MBCA). Nests of these bird species can only be removed if a permit is obtained from MNR. ■ Includes protection for dens of furbearing mammals (excluding fox and skunk) and beaver dams. Dens and beaver dams may only be damaged or destroyed if a person holds a license to trap furbearing mammals. ■ Authorizes permitting for the handling and/or transporting of fish under Ontario Regulation 261/05. ■ Applies to wildlife encounters during construction and operation of municipal infrastructure.
Provincial	Planning Act, 1990 and Provincial Planning Statement, 2024 (PPS)	Ministry of Municipal Affairs and Housing (MMAH)	■ While the *Planning Act* does not directly apply to projects regulated under the Environmental Assessment Act, the PPS, 2024 identifies natural heritage features and areas that should be considered as part of an EA. – Significant wetlands in Ecoregions 5E, 6E, 7E and in the Canadian Shield – Significant coastal wetlands – Significant woodlands in Ecoregions 6E and 7E (excluding islands in Lake Huron and St. Marys River) – Significant valley lands in Ecoregions 6E and 7E (excluding islands in Lake Huron and St. Marys River) – Significant Wildlife Habitat (SWH), including habitat of SOCC – Significant Areas of Natural and Scientific Interest (ANSI) – Coastal wetlands in Ecoregions 5E, 6E, and 7E – Significant habitat of Endangered or Threatened species – Fish habitat ■ Policies in the PPS are used to guide decision-making in land use planning. Under the PPS, development and site alteration are prohibited in significant wetlands in Ecoregion 5E, 6E, and 7E and in significant coastal wetlands. Development and site alteration are also not permitted within the remaining natural heritage features or adjacent lands unless it can be shown that there will be no adverse impacts. Of note, development does not include activities that create or maintain infrastructure, such as water and sewage infrastructure, authorized under an environmental assessment process; therefore, infrastructure may be permitted in natural heritage features and their adjacent land subject to the EA process.
Provincial	Conservation Act, 1990	MNR	■ *Ontario Regulation (O. Reg.) 41/24: Prohibited Activities, Exemptions, and Permits* came into effect on April 1, 2024, following amendments to the Conservation Authorities Act, 1990. The new O. Reg 41/24 establishes guidelines for the mapping of regulated areas within conservation authorities' jurisdictions where development could be subject to flooding, erosion, or dynamic beaches, or where interference with wetlands and alterations to shorelines and watercourses might have an adverse effect on those environmental features. This regulation identifies the processes to be followed to obtain exemptions and permits to allow for prohibited activities to occur within these regulated areas. The Project's Study Area falls within the Toronto and Region Conservation Authority (TRCA) and the Credit Valley Conservation (CVC) regulation limit.
Municipal	Regional Official Plan, consolidated 2022	Peel Region	■ Peel Region established the Greenland's System which outlines policies for natural heritage areas within the region. The Greenlands System in Peel is divided into three categories of natural heritage areas, as follows: **1) Core Areas:** – Woodlands ≥ 30 hectares; – Habitats of threatened or endangered species; – Provincially Significant Wetlands (PSWs); – Environmentally Significant Areas; – Provincially significant life science ANSIs; and – Valley and stream corridors outlined in Table 2 of the Regional Official Plan. **2) Natural Areas and Corridors (NAC)** – Woodlands between 3 hectares and 30 hectares; – Evaluated non-provincially significant wetlands – SWH outlined in Figure 5 of the Regional Official Plan; – Fish habitat; – Regionally significant life science ANSIs;

Level	Legislation	Governing Authority	Relevant Information
			– Provincially significant earth science ANSIs; – Escarpment Protection Areas of the Niagara Escarpment Plan; – Any valley and stream corridor that have not been defined as Core Areas; – Headwater source and discharge areas and any other natural features; and – Functional areas interpreted as part of the Greenlands System Natural Areas and Corridors by the individual area municipalities **3) Potential Natural Areas and Corridors (PNAC)** – Unevaluated wetlands; – Cultural woodlands and cultural savannahs within the Urban System and Rural Service Centres meeting one or more of the criteria in Table 1 of the Regional Official Plan. – Any other woodlands greater than 0.5 hectares; – Regionally significant earth science ANSI's; – Sensitive groundwater recharge areas; – Portions of Historic shorelines; – Open space portions of the Parkway Belt West Plan Area; – Potential ESA's identified as such by the conservation authorities; and ■ Any other natural features and functional areas interpreted as part of the Greenlands System PNAC, by the individual area municipalities in consultation with the conservation authorities. ■ Municipalities require an Environmental Impact Study (EIS) for development or site alteration within or adjacent to the Greenlands System in accordance with the Regional Official Plan and provincial policy. As per Section 2.3.2.6, essential infrastructure (i.e., stormwater management works and sewage and water systems) are permitted within Core Areas of the Greenlands System in Peel.
Municipal	Town of Caledon Official Plan, consolidated 2024	Town of Caledon	■ The Town of Caledon's Ecosystem Framework builds on the Regional Greenland System and consists of the following components: – Natural Core Areas – includes all woodland and wetland core areas, NEC areas, Life Science ANSIs, Environmentally Significant Areas, SAR habitat and SWH – Natural Corridors – includes core fishery resource areas and all valley and stream corridors – Supportive Natural Systems – includes all other woodland, wetland, fishery core systems, NEC protection areas, Earth Science ANSIs, potential Environmentally Significant Areas, all other wildlife habitat, groundwater and native soil systems – Natural Linkages – all other wetlands, woodlands, all NEC protection areas, Earth Science ANSIs and potential Environmentally Significant Areas, fishery resource areas, groundwater and native soil systems. ■ Natural Core Areas and Natural Corridors are designated as Environmentally Protected Area (EPA). Development within or adjacent to EPAs will be required to complete an Environmental Impact Study (EIS) and Management Plan in accordance with Section 5.7.3.7. ■ Development within or adjacent to Supportive Natural Systems or Natural Linkages may also require the completion of an EIS and Management Plan (MP); however, the scope of investigations will be determined by the Town and other applicable agencies. ■ Essential infrastructure (i.e., stormwater management works and sewage and water systems) is permitted within lands designated as EPA in accordance with the provisions of Section 5.7.3.5 (i.e., an EIS and MP will be prepared showing that all reasonable alternative locations outside of the EPA have been explored).
Municipal	City of Brampton Official Plan, 2024	City of Brampton	■ The City of Brampton outlines the following features and areas that make up the natural heritage system: – Valleylands and Watercourse Corridors – Woodlands – Wetlands (Provincially Significant and Other Wetlands) – Environmentally Sensitive/Significant Areas – ANSIs – Fish and Wildlife Habitat – Greenbelt Plan Natural System – Natural/Ecological Linkages ■ Development and site alterations are not permitted within Core areas of the Greenlands System with exception listed in the Region of Peel Official Plan (2022), included but not limited to essential infrastructure (authorized under an EA). ■ Development within or adjacent to components of the natural heritage system will require an EIS/Environmental Implementation Report (EIR) which demonstrates that there will be no negative impacts on the significant natural features or their ecological functions. Development within or adjacent to the Greenlands System defined within the Region of Peel Official Plan (2022) will also require an EIS/EIR to be completed. Essential infrastructure (i.e., stormwater management works and sewage and water systems) is permitted within lands designated as Environmentally Sensitive / Significant Areas. Development or site alteration adjacent to a wetland will be required to submit a wetland management plan.

2. Background Information Review

2.1 Methods

AECOM conducted a desktop review of natural heritage information to identify existing natural heritage features within the Study Area for each of the short-list route alternatives. Background information was obtained from the following sources:

- MNR's Natural Heritage Information Centre (NHIC): Make A Map (MNR, 2025a) and MNR's Land Information Ontario (LIO) GeoHub base mapping data (MNR, 2025b) for:
  - Natural areas (e.g., Area of Natural and Scientific Interest [ANSI], wooded areas, Provincially Significant Wetlands [PSWs]/Locally Significant Wetlands [LSWs]/unevaluated wetlands, provincial parks),
  - Aquatic Resource Area (ARA),
  - Dam Inventory,
  - Watershed mapping,
  - Wildlife habitats,
  - Aerial Photography,
  - NHIC provincially tracked species.
- Wildlife Atlases and other online databases:
  - Ontario Breeding Bird Atlas (OBBA; Birds Studies Canada [BSC] et al., 2006), Square 17PJ03;
  - Ontario Reptile and Amphibian Atlas (ORAA; Ontario Nature, 2019), Square 17NH88;
  - Ontario Butterfly Atlas (OBA; Toronto Entomologists' Association [TEA], 2021), Square 17PJ03;
  - Bat Conservation International (BCI) Range Maps (2025);
  - Fisheries and Oceans Canada (DFO) Aquatic SAR Mapping (DFO, 2025a),
  - Toronto and Region Conservation Authority (TRCA) Open Data Portal (2022),
  - Credit Valley Conservation (CVC) Open Data (2022),
  - eBird (2024), and
  - iNaturalist (2024).

- Planning Documents and Guidelines:
  - Town of Caledon Official Plan (2024),
  - City of Brampton Official Plan (2024),
  - Regional Official Plan (2022),
  - NHRM (MNR, 2010),
  - Significant Wildlife Habitat Technical Guide (MNR, 2000),
  - Significant Wildlife Habitat Criteria Schedules For Ecoregion 6E (MNR, 2015a), and
  - Significant Wildlife Habitat Criteria Schedules For Ecoregion 7E (MNR, 2015b).
- Open Portals and Interactive Mapping:
  - Ontario Ministry of Agriculture, Food, and Agribusiness (OMAFA) AgMaps application (OMAFA, 2025), and
  - Google Earth (2025).
- Reports
  - Schedule 'C' Municipal Class Environmental Assessment for the Kennedy Road Sanitary Truck Sewer – Phase 1 Report (AECOM, 2025a)
  - Schedule 'C' Municipal Class Environmental Assessment for the Kennedy Road Sanitary Truck Sewer – Phase 2 Report DRAFT (AECOM, 2025b),
  - Etobicoke Creek Watershed Plan 2024-2034 (TRCA, 2024),
  - Etobicoke Creek Watershed Report Card (TRCA, 2018),
  - Fletchers Creek Subwatershed Plan (Paragon Engineering Ltd., 1996), and
  - Credit Valley Conservation Watershed Report Card (CVC, 2023).

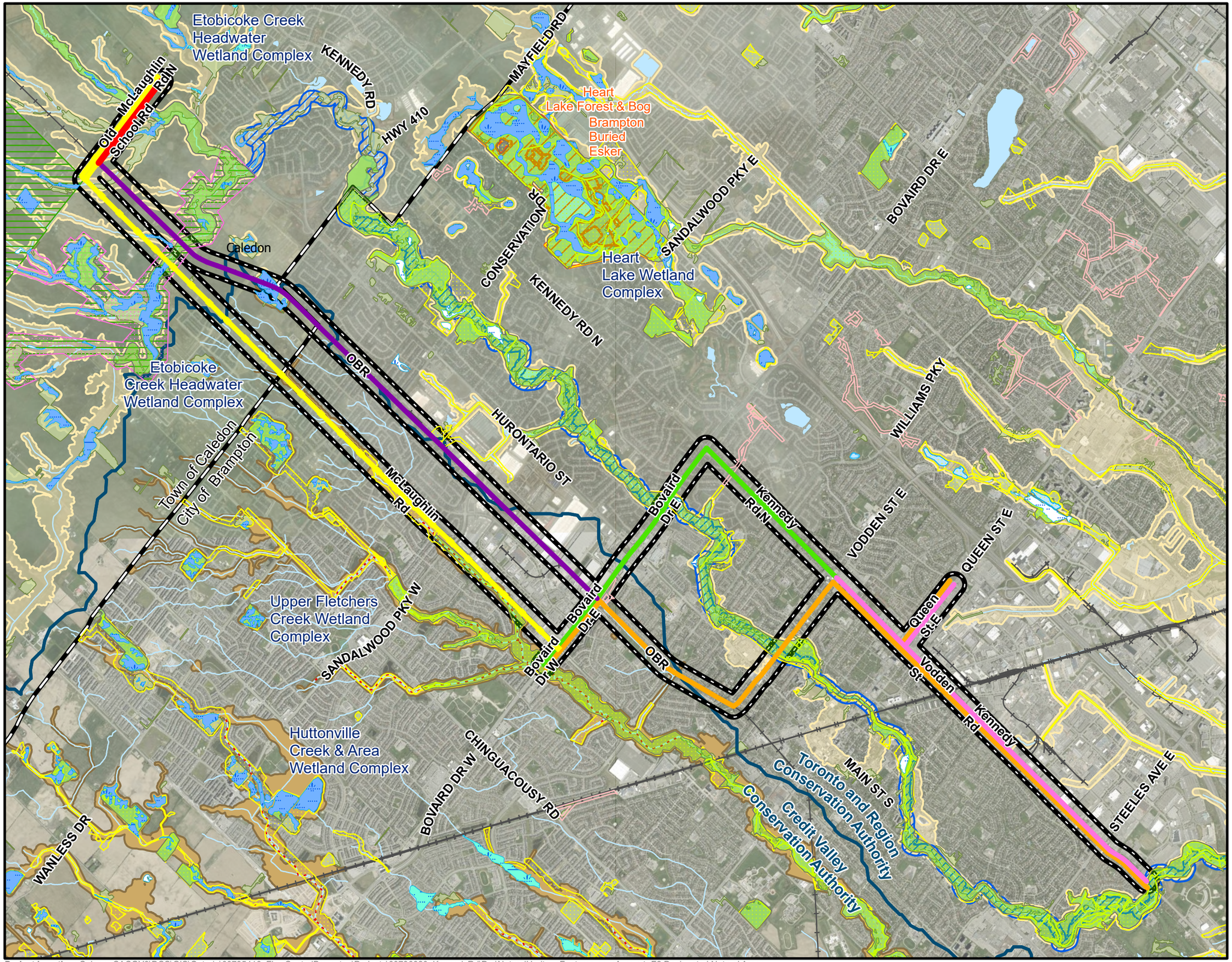
2.2 Background Review Results

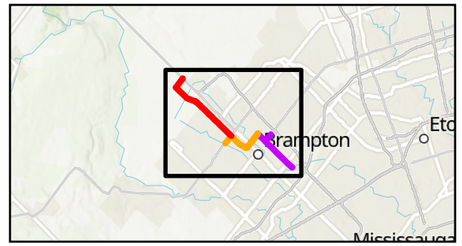
2.2.1 Natural Heritage Features

Natural heritage features and areas identified for protection in the Provincial Planning Statement (PPS) and environmental legislations, include significant wetlands, fish habitat, woodlands, significant wildlife habitat (SWH), and others, and may be identified by the various authorities (i.e., Canada, Ontario, municipalities, conservation authorities). A summary of the natural heritage features identified within the Study Areas through the background review is provided in Table 2-1 below. Natural heritage features within and in the vicinity of the Study Areas are illustrated in Figure 2. The Study Area of each route intersects natural heritage features and environmentally sensitive features.

Table 2-1: Natural Heritage Features within Study Areas

Natural Heritage Feature	S1	S2	N1	N2
Evaluated Wetland – Provincially Significant Etobicoke Creek Headwater Wetland Complex	Not within 120 metres; no intersections or crossings	Not within 120 metres; no intersections or crossings	Yes, present within 120 metres of N1 and crosses at two locations	Yes, present within 120 metres of N2 and crosses at three locations
Woodlands	Crosses or intersects at designated woodlands at four locations	Crosses or intersects at designated woodlands at four locations	Crosses or intersects at designated woodlands at three locations	Crosses or intersects at designated woodlands at five locations
Greenbelt Plan (2024) Protected Countryside	None	None	Crosses or intersects protected countryside at two locations	Crosses or intersects protected countryside at two locations
Greenbelt Plan (2024) Urban River Valley	Crosses the Greenbelt Urban River Valleys (Etobicoke Creek) at two locations	Crosses the Greenbelt Urban River Valleys (Etobicoke Creek) at two locations.	None	None
Region of Peel Official Plan Greenland System	Crosses or intersects the Peel Greenland system at two locations	Crosses or intersects the Peel Greenland system at two locations	Crosses or intersects the Peel Greenland system at two locations	Crosses or intersects the Peel Greenland system at two locations
Region of Peel Official Plan Natural Area and Corridors (NAC)	Crosses Peel Region NACs at two locations	Crosses Peel Region NACs at two locations	Crosses Peel Region NACs at six locations	Crosses Peel Region NACs at six locations
City of Brampton Official Plan - Natural Heritage System (NHS)	Crosses the City of Brampton NHS system at two locations	Crosses the City of Brampton NHS system at two locations	Crosses or intersects the City of Brampton NHS system at three locations	Runs adjacent to City of Brampton NHS system from Bovaird Drive to Mayfield Road
City of Brampton Official Plan – Linkages and Enhancement Areas	This route crosses the City of Brampton NHS Linkages and Enhancement Areas system at two locations	This route crosses the City of Brampton NHS Linkages and Enhancement Areas system at two locations	Does not cross or intersect the City of Brampton NHS Linkages and Enhancement Areas	This route crosses the City of Brampton NHS Linkages and Enhancement Areas system at one location
Town of Caledon Official Plan – Environmental Policy Area	Not Applicable	Not Applicable	Crosses the Caledon NHS system at one location	Crosses the Caledon NHS system at one location
Fish-bearing Watercourses	Five Fish-bearing Watercourses are present within 120 metres of Route S1	Eight Fish-bearing Watercourses are present within 120 metres of Route S2	Nine Fish-bearing Watercourses are present within 120 metres of Route N1	19 Fish-bearing Watercourses are present within 120 metres of Route N2





- N1/N2
- N1
- N2
- S1
- S2
- S1/S2
- Region of Peel Official Plan Greenlands System Core Areas (2013)
- Town of Caledon Natural Heritage System
- City of Brampton Natural Heritage System
- City of Brampton Linkages and Enhancement Areas
- Study Area
- Conservation Authority Boundary
- Municipal Boundary
- Railway
- Redside Dace Critical Habitat (DFO, 2025)
- Waterbody
- Watercourse
- Woodlands

Areas of Natural and Scientific Interest (ANSI)

- Provincially Significant
- Regionally Significant

Greenbelt Plan

- Protected Countryside
- Urban River Valley

Wetland Significance

- Unevaluated
- Non-Provincially Significant
- Provincially Significant

Regulated Area

- TRCA
- CVCA

Flow | Central Brampton

Kennedy Rd - Designated Natural Areas and Regulated Areas

0 0.5 1 1.5 2

Kilometers
Scale: 1:40,000

N

PN: 60735416	Figure 2
February 05, 2026	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA), Fisheries and Oceans Canada (DFO)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F2 Designated Natural Areas
Date Saved: February 05, 2026 **User:** WangS12

2.2.2 Fish and Fish Habitat

The Study Areas are located in the Etobicoke Creek watershed, within the jurisdiction of TRCA, and the Credit River watershed, within the jurisdiction of CVC (Appendix A1).

The Etobicoke Creek watershed is highly urbanized, resulting in elevated stormwater flows that contribute to erosion, increased flooding, and degraded surface water quality (TRCA, 2018). The creek is approximately 59 kilometre long, passing through four municipalities and draining an area of 22,404 hectares (ha). The headwaters of Etobicoke Creek begin near Boston Mills Road and Hurontario Street in Caledon, flowing southeast through Brampton, Mississauga, and Toronto, to Lake Ontario (TRCA, 2024). Three of the eight subwatersheds of Etobicoke Creek are within the Study Areas including Headwaters, West Branch, and Spring Creek; the proposed routes cross watercourses in the Headwaters and West Branch subwatersheds only.

The Fletchers Creek subwatershed is a highly urbanized part of the Lower Credit River with degraded surface water quality and the lowest forest cover conditions within CVC boundaries (CVC, 2022 and CVC, 2023). The creek is approximately 18 kilometres long (Paragon Engineering Ltd., 1996), passing through three municipalities and draining an area of 4,273 hectares (CVC, 2022). The headwaters begin just north of Old School Road in the Town of Caledon, with most of the watershed found within the City of Brampton. The creek joins the Credit River in Mississauga, immediately southwest of Highway 401 and Mavis Road, where it eventually enters Lake Ontario (CVC, 2018). The Study Areas cross Fletchers Creek at Bovaird Drive West.

To more easily identify and reference each of the features within the Study Areas, all features were assigned a unique identifying (ID) number (e.g., WC-01). This includes all features that cross each of the short-list route alternatives, as well as features within 120 metres of each of the short-list route alternatives (Study Areas). Where features flowed parallel to the route, unique ID numbers were assigned at incremental distances along the feature (Appendix A1).

Based on a review of the LIO Geohub ARA database published by the MNR (2025b), and TRCA (2022) and CVC (2022) fish monitoring data, fish community assemblage information within the Study Areas was available for Etobicoke Creek, Fletchers Creek, and their tributaries (Table 2-2). Aquatic SAR and Species of Conservation Concern (SOCC) are discussed in Section 3.4.

Table 2-2: Fish Community Assemblages for Watercourses within the Study Areas

Common Name	Scientific Name	Etobicoke Creek (WC-01, WC-03, WC-04)	Drainage feature of Etobicoke Creek (WC-02)	Fletchers Creek (WC-08) & Tributaries / Drainage Features to Fletchers Creek (WC-05-07, WC-14-29)	Alloa Drain (WC-12) Headwater features of Etobicoke Creek (WC-13, WC-30-35)	S-Rank[1]	ESA Status[2]	SARA Status[3]
American Brook Lamprey	*Lethenteron appendix*				x	S3	NAR	N/A
Blackchin Shiner	*Miniellus heterodon*				x	S4	NAR	NAR
Blacknose Shiner	*Notropis heterolepis*	X				S5	NAR	NAR
Bluntnose Minnow	*Pimephales notatus*	X		X	x	S5	NAR	NAR
Brassy Minnow	*Hybognathus hankinsoni*			X	x	S5	NAR	NAR
Brook Stickleback	*Culaea inconstans*	X		X	x	S5	NAR	NAR
Brown Bullhead	*Ameiurus nebulosus*	X		X	x	S5	NAR	NAR
Brown Trout	*Salmo trutta*				x	N/A	N/A	N/A
Carps and Minnows	*Cyprinidae sp. and Leuciscidae sp.*	X		X	x	N/A	N/A	N/A
Central Mudminnow	*Umbra limi*				x	S5	NAR	NAR
Central Stoneroller	*Campostoma anomalum*	X				S4	NAR	NAR
Chub species	*Semotilus sp.*	X				SNA	NAR	NAR
Common Shiner	*Luxilus cornutus*	X		X	x	S5	NAR	NAR
Creek Chub	*Semotilus atromaculatus*	X		X	x	S5	NAR	NAR
Darter species	*Etheostoma sp.*				x	N/A	N/A	N/A
Emerald Shiner	*Notropis atherinoides*	X				S5	NAR	NAR
Fantail Darter	*Etheostoma flabellare*	X			x	S4	NAR	NAR
Fathead Minnow	*Pimephales promelas*	X		X	x	S5	NAR	NAR
Golden Shiner	*Notemigonus crysoleucas*	X			x	S5	NAR	NAR
Goldfish	*Carassius auratus*	X		X		SNA	NAR	NAR
Green Sunfish	*Lepomis cyanellus*	X				S4	NAR	NAR
Johnny Darter	*Etheostoma nigrum*	X		X	x	S5	NAR	NAR
Johnny Darter x Tessellated Darter	*Etheostoma nigrum x Etheostoma olmstedi*	X			x	SNR	NAR	NAR
Largemouth Bass	*Micropterus salmoides*			X		NAR	NAR	NAR
Longnose Dace	*Rhinichthys cataractae*	X		X	x	S5	NAR	NAR
Longnose Sucker	*Catostomus catostomus*				x	S5	NAR	NAR
Mottled Sculpin	*Cottus bairdii*				x	S5	NAR	NAR
Northern Hog Sucker	*Hypentelium nigricans*			X	x	S4	NAR	NAR
Northern Pearl Dace	*Margariscus margarita*				x	S5	NAR	NAR
Northern Redbelly Dace	*Chrosomus eos*	X		X	x	S5	NAR	NAR
Pumpkinseed	*Lepomis gibbosus*	X		X	x	S5	NAR	NAR
Rainbow Darter	*Etheostoma caeruleum*	X		X	x	S4	NAR	NAR
Rainbow Trout	*Oncorhynchus mykiss*				x	N/A	N/A	N/A
Redside Dace	*Clinostomus elongatus*			X		S1	Endangered	Endangered
River Chub	*Nocomis micropogon*				x	S4	NAR	NAR
Rock Bass	*Ambloplites rupestris*	X		X	x	S5	NAR	NAR
Rosy Red Fathead Minnow	*Pimephales promelas*			X		SNR	NAR	NAR
Rosyface Shiner	*Notropis rubellus*			X		S4	NAR	NAR
Spotfin Shiner	*Cyprinella spiloptera*	X				S4	NAR	NAR
Spottail Shiner	*Notropis hudsonius*	X			x	S5	NAR	NAR
Stonecat	*Noturus flavus*				x	S4	NAR	N/A
Western Blacknose Dace	*Rhinichthys obtusus*	X		X	x	S5	NAR	NAR
White Sucker	*Catostomus commersonii*	X		X	x	S5	NAR	NAR
Yellow Perch	*Perca flavescens*	X		X		S5	NAR	NAR

Notes: 1. SNR – No Status Rank; SNA – Status Not Applicable; S1 – Critically Imperiled; S2 – Imperiled; S4 – Apparently Secure; S5 –Secure; N/A – Not available
2. Endangered (END) - species facing imminent extinction or extirpation; Not at Risk (NAR) – species evaluated and not at risk; N/A – Not available
3. Not on Schedule 1 – species not protected under SARA; Not at Risk (NAR) - species evaluated and not at risk; N/A – Not available

2.2.3 Vegetation

The natural vegetation communities potentially impacted by the alternative routes were assessed by reviewing Ecological Land Classification (ELC) data from CVC and TRCA (see **Appendix A2**). The Study Areas lay along the boundary between 2 Ecoregions: Ecoregion 6E (Lake Simcoe – Rideau) and Ecoregion 7E (Lake Erie – Lake Ontario (MNR, 2009).

Routes S1 and S2 go through highly urbanized areas. ELC communities that are potentially impacted by both routes include Cultural Meadows (CUM), Deciduous Forest (FOD), and Cultural Plantations (CUP) (CVC, 2022 and TRCA, 2022a).

Routes N1 and N2 pass through agricultural lands as well as urban areas. Both routes run along similar vegetation communities as they are adjacent to CUM, Cultural Savannah (CUS), FOD, Deciduous Swamp (SWD), and Meadow Marsh (MAM) vegetation communities and agricultural lands (CVC, 2022 and TRCA, 2022a).

2.2.4 Wildlife

Based on the secondary sources reviewed, there were records of 37 bird species and seven mammal species identified within the Study Areas. Some of the birds are protected under the *Migratory Birds Convention Act* (MBCA), nesting in treed habitats such as forests, parks, and riparian zones along the urban river valley. Mammal species identified likely utilize corridors like the former OBR, wetlands, and woodlands. Key habitats supporting wildlife include provincially significant wetlands and the Greenbelt Protected Countryside, which include ecological linkage areas. These findings indicate a mix of urban-adapted and sensitive species relying on both natural and modified landscapes within the area.

Through a background review of secondary sources for the short-list route alternatives, there were several SAR and SOCC that have potential to occur within each of the Study Areas. Both South Routes have similar potential for SAR and SOCC wildlife occurrence within the respective Study Areas of S1 and S2. Both the South Routes have the potential for nine SAR and 11 SOCC to occur.

The North Routes have varying potential for SAR and SOCC wildlife occurrence within the respective Study Areas of N1 and N2. The N1 route has the potential for seven SAR mammals and four SAR birds, as well as seven SOCC birds to occur. The N2 route has the potential for seven SAR mammals and four SAR birds, as well as seven SOCC birds and one SOCC amphibian to occur. Notably, both North Routes have a higher potential for SAR and SOCC to occur, compared to the two southern routes, due to the presence of more naturalized areas in the northern areas.

3. Existing Conditions

3.1 Methods

The desktop review as discussed in Section 2, and the review of GIS sources resulted in identification of natural heritage features and key policy areas (Table 2-1) within 120 metres of each short-list route alternative (Study Areas). To check the accuracy of these results, a windshield survey of all the short list routes was undertaken. This windshield survey was completed from the public right of way (ROW) and OBR on April 16 and 17, 2025.

This survey focused on verification of the presence of various vulnerable natural heritage features, as well as identification of additional natural heritage features not identified in the initial background review. The survey involved driving and walking along the routes, with brief stops at points of interest. These locations were pre-selected to focus on areas with greater potential impacts to confirm the presence or absence of the natural heritage features. At each location, a photo was taken to supplement the windshield survey and verify preliminary desktop studies (Appendix B1 and B2).

3.2 Results

3.2.1 Fish Habitat

Features along the short-list route alternative were assessed via a windshield survey to determine the potential for fish habitat (Appendix A1). A conservative approach to identifying fish habitat within a feature was taken. Rationale for identifying a feature as being fish habitat or potential fish habitat included a connection to a fish bearing waterbody, either upstream or downstream, at any given time of year (e.g., seasonally) or observations of fish during the survey. Other characteristics that were assessed included estimated flow regime (based on channel definition and substrate sorting), groundwater indicators such as Watercress (*Nasturtium officinale*) or iron staining, and potential impediments to fish migration.

Results of the windshield survey can be found in Table 3-1 below. These results were used to determine the location of detailed field assessments after the selection of the preferred route. Only sites deemed to be fish habitat or potential fish habitat, and for which permission to enter (PTE) was granted, were assessed in detail in Section 4.1.

A representative photographic log of each feature assessed during the windshield survey is provided in Appendix B1.

Table 3-1: Aquatic Windshield Survey Field Data Results along Short-list Route Alternatives

Watercourse Crossing ID	Watercourse Name	Fish Habitat Potential	Estimated Flow Regime	Fish Observed	Groundwater Indicators	Potential Impediments
WC-01	Etobicoke Creek	Yes	Permanent	Yes	No	No
WC-02	Drainage feature of Etobicoke Creek	No (no feature present where PTE granted and proposed work to occur)	Intermittent	No	No	Yes
WC-03	Etobicoke Creek	Yes	Permanent	No	No	Yes
WC-04	Etobicoke Creek	Yes	Permanent	No	No	No
WC-05	Tributary to Fletchers Creek	Yes	Permanent	Yes	No	Yes
WC-06	Drainage feature to Tributary to Fletchers Creek	Yes	Intermittent	No	No	Yes
WC-06a	Drainage feature to Tributary to Fletchers Creek	Yes	Intermittent	No	No	Yes
WC-07	Tributary to Fletchers Creek	Yes	Permanent (downstream) Intermittent (upstream)	No	No	Yes
WC-08	Fletchers Creek	Yes	Permanent	No	No	No
WC-09	Drainage feature to Fletchers Creek	Yes	Intermittent	No	No	Yes
WC-10	Drainage feature to Fletchers Creek	Yes	Intermittent	No	No	Yes
WC-11	Drainage feature to Fletchers Creek	Yes	Intermittent	No	No	Yes
WC-12	Alloa Drain	Yes	Permanent	No	No	No
WC-13	Headwater feature of Etobicoke Creek	Yes	Permanent	Yes	Yes	Yes
WC-14	Fletchers Creek	Yes	Permanent	No	Yes	Yes
WC-15	Fletchers Creek	Yes	Permanent	No	No	Yes
WC-16	Fetchers Creek	Yes	Permanent	No	No	Yes
WC-16a	Drainage feature to Fletchers Creek	Yes	Permanent	No	No	
WC-17	Drainage feature to Fletchers Creek	Yes	Permanent	No	No	Yes
WC-18	Fletchers Creek	Yes	Permanent	No	No	No
WC-19	Fletchers Creek	Yes	Permanent	No	Yes	No
WC-19a	Fletchers Creek	Yes	Permanent	No	No	Yes
WC-20	Drainage feature to Fletchers Creek	Yes	Intermittent	No	No	Yes
WC-21	Fletchers Creek	Yes	Permanent	No	No	No
WC-22	Fletchers Creek	Yes	Permanent	No	No	Yes
WC-23 (no PTE)	Headwater feature of Fletchers Creek	N/A	N/A	N/A	N/A	N/A
WC-24 (no PTE)	Headwater feature of Fletchers Creek	N/A	N/A	N/A	N/A	N/A
WC-25 (no PTE)	Headwater feature of Fletchers Creek	N/A	N/A	N/A	N/A	N/A
WC-26 (no PTE)	Headwater feature of Fletchers Creek	N/A	N/A	N/A	N/A	N/A
WC-27 (no PTE)	Headwater feature of Fletchers Creek	N/A	N/A	N/A	N/A	N/A
WC-28 (no PTE)	Headwater feature of Fletchers Creek	N/A	N/A	N/A	N/A	N/A
WC-29 (no PTE)	Headwater feature of Fletchers Creek	N/A	N/A	N/A	N/A	N/A
WC-30	Alloa Drain	Yes	Permanent	No	No	No
WC-31	Headwater feature of Etobicoke Creek	Yes	Intermittent	No	No	Yes
WC-32	Headwater feature of Etobicoke Creek	Yes	Permanent	No	No	Yes
WC-33	Headwater feature of Etobicoke Creek	Yes	Intermittent	No	No	Yes
WC-34	Headwater feature of Etobicoke Creek	Yes	Permanent	No	Yes	Yes
WC-35	Headwater feature of Etobicoke Creek	Yes	Permanent	No	No	Yes

3.2.2 Vegetation

A windshield survey was conducted to verify the results of the background data review as discussed in Section 2, and presented in Table 2-1 and ELC summary (Appendix A2). The windshield survey was completed from the public ROW and the OBR along each of the short-list route alternatives, on April 16 and 17, 2025.

The windshield survey focused on verifying the presence of the natural heritage features and ELC communities identified in the background review and identifying any additional natural heritage features. Brief stops were conducted at locations that were pre-determined to be potentially impacted by the short-list route alternatives, to verify the presence or absence of the natural feature (Appendix A2). At each location, a photo was taken to document the windshield survey. A total of 14 representative photos of various ELC communities are included in Appendix B2.

The survey was guided by ELC data from TRCA and CVC. No additional ELC survey work was conducted as part of the windshield survey. Various vegetation communities were observed along the alternate routes, including the Mineral Cultural Meadow Ecosite (CUM1), which covered more than 50% of the area. This was followed by forested communities such as Fresh-Moist Lowland Deciduous Forest Ecosite (FOD7), and wetland communities like Forb Mineral Meadow Marsh Type (MAM2-10), Common Reed Graminoid Mineral Meadow Marsh Type (MAMM1-12), Cattail Mineral Shallow Marsh Type (MAS2-1), Swamp White Oak Mineral Deciduous Swamp Type (SWD1-1), and Willow Mineral Deciduous Swamp Type (SWD4-1). Additionally, several sections of the route alternatives ran through agricultural lands, some of which were previously hayfields.

Dominant plants that could be identified during the season of the windshield survey (mid-April) were recorded for each vegetation community along the short-list route alternatives. Grasses dominated the Cultural Meadow vegetation communities, along with shrubs such as Red-osier Dogwood (*Cornus sericea*). The forested vegetation communities mainly consisted of Aspen (*Populus sp.*), Willow (*Salix sp.*), and Spruce (*Picea sp.*) trees. Several Black Ash (*Fraxinus nigra)* trees (a SAR) were observed during the windshield survey route. The marsh and swamp areas were primarily composed of grass species and Common Reed (*Phragmites australis*).

3.2.3 Incidental Wildlife

A variety of incidental wildlife observations were made during field work on the short-list route alternatives. There were 13 species of birds, three species of mammals, and one species of plant identified as incidental wildlife observations along all the routes during field surveys. Notably, one species of special concern, Barn Swallow (*Hirundo rustica)*, was identified in incidental observations (Table 3-2).

Table 3-2: Incidental Wildlife Observations during along the Short-list Route Alternatives

Taxon	Common Name	Scientific Name	S-Rank[1]	COSEWIC Status	SARA Status	ESA Status
Bird	American Robin	*Turdus migratorius*	S5	-	-	-
Bird	American Woodcock	*Scolopax minor*	S4	-	-	-
Bird	Barn Swallow	*Hirundo rustica*	S4B	SC	THR	SC
Bird	Black Capped Chickadee	*Poecile atricapillus*	S5	-	-	-
Bird	Bufflehead	*Bucephala albeola*	S5	-	-	-
Bird	Canada Goose	*Branta canadensis*	S5	-	-	-
Bird	Double Crested Cormorant	*Nannopterum auritum*	S4	-	-	-
Bird	Green Heron	*Butorides virescens*	S4	-	-	-
Bird	Mallard	*Anas platyrhynchos*	S5	-	-	-
Bird	Northern Cardinal	*Cardinalis cardinalis*	S5	-	-	-
Bird	Northern Flicker	*Colaptes auratus*	S5	-	-	-
Bird	Red-winged Blackbird	*Agelaius phoeniceus*	S5	-	-	-
Bird	Song Sparrow	*Melospiza meolodia*	S5	-	-	-
Mammal	American Groundhog	*Marmota monax*	S5	-	-	-
Mammal	Eastern Cottontail	*Sylvilagus floridanus*	S5	-	-	-
Mammal	Eastern Grey Squirrel	*Sciurus carolinensis*	S5	-	-	-

Note: 1. **S rank:** The natural heritage provincial ranking system (provincial S-rank) is used by the MNRF Natural Heritage Information Centre (NHIC) to set protection priorities for rare species and natural communities. The following status definitions were taken from NatureServe Explorer's (2015) National and Subnational Conservation Status Definitions available at http://explorer.natureserve.org/nsranks.htm:

S3 – Vulnerable—Vulnerable in the province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
S4 – Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors.
S5 – Secure—Common, widespread, and abundant in the nation or state/province.
SNR – Unranked—Province conservation status not yet assessed.
SU – Unrankable—Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
SNA – Not Applicable —A conservation status rank is not applicable because the species is not a suitable target for conservation activities.
S#S# - Range Rank —A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).

Breeding Status Qualifiers
B – Breeding—Conservation status refers to the breeding population of the species in the province.
N – Nonbreeding—Conservation status refers to the non-breeding population of the species in the province.

3.3 Significant Wildlife Habitat

The *Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E and 7E* (MNR, 2015a, 2015b) outline recommended criteria, based on science and expert knowledge, for identifying SWH. The schedules include a description of the wildlife habitat, indicator wildlife species, and criteria used for determining candidate[1] or confirmed[2] SWH. SWH is divided into five broad categories, which are described as:

- Seasonal Concentration Areas
- Rare Vegetation Communities
- Specialized Habitats for Wildlife
- Habitats of SOCC further defined as (MNR, 2000; MNR, 2010):
  - Species with Provincial S-rank assigned by the NHIC as S1 (critically imperilled), S2 (imperilled) or S3 (vulnerable),
  - Species listed as Special Concern under the ESA; and
  - Species identified federally as Endangered or Threatened under the federal *Species at Risk Act, 2002* (SARA) that are not protected under the ESA.
- Animal Movement Corridors

A desktop SWH Habitat Assessment (**Appendix C**) was conducted using data from the background review (**Section 2**) and the existing conditions windshield survey (**Section 3**) to determine if the habitat in the Study Areas met candidate criteria for each SWH category. The SWH could only be assessed at the candidate level because species-specific surveys were not conducted to confirm species presence thresholds required to meet the criteria for confirmed SWH.

Table 3-3 is a summary of the candidate SWH identified within the Study Areas for each SWH category. From the screening and field work conducted, potentially suitable habitats were identified for five SOCC species.

Table 3-3: Significant Wildlife Habitats within the Study Areas for Short-list Route Alternatives.

Routes	S1	S2	N1	N2
Seasonal Concentration Areas	Candidate SWH: ■ Bat Maternity Colonies ■ Turtle Wintering Areas	Candidate SWH: ■ Bat Maternity Colonies ■ Turtle Wintering Areas	Candidate SWH: ■ Bat Maternity Colonies ■ Turtle Wintering Areas	Candidate SWH: ■ Bat Maternity Colonies ■ Turtle Wintering Areas
Specialized Wildlife Habitat	Candidate SWH: ■ Amphibian Breeding Habitat (Wetlands).	Candidate SWH: ■ None	Candidate SWH: ■ Amphibian Breeding Habitat (Wetlands). ■ Amphibian Breeding Habitat (Woodland).	Candidate SWH: ■ Amphibian Breeding Habitat (Wetlands). ■ Amphibian Breeding Habitat (Woodland).
Habitat of Species of Conservation Concern *(refer to Appendix C for full Species of Conservation Concern Habitat Assessment)*	Candidate SWH: ■ Special Concern and Rare Wildlife Species – American Bumble Bee (*Bombus pensylyanicus*) – Monarch (*Danaus plexippus*) – Snapping Turtle (*Chelydra serpentina*) – Yellow-banded Bumble Bee (*Bombus terricola*)	Candidate SWH: ■ Special Concern and Rare Wildlife Species – American Bumble Bee – Monarch – Snapping Turtle – Yellow-banded Bumble Bee	Candidate SWH: ■ Terrestrial Crayfish ■ Special Concern and Rare Wildlife Species – American Bumble Bee – Monarch – Snapping Turtle – Yellow-banded Bumble Bee	Candidate SWH: ■ Terrestrial Crayfish ■ Special Concern and Rare Wildlife Species – American Bumble Bee – Monarch – Snapping Turtle – Yellow-banded Bumble Bee

3.4 Species at Risk Habitat

Special consideration was given to identifying any SAR within the Study Areas. SAR includes species that are listed as Extirpated, Endangered, or Threatened on the Species at Risk in Ontario (SARO) list and receive both individual and habitat protection under the ESA. The SARA applies to aquatic species listed as Extirpated, Endangered, or Threatened under Schedule 1 of the SARA, and receive individual and habitat protection under the SARA as well as under the ESA. Desktop habitat screenings were conducted for SAR using the sources listed in Section 2.1. SAR with ranges overlapping with or with recent occurrence records within the Study Areas were identified and then screened for the probability of occurrence by comparing their habitat requirements to the on-site conditions determined through the background information review (Section 2) and windshield surveys (Section 3). The probability of occurrence for the species within the Study Areas was assigned as follows:

- Low Probability: no suitable habitat for the species identified and no occurrence of the species incidentally observed through field assessment, but there is a known species record in the general area;
- Medium Probability: potentially suitable habitat identified, no occurrence of the species incidentally observed through field assessment although there is a known species record in the general area; and
- High Probability: good quality habitat identified and known species record in the Study Area (either through field assessment or background information).

The SAR habitat assessment and screening exercise are presented in Appendix D. Several candidate habitats for terrestrial SAR were identified within the Study Areas. Of the 25 SAR records identified through the background review, 10 SAR designated as Endangered were determined to have medium potential to occur within the Study Areas based on the presence of potentially suitable habitat. One SAR species, Black Ash was identified within the Study Areas during field investigations. The remaining SAR outlined in Appendix D were determined to have low potential to occur within the Study Areas due to a lack of suitable habitat.

DFO SAR mapping indicates Critical Habitat for Redside Dace within the Study Areas (DFO, 2025a), in addition to records of Redside Dace in Fletchers Creek within the Study Area (MNR, 2025 and CVC, 2022). Redside Dace is listed as Endangered provincially under the *Endangered Species Act, 2007* (ESA) and federally under the *Species at Risk Act, 2002* (SARA).

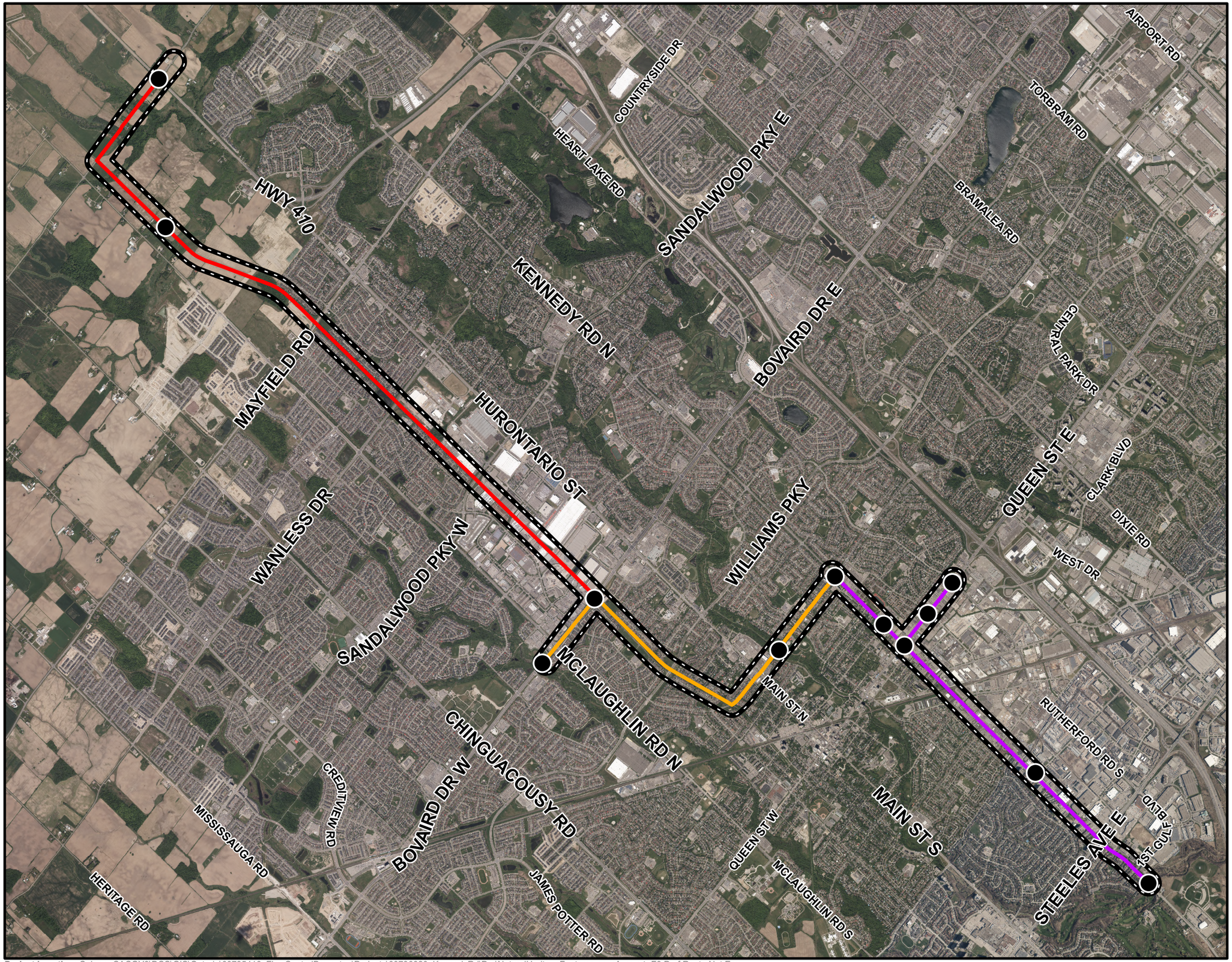
Table 3-4 lists the SAR species confirmed or with a medium potential to occur within the vegetation communities throughout the Study Area.

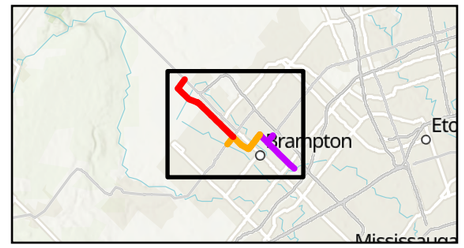
Table 3-4: Species at Risk with Medium or High Probability of Occurrence within 120 metres of each Short-list Route Alternatives

Probability of Occurrence	S1	S2	N1	N2
Medium	■ Red-headed Woodpecker (*Melanerpes erythrocephalus*), ■ Eastern Red Bat (*Lasiurus borealis*) ■ Eastern Small-footed Myotis (*Myotis leibii*) ■ Hoary Bat *(Lasiurus cinereus*) ■ Little Brown Myotis (*Myotis lucifugus*) ■ Northern Myotis (*Myotis septentrionalis*) ■ Silver-haired Bat (*Lasionycteris noctivagants*) ■ Tri-colored Bat (*Perimyotis subflavus*) ■ Butternut (*Juglans cinerea)*	■ Red-headed Woodpecker, ■ Eastern Red Bat ■ Eastern Small-footed Myotis (Eastern Small-footed Bat) ■ Hoary Bat ■ Little Brown Myotis (Little Brown Bat) ■ Northern Myotis (Northern Long-eared Bat) ■ Silver-haired Bat ■ Tri-colored Bat ■ Butternut	■ Red-headed Woodpecker ■ Eastern Red Bat ■ Eastern Small-footed Myotis (Eastern Small-footed Bat) ■ Hoary Bat ■ Little Brown Myotis (Little Brown Bat) ■ Northern Myotis (Northern Long-eared Bat) ■ Silver-haired Bat ■ Tri-colored Bat ■ Butternut	■ Red-headed Woodpecker ■ Eastern Red Bat ■ Eastern Small-footed Myotis (Eastern Small-footed Bat) ■ Hoary Bat ■ Little Brown Myotis (Little Brown Bat) ■ Northern Myotis (Northern Long-eared Bat) ■ Silver-haired Bat ■ Tri-colored Bat ■ Butternut
Confirmed	■ Redside Dace (*Clinostomus elongatus*)	■ Redside Dace	■ Black Ash (*Fraxinus nigra*)	■ None
Total Number of SAR per Short-list Alternative	10	10	10	9

4. Detailed Field Investigations for Preferred Route

During Phase 2 of the MCEA process (AECOM, 2025b), each route alternative was evaluated from least preferred to most preferred based on an evaluation matrix that was established during Phase 1 (AECOM, 2025a). One route, which consisted of a north section and a south section, with the lowest adverse overall environmental effects was then identified as the preferred route. The preferred route selected was **N1,** which runs along the OBR corridor from Bovaird Drive to Old School Road, including Old School Road from the OBR corridor to Hurontario Street, combined with **S2**, which runs from the future Etobicoke Creek STS on Kennedy Road to Vodden Street, Vodden Street from Kennedy Road to OBR, the OBR corridor from Vodden Street to Bovaird Drive, and Bovaird Drive West to the existing Fletchers Creek STS. The natural environment Study Area for the preferred route is 120 metres adjacent to the route, proposed shaft locations, and the shaft connection points along these routes. The preferred route is shown in **Figure 3**. Route naming has been updated for Phase 3 of the EA process. Route S2 has been divided into two segments: Segment 1, extending from the future Etobicoke Creek STS on Kennedy Road to Vodden Street, and Segment 2, encompassing Vodden Street from Kennedy Road to the OBR and the OBR corridor from Vodden Street to Bovaird Drive. Route N1 remains unchanged and is now referred to as Segment 3. To provide additional details on the preferred route, field surveys were conducted to supplement data collected from the windshield and background review.





Study Area

Sanitary Trunk Sewer Connections

Preferred Route - Segment

Segment 1

Segment 2

Segment 3

Flow | Central Brampton

Kennedy Rd - Preferred Route and Natural Environment Study Area

0 0.5 1 1.5 2

Kilometers
Scale: 1:40,000

N

PN: 60735416	Figure 3
January 28, 2026	AECOM

Data Sources:
ESRI Canada, Government of Ontario

4.1 Aquatic Investigations

Results of the windshield survey were used to inform assessments along the preferred route (Appendix E1). Those features that were confirmed as potential fish habitat along the preferred route (Table 3-1) were assessed in detail and can be found below.

4.1.1 Methods

On April 16, 17 and 23, 2025, investigations were carried out at all features along the preferred route that were identified as potential fish habitat during the windshield survey to confirm habitat conditions and evaluate the potential for aquatic SAR habitat within the Study Area. Data collected during field investigations for these features included:

- Flow description (source of flow, permanency/seasonality, low flow conditions),
- Characterization of channel dimensions and stream morphology including:
  - Runs – typically found at the head of a pool with water velocity similar to a riffle but with greater depth and surface that is typically not agitated;
  - Riffles – relatively shallow, fast turbulent flow where the water's surface is typically broken;
  - Pools – deep areas with a relatively low flow velocity and a smooth unagitated surface; and
  - Flats – low flowing water with a smooth un-agitated surface that are not as deep as a pool.
- Substrate composition (i.e., clay, silt, sand, gravel, cobble, rock, boulder, muck and detritus) and in-stream vegetation and other cover elements (i.e., woody debris, undercut banks, boulders),
- Characterization of riparian habitat and surrounding natural features and land uses (i.e., wetland, agriculture, etc.),
- Indicators of water quality – water clarity, water colour, presence and type of macrophytes and algal growth, evidence of runoff,
- Incidental observations of fish community species composition and life-history habitat elements (i.e., spawning, rearing/nursery habitat), and
- Basic field parameters such as pollution sources (i.e., tile drain discharges, other piped discharges and road runoff).

Fish community sampling was not required as the fish community data obtained through the background review for the Study Area was found to be sufficient.

A representative photographic log of each feature assessed during field investigations can be found in Appendix F1.

4.1.2 Results

WC-01 (Etobicoke Creek)

Etobicoke Creek is in the farthest southwestern portion of the Study Area, approximately 300 metres south of Kennedy Road and First Gulf Boulevard and within the jurisdiction of TRCA. The feature flows northerly under a large bridge at Kennedy Road with a golf course at the upstream reach that was not assessed (no PTE). This feature has a warm water thermal regime (MNR, 2025b). Surrounding lands included a golf course, roadways, and commercial and residential properties with potential pollution sources from road runoff and potential chemical / pesticide runoff for the golf course. Water temperature at the time of the assessment was 7°C.

The downstream reach consisted of flats (100%). The average wetted depth was 0.4 metres and the average wetted width was 8.8 metres. The average bankfull depth was 0.55 metres and the average bankfull width was 9.4 metres. The substrate consisted of cobble (40%), bedrock (30%), gravel (15%), boulders (5%), silt (5%), and sand (5%). Both banks were deemed slightly unstable and vulnerable. The left bank was a steep, treed covered ravine wall with overhanging shale slabs while the right bank had vegetation growth with some undercutting. In-stream cover totaled 40% consisting of cobble (70%) and undercut banks (30%). Total overhanging cover was moderate (30 to 59%) consisting of trees and Common Reed.

Based on channel morphology, substrates, defined banks, and small-bodied fish observed during field investigations, this feature provides permanent, direct fish habitat. No groundwater indicators were observed.

WC-04 (Etobicoke Creek)

This portion of Etobicoke Creek is located at Vodden Street East between Main Street North and Centre Street North within the jurisdiction of the TRCA. The feature flows southeasterly under a bridge at Vodden Street East with a width of 19.9 metres and a height of 2.75 metres. This feature has a warm water thermal regime (MNR, 2025b). Surrounding lands included roadways, parkland, and commercial and residential properties with potential pollution sources from road runoff, stormwater, and anthropogenic sources. Water temperature at the time of the assessment was 7°C.

The assessed upstream reach consisted of flats (60%) and riffles (40%). Within the flats, the average wetted depth was 0.35 metres and the average wetted width was 11.9 metres. The average bankfull depth was 0.9 metres and the average bankfull width was 12.6 metres. The substrates of the flats consisted of cobble (40%), sand (40%), silt

(10%), and detritus (10%). Within the riffle, the average wetted depth was 0.11 metres and the average wetted width was 17.7 metres. The average bankfull depth was 0.35 metres and the average bankfull width remained the same at 17.7 metres. The substrates of the riffle consisted of cobble (80%), gravel (10%), sand (10%). Both banks were deemed slightly unstable and vulnerable due to exposed sediments. In-stream cover totaled 50% consisting of cobble (70%) and woody debris (30%) while the total overhanging cover was low (1 to 29%) consisting of overhanging trees.

The downstream reach consisted of flats (95%) and pools (5%). Within the flats, the average wetted depth was 0.37 metres and the average wetted width was 9.9 metres. The average bankfull depth was 0.7 metres and the average bankfull width was 10.6 metres. The substrates of the flats consisted of gravel (30%), sand (30%), cobble (20%), and silt (20%). Within the pool, the average wetted depth was 0.9 metres and the average wetted width was 9.9 metres. The average bankfull depth was 1.4 metres and the average bankfull width was 10.6 metres. The substrates of the pool consisted of gravel (50%), cobble (25%), and silt (25%). Both banks were deemed moderately unstable and vulnerable with signs of erosion, slumping, and undercut. The instream cover totaled 20% consisting of undercut banks (25%), cobble (25%), woody debris (25%), and organic debris (25%). The total overhanging cover was low (1 to 29%) provided by one low-hanging willow tree near the stream. A stormwater outfall, approximately 0.75 metres in diameter and 20 metres downstream of the bridge on the right bank, was observed during field investigations.

Based on channel morphology, substrates, defined banks, and small-bodied fish observed during field investigations, this feature provides permanent, direct fish habitat. Large flow volumes were evident during field investigations with a trash line observed approximately 1.5 to 2 metres above the current water level. No groundwater indicators were observed.

