AECOM

Appendix C

Natural Environment Report and Memorandum

Natural Environment Report

Region of Peel Snow Storage

Region of Peel

60646784

June 2024

Delivering a better world

Statement of Qualifications and Limitations

The attached Report (the "Report") has been prepared by AECOM Canada Ltd. ("AECOM") for the benefit of the Regional Municipality of Peel ("Client") in accordance with the agreement between AECOM and Client, including the scope of work detailed therein (the "Agreement").

The information, data, recommendations and conclusions contained in the Report (collectively, the "Information"):

- is subject to the scope, schedule, and other constraints and limitations in the Agreement and the qualifications contained in the Report (the "Limitations");
- represents AECOM's professional judgement in light of the Limitations and industry standards for the preparation of similar reports;
- may be based on information provided to AECOM which has not been independently verified;
- has not been updated since the date of issuance of the Report and its accuracy is limited to the time period and circumstances in which it was collected, processed, made or issued;
- must be read as a whole and sections thereof should not be read out of such context;
- was prepared for the specific purposes described in the Report and the Agreement; and
- in the case of subsurface, environmental or geotechnical conditions, may be based on limited testing and on the assumption that such conditions are uniform and not variable either geographically or over time.

AECOM shall be entitled to rely upon the accuracy and completeness of information that was provided to it and has no obligation to update such information. AECOM accepts no responsibility for any events or circumstances that may have occurred since the date on which the Report was prepared and, in the case of subsurface, environmental or geotechnical conditions, is not responsible for any variability in such conditions, geographically or over time.

AECOM agrees that the Report represents its professional judgement as described above and that the Information has been prepared for the specific purpose and use described in the Report and the Agreement, but AECOM makes no other representations, or any guarantees or warranties whatsoever, whether express or implied, with respect to the Report, the Information or any part thereof.

Without in any way limiting the generality of the foregoing, any estimates or opinions regarding probable construction costs or construction schedule provided by AECOM represent AECOM's professional judgement in light of its experience and the knowledge and information available to it at the time of preparation. Since AECOM has no control over market or economic conditions, prices for construction labour, equipment or materials or bidding procedures, AECOM, its directors, officers and employees are not able to, nor do they, make any representations, warranties or guarantees whatsoever, whether express or implied, with respect to such estimates or opinions, or their variance from actual construction costs or schedules, and accept no responsibility for any loss or damage arising therefrom or in any way related thereto. Persons relying on such estimates or opinions do so at their own risk.

Except (1) as agreed to in writing by AECOM and Client; (2) as required by-law; or (3) to the extent used by governmental reviewing agencies for the purpose of obtaining permits or approvals, the Report and the Information may be used and relied upon only by Client.

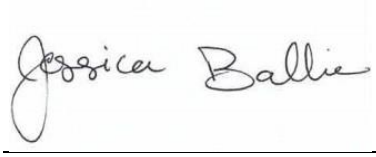
AECOM accepts no responsibility, and denies any liability whatsoever, to parties other than Client who may obtain access to the Report or the Information for any injury, loss or damage suffered by such parties arising from their use of, reliance upon, or decisions or actions based on the Report or any of the Information ("improper use of the Report"), except to the extent those parties have obtained the prior written consent of AECOM to use and rely upon the Report and the Information. Any injury, loss or damages arising from improper use of the Report shall be borne by the party making such use.

This Statement of Qualifications and Limitations is attached to and forms part of the Report and any use of the Report is subject to the terms hereof.

AECOM: 2024-06-07

Quality Information

Prepared by

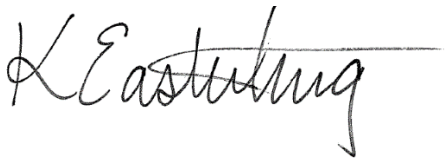


Jessica Ballie, B.Sc. (Hons)
Ecologist

Checked by

Olga Hropach, B.Sc. (Hons)
Senior Ecologist

Verified by



Katie Easterling, B.Sc.(Hons)
Senior Ecologist

Revision History

Rev #	Revision Date	Revised By:	Revision Description
0	N/A	N/A	Initial Draft
1	January 12, 2024	Olga Hropach	Revisions based on changes to Potential Snow Storage Areas
2	June 10, 2024	Jessica Ballie	Final

Distribution List

# Hard Copies	PDF Required	Association / Company Name
	✓	Region of Peel
	✓	AECOM Canada Ltd.

Prepared for:

Region of Peel
10 Peel Centre Drive
Suite B, 4th Floor
Brampton, ON L6T 4B9

Prepared by:

AECOM Canada Ltd.
105 Commerce Valley Drive West, 7th Floor
Markham, ON L3T 7W3
Canada

T: 905.886.7022
F: 905.538.8076
www.aecom.com

Executive Summary

AECOM Canada Ltd. has been retained by the Region of Peel to complete a Natural Environment Report as part of a Schedule "B" Municipal Class Environmental Assessment to evaluate snow storage opportunities at selected Region of Peel owned properties. The snow storage sites identified will provide near and long-term snow storage solutions that are environmentally sound and politically acceptable for the Region and its area municipalities.