WC-05 (Tributary to Fletchers Creek)

WC-05 is a Tributary to Fletchers Creek located at Williams Parkway and the OBR within the jurisdiction of CVC. This feature has a cool water thermal regime (MNR, 2025b), flowing southeasterly under a bridge with a height of 2.0 metres and a width of 4.6 metres, making a 90^0 turn just after exiting the bridge to flow southwest adjacent to Williams Parkway. This feature has a cool water thermal regime (MNR, 2025b). Surrounding lands included roadways, OBR, and residential properties with potential pollution sources from road runoff, stormwater, and anthropogenic sources. Water temperature at the time of the assessment was 6°C.

The assessed upstream reach consisted of flats (65%), other (concrete lined channel) (25%), and riffles (10%). Within the flats, the average wetted depth was 0.16 metres and the average wetted width was 1.6 metres. The average bankfull depth was 0.25 metres and the average bankfull width was 2.3 metres. The substrate of the flats consisted of

cobble (80%) and silt (20%). Within the concrete lined channel (other), the average wetted depth was 0.2 metres and the average wetted width was 1.0 metres. The average bankfull depth was 0.6 metres and the average bankfull width was 1.37 metres. The substrate of the channel consisted of concrete, (85%), cobble (10%), and silt (5%). Within the riffles, the average wetted depth was 0.13 metres and the average wetted width was 1.5 metres. The average bankfull depth was 0.24 metres and the average bankfull width was 2.0 metres. The substrates of the riffles consisted of only cobble (100%). Both banks were determined to be slightly unstable and vulnerable upstream of the concrete lining. In-stream cover totaled 65% consisting of cobble (85%) and organic debris (15%). No overhanging cover was observed in the upstream reach. Sediment deposits high onto the walls of the concrete channel had provided substrate for cattail (*Typha sp.*) growth.

The assessed downstream reach was determined to be a permanent channelized feature; however, within the concrete channel, sediment deposition has allowed for a small meandering channel. The channel morphology within this reach consisted entirely of flats (100%). The average wetted depth was 0.17 metres and the average wetted width was 1.45 metres. The average bankfull depth was 0.33 metres and the average bankfull width was 1.85 metres. The substrate of the flats consisted of silt (60%) and detritus (40%). Both banks were determined to be stable and protected by the concrete lining. In-stream cover totaled 10% consisting of vascular macrophytes (cattail) (100%), while total overhanging cover was low (1 to 29%) consisting of dead cattails. Small-bodied fish were observed within the feature.

Based on channel morphology, substrates, defined banks upstream of the concrete lining, and small-bodied fish observed during field investigations, this feature provides permanent, direct fish habitat. A potential impediment to upstream fish migration was observed within the upstream reach where pieces of concrete (approximately 20 centimetres high) were lined up across the channel. However, water was still able to flow through and small-bodied fish were observed further upstream indicating that the impediment is passable. Seasonal obstructions to fish passage could also be caused by large pieces of debris (wood and garbage) in the downstream reach of the channel. However, evidence of high flows was observed with the trash line spanning approximately 6 metres across and 1 metres high. No groundwater indicators were observed.

WC-06 (Drainage feature to Tributary to Fletchers Creek)

WC-06 is a drainage feature to a Tributary to Fletchers Creek (WC-07) located just south of Bovaird Drive West along the OBR within the jurisdiction of CVC. The feature passes through a concrete box with a semicircular opening with a height of 0.35 metres and a width of 0.6 metres and has a cool water thermal regime (MNR, 2025b). Surrounding lands included OBR, pedestrian walkway, and residential properties with potential pollution sources from runoff, stormwater, and anthropogenic sources. Water temperature at the time of the assessment was 5°C. The upstream portion of the feature was not assessed due to lack of PTE.

The small, downstream area of the feature was assessed and determined to be a permanent channelized feature with channel morphology consisting of a pool (100%). The average wetted depth was 0.21 metres, and the average wetted width was 1.6 metres. The average bankfull depth was 0.3 metres and the average bankfull width was 2.0 metres. The substrate of the pool consisted of gravel (60%), sand (30%), and detritus (10%). Both banks were determined to be slightly unstable and vulnerable. In-stream cover totaled 60% consisting of cobble (80%) and organic debris (20%). There was no overhanging cover. Low flow at the time of the assessment resulted in an impediment to fish migration to the pool and culvert.

Due to having a direct connection to WC-07, a fish-bearing waterbody, this feature has the potential to be permanent or seasonal fish habitat. No groundwater indicators were observed.

WC-06a (Drainage feature to Tributary to Fletchers Creek)

WC-06a is a drainage feature to a Tributary to Fletchers Creek (WC-07) that was identified during field investigations. This feature outlets through a large concrete encased double culvert with wingwalls. The upstream portion of this feature was not assessed due to lack of PTE; however, aerial imagery indicates that this feature may drain from an upstream stormwater management pond (Google Earth, 2025). This feature entered at the right bank of WC-07.

Due to having a direct connection to WC-07, a fish-bearing waterbody, this feature has the potential to be permanent or seasonal fish habitat. No groundwater indicators were observed.

WC-07 (Tributary to Fletchers Creek)

WC-07 is a Tributary to Fletchers Creek and located at the intersection of Bovaird Drive West and the OBR within the jurisdiction of CVC. The feature flows southeasterly through a box culvert with a height of 0.9 metres and width of 1.1 metres and has a cool water thermal regime (MNR, 2025b). Surrounding lands included roadways, the OBR, a pedestrian walkway, and commercial and residential properties with potential pollution sources from runoff, stormwater, and anthropogenic sources. Water temperature at the time of the assessment was 4°C in the downstream reach.

The assessed upstream reach of this feature was determined to be a channelized feature with intermittent flow. A gabion basket retaining wall was in place around the culvert with lose rip rap in the ditch to either side. In addition, a half-buried concrete culvert was situated in-line with the box culvert, approximately 1 metres upstream. This portion of the feature likely conveys drainage from the roads and surrounding commercial properties. Additional drainage could be heard and seen from within the culvert.

The assessed downstream reach consisted entirely of flats (100%). The average wetted depth was 0.29 metres and the average wetted width was 1.5 metres. The average bankfull depth was 0.45 metres and the average bankfull width was 1.6 metres. The substrate of the flats consisted of gravel (50%), sand (25%), cobble (15%), and detritus (10%). Both banks were determined to be slightly unstable and vulnerable. In-stream cover totaled 20% consisting of cobble (75%) and woody organic debris (25%). The overhanging cover was low (1 to 29%) consisting of a Red-osier Dogwood, cattails, and Common Reed.

Based on channel morphology, substrates, and defined banks observed during field investigations, this feature appeared to be permanent downstream, but intermittent upstream. A buildup of vegetation across the channel was observed in the downstream reach, causing a potential seasonal impediment to upstream fish migration during low flows. No groundwater indicators were observed.

WC-08 Fletchers Creek

Fletchers Creek is located on Bovaird Drive West between Fletchers Creek Blvd and McLaughin Road North within the jurisdiction of CVC. The feature flows southeasterly under Bovaird Drive West through an open foot culvert with a height of 3.3 metres and a width of 11.2 metres and has a cool water thermal regime (MNR, 2025b). Surrounding lands included roadways, parkland, and commercial and residential properties with potential pollution sources from road runoff, stormwater, and anthropogenic sources. Water temperature at the time of the assessment was 5°C.

The assessed upstream reach was determined to be a permanent feature with channel morphology consisting of pools (60%) and riffles (40%). Within the pools, the average wetted depth was 0.6 metres and the average wetted width was 8.9 metres. The average bankfull depth was 0.7 metres and the average bankfull width was 10.6 metres. The substrate of the pools consisted of sand (50%), silt (35%), cobble (10%), and muck (5%). Within the riffles, the average wetted depth was 0.2 metres and the average wetted width was 3.0 metres. The average bankfull depth was 0.5 metres and the average bankfull width was 3.5 metres. The substrate of the riffles consisted of sand (50%), silt (25%), gravel (20%), and cobble (5%). Both banks were determined to be moderately unstable, with the left bank being vulnerable and the right bank being eroded. In-stream cover totaled 7% consisting of cobble (60%) and undercut banks (40%). No overhanging cover was present at the time of the assessment, however dormant terrestrial grasses and cattails were evident on the banks. A small drainage feature was observed entering the watercourse on the left bank

The assessed downstream reach had a channel morphology consisting entirely of runs (100%). The average wetted depth was 0.45 metres and the average wetted width was 4.6 metres. The average bankfull depth was 0.95 metres and the average bankfull width was 6.2 metres. The substrate of the runs consisted of silt (40%), sand (30%), gravel

(20%), boulder (10%). Both banks were determined to be moderately unstable and eroded with evidence of channel restoration on the left bank where logs and old Christmas trees had been used for potential bank stabilization. In-stream cover totaled 10% consisting of boulders (50%) and woody debris (50%). No overhanging cover was observed at the time of the assessment. A large stormwater outfall (approximately 1 metre diameter) entered the downstream portion of the watercourse at the bridge on the right bank. Trash accumulation on the grates was observed and the lower portion of the grate was no longer attached. Sandbags were also present within the wetted portion of the feature between the upstream base of the outfall and the right bank.

Based on channel morphology, substrates, and defined banks observed during field investigations, this feature provides permanent, direct fish habitat. A potential seasonal impediment to fish passage due to low flow conditions was present in the upstream reach and no groundwater indicators were observed. According to DFO online mapping, this portion of Fletchers Creek has been designated as Redside Dace Critical Habitat (DFO, 2025a). Gravels and sand substrates, as well as the pool habitat in the upstream reach, along with the submerged branches and logs at the downstream restoration site, has potential to be suitable habitats for Redside Dace.

WC-09, WC-10, WC-11 (Drainage feature to Fletchers Creek)

WC-09, WC-10, and WC-11 are Drainage features to Fletchers Creek with a cool water thermal regime (MNR, 2025b). Upon assessment, these three features appeared to be the same feature that were likely realigned for the housing development west of the OBR between Wanless Drive and Mayfield Road. PTE was provided on the OBR; however, this feature was located between the housing development and the OBR and therefore was not accessible. This feature flows southwesterly adjacent to the OBR from Mayfield Road, entering the north corner of a stormwater management pond that is located at the intersection of Wanless Drive and the OBR. A stormwater outfall entered the stormwater management pond in the northwest corner and an outlet structure was observed in the south corner of the pond. From there, the feature was not observed and is likely piped.

WC-09 was observed at the north corner of the stormwater management pond where it drained into the pond. The feature was wet at the time of assessment. Observation at WC-10 were minimal with vegetation within the feature flattened indicating that fast flows pass though this section of the feature.

A 0.6 metres double corrugated steel pipe (CSP) culvert was observed at WC-11, likely conveying drainage from the east side to west side of the OBR. These culverts were quite overgrown with vegetation, especially the upstream portion, however water was observed in the north culvert. From there, a 0.75 metres concrete culvert was observed which outlets into WC-11. The culvert outlet and downstream portion of the channel was dominated by Common Reed, while the upstream portion of the channel contained cattail and Red-osier Dogwood.

Based on a visual assessment, and a direct connection to the stormwater management pond, this feature appeared to be intermittent with the potential to provide seasonal fish habitat.

WC-12 (Alloa Drain)

Alloa Drain is a headwater feature of Etobicoke Creek located 1.3 kilometres southeast of Old School Road following the OBR within the jurisdiction of TRCA. Surrounding lands consisted of rural residential properties, agricultural lands, and the abandoned OBR with potential pollution sources from agricultural and pesticide runoff. This feature has a warmwater thermal regime (MNR, 2025b). However, it is classified as a Class 'D' drain by DFO indicating that this feature contains sensitive fish species with a fall, or a combination of spring and fall, spawning periods that are sensitive to drain maintenance activities (Kavanagh, *et al*., 2017). Due to PTE restrictions, a detailed assessment of this feature was not possible, and a general assessment was completed from the bridge over the watercourse along the OBR.

Both the upstream and downstream reaches of this feature were consistent throughout the entirety of the assessed area consisting entirely of flats (100%). The substrate of the flats was estimated to consist of clay (50%), sand (40%), and cobble (10%). The banks were determined to be slightly unstable and vulnerable on the left bank with signs of erosion, and stable and protected on the right bank as they were cobble lined. There was no in-stream cover, and no shade cover with short grasses on both sides and a manicured lawn on the upstream left bank.

Based on bank definition and DFO's drain classification, this feature appeared to be a channelized, permanent feature. No groundwater indicators were observed. Based on aerial imagery, maintenance appears to have occurred at this feature within the past year (Google Earth, 2025).

WC-13 (Headwater feature of Etobicoke Creek)

WC-13 is a Headwater feature of Etobicoke Creek and located along the OBR approximately 250 metres southeast of Old School Road within the jurisdiction of TRCA. The feature flows northeasterly under the OBR through a bridge with a height of 4.0 metres and a width of 3.75 metres. This feature has a warm water thermal regime (MNR, 2025b). Surrounding lands included agriculture and the OBR with potential pollution sources coming from agricultural runoff and the abandoned railway. Water temperature at the time of the assessment was 7°C.

The assessed upstream reach consisted entirely of flats (100%). The average wetted depth was 0.15 metres and the average wetted width was 1.25 metres. The average bankfull depth was 0.25 metres and the average bankfull width was 1.8 metres. The substrate of the flats consisted of clay (90%), detritus (5%), and silt (5%). Both banks were slightly unstable and vulnerable. In-stream cover totaled 15% and consisted of vascular

macrophytes (70%) and organic debris (30%). The overhanging cover was high (60 to 89%) consisting of tree cover. The submergent vegetation totaled 15% and consisted of watercress.

The assessed downstream reach consisted of flats (100%). The average wetted depth was 0.15, and the average wetted width was 1.4 metres. The average bankfull depth was 0.2 metres and the average bankfull width was 1.85 metres. The substrate of the flats consisted of clay (85%), silt (10%), and detritus (5%). Both banks were determined to be slightly unstable and vulnerable at the downstream site. The in-stream cover totaled 15% consisting of vascular macrophytes (85%) and organic debris (15%). The overhanging cover was low (1 to 29%) provided by some tree cover. The submergent vegetation totaled 15% consisting of watercress.

Based on channel morphology, substrates, defined banks, and small-bodied fish observed during field investigations, this feature provides permanent, direct fish habitat. No migratory obstructions were observed; however, evidence of machinery driving though the downstream reach could cause deterioration of the feature. In addition, the right wingwall on the downstream side of the bridge had broken off into the feature causing some back watering under the bridge.

WC-33 (Headwater feature of Etobicoke Creek)

WC-33 is a Headwater feature of Etobicoke Creek located 50 metres northeast of the intersection of Old School Road and the OBR within the jurisdiction of TRCA. The feature flows northeasterly through a CSP culvert with a diameter of 1.35 metres and has a warm water thermal regime (MNR, 2025b). Surrounding lands included roadways and agriculture with potential pollution sources from road and agricultural runoff.

The assessed upstream reach consisted of flats (100%). The average wetted depth of the flats was 0.15 metres and the average wetted width was 1.0 metres and equal to bankfull. The substrate of the flats consisted of cobble (100%). Both banks at the upstream site were determined to be stable and protected by cobble with no in-stream cover or overhanging vegetation.

No water was present at the downstream reach, although water was present within the culvert; however, beyond the ROW, more water and likely a continuation of the feature was observed. Roadside drainage appeared to flow into this feature as well.

Based on channel morphology and its connection to a fish-bearing waterbody, this feature appeared to be an intermittent with upstream channelization, likely providing fish habitat, at least seasonally. The culvert appeared to be slightly perched downstream with scouring under the culvert observed upstream. This, in addition to seasonal low flow, could result in a potential migratory impediment for fish migration. No groundwater indicators were observed.

WC-34 (Headwater feature of Etobicoke Creek)

WC-34 is a Headwater feature of Etobicoke Creek located approximately 400 metres northeast of the intersection of Old School Road and the OBR within the jurisdiction of TRCA. Due to limited PTE, the assessment of WC-34 occurred from Old School Road. The feature flows easterly through a box culvert under Old School Road. Surrounding lands included woodland, roadways, and agriculture with potential pollution sources from road and agricultural runoff.

The upstream reach flowed from a dense wooded area and took a sharp turn at the road embankment before entering the box culvert. Substrates consisted of cobble, gravel, silt, and some boulders with a large pool and undercut bank located at the culvert inlet. The downstream reach was relatively straight with gravel substrates. Riparian vegetation of woody vegetation was high. High flows were evident both upstream and downstream with downed vegetation on the banks.

Based on channel morphology, substrates, and defined banks observed during field investigations, and its direct connection to a fish-bearing waterbody (Etobicoke Creek), this feature provides permanent, direct fish habitat. Evidence of groundwater (i.e., iron staining) was observed in the downstream reach.

WC-35 (Headwater feature of Etobicoke Creek)

WC-35 is a Headwater feature of Etobicoke Creek located approximately 350 metres southwest of the intersection of Old School Road and Hurontario Street within the jurisdiction of TRCA. Due to limited PTE, the assessment of WC-35 occurred from Old School Road. The feature flows southeasterly through a box culvert under Old School Road. Surrounding lands included woodlands, roadways, rural residential, and agriculture with potential pollution sources from road and agricultural runoff, and anthropogenic sources.

The upstream reach flowed from a dense wooded area, with cattails and an agricultural field present upstream to the left of the feature. The right bank was densely vegetated with woody trees and shrubs. The downstream reach was slightly narrower with the wetted width appearing smaller than bankfull width. A large sediment deposit was present at the culvert outlet on the right bank. The feature flowed into a wooded area with a lot of dead and downed trees. A stand of cattails was observed to the right of the channel, extending to the toe of the valley wall. High flows were evident both upstream and downstream with downed vegetation on the banks.

Based on channel morphology, substrates, and defined banks observed during field investigations, and its direct connection to a fish-bearing waterbody (Etobicoke Creek), this feature provides permanent, direct fish habitat. No groundwater indicators were observed.

4.2 Terrestrial Investigations

4.2.1 Methods

In order to acquire up-to-date information on the existing natural heritage terrestrial conditions within the Study Area for the preferred route, field investigations were conducted on April 16, 17 and 23, 2025 by AECOM ecologists. Field investigations were completed to supplement available background information as described in Section 2 and the windshield survey in Section 3. The terrestrial field survey conducted was an ELC survey with plant species lists (as far as possible given the timing of the surveys) and incidental observations of wildlife and wildlife habitat.

AECOM ecologists conducted vegetation community classification and mapping, including documentation of dominant species associations, following the *Ecological Land Classification (ELC) Manual for Southern Ontario* (Lee et al., 1998) to Ecosite or Vegetation Type within the Study Area. Where the 1998 ELC codes were not appropriate updated ELC codes from the Ontario Ministry of Natural Resources were used (Lee *et al.*, 2008).

Data were collected from the roadside, and where vegetation community data could not be determined during field investigations, aerial imagery was used to classify vegetation to the Community Series level in accordance with MNRF's ELC protocol (Lee et al., 1998). Wetland delineations were not completed as the wetland communities in the Study Area of the preferred route did not satisfy the OWES size requirement for evaluation, since all the wetlands identified on site were less than 2 hectares in size.

4.2.2 Results

4.2.2.1 Ecological Land Classification and Plant Inventory

The vegetation communities sampled reflected disturbance as a result of anthropogenic activities. Surveys confirmed that there were no provincially significant vegetation community types identified in the Study Area. A total of 25 vegetation community types were identified along the preferred route. The vegetation communities are described in Table 4-1 and mapped in Appendix E2. Some community types were observed multiple times along the preferred route; for these types, the summary in Table 4-1 is a general description based on observations from several polygons. he 2025 field work indicated that areas without a polygon were classified as agricultural or urban land use, which can be seen in the photographic log provided in Appendix F2.

Table 4-1: ELC Vegetation Table for the Preferred Route

ELC Code	Dominant Species				
	Inclusion	Vegetation or Ecosite Name	Canopy layer	Sub-canopy Layer	Ground Layer
Forest Communities					
FOD3-2	-	■ Dry - Fresh White Birch Deciduous Forest Type	■ The canopy layer within this category was dominated by American Elm (*Ulmus americana*) and Paper Birch (*Betula papyrifera*),	■ Not visible from the collection point.	■ Not visible from the collection point
FOD4-2	-	■ Dry - Fresh White Ash Deciduous Forest Type	■ The canopy layer within this category was dominated by White Ash (*Fraxinus americana*), and White Spruce (*Picea glauca*)	■ The subcanopy was dominated by Grey Dogwood (*Cornus racemosa*).	■ Not visible due to collection time
FOD5	-	■ Fresh Sugar Maple Deciduous Forest Ecosite	■ The canopy layer within this category was dominated by American Beech (*Fagus grandifolia*), Shagbark Hickory (*Carya ovata*) and Sugar Maple (*Acer saccharum*	■ The subcanopy was dominated by American Beech.	■ The ground layer was dominated by Yellow Trout Lily (*Erythronium americanum*).
FOD5-10	-	■ Dry - Fresh Sugar Maple - White Birch - Poplar Deciduous Forest Type	■ The canopy layer within this category was dominated by American Elm, Manitoba Maple (*Acer negundo*) Red Oak (*Quercus rubra*), and Sugar Maple	■ The subcanopy was dominated by Manitoba Maple, and Staghorn Sumac (*Rhus typhina*).	■ The ground layer was dominated by Kentucky Bluegrass (*Poa pratensis*) and Quackgrass (*Elymus repens*)
FOD5-2	-	■ Fresh Sugar Maple - Beech Deciduous Forest Type	■ The canopy layer within this category was dominated by American Beech, Bur Oak (*Quercus macrocarpa*), Red Oak, and Sugar Maple	■ The subcanopy was dominated by American Beech, and European Buckthorn (*Rhamnus cathartica*).	■ The ground layer was dominated by Yellow Trout Lily.
FOD6-5	-	■ Fresh - Moist Sugar Maple - Hardwood Deciduous Forest Type	■ The canopy layer within this category was dominated by Sugar Maple	■ A Subcanopy layer was not observed at the time of the survey.	■ A ground layer was not observed at the time of the survey
FOD7	-	■ Fresh - Moist Lowland Deciduous Forest Ecosite	■ The canopy layer within this category was dominated by Crack Willow (*Salix euxina*), Green Ash (*Fraxinus pennsylvanica*), Manitoba Maple, Paper Birch, Red Oak, and White Willow (*Salix alba)*	■ The subcanopy was dominated by European Buckthorn, Crack Willow, Green Ash, Grey Dogwood, Manitoba Maple, Paper Birch, and Red Oak	■ The ground layer was dominated by Garlic Mustard (*Alliaria petiolata*), Kentucky Bluegrass, and Quackgrass.
FOD7-3	-	■ Fresh - Moist Willow Lowland Deciduous Forest Type	■ The canopy layer within this category was dominated by Crack Willow, Manitoba Maple, and White Willow	■ The subcanopy was dominated by Crack Willow, Manitoba Maple and White Willow	■ The ground layer was dominated by Kentucky Bluegrass and Quackgrass.
FODM11	-	■ Naturalized Deciduous Hedgerow Ecosite	■ The canopy layer within this category was dominated by Austrian Pine (Pinus nigra), Manitoba Maple, Sugar Maple and White Oak (Quercus alba)	■ The subcanopy was dominated by Common Lilac (Syringa vulgaris), Eastern White Cedar (Thuja occidentalis) and European Buckthorn	■ The ground layer was dominated by Garlic Mustard, Kentucky Bluegrass, and Quackgrass.
Cultural Communities					
CUM1	-	■ Mineral Cultural Meadow Ecosite	■ The tree canopy consisted of Crack Willow and Manitoba Maple	■ The subcanopy was dominated by Manitoba Maple, Pussy Willow (*Salix discolor*), Siberian Elm (*Ulmus pumila*) and Trembling Aspen (*Populus tremuloides*).	■ The ground layer was dominated by Kentucky Bluegrass and Quackgrass.
CUM1-1	MAM2	■ Dry-Moist Old Field Meadow Type with Mineral Meadow Marsh inclusion	■ The tree canopy consisted of Manitoba Maple, Silver Maple (*Acer saccharinum*), White Ash, White Elm, and White Spruce	■ The subcanopy was dominated by Common Apple (*Malus pumila*), Common Hawthorn (*Crataegus monogyna*), Common Reed (*Phragmites australis*), Crack Willow, Red Maple (*Acer rubrum*), Red-osier Dogwood (*Cornus sericea*), Staghorn Sumac, and Trembling Aspen	■ The ground layer was dominated by Canada Goldenrod (*Solidago canadensis*), Kentucky Bluegrass, Quackgrass Reed Canary Grass (*Phalaris arundinacea*) and Smooth Brome (*Bromus inermis*)

ELC Code	Dominant Species				
	Inclusion	Vegetation or Ecosite Name	Canopy layer	Sub-canopy Layer	Ground Layer
CUP1	-	■ Deciduous Plantations	■ The tree canopy was dominated by Black Locust (*Robinia pseudoacacia*), Eastern Cottonwood (*Populus deltoides*), Green Ash (*Fraxinus pennsylvanica*), and White Elm	■ The subcanopy was dominated by European Buckthorn, Green Ash, and Silver Maple	■ The ground layer was dominated by Garlic Mustard, Kentucky Bluegrass and Smooth Brome.
CUP2	-	■ Mixed Plantations	■ The canopy layer consisted of Black Walnut (*Juglans nigra*), Eastern Cottonwood, Silver Maple and White Ash	■ The subcanopy was dominated by Staghorn Sumac and White Ash	■ The ground layer was dominated by Common Dandelion (*Taraxacum officinale*) and Quackgrass.
CUP3-2	-	■ White Pine Coniferous Plantation Type	■ The canopy layer was dominated by Balsam Poplar (*Populus balsamifera*) and Eastern White Pine (*Pinus strobus*)	■ The subcanopy was dominated by Common Apple	■ A ground layer was not observed at the time of the survey
CUP3-8	-	■ White Spruce -European Larch Coniferous Plantation Type	■ The canopy layer was dominated by White Spruce	■ A Subcanopy layer was not observed at the time of the survey	■ The ground layer was dominated by Kentucky Bluegrass
CUS1	-	■ Mineral Cultural Savannah Ecosite	■ The canopy layer within this category was dominated by Black Walnut, Eastern Cottonwood, Green Ash (*Fraxinus pennsylvanica*) and Silver Maple.	■ The subcanopy was dominated by Common Apple, European Buckthorn, Red-osier Dogwood (*Cornus sericea*), Silver Maple, Staghorn Sumac, and White Ash.	■ The ground layer was dominated by Kentucky Bluegrass, Smooth Brome, and Quackgrass.
CUT1	-	■ Mineral Cultural Thicket Ecosite	■ The canopy layer within this category was dominated by Crack Willow, and Swamp White Oak (*Quercus bicolor*)	■ The subcanopy was dominated by Crack Willow Grey Dogwood and Red-osier Dogwood	■ The ground layer was dominated by Kentucky Bluegrass and Quackgrass
CUT1-1	-	■ Sumac Cultural Thicket Type	■ The canopy layer within this category was dominated by Black Walnut	■ The subcanopy was dominated by European Buckthorn and Staghorn Sumac.	■ The ground layer was dominated by Kentucky Bluegrass
CUW1	-	■ Mineral Cultural Woodland Ecosite	■ The canopy layer within this category was dominated by American Elm, Black Walnut, and Green Ash.	■ The subcanopy was dominated by European Buckthorn, Manitoba Maple, and White Ash.	■ The ground layer was dominated by Smooth and Common Dandelion
Wetland Communities					
MAM2-10	-	■ Forb Mineral Meadow Marsh Type	■ The canopy layer within this category was dominated by Willow Species (*Salix spp.)*	■ No subcanopy was observed	■ The ground layer was dominated by Quackgrass and Reed Canary Grass.
MAMM1-12	-	■ Common Reed Graminoid Mineral Meadow Marsh Type	■ There was no canopy located in this community.	■ Common Reed	■ No ground layer observed
MAS2-1	-	■ Cattail Mineral Shallow Marsh Type	■ The canopy layer within this category was dominated by Black Walnut, Crack Willow, and White Poplar (*Populus alba*)	■ The subcanopy was dominated by European Buckthorn, Grey Dogwood, and Red-osier Dogwood	■ The ground layer was dominated by Broadleaf Cattail (*Typha latifolia*), Common Tansy (*Tanacetum vulgare*), Kentucky Bluegrass, Reed Canary Grass, and Smooth Brome
SWD1-1	-	■ Swamp White Oak Mineral Deciduous Swamp Type	■ The canopy layer within this category was dominated by Green Ash, Silver Maple and Swamp White Oak,	■ The subcanopy was dominated by Black Ash (*Fraxinus nigra*), Bitternut Hickory (*Carya cordiformis),* European Buckthorn and Green Ash	■ The ground layer was dominated by Yellow Trout Lily and Quackgrass.
SWD2	-	■ Ash Mineral Deciduous Swamp Ecosite	■ The canopy layer within this category was dominated by Green Ash, and Silver Maple.	■ The subcanopy was dominated by Black Ash, Green Ash, and Silver Maple	■ The ground layer was dominated by Kentucky Bluegrass, Sedge species (*Carex sp.*), Virginia Waterleaf (*Hydrophyllum virginianum*), and
SWD4-1	-	■ Willow Mineral Deciduous Swamp Type	■ The canopy layer within this category was dominated by American Basswood (*Tilia americana*), American Elm, Crack Willow, Manitoba Maple, and Silver Maple.	■ The subcanopy was dominated by Crack Willow and Manitoba Maple	■ The ground layer was dominated by Kentucky Bluegrass and Quackgrass.
THD3	-	■ Dry-Fresh Deciduous Hedgerow Thicket	■ The canopy layer within this category was dominated by Green Ash, Manitoba Maple, and White Spruce	■ The subcanopy was dominated by Green Ash, Grey Dogwood, Red-osier Dogwood, Russian Olive (*Elaeagnus angustifolia*), and Staghorn Sumac	■ The ground layer was dominated by Kentucky Bluegrass, Quackgrass, Queen Anne's Lace (*Daucus carota*) and Smooth brome

Plant species found within the vegetation community were recorded from the roadside and are documented in **Appendix G.** A total of 102 plant species were recorded along the preferred route of which 63 were native and 39 were introduced. A total of 20 species were also identified as invasive during the plant surveys. One SAR species, Black Ash, and two provincially rare species, based on the S-rank, Dwarf White Birch (*Betula minor*) and Kentucky Coffee-tree (*Gymnocladus dioicus*), were seen, however, no SOCC plants were identified in the Study Area. All live individuals of the Black Ash had a DBH of less than 8 centimetres, and the larger specimens were not alive and therefore are not protected as per O. Reg. 6/21 9(1)(a), hence no further assessments are anticipated for this species. The one Kentucky Coffee-tree was seen in the CUS1 ELC community to the west of the intersection of Bovaird Drive West and McLaughlin Road North, however, it is well outside its natural range and is not classified as a species at risk under the ESA in Peel Region. Where this species occurs naturally in southwestern Ontario (the County of Elgin, the County of Essex, the County of Lambton, the County of Middlesex, the County of Norfolk, the County of Oxford, and the Municipality of Chatham-Kent) it is considered a SAR species and is classified as Endangered. Throughout the Study Area, the most common invasive species observed were the Common Teasel, European Buckthorn, Garlic Mustard, Manitoba Maple, Reed Canarygrass and Smooth Brome. These invasive plants were found mainly in the cultural vegetation communities such as CUM1-1, and CUT1-1 located in the disturbed areas of the Study Area.

4.2.3 Incidental Wildlife

The incidental wildlife species recorded along the preferred route during field work are shown below in **Table 4-2.** There were 10 species of birds and two species of mammals identified as incidental wildlife observations along the preferred route during field surveys.

Table 4-2: Incidental Wildlife Observations along the Preferred Route

Taxon	Common Name	Scientific Name	S-Rank[1]	COSEWIC Status	SARA Status	ESA Status
Bird	American Robin	*Turdus migratorius*	S5	-	-	-
Bird	American Woodcock	*Scolopax minor*	S4	-	-	-
Bird	Black Capped Chickadee	*Poecile atricapillus*	S5	-	-	-
Bird	Bufflehead	*Bucephala albeola*	S5	-	-	-
Bird	Canada Goose	*Branta canadensis*	S5	-	-	-
Bird	Green Heron	*Butorides virescens*	S4	-	-	-
Bird	Mallard	*Anas platyrhynchos*	S5	-	-	-
Bird	Northern Cardinal	*Cardinalis cardinalis*	S5	-	-	-
Bird	Red-winged Blackbird	*Agelaius phoeniceus*	S5	-	-	-
Bird	Song Sparrow	*Melospiza meolodia*	S5	-	-	-

Taxon	Common Name	Scientific Name	S-Rank[1]	COSEWIC Status	SARA Status	ESA Status
Mammal	American Groundhog	*Marmota monax*	S5	-	-	-
Mammal	Eastern Cottontail	*Sylvilagus floridanus*	S5	-	-	-

Note: 1. **S rank:** The natural heritage provincial ranking system (provincial S-rank) is used by the MNRF Natural Heritage Information Centre (NHIC) to set protection priorities for rare species and natural communities. The following status definitions were taken from NatureServe Explorer's (2015) National and Subnational Conservation Status Definitions available at http://explorer.natureserve.org/nsranks.htm:

S3 – Vulnerable—Vulnerable in the province due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.

S4 – Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors.

S5 – Secure—Common, widespread, and abundant in the nation or state/province.

SNR – Unranked—Province conservation status not yet assessed.

SU – Unrankable—Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.

SNA – Not Applicable —A conservation status rank is not applicable because the species is not a suitable target for conservation activities.

S#S# - Range Rank —A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).

Breeding Status Qualifiers

B – Breeding—Conservation status refers to the breeding population of the species in the province.

N – Nonbreeding—Conservation status refers to the non-breeding population of the species in the province.

4.3 Significant Wildlife Habitat

Using the methods described in **Section 3.1** and additional field data collected from the detailed field investigations, the SWH within 120 metres of the preferred route have been further refined from **Section 3.3**. The following are the candidate and confirmed SWH identified for the preferred route (refer to **Appendix C** for full SWH screening):

Seasonal Concentration Areas

- **Candidate Bat Maternity Colonies** present in FOD3-2 - Dry - Fresh White Birch Deciduous Forest Type, FOD4-2 - Dry - Fresh White Ash Deciduous Forest Type, FOD5 – Dry – Fresh Sugar Maple Deciduous Forest Ecosite, FOD5-10 - Dry - Fresh Sugar Maple - White Birch - Poplar Deciduous Forest Type, FOD5-2 - Dry - Fresh Sugar Maple - Beech Deciduous Forest Type, FOD6-5 - Fresh - Moist Sugar Maple - Hardwood Deciduous Forest Type, FOD7, SWD1-1 - Swamp White Oak Mineral Deciduous Swamp Type, SWD4-1 – Willow Mineral Deciduous Swamp Type
- **Candidate Turtle Wintering Area** present in SWD1-1, SWD2, SWD4-1

Specialized Wildlife Habitat Considered Significant Wildlife Habitat

- **Candidate Amphibian Breeding Habitat (Woodland)** present in FOD6-5, SWD1-1, SWD2, SWD4-1, FOD7
- **Candidate Amphibian Breeding Habitat (Wetland)** present in SWD1-1, SWD2, SWD4-1, MAM2-10, MAMM1-12, MAS2-1

Habitat for Species of Conservation Concern considered Significant Wildlife Habitat

- **Candidate Terrestrial Crayfish Habitat** found in SWD1-1, SWD2, SWD4-1, MAM2-10, MAMM1-12, MAS2-1
- **Candidate habitat for Special Concern and Rare Wildlife Species:** American Bumble Bee, Barn Swallow, Monarch, Yellow-banded Bumble Bee, Snapping Turtle

4.4 Species at Risk Habitat

Using the methods described in **Section 3.4** and additional field data collected from the detailed field investigations, potential SAR occurring within the Study Area of the preferred route have been further refined from **Section 3.4**. The species with a medium or high probability of occurring in the Study Area of the preferred route are listed in **Table** 4-3 (refer to **Appendix D** for the complete SAR habitat screening).

Table 4-3: Species at Risk Identified with Medium Potential to occur or confirmed within the Study Area of the Preferred Route

Species Name	Scientific Name	Medium Probability of Occurrence	Confirmed Occurrence
Black Ash	*Fraxinus nigra*		X
Butternut	*Juglans cinerea*	X	
Eastern Red Bat	*Lasiurus borealis*	X	
Eastern Small-footed Myotis	*Myotis leibii*	X	
Hoary Bat	*Lasiurus cinereus*	X	
Little Brown Myotis	*Myotis lucifugus*	X	
Northern Myotis	*Myotis septentrionalis*	X	
Red-headed Woodpecker	*Melanerpes erythrocephalus*	X	
Redside Dace	*Clinostomus elongatus*		X
Silver-haired Bat	*Lasionycteris noctivagants*	X	
Tri-coloured Bat	*Perimyotis subflavus*	X	

All other potential SAR were determined to have low probability of occurrence within the Study Area due to lack of suitable habitat.

5. Proposed Works

The focus of the Kennedy Road STS Project is to increase the wastewater conveyance capacity in Central Brampton and South-Central Caledon to service key development growth areas. Specifically, the EA planning process will assess and recommend the preferred route for a new large diameter STS with the EA study completion targeted by June 2026.

To provide additional sanitary conveyance capacity for expected future growth, an MCEA study has been initiated to identify the alignment and design concept for a new large diameter STS known as the Kennedy Road STS. This STS will allow wastewater flow to be shifted from the Fletcher Creek STS by intercepting the sewer, including some of its associated sub trunks, and diverting flows to the Etobicoke Creek STS (existing 1,050 millimetres plus a proposed 1,500 millimetres) as part of the East Trunk System. In addition, the Kennedy Road STS will convey sewage from a new proposed STS along Queen Street (east of Kennedy Road to Rutherford Road). The proposed Kennedy Road STS will also provide additional conveyance capacity for future growth in the Town of Caledon, along the Hurontario Street (Highway 10) corridor.

The proposed Kennedy Road STS will follow the preferred route and be primarily constructed via a Micro Tunnel Boring Machine (MTBM) trenchless method (Appendix H). Temporary disturbance of vegetation communities will occur around shaft locations and in areas of open cut to facilitate connection to existing trunk sewers. Open-cut construction is proposed at both the Fletchers Creek STS and Etobicoke Creek STS connection points (Appendix H-2 and H-3).

6. Mitigation Measures and Net Effects Analysis

6.1 Existing Disturbances

This section describes the existing disturbances on the natural environment along the preferred route. It is recognized that many natural areas within Southern Ontario have been affected by historical and ongoing human disturbance. Documentation of existing disturbances within the Study Area is necessary to establish a baseline for assessing potential Project-related impacts and to distinguish between environmental changes associated with the Project and those resulting from past or ongoing activities.

The identification of existing disturbances is not intended to justify or diminish concerns regarding potential Project impacts. Rather, it provides context for evaluating potential environmental effects, developing appropriate mitigation measures, and identifying opportunities to avoid, minimize, and where feasible, improve environmental conditions. Based on AECOM's field investigations, the following existing disturbances were identified within the Study Area:

- Fragmentation of Natural Vegetation and Habitat
  Natural heritage features within the Study Area and surrounding landscape have been fragmented and influenced by clearing for residential and agricultural land uses, as well as for the construction of municipal roads. Despite this fragmentation, the watercourses and delineated vegetation communities within the Study Area can still provide wildlife habitat and a movement corridor through the greater landscape.
- Introduction of Horticultural and Invasive Plants
  The majority of the vegetation communities adjacent to urban areas are subject to the gradual invasion of weedy and horticultural species introduced from residential gardens, vehicle traffic, and natural dispersal.
- Water Contamination from Transportation and Stormwater Infrastructure
  The Study Area consists of residential, agricultural, commercial, and industrial land uses and their associated infrastructure. As such, there are numerous stormwater inputs to Etobicoke Creek, Fletchers Creek, and their tributaries within the Study Area. Road salt, oil and gas, sediment, and other deleterious substances from the roadways, driveways, and parking lots enter watercourses via stormwater drainage, existing watercourse crossings, and agricultural drainage. Such inputs can have an impact on overall water quality, and physical habitat for aquatic species.

- Noise Impacts
  Moderate traffic noise levels are evident throughout the Study Area. This noise may cause a reduction in species abundance or richness of birds and other wildlife inhabiting natural areas within or in the vicinity of the Study Area. Noise from land use activities including roads and agricultural activities (e.g., tractors and farming machinery) can have a long-term effect on wildlife species inhabiting existing natural heritage features, likely reducing the number of, or altering the diversity of species such as birds, amphibians, or mammals. Some species may have acclimated to the noises generated by human activities.

6.2 Potential Impacts and Net Effects Assessments

The potential environmental impacts associated with the Project relate primarily to construction activities. Many of the potential impacts are commonly encountered with construction and have associated standard mitigation measures available to reduce or avoid potential impacts. These potential impacts can be prevented or controlled if appropriate measures are implemented. If impacts are not controlled through best management practices and avoidance or mitigation, they may lead to long-term impacts and significant damage to both ecological features and their functions. The tables outline general best practices for reducing construction impacts (Table 6-1) as well as site specific measures needed to manage localized impacts (Table 6-2). The recommendations are presented with a relatively low level of detail with the expectation that the measures will be refined at detailed design.

To address potential impacts of the proposed works, there are three general categories of measures identified in this Report:

- Avoidance – Avoidance involves protecting natural heritage features and functions from direct impacts by keeping the works outside of natural heritage features wherever possible.
- Mitigation – Mitigation involves the implementation of measures designed to eliminate or reduce indirect impacts by scheduling work at appropriate times, using best management practices to reduce risks from construction, incorporating site specific facilities or natural elements into the construction activities that reduce impacts through filtering water, providing physical separation or controlling access.
- Compensation – Compensation involves the replacement of a feature and/or function that may be lost as a result of the construction and long-term presence of the works. It can include restoration of features and functions on site, or in some cases, replication of a function in another location.

The avoidance, mitigation and compensation recommendations are listed in Table 6-1 and Table 6-2 which summarize the potential effects on Natural Heritage Features and Functions, and the anticipated net effects associated with the preferred route. The "*net effects*" of the Project were assessed based on the degree to which the recommended mitigation/ avoidance measures can prevent or minimize the potential environmental effects. In other words, net effects are those that remain after mitigation, avoidance and/or compensation measures have been implemented.

The following criteria were applied during the assignment of net effects from the design and construction of the Project. The potential impacts caused by the proposed work for the Project were considered relative to the significance and sensitivity of the ecological features or their functions.

NO Net Effect ..... indicates that no impact to the identified ecological features or functions is anticipated;

LOW Net Effect..... indicates loss of habitat possessing limited potential habitat value, or loss of a portion of habitat, which will not result in long-term impact to the remaining habitat, or reduction in associated key ecological functions;

MEDIUM Net Effect.... indicates loss of habitat possessing moderate potential habitat value, or loss of a portion of habitat that may result in long term impact to the remaining habitat, or loss of associated key ecological functions; and,

HIGH Net Effect..... Indicates loss of habitat possessing significant potential habitat value, or loss of a portion of habitat that may result in long-term and potentially critical impacts to the remaining habitat, or significant loss of associated key ecological functions.

Table 6-1 discusses the potential impacts that are common to all the Segments. Impacts unique to Segments 2 and 3 are addressed separately and are included in Table 6-2. There are no unique impacts in Segment 1; all potential impacts for Segment 1 are discussed in Table 6-1.

Table 6-1: Potential Impacts, Mitigation and Compensation Measures along the Preferred Route (Segments 1, 2 and 3)

Potential Impact to Natural Environment Features	Effects	Avoidance, Mitigation, and Compensation Measures	Net Effects/ Rationale
Dust Deposition on Surrounding Environment	■ Dust on vegetation adjacent to construction reduces photosynthesis ■ Dust in watercourse could be transported downstream to fish habitat	■ Appropriate application of dust suppressants such as water to reduce or eliminate the generation of dust from construction and earth-moving activities, areas of exposed soils and areas of concrete drilling / cutting to mitigate dust deposition into adjacent natural areas and watercourses. ■ A trained erosion and sediment control (ESC) inspector shall monitor dust suppression measures as needed, at least weekly.	NO NET EFFECT ■ Use of dust suppressants can reduce the risk of dust accumulation in the Natural Heritage Features and associated functions.
Disturbance of Wildlife and Wildlife Habitat – General	■ Displacement, disturbance or harm to wildlife in adjacent natural environment features ■ Accidental injury or mortality to wildlife, including species of conservation concern (SOCC), that may enter the construction work area ■ Disruption of life cycle processes (e.g., nesting, hibernating, etc.) resulting in injury or mortality, or impacts to breeding success (recruitment) ■ Noise, vibration and light from construction activities, may interfere with habitat use (generally expected to be temporary, short in duration and not substantially greater than existing urban impacts)	■ Wildlife observation and handling strategies shall be implemented to ensure that appropriate measures are in place for the identification, handling, translocation and reporting of wildlife, including species at risk (SAR). The strategies listed below follow the Ministry of Natural Resources and Forestry's Ontario Species at Risk Handling Manual: For Endangered Species Act Authorization Holders (MNRF, no date). ■ A wildlife kit shall be present on-site, made readily available, and shall include items listed in the Appendix 3 of the Ministry of Natural Resources and Forestry's Ontario Species at Risk Handling Manual: For Endangered Species Act Authorization Holders (MNRF, no date). ■ Construction personnel shall not approach, feed or harass wildlife; food waste will be properly stored and disposed of; and vehicles will yield to wildlife. ■ If wildlife is encountered, measures will be implemented to avoid destruction, injury, or interference with the species, and/or its habitat. For example, construction activities will cease or be reduced, and wildlife will be encouraged to move off-site and away from the construction area on its own. A qualified Biologist will be contacted if the wildlife does not leave on its own. ■ Restrict construction activities to daytime hours (sunrise to sunset) to the extent possible and outside of breeding season for any bird species identified within the Study Area. ■ If construction activities must occur at night, lighting must be fully shielded, directed down-ward and away from natural areas. Where feasible, warm or red-spectrum lighting should be used instead to minimize impacts on bats (Spoelstra et al., 2017). ■ Install wildlife exclusion fencing around the construction footprint as well as around storage areas and stockpiled gravel or sand (if outside of the construction footprint) prior to April 1 and maintain until the end of construction works to keep turtles and snakes from entering and potentially nesting within the construction zone. Conduct regular inspections of wildlife exclusion fencing and promptly repair any rips, tears, gaps, or installation deficiencies to prevent wildlife from entering the work area. ■ Do not feed wildlife. ■ Do not litter; garbage can attract wildlife to the work area. All garbage shall be thrown out in appropriate waste receptacles.	NO NET EFFECT ■ Installation of exclusion fencing, and implementation of the wildlife observation and handling strategies will minimize or avoid injury/mortality of wildlife.

Potential Impact to Natural Environment Features	Effects	Avoidance, Mitigation, and Compensation Measures	Net Effects/ Rationale
Soil and Water Contamination	■ Soil contamination from spills or leaks (e.g., grease and/or fuel) from equipment could result in groundwater effects ■ Surface water and runoff contamination (water and soil) may impair aquatic habitat ■ The use of machinery and vehicles on site could result in spills or leaks of oil, gasoline and other fluids which could enter the surrounding natural communities. These impacts can be limited and even avoided with proper machinery inspections and maintenance and establishing areas away from natural heritage features dedicated to re-fuelling and storing machinery	■ A Spill Prevention and Contingency Plan will be developed and adhered to. Spills will be immediately contained and cleaned up in accordance with provincial regulatory requirements and the contingency plan. ■ Refuelling stations shall be located within a centralized location on-site and be at least 30 metres away from site drainage features. ■ Re-fuelling stations shall be constructed in a manner to prevent soil and/or surface and groundwater contamination from any leaks or spills and be lined with appropriate material to prevent seepage and fuel discharge. ■ An emergency response kit shall be made available at each re-fuelling station in case of a spill. ■ Train all on-site crew members operating construction vehicles in handling a potential spill and have Workplace Hazardous Materials Information System (WHMIS) training. ■ All chemical transfer/maintenance shall be conducted within the refuelling station areas. ■ Develop an ESC plan to reduce instances of sedimentation entering adjacent vegetation communities. ■ Implement appropriate spill prevention measures and develop spill response plan with containment/cleanup materials readily available. ■ Implement measures (i.e., work platform with tarps) to capture and contain construction debris and waste during construction over or near water. ■ Adhere to the Clean Equipment Protocol for Industry (Halloran et al., 2013).	<u>NO NET EFFECT</u> ■ Proper equipment maintenance and refuelling practices can greatly reduce the risk of leaks and spills. Paired with appropriate emergency spill planning there are no anticipated impacts to Natural Heritage Features.
Introduction or Spread of Invasive Species	■ Vegetation clearing and grubbing or grading and movement of construction equipment may introduce or spread invasive species ■ Displacement of native species ■ Habitat degradation ■ Some invasive species produce harmful compounds that can affect plants, animals and humans	■ Maintain all machinery, construction equipment and vehicles arriving on site in clean condition (e.g., free of fluid leaks, or attached soil potentially containing seeds of plant material from invasive species). Inspect and wash equipment in accordance with the Clean Equipment Protocol for Industry (Halloran et al., 2013) prior to arriving and leaving the construction site. ■ Develop an Invasive Species Control Plan prior to construction. ■ Implement effective ESC plans to control runoff and potential dispersal of seeds or plant parts (propagules).	<u>NO NET EFFECT</u> ■ The Study Area already contains a high number of invasive species. Control measures for invasive species are anticipated to enhance vegetation communities.

6.2.1 Segment 1: Kennedy Road from Etobicoke Creek to Vodden Street, including Queen Street from Rutherford Road to Kennedy Road

For Segment 1, all shaft compounds are within built up urban areas and avoid impacts to sensitive nature heritage features including Species at Risk and their habitats. However, general Best Management Practices should be implemented as documented in Table 6-1.

6.2.2 Segment 2: Vodden Street to Bovaird Drive from Kennedy Road; OBR- Bovaird Drive to Fletcher's Creek

Refer to Table 6-1 for general Best Management Practices applicable to Segment 2 shaft compounds. Table 6-2 identifies impacts and mitigation that are unique to Segment 2.

6.2.3 Segment 3: Orangeville Brampton Railway (OBR) from Bovaird Drive to Old School Road and Old School Road from OBR to Hurontario Street

Refer to Table 6-1 for general Best Management Practices applicable to Segment 3 shaft compounds. Table 6-2 identifies impacts and mitigation that are unique to Segment 3.

Table 6-2: Potential Natural Environment Impacts, Mitigation and Compensation Measures for Segments 2 and 3.

Potential Impact to Natural Environment Features	Proposed Shaft Compound	Potential Effects	Avoidance, Mitigation, and Compensation Measures	Net Effects/ Rationale
Construction Phase				
Loss and disturbance of vegetation communities	Segment 2 ■ V1-SHFT1A ■ OBR1-SHFT1A ■ OBR1-SHFT2B/OBR2-SHFT2A ■ Provisional Shaft B ■ OBR1-SHFT3A ■ B3-SHFT1A	Vegetation Removal ■ Potential removal of 0.34 hectares Dry-Fresh Deciduous Hedgerow Thicket (THDM3), as a result of Micro Tunnel Boring Machine (MTBM) Shaft construction, which is 5% of the THDM3 impacted vegetation communities occurring within the Project Area ■ Potential removal of 0.23 hectares Naturalized Deciduous Hedgerow Ecosite (FODM11) as a result of MTBM Shaft construction. This is 9.4% of the total FODM11 impacted vegetation communities occurring within the Project Area ■ Potential removal of 0.076 hectares Cultural Savannah (CUS) as a result of MTBM Shaft construction. This is 1.9% of the total CUS impacted vegetation communities occurring within the Project Area. ■ Potential removal of 0.19 hectares Deciduous Plantation (CUP1) - as a result of MTBM construction. This is 31% of the total CUP1 impacted vegetation communities occurring within the Project Area. ■ Relatively low percentages of existing habitats will be removed ■ Removal in areas surrounding the shaft construction is limited to disturbed natural areas edge habitats ■ Form and function of the remaining vegetation communities and habitats will not be significantly impaired	■ Limit vegetation removal to the extent possible. Clearly delineate vegetation clearing zones (i.e., using silt or tree protection fencing) on both construction drawings and in the field prior to clearing and grading). ■ Revegetate temporarily disturbed areas using non-invasive, preferably native plantings and/or seed mix appropriate to the site conditions and adjacent vegetation communities. Seed mixes are to be used in conjunction with an appropriate non-invasive cover crop as needed using the following guides as applicable: • Seed Mix Guideline V.2.0 (TRCA, 2022b) • Guideline for Determining Ecosystem Compensation (TRCA, 2023) • Plant Selection Guidelines (CVC, 2018) • Health Soils Guideline (CVC, 2017) ■ Implement appropriate setbacks and erosion and sediment control (ESC) fencing to define the construction footprint area and prevent accidental removal. ■ An assessment of potential dewatering-related impacts associated with tunneling and shaft construction adjacent to wetland communities—particularly the Etobicoke Creek Headwater PSW complex—will be undertaken during detailed design.	<u>NO NET EFFECT</u> ■ Anticipated vegetation removal affects small areas (less that 10%) of already disturbed, low-quality vegetation communities compared to the remaining natural areas. One exception is removal of 31% of Cultural Plantation adjacent to Etobicoke Creek (V1-SHFT1A). ■ No long-term effects are anticipated on the remaining vegetation communities.
	Segment 3 ■ OBR2-SHFT1A ■ OBR2-SHFT2A ■ OBR2-SHFT5A ■ OBR2-SHFT6A	■ Potential removal of 0.24 hectares THDM3, as a result of MTBM Shaft construction. This is 5.1% of the total THDM3 impacted vegetation communities occurring within this segment. ■ Potential removal of 0.15 hectares CUM1-1 as a result of MTBM Shaft construction. This is 2.7 % of the total CUM1-1 impacted vegetation communities occurring within the Project Area ■ Based on the percentage of potential vegetation removal, minimal vegetation loss within vegetation communities in natural environment features is anticipated ■ Vegetation removal will occur in areas surrounding the shaft construction located in disturbed natural areas and limited to edge habitat. This will not affect the form and function of the vegetation communities. The Etobicoke Creek Headwater Provincially Significant Wetland (PSW) Complex will be crossed via trenchless methods using MTBM. No vegetation removal is anticipated in wetland vegetation communities as shafts avoid these sensitive features.		

Potential Impact to Natural Environment Features	Proposed Shaft Compound	Potential Effects	Avoidance, Mitigation, and Compensation Measures	Net Effects/ Rationale
Loss of potential bat species at risk (SAR) habitat	Segment 2 ■ V1-SHFT1A ■ OBR1-SHFT1A ■ OBR1-SHFT2B/OBR2-SHFT2A ■ Provisional Shaft B ■ OBR1-SHFT3A ■ B3-SHFT1A	■ Less than one hectare (7%) of woodland communities (CUS1 - 0.076 hectares, FODM11 - 0.23 hectares and CUP1 -0.19 hectares) considered to be potential bat SAR habitat will be removed for construction of the MTBM shafts ■ No cavity trees were found within the Construction Disturbance Area (CDA) during the field investigations; however, detail leaf-off cavity searches were not completed. ■ Vegetation removal will be limited to edge habitat, as these communities are located along existing roadways/railways and are already subjected to anthropogenic disturbances	■ Limit vegetation removal to the extent possible. Clearly delineate vegetation clearing zones (i.e., using silt or tree protection fencing) on both construction drawings and in the field prior to clearing and grading to prevent accidental damage or intrusion to adjacent vegetation or Ecological Land Classification communities. ■ Schedule tree removal within the CUS1, FODM1, and CUP1 outside of the bat active season (April 1 to November 30), to avoid injury or mortality of bats.	<u>NO NET EFFECT</u> ■ Potential tree removal affects a small area and is limited to disturbed edge habitat. The remaining treed areas within the Study Area will continue to function as foraging and roosting habitat for bat SAR. No cavity trees were identified in the Study Area and therefore there is no anticipated effect to the roosting habitats of the SAR bats. However, restricting tree removal outside of the bat active season will avoid impacts on individual bat SAR.
Loss of candidate Red-headed Woodpecker habitat	Segment 2 ■ V1-SHFT1A ■ OBR1-SHFT1A ■ OBR1-SHFT2B/OBR2-SHFT2A ■ Provisional Shaft B ■ OBR1-SHFT3A ■ B3-SHFT1A	■ Less than one hectare (7%) of woodland communities (CUS1 - 0.076 hectares, FODM11 - 0.23 hectares and CUP1 – 0.19 hectares) will be removed for construction of the MTBM shafts ■ Candidate habitat for the Red-headed Woodpecker is potentially located in CUS1, FODM11 and CUP1, where vegetation removal will occur ■ No nesting cavity trees were identified within the CDA	■ Limit vegetation removal to the extent possible. Clearly delineate vegetation clearing zones (i.e., using silt or tree protection fencing) on both construction drawings and in the field prior to clearing and grading to prevent accidental damage or intrusion to adjacent vegetation or Ecological Land Classification communities ■ Schedule tree removal outside of the breeding bird season (April 1 to August 31), to avoid potential impacts to Red-headed Woodpecker.	NO NET EFFECT ■ Tree removal affects a small area and is limited to already disturbed, low-quality edge habitat within vegetation communities. No long-term effects are anticipated on the remaining vegetation communities. Given the remaining habitats the function and form of potential Red-headed Woodpecker habitat will not be eliminated or impaired.
Damage and disturbance to adjacent natural environment features	Segment 2 ■ V1-SHFT1A ■ OBR1-SHFT1A ■ OBR1-SHFT2B/ OBR2-SHFT2A ■ Provisional Shaft B ■ OBR1-SHFT3A ■ B3-SHFT1A Segment 3 ■ OBR2-SHFT1A ■ OBR2-SHFT2A ■ OBR2-SHFT5A ■ OBR2-SHFT6A ■ OBR2-SHFT10A	■ Incidental intrusion into the adjacent vegetation communities from machinery, equipment, etc. ■ Damage to tree rooting zone immediately adjacent to areas of grading and excavation ■ Soil compaction by machinery in areas adjacent to natural environment features affect trees' ability to absorb nutrients and water ■ Structural damage to adjacent vegetation by operation of heavy machinery (broken tree limbs, etc.)	■ Clearly delineate vegetation clearing zones (i.e., using silt or tree protection fencing) on both construction drawings and in the field prior to clearing and grading to prevent accidental damage to vegetation or intrusion into adjacent vegetation areas. ■ Limit tree removal to the extent possible. ■ Restore temporarily disturbed areas with native plants appropriate to site conditions and affected vegetation community. ■ Root pruning of adjacent trees during grading and excavation. ■ Install tree protection fencing prior to initiation of the work and maintain in place until construction activities conclude, as per the City's tree protection guidelines.	<u>NO NET EFFECT</u> ■ Proper installation of tree protection and sediment erosion fencing and regular monitoring during vegetation removal will prevent incidental damage or intrusion into adjacent vegetation communities.

Potential Impact to Natural Environment Features	Proposed Shaft Compound	Potential Effects	Avoidance, Mitigation, and Compensation Measures	Net Effects/ Rationale
Migratory bird nest and egg destruction	Segment 2 ■ V1-SHFT1A ■ OBR1-SHFT1A ■ OBR1-SHFT2B/ OBR2-SHFT2A ■ Provisional Shaft B ■ OBR1-SHFT3A ■ B3-SHFT1A Segment 3 ■ OBR2-SHFT4A ■ OBR2-SHFT5A ■ OBR2-SHFT6A ■ OBR2-SHFT7 ■ OBR2-SHFT8A ■ OBR2-SHFT9A ■ MTBM-Provisional Shaft A ■ OBR2-SHFT10A ■ OS1-SHFT1A ■ OS1-SHFT2A	■ Disturbance or destruction of migratory bird nests – vegetation communities provide breeding habitat and movement corridors for a variety of wildlife, including SAR, Species of Conservation Concern (SOCC) and/or migratory birds protected under the Migratory Birds Convention Act (MBCA) ■ Vegetation (i.e., trees, shrubs and ground cover) removal has the potential to destroy migratory bird nests and eggs, which are protected under the MBCA, if conducted during the overall bird nesting period of April 1 to August 31	■ Avoid vegetation removal within the active breeding bird season (April 1 – August 31) to avoid disturbing nesting birds and contravening the MBCA. ■ If vegetation disturbance is necessary during the general nesting period, an experienced and qualified Biologist shall complete nest searches no more than 48 hours prior to vegetation removal. An appropriately sized buffer where no construction activities are to occur will be established around an active MBCA-protected nest until the young have fledged and the nest is deemed no longer active by a qualified Biologist. ■ All stockpiled materials of soil, overburden or similar materials are to be maintained at 70 degrees or less by sloping off stockpiles to creak a slot angle that will not support nesting breeding birds during the breeding bird season (April 1 to August 31).	<u>NO NET EFFECT</u> ■ Avoidance of vegetation removal within the breeding bird season and following regulations on bird nests will avoid impacts on MBCA-protected birds.
Disturbance to fish species and their habitat, including SAR habitat	Segment 2 ■ V1-SHFT1A ■ OBR1-SHFT2A / OBR1-SHFT2B ■ Provisional Shaft B ■ OBR1-SHFT3A ■ B3-SHFT1A Segment 3 ■ OBR2-SHFT4A ■ OBR2-SHFT5A ■ OBR2-SHFT6A ■ OBR2-SHFT10A	■ Potential release of sediments or deleterious substances to fish habitat, resulting from spills or equipment leaks ■ Fish mortality ■ Habitat degradation or loss	■ Machinery shall not enter watercourses, even if a channel is dry, and machinery movement in the vicinity of watercourses shall be kept to a minimum. ■ Machinery, construction equipment, and vehicles shall be cleaned at least 30 away from any watercourse, waterbody, and ideally on mud free, gravel covered, hard surface or well-maintained grassy area (e.g., parking lots or manicured lawns). ■ Develop a detailed ESC Plan prior to construction to reduce erosion potential and minimize sediment release to adjacent vegetation communities and watercourses. The following principles shall be incorporated to minimize sedimentation and erosion: • Minimize the duration of soil exposure, • Retain existing vegetation, where feasible, • Encourage re-vegetation, • Divert runoff away from exposed soils, • Keep runoff velocities low, and • Trap sediment as close to the source as possible. ■ Develop a Spills Response Plan prior to construction to avoid/minimize contaminant release to the adjacent natural areas, particularly the watercourses. As part of the Spills Response Plan: ■ Re-fuelling stations shall be located within a centralized location on-site at least 30 metres away from watercourses or wetlands. ■ Re-fuelling stations shall be constructed in a manner to prevent soil, and/or surface and groundwater contamination from any leaks or spills.	<u>NO NET EFFECT</u> ■ Should all mitigation measures be implemented, no direct effects are anticipated

Potential Impact to Natural Environment Features	Proposed Shaft Compound	Potential Effects	Avoidance, Mitigation, and Compensation Measures	Net Effects/ Rationale
			■ An emergency response kit shall be made available at each re-fuelling station in case of a spill. ■ All on-site crew members operating construction vehicles shall be appropriately trained in handling a potential spill and have Workplace Hazardous Materials Information System Training. ■ All chemical transfer/maintenance shall be conducted within the refuelling station areas. ■ Drip pans shall be placed under all equipment (e.g., generators) within 30 metres of a watercourse, drainage feature, or wetland. ■ Where vegetation removals are necessary for construction activities (i.e., at shaft locations and connection points), areas shall be revegetated with native tress, shrubs, and forbs to restore allochthonous inputs to downstream aquatic habitat. Conditions shall match or exceed preconstruction conditions. If plantings are not feasible, riparian seed mix shall be used.	
Emergency in water work could cause a potential disturbance to fish species and their habitat, including SAR habitat	Segment 2 ■ V1-SHFT1A ■ OBR1-SHFT2A / OBR1-SHFT2B ■ Provisional Shaft B ■ OBR1-SHFT3A ■ B3-SHFT1A Segment 3 ■ OBR2-SHFT4A ■ OBR2-SHFT5A ■ OBR2-SHFT6A ■ OBR2-SHFT10A	■ Harmful alteration, disruption, or destruction (HADD) of fish habitat or death of fish	■ Use trenchless methods to avoid in-water works. Where shaft compounds and open cut methods are proposed, appropriate mitigation measures must be in place. ■ Machinery shall not enter watercourses, even if a channel is dry, and machinery movement in the vicinity of watercourses shall be kept to a minimum. ■ Submit a Request for Review (RfR) to Fisheries and Oceans Canada (DFO) if emergency in-water works are required.	<u>NO NET EFFECT</u> ■ With no in-water work proposed and all mitigation measures implemented, the potential for the death of fish or a HADD of fish habitat is reduced and effectively mitigated.
Risk of frac-out (an accidental release of drilling mud) when using trenchless watercourse crossings causing a potential disturbance to fish species and their habitat	Segment 2 ■ V1-SHFT1A ■ OBR1-SHFT2A / OBR1-SHFT2B ■ Provisional Shaft B ■ OBR1-SHFT3A ■ B3-SHFT1A Segment 3 ■ OBR2-SHFT4A ■ OBR2-SHFT5A ■ OBR2-SHFT6A ■ OBR2-SHFT8A ■ OBR2-SHFT9A ■ MTBM-Provisional Shaft A ■ OBR2-SHFT10A ■ OS1-SHFT1A ■ OS1-SHFT2A	■ Release of bentonite and / or fluids into watercourse increasing sediment load to watercourse ■ Emergency work in water or floodplain ■ Fish mortality ■ Habitat degradation or loss	■ Develop a Contingency Plan for Trenchless Failure to identify high-risk operation and corresponding mitigation measures. Contingency measure to be included in the plan are as follows: • A qualified construction inspector shall be present onsite throughout microtunnelling operations to visually assess the working area for signs of ground instability, erosion, sediment migration, or environmental impacts. • The site inspector should visually monitor the watercourse for several days during the crossing works to ensure that bentonite does not enter the watercourse during the tunnelling period. The obvert of the tunnel should be positioned at least 5 metres below the creek bed and within competent ground. • Any indication of ground movement outside acceptable thresholds, or frac-out from MTBM shall trigger an immediate review and potential suspension of tunnelling operations. • All groundwater inflow within shafts must be directed to an on-site settlement tank to remove sediment and suspended solids.	<u>NO NET EFFECT</u> ■ Proper equipment maintenance and inspection can greatly reduce the risk of frac-outs. Paired with appropriate emergency spill planning, there is no expected impact to Natural Heritage Features.

Potential Impact to Natural Environment Features	Proposed Shaft Compound	Potential Effects	Avoidance, Mitigation, and Compensation Measures	Net Effects/ Rationale
			• Sediment and erosion controls (silt fencing, mud mats, berms, geotextile filters) shall be installed and maintained in all working areas, consistent with the contract documents and environmental permits. ■ Excavated material generated from microtunnelling and shaft construction shall be sampled frequently to verify that soil meets MECP waste classification and landfill acceptance criteria.	
Sediment and Erosion	Segment 2 ■ V1-SHFT1A ■ OBR1-SHFT1A ■ OBR1-SHFT2B / OBR2-SHFT2A ■ Provisional Shaft B ■ OBR1-SHFT3A ■ B3-SHFT1A Segment 3 ■ OBR2-SHFT1A ■ OBR2-SHFT2A ■ OBR2-SHFT5A ■ OBR2-SHFT6A ■ OBR2-SHFT10A	■ Soil compaction, and vegetation clearing, grubbing, and grading can result in discharge of sediment laden runoff into nearby watercourses. ■ Direct impact to aquatic species by clogging the gills of fish, covering fry and eggs within the substrate, and by reducing the ability of species to find prey. ■ Impairment of aquatic system by impacting water quality and chemistry as well as nutrient cycles.	■ An ESC plan should be developed prior to construction that includes BMP's, such as those described on DFO's Measures to Protect Fish and Fish Habitat website (DFO 2022), and installation of ESC measures such as silt fencing prior to construction activities. ■ Use water as a dust control measure to reduce the generation of dust from equipment ■ Restore and re-stabilize disturbed work areas and banks.	<u>NO NET EFFECT</u> ■ With appropriate ESC measures in place and maintained during construction, there are no anticipated impacts.
Temporary loss of riparian vegetation, including aquatic SAR habitat	Segment 2 ■ V1-SHFT1A ■ OBR1-SHFT2A / OBR1-SHFT2B ■ Provisional Shaft B ■ OBR1-SHFT3A ■ B3-SHFT1A Segment 3 ■ OBR2-SHFT4A ■ OBR2-SHFT5A ■ OBR2-SHFT6A ■ OBR2-SHFT10A	■ Soil compaction, and vegetation clearing, grubbing, and grading can result in discharge of sediment laden runoff into nearby watercourses, particularly from the proposed open cut areas at Etobicoke and Fletchers Creeks ■ Changes in riparian vegetation can alter the food sources available for Redside Dace (*Clinostomus elongatus*) in Fletchers Creek ■ Direct impact to aquatic species by clogging the gills of fish, covering fry and eggs within the substrate, and by reducing the ability of species to find prey ■ Impairment of aquatic system by impacting water quality and chemistry as well as nutrient cycles	■ Minimize the area of disturbance. ■ Impacts to Redside Dace Critical Habitat at Fletchers Creek above the two-year high-water mark will require consultation with DFO through submission of an RfR. This consultation will determine the requirement for approval (e.g., Letter of Advice, Fisheries Act Authorization, and/or SARA permit). All mitigation measures set out by DFO in their approval must be adhered to. ■ Where open cut methods are proposed at Etobicoke Creek, appropriate mitigation measures (ESC) must be in place. ■ An ESC plan shall be developed prior to construction that includes BMP's, such as those described on DFO's Measures to Protect Fish and Fish Habitat website (DFO, 2025), and installation of ESC measures such as silt fencing prior to construction activities. ■ Use water as a dust control measure to reduce the generation of dust from equipment. ■ Restore and re-stabilize disturbed work areas and banks as soon as possible.	<u>(-) LOW NET NEGATIVE EFFECT</u> ■ The vegetated area proposed for open-cut construction is highly disturbed. Maintaining the maximum buffer possible from Fletchers Creek, proper installation and monitoring of ESC, and applicable DFO Codes of Practice will minimize risk to SAR habitat. Re-vegetation after construction will be required. Approvals under the *Fisheries Act* will also be required as work is proposed within the Critical Habitat for Redside Dace. ■ Proper installation and monitoring of ESC can reduce the risk of potential impacts at Etobicoke Creek.

Potential Impact to Natural Environment Features	Proposed Shaft Compound	Potential Effects	Avoidance, Mitigation, and Compensation Measures	Net Effects/ Rationale
Operational Phase				
Effects on Water Quality	Segment 2 ■ V1-SHFT1A ■ OBR1-SHFT1A ■ OBR1-SHFT2B / OBR2-SHFT2A ■ Provisional Shaft B ■ OBR1-SHFT3A ■ B3-SHFT1A Segment 3 ■ OBR2-SHFT1A ■ OBR2-SHFT2A ■ OBR2-SHFT5A ■ OBR2-SHFT6A ■ OBR2-SHFT10A	■ Long-term operation of the system may increase the potential for leaks from the sanitary trunk sewer to the watercourses and wetlands, indirectly affecting fish and aquatic habitat, including aquatic SAR.	■ Complete leak testing of sewers after works have finished. ■ Periodic monitoring and maintenance over the life of the system	NO NET EFFECT ■ With regular maintenance and monitoring, the risk of leaks is low. Should a leak occur, it can be quickly managed to prevent any long-term environmental effects.

7. Permits and Approvals

Table 7-1 summarizes permits and approvals anticipated for the proposed Study Area based on the summary of existing conditions captured through background review and site reconnaissance. Applicable permits and approvals should be obtained from the appropriate regulatory agencies prior to any construction.

Table 7-1: Anticipated Permits and Approvals

Level of Government	Legislation	Governing Authority	Applicability to the Project
Federal	Species at Risk Act, 2002 (SARA)	Environment and Climate Change Canada (ECCC)	■ No permit required for terrestrial SAR – Contravention of SARA is not anticipated, provided vegetation removal occurs outside of the SAR breeding bird season (April 1 to August 31).
Federal	Migratory Birds Convention Act, 1994 (MBCA)	ECCC	■ No permit required - Contravention of the MBCA is not anticipated, provided vegetation removal occurs outside of the breeding bird season (April 1 to August 31).
Federal	Fisheries Act, 1985 SARA	Fisheries and Oceans Canada (DFO)	■ No in-water work is proposed, however, impacts to Redside Dace (*Clinostomus elongatus*) Critical Habitat at Fletchers Creek (WC-08 / B3-SHFT1) above the two-year high-water mark will require consultation with DFO through submission of a Request for Review. This consultation will determine the requirement for approval (e.g., Letter of Advice, Fisheries Act Authorization, and/or SARA permit).
Provincial	Endangered Species Act, 2007 (ESA)	Ontario Ministry of the Environment, Conservation and Parks (MECP)	■ Regulated habitat for Redside Dace is located within the boundaries of Fletchers Creek (WC-08) where a connection to an existing sanitary truck sewer connection is proposed (B3-SHFT1). Proposed open-cut construction is expected to be in the regulated habitat of Redside Dace (i.e., vegetated area of the meander belt plus 30 metres). A meander belt analysis has been completed and confirmed the limits of the regulated habitat. Approvals from MECP may be required. ■ No permits required for Bat SAR as contravention of ESA/SCA is not anticipated, provided vegetation removal is minimal and occurs outside of the Bat SAR season (April 1 to November 30).

Level of Government	Legislation	Governing Authority	Applicability to the Project
Provincial	Fish and Wildlife Conservation Act, 1997	Ontario Ministry Natural Resources (MNR)	■ A Licence to collect fish for scientific purposes is not required, as no in-water work is proposed. However, in the event of emergency in-waters, a licence will be required to remove fish from in-water isolation measures.
Provincial	*Planning Act, 1990* and Provincial Planning Statement (PPS; 2024)	Ontario Ministry of Municipal Affairs and Housing	■ No permit required - There are no permits to be obtained under the PPS; however, mitigation measures and best management practices will reduce the likelihood of or minimize effects on identified candidate Species of Conservation Concern.
Provincial	Greenbelt Act, 2005 and Greenbelt Plan, 2017	Ministry of Municipal Affairs and Housing (MMAH)	■ No permits required - There are no permits to be obtained under the Greenbelt Act; however, mitigation measures and best management practices will reduce the likelihood of or minimize effects on identified natural heritage features.
Provincial	Conservation Authorities Act, 1990 Ontario Regulation 41/24	Toronto and Region Conservation Authority (TRCA)	■ A permit is required as the proposed works are within the TRCA Regulated Limits.
Provincial	Conservation Authorities Act, 1990 Ontario Regulation 41/24	Credit Valley Conservation (CVC)	■ A permit is required as the proposed works are within the CVC Regulated Limits.
Municipal	Town of Caledon Official Plan, consolidated 2024	Town of Caledon	■ Permit not required
Municipal	City of Brampton Official Plan, consolidated 2020	City of Brampton	■ Permit not required.
Municipal	Regional Official Plan, consolidated 2022	Peel Region	■ Permit not required

8. Conclusions

This Natural Environment Report (NER) has been prepared to support the Municipal Class Environmental Assessment (MCEA) for the Kennedy Road Sanitary Trunk Sewer (STS) Project, a critical infrastructure initiative under Peel Region's FLOW Central Brampton program. The report documents the identification, evaluation, and mitigation of potential impacts to natural heritage features, species at risk (SAR), and designated environmental areas along the short-listed and preferred route alternatives.

Through a combination of background review, windshield surveys, and targeted field investigations, the study identified a range of natural features within the study area, including:

- PSWs
- Woodlands and riparian corridors
- Candidate SWH
- Confirmed and candidate SAR habitat, including for Redside Dace and Black Ash

The preferred route (Segments 1-3) was selected based on a balanced consideration of environmental, technical, and socio-economic factors. While the route intersects several natural heritage features, the majority of the alignment will be constructed using trenchless methods, minimizing surface disturbance and potential ecological impacts.

Potential impacts to natural features have been assessed and can be effectively mitigated through a combination of avoidance, best management practices, and restoration measures. Where vegetation removal is unavoidable, compensation will be provided in accordance with municipal and conservation authority policies. Regulatory approvals will be obtained from DFO, MECP, and the relevant conservation authorities (TRCA and CVC) prior to construction (outlined in Section 9.2).

9. Next Steps for Detailed Design

As the Kennedy Road STS Project advances into the detailed design phase, the following steps are recommended to ensure that natural heritage features, SAR, and policy requirements are fully addressed.

9.1 Targeted Field Investigations

- Tree Inventory and Preservation Plan: Conduct a full tree inventory along the preferred route to identify trees for preservation, removal, and compensation, in accordance with Brampton and Caledon policies.
- SAR Habitat Surveys:
  - Bat cavity tree surveys (leaf-off) following MNRF protocols. No cavity trees were identified during the field investigations in the CDA; however, detailed leaf-off cavity surveys were not completed and are recommended during detail design.
  - Breeding bird surveys, including targeted Red-headed Woodpecker surveys.
  - Targeted amphibian and turtle habitat assessments, if warranted by site conditions.
  - Incidental wildlife observations, including indirect evidence (e.g., tracks, scat, nests and burrows) of mammals, birds, reptiles, amphibians, fish and invertebrates.
- ELC and plant inventory: Conduct updated ELC surveys and detailed plant inventories during the peak growing season (May to early September) to capture species that may not have been identifiable during the April field investigations completed in support of this MCEA.
- Wetland and ELC Boundary Refinement: Confirm boundaries of unevaluated wetlands and vegetation communities near shaft locations.
- Aquatic habitat investigations: Conduct updated watercourse assessments to verify of existing conditions and potential significant habitat features.
- Identify species that are of bio-cultural importance to Indigenous Nations and Indigenous right holders to inform avoidance, mitigation measures, and restoration planting measures, and to support the protection of hunting, harvesting, and Treaty rights.

9.2 Permitting and Agency Consultation

- DFO: Submit a Request for Review for potential impacts to Redside Dace Critical Habitat.
- MECP: Update SAR screening if any new species are uplisted under the ESA or SCA and confirm authorization requirements for bat SAR under the new SCA once enforced.
- TRCA and CVC: Obtain permits under Ontario Regulation 41/24 for works within regulated areas.
- Municipal Co-ordination: Confirm requirements for vegetation removal and compensation under Brampton and Caledon Official Plans.
- Indigenous Nations and Indigenous Right Holders: Continuation of engagement, involvement and consultation pertaining to natural heritage protection and restoration.

9.3 Environmental Management Plans

- Prepare the following plans for implementation during construction:
  - Erosion and Sediment Control (ESC) Plan
  - Spill Prevention and Response Plan
  - Wildlife Encounter and Handling Protocol
  - Invasive Species Management Plan
  - Tree Protection Plan and Arborist Report
  - Vegetation Restoration and Compensation Plan

9.4 Design Integration

- Avoidance and Minimization: Refine shaft and access locations to avoid high-value natural features where feasible.
- Vegetation Compensation: Develop a planting plan to offset tree and vegetation loss, prioritizing native species and ecological function.
- Monitoring Commitments: Define post-construction monitoring requirements for SAR habitat, vegetation recovery, and ESC effectiveness.

9.5 Documentation and Reporting

- Update the Natural Environment Report to reflect:
  - Results of detailed field work

  - Final design footprint
  - Confirmed mitigation and compensation measures
  - Update species status designations and classifications against the current regulatory framework under the Species Conservation Act, 2025 and associated regulations.
  - Any applicable permitting, registration, assessment, mitigation, or approval requirements should be confirmed to ensure compliance with the legislative requirements in effect at that time.
- Prepare supporting documentation for permit applications and agency submissions.

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Appendix A

A1. Aquatic Windshield Survey Map

A2. Terrestrial Windshield ELC Map

AECOM

Peel Region

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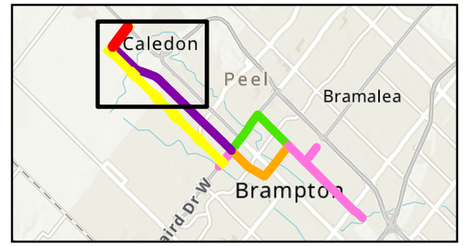
Central Brampton

A1. Aquatic Windshield Survey Map

AECOM

Peel Region





- Watercourse Crossing ID
- Study Area
- Municipal Boundary
- Conservation Authority Boundary
- N1/N2
- N2
- N1

Watercourse Permanency

- N/A
- Intermittent
- Permanent

Thermal Regime

- Cool
- Warm

Flow | Central Brampton

Kennedy Rd - Windshield Survey for the Short-list Route Alternatives – Aquatic Habitat Assessment

0 200 400 600

Meters

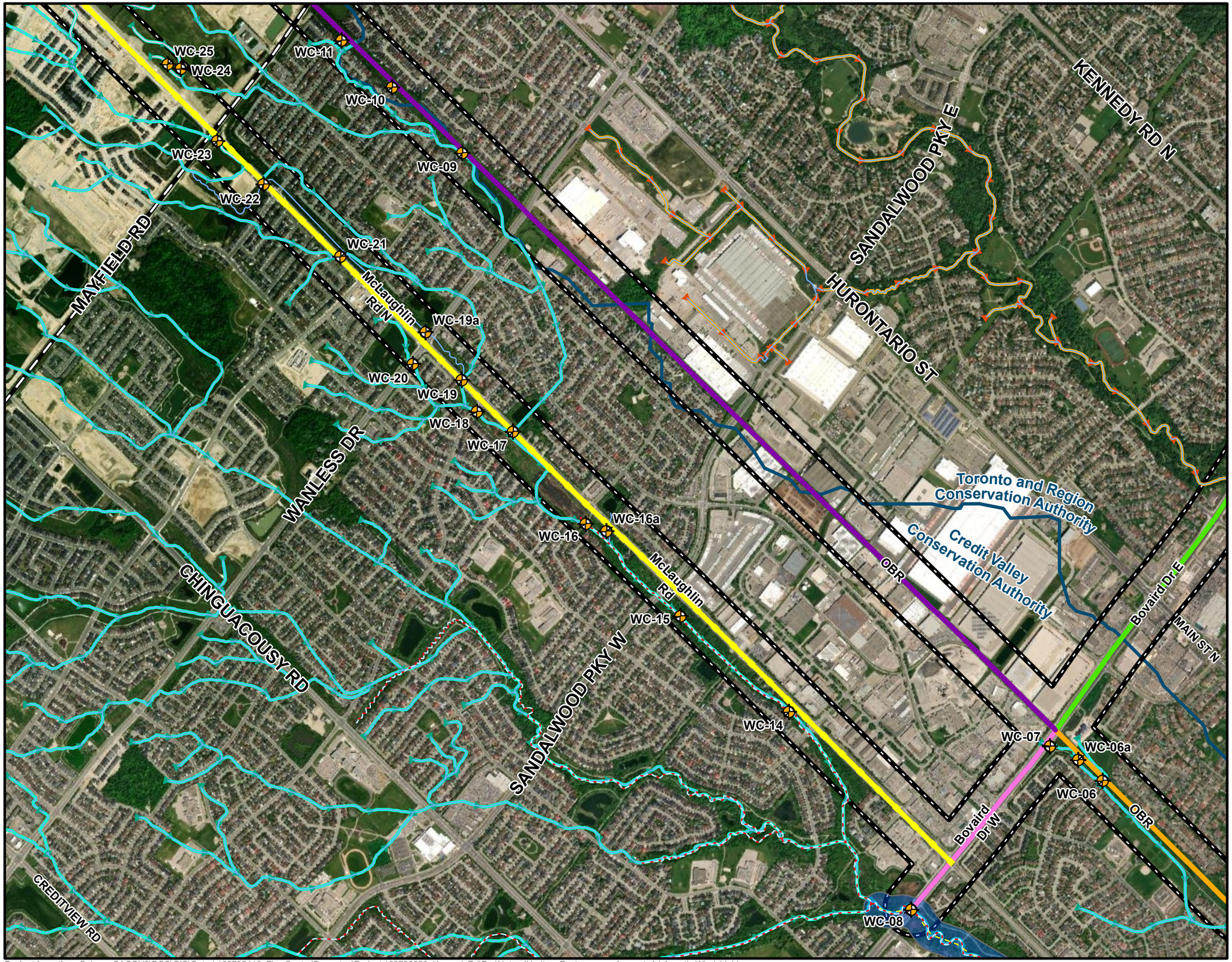
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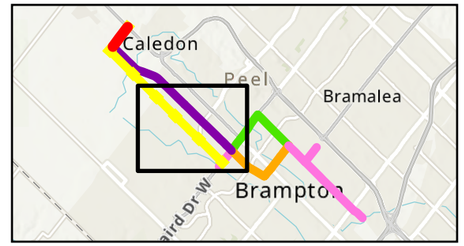
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June 10, 2025	AECOM

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Date Saved: June 10, 2025 **User:** WangS12





- Watercourse Crossing ID
- Study Area
- Municipal Boundary
- Conservation Authority Boundary
- Redside Dace Critical Habitat (DFO, 2025)
- Fletcher's Creek Meander Belt Axis
- Redside Dace Critical Habitat (Meander Belt Width + 30m) (AECOM, 2025)
- N2
- N1
- S1
- S2
- S1/S2

Watercourse Permanency

- N/A
- Intermittent
- Permanent

Thermal Regime

- Cool
- Warm

Flow | Central Brampton

Kennedy Rd - Windshield Survey for the Short-list Route Alternatives – Aquatic Habitat Assessment

0 200 400 600

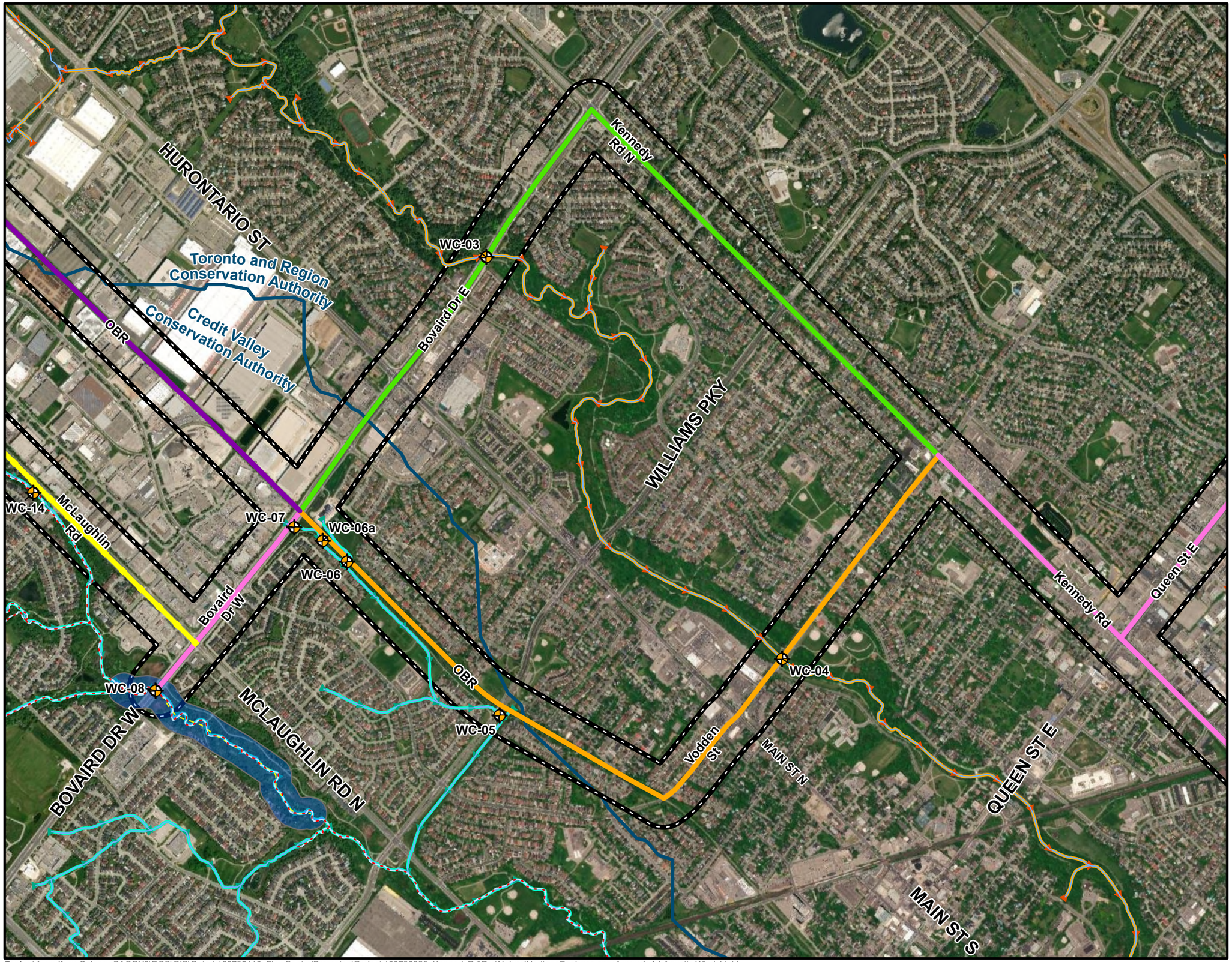
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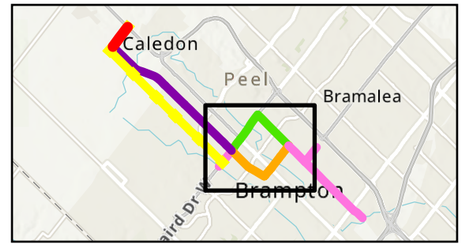
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- Watercourse Crossing ID
- Study Area
- Conservation Authority Boundary
- Redside Dace Critical Habitat (DFO, 2025)
- Fletcher's Creek Meander Belt Axis
- Redside Dace Critical Habitat (Meander Belt Width + 30m) (AECOM, 2025)
- N2
- N1
- S1
- S2
- S1/S2

Watercourse Permanency

- Intermittent
- Permanent

Thermal Regime

- Cool
- Warm

Flow | Central Brampton

Kennedy Rd - Windshield Survey for the Short-list Route Alternatives – Aquatic Habitat Assessment

0 200 400 600

Meters

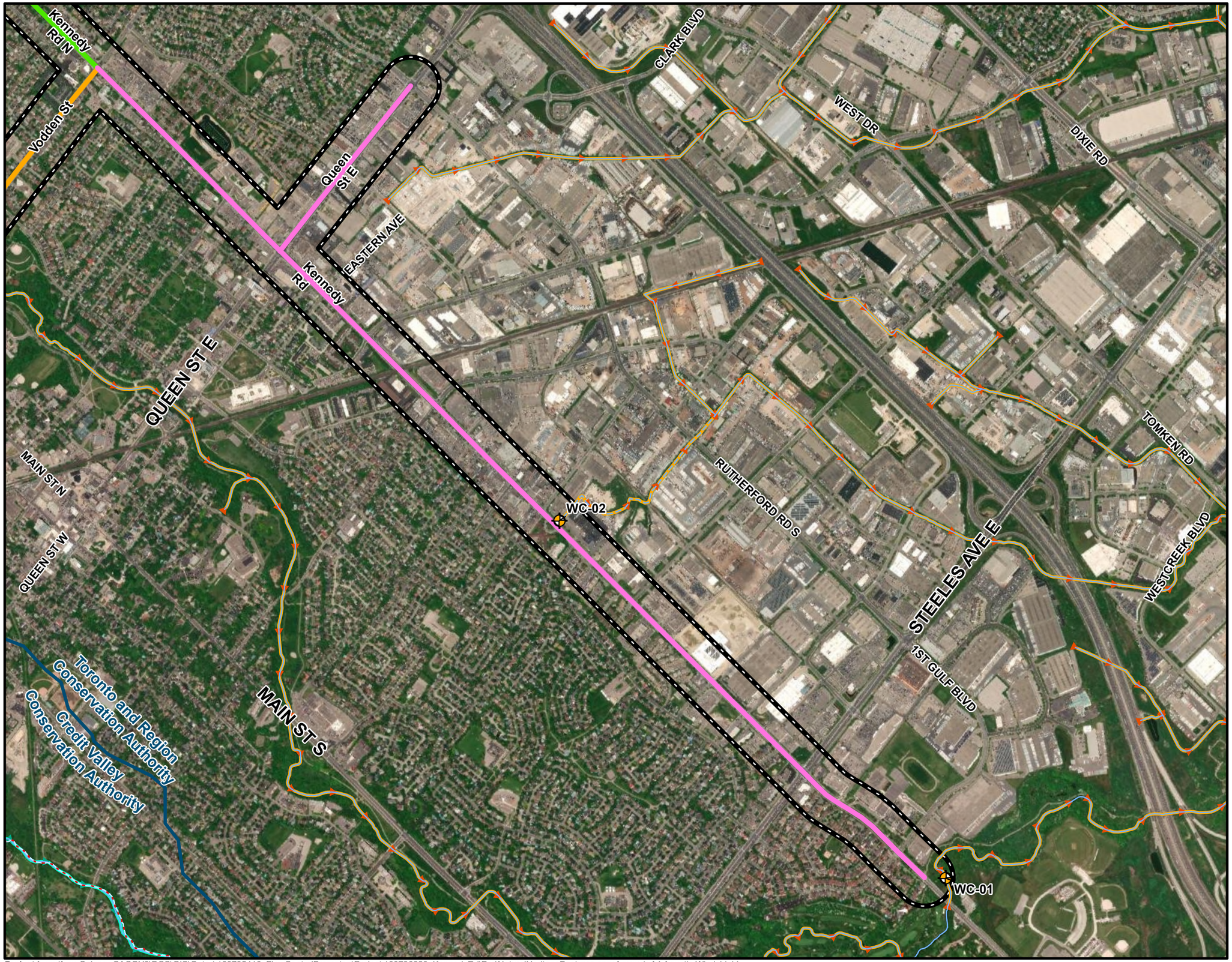
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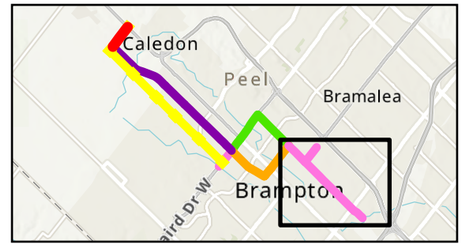
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Date Saved: June 10, 2025 **User:** WangS12





- Watercourse Crossing ID
- Study Area
- Conservation Authority Boundary
- Redside Dace Critical Habitat (DFO, 2025)
- S1
- S2
- S1/S2

Watercourse Permanency

- Intermittent
- Permanent

Thermal Regime

- Cool
- Warm

Flow | Central Brampton

Kennedy Rd - Windshield Survey for the Short-list Route Alternatives – Aquatic Habitat Assessment

0 200 400 600

Meters
Scale: 1:15,000

N

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June 10, 2025	AECOM

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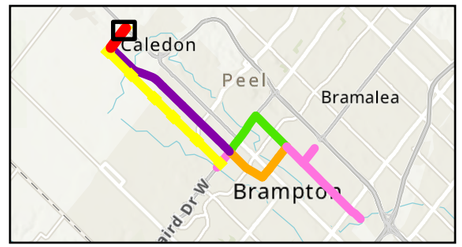
Central Brampton

A2. Terrestrial Windshield ELC Map

AECOM

Peel Region





- Study Area
- ELC - CVCA
- ELC - TRCA
- Watercourse
- N1/N2
- N2

Flow | Central Brampton

Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

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Meters
Scale: 1:3,000

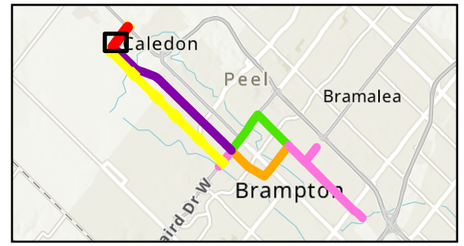
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- Study Area
- ELC - CVCA
- ELC - TRCA
- Watercourse
- N1/N2
- N1
- N2

Flow | Central Brampton

Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

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Meters
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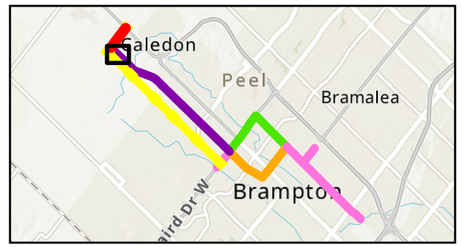
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- Study Area
- ELC - CVCA
- ELC - TRCA
- Watercourse
- N1/N2
- N1
- N2

Flow | Central Brampton

Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

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Meters
Scale: 1:3,000

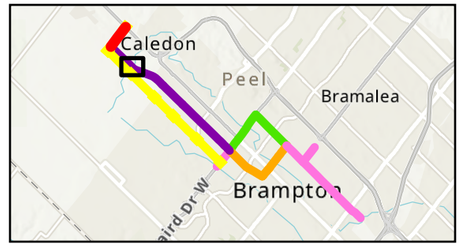
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- Study Area
- ELC - CVCA
- ELC - TRCA
- Watercourse
- N1
- N2

Flow | Central Brampton

Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

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Meters
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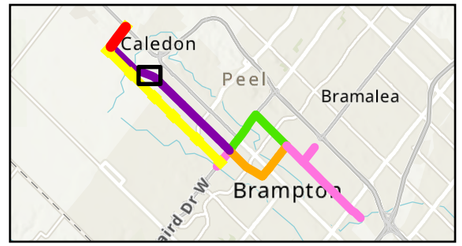
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ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA)

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- Study Area
- ELC - CVCA
- Watercourse
- N1
- N2

Flow | Central Brampton

Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

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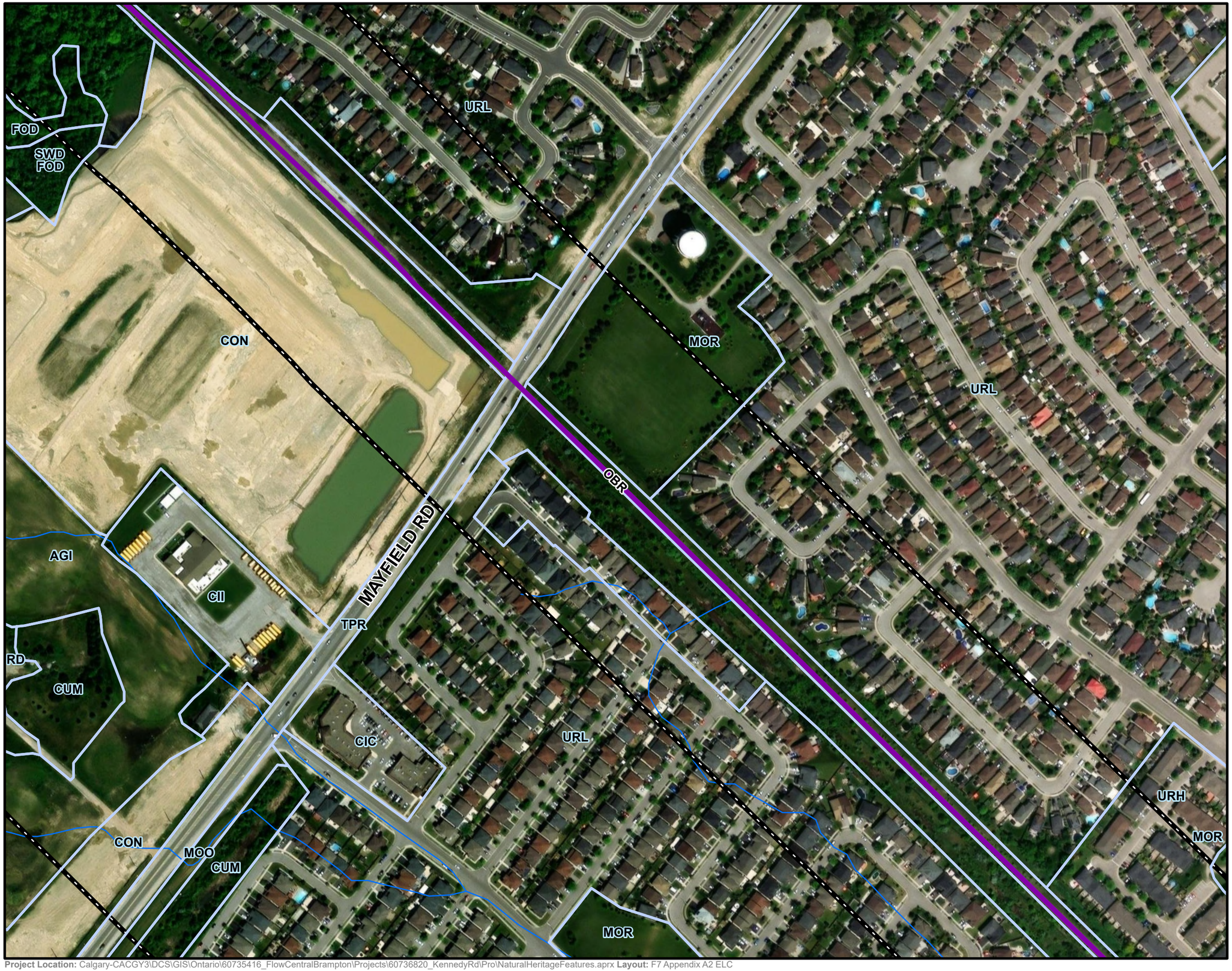
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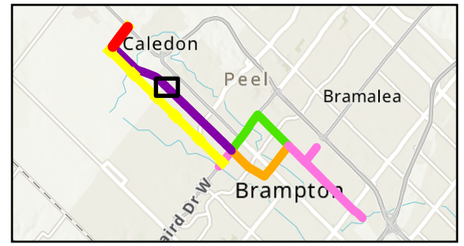
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Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F7 Appendix A2 ELC Windshield





- Study Area
- ELC - CVCA
- Watercourse
- N1

Flow | Central Brampton

Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

0 25 50 75 100 125 150

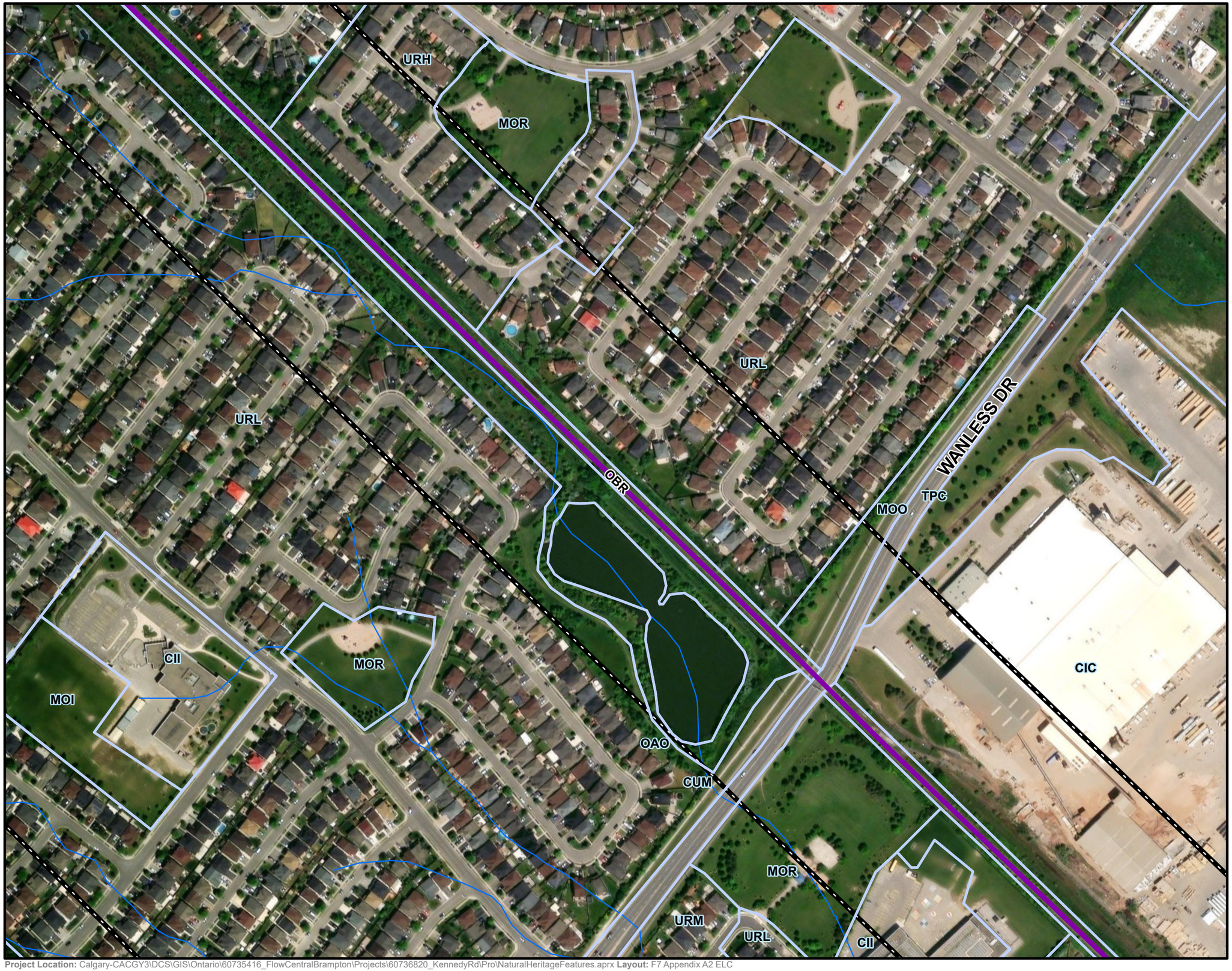
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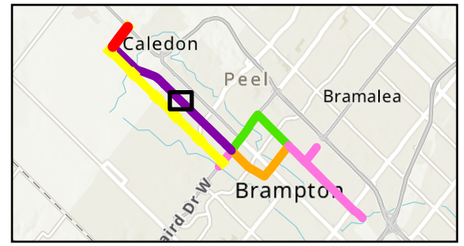
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PN: 60735416	Appendix A2-6
June 10, 2025	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F7 Appendix A2 ELC Windshield





- Study Area
- ELC - CVCA
- Watercourse
- N1

Flow | Central Brampton

Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

0 25 50 75 100 125 150

Meters

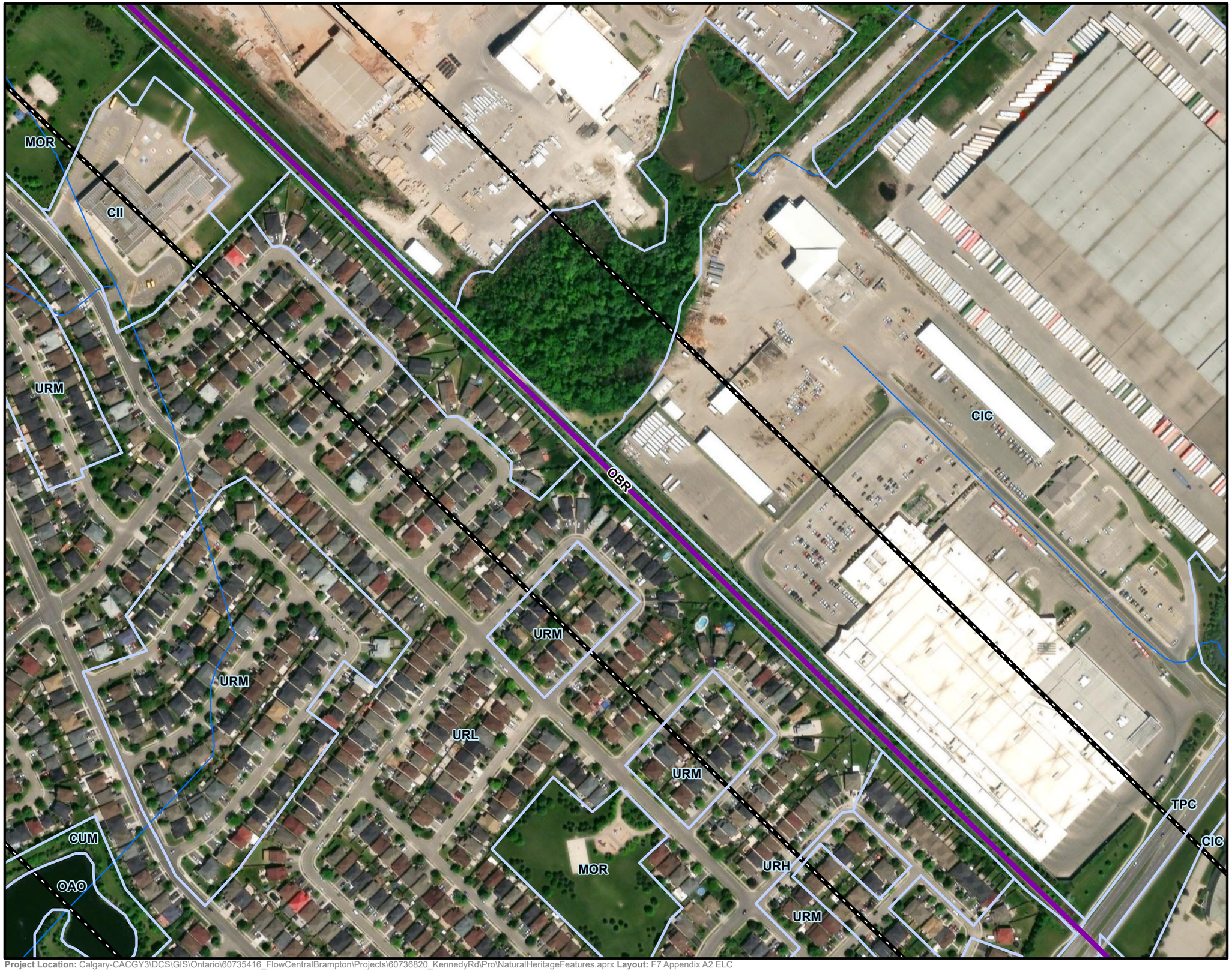
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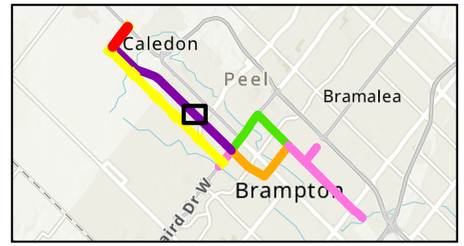
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PN: 60735416	Appendix A2-7
June 10, 2025	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F7 Appendix A2 ELC Windshield





Study Area
ELC - CVCA
Watercourse
N1

Flow | Central Brampton

Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

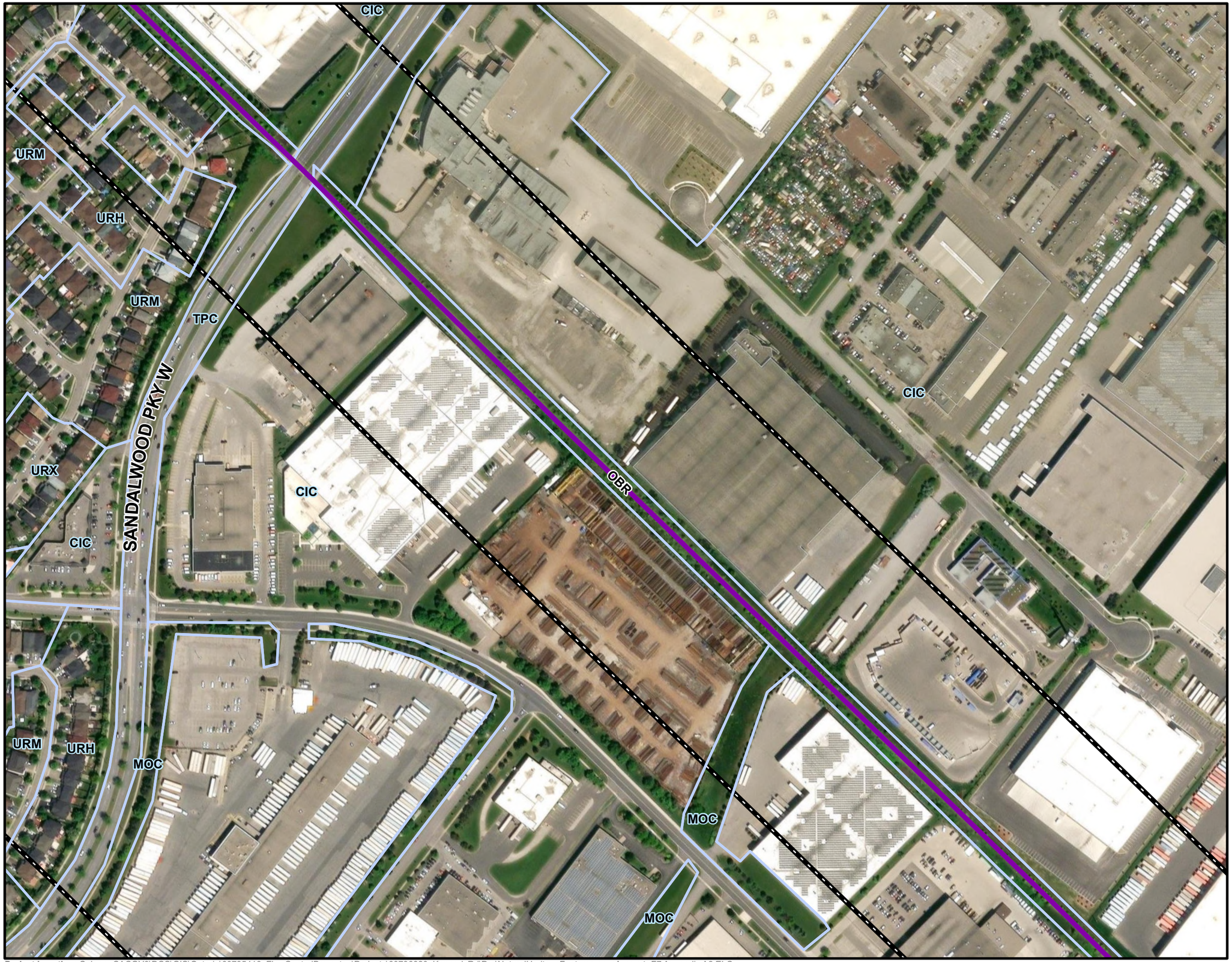
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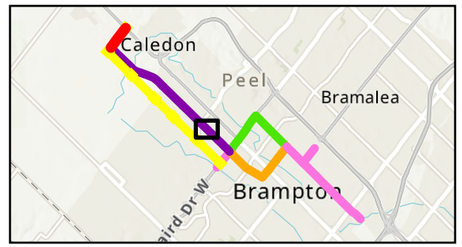
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PN: 60735416	Appendix A2-8
June 10, 2025	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F7 Appendix A2 ELC Windshield