The Region of Peel has identified five (5) properties within its municipal boundaries as possible locations for snow storage sites. The Study Areas for each site include 120 metre (m) buffer to identify natural heritage features and their adjacent lands. The sites and their locations are provided below:

- Site 1: Highway No. 50 Carpool lot
- Site 3: West Brampton Reservoir and Pumping Station
- Site 5: Johnston Sports Park
- Site 6: Tullamore Reservoir and Pumping Station
- Site 9: Alloa Reservoir and Pumping Station

Existing aquatic and terrestrial conditions were identified through a background review of secondary sources and field investigations. A Species at Risk (SAR) and Significant Wildlife Habitat (SWH) screening were completed based on the existing conditions data and species records identified.

All sites were assessed based on their existing natural heritage conditions to determine the following potential considerations and constraints:

- Potential effects from existing infrastructure (i.e., fragmentation, edge effects, noise and disturbance of road or train traffic);
- Level of potential effect on terrestrial and aquatic natural heritage features (i.e., low, medium or high impact);
- Level of potential effect on SAR and their habitats (i.e., low medium or high impact); and
- Potential for permits/authorizations requirements under the *Endangered Species Act (ESA), Species at Risk Act, Fisheries Act* and other regulations.

All sites were found to contain natural areas within their Study Areas. The Proposed Snow Storage Areas of all sites did not fall within any regulated areas of the conservation authorities. Sites 1 and 3 contained candidate or confirmed SWH within the Proposed Snow Storage Areas. Only Site 3 was identified to provide potential terrestrial SAR habitat for eastern meadowlark (*Sturnella magna*) and bobolink (*Dolichonyx oryzivorus)*. Aquatic SAR habitat for Redside Dace (*Clinostomus elongatus)* was identified immediately downstream of the Proposed Snow Storage Areas of Site 5 and habitat for Redside Dace was identified within the Proposed Snow Storage Area 6 site (in Salt Creek). No SAR habitat, SWH or natural heritage features for SAR were found within Site 9.

Site 9 was selected as the preferred alternative followed by Site 1 due to the lack of potential effects on SAR and SWH as well as the potential for permits/ authorizations. Site 9 is proposed to be located entirely within a manicured lawn and is unlikely to require any isolated tree or shrub removal. Watercourses, core woodlands and Potential Natural Areas and Corridors are unlikely to be impacted from increase water inputs from snow melt as these are located more than 250 m away from the Potential Snow Storage Area for Site 9.

Although Site 9 has been identified as the preferred alternative, potential effects and mitigation measures were described generally in nature as to apply to all alternatives. Recommended additional studies that should be

conducted during the Preliminary Design include: breeding bird surveys targeting Bobolink and Eastern Meadowlark if Site 3 is the overall preferred alternative, as well as tree inventory to document required removals based on the construction footprint and for use in consideration of replacement plantings, if any. If Site 6 is chosen, a meander belt analysis should be conducted to determine the limits of regulated Redside Dace habitat (protected under the ESA and ensure that no temporary or permanent footprints for the snow storage area fall within the regulated habitat.

Table of Contents

Tables

Appendices

1. Introduction

AECOM has been retained by the Region of Peel to complete a Natural Environment Report as part of a Schedule "B" Municipal Class Environmental Assessment (MCEA) to evaluate snow storage opportunities at selected Region of Peel owned properties. The snow storage sites identified will provide near and long-term snow storage solutions that are environmentally sound and politically acceptable for the Region and its area municipalities.

This report provides a description of the existing natural heritage features, an assessment of the significance of features and their functions, a Species at Risk (SAR) screening, a summary of constraints and opportunities, as well as recommended mitigation measures. The following sections describe the existing aquatic and terrestrial conditions for each of the snow storage opportunities as determined through a review of available online background information and agency correspondence as well as reconnaissance-level field investigations.

1.1 Study Area

The Region of Peel has identified five (5) properties within its boundaries as possible locations for snow storage sites. **Table 1-1** below identifies the locations of each property and their associated municipality. The Study Areas of each property include a 120 m buffer to identify natural heritage features and their adjacent lands, as defined by the Natural Heritage Reference Manual (NHRM) (MNRF, 2010). **Figure 1** indicates the boundaries of each Study Area.

Table 1-1: Potential Snow Storage Sites

Site	Location	Municipality
1	Highway No. 50 Carpool lot	Brampton
3	West Brampton Reservoir and Pumping Station	Brampton
5	Johnston Sports Park	Caledon
6	Tullamore Reservoir and Pumping Station	Caledon
9	Alloa Reservoir and Pumping Station	Caledon

1.2 Applicable Environmental Legislation

Current legislations 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 *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* includes 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 Convention Act, 1994 (MBCA)	Environment and Climate Change Canada (ECCC)	■ Intended to protect migratory birds, their eggs and their active nests. ■ Includes more than 700 species of birds ■ Prohibits the possession, destruction and harm of migratory birds and / or their nests.
Federal	Species at Risk Act, 2002 (SARA)	Environment and Climate Change Canada - Canadian Wildlife Services (ECCC – CWS)	■ The SARA protects and ensures 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 manages 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	Endangered Species Act, 2007 (ESA)	Ontario Ministry of the Environment, Conservation and Parks (MECP)	■ Under the ESA, species are listed as Extirpated, Endangered, Threatened and Special Concern. ■ The ESA prohibits the killing, harming or harassment of Endangered or Threatened species and the damage or destruction of their habitat. ■ MECP may grant a permit, or other authorization, for activities that would otherwise not be allowable under the ESA. ■ For the purposes of this report Special Concern species are considered *Species of Conservation Concern (SOCC).*