Study Area
ELC - CVCA
N1

Flow | Central Brampton

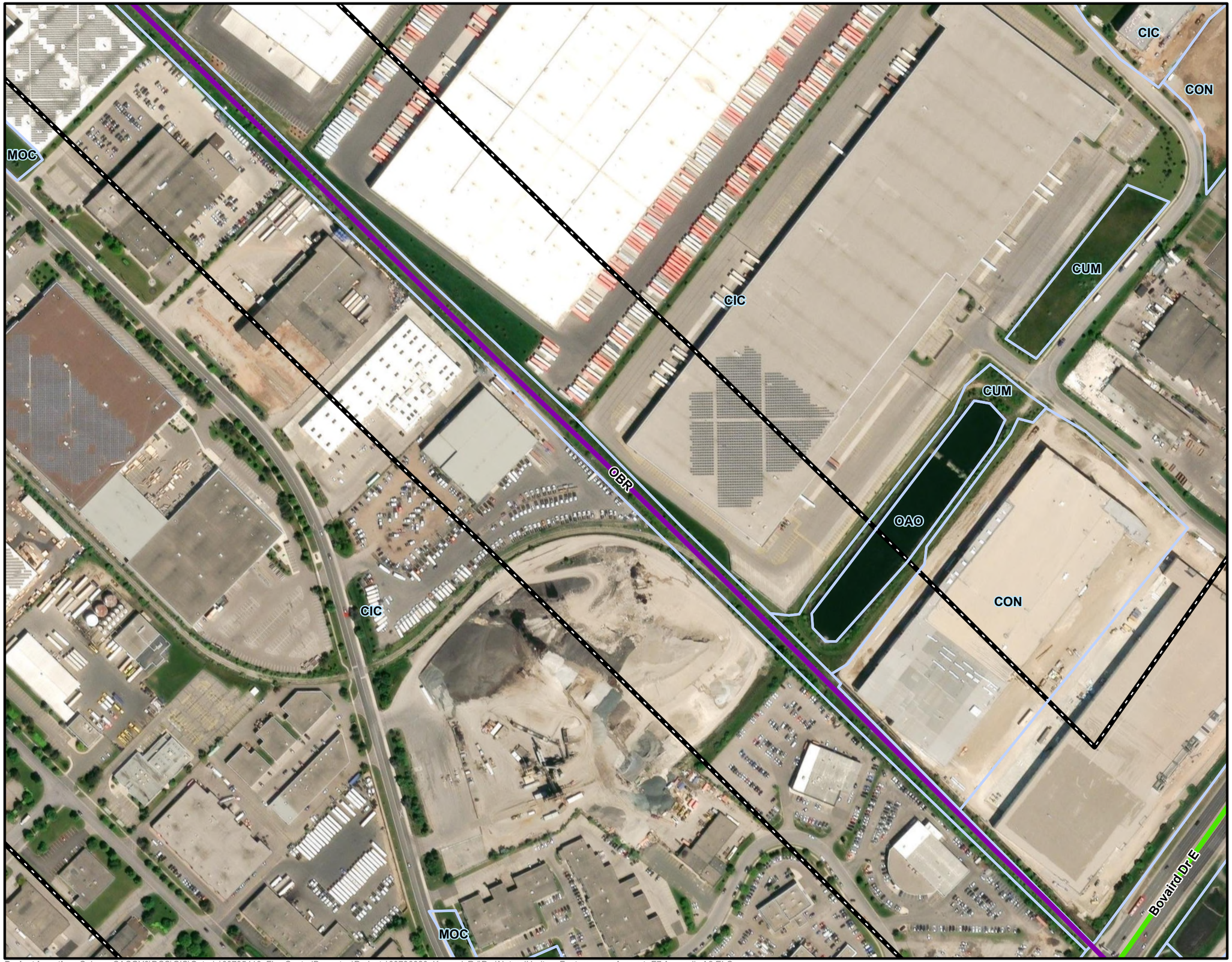
Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

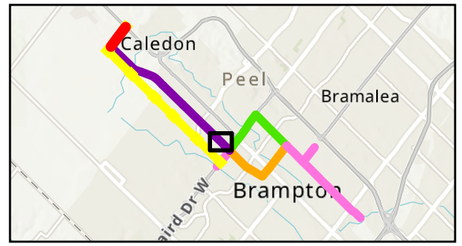
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Scale: 1:3,000
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PN: 60735416	Appendix A2-9
June 10, 2025	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F7 Appendix A2 ELC Windshield





Study Area
ELC - CVCA
N1
S1

Flow | Central Brampton

Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

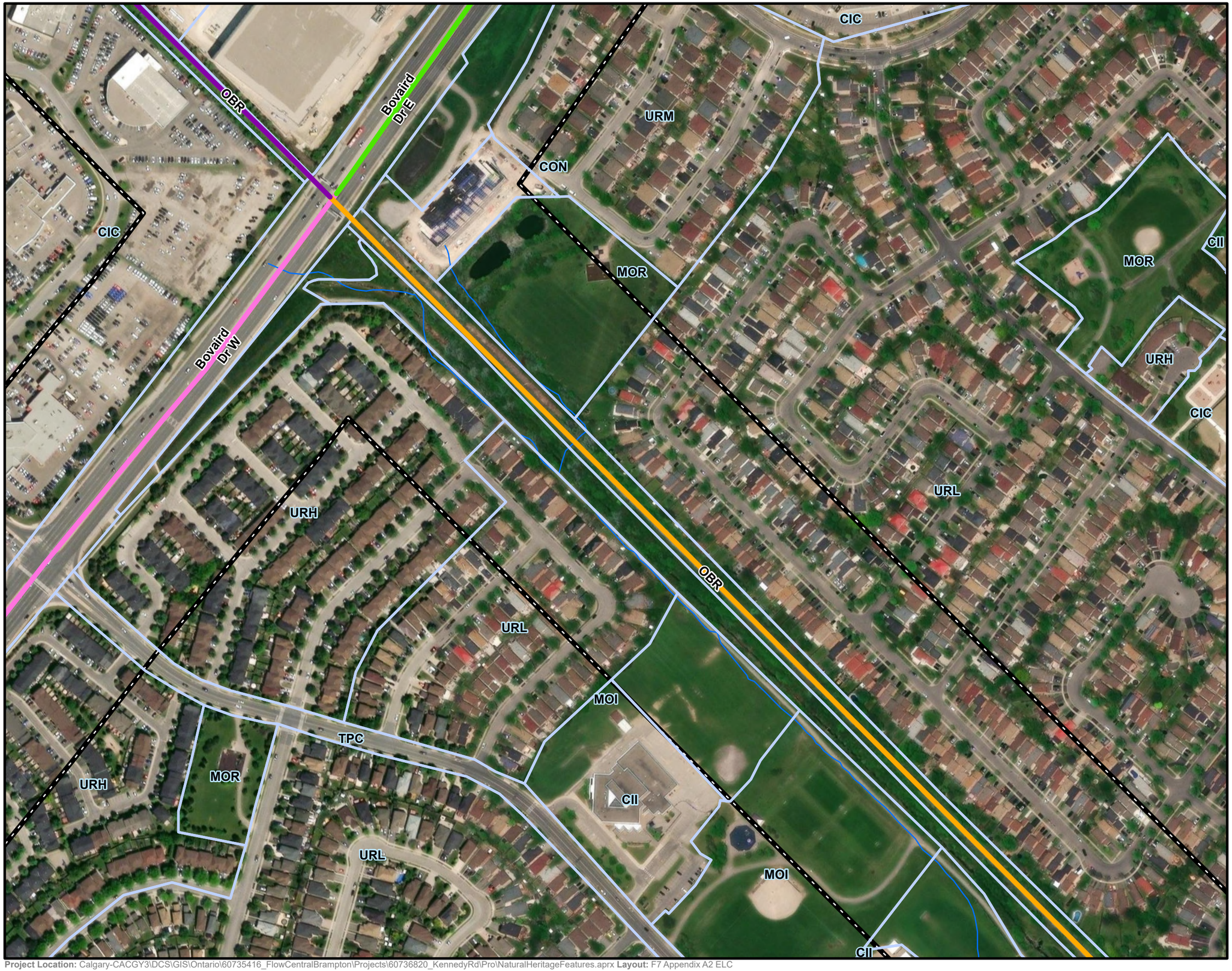
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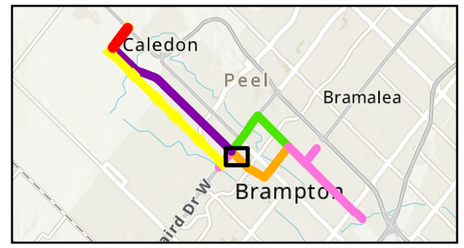
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PN: 60735416	Appendix A2-10
June 10, 2025	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F7 Appendix A2 ELC Windshield





- Study Area
- ELC - CVCA
- Watercourse
- N1
- S1
- S2
- S1/S2

Flow | Central Brampton

Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

0 25 50 75 100 125 150

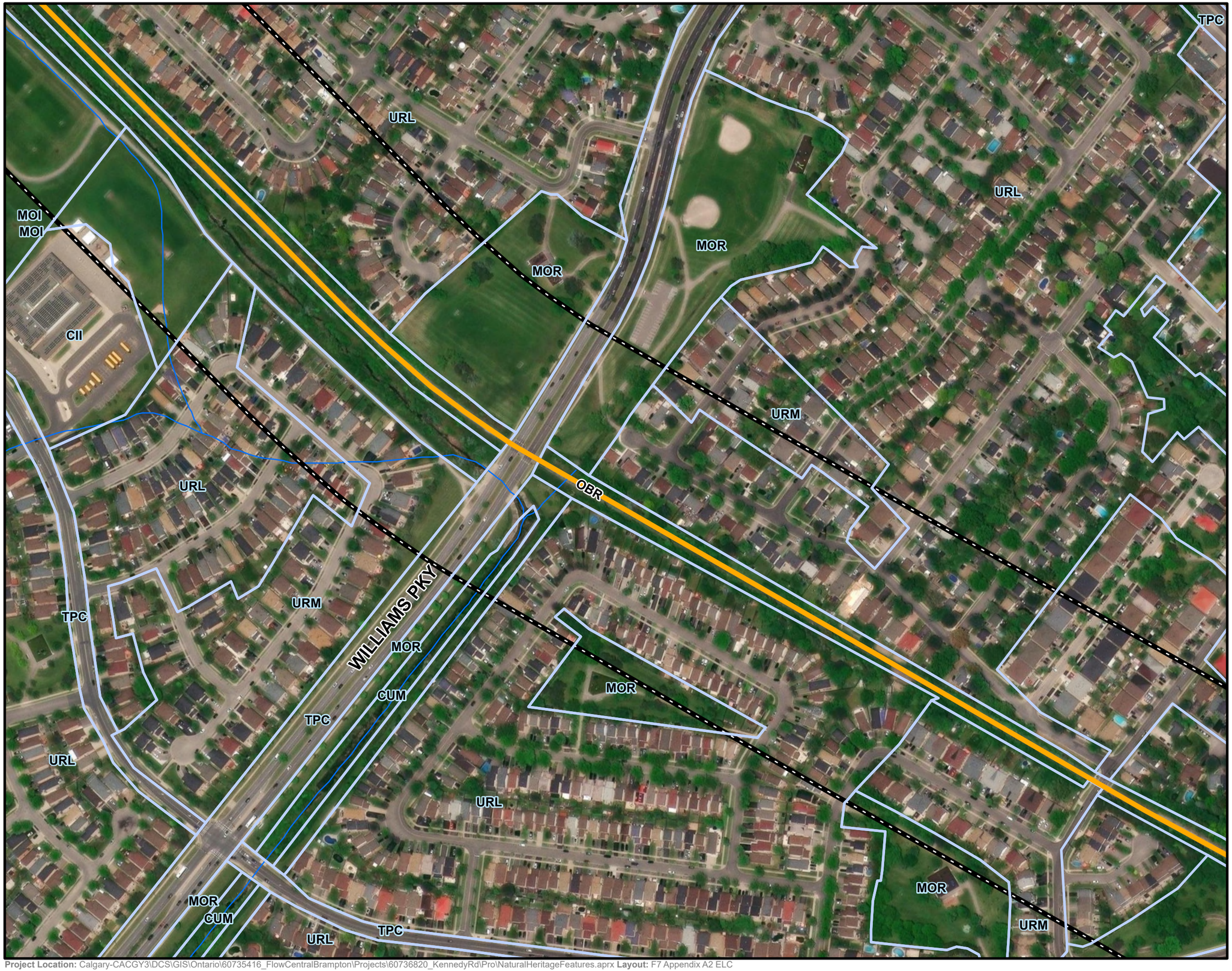
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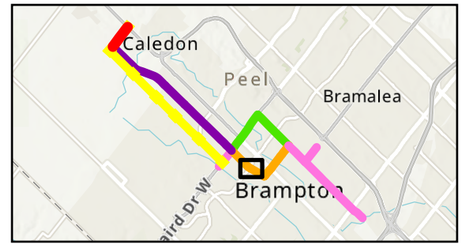
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PN: 60735416	Appendix A2-11
June 10, 2025	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F7 Appendix A2 ELC Windshield





- Study Area
- ELC - CVCA
- Watercourse
- S2

Flow | Central Brampton

Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

0 25 50 75 100 125 150

Meters
Scale: 1:3,000

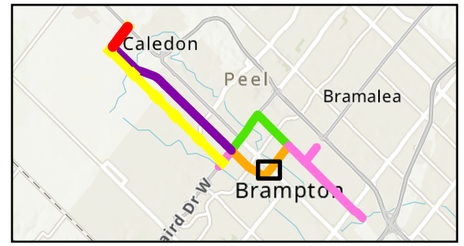
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PN: 60735416	Appendix A2-12
June 10, 2025	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F7 Appendix A2 ELC Windshield





Study Area
ELC - CVCA
ELC - TRCA
Watercourse
S2

Flow | Central Brampton

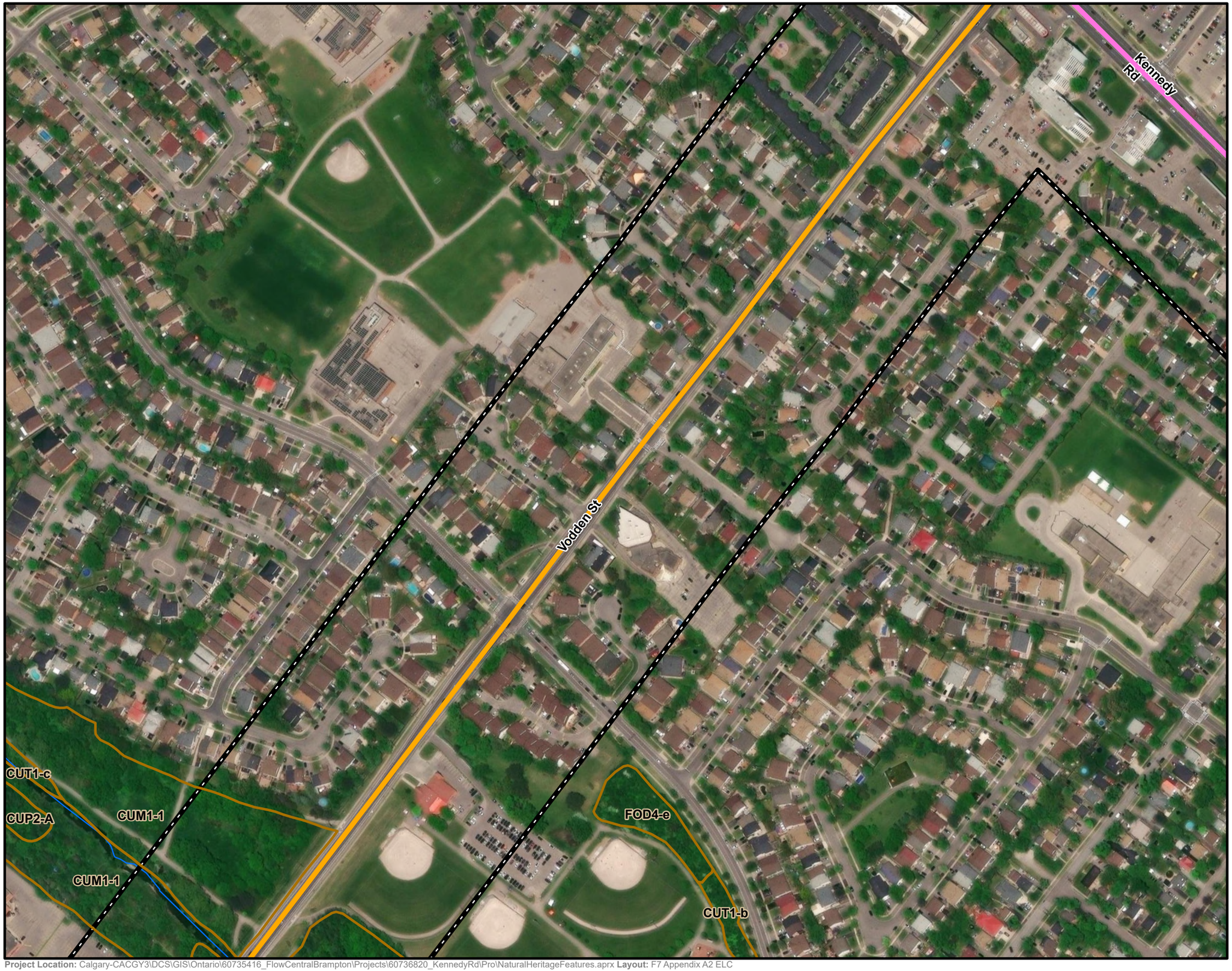
Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

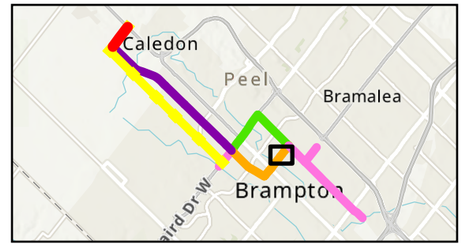
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Meters
Scale: 1:3,000
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PN: 60735416	Appendix A2-13
June 10, 2025	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F7 Appendix A2 ELC Windshield





- Study Area
- ELC - TRCA
- Watercourse
- S2
- S1/S2

Flow | Central Brampton

Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

0 25 50 75 100 125 150

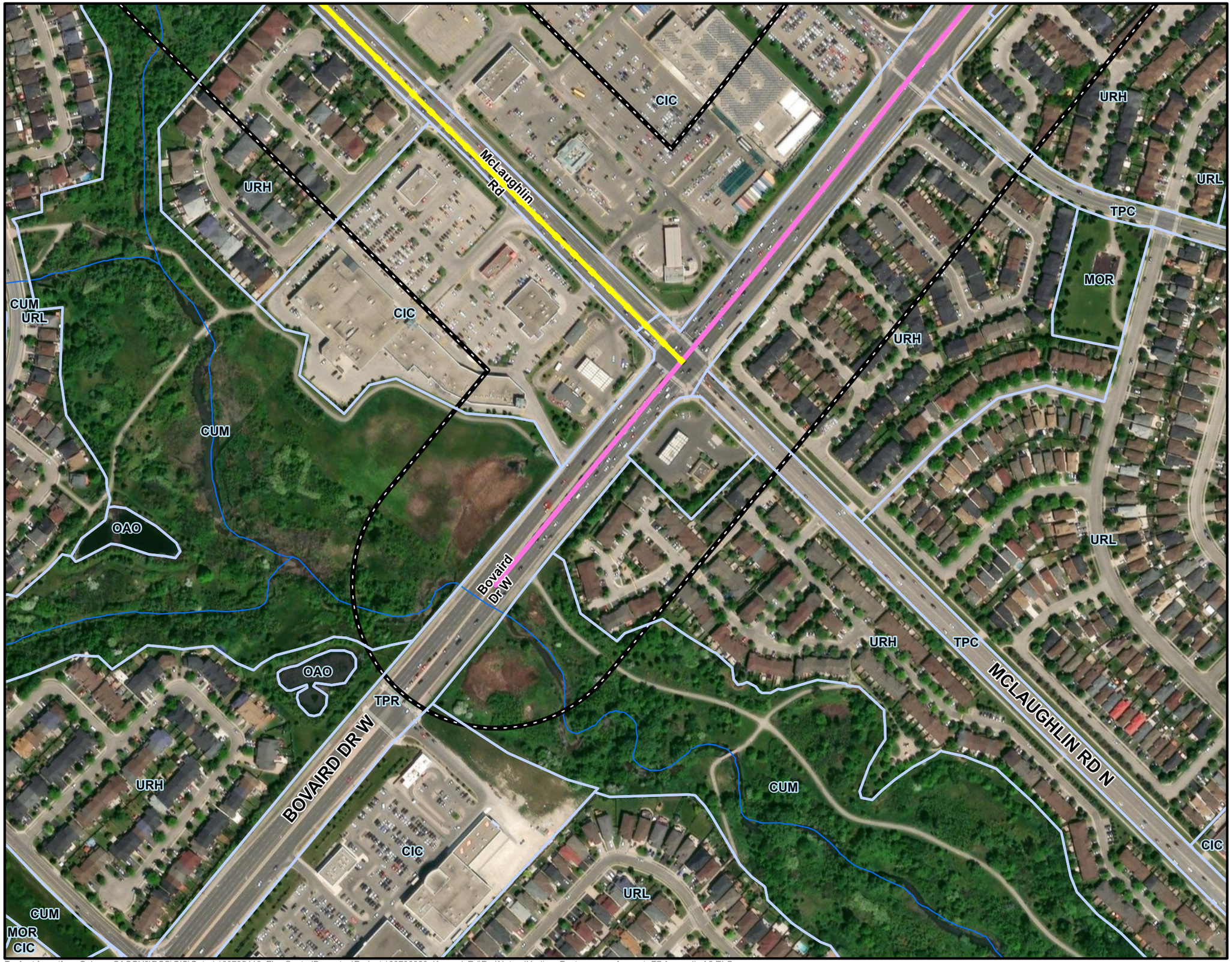
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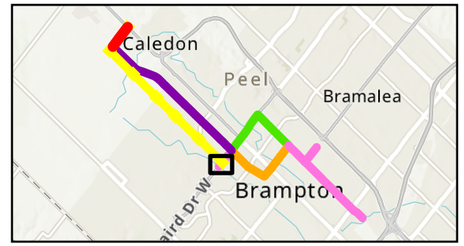
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PN: 60735416	Appendix A2-14
June 10, 2025	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F7 Appendix A2 ELC Windshield





Study Area
ELC - CVCA
Watercourse
N2
S1/S2

Flow | Central Brampton

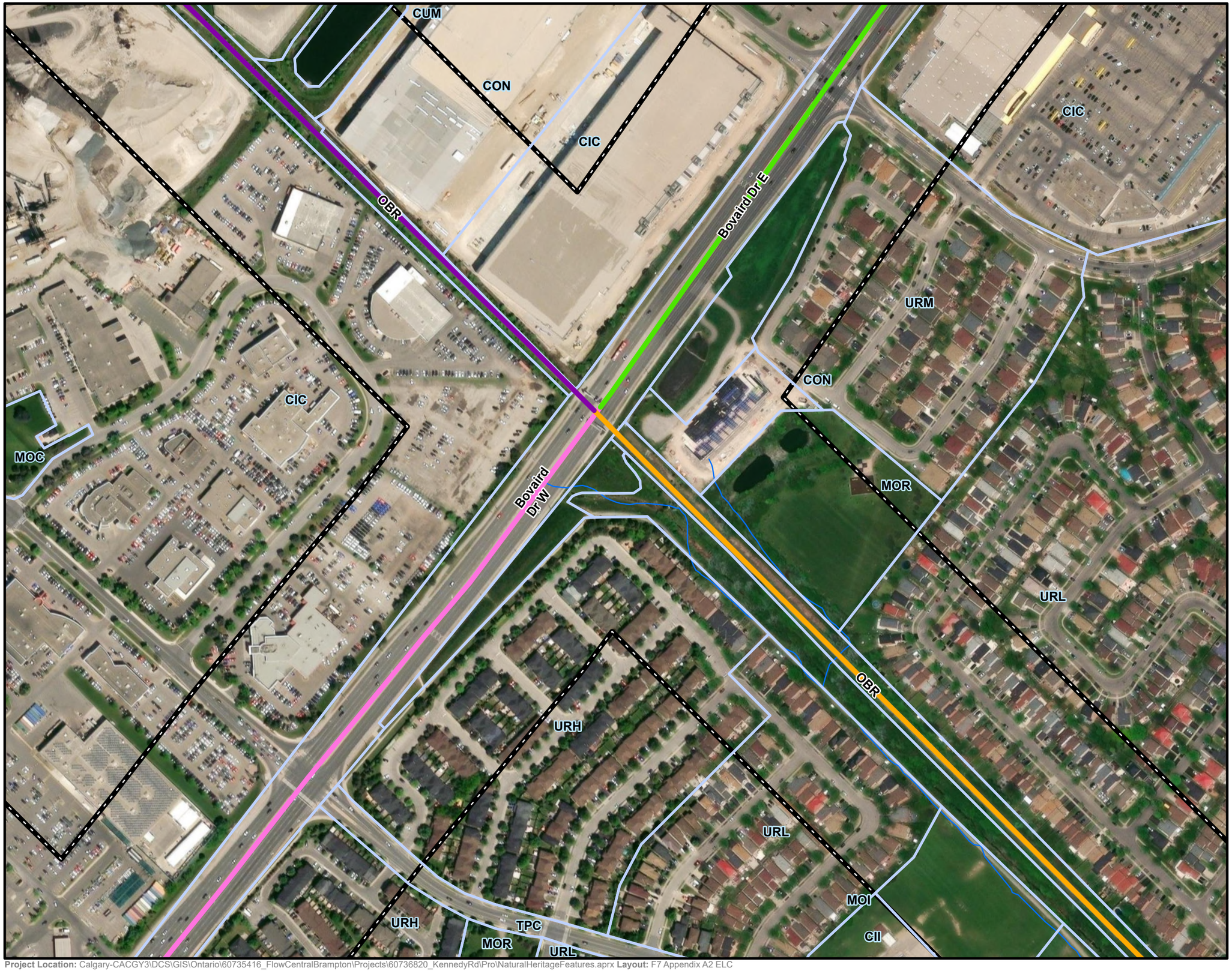
Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

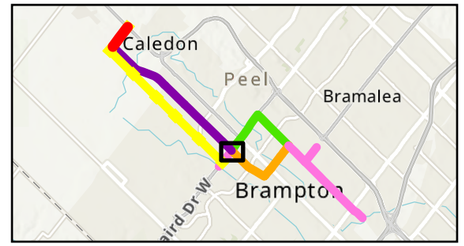
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PN: 60735416	Appendix A2-15
June 10, 2025	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F7 Appendix A2 ELC Windshield





- Study Area
- ELC - CVCA
- Watercourse
- N1
- S1
- S2
- S1/S2

Flow | Central Brampton

Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

0 25 50 75 100 125 150

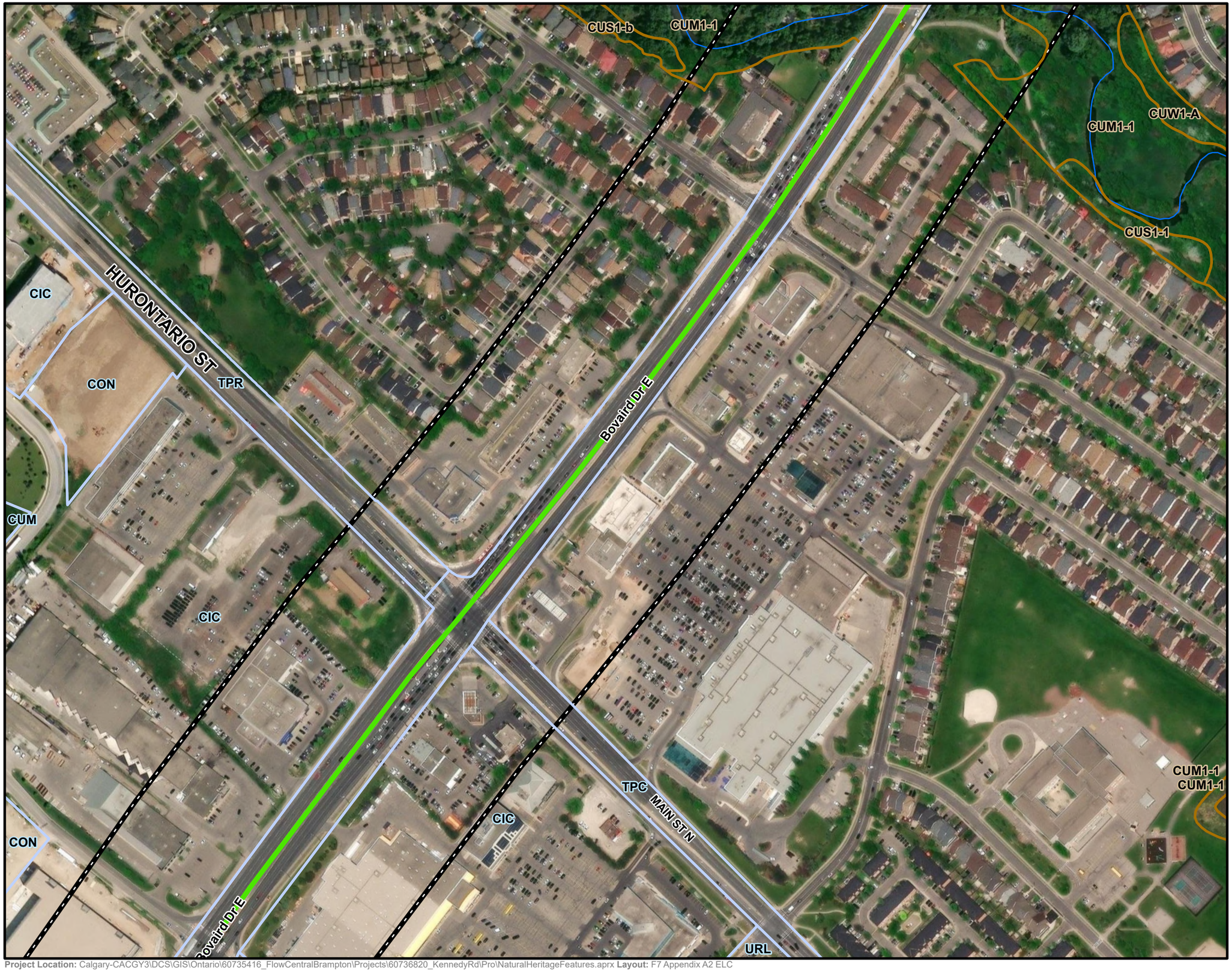
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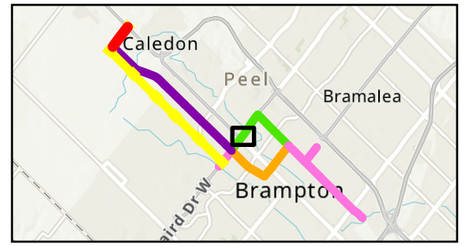
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PN: 60735416	Appendix A2-16
June 10, 2025	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F7 Appendix A2 ELC Windshield





- Study Area
- ELC - CVCA
- ELC - TRCA
- Watercourse
- S1

Flow | Central Brampton

Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

0 25 50 75 100 125 150

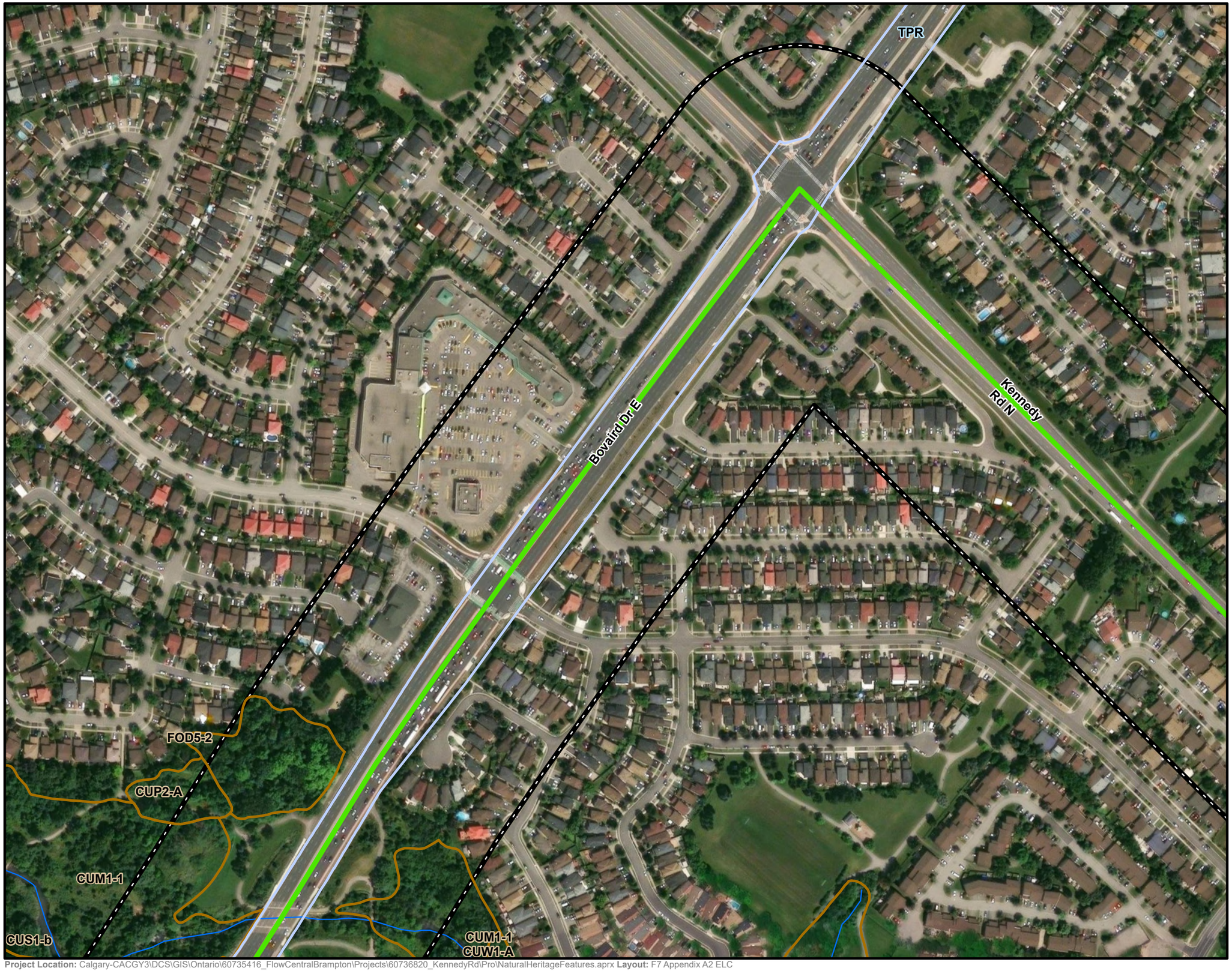
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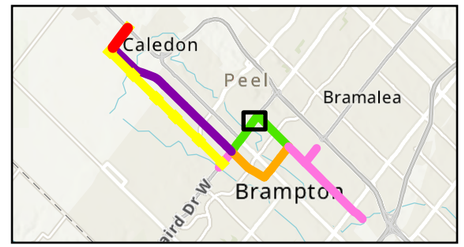
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PN: 60735416	Appendix A2-17
June 10, 2025	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F7 Appendix A2 ELC Windshield





- Study Area
- ELC - CVCA
- ELC - TRCA
- Watercourse
- S1

Flow | Central Brampton

Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

0 25 50 75 100 125 150

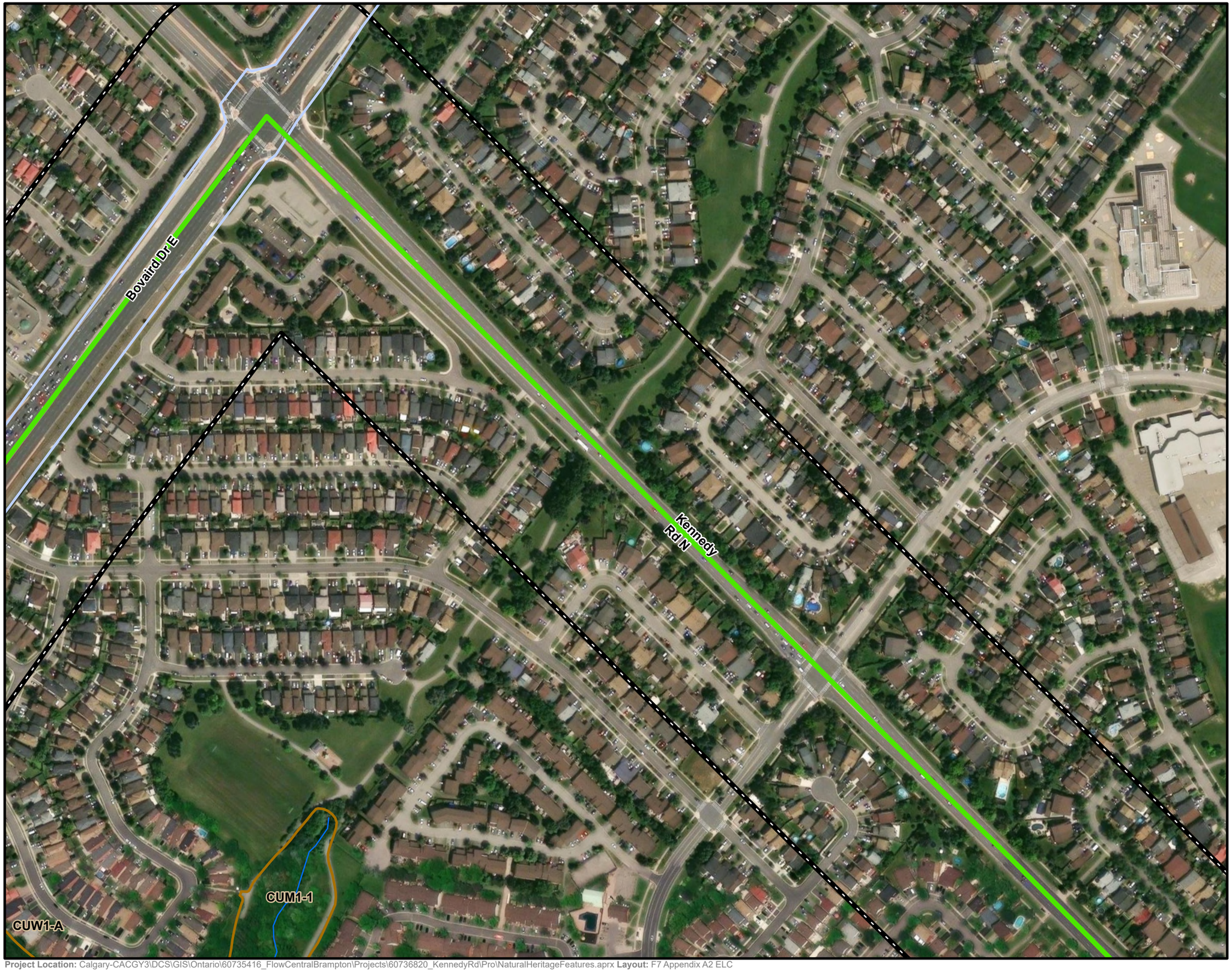
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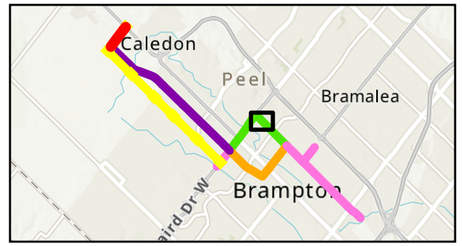
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PN: 60735416	Appendix A2-18
June 10, 2025	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F7 Appendix A2 ELC Windshield





- Study Area
- ELC - CVCA
- ELC - TRCA
- Watercourse
- S1

Flow | Central Brampton

Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

0 25 50 75 100 125 150

Meters

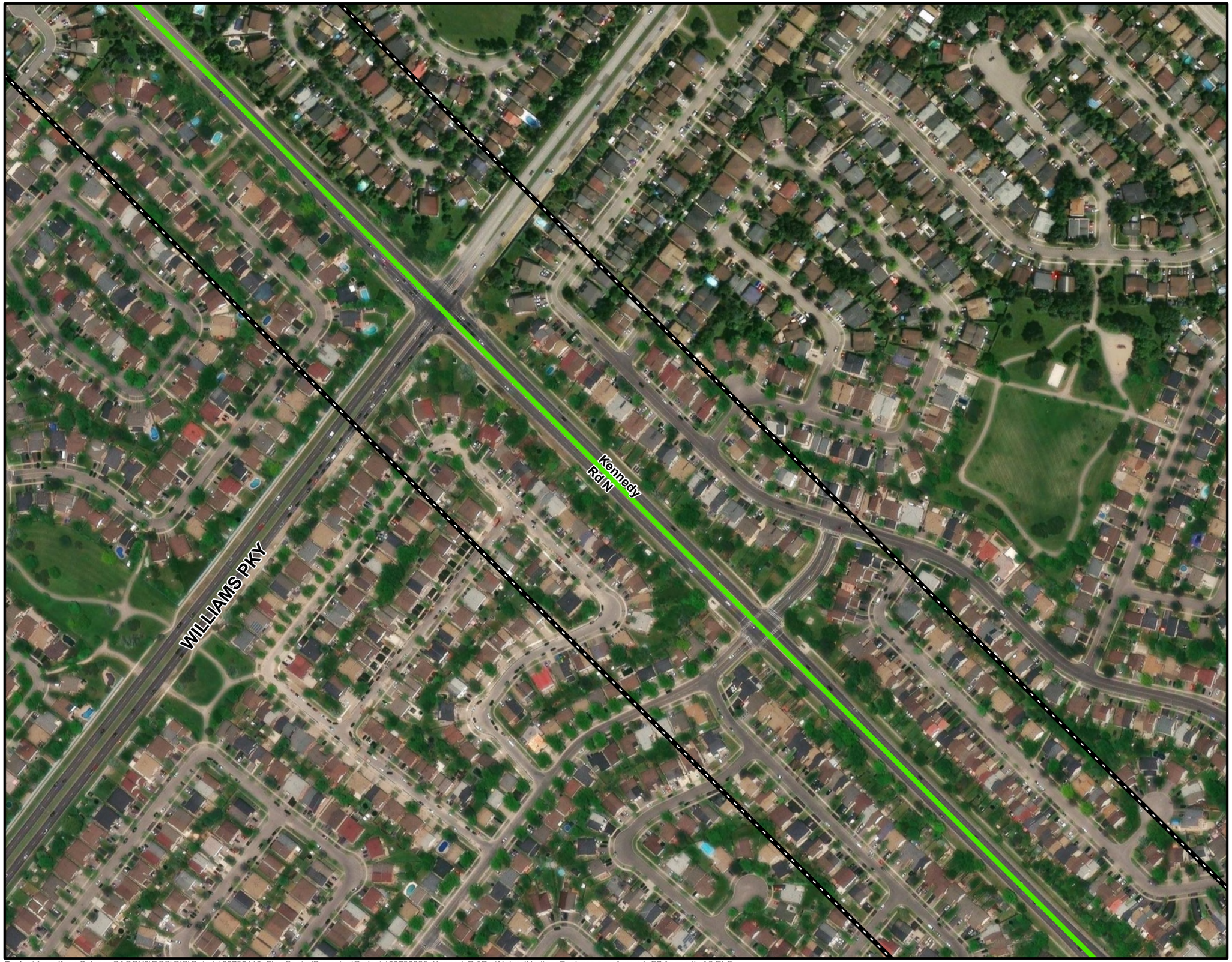
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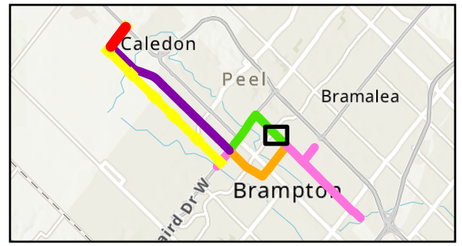
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PN: 60735416	Appendix A2-19
June 10, 2025	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F7 Appendix A2 ELC Windshield





Study Area
S1

Flow | Central Brampton

Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

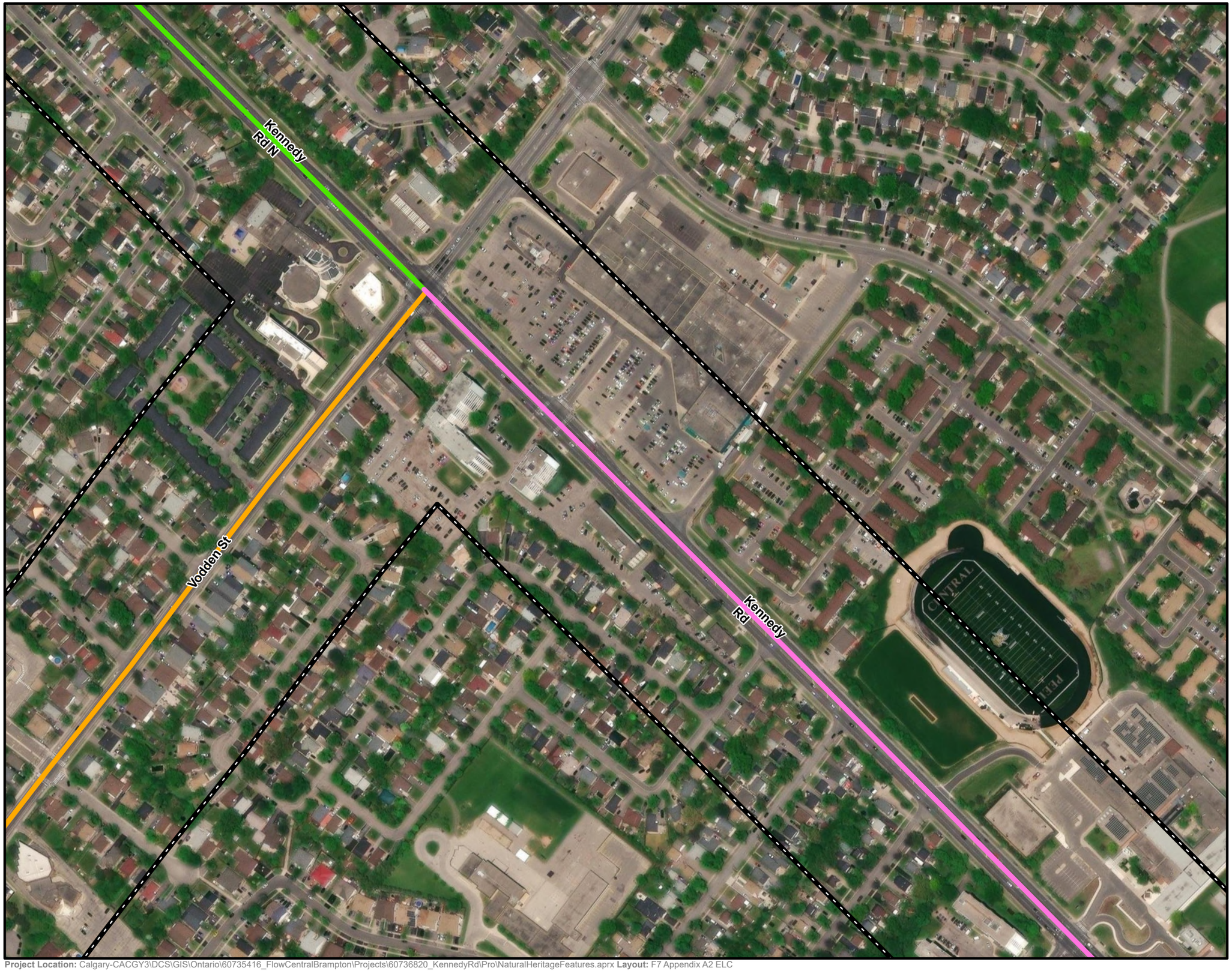
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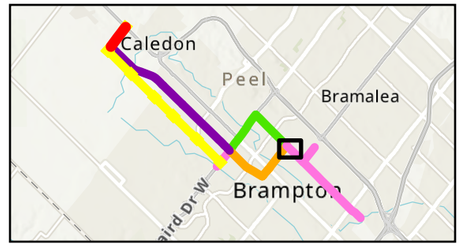
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PN: 60735416	Appendix A2-20
June 10, 2025	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F7 Appendix A2 ELC Windshield





Study Area
S1
S2
S1/S2

Flow | Central Brampton

Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

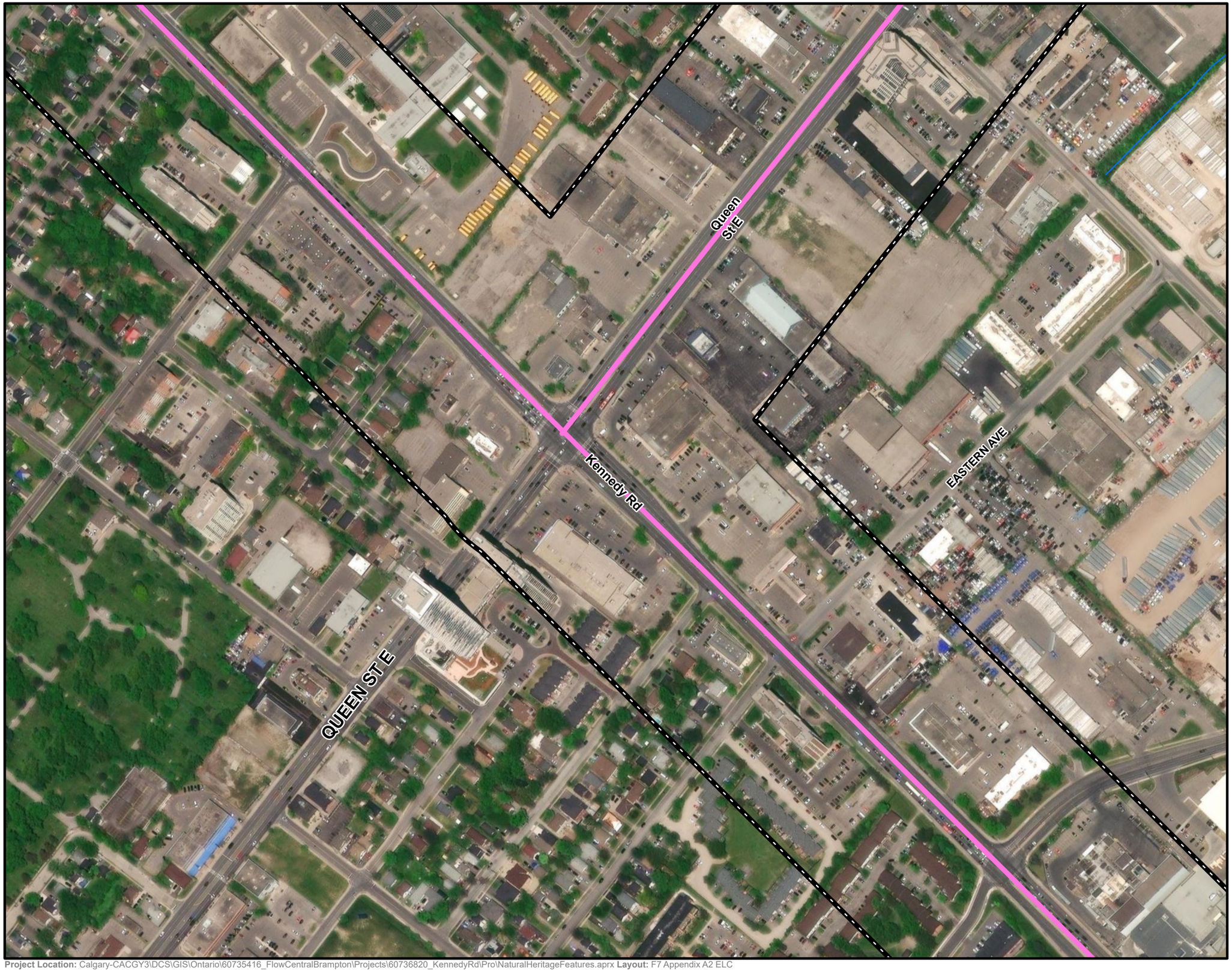
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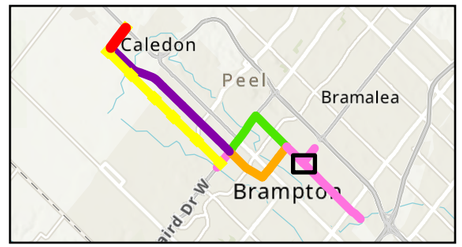
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PN: 60735416	Appendix A2-21
June 10, 2025	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F7 Appendix A2 ELC Windshield





Study Area
Watercourse
S1/S2

Flow | Central Brampton

Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

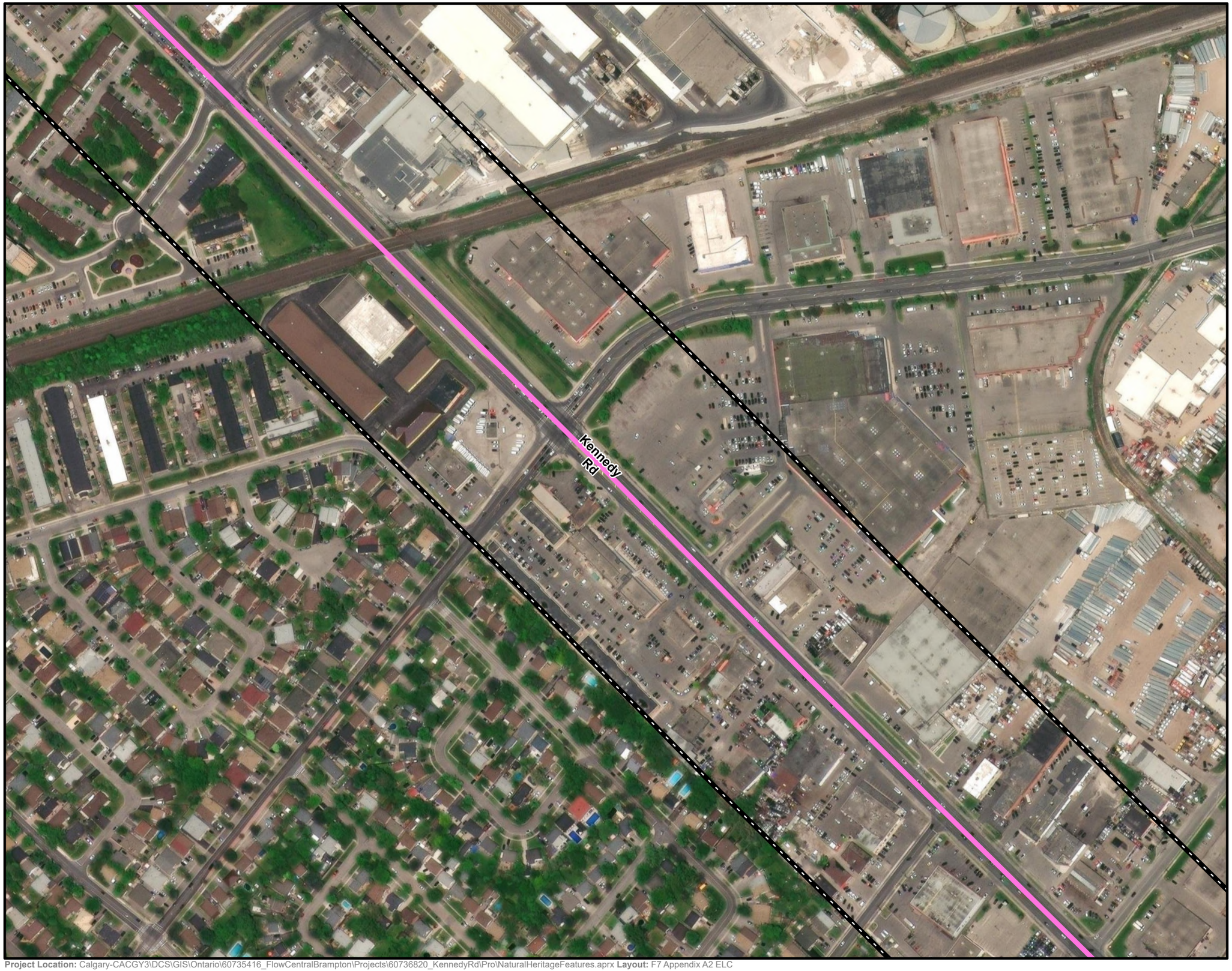
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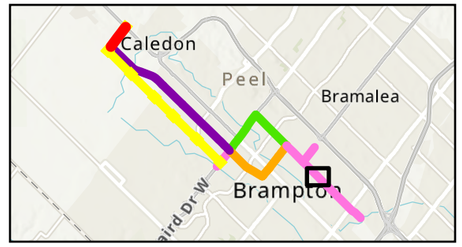
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PN: 60735416	Appendix A2-22
June 10, 2025	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F7 Appendix A2 ELC Windshield





Study Area
Watercourse
S1/S2

Flow | Central Brampton

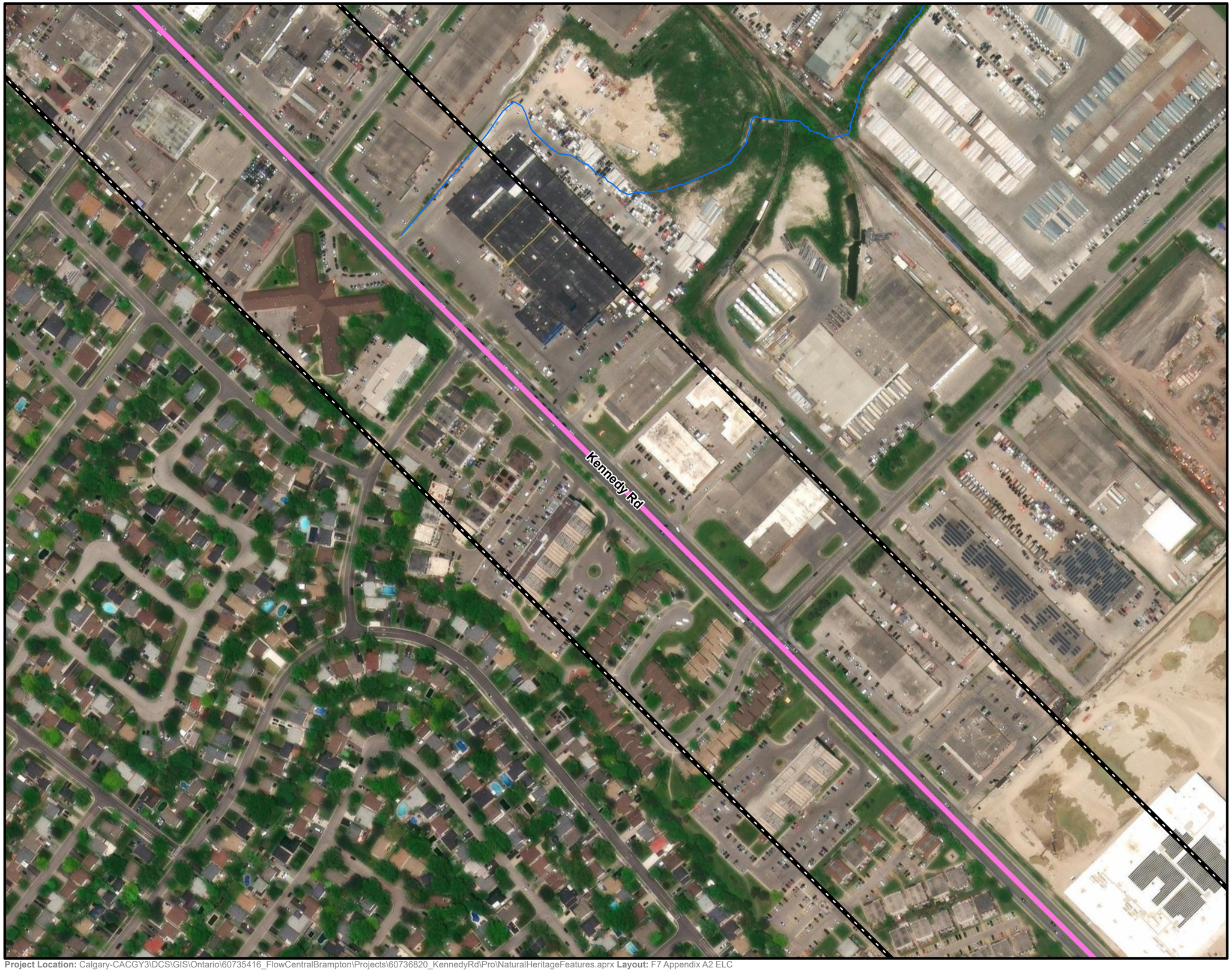
Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

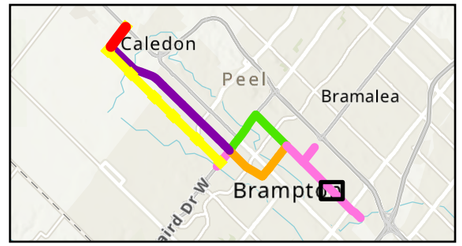
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Meters
Scale: 1:3,000
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PN: 60735416	Appendix A2-23
June 10, 2025	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F7 Appendix A2 ELC Windshield





Study Area
Watercourse
S1/S2

Flow | Central Brampton

Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

0 25 50 75 100 125 150
Meters
Scale: 1:3,000

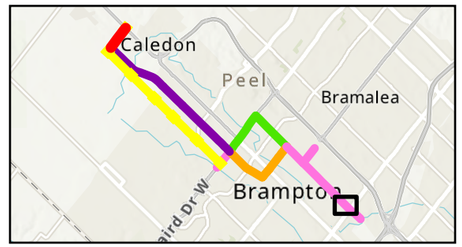
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PN: 60735416	Appendix A2-24
June 10, 2025	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F7 Appendix A2 ELC Windshield





Study Area
ELC - CVCA
S1/S2

Flow | Central Brampton

Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

0 25 50 75 100 125 150

Meters
Scale: 1:3,000

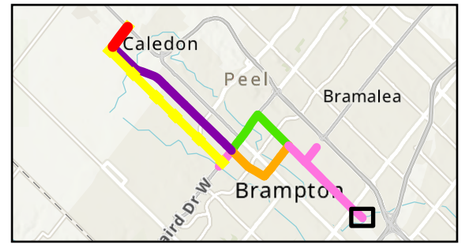
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PN: 60735416	Appendix A2-25
June 10, 2025	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F7 Appendix A2 ELC Windshield





- Study Area
- ELC - CVCA
- ELC - TRCA
- Watercourse
- S1/S2

Flow | Central Brampton

Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

0 25 50 75 100 125 150

Meters
Scale: 1:3,000

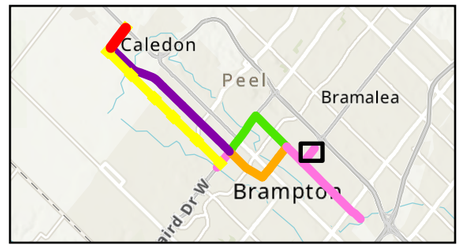
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PN: 60735416	Appendix A2-26
June 10, 2025	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F7 Appendix A2 ELC Windshield





Study Area
Watercourse
S1/S2

Flow | Central Brampton

Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

0 25 50 75 100 125 150
Meters
Scale: 1:3,000

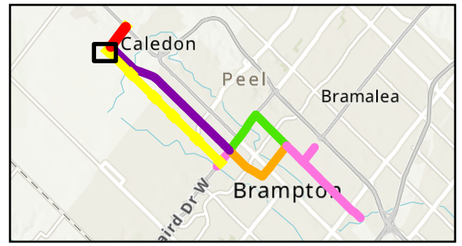
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PN: 60735416	Appendix A2-27
June 10, 2025	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F7 Appendix A2 ELC Windshield





- Study Area
- ELC - CVCA
- ELC - TRCA
- Watercourse
- N1/N2
- N1
- N2

Flow | Central Brampton

Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

0 25 50 75 100 125 150

Meters
Scale: 1:3,000

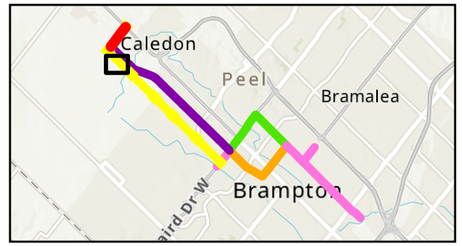
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PN: 60735416	Appendix A2-28
June 10, 2025	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F7 Appendix A2 ELC Windshield





- Study Area
- ELC - CVCA
- ELC - TRCA
- Watercourse
- N1
- N2

Flow | Central Brampton

Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

0 25 50 75 100 125 150

Meters

Scale: 1:3,000

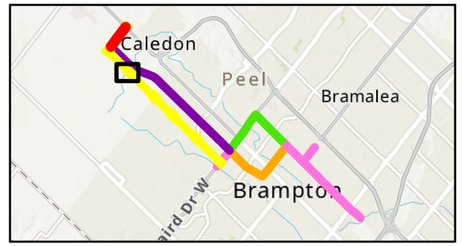
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PN: 60735416	Appendix A2-29
June 10, 2025	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F7 Appendix A2 ELC Windshield





- Study Area
- ELC - CVCA
- ELC - TRCA
- Watercourse
- N1
- N2

Flow | Central Brampton

Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

0 25 50 75 100 125 150

Meters
Scale: 1:3,000

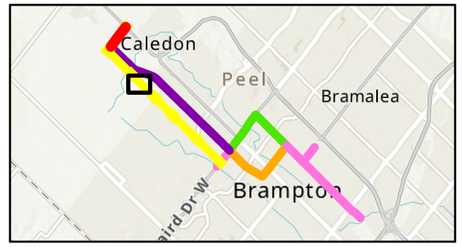
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PN: 60735416	Appendix A2-30
June 10, 2025	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F7 Appendix A2 ELC Windshield





Study Area
ELC - CVCA
Watercourse
N2

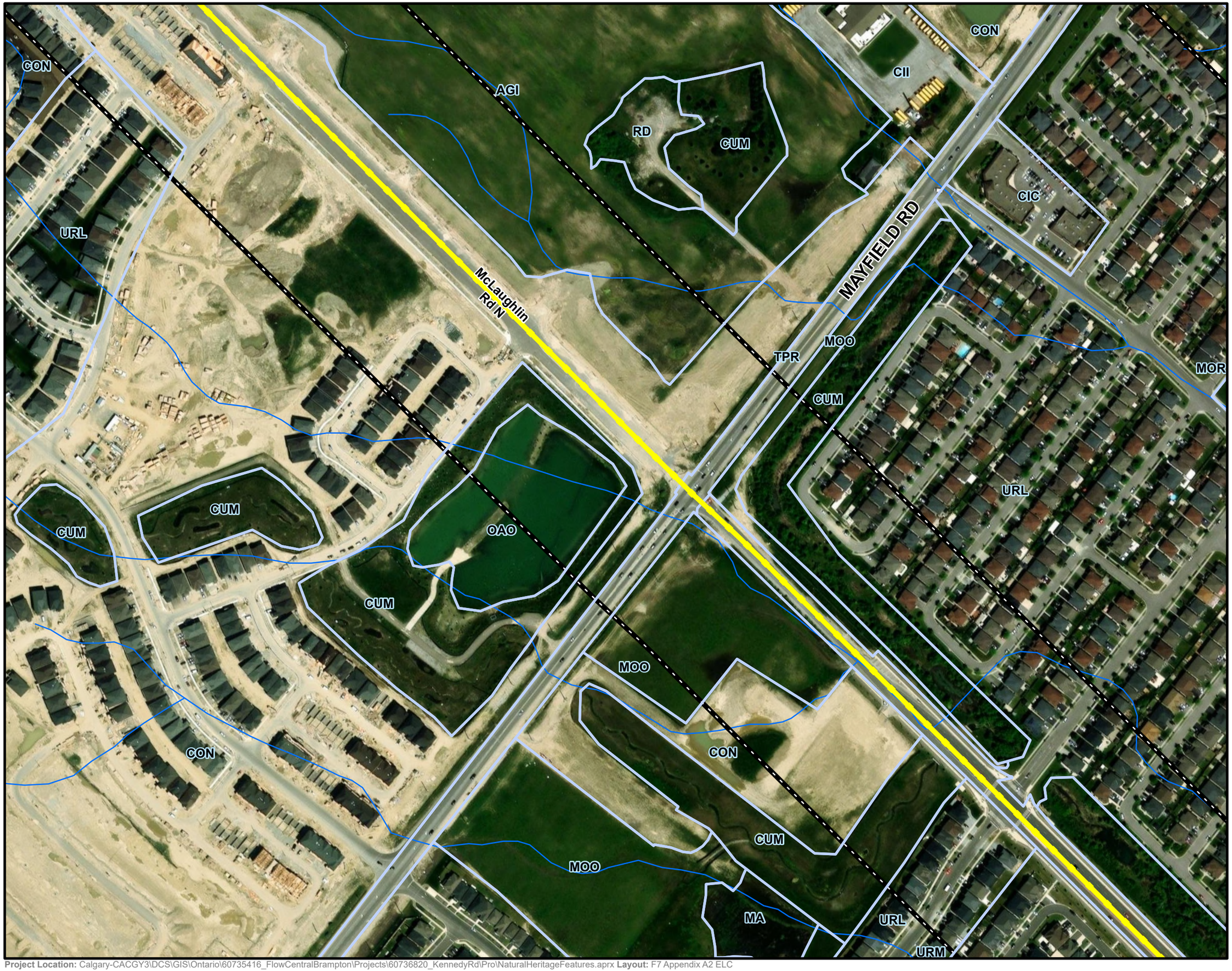
Flow | Central Brampton

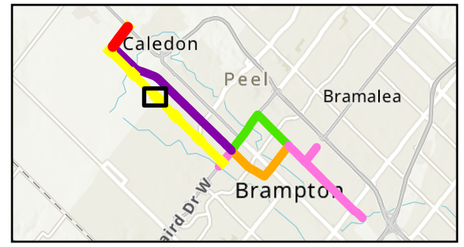
Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

0 25 50 75 100 125 150
Meters
Scale: 1:3,000
N

PN: 60735416	Appendix A2-31
June 10, 2025	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA)





Study Area
ELC - CVCA
Watercourse
N2

Flow | Central Brampton

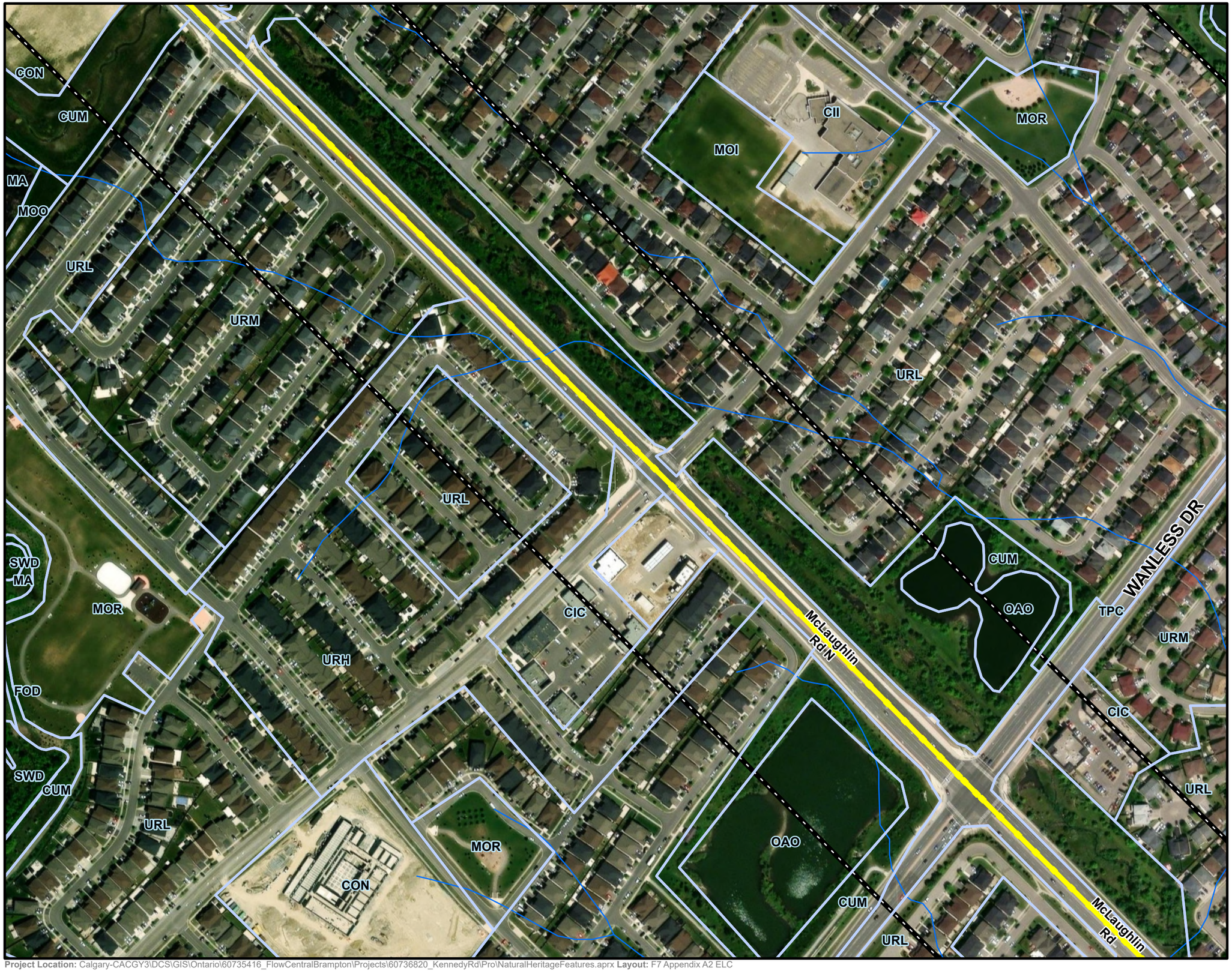
Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

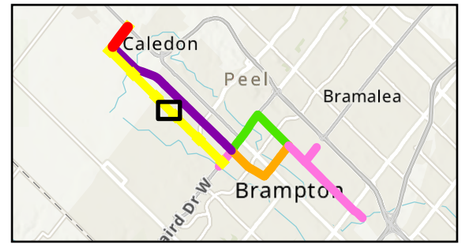
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Meters
Scale: 1:3,000
N

PN: 60735416	Appendix A2-32
June 10, 2025	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F7 Appendix A2 ELC Windshield





Study Area
ELC - CVCA
Watercourse
N2

Flow | Central Brampton

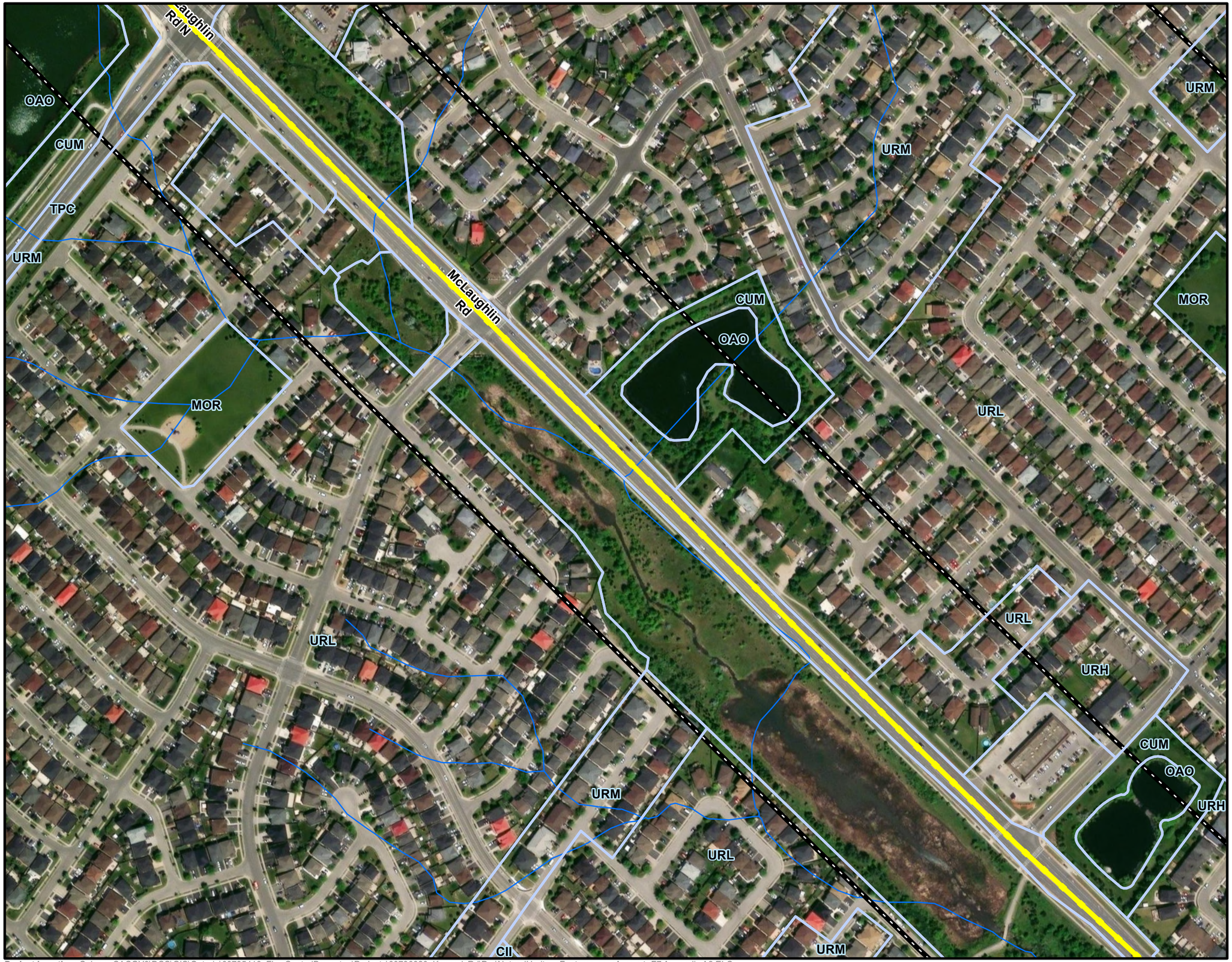
Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

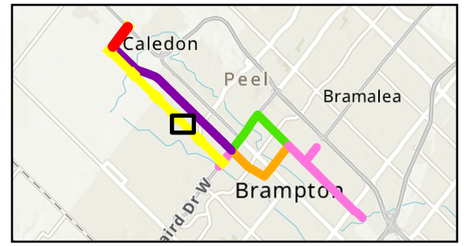
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Meters
Scale: 1:3,000
N

PN: 60735416	Appendix A2-33
June 10, 2025	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F7 Appendix A2 ELC Windshield





Study Area
ELC - CVCA
Watercourse
N2

Flow | Central Brampton

Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

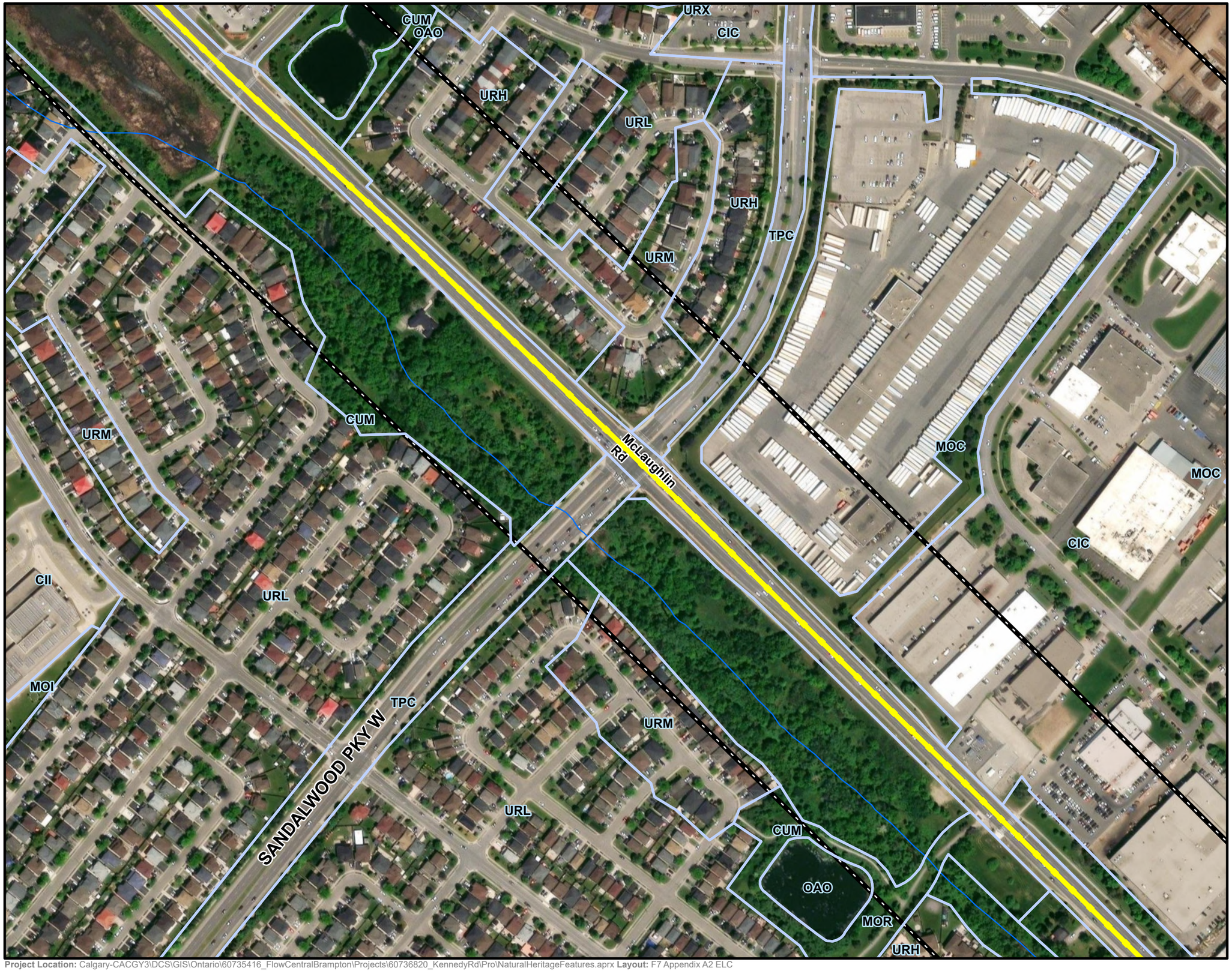
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Meters
Scale: 1:3,000

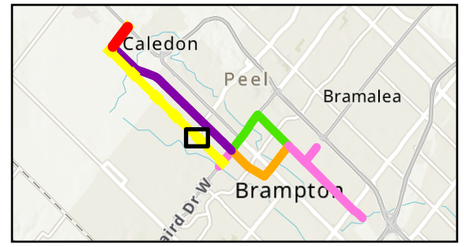
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PN: 60735416	Appendix A2-34
June 10, 2025	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F7 Appendix A2 ELC Windshield





Study Area
ELC - CVCA
Watercourse
N2

Flow | Central Brampton

Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

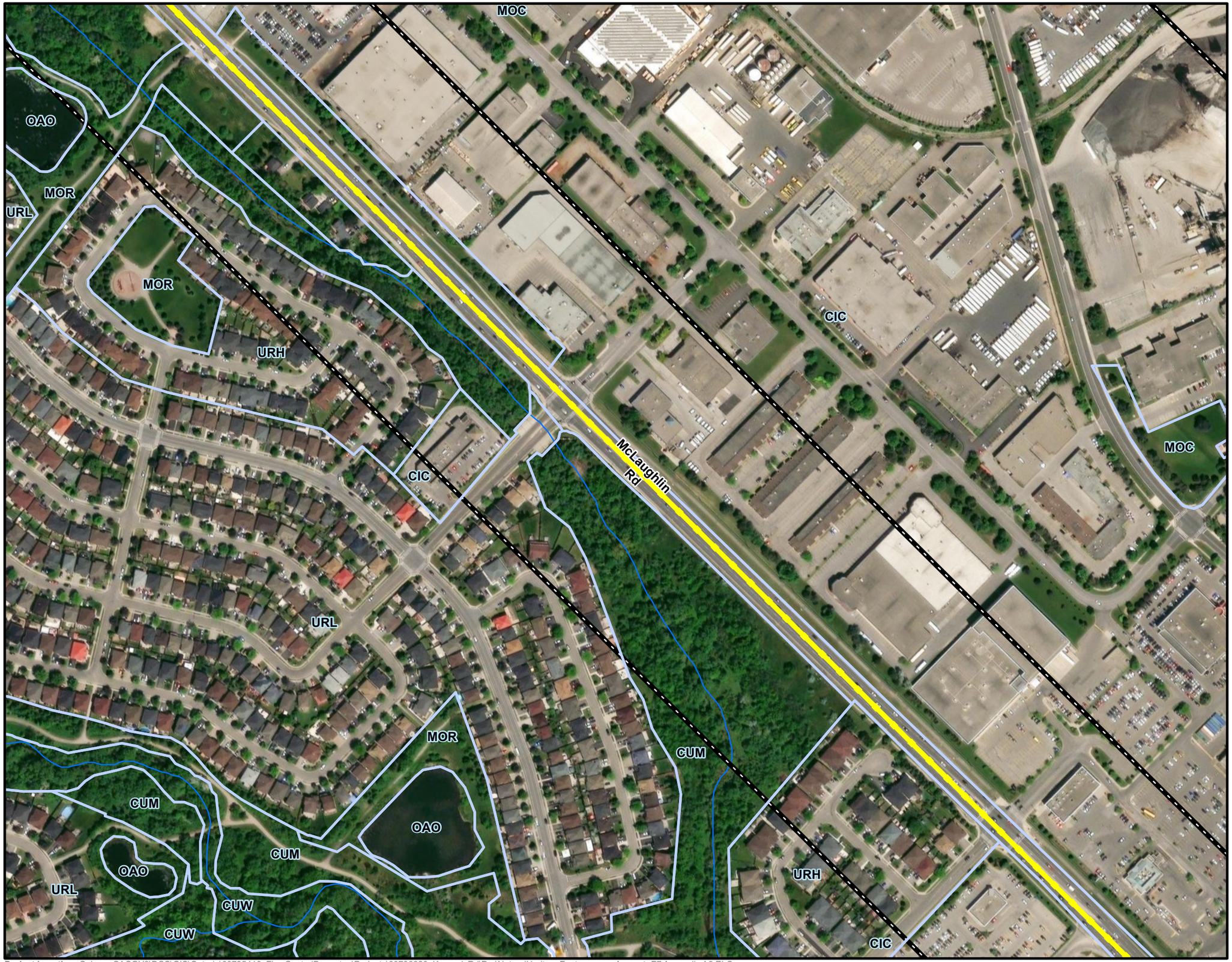
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Scale: 1:3,000

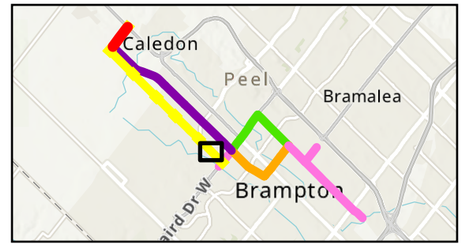
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PN: 60735416	Appendix A2-35
June 10, 2025	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F7 Appendix A2 ELC Windshield





Study Area
ELC - CVCA
Watercourse
N2

Flow | Central Brampton

Kennedy Rd - Windshield Survey for the Short-list Route Alternatives - Ecological Land Classification

0 25 50 75 100 125 150
Meters
Scale: 1:3,000
N

PN: 60735416	Appendix A2-36
June 10, 2025	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F7 Appendix A2 ELC Windshield

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Appendix B

B1. Aquatic Windshield Survey Photolog

B2. Terrestrial Windshield Survey Photolog

AECOM

Peel Region

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B1. Aquatic Windshield Survey Photolog

AECOM

Peel Region

Appendix B1. Aquatic Photographic Log
Windshield Survey

Client Name:	Report Name	Project No.
Peel Region	FLOW Kennedy Road Natural Heritage Report	60736820



Photograph 1.
Etobicoke Creek (WC-01)
April 17, 2025
Summary of downstream reach, facing north.



Photograph 2.
Tributary to Etobicoke Creek (WC-02)
April 16, 2025
Feature buried within Study Area.



Photograph 3.
Etobicoke Creek (WC-03)
April 17, 2025
Summary of downstream reach, facing east.



Photograph 4.
Etobicoke Creek (WC-04)
April 17, 2025
Summary of downstream reach, facing southeast.



Photograph 5.
Tributary to Fletchers Creek (WC-05)
April 17, 2025
Summary of upstream reach, facing northwest.



Photograph 6.
Drainage feature to Tributary to Fletchers Creek (WC-06)
April 17, 2025
Culvert outlet WC-06 facing northeast (upstream).

Appendix B1. Aquatic Photographic Log
Windshield Survey

Client Name:	Report Name	Project No.
Peel Region	FLOW Kennedy Road Natural Heritage Report	60736820



Photograph 7.
Drainage feature to Tributary to Fletchers Creek (WC-06a)
April 17, 2025
Culvert outlet of WC-06a facing northeast (upstream).



Photograph 8.
Tributary to Fletchers Creek (WC-07)
April 17, 2025
Summary of downstream reach, facing southeast.



Photograph 9.
Fletchers Creek (WC-08)
April 16, 2025
Summary of the downstream reach, facing southeast.



Photograph 10.
Drainage feature to Fletchers Creek (WC-09)
April 23, 2025
Direct connection of WC-09 to the stormwater pond.



Photograph 11.
Drainage feature to Fletchers Creek (WC-10)
April 23, 2025
Intermittent feature.



Photograph 12.
Drainage feature to Fletchers Creek (WC-11)
April 23, 2025
Upstream reach of WC-11.

Appendix B1. Aquatic Photographic Log
Windshield Survey

Client Name:	Report Name	Project No.
Peel Region	FLOW Kennedy Road Natural Heritage Report	60736820



Photograph 13. ↑
Alloa Drain (WC-12)
April 23, 2025
Summary of upstream reach, facing southwest.



Photograph 14. ↑
Headwater feature of Etobicoke Creek (WC-13)
April 23, 2025
Summary of the upstream reach, facing southwest.



Photograph 15. ↑
Fletchers Creek (WC-14)
April 16, 2025
Summary of feature, facing southeast.



Photograph 16. ↑
Fletchers Creek (WC-15)
April 16, 2025
Summary of downstream reach, facing northeast.



Photograph 17. ↑
Fletchers Creek (WC-16)
April 16, 2025
Summary of downstream reach, facing east.



Photograph 18. ↑
Drainage feature to Fletchers Creek (WC-16a)
April 16, 2025
Summary of downstream reach, facing east.



Photograph 19. ↑
Drainage feature to Fletchers Creek (WC-17)
April 16, 2025
Stormwater pond at the upstream reach, facing northeast



Photograph 20. ↑
Fletchers Creek (WC-18)
April 16, 2025
Summary of upstream reach, facing north.



Photograph 21. ↑
Fletchers Creek (WC-19)
April 16, 2025
Summary of downstream reach, facing southeast.



Photograph 22. ↑
Fletchers Creek (WC-19a)
April 16, 2025
Summary of upstream reach, facing south.



Photograph 23. ↑
Drainage feature to Fletchers Creek (WC-20)
April 16, 2025
Summary of downstream reach, facing north.



Photograph 24. ↑
Fletchers Creek (WC-21)
April 16, 2025
Summary of downstream reach, facing north.



Photograph 25.
Fletchers Creek (WC-22)
April 16, 2025
Summary of upstream reach, facing west.



Photograph 26.
Alloa Drain (WC-30)
April 23, 2025
Summary of downstream reach, facing east.



Photograph 27.
Headwater feature of Etobicoke Creek (WC-31)
April 23, 2025
Culvert inlet at upstream reach, facing west.



Photograph 28.
Headwater feature of Etobicoke Creek (WC-32)
April 23, 2025
Summary of upstream reach, facing southwest.



Photograph 29.
Headwater feature of Etobicoke Creek (WC-33)
April 16, 2025
Summary of downstream reach, facing southeast



Photograph 30.
Headwater feature of Etobicoke Creek (WC-34)
April 16, 2025
Summary of downstream reach, facing west.



Photograph 31. ↑
Headwater feature of Etobicoke Creek (WC-35)
April 16, 2025
Summary of upstream reach, facing northwest

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B2. Terrestrial Windshield Survey Photolog

AECOM

Peel Region

Appendix B2. Terrestrial Photographic Log
Windshield Survey

Client Name:	Report Name	Project No.
Peel Region	FLOW Kennedy Road Natural Heritage Report	60736820



Photograph 1. ↑
Cultural Meadow (CUM)
April 24, 2025
Location: Near Bovaird Drive East and Kennedy Road



Photograph 2. ↑
Cultural Plantation (CUP)
April 24, 2025
Location: Near Bovaird Drive East and Kennedy Road



Photograph 3. ↑
Ash Forest (FOD7-2)
April 16, 2025
Location: North of McLaughlin Road North and Bovaird Drive West



Photograph 4. ↑
Cattail Marsh and Open Aquatic Area (MAS2-1 and OAO)
April 16, 2025
Location: McLaughlin Road North and Potters Wheel Gate

Appendix B2. Terrestrial Photographic Log
Windshield Survey

Client Name:	Report Name	Project No.
Peel Region	FLOW Kennedy Road Natural Heritage Report	60736820



Photograph 5. ↑
Cultural Meadow and Creek (CUM1)
April 16, 2025
Location: McLaughlin Road North and Wanless Drive



Photograph 6. ↑
Cultural Meadow and Creek (CUM1)
April 16, 2025
Location: McLaughlin Road North and Wanless Drive



Photograph 7. ↑
Cultural Meadow and Provincially Significant Etobicoke Creek (CUM1)
April 16, 2025
Location: McLaughlin Road North and Wanless Drive

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Appendix C

Significant Wildlife Habitat Screening

AECOM

Peel Region

Appendix C: Significant Wildlife Habitat (SWH) Ecoregions 6E and 7E Criterion Schedule (MNRF, 2015)

AECOM

Significant Wildlife Habitat Category	Wildlife Habitat	Listed or Indicator Species	Candidate SWH - ELC Ecosite Codes	Candidate[1] SWH - Habitat Criteria	Confirmed SWH[2] - Defining Criteria	Presence of SWH within 120 m of Short-list Alternative Route:			
						Alternative Route S1: Kennedy Rd/ Bovaird Dr to McLaughlin Rd	Alternative Route S2: Kennedy Rd/ Vodden St/Orangeville Brampton Railway (to Bovaird Dr)	Alternative Route N1: Orangeville Brampton Railway from Bovaird Dr/Old School Rd to Hurontario St	Alternative Route N2: McLaughlin Rd to Bovaird Dr / Old School Rd to Hurontario St
Seasonal Concentration Areas of Animals Ecoregion 6E & 7E	**Waterfowl Stopover and Staging Areas (Terrestrial)** Rationale: Habitat important to migrating waterfowl.	6E and 7E: Green-winged Teal, Blue-winged Teal, American Wigeon, Northern Shoveler, American Black Duck, Northern Pintail, Gadwall 6E: Wood Duck, Mallard 7E: Tundra Swan	CUM1 and CUT1 Plus evidence of annual spring flooding from melt water or run-off within these Ecosites. For 7E only: Fields with seasonal flooding and waste grains may be important for Tundra Swans in southwestern Ontario	• Fields with sheet water during Spring (mid-March to May). • Fields flooding during spring melt and run-off provide important invertebrate foraging habitat for migrating waterfowl. • Agricultural fields with waste grains are commonly used by waterfowl, these are not considered SWH unless they have spring sheet water available.	• Any mix of listed species aggregations of 100 or more individuals required. • The flooded field ecosite habitat plus a 100-300m radius area, dependent on local site conditions and adjacent land use is the significant wildlife habitat	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.
Seasonal Concentration Areas of Animals Ecoregion 6E & 7E	**Waterfowl Stopover and Staging Areas (Aquatic)** Rationale: Important for local and migrant waterfowl populations during the spring or fall migration or both periods combined.	Canada Goose, Cackling Goose, Snow Goose, American Black Duck, Northern Pintail, Northern Shoveler, American Wigeon, Gadwall, Green-winged Teal, Blue-winged Teal, Hooded Merganser, Common Merganser, Lesser Scaup, Greater Scaup, Long-tailed Duck, Surf Scoter, White-winged Scoter, Black Scoter, Ring-necked Duck, Common Goldeneye, Bufflehead, Redhead, Ruddy Duck, Red-breasted Merganser, Brant, Canvasback	MAS1, MAS2, MAS3, SAS1, SAM1, SAF1, SWD1, SWD2, SWD3, SWD4, SWD5, SWD6, SWD7	• Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration. Sewage treatment ponds and storm water ponds do not qualify as a SWH, however a reservoir managed as a large wetland or pond/lake does qualify. • These habitats have an abundant food supply (mostly aquatic invertebrates and vegetation in shallow water)	• Aggregations of 100 or more of listed species for 7 days, results in > 700 waterfowl use days. • Areas with annual staging of ruddy ducks, canvasbacks, and redheads are SWH • The combined area of the ELC ecosites and a 100 m radius area is the SWH • Wetland area and shorelines associated with sites identified within the SWHTG Appendix K are significant wildlife habitat.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.

1. **Candidate SWH** – Identifies areas with potential wildlife habitat based on existing background data, ELC Ecosites, and habitat features that meet specific SWH habitat criteria, without confirmation of habitat use through targeted species-specific surveys. Candidate SWH are assumed significant (unless targeted species-specific surveys do not meet defining criteria for significance) and impacts from proposed works on Candidate SWH are mitigated through avoidance and mitigation measures.
2. **Confirmed SWH** – Represents candidate SWH that has been validated as significant through targeted species-specific surveys meeting the defining criteria for Confirmed SWH. Targeted species-specific surveys should follow methods outlined in the Bird and Bird Habitats: Guidelines for Wind Projects (MNR, 2024), Bat and Bat Habitats: Guidelines for Wind Projects (MNR, 2024), industry acceptable protocols or as otherwise stated in this Schedule, as applicable. Impacts from proposed works on Confirmed SWH are mitigated through avoidance and mitigation measures.

Appendix C: Significant Wildlife Habitat (SWH) Ecoregions 6E and 7E Criterion Schedule (MNRF, 2015)

AECOM

Significant Wildlife Habitat Category	Wildlife Habitat	Listed or Indicator Species	Candidate SWH - ELC Ecosite Codes	Candidate[1] SWH - Habitat Criteria	Confirmed SWH[2] - Defining Criteria	Presence of SWH within 120 m of Short-list Alternative Route:			
						Alternative Route S1: Kennedy Rd/ Bovaird Dr to McLaughlin Rd	Alternative Route S2: Kennedy Rd/ Vodden St/Orangeville Brampton Railway (to Bovaird Dr)	Alternative Route N1: Orangeville Brampton Railway from Bovaird Dr/Old School Rd to Hurontario St	Alternative Route N2: McLaughlin Rd to Bovaird Dr / Old School Rd to Hurontario St
Seasonal Concentration Areas of Animals Ecoregion 6E & 7E	Shorebird Migratory Stopover Area Rationale: High quality shorebird stopover habitat is extremely rare and typically has a long history of use.	Greater Yellowlegs, Lesser Yellowlegs, Marbled Godwit, Hudsonian Godwit, Black-bellied Plover, American Golden-Plover, Semipalmated Plover, Solitary Sandpiper, Spotted Sandpiper, Semipalmated Sandpiper, Pectoral Sandpiper, White-rumped Sandpiper, Baird's Sandpiper, Least Sandpiper, Purple Sandpiper, Stilt Sandpiper, Short-billed Dowitcher, Red-necked Phalarope, Whimbrel, Ruddy Turnstone, Sanderling, Dunlin	BBO1, BBO2, BBS1, BBS2, BBT1, BBT2, SDO1, SDS2, SDT1, MAM1, MAM2, MAM3, MAM4, MAM5	• Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats. • Great Lakes coastal shorelines, including groynes and other forms of armour rock lakeshores, are extremely important for migratory shorebirds in May to mid-June and early July to October. • Sewage treatment ponds and storm water ponds do not qualify as a SWH.	• Presence of 3 or more of listed species and > 1000 shorebird use days during spring or fall migration period. (shorebird use days are the accumulated number of shorebirds counted per day over the course of the fall or spring migration period) • Whimbrel stop briefly (<24hrs) during spring migration, any site with >100 Whimbrel used for 3 years, or more is significant. • The area of significant shorebird habitat includes the mapped ELC shoreline ecosites plus a 100m radius area	Absent – No suitable habitat was present . None of the Bird species have been recorded in this area based on Background review. Breeding Birds surveys were not conducted.	Absent – No suitable habitat was present. None of the Bird species have been recorded in this area based on Background review. Breeding Birds surveys were not conducted.	Absent – No suitable habitat was present. None of the Bird species have been recorded in this area based on Background review. Breeding Birds surveys were not conducted.	Absent – No suitable habitat was present. None of the Bird species have been recorded in this area based on Background review. Breeding Birds surveys were not conducted.
Seasonal Concentration Areas of Animals Ecoregion 6E & 7E	Raptor Wintering Area Rationale: Sites used by multiple species, a high number of individuals and used annually are most significant	Rough-legged Hawk Red-tailed Hawk Northern Harrier American Kestrel Snowy Owl Special Concern: Short-eared Owl Bald Eagle	Hawks/Owls: Combination of ELC Community Series; need to have present one Community Series from each land class; Forest: FOD, FOM, FOC. Upland: CUM; CUT; CUS; CUW. Bald Eagle: Forest community Series: FOD, FOM, FOC, SWD, SWM or SWC on shoreline areas adjacent to large rivers or adjacent to lakes with open water (hunting area).	• The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors. • Raptor wintering sites (hawk/owl) need to be > 20 ha, cxlix with a combination of forest and upland. • Least disturbed sites, idle/fallow or lightly grazed field/meadow (>15ha) with adjacent woodlands • Field area of the habitat is to be wind swept with limited snow depth or accumulation. • Eagle sites have open water, large trees and snags available for roosting	• One or more Short-eared Owls or; One or more Bald Eagles or; At least 10 individuals and two of the listed hawk/owl species. • To be significant a site must be used regularly (3 in 5 years) for a minimum of 20 days by the above number of birds. • The habitat area for an Eagle winter site is the shoreline forest ecosites directly adjacent to the prime hunting area	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present	Absent - No suitable habitat was present
Seasonal Concentration Areas of Animals Ecoregion 6E & 7E	Bat Hibernacula Rationale: Bat hibernacula are rare habitats in all Ontario landscapes.	Big Brown Bat, Tri-coloured Bat	Bat Hibernacula may be found in these ecosites: CCR1, CCR2, CCA1, CCA2 (Note: buildings are not considered to be SWH)	• Hibernacula may be found in caves, mine shafts, under-ground foundations and Karsts. • Active mine sites should not be considered as SWH • The locations of bat hibernacula are relatively poorly known.	• All sites with confirmed hibernating bats are SWH. • The habitat area includes a 200m radius around the entrance of the hibernaculum, for most development types and 1000 m for wind farms. • Studies are to be conducted during the peak swarming period (Aug. – Sept.).	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.

Appendix C: Significant Wildlife Habitat (SWH) Ecoregions 6E and 7E Criterion Schedule (MNRF, 2015)

AECOM

Significant Wildlife Habitat Category	Wildlife Habitat	Listed or Indicator Species	Candidate SWH - ELC Ecosite Codes	Candidate[1] SWH - Habitat Criteria	Confirmed SWH[2] - Defining Criteria	Presence of SWH within 120 m of Short-list Alternative Route:			
						Alternative Route S1: Kennedy Rd/ Bovaird Dr to McLaughlin Rd	Alternative Route S2: Kennedy Rd/ Vodden St/Orangeville Brampton Railway (to Bovaird Dr)	Alternative Route N1: Orangeville Brampton Railway from Bovaird Dr/Old School Rd to Hurontario St	Alternative Route N2: McLaughlin Rd to Bovaird Dr / Old School Rd to Hurontario St

Seasonal Concentration Areas of Animals
 	
Ecoregion 6E & 7E
	Bat Maternity Colonies
	<u>Rationale:</u>
	Known locations of forested bat maternity colonies are extremely rare in all Ontario landscapes.
		Big Brown Bat, Silver-haired Bat	Maternity colonies considered SWH are found in forested Ecosites.
			All ELC Ecosites in ELC Community Series: FOD, FOM, SWD, SWM
				• Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings are not considered to be SWH).
				• Maternity roosts are not found in caves and mines in Ontario.
				• Maternity colonies located in Mature deciduous or mixed forest stands, with >10/ha large diameter (>25cm dbh) wildlife trees
				• Female Bats prefer wildlife tree (snags) in early stages of decay, class 1-3 or class 1 or 2.
				• Silver-haired Bats prefer older mixed or deciduous forest and form maternity colonies in tree cavities and small hollows. Older forest areas with at least 21 snags/ha are preferred
					• Maternity Colonies with confirmed use by;
					  • >10 Big Brown Bats
					  • >5 Adult Female Silver-haired Bats
					• The area of the habitat includes the entire woodland or a forest stand ELC Ecosite or an Ecoelement containing the maternity colonies.
						Candidate SWH - Ecosite(s) and/or habitat features were present but targeted species-specific surveys were not completed.	Candidate SWH - Ecosite(s) and/or habitat features were present but targeted species-specific surveys were not completed.	Candidate SWH - Ecosite(s) and/or habitat features were present but targeted species-specific surveys were not completed.	Candidate SWH - Ecosite(s) and/or habitat features were present but targeted species-specific surveys were not completed.

Seasonal Concentration Areas of Animals Ecoregion 6E & 7E	Turtle Wintering Areas <u>Rationale:</u> Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.	Midland Painted Turtle <u>Special Concern:</u> Northern Map Turtle Snapping Turtle	Midland Painted Turtles; ELC Community Classes; SW, MA, OA and SA, ELC Community Series; FEO and BOO Northern Map Turtle; Open Water areas such as deeper rivers or streams and lakes with current can also be used as over-wintering habitat.	• For most turtles, wintering areas are in the same general area as their core habitat. Water has to be deep enough not to freeze and have soft mud substrates. • Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen • Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH.	• Presence of 5 over-wintering Midland Painted Turtles is significant. • One or more Northern Map Turtle or Snapping Turtle over-wintering within a wetland is significant. • The mapped ELC ecosite area with the over wintering turtles is the SWH. If the hibernation site is within a stream or river, the deep-water pool where the turtles are over wintering is the SWH. • Over wintering areas may be identified by searching for congregations (Basking Areas) of turtles on warm, sunny days during the fall (Sept. – Oct.) or spring (Mar. – May) • Congregation of turtles is more common where wintering areas are limited and therefore significant	Candidate SWH - Ecosite(s) and/or habitat features were present but targeted species-specific surveys were not completed.	Candidate SWH - Ecosite(s) and/or habitat features were present but targeted species-specific surveys were not completed.	Candidate SWH - Ecosite(s) and/or habitat features were present but targeted species-specific surveys were not completed.	Candidate SWH - Ecosite(s) and/or habitat features were present but targeted species-specific surveys were not completed.

Appendix C: Significant Wildlife Habitat (SWH) Ecoregions 6E and 7E Criterion Schedule (MNRF, 2015)

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Significant Wildlife Habitat Category	Wildlife Habitat	Listed or Indicator Species	Candidate SWH - ELC Ecosite Codes	Candidate[1] SWH - Habitat Criteria	Confirmed SWH[2] - Defining Criteria	Presence of SWH within 120 m of Short-list Alternative Route:			
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Seasonal Concentration Areas of Animals Ecoregion 6E & 7E	Reptile Hibernaculum <u>Rationale:</u> Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.	<u>6E and 7E:</u> <u>Snakes:</u> Eastern Gartersnake Northern Watersnake Northern Red-bellied Snake Northern Brownsnake Smooth Green Snake Northern Ring-necked Snake <u>Special Concern:</u> Milksnake Eastern Ribbonsnake 6E Only: <u>Lizard:</u> <u>Special Concern</u> (Southern Shield population): Five-lined Skink	For all snakes, habitat may be found in any ecosite other than very wet ones. Talus, Rock Barren, Crevice, Cave, and Alvar sites may be directly related to these habitats. Observations or congregations of snakes on sunny warm days in the spring or fall is a good indicator. 6E Only: For Five-lined Skink, ELC Community Series of FOD and FOM and Ecosites: FOC1 FOC3	• For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural or naturalized locations. The existence of features that go below frost line; such as rock piles or slopes, old stone fences, and abandoned crumbling foundations assist in identifying candidate SWH. • Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line • Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens, or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover. 6E Only: • Five-lined skink prefer mixed forests with rock outcrop openings providing cover rock overlaying granite bedrock with fissures.	Studies confirming: • Presence of snake hibernacula used by a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. • Congregations of a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. near potential hibernacula (e.g. foundation or rocky slope) on sunny warm days in Spring (Apr/May) and Fall (Sept/Oct) • <u>Note:</u> If there are Special Concern Species present, then site is SWH • <u>Note:</u> Sites for hibernation possess specific habitat parameters (e.g. temperature, humidity, etc.) and consequently are used annually, often by many of the same individuals of a local population (i.e. strong hibernation site fidelity). Other critical life processes (e.g. mating) often take place in close proximity to hibernacula. The feature in which the hibernacula is located plus a 30 m radius area is the SWH 6E Only: • Presence of any active hibernaculum for skink is significant.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.
Seasonal Concentration Areas of Animals Ecoregion 6E & 7E	Colonially -Nesting Bird Breeding Habitat (Bank and Cliff) <u>Rationale:</u> Historical use and number of nests in a colony make this habitat significant. An identified colony can be very important to local populations. All swallow populations are declining in Ontario.	Cliff Swallow Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies)	Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles. Cliff faces, bridge abutments, silos, barns. Habitat found in the following ecosites: CUM1, CUT1, CUS1, BLO1, BLS1, BLT1, CLO1, CLS1, CLT1	• Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed / permitted aggregate area. • Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles. • Does not include a licensed/permitted Mineral Aggregate Operation.	• Presence of 1 or more nesting sites with 8 or more cliff swallow pairs and/or rough-winged swallow pairs during the breeding season. • A colony identified as SWH will include a 50m radius habitat area from the peripheral nests • Field surveys to observe and count swallow nests are to be completed during the breeding season.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.

Appendix C: Significant Wildlife Habitat (SWH) Ecoregions 6E and 7E Criterion Schedule (MNRF, 2015)

AECOM

Significant Wildlife Habitat Category	Wildlife Habitat	Listed or Indicator Species	Candidate SWH - ELC Ecosite Codes	Candidate[1] SWH - Habitat Criteria	Confirmed SWH[2] - Defining Criteria	Presence of SWH within 120 m of Short-list Alternative Route:			
						Alternative Route S1: Kennedy Rd/ Bovaird Dr to McLaughlin Rd	Alternative Route S2: Kennedy Rd/ Vodden St/Orangeville Brampton Railway (to Bovaird Dr)	Alternative Route N1: Orangeville Brampton Railway from Bovaird Dr/Old School Rd to Hurontario St	Alternative Route N2: McLaughlin Rd to Bovaird Dr / Old School Rd to Hurontario St
Seasonal Concentration Areas of Animals Ecoregion 6E & 7E	Colonially -Nesting Bird Breeding Habitat (Tree/Shrubs) <u>Rationale:</u> Large colonies are important to local bird population, typically sites are only known colony in area and are used annually.	Great Blue Heron, Black-crowned Night-Heron, Great Egret, Green Heron	SWM2, SWM3, SWM5, SWM6, SWD1, SWD2, SWD3, SWD4, SWD5, SWD6, SWD7, FET1	• Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used. • Most nests in trees are 11 to 15 m from ground, near the top of the tree.	6E and 7E: • The habitat extends from the edge of the colony and a minimum 300m radius or extent of the Forest Ecosite containing the colony or any island <15.0ha with a colony is the SWH • Confirmation of active heronries are to be achieved through site visits conducted during the nesting season (April to August) or by evidence such as the presence of fresh guano, dead young and/or eggshells. 6E Only: • Presence of 5 or more active nests of Great Blue Heron or other listed species. 7E Only: • Presence of 2 or more active nests of Great Blue Heron or other listed species.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present	Absent - No suitable habitat was present
Seasonal Concentration Areas of Animals Ecoregion 6E & 7E	Colonially -Nesting Bird Breeding Habitat (Ground) <u>Rationale:</u> Colonies are important to local bird population, typically sites are only known colony in area and are used annually.	Herring Gull, Great Black-backed Gull, Little Gull, Ring-billed Gull, Common Tern, Caspian Tern, Brewer's Blackbird	Any rocky island or peninsula (natural or artificial) within a lake or large river (two-lined on a 1:50,000 NTS map). Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird) MAM1-6, MAS1-3, CUM, CUT, CUS	• Nesting colonies of gulls and terns are on islands or peninsulas associated with open water or in marshy areas. • Brewer's Blackbird colonies are found loosely on the ground in low bushes in close proximity to streams and irrigation ditches within farmlands.	• Presence of > 25 active nests for Herring Gulls or Ring-billed Gulls, >5 active nests for Common Tern or >2 active nests for Caspian Tern. • Presence of 5 or more pairs for Brewer's Blackbird. • Any active nesting colony of one or more Little Gull, and Great Black-backed Gull is significant. • The edge of the colony and a minimum 150m radius area of habitat, or the extent of the ELC ecosites containing the colony or any island <3.0ha with a colony is the SWH, • Studies would be done during May/June when actively nesting.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.