Table 1-2: Relevant Legislation and Policies

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 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 m 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 and Forestry (MNRF)	■ Provides protection and regulation (i.e., ownership and possession, sale facilities, administrative, import/export, transportation, habitat for wildlife in Ontario. ■ Includes protection for raptors and other bird species not protected under MBCA. Nests of these bird species can only be removed if a permit is obtained from MNRF.
Provincial	Planning Act, 1990 and Provincial Policy Statement, 2020 (PPS)	MMAH	■ The PPS was issued under Section 3 of the *Ontario Planning Act, 1990*. ■ PPS identifies seven types of natural heritage features to be protected: ■ Significant habitat of endangered or threatened species – Significant wetlands – Coastal wetlands – Significant woodlands in Ecoregions 6E and 7E. – Significant valley lands in Ecoregions 6E and 7E – Significant wildlife habitat (including habitat of SOCC identified through background review and field surveys) – Significant Areas of Natural and Scientific Interest (ANSI) ■ Under the PPS development and site alteration are prohibited in significant wetlands. In addition, development and site alteration are not permitted within the remaining natural heritage features or adjacent habitats (including adjacent habitats to significant wetlands) unless it can be shown that there will be no negative impact.
Provincial	Conservation Act, 1990	Ontario Ministry of Natural Resources and Forestry (MNRF)	■ 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 Study Area falls within the Toronto and Region Conservation Authority's (TRCA) regulation limit.

Table 1-2: Relevant Legislation and Policies

Level	Legislation	Governing Authority	Relevant Information
Provincial	Conservation Act, 1990	Ontario Ministry of Natural Resources and Forestry (MNRF)	■ 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 Study Area falls within Credit Valley Conservation's (CVC) regulation limit.
Municipal	Regional Official Plan, consolidated 2022	Region of Peel	■ The Region of Peel established the Greenlands 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 ha; – 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 ha and 30 ha; – Evaluated non-provincially significant wetlands – SWH outlined in Figure 5 of the Regional Official Plan; – Fish habitat; – Regionally significant life science ANSIs; – 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.

Table 1-2: Relevant Legislation and Policies

Level	Legislation	Governing Authority	Relevant Information
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, consolidated 2020	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 ■ Development within or adjacent to components of the natural heritage system will require an EIS 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 (2021) will also require an EIS 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.

2. Methods

2.1 Background Information Review

AECOM conducted a desktop review for natural heritage information from the following secondary sources to identify existing natural heritage features within the Study Areas:

- NDMNRF Make A Map: Natural Heritage Areas Application and NHIC NDMNRF GeoHub base mapping data, (NDMNRF, 2021a; NDMNRF 2021b; MNRF, 2017) for:
  - Designated natural areas (i.e., ANSI, wooded areas, PSWs/Locally Significant Wetlands[LSWs]/unevaluated wetlands, provincial parks);
  - Aquatic Resource Areas;
  - Dam Inventory,
  - Watershed mapping;
  - Wildlife habitats;
  - Aerial Photography; and
  - NHIC provincially tracked species.
- Wildlife Atlases:
  - Ontario Breeding Bird Atlas (OBBA; BSC et al., 2006), Square 17TNH88;
  - Ontario Reptile and Amphibian Atlas (ORAA; Ontario Nature, 2019), Square 17NH88;
  - Ontario Butterfly Atlas (OBA; TEA, 2021), Square 17NH88;
  - Bat Conservation International (BCI) Range Maps (2021);
  - Fisheries and Oceans Canada (DFO) Aquatic SAR Mapping (DFO, 2021);
  - eBird (2021); and
  - iNaturalist (2021).
- Planning Documents and Guidelines:
  - Town of Caledon Official Plan (2024)
  - City of Brampton Official Plan (2020)
  - Regional Official Plan (2022).
  - NHRM (MNRF, 2010);
  - SWH Technical Guide (MNRF, 2000);
  - SWH Criteria Schedules For Ecoregion 6E (MNRF, 2015a); and
  - SWH Criteria Schedules For Ecoregion 7E (MNRF, 2015b).
- Open Portals and Interactive Mapping:
  - Ontario Ministry of Food, Agriculture and Rural Affairs (OMAFRA) AgMaps application (OMAFRA, 2021)

During this preliminary desktop review, AECOM identified data gaps and submitted information request letters to the TRCA and CVC on March 2, 2021. The TRCA responded on March 25, 2021 and April 23, 2021 and provided information on fish records, fish habitat, wildlife records, floodlines and TRCA regulated area. On August 23, 2021, CVC provided aquatic and terrestrial natural heritage information, related stormwater management reports, fluvial geomorphology information, 100 year floodplains, and CVC regulated areas.

2.2 Site Visit

2.2.1 Terrestrial Field Investigations

In order to acquire up-to-date information on the existing natural heritage conditions within the Study Areas, field investigations were conducted on September 23, 2021 and October 15, 2021 by AECOM ecologists. Field investigations were completed to supplement available background information as described in **Section 2.1** above. A representative photographic log is provided in **Appendix B**.

Field investigations included the following:

- 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;
- List of wildlife species observed, and evidence of wildlife habitat on man-made structures including direct observation and incidental evidence;
- Assessment of habitat potential based on wildlife observations and site conditions; and
- Location of any SAR, SOCC or their habitats.

2.2.2 Aquatic Field Investigations Methods

An AECOM aquatic biologist undertook aquatic habitat assessments in order to characterize aquatic features and functions within the Study Area for each site, except Site 5 (Johnston Sports Park) where permission to access was not granted. Investigations were carried out for all features identified during the background review for each site. 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 and agency information requests for the Study Area was found to be sufficient.

2.3 Significant Wildlife Habitat Assessment

The *Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E* (MNRF, 2015b) and *Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E* (MNRF, 2015a) contains information and criteria for identifying SWH, which are defined as areas that have important ecological features and functions and which support sustainable populations of plants, wildlife and other organisms within this Ecoregion. The SWH is generally characterized into the following five categories:

- Seasonal Concentration Areas,
- Rare Vegetation Communities,
- Specialized Habitats for Wildlife,
- Habitats of Species of Conservation Concern (SOCC), and,
- Animal Movement Corridors.

Field data such as general habitat conditions and habitat characteristics was collected to identify the presence of SWH within the Study Areas based on the habitat criteria identified in the *Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E* (MNRF, 2015a) and *Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E* (MNRF, 2015b).

According to the NHRM (MNRF, 2010), which was developed to provide technical guidance for implementing the natural heritage policies of the PPS (2020), SWH includes the habitat of SOCC, which consists of the following:

- Species with Provincial S-rank assigned by the NHIC as S1 (critically imperiled), S2 (imperiled) or S3 (vulnerable),
- Species listed as Special Concern under the *Endangered Species Act* (ESA, 2007), and,
- Species identified as nationally Endangered or Threatened by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), which are not protected under the ESA.

Although SOCC do not receive legal protection under the ESA, they may be afforded protection under the PPS (2020), the MCBA (1994), FWCA (1997), and other planning documents. A screening for SOCC was completed as per **Section 2.4** below.

2.4 Species at Risk Habitat Assessment

The Committee on the Status of Species at Risk in Ontario (COSSARO) determines the status of species within Ontario. The four classifications of species include:

- **Extirpated:** no longer lives within a certain region of Ontario, although still lives somewhere in the world,
- **Endangered:** lives in the wild in Ontario but is facing imminent extinction or extirpation,
- **Threatened:** lives in the wild in Ontario, is not Endangered, but is likely to become Endangered if steps are not taken to address factors threatening it, and
- **Special Concern:** lives in the wild in Ontario, is not Threatened or Endangered, but may become Threatened or Endangered due to a combination of biological characteristics and identified threats. (NDMNRF, 2021).

For the purpose of this report, provincial SAR are defined as species that are listed as either Threatened, Endangered, or Extirpated under the ESA. These species, as well as their habitat, are afforded protection under the ESA. Species listed as Special Concern provincially are not afforded protection under the ESA but have been included in the SAR Screening to avoid future implications should the status of these species change under the ESA. Furthermore, species listed as Special Concern provincially are considered as SOCC in the NHRM (MNRF,

2010). As such, habitat for these species is considered SWH and they receive protection under other federal/provincial legislation, or planning tools such as the PPS, MBCA, FWCA, and municipal official plans.

Federal SAR are those species that are listed as Threatened, Endangered or Extirpated under Schedule 1 of the SARA and are afforded species protection, and in some cases habitat protection, under this Act. In the case of federal aquatic SAR, the SARA provides protection for aquatic species listed on Schedule 1 on both federal and non-federal lands. With respect to federally listed terrestrial SAR, this legislation applies only to federal lands, federally regulated projects, species with critical habitat on non-federal lands in specific circumstances, and SAR birds that are also protected under the MBCA. Most species listed under Schedule 1 of the SARA receive habitat protection on non-federal lands under the provincial ESA. Species that do not receive protection under the ESA and do not have critical habitat identified may be afforded protection under other legislation, such as the MBCA.

A SAR screening exercise was completed to determine the presence and potential impacts to SAR within the Study Area. A list of SAR which have the potential to occur within the Study Area was compiled based on a review of background information as described in **Section 2.1**. Habitat preferences of SAR and SOCC identified during background review were compared to on-site habitat characteristics identified through field investigations to determine if the Study Area contains potential habitat for any of the listed SAR or SOCC. The potential for the species to occur within the Study Area was determined through a probability of occurrence whereby the following rankings were applied:

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

3. Existing Conditions

3.1 Background Information Review

3.1.1 Designated Natural Areas

Natural features and areas identified for protection in the Provincial Policy Statement (PPS) and other legislation that are collectively referred to as "Designated Natural Areas"; these include, but are not limited to significant wetlands, SWH, etc. and may be identified by the planning authorities (i.e., province, municipality, conservation authority). A summary of designated natural areas identified within the Study Areas through the background review are provided in **Table 3-1** below. Designated natural areas within and in the vicinity of the Study Areas are illustrated on **Figure 1.** Although the Study Areas of many sites contained designated natural areas, the proposed snow storage areas were located outside of designated natural areas.