Appendix C: Significant Wildlife Habitat (SWH) Ecoregions 6E and 7E Criterion Schedule (MNRF, 2015)

AECOM

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Seasonal Concentration Areas of Animals Ecoregion 6E & 7E	**Migratory Butterfly Stopover Areas** <u>Rationale:</u> Butterfly stopover areas are extremely rare habitats and are biologically important for butterfly species that migrate south for the winter.	Painted Lady Red Admiral <u>Special Concern</u> Monarch	Combination of ELC Community Series; need to have present one Community Series from each land class: <u>Field:</u> CUM, CUT, CUS <u>Forest:</u> FOC, FOD, FOM, CUP Anecdotally, a candidate site for butterfly stopover will have a history of butterflies being observed.	• A butterfly stopover area will be a minimum of 10 ha in size with a combination of field and forest habitat present, and will be located within 5 km of Lake Ontario • The habitat is typically a combination of field and forest, and provides the butterflies with a location to rest prior to their long migration south • The habitat should not be disturbed, fields/meadows with an abundance of preferred nectar plants and woodland edge providing shelter are requirements for this habitat, • Staging areas usually provide protection from the elements and are often spits of land or areas with the shortest distance to cross the Great Lakes.	• The presence of Monarch Use Days (MUD) during fall migration (Aug/Oct). MUD is based on the number of days a site is used by Monarchs, multiplied by the number of individuals using the site. Numbers of butterflies can range from 100-500/day, significant variation can occur between years and multiple years of sampling should occur • Observational studies are to be completed and need to be done frequently during the migration period to estimate MUD. • MUD of >5000 **or** >3000 with the presence of Painted Ladies or Red Admiral's is to be considered significant.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.
Seasonal Concentration Areas of Animals Ecoregion 6E & 7E	**Landbird Migratory Stopover Areas** <u>Rationale:</u> Sites with a high diversity of species as well as high numbers are most significant.	All migratory songbirds and migrant raptors.	All Ecosites associated with these ELC Community Series; FOC, FOM, FOD, SWC, SWM, SWD	**6E and 7E:** • If multiple woodlands are located along the shoreline those Woodlands <2km from Lake Ontario are more significant • Sites have a variety of habitats; forest, grassland and wetland complexes. • The largest sites are more significant • Woodlots and forest fragments are important habitats to migrating birds, these features located along the shore and located within 5km of Lake Ontario are Candidate SWH. **6E Only:** • Woodlots need to be >10 ha in size and within 5 km of Lake Ontario. **7E Only:** • Woodlots need to be >5 ha in size and within 5 km of Lake Ontario. • If woodlands are rare in an area of shoreline, woodland fragments 2-5ha can be considered for this habitat.	• Use of the habitat by >200 birds/day and with >35 spp. with at least 10 bird spp. recorded on at least 5 different survey dates. This abundance and diversity of migrant bird species is considered above average and significant. • Studies should be completed during spring (Apr/May) and fall (Aug/Oct) migration using standardized assessment techniques.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.

Appendix C: Significant Wildlife Habitat (SWH) Ecoregions 6E and 7E Criterion Schedule (MNRF, 2015)

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Seasonal Concentration Areas of Animals Ecoregion 6E ONLY	Deer Yarding Areas 6E Only <u>Rationale:</u> Winter habitat for deer is the main limiting factor for northern deer populations. In winter, deer congregate in "yards" to survive severe winter conditions. Deer yards typically have a long history of annual use by deer; yards typically represent 10-15% of an areas summer range.	White-tailed Deer	Note: MNR to determine this habitat. ELC Community Series providing a thermal cover component for a deer yard would include; FOM, FOC, SWM and SWC. Or these ELC Ecosites; CUP2, CUP3, FOD3, CUT	• MNR determines deer yards following methods outlined in "Selected Wildlife and Habitat Features: Inventory Manual" • Woodlots with high densities of deer due to artificial feeding are not significant.	• Deer Yards are mapped by MNR District offices. Locations of Core or Stratum 1 and Stratum 2 Deer yards considered significant by MNR will be available at local MNR offices or via Land Information Ontario (LIO). • If a SWH is determined for Deer Wintering Area or if a proposed development is within Stratum II yarding area then Movement Corridors are to be considered.	Absent - No suitable habitat was present	Absent - No suitable habitat was present	Absent - No suitable habitat was present	Absent - No suitable habitat was present
Seasonal Concentration Areas of Animals Ecoregion 6E & 7E	Deer Winter Congregation Areas Rationale: Deer movement during winter in the southern areas of Eco-region 6E and 7E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands to reduce or avoid the impacts of winter conditions	White-tailed Deer	All Forested Ecosites with these ELC Community Series: FOC FOM FOD SWC SWM SWD Conifer plantations much smaller than 50 ha may also be used.	6E and 7E: • Deer movement during winter in the southern areas of Ecoregion 6E and 7E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands. • Large woodlots >100ha and up to 1500 ha are known to be used annually by densities of deer that range from 0.1-1.5 deer/ha. • Woodlots with high densities of deer due to artificial feeding are not significant. 6E Only: • If deer are constrained by snow depth refer to the Deer Yarding Area habitat above. • Woodlots >100 ha in size. Woodlots <100ha may be considered as significant based on MNRF studies or assessment. 7E Only: • Woodlots >100 ha in size or if large woodlots are rare in a planning area woodlots >50ha	6E and 7E: • Deer management is an MNRF responsibility, deer winter congregation areas considered significant will be mapped by MNRF • Use of the woodlot by white-tailed deer will be determined by MNRF, all woodlots exceeding the area criteria are significant, unless determined not to be significant by MNRF • Studies should be completed during winter (Jan/Feb) when >20cm of snow is on the ground using aerial survey techniques, ground or road surveys or a pellet count deer density survey 6E Only: • If a SWH is determined for Deer Wintering Area or if a proposed development is within Stratum II yarding area then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.

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Rare Vegetation Communities. Ecoregion 6E & 7E	**Cliffs and Talus Slopes** **Rationale:** Cliffs and Talus Slopes are extremely rare habitats in Ontario.	Not applicable	Any ELC Ecosite within Community Series: TAO, TAS, TAT, CLO, CLS, CLT	• Most cliff and talus slopes occur along the Niagara Escarpment. • A Cliff is vertical to near vertical bedrock >3m in height. • A Talus Slope is rock rubble at the base of a cliff made-up of coarse rocky debris.	• Confirm any ELC Vegetation Type for Cliffs or Talus Slopes	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.
Rare Vegetation Communities. Ecoregion 6E & 7E	**Sand Barren** **Rationale:** Sand barrens are rare in Ontario and support rare species.	Not applicable	ELC Ecosites: SBO1, SBS1, SBT1 Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always < 60%.	• A sand barren area >0.5ha in size. • Sand Barrens typically are exposed sand, generally sparsely vegetated and caused by lack of moisture, periodic fires and erosion. Usually located within other types of natural habitat such as forest or savannah. Vegetation can vary from patchy and barren to tree covered, but less than 60%.	• Confirm any ELC Vegetation Type for Sand Barrens • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.).	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.
Rare Vegetation Communities. Ecoregion 6E & 7E	**Alvar** **Rationale:** Alvars are extremely rare habitats in Ecoregion 6E.	**Five Alvar Indicator Species:** 1) *Carex crawei* 2) *Panicum philadelphicum* 3) *Eleocharis compressa* 4) *Scutellaria parvula* 5) *Trichostema brachiatum* These indicator species are very specific to Alvars within Ecoregion 6E and 7E	ALO1, ALS1, ALT1, FOC1, FOC2, CUM2, CUS2, CUT2-1, CUW2	• An alvar site > 0.5 ha in size. • An alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. The hydrology of alvars is complex, with alternating periods of inundation and drought. Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a number of characteristic or indicator plants. Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animal species. Vegetation cover varies from patchy to barren with a less than 60% tree cover. 7E: • Alvar is particularly rare in Ecoregion 7E where the only known sites are found in the western islands of Lake Erie	• Field studies that identify four of the five Alvar Indicator Species at a Candidate Alvar site is Significant. • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). • The alvar must be in excellent condition and fit in with surrounding landscape with few conflicting land uses	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.

Appendix C: Significant Wildlife Habitat (SWH) Ecoregions 6E and 7E Criterion Schedule (MNRF, 2015)

AECOM

Significant Wildlife Habitat Category	Wildlife Habitat	Listed or Indicator Species	Candidate SWH - ELC Ecosite Codes	Candidate[1] SWH - Habitat Criteria	Confirmed SWH[2] - Defining Criteria	Presence of SWH within 120 m of Short-list Alternative Route:			
						Alternative Route S1: Kennedy Rd/ Bovaird Dr to McLaughlin Rd	Alternative Route S2: Kennedy Rd/ Vodden St/Orangeville Brampton Railway (to Bovaird Dr)	Alternative Route N1: Orangeville Brampton Railway from Bovaird Dr/Old School Rd to Hurontario St	Alternative Route N2: McLaughlin Rd to Bovaird Dr / Old School Rd to Hurontario St
Rare Vegetation Communities. Ecoregion 6E & 7E	Old Growth Forest Rationale: Due to historic logging practices, extensive old growth forest is rare in the Ecoregion. Interior habitat provided by old growth forests is required by many wildlife species.	Not applicable	Forest Community Series: FOD, FOC, FOM, SWD, SWC, SWM	6E and 7E: • Old Growth forests are characterized by heavy mortality or turnover of over-storey trees resulting in a mosaic of gaps that encourage development of a multi-layered canopy and an abundance of snags and downed woody debris. 6E: • Woodland areas 30 ha or greater in size or with at least 10 ha interior habitat assuming 100 m buffer at edge of forest. 7E: • Woodland area is >0.5 ha	• If dominant trees species of the are >140 years old, then the area containing these trees is Significant Wildlife Habitat • The forested area containing the old growth characteristics will have experienced no recognizable forestry activities (cut stumps will not be present) • The area of forest ecosites combined or an eco-element within an ecosite that contains the old growth characteristics is the SWH. • Determine ELC vegetation types for the forest area containing the old growth characteristics	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.
Rare Vegetation Communities. Ecoregion 6E & 7E	Savannah Rationale: Savannahs are extremely rare habitats in Ontario.	Not applicable	TPS1, TPS2, TPW1, TPW2, CUS2	6E and 7E: • No minimum size to site. Site must be a restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH. • A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60%. 7E Only: • Known Tallgrass Prairie and savannah remnants are scattered between Lake Huron and Lake Erie, near Lake St. Clair, north of and along the Lake Erie shoreline, in Brantford and in the Toronto area (north of Lake Ontario).	• Field studies confirm one or more of the Savannah indicator species listed in Appendix N should be present. Note: **Savannah plant spp. list from Ecoregion 6E or 7E as applicable** should be used. • Area of the ELC Ecosite is the SWH. • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.).	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.

Appendix C: Significant Wildlife Habitat (SWH) Ecoregions 6E and 7E Criterion Schedule (MNRF, 2015)

AECOM

Significant Wildlife Habitat Category	Wildlife Habitat	Listed or Indicator Species	Candidate SWH - ELC Ecosite Codes	Candidate[1] SWH - Habitat Criteria	Confirmed SWH[2] - Defining Criteria	Presence of SWH within 120 m of Short-list Alternative Route:			
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Rare Vegetation Communities. Ecoregion 6E & 7E	Tallgrass Prairie <u>Rationale:</u> Tallgrass Prairies are extremely rare habitats in Ontario.	Not applicable	TPO1, TPO2	6E and 7E: • No minimum size to site. Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH. • A Tallgrass Prairie has ground cover dominated by prairie grasses. An open Tallgrass Prairie habitat has < 25% tree cover. 7E Only: • Known Tallgrass Prairie and savannah remnants are scattered between Lake Huron and Lake Erie, near Lake St. Clair, north of and along the Lake Erie shoreline, in Brantford and in the Toronto area (north of Lake Ontario).	• Field studies confirm one or more of the Prairie indicator species listed in Appendix N of SWHTG should be present. Note: **Prairie plant list from Ecoregion 6E or 7E as applicable** should be used • Area of the ELC Ecosite is the SWH. • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.).	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.
Rare Vegetation Communities. Ecoregion 6E & 7E	Other Rare Vegetation Communities <u>Rationale:</u> Plant communities that often contain rare species which depend on the habitat for survival.	Not applicable	Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTG. Any ELC Ecosite Code that has a possible ELC Vegetation Type that is Provincially Rare is Candidate SWH.	• ELC Ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in appendix M • The MNR/NHIC will have up to date listing for rare vegetation communities. • Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps.	• Field studies should confirm if an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of SWHTG. • Area of the ELC Vegetation Type polygon is the SWH.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.
Specialized Wildlife Habitat Considered SWH 1 Ecoregion 6E & 7E	Waterfowl Nesting Area <u>Rationale:</u> Important to local waterfowl populations, sites with greatest number of species and highest number of individuals are significant.	American Black Duck Northern Pintail Northern Shoveler Gadwall Blue-winged Teal Green-winged Teal Wood Duck Hooded Merganser Mallard	All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH: MAS1, MAS2, MAS3, SAS1, SAM1, SAF1, MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, SWT1, SWT2, SWD1, SWD2, SWD3, SWD4 **Note: includes adjacency to Provincially Significant Wetlands**	• A waterfowl nesting area extends 120 m from a wetland (> 0.5 ha) or a wetland (>0.5ha) and any small wetlands (0.5ha) within 120m or a cluster of 3 or more small (<0.5 ha) wetlands within 120 m of each individual wetland where waterfowl nesting is known to occur. • Upland areas should be at least 120 m wide so that predators such as racoons, skunks, and foxes have difficulty finding nests. • Wood Ducks and Hooded Mergansers utilize large diameter trees (>40cm dbh) in woodlands for cavity nest sites.	• Presence of 3 or more nesting pairs for listed species excluding Mallards, or; • Presence of 10 or more nesting pairs for listed species including Mallards. • Any active nesting site of an American Black Duck is considered significant. • Nesting studies should be completed during the spring breeding season (April - June). • A field study confirming waterfowl nesting habitat will determine the boundary of the waterfowl nesting habitat for the SWH, this may be greater or less than 120 m from the wetland and will provide enough habitat for waterfowl to successfully nest.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present	Absent - No suitable habitat was present

Appendix C: Significant Wildlife Habitat (SWH) Ecoregions 6E and 7E Criterion Schedule (MNRF, 2015)

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Significant Wildlife Habitat Category	Wildlife Habitat	Listed or Indicator Species	Candidate SWH - ELC Ecosite Codes	Candidate[1] SWH - Habitat Criteria	Confirmed SWH[2] - Defining Criteria	Presence of SWH within 120 m of Short-list Alternative Route:			
						Alternative Route S1: Kennedy Rd/ Bovaird Dr to McLaughlin Rd	Alternative Route S2: Kennedy Rd/ Vodden St/Orangeville Brampton Railway (to Bovaird Dr)	Alternative Route N1: Orangeville Brampton Railway from Bovaird Dr/Old School Rd to Hurontario St	Alternative Route N2: McLaughlin Rd to Bovaird Dr / Old School Rd to Hurontario St
Specialized Wildlife Habitat Considered SWH Ecoregion 6E & 7E 2	**Bald Eagle and Osprey Nesting, Foraging and Perching Habitat** Rationale: Nest sites are fairly uncommon in Eco-region 6E and 7E and are used annually by these species. Many suitable nesting locations may be lost due to increasing shoreline development pressures and scarcity of habitat.	Osprey **Special Concern** Bald Eagle	ELC Forest Community Series: FOD, FOM, FOC, SWD, SWM and SWC directly adjacent to riparian areas – rivers, lakes, ponds and wetlands	• Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water. • Osprey nests are usually at the top a tree whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree's canopy. • Nests located on man-made objects are not to be included as SWH (e.g. telephone poles and constructed nesting platforms).	• One or more active Osprey or Bald Eagle nests in an area. • Some species have more than one nest in a given area and priority is given to the primary nest with alternate nests included within the area of the SWH. • For an Osprey, the active nest and a 300 m radius around the nest or the contiguous woodland stand is the SWH, maintaining undisturbed shorelines with large trees within this area is important. • For a Bald Eagle the active nest and a 400-800 m radius around the nest is the SWH. Area of the habitat from 400-800 m is dependent on site lines from the nest to the development and inclusion of perching and foraging habitat • To be significant a site must be used annually. When found inactive, the site must be known to be inactive for > 3 years or suspected of not being used for >5 years before being considered not significant. • Observational studies to determine nest site use, perching sites and foraging areas need to be done from mid-March to mid-August.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.
Specialized Wildlife Habitat Considered SWH Ecoregion 6E & 7E	**Woodland Raptor Nesting Habitat** Rationale: Nests sites for these species are rarely identified; these area sensitive habitats and are often used annually by	Northern Goshawk, Cooper's Hawk, Sharp-shinned Hawk, Red-shouldered Hawk, Barred Owl, Broad-winged Hawk	May be found in all forested ELC Ecosites. May also be found in SWC, SWM, SWD and CUP3	7E and 6E: • Stick nests found in a variety of intermediate-aged to mature coniferous, deciduous or mixed forests within tops or crotches of trees. Species such as Coopers hawk nest along forest edges sometimes on peninsulas or small off-shore islands.	• Presence of 1 or more active nests from species list is considered significant. • Red-shouldered Hawk and Northern Goshawk – A 400m radius around the nest or 28 ha area of habitat is the SWH (the 28 ha habitat area would be applied where optimal habitat is irregularly shaped around the nest)	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.

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3				• In disturbed sites, nests may be used again, or a new nest will be in close proximity to old nest. 6E: • All natural or conifer plantation woodland/forest stands >30ha with >10ha of interior habitat, Interior habitat determined with a 200m buffer 7E: • All natural or conifer plantation woodland/forest stands >30ha with >4ha of interior habitat, Interior habitat determined with a 200m buffer	• Barred Owl – A 200m radius around the nest is the SWH. • Broad-winged Hawk and Coopers Hawk – A 100m radius around the nest is the SWH. • Sharp-Shinned Hawk – A 50m radius around the nest is the SWH • Conduct field investigations from mid-March to end of May. The use of call broadcasts can help in locating territorial (courting/nesting) raptors and facilitate the discovery of nests by narrowing down the search area.				
Specialized Wildlife Habitat Considered SWH 4 Ecoregion 6E & 7E	Turtle Nesting Areas <u>Rationale:</u> These habitats are rare and when identified will often be the only breeding site for local populations of turtles.	Midland Painted Turtle <u>Special Concern Species</u> Northern Map Turtle Snapping Turtle	Exposed mineral soil (sand or gravel) areas adjacent (<100m) or within the following ELC Ecosites: MAS1, MAS2, MAS3, SAS1, SAM1, SAF1, BOO1	• Best nesting habitat for turtles are close to water and away from roads and sites less prone to loss of eggs by predation from skunks, raccoons or other animals. • For an area to function as a turtle-nesting area, it must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH. • Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used.	• Presence of 5 or more nesting Midland Painted Turtles • One or more Northern Map Turtle or Snapping Turtle nesting is a SWH. • The area or collection of sites within an area of exposed mineral soils where the turtles nest, plus a radius of 30-100m around the nesting area dependant on slope, riparian vegetation and adjacent land use is the SWH • Travel routes from wetland to nesting area are to be considered within the SWH as part of the 30-100m area of habitat. • Field investigations should be conducted in prime nesting season typically late spring to early summer. Observational studies observing the turtles nesting is a recommended method.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.

Appendix C: Significant Wildlife Habitat (SWH) Ecoregions 6E and 7E Criterion Schedule (MNRF, 2015)

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Significant Wildlife Habitat Category	Wildlife Habitat	Listed or Indicator Species	Candidate SWH - ELC Ecosite Codes	Candidate[1] SWH - Habitat Criteria	Confirmed SWH[2] - Defining Criteria	Presence of SWH within 120 m of Short-list Alternative Route:			
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Specialized Wildlife Habitat Considered SWH 5 Ecoregion 6E & 7E	Seeps and Springs Rationale: Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams.	Wild Turkey, Ruffed Grouse, Spruce Grouse, White-tailed Deer, Salamander spp.	Seeps/Springs are areas where ground water comes to the surface. Often they are found within headwater areas within forested habitats. Any forested Ecosite within the headwater areas of a stream could have seeps/springs.	• Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system. • Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species	• Presence of a site with 2 or more seeps/springs should be considered SWH. • The area of an ELC forest ecosite or an Ecoelement within ecosite containing the seeps/springs is the SWH. The protection of the recharge area considering the slope, vegetation, height of trees and groundwater condition need to be considered in delineation the habitat.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.
Specialized Wildlife Habitat Considered SWH Ecoregion 6E & 7E 6	Amphibian Breeding Habitat (Woodland). Rationale: These habitats are extremely important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations	Eastern Newt, Blue-spotted Salamander, Spotted Salamander, Gray Treefrog, Spring Peeper, Western Chorus Frog, Wood Frog	All Ecosites associated with these ELC Community Series; FOC, FOM, FOD, SWC, SWM, SWD Breeding pools within the woodland or the shortest distance from forest habitat are more significant because they are more likely to be used due to reduced risk to migrating amphibians	• Presence of a wetland, pond or woodland pool (including vernal pools) >500m2 (about 25m diameter) within or adjacent (within 120m) to a woodland (no minimum size). Some small wetlands may not be mapped and may be important breeding pools for amphibians. • Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat	• Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog species with Call Level Codes of 3. • A combination of observational study and call count surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the woodland/wetlands. • The habitat is the wetland area plus a 230 m radius of woodland area. If a wetland area is adjacent to a woodland, a travel corridor connecting the wetland to the woodland is to be included in the habitat.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Candidate SWH - Ecosite(s) and/or habitat features were present but targeted species-specific surveys were not completed.	Candidate SWH - Ecosite(s) and/or habitat features were present but targeted species-specific surveys were not completed.

Appendix C: Significant Wildlife Habitat (SWH) Ecoregions 6E and 7E Criterion Schedule (MNRF, 2015)

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Specialized Wildlife Habitat Considered SWH Ecoregion 6E & 7E 7	**Amphibian Breeding Habitat (Wetlands) Rationale;** Wetlands supporting breeding for these amphibian species are extremely important and fairly rare within Central Ontario landscapes.	Eastern Newt, American Toad, Spotted Salamander, Four-toed Salamander, Blue-spotted Salamander, Gray Treefrog, Western Chorus Frog, Northern Leopard Frog, Pickerel Frog, Green Frog, Mink Frog, Bullfrog	ELC Community Classes SW, MA, FE, BO, OA and SA. Typically these wetland ecosites will be isolated (>120m) from woodland ecosites, however larger wetlands containing predominantly aquatic species (e.g. Bull Frog) may be adjacent to woodlands.	• Wetlands>500m2 (about 25m diameter), supporting high species diversity are significant; some small or ephemeral habitats may not be identified on MNR mapping and could be important amphibian breeding habitats. • Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape and concealment from predators. • Bullfrogs require permanent water bodies with abundant emergent vegetation.	• Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog/toad species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog/toad species with Call Level Codes of 3. **or;** Wetland with confirmed breeding Bullfrogs are significant. • The ELC ecosite wetland area and the shoreline are the SWH. • A combination of observational study and call count surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the wetlands. • If a SWH is determined for Amphibian Breeding Habitat (Wetlands) then Movement Corridors are to be considered.	Candidate SWH - Ecosite(s) and/or habitat features were present but targeted species-specific surveys were not completed.	Absent - No suitable habitat was present.	Candidate SWH - Ecosite(s) and/or habitat features were present but targeted species-specific surveys were not completed.	Candidate SWH - Ecosite(s) and/or habitat features were present but targeted species-specific surveys were not completed.
Specialized Wildlife Habitat Considered SWH Ecoregion 6E & 7E 8	**Woodland Area-Sensitive Bird Breeding Habitat** Rationale: Large, natural blocks of mature woodland habitat within the settled areas of Southern Ontario are important habitats.	**6E and 7E:** Yellow-bellied Sapsucker, Red-breasted Nuthatch, Veery, Blue-headed Vireo, Northern Parula, Black-throated Green Warbler, Blackburnian Warbler, Black-throated Blue Warbler, Ovenbird, Scarlet Tanager, Winter Wren **7E Only:** Pileated Woodpecker **6E and 7E Special Concern:** Cerulean Warbler, Canada Warbler	All Ecosites associated with these ELC Community Series; FOC, FOM, FOD, SWC, SWM, SWD	• Habitats where interior forest breeding birds are breeding, typically large mature (>60 yrs. old) forest stands or woodlots >30 ha. • Interior forest habitat is at least 200 m from forest edge habitat.	• Presence of nesting or breeding pairs of 3 or more of the listed wildlife species. • Note: any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH. • Conduct breeding bird surveys in spring and early summer when birds are singing and defending their territories.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.

Appendix C: Significant Wildlife Habitat (SWH) Ecoregions 6E and 7E Criterion Schedule (MNRF, 2015)

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Habitats of Species of Conservation Concern considered SWH 1 Ecoregion 6E & 7E	Marsh Breeding Bird Habitat <u>Rationale:</u> Wetlands for these bird species are typically productive and fairly rare in Southern Ontario landscapes.	6E and 7E: American Bittern, Virginia Rail, Sora, Common Moorhen, American Coot, Pied-billed Grebe, Marsh Wren, Sedge Wren, Common Loon, Green Heron, Trumpeter Swan 6E Only: Sandhill Crane 6E and 7ESpecial Concern: Black Tern, Yellow Rail	MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, SAS1, SAM1, SAF1, FEO1, BOO1 For Green Heron: All SW, MA and CUM1 sites.	• Nesting occurs in wetlands. • All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present. • For Green Heron, habitat is at the edge of water such as sluggish streams, ponds and marshes sheltered by shrubs and trees. Less frequently, it may be found in upland shrubs or forest a considerable distance from water.	6E and 7E: • Note: any wetland with breeding of 1 or more Black Terns, Trumpeter Swan, Green Heron or Yellow Rail is SWH. • Area of the ELC ecosite is the SWH. • Conduct breeding bird surveys in May/June when these species are actively nesting in wetland habitats. 6E Only: • Presence of 5 or more nesting pairs of Sedge Wren or Marsh Wren or 1 pair of Sandhill Cranes; **or** breeding by any combination of 5 or more of the listed species 7E Only: • Presence of 5 or more nesting pairs of Sedge Wren or Marsh Wren or breeding by any combination of 4 or more of the listed species	Absent – None of the Bird species have been recorded in this area based on Background review. Breeding Birds surveys were not conducted.	Absent – None of the Bird species have been recorded in this area based on Background review. Breeding Birds surveys were not conducted.	Absent – None of the Bird species have been recorded in this area based on Background review. Breeding Birds surveys were not conducted.	Absent – None of the Bird species have been recorded in this area based on Background review. Breeding Birds surveys were not conducted.
Habitats of Species of Conservation Concern considered SWH Ecoregion 6E & 7E 2	Open Country Bird Breeding Habitat <u>Rationale:</u> This habitat is declining throughout Ontario. Upland Sandpiper have declined significantly the past 40 years based on CWS (2004) trend records.	Upland Sandpiper, Grasshopper Sparrow, Vesper Sparrow, Northern Harrier, Savannah Sparrow Special Concern Short-eared Owl	CUM1, CUM2	• Large grassland areas (includes natural and cultural fields and meadows) >30 ha. • Grasslands not Class 1 or 2 agricultural lands and not being actively used for farming (i.e. no row cropping or intensive hay or livestock pasturing in the last 5 years). • Grassland sites considered significant should have a history of longevity, either abandoned fields, mature hayfields and pasturelands that are at least 5 years or older. • The Indicator bird species are area sensitive requiring larger grassland areas than the common grassland species.	• Presence of nesting or breeding of 2 or more of the listed species. • A field with 1 or more breeding Short-eared Owls is to be considered SWH. • The area of SWH is the contiguous ELC ecosite field areas. • Conduct breeding bird surveys in the most likely areas in spring and early summer when birds are singing and defending their territories.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.

Appendix C: Significant Wildlife Habitat (SWH) Ecoregions 6E and 7E Criterion Schedule (MNRF, 2015)

AECOM

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Habitats of Species of Conservation Concern considered SWH Ecoregion 6E & 7E 3	**Shrub/Early Successional Bird Breeding Habitat** Rationale: This habitat is declining throughout Ontario. Brown Thrasher has declined significantly over the past 40 years based on CWS (2004) trend records.	Indicator Spp.: Brown Thrasher, Clay-coloured Sparrow Common Spp.: Field Sparrow, Black-billed Cuckoo, Eastern Towhee, Willow Flycatcher **Special Concern:** Yellow-breasted Chat, Golden-winged Warbler	CUT1, CUT2, CUS1, CUS2, CUW1, CUW2 Patches of shrub ecosites can be complexed into a larger habitat for some bird species	• Large field areas succeeding to shrub and thicket habitats>10ha in size. • Shrub land or early successional fields, not class 1 or 2 agricultural lands, not being actively used for farming (i.e. no row-cropping, haying or live-stock pasturing in the last 5 years). • Shrub thicket habitats (>10 ha) are most likely to support and sustain a diversity of these species. • Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or pasturelands.	• Presence of nesting or breeding of 1 of the indicator species and at least 2 of the common species. • A habitat with breeding Yellow-breasted Chat or Golden-winged Warbler is to be considered as Significant Wildlife Habitat. • The area of the SWH is the contiguous ELC ecosite field/thicket area. • Conduct breeding bird surveys in the most likely areas in spring and early summer when birds are singing and defending their territories.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.
Habitats of Species of Conservation Concern considered SWH Ecoregion 6E & 7E 4	**Terrestrial Crayfish** Rationale: Terrestrial Crayfish are only found within southwestern Ontario in Canada and their habitats are very rare.	Chimney or Digger Crayfish; (*Fallicambarus fodiens*) Devil Crayfish or Meadow Crayfish; (*Cambarus diogenes*)	MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, MAS1, MAS2, MAS3, SWD, SWT, SWM, CUM1 with inclusions of above meadow marsh or swamp ecosites can be used by terrestrial crayfish.	• Wet meadow and edges of shallow marshes (no minimum size) should be surveyed for terrestrial crayfish. • Constructs burrows in marshes, mudflats, meadows, the ground can't be too moist. Can often be found far from water. • Both species are a semi-terrestrial burrower which spends most of its life within burrows consisting of a network of tunnels. Usually the soil is not too moist so that the tunnel is well formed.	• Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable meadow marsh, swamp or moist terrestrial sites • Area of ELC ecosite or an Ecoelement area of meadow marsh or swamp within the larger ecosite area is the SWH. • Surveys should be done April to August in temporary or permanent water. Note the presence of burrows or chimneys are often the only indicator of presence, observance or collection of individuals is very difficult	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Candidate SWH - Ecosite(s) and/or habitat features were present but targeted species-specific surveys were not completed.	Candidate SWH - Ecosite(s) and/or habitat features were present but targeted species-specific surveys were not completed.

Appendix C: Significant Wildlife Habitat (SWH) Ecoregions 6E and 7E Criterion Schedule (MNRF, 2015)

AECOM

Significant Wildlife Habitat Category	Wildlife Habitat	Listed or Indicator Species	Candidate SWH - ELC Ecosite Codes	Candidate[1] SWH - Habitat Criteria	Confirmed SWH[2] - Defining Criteria	Presence of SWH within 120 m of Short-list Alternative Route:			
						Alternative Route S1: Kennedy Rd/ Bovaird Dr to McLaughlin Rd	Alternative Route S2: Kennedy Rd/ Vodden St/Orangeville Brampton Railway (to Bovaird Dr)	Alternative Route N1: Orangeville Brampton Railway from Bovaird Dr/Old School Rd to Hurontario St	Alternative Route N2: McLaughlin Rd to Bovaird Dr / Old School Rd to Hurontario St
Habitats of Species of Conservation Concern considered SWH Ecoregion 6E & 7E	Special Concern and Rare Wildlife Species Rationale: These species are quite rare or have experienced significant population declines in Ontario.	All Special Concern and Provincially Rare (S1-S3, SH) plant and animal species. Lists of these species are tracked by the Natural Heritage Information Centre.	All plant and animal element occurrences (EO) within a 1 or 10km grid. Older element occurrences were recorded prior to GPS being available, therefore location information may lack accuracy	• When an element occurrence is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites	• Assessment/ inventory of the site for the identified special concern or rare species needs to be completed during the time of year when the species is present or easily identifiable. • The area of the habitat to the finest ELC scale that protects the habitat form and function is the SWH; this must be delineated through detailed field studies. The habitat needs be easily mapped and cover an important life stage component for a species e.g. specific nesting habitat or foraging habitat.	Candidate habitat for: • American Bumble Bee (*Bombus pensylvanicus*), • Monarch (*Danaus* plexippus), • Snapping Turtle (*Chelydra serpentina*). • Yellow-banded Bumble Bee (*Bombus terricola*),	Candidate habitat for: • American Bumble Bee • Monarch • Snapping Turtle • Yellow-banded Bumble Bee	Candidate habitat for: • American Bumble Bee • Barn Swallow (*Hirundo rustica)* • Monarch • Snapping Turtle. • Yellow-banded Bumble Bee	Candidate habitat for: • American Bumble Bee • Barn Swallow (*Hirundo rustica)* • Monarch • Snapping Turtle. • Yellow-banded Bumble Bee
Animal Movement Corridors Ecoregion 6E & 7E	Amphibian Movement Corridors Rationale: Movement corridors for amphibians moving from their terrestrial habitat to breeding habitat can be extremely important for local populations.	Eastern Newt, American Toad, Spotted Salamander, Four-toed Salamander, Blue-spotted Salamander, Gray Treefrog, Western Chorus Frog, Northern Leopard Frog, Pickerel Frog, Green Frog, Mink Frog, Bullfrog	Corridors may be found in all ecosites associated with water. • Corridors will be determined based on identifying the significant breeding habitat for these species.	• Movement corridors between breeding habitat and summer habitat • Movement corridors must be determined when **Amphibian Breeding Habitat –Wetland** is confirmed as SWH of this Schedule.	• Field Studies must be conducted at the time of year when species are expected to be migrating or entering breeding sites. • Corridors should consist of native vegetation, with several layers of vegetation. • Corridors unbroken by roads, waterways or bodies, and undeveloped areas are most significant • Corridors should have at least 15m of vegetation on both sides of waterway or be up to 200m wide of woodland habitat and with gaps <20m. • Shorter corridors are more significant than longer corridors; however amphibians must be able to get to and from their summer and breeding habitat.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.

Appendix C: Significant Wildlife Habitat (SWH) Ecoregions 6E and 7E Criterion Schedule (MNRF, 2015)

AECOM

Significant Wildlife Habitat Category	Wildlife Habitat	Listed or Indicator Species	Candidate SWH - ELC Ecosite Codes	Candidate[1] SWH - Habitat Criteria	Confirmed SWH[2] - Defining Criteria	Presence of SWH within 120 m of Short-list Alternative Route:			
						Alternative Route S1: Kennedy Rd/ Bovaird Dr to McLaughlin Rd	Alternative Route S2: Kennedy Rd/ Vodden St/Orangeville Brampton Railway (to Bovaird Dr)	Alternative Route N1: Orangeville Brampton Railway from Bovaird Dr/Old School Rd to Hurontario St	Alternative Route N2: McLaughlin Rd to Bovaird Dr / Old School Rd to Hurontario St
Animal Movement Corridors Ecoregion 6E ONLY	ONLY APPLICABLE to 6E Deer Movement Corridors <u>Rationale:</u> Corridors important for all species to be able to access seasonally important life-cycle habitats or to access new habitat for dispersing individuals by minimizing their vulnerability while travelling.	White-tailed Deer	Corridors may be found in all forested ecosites. A Project Proposal in Stratum II Deer Wintering Area has potential to contain corridors.	• Movement corridor must be determined when **Deer Wintering Habitat** is confirmed as SWH from Table 1.1 of this schedule. • A deer wintering habitat identified by the MNR as SWH in Table 1.1 of this Schedule will have corridors that the deer use during fall migration and spring dispersion • Corridors typically follow riparian areas, woodlots, areas of physical geography (ravines, or ridges).	• Studies must be conducted at the time of year when deer are migrating or moving to and from winter concentration areas. • Corridors that lead to a deer wintering habitat should be unbroken by roads and residential areas. • Corridors should be at least 200m wide with gaps < 20m and if following riparian area with at least 15m of vegetation on both sides of waterway. • Shorter corridors are more significant than longer corridors.	Absent - No suitable habitat was present	Absent - No suitable habitat was present	Absent - No suitable habitat was present.	Choose an item.
Exceptions for Ecodistricts within EcoRegion 6E 6E-14 Ecoregion 6E ONLY	ONLY APPLICABLE to 6E <u>Rationale:</u> The Bruce Peninsula has an isolated and distinct population of black bears. Maintenance of large woodland tracts with mast-producing tree species is important for bears.	**Mast Producing Areas** Black Bear	All Forested habitat represented by ELC Community Series: FOM, FOD	• Woodland ecosites >30ha with mast-producing tree species, either soft (cherry) or hard (oak and beech), <u>Information Sources</u> • Important forest habitat for black bears may be identified by MNR.	• All woodlands > 30ha with a 50%composition of these ELC Vegetation Types are considered significant: FOM1-1, FOM2-1, FOM3-1, FOD1-1, FOD1-2, FOD2-1, FOD2-2, FOD2-3, FOD2-4, FOD4-1, FOD5-2, FOD5-3, FOD5-7, FOD6-5	Absent - No suitable habitat was present	Absent - No suitable habitat was present	Absent - No suitable habitat was present	Absent - No suitable habitat was present
Exceptions for Ecodistricts within EcoRegion 6E 6E- 17 Ecoregion 6E ONLY	ONLY APPLICABLE to 6E <u>Rationale:</u> Sharp-tailed grouse only occur on Manitoulin Island in Eco-region 6E, Leks are an important habitat to maintain their population	**Lek** **Sharp-tailed Grouse**	CUM, CUS, CUT	• Grasslands (field/meadow) are to be >15ha when adjacent to shrubland and >30ha when adjacent to deciduous woodland. • Grasslands are to be undisturbed with low intensities of agriculture (light grazing or late haying) • Leks will be used annually if not destroyed by cultivation or invasion by woody plants or tree planting • Leks are typically a grassy field/meadow >15ha with adjacent shrublands and >30ha with adjacent deciduous woodland. Conifer trees within 500m are not tolerated.	• Studies confirming lek habitat are to be completed from late March to June. • Any site confirmed with sharp-tailed grouse courtship activities is considered significant • The field/meadow ELC ecosites plus a 200 m radius area with shrub or deciduous woodland is the elk habitat	Absent - No suitable habitat was present	Absent - No suitable habitat was present	Absent - No suitable habitat was present	Absent - No suitable habitat was present

Appendix C: Significant Wildlife Habitat (SWH) Ecoregions 6E and 7E Criterion Schedule (MNRF, 2015)

Significant Wildlife Habitat Category	Wildlife Habitat	Listed or Indicator Species	Candidate SWH - ELC Ecosite Codes	Candidate[1] SWH - Habitat Criteria	Confirmed SWH[2] - Defining Criteria	Presence of SWH within 120 m of Short-list Alternative Route:			
						Alternative Route S1: Kennedy Rd/ Bovaird Dr to McLaughlin Rd	Alternative Route S2: Kennedy Rd/ Vodden St/Orangeville Brampton Railway (to Bovaird Dr)	Alternative Route N1: Orangeville Brampton Railway from Bovaird Dr/Old School Rd to Hurontario St	Alternative Route N2: McLaughlin Rd to Bovaird Dr / Old School Rd to Hurontario St
Exceptions for Ecodistricts within EcoRegion 7E 7E-2 Ecoregion 7E ONLY	ONLY APPLICABLE to 7E **Bat Migratory Stopover Area** **Rationale:** Stopover areas for long distance migrant bats are important during fall migration.	Hoary Bat Eastern Red Bat Silver-haired Bat	No specific ELC types.	• Long distance migratory bats typically migrate during late summer and early fall from summer breeding habitats throughout Ontario to southern wintering areas. Their annual fall migration may concentrate these species of bats at stopover areas. • This is the only known bat migratory stopover habitats based on current information.	• Long Point (42°35'N, 80°30'E, to 42°33'N, 80°03'E) has been identified as a significant stop-over habitat for fall migrating Silver-haired Bats, due to significant increases in abundance, activity and feeding that was documented during fall migration. • The confirmation criteria and habitat areas for this SWH are still being determined.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.	Absent - No suitable habitat was present.

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Central Brampton

Appendix D

Species at Risk Screening

AECOM

Peel Region

Appendix D. Species at Risk Habitat Screening

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Taxonomy	Common Name	Scientific Name	[1]S-Rank (03-06-25)	2ESA Status (03-06-25)	[3]SARA Status (03-06-25)	[4]COSEWIC Status (03-06-25)	[5]Habitat Requirements	[5]Known Species Range	[6]Source Identifying Species Record	Suitable Habitat Presence and Quality (Absent, Low Quality, High Quality)	Species Observed using Suitable Habitat (Yes, No, Flyover Only)	Probability of Occurring in the Study Area Combined for S1, S2, N1 and N2	Within 120 m of S1? (Yes/No)	Within 120 m of S2? (Yes/No)	Within 120 m of N1? (Yes/No)	Within 120 m of N2? (Yes/No)
Mammals	Eastern Red Bat	*Lasiurus borealis*	S2S3	END	No Status	END	Wide diversity of deciduous and coniferous forests, of any age class. Trees used as maternity roosts tend to be large diameter and tall, reaching or exceeding the height of the surrounding canopy. They typically roost among the foliage of trees and occasionally shrubs. They forage in both forested and non-forested habitats, often foraging over open spaces including wetlands, grasslands and fields.	Found throughout Ontario north to the Hudson Bay Lowlands.	BCA	Low Quality	No	Medium	Yes	Yes	Yes	Yes
Mammals	Hoary Bat	*Lasiurus cinereus*	S2S3	END	No Status	END	Wide diversity of deciduous and coniferous forests, of any age class. Trees used as maternity roosts tend to be large diameter and tall, reaching or exceeding the height of the surrounding canopy. They typically roost among the foliage of trees and occasionally shrubs. They forage in both forested and non-forested habitats, often foraging over open spaces including wetlands, grasslands and fields.	Found throughout Ontario.	BCA	Low Quality	No	Medium	Yes	Yes	Yes	Yes
Mammals	Little Brown Myotis (Little Brown Bat)	*Myotis lucifugus*	S3	END	END	END	Roost in trees and buildings. They often select attics, abandoned buildings, large diameter trees and barns for summer colonies where they can raise their young. Little Brown Bats hibernate in caves or abandoned mines that are humid and remain above freezing. Foraging occurs over water, along waterways, and forest edges. Large open fields or clearcuts generally are avoided.	Widespread in Ontario and found as far north as Moose Factory and Favourable Lake.	BCA	Low Quality	No	Medium	Yes	Yes	Yes	Yes
Mammals	Northern Myotis (Northern Long-eared Bat)	*Myotis septentrionalis*	S3	END	END	END	Boreal forests, choosing to roost or maternity colonies under loose bark and in the cavities of large diameter trees and buildings. The Northern Long-eared Bat overwinters in cold and humid hibernacula (caves/mines). Foraging occurs along waterways, forest edges, and in gaps in the forest. Large open fields or clearcuts generally are avoided.	Found throughout forested areas in Ontario, north to the north shore of Lake Superior and occasionally as far north as Moosonee, and west to Lake Nipigon.	BCA	Low Quality	No	Medium	Yes	Yes	Yes	Yes
Birds	Red-headed Woodpecker	*Melanerpes erythrocephalus*	S3	END	END	END	Breeds in open deciduous forests, parklands, and savannas with standing dead trees for nesting and foraging. Requires habitat patches >10 ha with limited understory and abundant snags.	Found in southern Ontario and near Lake of the Woods; population declining in most areas.	Ebird, NHIC, OBBA, INAT	Low Quality	No	Medium	Yes	Yes	Yes	Yes
Fish	Redside Dace	*Clinostomus elongatus*	S1	END	END	END	Clear pools and slow-moving areas of small streams and headwaters with a gravel, rock or sand bottom with overhanging grasses and shrubs. They can be found in shallow parts of streams during spawning.	Found in a few tributaries of Lake Huron, in streams flowing into western Lake Ontario, the Holland River (which flows into Lake Simcoe), and Irvine Creek of the Grand River system (which flows into Lake Erie).	NHIC, INAT	Low Quality	No	Medium	Yes	Yes	Yes	Yes
Mammals	Silver-haired Bat	*Lasionycteris noctivagans*	S2S3	END	No Status	END	Silver-haired Bats occupy a wide diversity of habitats across their geographic range. They roost in a variety of large diameter coniferous and deciduous trees. Roosting occurs primarily under peeling bark and in the cavities of trees, and occasionally in anthropogenic structures (e.g., buildings). They forage in young and old forest, as well as forest openings (canopy gaps), but are typically concentrated along forest edges and intact forest. In British Columbia, Silver-haired Bats have been documented hibernating in mines, rock crevices, trees, and snags. Little else is known about their winter ecology.	Found throughout Ontario north to the Hudson Bay Lowlands.	BCA	Low Quality	No	Medium	Yes	Yes	Yes	Yes
Mammals	Tri-colored Bat	*Perimyotis subflavus*	S3?	END	END	END	Variety of forested habitats. It forms day roosts and maternity colonies in older forest with large diameter trees and occasionally in barns or other structures. They forage over water and along streams in the forest. At the end of the summer they travel to a location where they swarm; it is generally near the cave or underground location where they will overwinter in cold and humid hibernacula (caves/mines). Foraging occurs over water, along waterways, and forest edges. Large open fields or clearcuts generally are avoided.	Found in southern and central Ontario, extending as far north as Lake Nipissing and Algonquin Provincial Park.	BCA	Low Quality	No	Medium	Yes	Yes	Yes	Yes
Plants	Black Ash	*Fraxinus nigra*	S4	END	No Status	THR	Prefers swampy lowlands and streambanks in cold, poorly drained organic soils. Reproduces by seed and root suckers; highly susceptible to Emerald Ash Borer.	Widespread across central and southern Ontario, especially in wet lowland areas and riparian zones.	NHIC	Low Quality	Yes	Confirmed	No	No	Yes	No
Insects	Monarch	*Danaus plexippus*	S2N,S4B	SC	END	END	Requires open areas with milkweed for larval development and wildflowers for adult nectar. Roosts during migration occur in trees along the Great Lakes.	Common throughout southern Ontario; migratory populations overwinter in Mexico.	OBA, INAT	Low Quality	No	Medium	Yes	Yes	Yes	Yes
Insects	American Bumble Bee	*Bombus pensylvanicus*	S3S4	SC	SC	SC	Found in open habitats including grasslands, farmlands, and meadows. Nests are typically constructed above ground in long grasses or in abandoned burrows. Queens overwinter in rotting logs or compost in shaded areas.	Occurs throughout southern Ontario, particularly within the Mixedwood Plains Ecozone.	NHIC, INAT	Low Quality	No	Medium	Yes	Yes	Yes	Yes
Birds	Barn Swallow	*Hirundo rustica*	S4B	SC	THR	SC	Nests in barns or hollow trees in open habitats like pastures and croplands. Forages at night in grasslands and overwinters in warm, sheltered cavities in southern parts of Ontario or migrates.	Found in southwestern Ontario, mostly near Lake Erie and Lake Ontario.	EBIRD	Low Quality	No	Medium	No	No	Yes	Yes
Reptiles	Snapping Turtle	*Chelydra serpentina*	S4	SC	SC	SC	Prefers slow-moving or still waters including marshes, lakes, ponds, and rivers with soft bottoms and aquatic vegetation. Nests in sunny, well-drained soils close to water.	Widespread across southern, central, and parts of northern Ontario.	ORAA	Low Quality	No	Medium	Yes	Yes	Yes	Yes
Insects	Yellow-banded Bumble Bee	*Bombus terricola*	S3S5	SC	SC	SC	Found in forests, wetlands, and open meadows. Nests underground or in decomposing logs. Generalist forager and sensitive to habitat disturbance.	Widespread in Ontario; declining in southern regions but stable in the north.	NHIC, INAT	Low Quality	No	Medium	Yes	Yes	Yes	Yes

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Central Brampton

Appendix E

E1. Aquatic Habitat Assessment along Preferred Route

E2. Terrestrial ELC Classifications along Preferred Route

AECOM

Peel Region

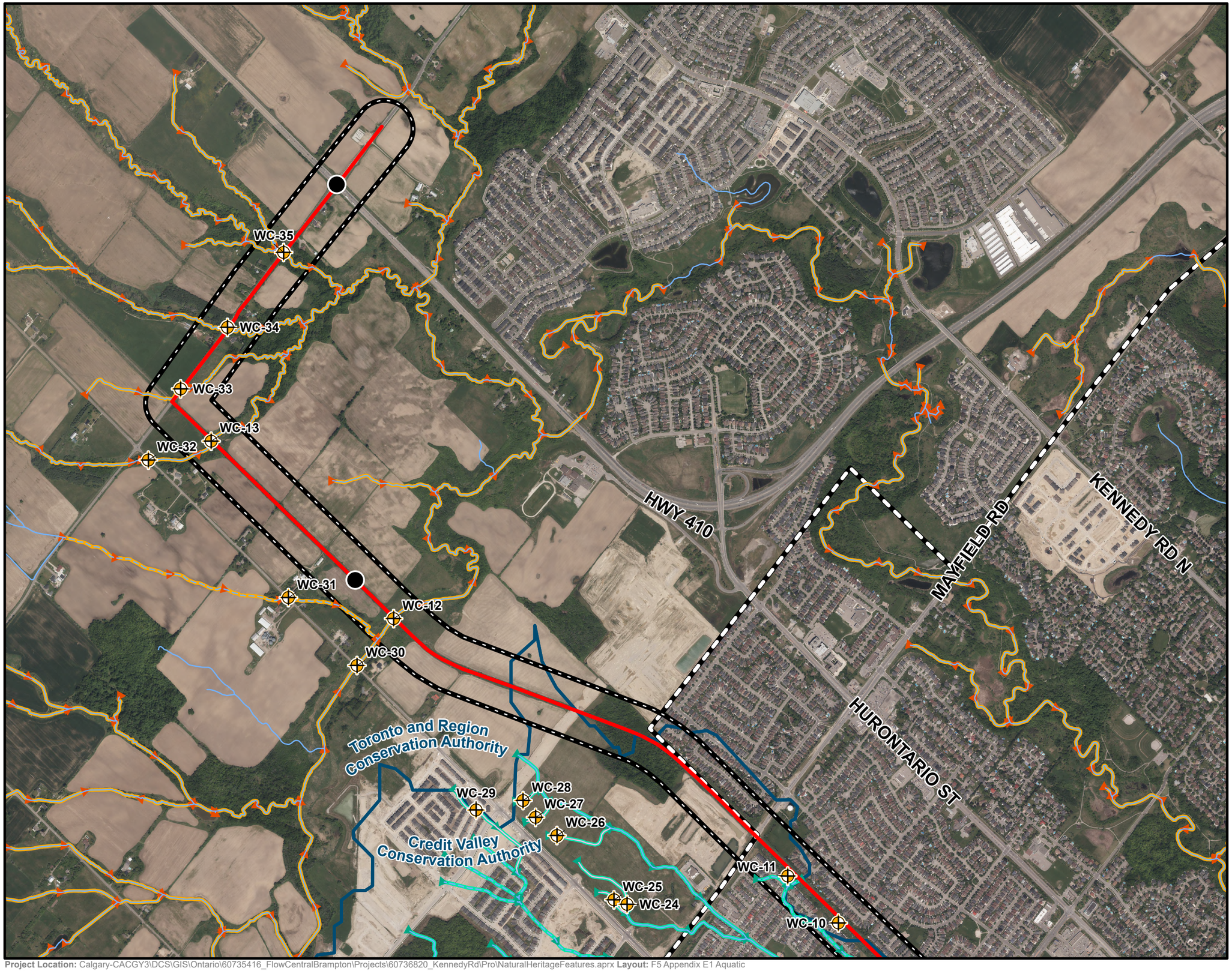
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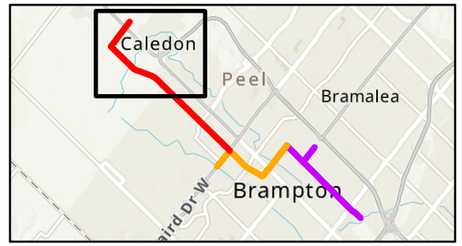
Central Brampton

E1. Aquatic Habitat Assessment along Preferred Route

AECOM

Peel Region





Study Area
Municipal Boundary
Watercourse Crossing ID
Sanitary Trunk Sewer Connections
Conservation Authority Boundary

Preferred Route - Segment
Segment 1
Segment 2
Segment 3

Thermal Regime
Cool
Warm

Watercourse Permanency
N/A
Intermittent
Permanent

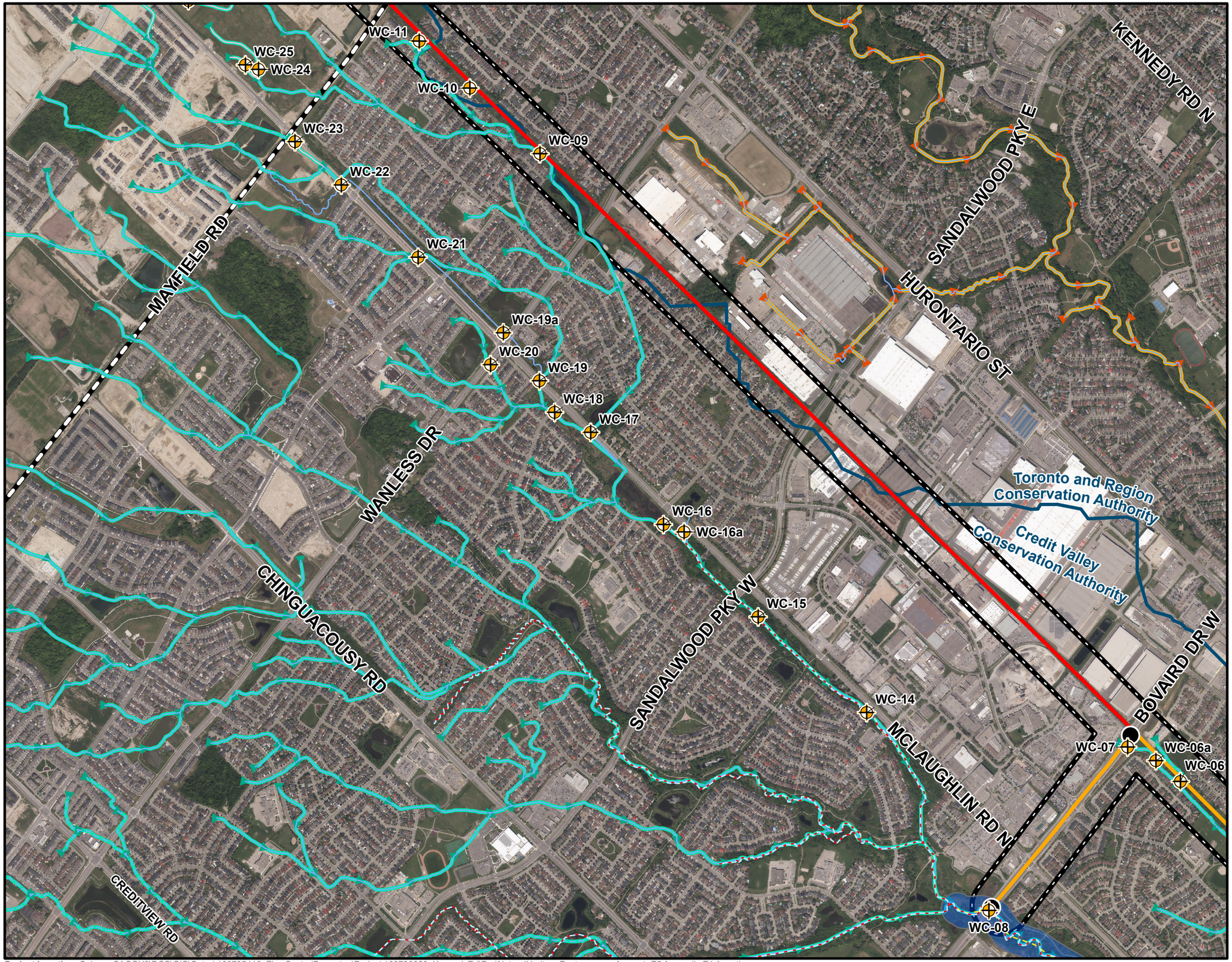
Flow | Central Brampton

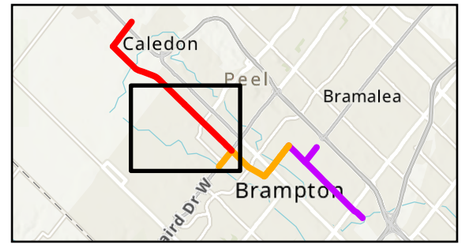
Kennedy Rd - Detailed Field Investigations for the Preferred Route – Aquatic Habitat Assessment

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Scale: 1:15,000
N

PN: 60735416	Appendix E1-1
January 29, 2026	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA), Fisheries and Oceans Canada (DFO)





- Study Area
- Municipal Boundary
- Watercourse Crossing ID
- Sanitary Trunk Sewer Connections
- Conservation Authority Boundary

Critical Habitat

- Redside Dace Critical Habitat (DFO, 2025)
- Fletcher's Creek Meander Belt Axis
- Redside Dace Critical Habitat (Meander Belt Width + 30m) (AECOM, 2025)

Preferred Route - Segment

- Segment 1
- Segment 2
- Segment 3

Thermal Regime

- Cool
- Warm

Watercourse Permanency

- N/A
- Intermittent
- Permanent

Flow | Central Brampton

Kennedy Rd - Detailed Field Investigations for the Preferred Route – Aquatic Habitat Assessment

0 250 500 750

Meters

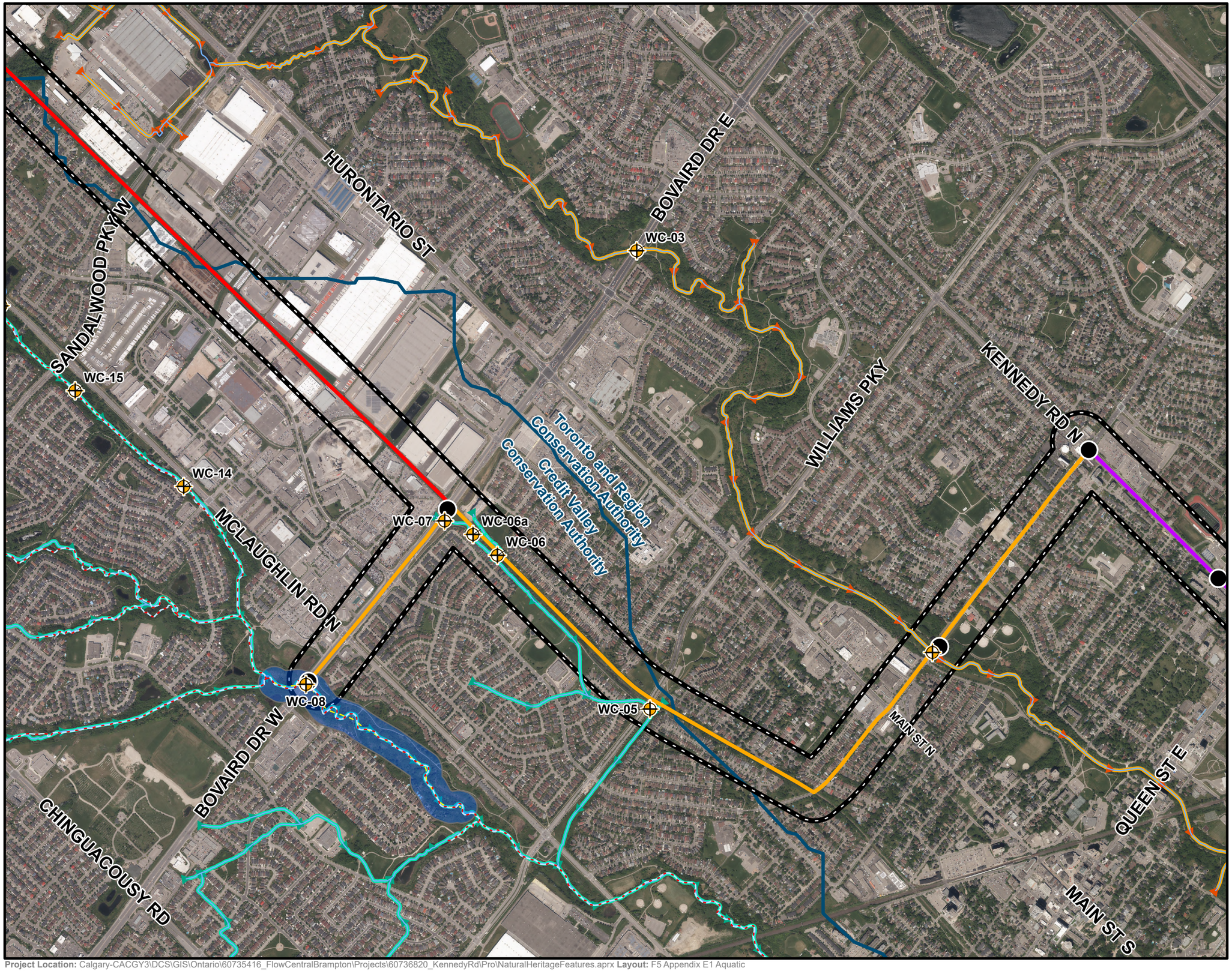
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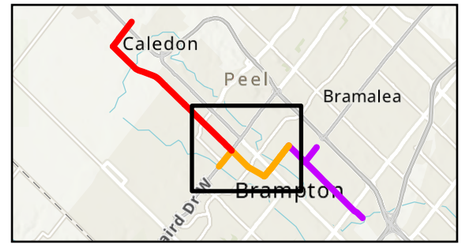
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PN: 60735416	Appendix E1-2
January 29, 2026	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA), Fisheries and Oceans Canada (DFO)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F5 Appendix E1 Aquatic Habitat Assessment





- Study Area
- Municipal Boundary
- Watercourse Crossing ID
- Sanitary Trunk Sewer Connections
- Conservation Authority Boundary

Critical Habitat

- Redside Dace Critical Habitat (DFO, 2025)
- Fletcher's Creek Meander Belt Axis
- Redside Dace Critical Habitat (Meander Belt Width + 30m) (AECOM, 2025)

Preferred Route - Segment

- Segment 1
- Segment 2
- Segment 3

Thermal Regime

- Cool
- Warm

Watercourse Permanency

- Intermittent
- Permanent

Flow | Central Brampton

Kennedy Rd - Detailed Field Investigations for the Preferred Route – Aquatic Habitat Assessment

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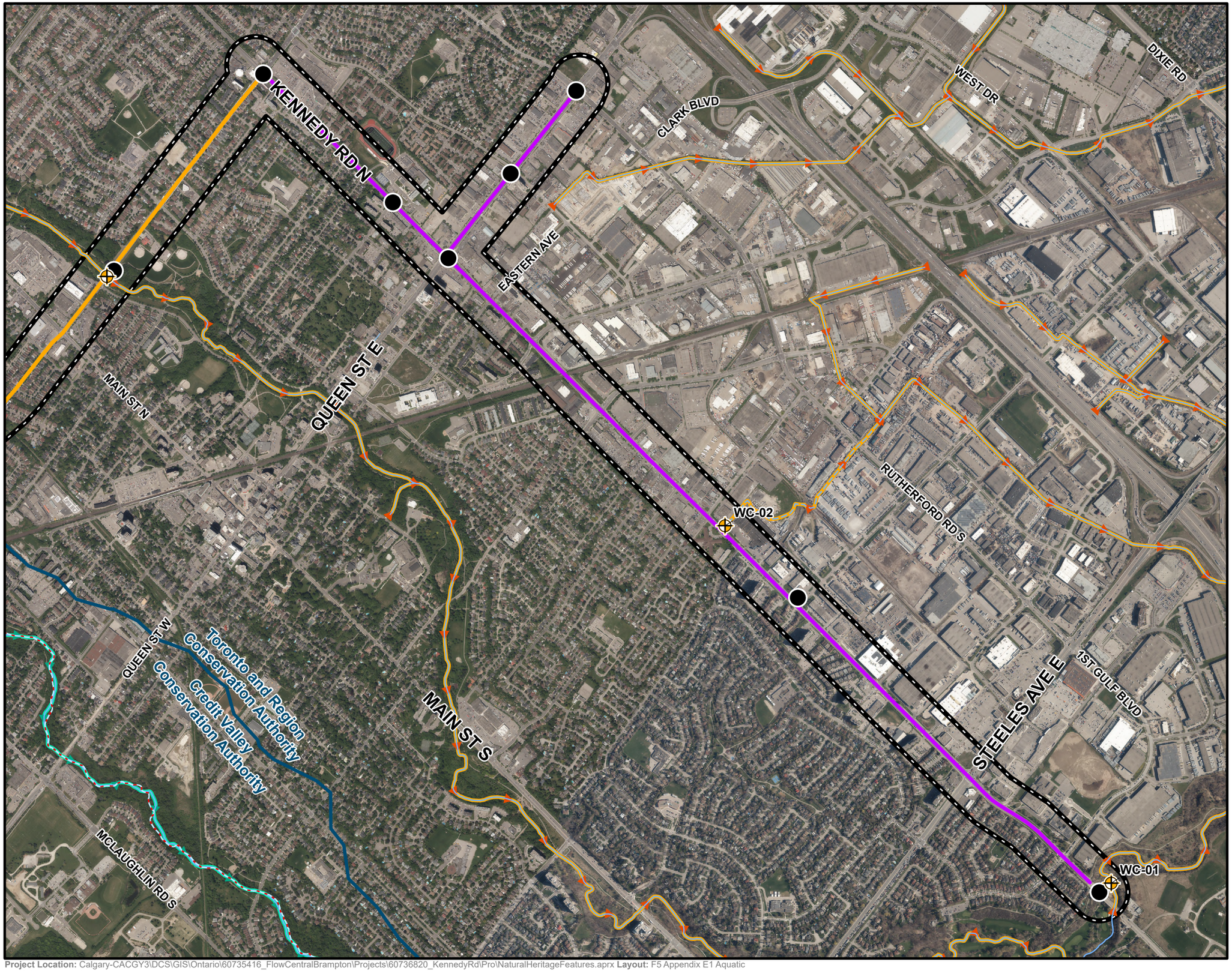
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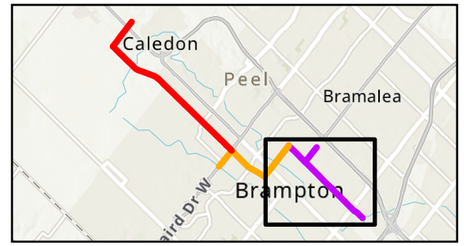
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PN: 60735416	Appendix E1-3
January 29, 2026	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA), Fisheries and Oceans Canada (DFO)

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- Study Area
- Municipal Boundary
- Watercourse Crossing ID
- Sanitary Trunk Sewer Connections
- Conservation Authority Boundary

Critical Habitat

- Redside Dace Critical Habitat (DFO, 2025)

Preferred Route - Segment

- Segment 1
- Segment 2
- Segment 3

Thermal Regime

- Cool
- Warm

Watercourse Permanency

- Intermittent
- Permanent

Flow | Central Brampton

Kennedy Rd - Detailed Field Investigations for the Preferred Route – Aquatic Habitat Assessment

0 250 500 750

Meters

Scale: 1:15,000

N

PN: 60735416	Appendix E1-4
January 29, 2026	AECOM

Data Sources:
ESRI Canada, Government of Ontario, Toronto and Region Conservation Authority (TRCA), Credit Valley Conservation Authority (CVCA), Fisheries and Oceans Canada (DFO)

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F5 Appendix E1 Aquatic Habitat Assessment

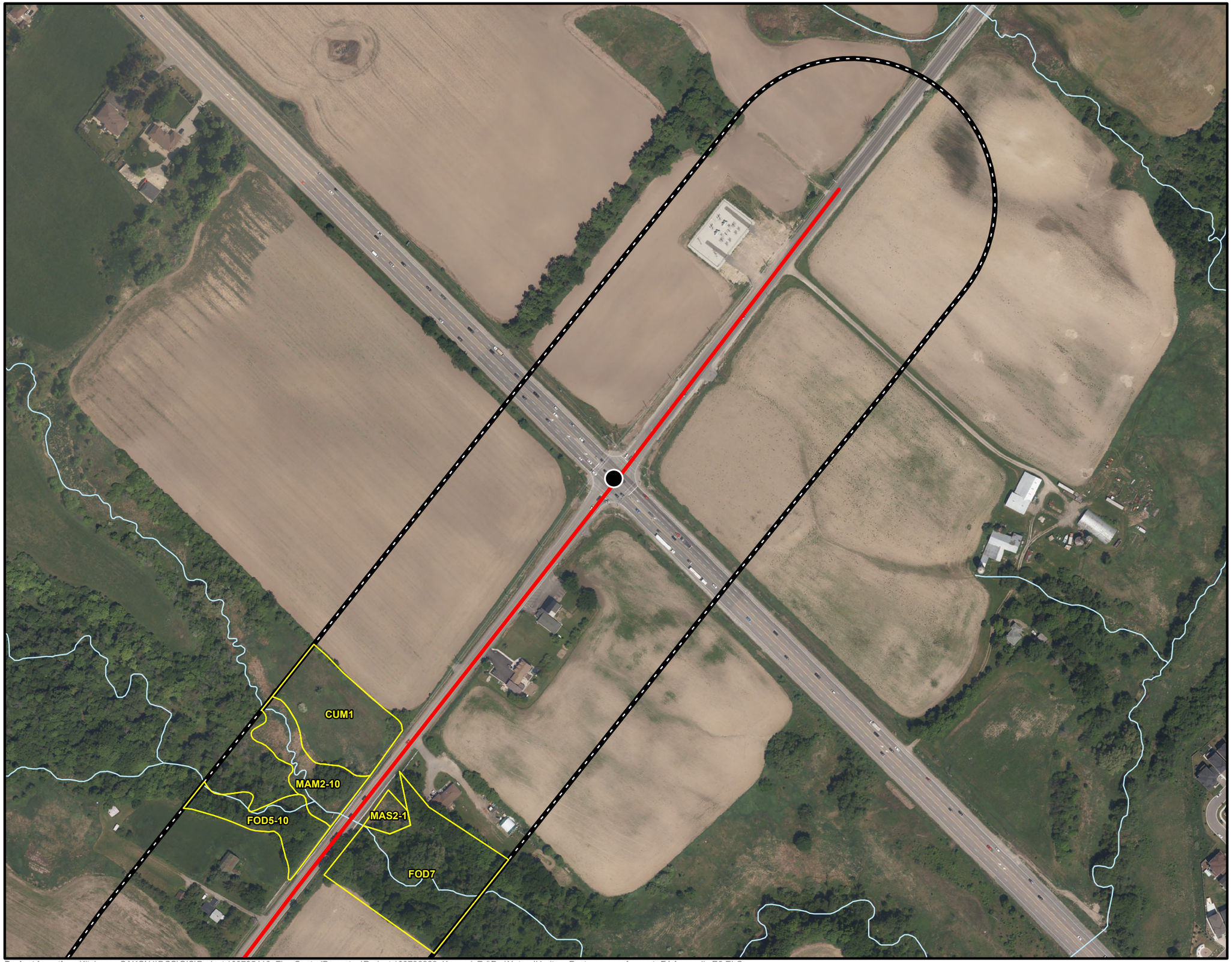
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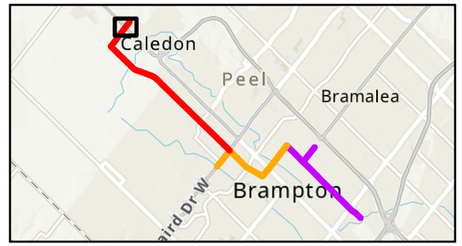
Central Brampton

E2. Terrestrial ELC Classifications along Preferred Route

AECOM

Peel Region





Study Area

Watercourse

Ecological Land Classification

Sanitary Trunk Sewer Connections

Preferred Route - Segment

Segment 3

-CUM1: Mineral Cultural Meadow Ecosite

-FOD5-10: Dry - Fresh Sugar Maple - White Birch - Poplar Deciduous Forest Type

-FOD7: Fresh - Moist Lowland Deciduous Forest Ecosite

-MAM2-10: Forb Mineral Meadow Marsh Type

-MAS2-1: Cattail Mineral Shallow Marsh Type

Flow | Central Brampton

Kennedy Rd - Detailed Field Investigations for the Preferred Route - Ecological Land Classification

0 50 100 150

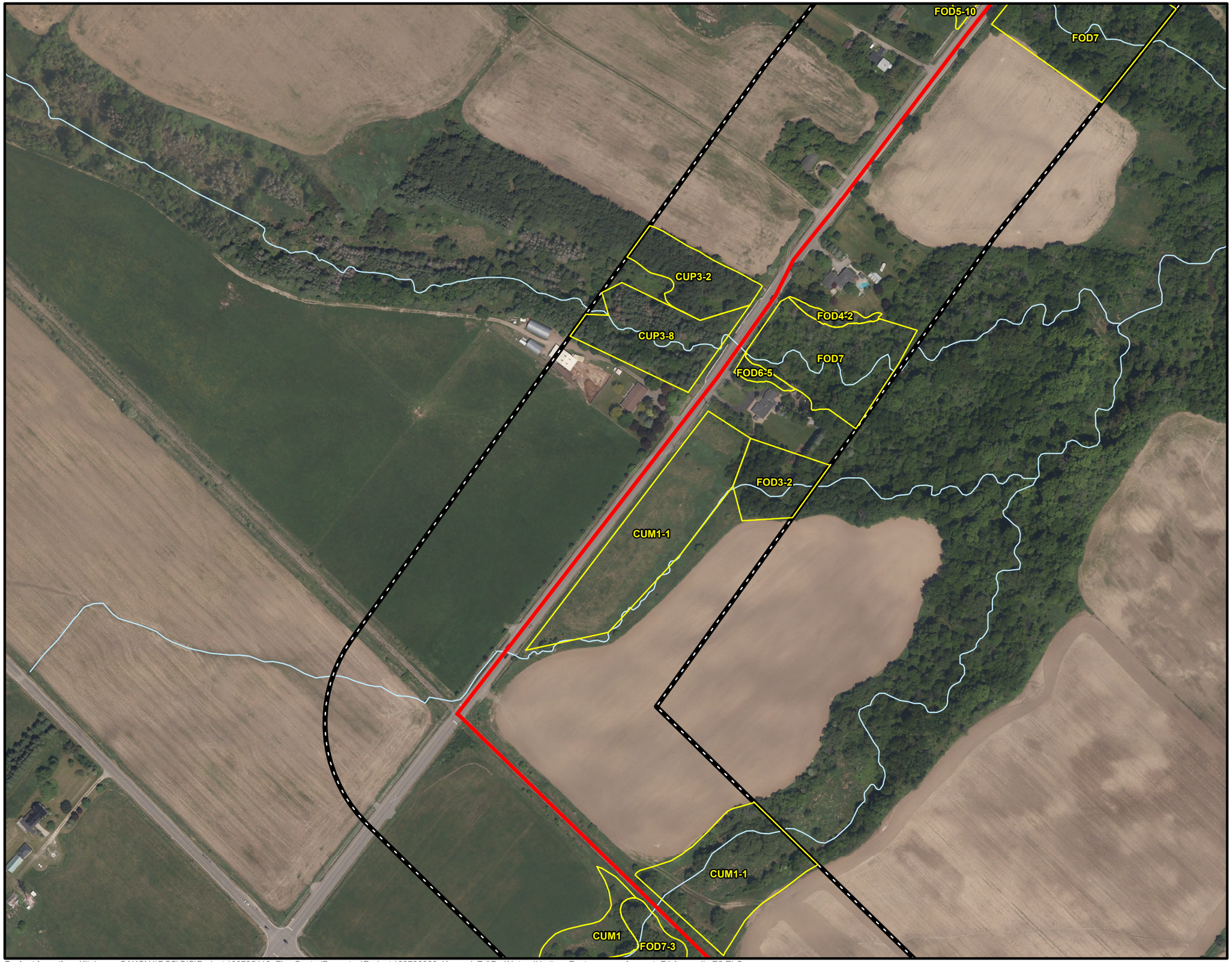
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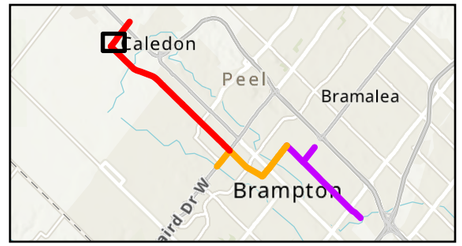
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PN: 60735416	Appendix E2-1
January 29, 2026	AECOM

Data Sources:
ESRI Canada, Government of Ontario





- Study Area
- Watercourse
- Ecological Land Classification
- Sanitary Trunk Sewer Connections

Preferred Route - Segment

- Segment 3

-CUM1: Mineral Cultural Meadow Ecosite

-CUM1-1: Dry - Moist Old Field Meadow Type

-CUP3-2: White Pine Coniferous Plantation Type

-CUP3-8: White Spruce - European Larch Coniferous Plantation Type

-FOD3-2: Dry - Fresh White Birch Deciduous Forest Type

-FOD4-2: Dry - Fresh White Ash Deciduous Forest Type

-FOD5-10: Dry - Fresh Sugar Maple - White Birch - Poplar Deciduous Forest Type

-FOD6-5: Fresh - Moist Sugar Maple - Hardwood Deciduous Forest Type

-FOD7: Fresh - Moist Lowland Deciduous Forest Ecosite

-FOD7-3: Fresh - Moist Willow Lowland Deciduous Forest Type

Flow | Central Brampton

Kennedy Rd - Detailed Field Investigations for the Preferred Route - Ecological Land Classification

0 50 100 150

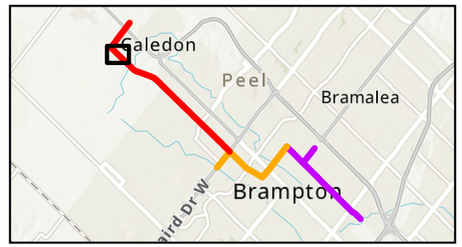
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PN: 60735416	Appendix E2-2
January 29, 2026	AECOM

Data Sources:
ESRI Canada, Government of Ontario





Study Area

Watercourse

Ecological Land Classification

Sanitary Trunk Sewer Connections

Preferred Route - Segment

Segment 3

-CUM1: Mineral Cultural Meadow Ecosite

-CUM1-1: Dry - Moist Old Field Meadow Type

-FOD7-3: Fresh - Moist Willow Lowland Deciduous Forest Type

Flow | Central Brampton

Kennedy Rd - Detailed Field Investigations for the Preferred Route - Ecological Land Classification

0 50 100 150

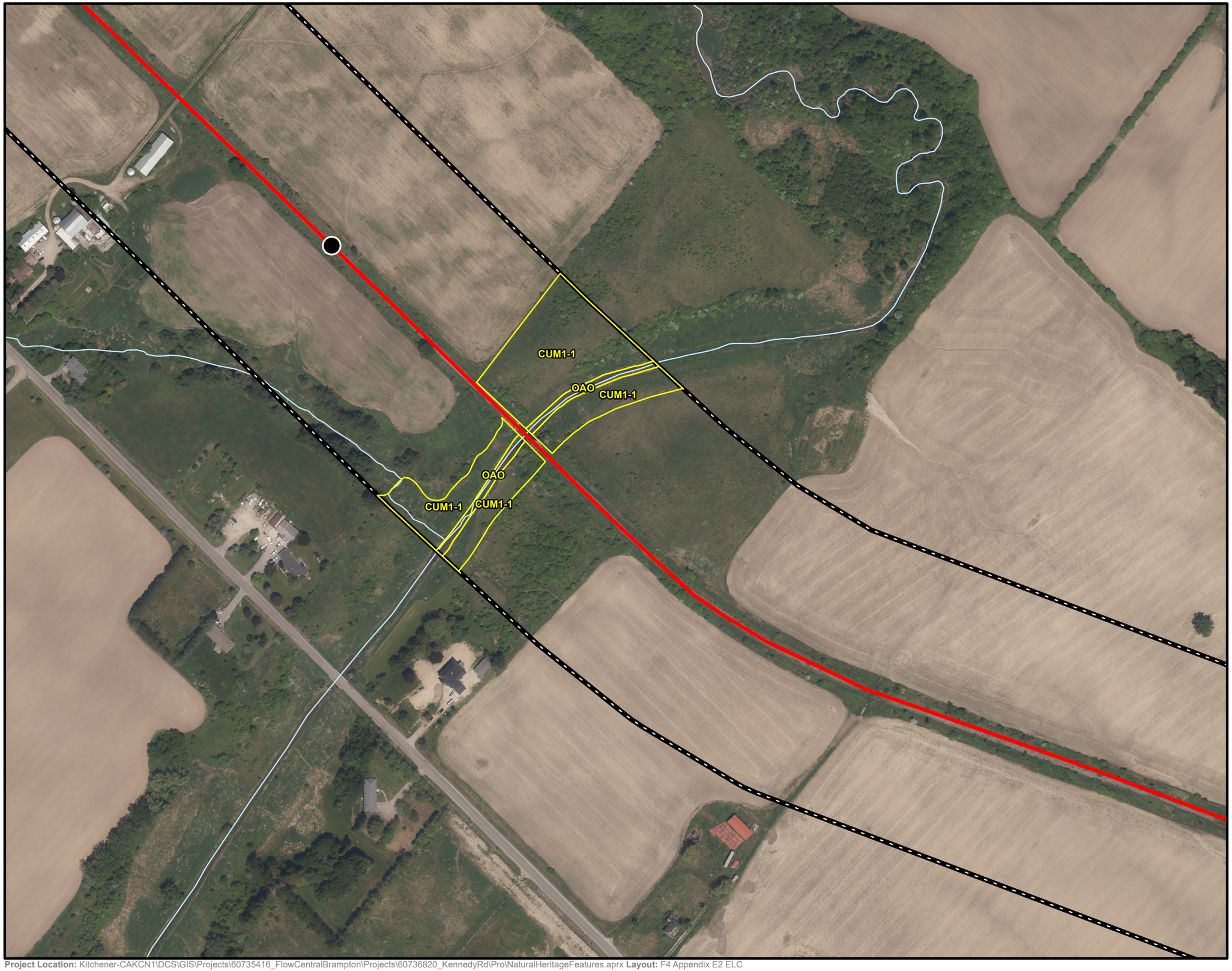
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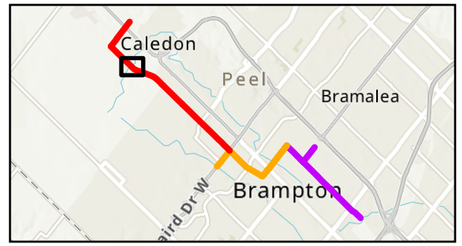
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PN: 60735416	Appendix E2-3
January 29, 2026	AECOM

Data Sources:
ESRI Canada, Government of Ontario





Study Area

Watercourse

Ecological Land Classification

Sanitary Trunk Sewer Connections

Preferred Route - Segment

Segment 3

-CUM1-1: Dry - Moist Old Field Meadow Type

-OAO: Open Aquatic

Flow | Central Brampton

Kennedy Rd - Detailed Field Investigations for the Preferred Route - Ecological Land Classification

0 50 100 150

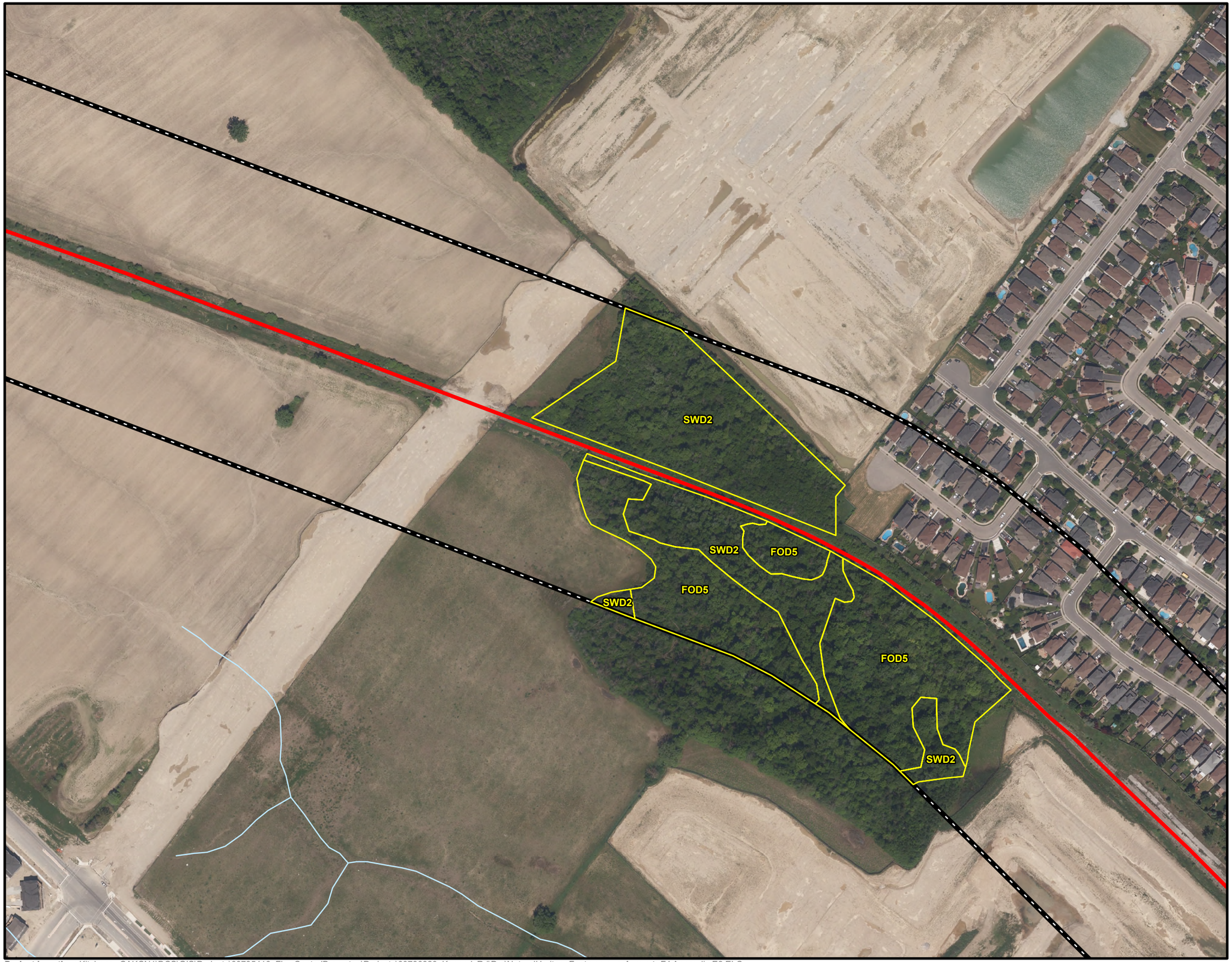
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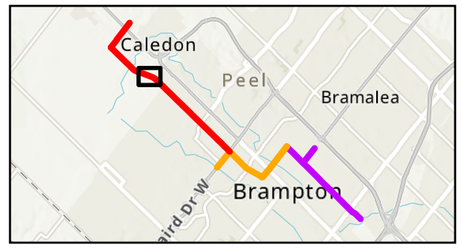
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PN: 60735416	Appendix E2-4
January 29, 2026	AECOM

Data Sources:
ESRI Canada, Government of Ontario





Study Area

Watercourse

Ecological Land Classification

Sanitary Trunk Sewer Connections

Preferred Route - Segment

Segment 3

-FOD5: Dry – Fresh Sugar Maple Deciduous Forest Ecosite

-SWD2: Ash Mineral Deciduous Swamp Ecosite

Flow | Central Brampton

Kennedy Rd - Detailed Field Investigations for the Preferred Route - Ecological Land Classification

0 50 100 150

Meters

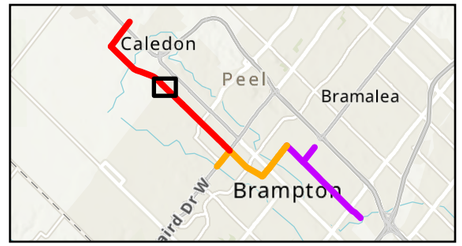
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PN: 60735416	Appendix E2-5
January 29, 2026	AECOM

Data Sources:
ESRI Canada, Government of Ontario





Study Area

Watercourse

Ecological Land Classification

Sanitary Trunk Sewer Connections

Preferred Route - Segment

Segment 3

-CUM1-1: Dry - Moist Old Field Meadow Type

-FOD5: Dry – Fresh Sugar Maple Deciduous Forest Ecosite

-SWD2: Ash Mineral Deciduous Swamp Ecosite

Flow | Central Brampton

Kennedy Rd - Detailed Field Investigations for the Preferred Route - Ecological Land Classification

0 50 100 150

Meters

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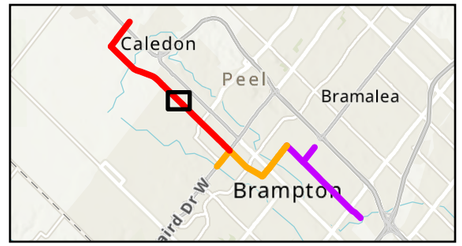
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January 29, 2026	AECOM

Data Sources:
ESRI Canada, Government of Ontario

Project Location: Kitchener-CAKCN1\DCS\GIS\Projects\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F4 Appendix E2 ELC
Date Saved: January 28, 2026 **User:** WangS12





- Study Area
- Watercourse
- Ecological Land Classification
- Sanitary Trunk Sewer Connections

Preferred Route - Segment

- Segment 3

-CUM1-1: Dry - Moist Old Field Meadow Type

-OAO: Open Aquatic

Flow | Central Brampton

Kennedy Rd - Detailed Field Investigations for the Preferred Route - Ecological Land Classification

0 50 100 150

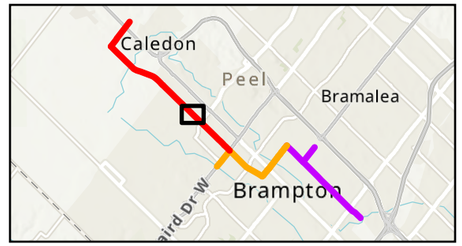
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PN: 60735416	Appendix E2-7
January 29, 2026	AECOM

Data Sources:
ESRI Canada, Government of Ontario





Study Area

Watercourse

Ecological Land Classification

Sanitary Trunk Sewer Connections

Preferred Route - Segment

Segment 3

-CUM1: Mineral Cultural Meadow Ecosite

-MAS2-1: Cattail Mineral Shallow Marsh Type

-SWD1-1: Swamp White Oak Mineral Deciduous Swamp Type

Flow | Central Brampton

Kennedy Rd - Detailed Field Investigations for the Preferred Route - Ecological Land Classification

0 50 100 150

Meters
Scale: 1:3,000

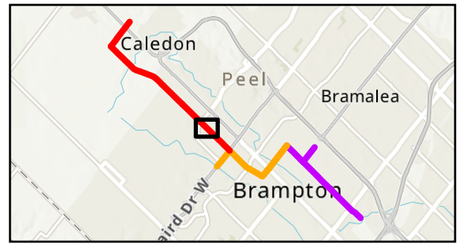
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PN: 60735416	Appendix E2-8
January 29, 2026	AECOM

Data Sources:
ESRI Canada, Government of Ontario

Project Location: Kitchener-CAKCN1\DCS\GIS\Projects\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F4 Appendix E2 ELC
Date Saved: January 28, 2026 **User:** WangS12





Study Area

Ecological Land Classification

Sanitary Trunk Sewer Connections

Preferred Route - Segment

Segment 3

-CUM1: Mineral Cultural Meadow Ecosite

-THDM3: Dry-Fresh Deciduous Hedgerow Thicket

Flow | Central Brampton

Kennedy Rd - Detailed Field Investigations for the Preferred Route - Ecological Land Classification

0 50 100 150

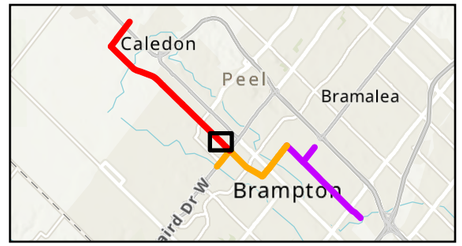
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PN: 60735416	Appendix E2-9
January 29, 2026	AECOM

Data Sources:
ESRI Canada, Government of Ontario





Study Area

Ecological Land Classification

Sanitary Trunk Sewer Connections

Preferred Route - Segment

Segment 3

-MAS2-1: Cattail Mineral Shallow Marsh Type

-THDM3: Dry-Fresh Deciduous Hedgerow Thicket

Flow | Central Brampton

Kennedy Rd - Detailed Field Investigations for the Preferred Route - Ecological Land Classification

0 50 100 150

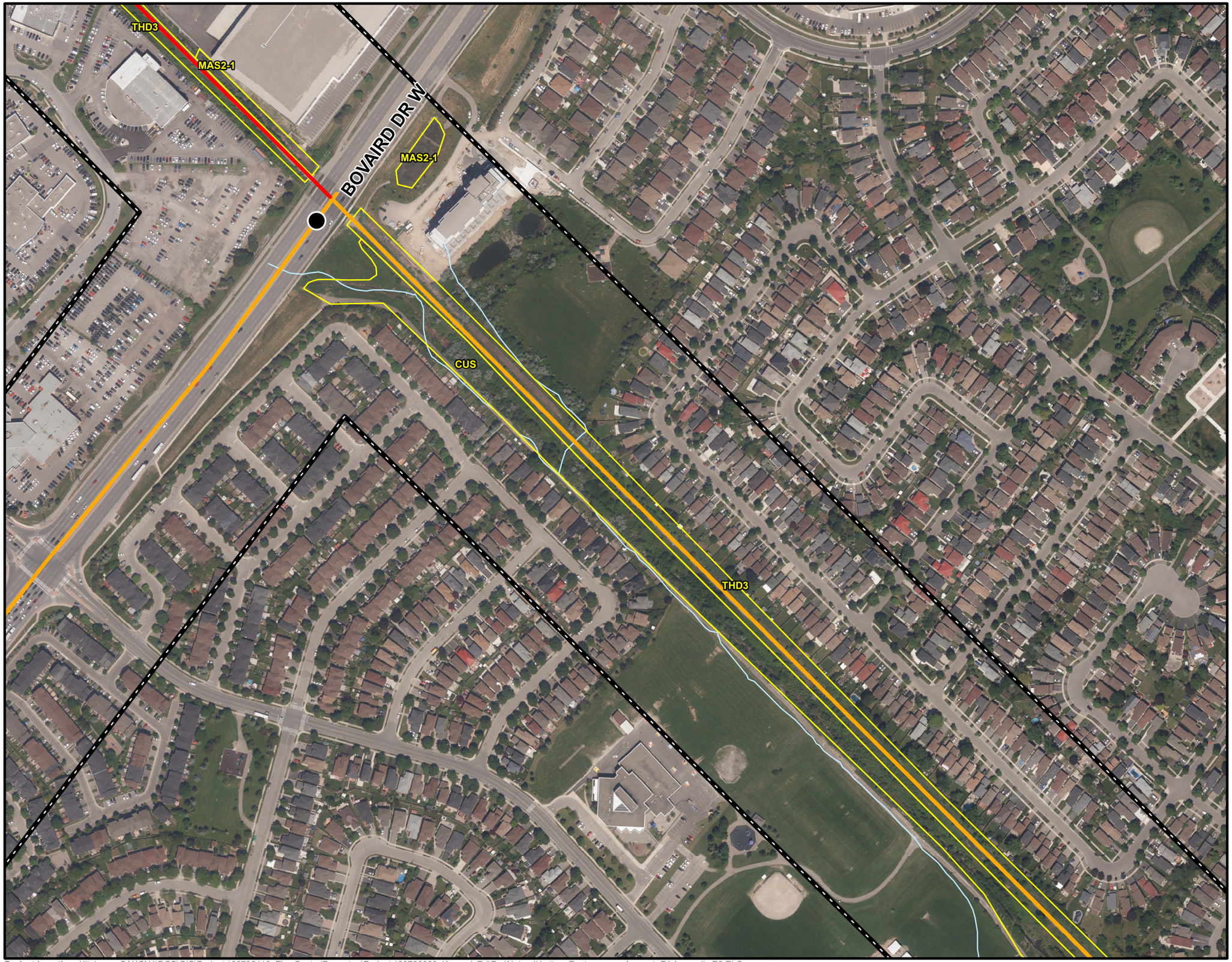
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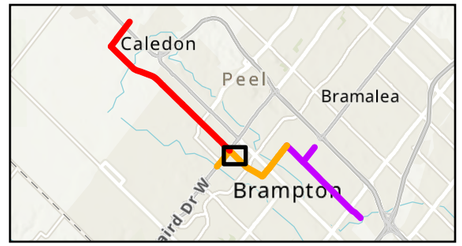
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PN: 60735416	Appendix E2-10
January 29, 2026	AECOM

Data Sources:
ESRI Canada, Government of Ontario

Project Location: Kitchener-CAKCN1\DCS\GIS\Projects\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F4 Appendix E2 ELC
Date Saved: January 28, 2026 **User:** WangS12





Study Area

Watercourse

Ecological Land Classification

Sanitary Trunk Sewer Connections

Preferred Route - Segment

Segment 2

Segment 3

-CUS: Cultural Savannah

-MAS2-1: Cattail Mineral Shallow Marsh Type

-THDM3: Dry-Fresh Deciduous Hedgerow Thicket

Flow | Central Brampton

Kennedy Rd - Detailed Field Investigations for the Preferred Route - Ecological Land Classification

0 50 100 150

Meters

Scale: 1:3,000

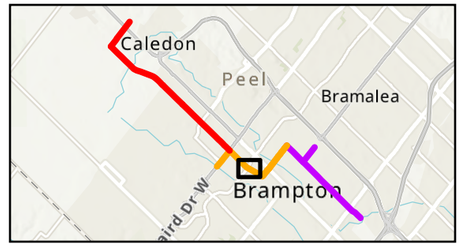
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PN: 60735416	Appendix E2-11
January 29, 2026	AECOM

Data Sources:
ESRI Canada, Government of Ontario

Project Location: Kitchener-CAKCN1\DCS\GIS\Projects\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F4 Appendix E2 ELC
Date Saved: January 28, 2026 **User:** WangS12





Study Area

Watercourse

Ecological Land Classification

Sanitary Trunk Sewer Connections

Preferred Route - Segment

Segment 2

-CUS: Cultural Savannah

-FODM11: Naturalized Deciduous Hedgerow Ecosite

-THDM3: Dry-Fresh Deciduous Hedgerow Thicket

Flow | Central Brampton

Kennedy Rd - Detailed Field Investigations for the Preferred Route - Ecological Land Classification

0 50 100 150

Meters

Scale: 1:3,000

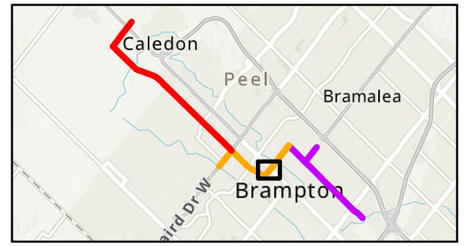
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PN: 60735416	Appendix E2-12
January 29, 2026	AECOM

Data Sources:
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Project Location: Kitchener-CAKCN1\DCS\GIS\Projects\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F4 Appendix E2 ELC
Date Saved: January 28, 2026 **User:** WangS12





- Study Area
- Watercourse
- Ecological Land Classification
- Sanitary Trunk Sewer Connections

Preferred Route - Segment

- Segment 2

-CUP1 - Deciduous Plantations

-CUP2: Mixed Plantations

-CUS1: Mineral Cultural Savannah Ecosite

-FOD7: Fresh - Moist Lowland Deciduous Forest Ecosite

-FOD7-3: Fresh - Moist Willow Lowland Deciduous Forest Type

-FODM11: Naturalized Deciduous Hedgerow Ecosite

Flow | Central Brampton

Kennedy Rd - Detailed Field Investigations for the Preferred Route - Ecological Land Classification

0 50 100 150

Meters

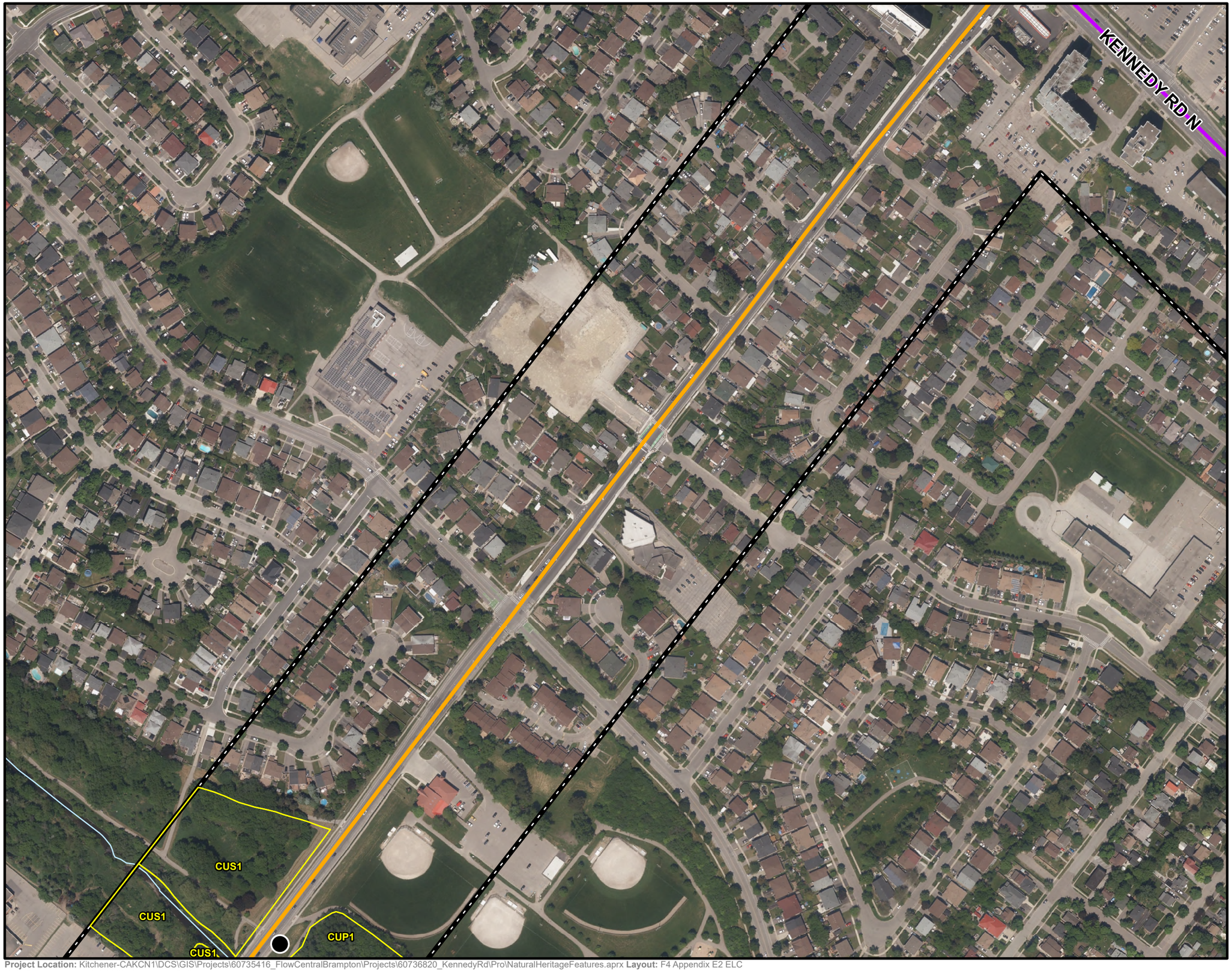
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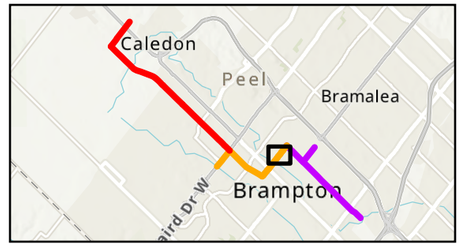
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PN: 60735416	Appendix E2-13
January 29, 2026	AECOM

Data Sources:
ESRI Canada, Government of Ontario

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Date Saved: January 28, 2026 **User:** WangS12





Study Area

Watercourse

Ecological Land Classification

Sanitary Trunk Sewer Connections

Preferred Route - Segment

Segment 1

Segment 2

-CUP1 - Deciduous Plantations

-CUS1: Mineral Cultural Savannah Ecosite

Flow | Central Brampton

Kennedy Rd - Detailed Field Investigations for the Preferred Route - Ecological Land Classification

0 50 100 150

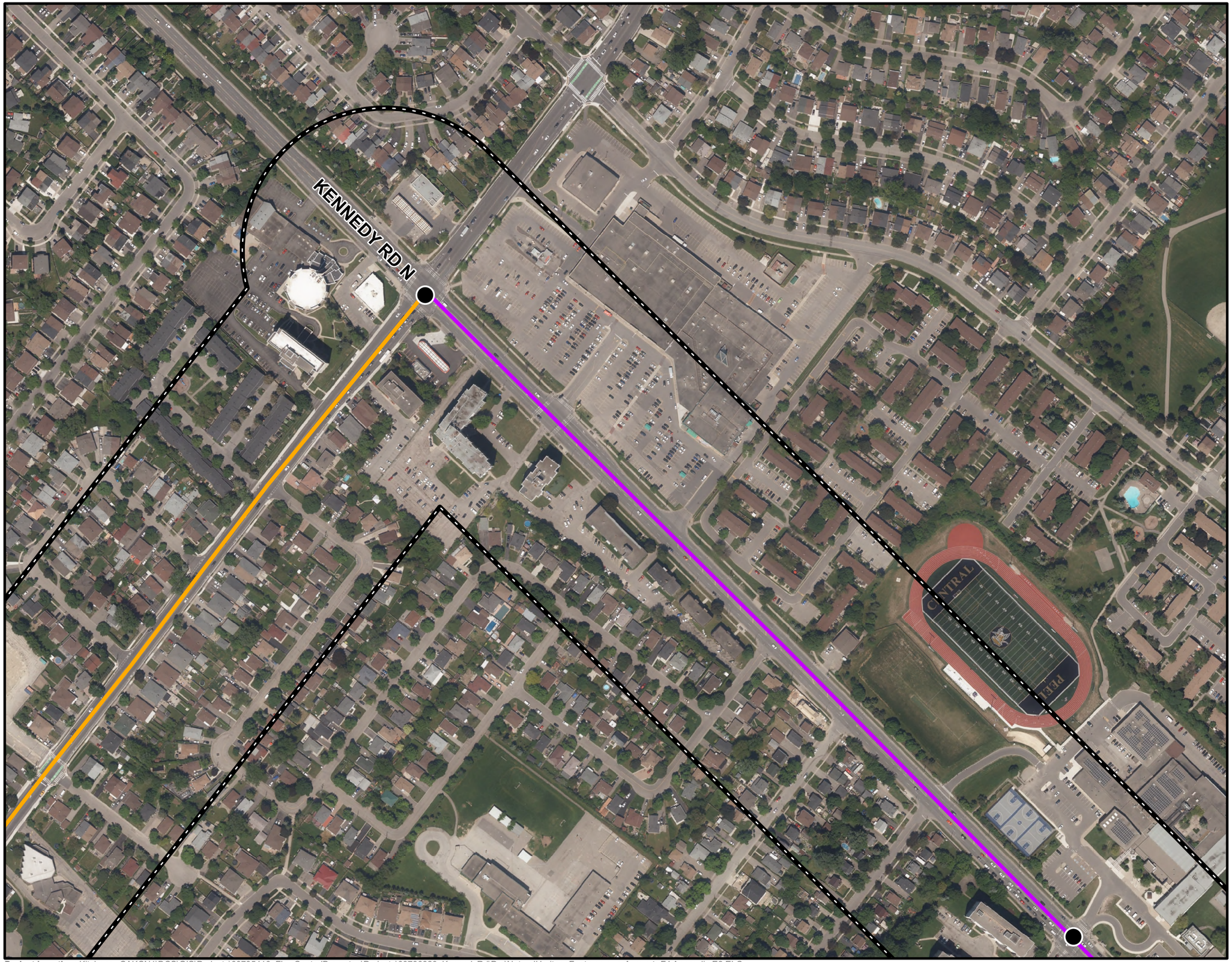
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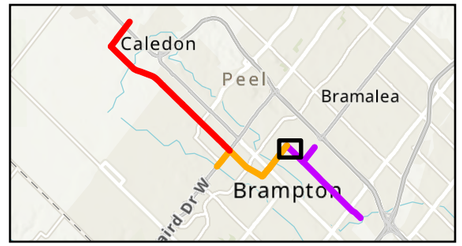
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PN: 60735416	Appendix E2-14
January 29, 2026	AECOM

Data Sources:
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Date Saved: January 28, 2026 **User:** WangS12





- Study Area
- Ecological Land Classification
- Sanitary Trunk Sewer Connections

Preferred Route - Segment

- Segment 1
- Segment 2

Flow | Central Brampton

Kennedy Rd - Detailed Field Investigations for the Preferred Route - Ecological Land Classification

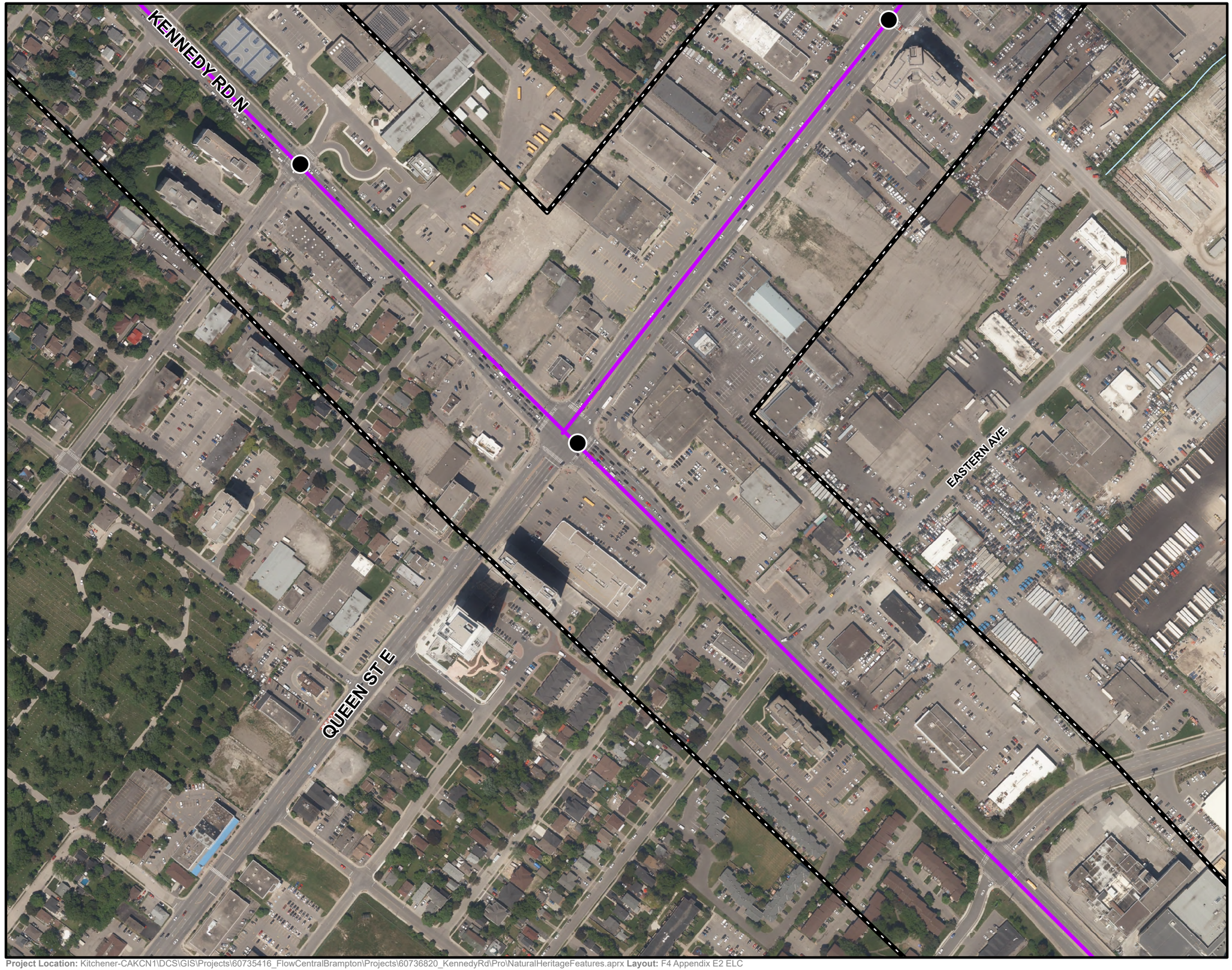
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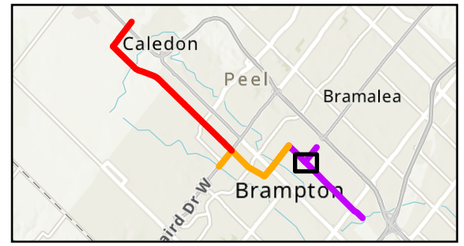
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PN: 60735416	Appendix E2-15
January 29, 2026	AECOM

Data Sources:
ESRI Canada, Government of Ontario





Study Area
Watercourse
Ecological Land Classification
Sanitary Trunk Sewer Connections

Preferred Route - Segment

Segment 1

Flow | Central Brampton

Kennedy Rd - Detailed Field Investigations for the Preferred Route - Ecological Land Classification