Table 3-1: Natural Features within Study Areas

Site	Wetlands	Woodlands	Significant Wildlife Habitat	Potential Snow Storage Areas Located within Natural Designated Features (Yes/No)
1	None	None	None	No
3	Provincially Significant Huttonville Creek & Area Wetland Complex	Core Areas and NACs	None	No
5	None	Core Areas and NACs	Wildlife Concentration Area - Mixed Wader Nesting Colony	No
6	None	NACs	Wildlife Concentration Area - Mixed Wader Nesting Colony	No
9	None	Core Areas	None	No

3.1.2 Policy Areas

Generally, all of the proposed snow storage areas occurred outside of the policy areas, with the exception of Site 5. The northeast corner of the Site 5 proposed snow storage area overlapped with protected countryside. The Policy areas located within the Study Areas are presented in **Table 3-2**. These are also shown on **Figure 1.**

Table 3-2: Policy Areas within Study Areas

Site	Conservation Authority Regulation Areas	Greenbelt Plan (2017)	Region of Peel Official Plan	City of Brampton Official Plan	Town of Caledon Official Plan	Potential Snow Storage Areas Located within Policy Areas (Yes/No)
1	■ TRCA Regulated Area	■ None	■ None	■ None	■ None	■ No
3	■ CVC Regulated Areas	■ None	■ Core Area - Woodlands ■ NAC - Woodland	■ City of Brampton's NHS - Woodlands	■ None	■ No, but within 40 m of Region of Peel Core Woodland and City of Brampton's NHS. More than 500 m away from Region of Peel NAC Woodland.
5	■ TRCA Regulated Area	■ Protected Countryside and NHS	■ Core Area- Woodlands ■ NAC - Woodlands	■ None	■ None	■ No, but within 500 m of Region of Peel Core Area and NAC Woodland.
6	■ TRCA Regulated Area	■ None	■ NAC - Woodlands	■ None	■ None	■ No, but within 200 m of Region of Peel NAC woodland.
9	■ TRCA ■ CVC Regulated Areas	■ None	■ Core Area - Woodlands	■ None	■ None	■ No, but within 330 m of Region of Peel Core Area Woodland.

3.1.3 Vegetation

The Study Area of Site 1 falls within the Lake Simcoe-Rideau Ecoregion (6E), which is part of the Mixedwood Plains Ecozone. This Ecoregion extends from Lake Huron in the west to the Ottawa River in the east and is considered the second most densely populated ecoregion in Ontario. Forests within this ecoregion are diverse. Upland sites are typically dominated by sugar maple, American beech, white ash and eastern hemlock (*Tsuja canadensis*), while lowland forests are often represented by green ash (*Fraxinus pennsylvanica*), silver maple (*Acer saccharinum*), red maple (*Acer rubrum*), eastern white cedar (*Thuja occidentalis*), yellow birch (*Betula alleghaniensis*), balsam fir (*Abies balsamea*) and black ash (*Fraxinus nigra*) (Crins et al., 2009).

The Study Areas of Sites 3, 5, 6, and 9 are located within Ecoregion 7E (Lake Erie-Lake Ontario). Ecoregion 7E, which is part of the Mixedwood Plains Ecozone, extends from Windsor to Toronto and includes the Niagara Region. The Lake Erie Lowland Ecoregion is underlain by carbonate-rich, Paleozoic bedrock, and is dominated by a variety of deep glacial deposits (Ecological Stratification Working Group, 1995). Forests in this Ecoregion, which are sparse due to urban development and agriculture, are characterized by sugar maple (*Acer saccharum*), American beech (*Fagus grandifolia*), oaks (*Quercus* spp.), ash (*Fraxinus* spp.), American elm (*Ulmus americana*), eastern cottonwood (*Populus deltoids*), balsam poplar (*Populus balsamifera*) and silver maple (*Acer saccharinum*) (Ecological Stratification Working Group, 1995).

A number of SOCC and SAR plant records in the vicinity of the Study Areas were identified through a review of the background information sources listed in **Section 3.1**. These species are further discussed in **Sections 3.3** and **3.4**, respectively.

3.1.4 Aquatic Habitat

Fish habitat as defined under the *Fisheries Act* was identified within the Snow Storage Property Boundaries for Site 3, Site 5, Site 6, and Site 9. However, none of the Snow Storage Areas are located on or immediately adjacent to watercourses (i.e., within the regulated floodplain limits). Details of these features is provided **Table 3-3**. Site 3 was the only site without fish community records and the watercourse that is mapped through Site 3 is not regulated by CVC based on their regulated floodplain limits.

Table 3-3: Fish Habitat Features

Feature	Name	Status	Site	Potential Snow Storage Area Contains Fish Habitat (Yes / No)
Watercourse	Tributary to Robinson Creek	TRCA Regulated Area	1	No
Watercourse	Tributary to Credit River	Not Regulated	3	No
Watercourse	Lindsay Creek	TRCA Regulated Area	5	No
Watercourse	Salt Creek	TRCA Regulated Area	6	No
Watercourse	Alloa Municipal Drain	TRCA Regulated Area	9	No

A list of aquatic SAR potentially present within the Study Areas is presented in **Table 3-4**.

3.1.5 Terrestrial Species at Risk and Species of Conservation Concern

A list of wildlife SAR and/or SOCC with records identified through the background review in the vicinity of the Study Areas is presented in **Table 3-4**.

Table 3-4: SAR and/or SOCC Potentially Present within Study Areas

Taxon	Common Name	Scientific Name	S-Rank[1]	ESA Status[2]	COSEWIC Status[3]	SARA Schedule 1 Status[4]	Site	Source	SAR/ SOCC
Amphibians	Jefferson Salamander	*Ambystoma jeffersonianum*	S2	END	END	END	6, 9	ORAA	SAR
Birds	Acadian Flycatcher	*Empidonax virescens*	S2S3B	END	END	END	1, 6	eBird, OBBA	SAR
	Bank Swallow	*Riparia riparia*	S4B	THR	THR	THR	1,3,5,6,9	eBird, OBBA	SAR
	Barn Swallow	*Hirundo rustica*	S5B	THR	THR	THR	1,3,5,6,9	eBird, OBBA	SAR
	Bobolink	*Dolichonyx oryzivorus*	S4B	THR	THR	THR	1,3,5,6,9	eBird, NHIC, OBBA	SAR
	Chimney Swift	*Chaetura pelagica*	S4B,S4N	THR	THR	THR	1,3,5,6,9	eBird, OBBA	SAR
	Eastern Meadowlark	*Sturnella magna*	S4B	THR	THR	THR	1,3,5,6,9	eBird, NHIC, OBBA	SAR
	Eastern Whip-poor-will	*Antrostomus vociferous*	S4B	THR	THR	THR	3, 9	eBird, OBBA	SAR
	Prothonotary Warbler	*Protonotaria citrea*	S1B	END	END	END	5, 6	eBird, OBBA	SAR
	Red-headed Woodpecker	*Melanerpes erythrocephalus*	S4B	END	END	THR	3,5, 6, 9	eBird, OBBA	SAR
Fish	Redside Dace	*Clinostomus elongatus*	S1	END	END	END	5, 6	NHIC, DFO	SAR
Amphibians	Western Chorus Frog – Great Lakes – St. Lawrence – Canadian Shield population	*Pseudacris maculata pop. 1*	S4	NAR	THR	THR	1, 5, 6, 9	ORAA	SOCC
Birds	American Golden-plover	*Pluvialis dominica*	S2B,S4N	No Status	No Status	No Status	5	eBird	SOCC
	Common Nighthawk	*Chordeiles minor*	S4B	SC	SC	THR	1,3,6,9	OBBA	SOCC
	Eastern Palm Warbler	*Setophaga palmarum hypochrysea*	S1B	No Status	No Status	No Status	5	eBird	SOCC
	Eastern Wood-pewee	*Contopus virens*	S4B	SC	SC	SC	1,3,5,6,9	eBird, OBBA	SOCC
	Golden-winged Warbler	*Vermivora chrysoptera*	S4B	SC	THR	THR	5, 6	eBird, OBBA	SOCC
	Grasshopper Sparrow	*Ammodramus savannarum*	S4B	SC	SC	SC	5,6	eBird, OBBA	SOCC
	Purple Martin	*Progne subis*	S3S4B	No Status	No Status	No Status	3,9	eBird, OBBA	SOCC
	Wood Thrush	*Hylocichla mustelina*	S4B	SC	THR	THR	1,3,5,6,9	eBird, NHIC, OBBA	SOCC
Bryophyte	Alleghany Moss	*Thamnobryum alleghaniense*	S2	No Status	No Status	No Status	9	iNaturalist	SOCC
Insects	Fraternal Potter Wasp	*Eumenes fraternus*	S3	No Status	No Status	No Status	9	iNaturalist	SOCC

[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 (i.e., S2S3) is used to indicate any range of uncertainty about the status of the species or community. Ranges cannot skip more than one rank (i.e., 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.*

[2]***ESA Status***: *The Endangered Species Act 2007 (ESA) protects species listed as Threatened and Endangered on the Species at Risk in Ontario (SARO) List on provincial and private land. The Minister lists species on the SARO list based on recommendations from the Committee on the Status of Species at Risk in Ontario (COSSARO), which evaluates the conservation status of species occurring in Ontario. The following are the categories of at risk:*

END *(Endangered) – A species facing imminent extinction or extirpation in Ontario.*
THR *(Threatened) – Any native species that, on the basis of the best available scientific evidence, is at risk of becoming Endangered throughout all or a large portion of its Ontario range if the limiting factors are not reversed.*
SC *(Special Concern) – A species that may become Threatened or Endangered due to a combination of biological characteristics and identified threats.*

[3]***COSEWIC Status:*** *The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) exists to provide Canadians and their governments with advice regarding the status of wildlife species that are nationally at risk of extinction or extirpation. COSEWIC classifies SAR as follows:*

Extirpated (EXP) – a wildlife species that no longer exists in the wild in Canada, but exists elsewhere in the wild (SARA Registry, 2012).
Endangered (END) – a wildlife species that is facing imminent extirpation or extinction (SARA Registry, 2012).
Threatened (THR) – 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 (SC) – 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)
Not At Risk (NAR) – a wildlife species that has been evaluated and found to be not at risk of extinction given the current circumstances.

[4]***SARA Sched. 1 Status:*** *The SARA protects and ensures the recovery of SAR listed on Schedule 1 as Extirpated, Endangered and Threatened, and their critical habitats at a federal level. Schedule 1 of the SARA provides the legal classification of SAR as follows:*

Extirpated (EXP) – a wildlife species that no longer exists in the wild in Canada, but exists elsewhere in the wild (SARA Registry, 2012).
Endangered (END) – a wildlife species that is facing imminent extirpation or extinction (SARA Registry, 2012).
Threatened (THR) – 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 (SC) – 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).
Not At Risk (NAR) – a wildlife species that has been evaluated and found to be not at risk of extinction given the current circumstances.