0 50 100 150

Meters
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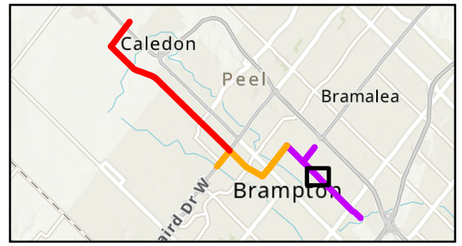
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PN: 60735416	Appendix E2-16
January 29, 2026	AECOM

Data Sources:
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Project Location: Kitchener-CAKCN1\DCS\GIS\Projects\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F4 Appendix E2 ELC
Date Saved: January 28, 2026 **User:** WangS12





- Study Area
- Watercourse
- Ecological Land Classification
- Sanitary Trunk Sewer Connections

Preferred Route - Segment

- Segment 1

Flow | Central Brampton

Kennedy Rd - Detailed Field Investigations for the Preferred Route - Ecological Land Classification

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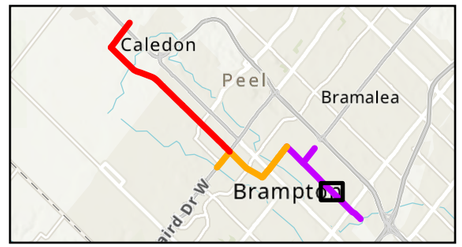
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PN: 60735416	Appendix E2-17
January 29, 2026	AECOM

Data Sources:
ESRI Canada, Government of Ontario





Study Area
Watercourse
Ecological Land Classification
Sanitary Trunk Sewer Connections

Preferred Route - Segment

Segment 1

Flow | Central Brampton

Kennedy Rd - Detailed Field Investigations for the Preferred Route - Ecological Land Classification

0 50 100 150

Meters
Scale: 1:3,000

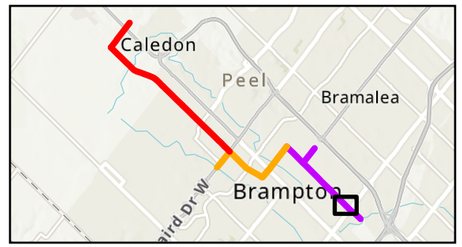
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January 29, 2026	AECOM

Data Sources:
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Date Saved: January 28, 2026 **User:** WangS12





Study Area

Ecological Land Classification

Sanitary Trunk Sewer Connections

Preferred Route - Segment

Segment 1

Flow | Central Brampton

Kennedy Rd - Detailed Field Investigations for the Preferred Route - Ecological Land Classification

0 50 100 150

Meters

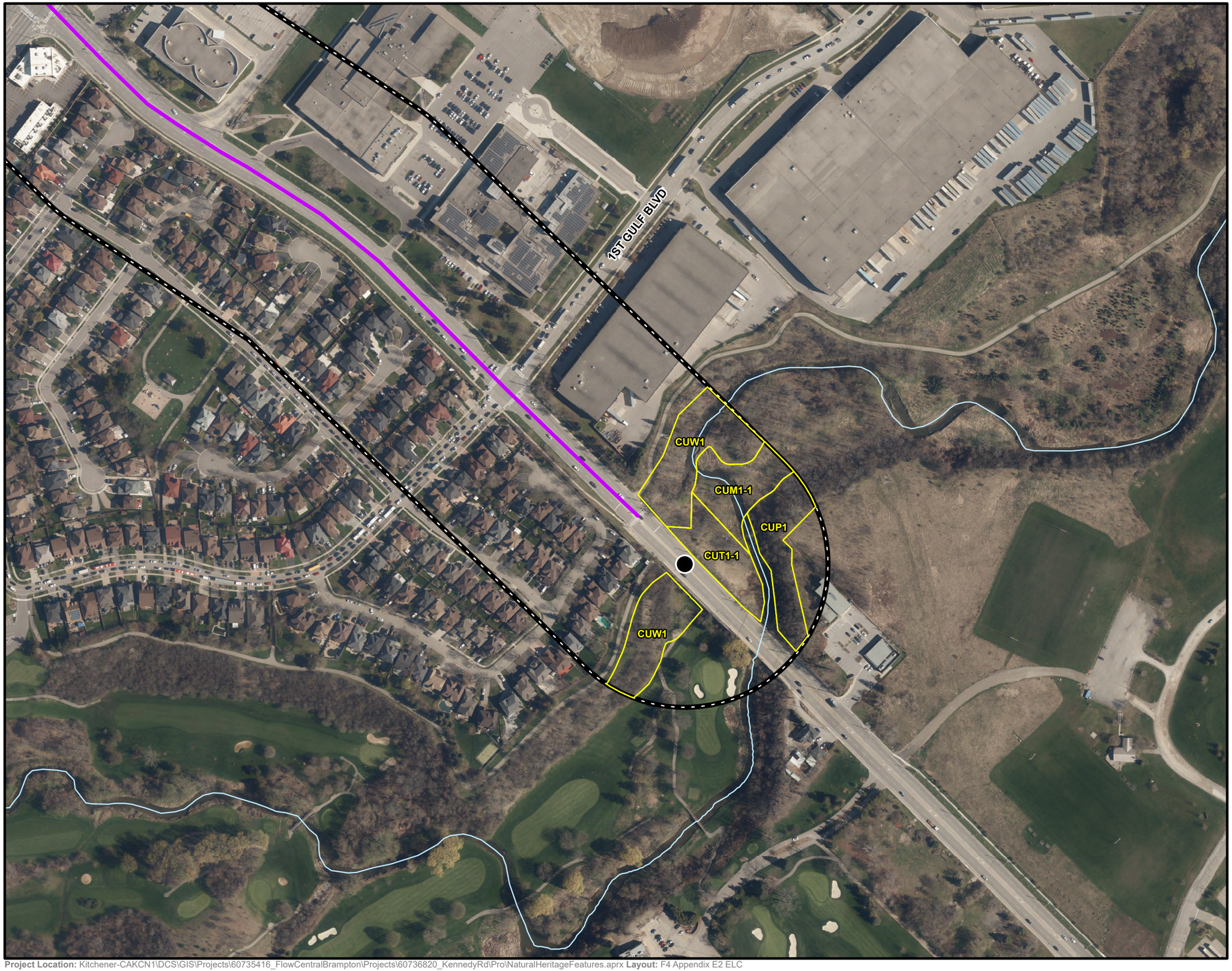
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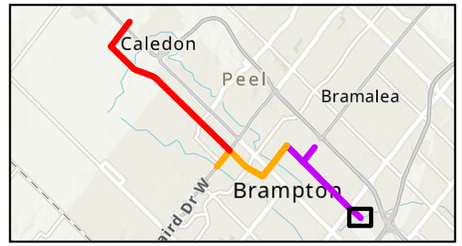
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PN: 60735416	Appendix E2-19
January 29, 2026	AECOM

Data Sources:
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Project Location: Kitchener-CAKCN1\DCS\GIS\Projects\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F4 Appendix E2 ELC
Date Saved: January 28, 2026 **User:** WangS12





- Study Area
- Watercourse
- Ecological Land Classification
- Sanitary Trunk Sewer Connections

Preferred Route - Segment

- Segment 1

-CUM1-1: Dry - Moist Old Field Meadow Type

-CUP1 - Deciduous Plantations

-CUT1-1: Sumac Cultural Thicket Type

-CUW1: Mineral Cultural Woodland Ecosite

Flow | Central Brampton

Kennedy Rd - Detailed Field Investigations for the Preferred Route - Ecological Land Classification

0 50 100 150

Meters

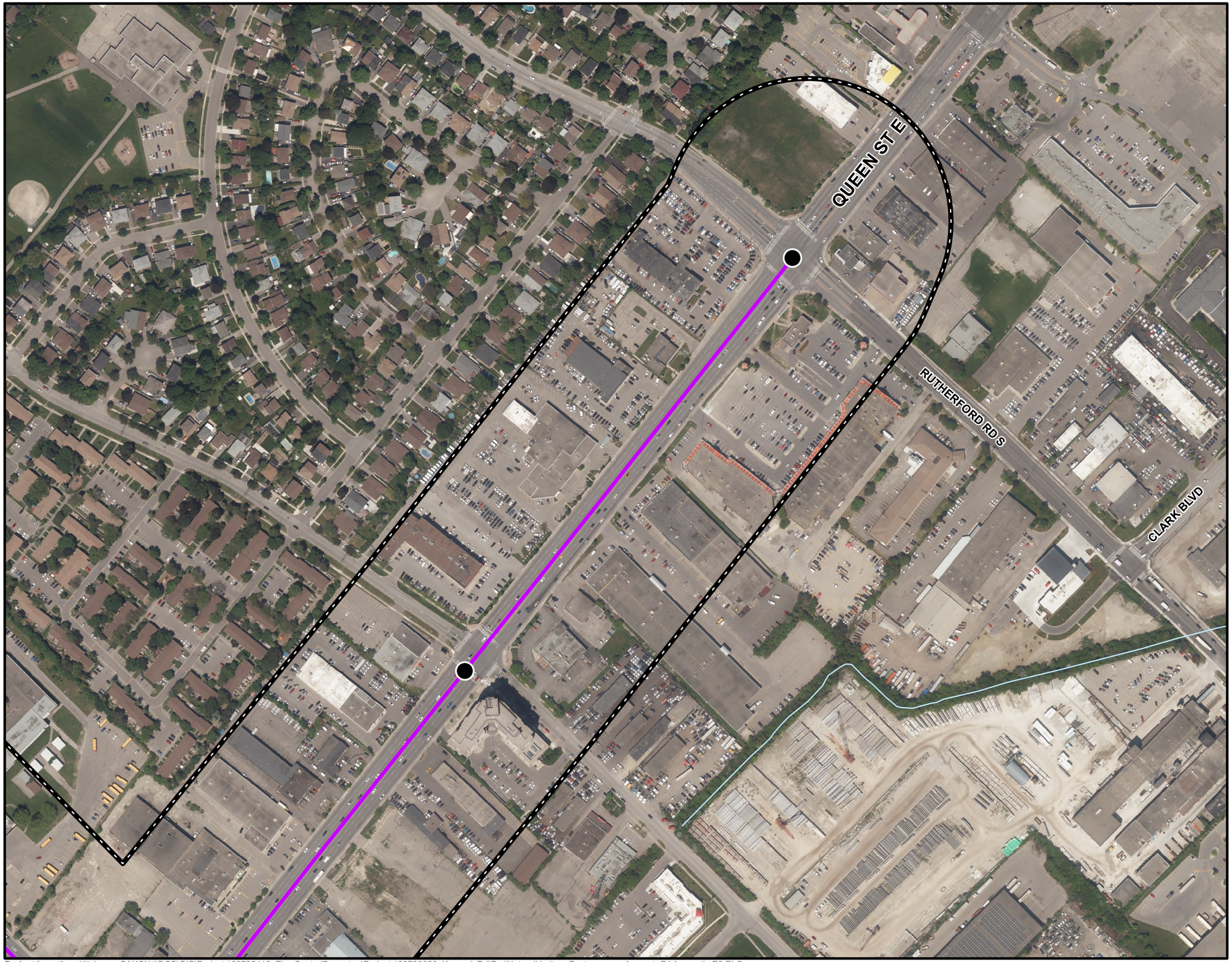
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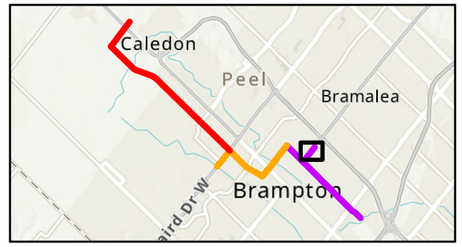
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PN: 60735416	Appendix E2-20
January 29, 2026	AECOM

Data Sources:
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Project Location: Kitchener-CAKCN1\DCS\GIS\Projects\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F4 Appendix E2 ELC
Date Saved: January 28, 2026 **User:** WangS12





- Study Area
- Watercourse
- Ecological Land Classification
- Sanitary Trunk Sewer Connections

Preferred Route - Segment

- Segment 1

Flow | Central Brampton

Kennedy Rd - Detailed Field Investigations for the Preferred Route - Ecological Land Classification

0 50 100 150

Meters

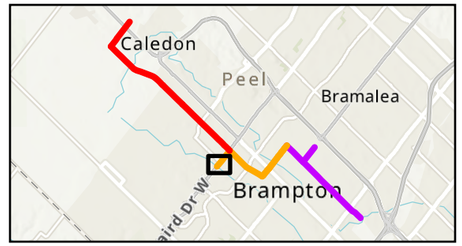
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PN: 60735416	Appendix E2-21
January 29, 2026	AECOM

Data Sources:
ESRI Canada, Government of Ontario





Study Area

Watercourse

Ecological Land Classification

Sanitary Trunk Sewer Connections

Preferred Route - Segment

Segment 2

-CUM1-1: Dry - Moist Old Field Meadow Type

-CUS1: Mineral Cultural Savannah Ecosite

-CUT1: Mineral Cultural Thicket Ecosite

-MAMM1-12: Common Reed Graminoid Mineral Meadow Marsh Type

Flow | Central Brampton

Kennedy Rd - Detailed Field Investigations for the Preferred Route - Ecological Land Classification

0 50 100 150

Meters
Scale: 1:3,000

N

PN: 60735416	Appendix E2-22
January 29, 2026	AECOM

Data Sources:
ESRI Canada, Government of Ontario

Project Location: Kitchener-CAKCN1\DCS\GIS\Projects\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F4 Appendix E2 ELC
Date Saved: January 28, 2026 **User:** WangS12

Flow
Building our future, faster.

Central Brampton

Appendix F

F1. Aquatic Detailed Survey Photolog

F2. Terrestrial Detailed Survey Photolog

AECOM

Peel Region

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Building our future, faster.

Central Brampton

F1. Aquatic Detailed Survey Photolog

AECOM

Peel Region

Appendix F1. Aquatic Photographic Log
Detailed Survey

Client Name:	Report Name	Project No.
Peel Region	FLOW Kennedy Road Natural Heritage Report	60736820



Photograph 1.
Etobicoke Creek (WC-01)
April 17, 2025.
Summary of downstream site, facing downstream (north).



Photograph 2.
Etobicoke Creek (WC-01)
April 17, 2025
Left bank of downstream site, facing downstream (northwest).



Photograph 3.
Etobicoke Creek (WC-01)
April 17, 2025
Right bank at downstream site, facing upstream (southeast).



Photograph 4.
Etobicoke Creek (WC-01)
April 17, 2025
Summary of substrate composition featuring large cobbles and shale bedrock, facing northeast.



Photograph 5.
Etobicoke Creek (WC-04)
April 17, 2025
Summary of downstream site, facing southeast.



Photograph 6.
Etobicoke Creek (WC-04)
April 17, 2025
Summary of area under bridge, facing upstream (southeast).



Photograph 7. ↑
Etobicoke Creek (WC-04)
April 17, 2025
Culvert outlet on northern shore at the downstream site, facing northeast.



Photograph 8. ↑
Etobicoke Creek (WC-04)
April 17, 2025
Summary of upstream site, from the bridge facing north.



Photograph 9. ↑
Tributary to Fletchers Creek (WC-05)
April 17, 2025
Summary of bridge structure, taken from upstream, facing downstream (east).



Photograph 10. ↑
Tributary to Fletchers Creek (WC-05)
April 17, 2025
Summary of upstream reach, facing upstream (northwest).



Photograph 11. ↑
Tributary to Fletchers Creek (WC-05)
April 17, 2025
Fish impediment structure at the bridge in the upstream reach, facing upstream (northwest).



Photograph 12. ↑
Tributary to Fletchers Creek (WC-05)
April 17, 2025
Summary of the substrate composition in the upstream reach, facing south.



Photograph 13.
Tributary to Fletchers Creek (WC-05)
April 17, 2025
Summary at downstream reach, facing downstream (south).



Photograph 14.
Tributary to Fletchers Creek (WC-05)
April 17, 2025
Culvert outlet and small inflowing channel, downstream of the bridge, facing upstream (northeast).



Photograph 15.
Drainage feature to Tributary to Fletchers Creek (WC-06)
April 17, 2025
Culvert outlet at downstream site of WC-06, feeding WC-07, facing upstream (northeast).



Photograph 16.
Drainage feature to Tributary to Fletchers Creek (WC-06a)
April 17, 2025
Culvert outlet at downstream site of WC-06a, feeding WC-07, facing upstream (northeast).



Photograph 17.
Tributary to Fletchers Creek (WC-07)
April 17, 2025
Summary of downstream site, facing downstream (southeast).



Photograph 18.
Tributary to Fletchers Creek (WC-07)
April 17, 2025
Summary of substrate composition within downstream reach, facing southwest.



Photograph 19.
Tributary to Fletchers Creek (WC-07)
April 17, 2025
Vegetation and trash buildup causing a potential impediment to fish passage, facing upstream (west).



Photograph 20.
Tributary to Fletchers Creek (WC-07)
April 17, 2025
Culvert inlet at the upstream reach, dry, facing downstream (north).



Photograph 21.
Fletchers Creek (WC-08)
April 16, 2025
Summary under the bridge, facing upstream (northwest).



Photograph 22.
Fletchers Creek (WC-08)
April 16, 2025
Storm outfall entering the watercourse on the right bank of the downstream reach, facing upstream (northwest).



Photograph 23.
Fletchers Creek (WC-08)
April 16, 2025
Summary of downstream reach as the feature exits the bridge, facing downstream (northwest).



Photograph 24.
Fletchers Creek (WC-08)
April 16, 2025
Summary of the feature, facing downstream (southeast), with bank restoration activities evident on the left bank



Photograph 25.
Fletchers Creek (WC-08)
April 18, 2025
Summary of upstream reach, facing southwest.



Photograph 26.
Fletchers Creek (WC-08)
April 16, 2025
A small drainage feature entering the upstream reach on the left bank, facing south.



Photograph 27.
Drainage feature to Fletchers Creek (WC-09)
April 23, 2025
Stormwater management pond at WC-09, facing southeast.



Photograph 28.
Drainage feature to Fletchers Creek (WC-09)
April 23, 2025
Stormwater outfall located in the northwest potion of the stormwater management pond, facing south.



Photograph 29.
Drainage feature to Fletchers Creek (WC-09)
April 23, 2025
Inlet culverts of the stormwater management pond outlet structure, facing north.



Photograph 30.
Drainage feature to Fletchers Creek (WC-09)
April 23, 2025
Exit culvert of the stormwater management pond outlet structure, facing south. The feature was not observed beyond this structure and likely piped.



Photograph 31. ↑
Drainage feature to Fletchers Creek (WC-09)
April 23, 2025
Direct connection of WC-09 to the stormwater management pond, facing downstream (southeast).



Photograph 32. ↑
Drainage feature to Fletchers Creek (WC-09)
April 23, 2025
Direct connection of WC-09 to the stormwater management pond, facing downstream (southeast).



Photograph 33. ↑
Drainage feature to Fletchers Creek (WC-10)
April 23, 2025
WC-10 with evidence of high flows due to down vegetation in channel, facing southwest.



Photograph 34. ↑
Drainage feature to Fletchers Creek (WC-11)
April 23, 2025
Standing water in the ditch along the OBR, facing west.



Photograph 35. ↑
Drainage feature to Fletchers Creek (WC-11)
April 23, 2025
Double CSP culvert outlet into OBR drainage ditch, facing northwest.



Photograph 36. ↑
Drainage feature to Fletchers Creek (WC-11)
April 23, 2025
CSP culvert inlet located on the east side of the OBR with dense vegetation growth.



Photograph 37. ↑
Drainage feature to Fletchers Creek (WC-11)
April 23, 2025
Culvert inlet along the OBR entering WC-11, facing southwest.



Photograph 38. ↑
Drainage feature to Fletchers Creek (WC-11)
April 23, 2025
OBR drainage ditch, upstream of the culvert inlet to WC-11, facing upstream (northwest).



Photograph 39. ↑
Drainage feature to Fletchers Creek (WC-11)
April 23, 2025
Downstream reach of WC-11 dominated by Common Reed (*Phragmites australis*)



Photograph 40. ↑
Drainage feature to Fletchers Creek (WC-11)
April 23, 2025
Upstream reach of WC-11 with cattails (*Typha sp.*) and Red Osier Dogwood (*Cornus sericea*)



Photograph 41. ↑
Alloa Drain (WC-12)
April 23, 2025
Upstream reach of WC-12, facing east. Taken from bridge along the Orangeville Brampton Railway (OBR).



Photograph 42. ↑
Alloa Drain (WC-12)
April 23, 2025
Downstream site, facing southwest.
Taken from bridge along OBR.



Photograph 43. ↑
Headwater feature of Etobicoke Creek (WC-13)
April 23, 2025
Summary of the upstream reach,
facing upstream (southwest).



Photograph 44. ↑
Headwater feature of Etobicoke Creek (WC-13)
April 23, 2025
OBR bridge structure at WC-13 from
upstream reach, facing northeast.



Photograph 45. ↑
Headwater feature of Etobicoke Creek (WC-13)
April 23, 2025
Summary of the downstream reach, facing downstream
(northeast).



Photograph 46. ↑
Headwater feature of Etobicoke Creek (WC-13)
April 23, 2025
View of the bridge from within the downstream reach, looking
upstream (southwest). The right wingwall is broken off and
laying in the feature with some flow going under.



Photograph 47. ↑
WC-33 April 16, 2025
Culvert inlet with a slight perch, facing south.



Photograph 48. ↑
WC-33
April 16, 2025
Ditch line at WC-33, facing southwest.



Photograph 49. ↑
WC-33 April 16, 2025
Dry downstream site, facing southeast.



Photograph 50. ↑
WC-33 April 16, 2025
Wetted ditch facing east.



Photograph 51. ↑
WC-34 April 16, 2025
Summary of downstream site, facing southeast.



Photograph 52. ↑
WC-34 April 16, 2025
Summary of upstream site, facing northwest.



Photograph 53. ↑
WC-34 April 16, 2025
Further upstream site, facing west.



Photograph 54. ↑
WC-34 April 16, 2025
Further upstream site, facing west.



Photograph 55. ↑
WC-35 April 16, 2025
Ditch line, facing southwest.



Photograph 56. ↑
WC-35 April 16, 2025
Summary of upstream site, facing northwest.



Photograph 57. ↑
WC-35 April 16, 2025
Summary of downstream site, facing southeast.



Photograph 58. ↑
WC-35 April 16, 2025
Dry, input stream to downstream site, facing east.

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Central Brampton

F2. Terrestrial Detailed Survey Photolog

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Peel Region

Appendix F2. Terrestrial Photographic Log
Detailed Survey

Client Name:	Report Name	Project No.
Peel Region	FLOW Kennedy Road Natural Heritage Report	60736820



Photograph 1.
Mineral Cultural Savannah (CUS1)
April 16, 2025
Location: McLaughlin and Old School Road



Photograph 2.
Deciduous Plantation (CUP1)
April 24, 2025
Location: Vodden Street East



Photograph 3.
Swamp White Oak Mineral Deciduous Swamp (SWD1-1)
April 24, 2025
Location: OBR



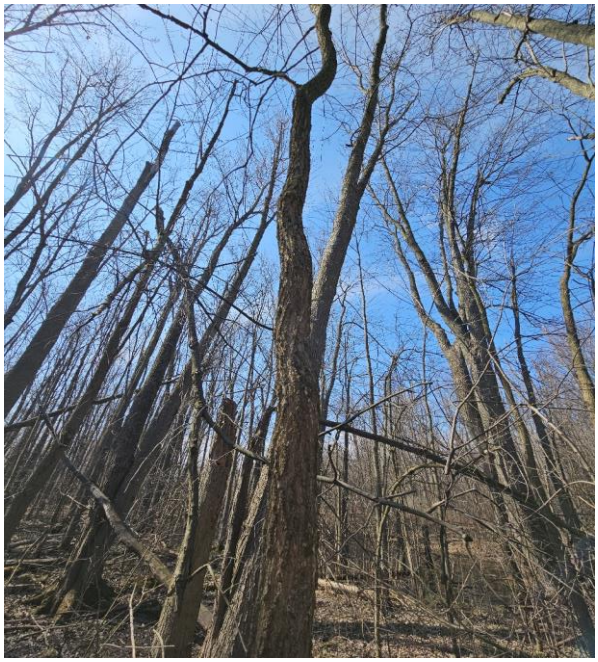
Photograph 4.
Mineral Cultural Meadow (CUM1)
April 24, 2025
Location: OBR



Photograph 5. ↑
White Spruce- European Larch Coniferous Plantation (CUP3-8)
April 16, 2025
Location: Old School Road



Photograph 6. ↑
Agricultural Fields
April 16, 2025
Location: OBR and Old School Road



Photograph 7. ↑
Fresh Sugar Maple Deciduous Forest (FOD5)
April 24, 2025
Location: OBR



Photograph 8. ↑
Ash Mineral Deciduous Swamp (SWD2)
April 24, 2025
Location: OBR



Photograph 9.
Swamp White Oak Mineral Deciduous Swamp (SWD1-1)
April 24, 2025
Location: OBR



Photograph 10.
Dry – Fresh Deciduous Hedgerow Thicket (THDM3)
April 24, 2025
Location: OBR - Large Portions of Rail



Photograph 11.
Cattail Mineral Shallow Marsh (MAS2-1)
April 24, 2025
Location: OBR



Photograph 12.
Mineral Cultural Thicket (CUT1)
April 24, 2025
Location: Kennedy Road and Etobicoke Creek



Photograph 13. ↑
Fresh- Moist White Elm Lowland Deciduous Forest (FOD7-3)
April 16, 2025
Location: Old School Road



Photograph 14. ↑
Mineral Cultural Savannah (CUS1)
April 24, 2025
Location: Bovaird Drive West and Mclaughlin Road North

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Central Brampton

Appendix G

Plant List

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Peel Region

Appendix G: Plant List

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Botanical Name																														
Common Name	**Scientific Name**	**Family**	CUM	CUM1	CUM1-1	CUP1	CUP2	CUP3-2	CUP3-8	CUS1	CUT1	CUT1-1	CUW1	FOD3-2	FOD4-2	FOD5	FOD5-10	FOD5-2	FOD6-5	FOD7	FOD7-3	FODM11	MAM2-10	MAS2-1	OAO	SWD1-1	SWD2	SWD4-1	THD3	MAM,1-12
American Beech	*Fagus grandifolia*	Fagaceae														x		x									x			
Austrian Pine	*Pinus nigra*	Pinaceae																				x								
Balsam Fir	*Abies balsamea*	Pinaceae			x																x									
Balsam Poplar	*Populus balsamifera*	Salicaceae					x	x																						
Barren Strawberry	*Geum fragarioides*	Rosaceae			x																									
Basswood	*Tilia americana*	Tiliaceae																	x							x		x		
Bearded Beggarticks	*Bidens aristosa*	Asteraceae		x																										
Bebb's Willow	*Salix bebbiana*	Salicaceae																		x			x							
Black Ash	*Fraxinus nigra*	Oleaceae																								x	x			
Black Locust	*Robinia pseudoacacia*	Fabaceae											x																	
Black Walnut	*Juglans nigra*	Juglandaceae				x	x					x	x					x				x		x						
Blue Spruce	*Picea pungens*	Pinaceae																				x								
Broad-leaved Cattail	*Typha latifolia*	Typhaceae			x																			x	x				x	
Bur Oak	*Quercus macrocarpa*	Fagaceae																x												
Canada Goldenrod	*Solidago canadensis*	Asteraceae	x	x	x				x		x	x			x		x		x	x	x	x		x					x	
Canada Thistle	*Cirsium arvense*	Asteraceae			x					x											x	x								
Catnip	*Nepeta cataria*	Lamiaceae																				x								
Chokecherry	*Prunus virginiana*	Rosaceae																		x		x		x						
Coltsfoot	*Tussilago farfara*	Asteraceae			x								x																	
Common Apple	*Malus pumila*	Rosaceae		x			x	x		x																				
Common Bedstraw	*Galium aparine*	Rubiaceae			x																									
Common Burdock	*Arctium minus*	Asteraceae	x		x					x					x								x						x	
Common Dandelion	*Taraxacum officinale*	Asteraceae	x		x		x			x		x	x				x				x	x					x			
Common Evening-primrose	*Oenothera biennis*	Onagraceae		x																										
Common Hackberry	*Celtis occidentalis*	Ulmaceae					x																							
Common Hound's-tongue	*Cynoglossum officinale*	Boraginaceae																				x								
Common Juniper	*Juniperus communis*	Cupressaceae		x																										
Common Lilac	*Syringa vulgaris*	Oleaceae																				x								
Common Milkweed	*Asclepias syriaca*	Apocynaceae		x	x					x																				
Common Mullein	*Verbascum thapsus*	Scrophulariaceae	x			x				x										x		x								
Common Reed	*Phragmites australis*	Poaceae		x	x					x		x												x	x					x
Common Tansy	*Tanacetum vulgare*	Asteraceae		x	x																	x		x					x	
Common Teasel	*Dipsacus fullonum*	Dipsacaceae		x	x					x		x								x			x	x					x	
Corn	*Zea mays*	Poaceae																												
Crack Willow	*Salix euxina*	Salicaceae		x	x					x	x		x							x	x	x		x	x			x	x	
Curled Dock	*Rumex crispus*	Polygonaceae								x																				
Dwarf White Birch	*Betula minor*	Betulaceae			x									x					x	x										
Eastern Cottonwood	*Populus deltoides*	Salicaceae				x	x			x																				
Eastern Hemlock	*Tsuga canadensis*	Pinaceae														x			x	x										
Eastern Hop-hornbeam	*Ostrya virginiana*	Betulaceae														x		x	x											
Eastern Red Cedar	*Juniperus virginiana*	Cupressaceae	x									x																		
Eastern White Cedar	*Thuja occidentalis*	Cupressaceae			x	x	x			x									x			x						x		
Eastern White Pine	*Pinus strobus*	Pinaceae				x	x	x							x															
English Hawthorn	*Crataegus monogyna*	Rosaceae			x																									
English Violet	*Viola odorata*	Violaceae								x																				
European Black Alder	*Alnus glutinosa*	Betulaceae			x					x																				
European Buckthorn	*Rhamnus cathartica*	Rhamnaceae			x		x					x	x							x	x	x		x		x	x			
False Cleavers	*Galium spurium*	Rubiaceae				x																								
Field Horsetail	*Equisetum arvense*	Equisetaceae																											x	
Forbes' Squill	*Scilla forbesii*	Liliaceae																											x	

Appendix G: Plant List

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Common Name	Scientific Name	Family	CUM	CUM1	CUM1-1	CUP1	CUP2	CUP3-2	CUP3-8	CUS1	CUT1	CUT1-1	CUW1	FOD3-2	FOD4-2	FOD5	FOD5-10	FOD5-2	FOD6-5	FOD7	FOD7-3	FODM11	MAM2-10	MAS2-1	OAO	SWD1-1	SWD2	SWD4-1	THD3	MAM,1-12
Garlic Mustard	*Alliaria petiolata*	Brassicaceae	x		x	x				x		x					x			x		x								
Giant Goldenrod	*Solidago gigantea*	Asteraceae								x																				
Grey Alder	*Alnus incana*	Betulaceae								x																				
Grey Dogwood	*Cornus racemosa*	Cornaceae			x					x	x				x				x	x				x	x			x	x	
Horse Chestnut	*Aesculus hippocastanum*	Hippocastanaceae			x																										
Kentucky Bluegrass	*Poa pratensis*	Poaceae		x	x	x	x		x	x	x		x				x		x	x	x	x	x	x			x	x	x	
Kentucky Coffee-tree	*Gymnocladus dioicus*	Fabaceae								x																				
Manitoba Maple	*Acer negundo*	Aceraceae	x	x	x						x	x	x				x			x	x	x						x	x	
Multiflora Rose	*Rosa multiflora*	Rosaceae																			x									
Narrow-leaved Cattail	*Typha angustifolia*	Typhaceae								x														x					x	
Northern Red Oak	*Quercus rubra*	Fagaceae															x	x		x		x				x				
Paper Birch	*Betula papyrifera*	Betulaceae								x				x																
Purple Loosestrife	*Lythrum salicaria*	Lythraceae		x																										
Pussy Willow	*Salix discolor*	Salicaceae		x																										
Quackgrass	*Elymus repens*	Poaceae	x	x	x		x			x	x	x			x		x			x	x	x				x		x	x	
Red Ash	*Fraxinus pennsylvanica*	Oleaceae		x		x	x			x					x	x				x						x	x		x	
Red Maple	*Acer rubrum*	Aceraceae			x																					x				
Red Pine	*Pinus resinosa*	Pinaceae			x																									
Red Raspberry	*Rubus idaeus*	Rosaceae		x																										
Staghorn Sumac	*Rhus typhina*	Anacardiaceae			x		x			x	x	x					x												x	
Red-osier Dogwood	*Cornus sericea*	Cornaceae	x	x	x					x	x				x		x			x	x	x	x	x	x	x	x		x	
Reed Canarygrass	*Phalaris arundinacea*	Poaceae	x	x	x					x	x												x	x	x			x		
Riverbank Grape	*Vitis riparia*	Vitaceae		x							x						x													
Russian Olive	*Elaeagnus angustifolia*	Elaeagnaceae		x																									x	
Shagbark Hickory	*Carya ovata*	Juglandaceae				x										x										x				
Siberian Elm	*Ulmus pumila*	Ulmaceae		x													x						x							
(Salix alba X Salix babylonica)	*Salix x sepulcralis*	Salicaceae																												
Silver Maple	*Acer saccharinum*	Aceraceae			x					x										x	x					x	x	x		
Smooth Brome	*Bromus inermis*	Poaceae	x	x	x	x				x		x	x		x					x	x			x					x	
Sugar Maple	*Acer saccharum*	Aceraceae			x	x				x						x		x	x			x					x		x	
Swamp White Oak	*Quercus bicolor*	Fagaceae									x															x	x			
Tall Goldenrod	*Solidago altissima*	Asteraceae			x					x										x										
Trembling Aspen	*Populus tremuloides*	Salicaceae		x	x																									
Virginia Waterleaf	*Hydrophyllum virginianum*	Hydrophyllaceae																									x			
Virginia Waterleaf	*Hydrophyllum virginianum var. virginianum*	Hydrophyllaceae																									x			
Wheat Sedge	*Carex atherodes*	Cyperaceae																												
White Ash	*Fraxinus americana*	Oleaceae					x			x			x		x					x	x								x	
White Elm	*Ulmus americana*	Ulmaceae		x	x								x	x			x									x		x		
White Meadowsweet	*Spiraea alba*	Rosaceae																			x									
White Meadowsweet	*Spiraea alba var. alba*	Rosaceae																			x									
White Oak	*Quercus alba*	Fagaceae								x							x	x				x								
White Poplar	*Populus alba*	Salicaceae																				x		x						
White Spruce	*Picea glauca*	Pinaceae			x	x	x		x	x			x		x				x	x									x	
White Trillium	*Trillium grandiflorum*	Liliaceae																									x			
White Trout-lily	*Erythronium albidum*	Liliaceae																									x			
White Willow	*Salix alba*	Salicaceae																		x	x									
Wild Carrot	*Daucus carota*	Apiaceae		x	x					x							x			x	x	x	x	x					x	
Wild Cucumber	*Echinocystis lobata*	Cucurbitaceae															x													
Wild Parsnip	*Pastinaca sativa*	Apiaceae			x																									
Wild Strawberry	*Fragaria virginiana*	Rosaceae																									x			
Wild Strawberry	*Fragaria virginiana ssp. virginiana*	Rosaceae																									x			

Appendix G: Plant List

AECOM

Common Name	Scientific Name	Family	CUM	CUM1	CUM1-1	CUP1	CUP2	CUP3-2	CUP3-8	CUS1	CUT1	CUT1-1	CUW1	FOD3-2	FOD4-2	FOD5	FOD5-10	FOD5-2	FOD6-5	FOD7	FOD7-3	FODM11	MAM2-10	MAS2-1	OAO	SWD1-1	SWD2	SWD4-1	THD3	MAM,1-12
Yellow Trout-lily	*Erythronium americanum*	Liliaceae														x		x								x				
Floristic Summary and Analysis for Entire Study Area			**0**	**0**	**0**	**0**	**0**	**0**	**0**		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**		**0**	**0**	**0**	**0**
Summary																														
Total Species:	102		11	26	39	13	15	3	3	35	11	12	12	3	10	7	15	8	10	24	18	25	8	17	6	13	16	10	23	1
Native Species:	63	0.617647059	5	14	22	9	11	2	3	19	9	5	6	3	7	7	10	8	10	15	9	10	4	8	4	11	14	8	13	0
Introduced Species:	39	0.382352941	6	12	17	4	4	1	0	16	2	7	6	0	3	0	5	0	0	9	9	15	4	9	2	2	2	2	10	1
Invasive Species:	20	0.196078431	4	8	12	2	1	0	0	8	2	6	5	0	1	0	3	0	0	5	5	6	3	7	2	1	1	2	5	1
ESA Status																														
END	1	0.009803922	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
THR	1	0.009803922	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COSEWIC Status																														
END	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
THR	2	0.019607843	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
SC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Provincially Rare (S-rank of S1-S3)																														
S1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S1?	1	0.009803922	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
S1S2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S1S3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S2	1	0.009803922	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S2?	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S2S3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S2S4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S3	1	0.009803922	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
S3?	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S3S4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total S1-S3:	3	0.029411765	0	0	1	0	0	0	0	1	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0
Local Rank																														
ENTER MANUALLY																														
Co-efficient of Conservatism and Floral Quality Index																														
Co-efficient of Conservatism (CC) (average):	3.73015873		1.4	1.33333	2.63636	4	3.90909	4	2.33333	3	1.55556	1.83333	3	2.5	3.14286	5	2.2	5.125	3.55556	3.07143	2.55556	3	1.5	1.44444	1	4.81818	4.57143	2.25	2.30769	0
CC 0 to 3	lowest sensitivity	26	4	14	13	2	3	0	2	10	8	4	3	2	4	1	8	0	3	8	6	5	3	8	5	3	5	5	9	1
CC 4 to 6	moderate sensitivity	31	1	1	8	7	7	2	1	10	0	2	3	0	3	5	2	8	5	5	3	5	1	1	0	6	6	3	4	0
CC 7 to 8	high sensitivity	6	0	0	1	0	1	0	0	0	1	0	0	0	0	1	0	0	1	1	0	0	0	0	0	2	3	0	0	0
CC 9 to 10	highest sensitivity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Floral Quality Index (FQI)																														
FQI:	29.60721705		3.1305	4.98888	12.3656	12	12.965	5.65685	4.04145	13.0767	4.66667	4.09946	7.34847	4.33013	8.31522	13.2288	6.95701	14.4957	11.2437	11.8956	7.66667	9.48683	3	4.08551	2	15.9801	17.1047	6.36396	8.3205	0
Presence of Wetland Species																														
Wetness Value (CW) (average):	1.303030303		1.72727	1	1.34211	1.92308	1.33333	1.66667	3	1.14286	0.27273	1.91667	1.91667	0	1.7	2.42857	1.33333	3.25	2	1.30435	0.72222	2.6	1	0.94118	-2.3333	-0.0769	0.5625	-0.3	1.09091	-3
upland	5	16	2	5	7	2	1	1	0	6	0	1	1	0	1	1	1	1	0	3	2	7	1	4	0	1	0	0	3	0
facultative upland	2 to 4	44	5	9	15	7	8	1	3	14	4	7	7	1	6	5	8	7	7	10	7	12	4	5	0	4	8	3	10	0
facultative	1 to -1	14	2	4	7	2	3	0	0	5	4	3	3	0	1	0	3	0	1	5	3	4	0	3	2	2	3	3	4	0
facultative wetland	-2 to -4	21	2	7	8	2	3	1	0	9	3	1	1	1	2	1	3	0	1	5	6	2	3	3	3	6	5	4	2	1
obligate wetland	-5	4	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	3	0

Flow
Building our future, faster.

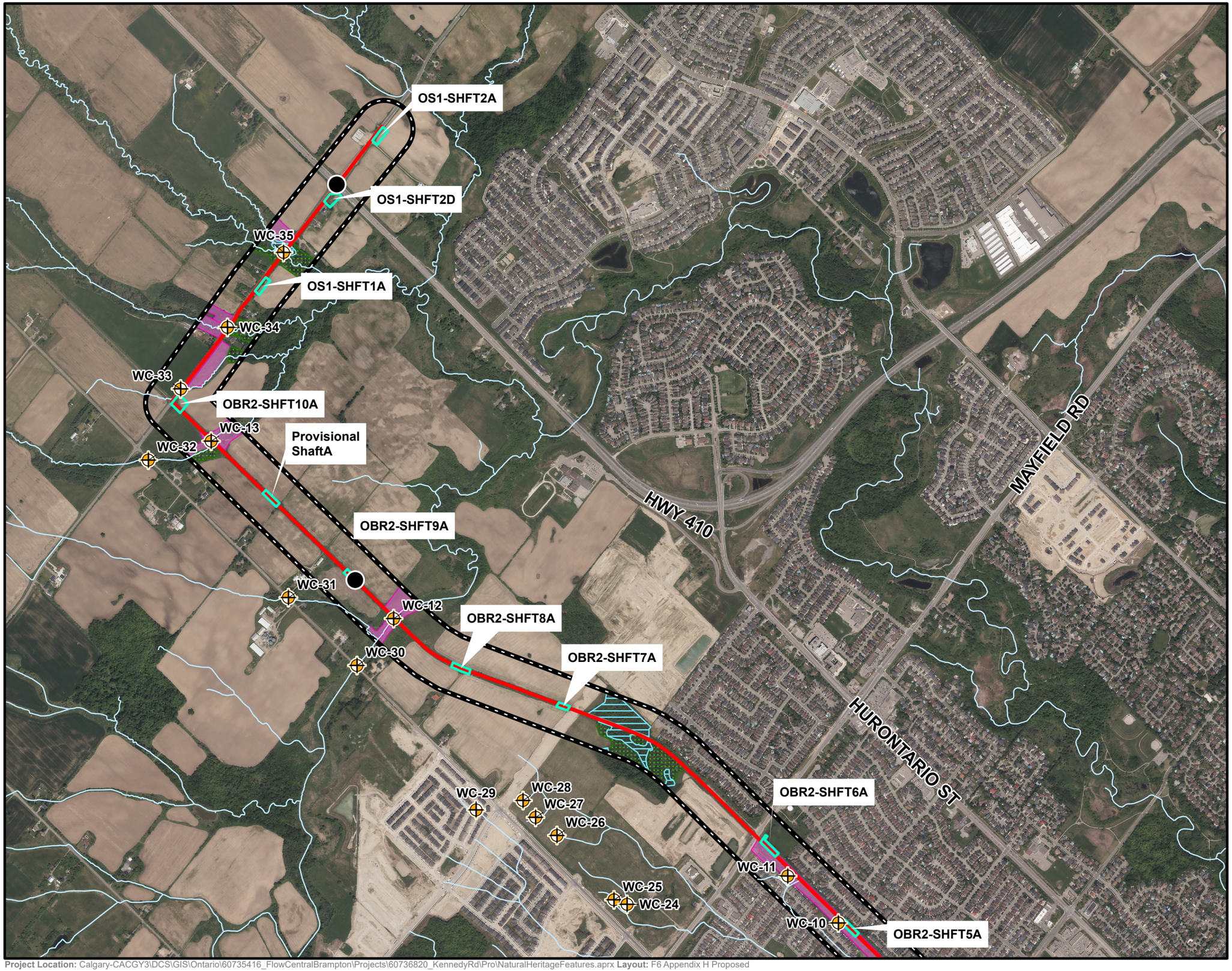
Central Brampton

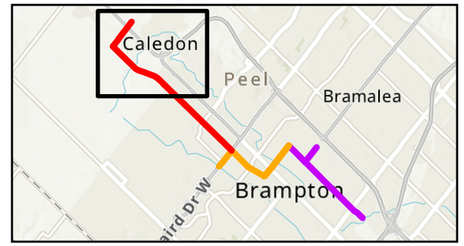
Appendix H

Proposed Works

AECOM

Peel Region





- Watercourse Crossing ID
- Sanitary Trunk Sewer Connections
- MTBM Shaft Compound Preferred
- Watercourse
- Study Area

Preferred Route - Segment

- Segment 1
- Segment 2
- Segment 3

Cultural Communities

CUM1, CUM1-1, CUP1, CUP2, CUP3-2, CUP3-8, CUS, CUS1, CUT1, CUT1-1, CUW1

Forest Communities

FOD3-2, FOD4-2, FOD5, FOD5-10, FOD6-5, FOD7, FOD7-3, FODM11

Wetland Communities

MAM2-10, MAMM1-12, MAS2-1, SWD1-1, SWD2, SWD4-1

Thicket Communities

THD3

Flow | Central Brampton

Kennedy Rd - Proposed Works

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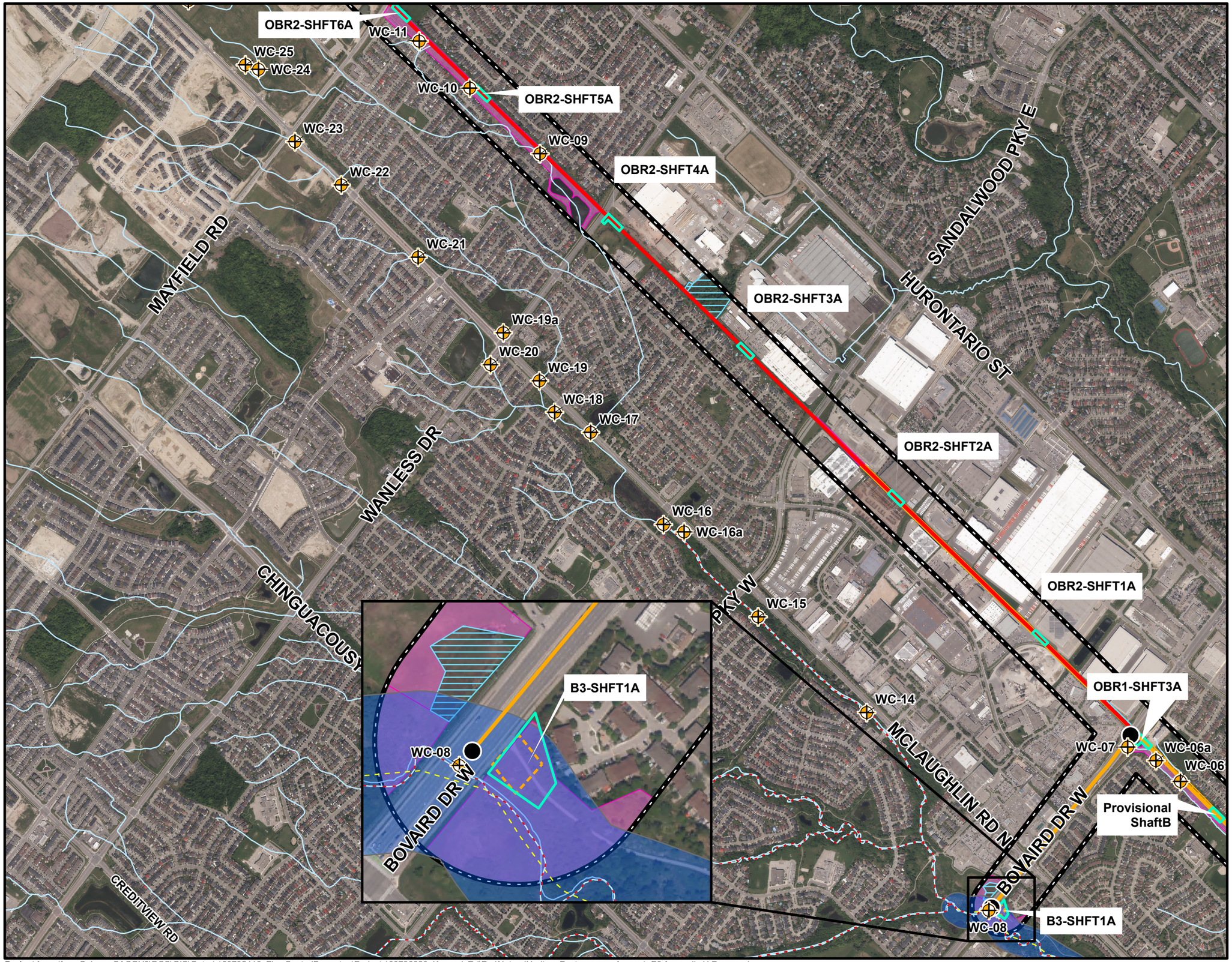
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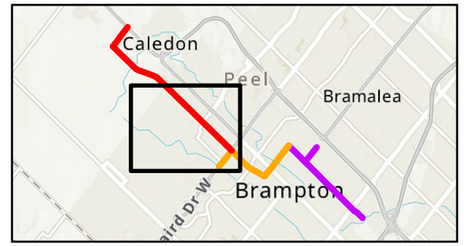
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PN: 60735416	Appendix H-1
January 29, 2026	AECOM

Data Sources:
ESRI Canada, Government of Ontario

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F6 Appendix H Proposed Works





- Watercourse Crossing ID
- Sanitary Trunk Sewer Connections
- MTBM Shaft Compound Preferred
- Watercourse
- Study Area
- Approximate Excavation Extent

Critical Habitat

- Redside Dace Critical Habitat (DFO, 2025)
- Fletcher's Creek Meander Belt Axis
- Redside Dace Critical Habitat (Meander Belt Width + 30m) (AECOM, 2025)

Preferred Route - Segment

- Segment 1
- Segment 2
- Segment 3

Cultural Communities

- CUM1, CUM1-1, CUP1, CUP2, CUP3-2, CUP3-8, CUS, CUS1, CUT1, CUT1-1, CUW1

Forest Communities

- FOD3-2, FOD4-2, FOD5, FOD5-10, FOD6-5, FOD7, FOD7-3, FODM11

Wetland Communities

- MAM2-10, MAMM1-12, MAS2-1, SWD1-1, SWD2, SWD4-1

Thicket Communities

- THD3

Flow | Central Brampton

Kennedy Rd - Proposed Works

0 0.15 0.3 0.45 0.6

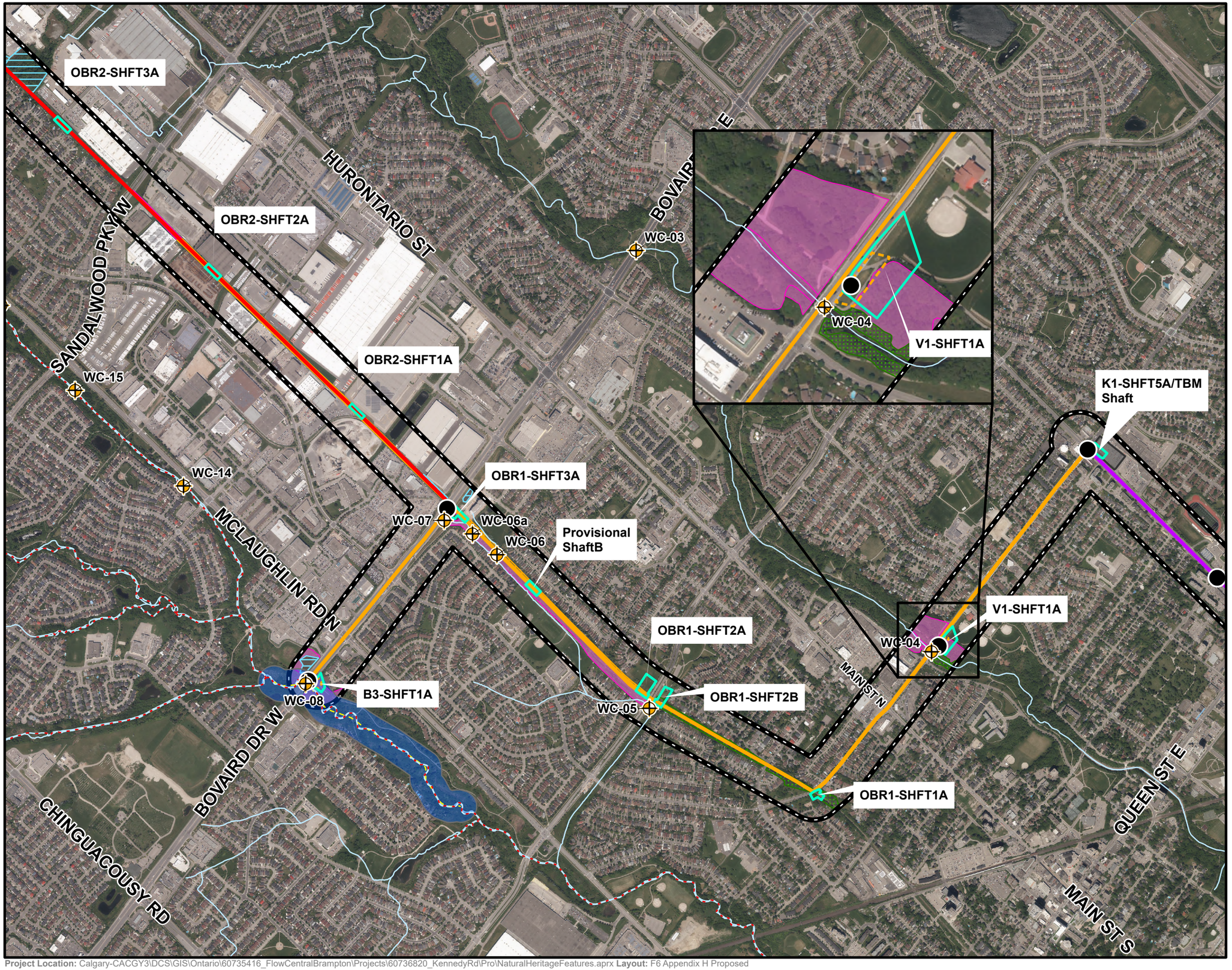
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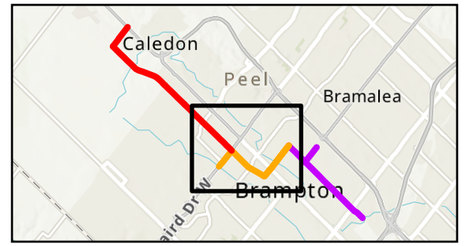
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PN: 60735416	Appendix H-2
January 29, 2026	AECOM

Data Sources:
ESRI Canada, Government of Ontario

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F6 Appendix H Proposed Works





- Watercourse Crossing ID
- Sanitary Trunk Sewer Connections
- MTBM Shaft Compound Preferred
- TBM Shaft Compound
- Watercourse
- Study Area
- Approximate Excavation Extent

Critical Habitat

- Redside Dace Critical Habitat (DFO, 2025)
- Fletcher's Creek Meander Belt Axis
- Redside Dace Critical Habitat (Meander Belt Width + 30m) (AECOM, 2025)

Preferred Route - Segment

- Segment 1
- Segment 2
- Segment 3

Cultural Communities

- CUM1, CUM1-1, CUP1, CUP2, CUP3-2, CUP3-8, CUS, CUS1, CUT1, CUT1-1, CUW1

Forest Communities

- FOD3-2, FOD4-2, FOD5, FOD5-10, FOD6-5, FOD7, FOD7-3, FODM11

Wetland Communities

- MAM2-10, MAMM1-12, MAS2-1, SWD1-1, SWD2, SWD4-1

Thicket Communities

- THD3

Flow | Central Brampton

Kennedy Rd - Proposed Works

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Kilometers
Scale: 1:15,000

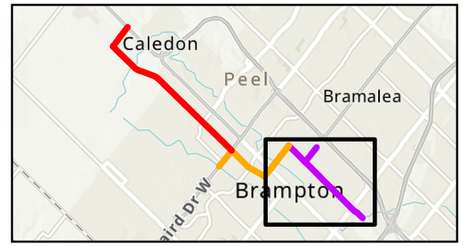
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PN: 60735416	Appendix H-3
January 29, 2026	AECOM

Data Sources:
ESRI Canada, Government of Ontario

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F6 Appendix H Proposed Works





- Watercourse Crossing ID
- Sanitary Trunk Sewer Connections
- MTBM Shaft Compound Preferred
- TBM Shafts
- Watercourse
- Study Area
- Approximate Excavation Extent

Critical Habitat

- Redside Dace Critical Habitat (DFO, 2025)

Preferred Route - Segment

- Segment 1
- Segment 2
- Segment 3

Cultural Communities

- CUM1, CUM1-1, CUP1, CUP2, CUP3-2, CUP3-8, CUS, CUS1, CUT1, CUT1-1, CUW1

Forest Communities

- FOD3-2, FOD4-2, FOD5, FOD5-10, FOD6-5, FOD7, FOD7-3, FODM11

Wetland Communities

- MAM2-10, MAMM1-12, MAS2-1, SWD1-1, SWD2, SWD4-1

Thicket Communities

- THD3

Flow | Central Brampton

Kennedy Rd - Proposed Works

0 0.15 0.3 0.45 0.6

Kilometers
Scale: 1:15,000

N

PN: 60735416	Appendix H-4
January 29, 2026	AECOM

Data Sources:
ESRI Canada, Government of Ontario

Project Location: Calgary-CACGY3\DCS\GIS\Ontario\60735416_FlowCentralBrampton\Projects\60736820_KennedyRd\Pro\NaturalHeritageFeatures.aprx **Layout:** F6 Appendix H Proposed Works