3.2 Field Investigation

3.2.1 Vegetation

Vegetation communities were limited due to the fragmented landscape resulting from human disturbance. Where accessible, AECOM staff delineated vegetation communities that are shown in **Figure 2**. Vegetation community descriptions are presented in **Table 3-5**. AECOM ecologists were unable to record vegetation lists for some communities due to accessibility limitations as indicated in **Table 3-5**. The flora lists are provided in **Appendix C**.

Table 3-5: Ecological Land Classification Communities within Study Areas

Site	ELC Code	ELC Name	Community Description	Floristic Assessment	ELC Community within Potential Snow Storage Areas Located
1	CUM1-1	Dry – Moist Old Field Meadow	This community consisted of a variety of graminoid and herbaceous species, including tall goldenrod (*Solidago altissima*), Kentucky blue-grass (*Poa pratensis*), calico aster (*Symphyotrichum lateriflorum*), New England aster (*Symphyotrichum novae-angliae*), heath aster (*Symphyotrichum ericoides*), wild carrot (*Daucus carota*). The canopy and shrub layer was sparse and consisted of Russian olive (*Elaeagnus angustifolia*) and European Buckthorn (*Rhamnus cathartica*), both invasive and non-native species.	Total Species: 21 Native Species: 8 (38%) Non-native Species: 13 (62%) No presence of SOCC or SAR plants or provincially significant vegetation communities.	Yes – Proposed snow storage area consists entirely of CUM1-1 community.
	CUW1	Mineral Cultural Woodland	No property access granted and could not assess from roadside due to health and safety reasons.	N/A	No – Proposed snow storage area consists of CUM1-1 only.
3	FOD2-3	Dry-Fresh Oak-Hickory Deciduous Forest Type	The canopy was mostly dominated by shagbark hickory (*Carya ovata*) followed by sugar maple, American beech (*Fagus grandifolia),* green ash (*Fraxinus pensylvanica*) and red maple (*Acer rubrum*). European buckthorn and red oak (*Quercus rubra)* were abundant in the understorey.	Total Species: 8 Native Species: 7 (87.5%) Non-native Species: 1 (15.5%) No presence of SOCC or SAR plants or provincially significant vegetation communities.	No – Proposed snow storage area consists of CUM1-1 only.
	MAS2-1	Cattail Mineral Shallow Marsh Type	This community was dominated by narrow-leaved cattail (*Typha angustifolia)* and consisted of willow species in the canopy including pussy willow (*Salix discolor*) and peach-leaved willow (*Salix amygdaloides*).	Total Species: 3 Native Species: 3 (100%) No presence of SOCC or SAR plants or provincially significant vegetation communities	No – Proposed snow storage area consists of CUM1-1 only.
	CUM1-1	Dry – Moist Old Field Meadow	The meadow communities were comprised of grasses, asters including heath aster, goldenrods in the herbaceous layer. Willow species including pussy willow was present in the shrub layer.	Total Species: 5 Native Species: 2 (40%) Non-native Species: 3 (60%) No presence of SOCC or SAR plants or provincially significant vegetation communities	Yes – Proposed snow storage area consists entirely of CUM1-1 community.
5	MAM3-2	Reed-canary Grass Graminoid Organic Meadow Marsh Type	The meadow marsh community was situated around the watercourse. Reed canary grass (*Phalaris arundinacea*) was dominant in the herbaceous layer. Narrow-leaved cattails, asters and grasses were also in the herbaceous layer. The shrub layer consisted of European buckthorn, willows and dogwoods (*Cornus sp.*).	Total Species: 12 Native Species: 10 (83.33%) Non-native Species: 2 (16.67%) No presence of SOCC or SAR plants or provincially significant vegetation communities	No – Proposed snow storage area consists of a parking lot and sports field and does not overlap with delineated vegetation communities.

Site	ELC Code	ELC Name	Community Description	Floristic Assessment	ELC Community within Potential Snow Storage Areas Located
	CUM1-1	Dry – Moist Old Field Meadow	The meadow community surrounded the stormwater management pond. The ground layer consisted of reed canary grass, heath aster, New England aster, common reed (*Phragmites australis*), an aggressive invasive wetland plant, and Canada thistle (*Cirsium arvense*). The canopy consisted of few trees that appeared to be planted. Planted trees included tamarack (*Larix laricina)*, eastern white cedar (*Cirsium arvense*) and white pine (*Pinus strobus*).	Total Species: 27 Native Species: 17 (62.96%) Non-native Species: 10 (37.04%) One SAR tree was identified within this community. The planted Kentucky Coffee-tree (*Gymnocladus dioicus*) is listed as threatened under the ESA. No provincially significant vegetation communities were present.	No – Proposed snow storage area consists of a parking lot and sports field and does not overlap with delineated vegetation communities.
	MAS2-1	Cattail Mineral Shallow Marsh Type	The mineral marsh was densely vegetated with narrow-leaved cattail, reed canary grass and common reed.	Total Species: 3 Native Species: 3 (100%) No presence of SOCC or SAR plants or provincially significant vegetation communities	No – Proposed snow storage area consists of a parking lot and sports field and does not overlap with delineated vegetation communities.
	MAM3-2/ CUW1	Reed-canary Grass Graminoid Organic Meadow Marsh Type	The meadow marsh consisted of Freeman's maple (*Acer freemani*), green ash (*Fraxinus pennsylvanica),* pussy willow, and speckled alder (*Alnus incana)*. Detailed vegetation composition was not possible due to accessibility limitations.	Total Species: 4 Native Species: 4 (100%) No presence of SOCC or SAR plants or provincially significant vegetation communities	No – Proposed snow storage area consists of a parking lot and sports field and does not overlap with delineated vegetation communities.
	OAO	Open Aquatic	Open water community of the stormwater management pond with narrow-leaved cattail sparsely emergent on edges.	Total Species: 1 Native Species: 1 (100%) No presence of SOCC or SAR plants or provincially significant vegetation communities	No – Proposed snow storage area consists of a parking lot and sports field and does not overlap with delineated vegetation communities.
	FOD	Deciduous Forest	No property access granted and could not assess from roadside due to health and safety reasons.	N/A	No – Proposed snow storage area consists of a parking lot and sports field and does not overlap with delineated vegetation communities.
	CUH	Cultural Hedgerow	Hedgerow's present contained mostly European buckthorn and green ash. Detailed vegetation composition was not possible due to accessibility limitations.	Total Species: 2 Native Species: 1 (50%) Non-native Species: 1 (50%) No presence of SOCC or SAR plants or provincially significant vegetation communities	No – Proposed snow storage area consists of a parking lot and sports field and does not overlap with delineated vegetation communities.
	CUW1	Mineral Cultural Woodland	No property access granted and could not assess from roadside due to health and safety reasons.	N/A	No – Proposed snow storage area consists of a parking lot and sports field and does not overlap with delineated vegetation communities.

Site	ELC Code	ELC Name	Community Description	Floristic Assessment	ELC Community within Potential Snow Storage Areas Located
6	CUM1-1	Dry – Moist Old Field Meadow	This open meadow was dominated with tall goldenrod, heath aster, New England aster, cow vetch (*Vicia cracca*), birds-foot trefoil (*Lotus corniculatus*), Kentucky bluegrass and black medick (*Medicago lupilina*).	Total Species: 28 Native Species: 13 (46.43%) Non-native Species: 15 (53.57%) No presence of SOCC or SAR plants or provincially significant vegetation communities	No – Proposed snow storage area consists of manicured lawns.
	CUT1/ CUM1-1	Cultural Thicket / Dry – Moist Old Field Meadow	The canopy and shrub layer was dominated with pussy willow, red-osier dogwood *(Cornus sericea*), gray dogwood (*Cornus racemosa)*, speckled alder, European buckthorn and trembling aspen (*Populus tremuloides).*	Total Species: 9 Native Species: 7 (77.78%) Non-native Species: 2 (22.22%) No presence of SOCC or SAR plants or provincially significant vegetation communities	No – Proposed snow storage area consists of manicured lawn.
	MAS2-1	Cattail Mineral Shallow Marsh Type	This community was densely vegetated with narrow-leaved cattail and common reed.	Total Species: 2 Native Species: 2 (100%) No presence of SOCC or SAR plants or provincially significant vegetation communities	No – Proposed snow storage area consists of manicured lawn.
	FOD	Deciduous Forest	Community description was not possible due to accessibility limitations.	N/A	No – Proposed snow storage area consists of manicured lawn.
	CUT	Cultural Thicket	Community description was not possible due to accessibility limitations.	N/A	No – Proposed snow storage area consists of manicured lawn.
9	CUM1-1	Dry – Moist Old Field Meadow	This community consisted of a variety of graminoid and herbaceous species, including Kentucky blue-grass, tall goldenrod, Canada goldenrod (*Solidago canadensis*), heath aster, chicory (*Cichorium intybus*) and wild carrot.	Total Species: 16 Native Species: 6 (37.50%) Non-native Species: 10 (62.50%) No presence of SOCC or SAR plants or provincially significant vegetation communities	No – Proposed snow storage area consists of manicured lawn.
	CUW1	Cultural Woodland	This community consisted of a single layer of trees. The canopy was dominated by green ash. Kentucky blue-grass was abundant within the ground layer.	Total Species: 2 Native Species: 2 (100%) No presence of SOCC or SAR plants or provincially significant vegetation communities	No – Proposed snow storage area consists of manicured lawn.

3.2.2 Incidental Wildlife Observations

Incidental wildlife observations as well as the identification of preferred wildlife habitat conditions were documented during the field investigations conducted by AECOM Ecologists. The majority of species observations were considered common and tolerant of urban disturbances and many bird species observed are also protected under the MBCA. Although the sites have been anthropogenically disturbed and fragmented, vegetation present still provides potential nesting opportunities for migratory birds. Isolated trees, shrubs, vegetation communities and anthropogenic structures (i.e., buildings and bridges) can provide nesting habitat for migratory birds protected under the MBCA. Field investigations recorded five bird species protected under the MBCA: Brown Creeper (*Certhia americana*), Canada Goose (*Branta canadensis*), Killdeer (*Charadrius vociferus*), Mourning Dove (*Zenaida macroura*) and Northern Mockingbird (*Mimus polyglottos*).

Additionally, a muskrat lodge was identified within the stormwater management pond at Site 5, this species is considered a furbearing mammal and is afforded protection from the FWCA. Observations of one SOCC were identified within Site 3, the monarch observed is discussed further in **Section 3.3**. **Table 3-6** outlines incidental wildlife observed during field investigations.

Table 3-6: Incidental Wildlife Observations

Taxon	Common Name	Scientific Name	S-Rank[1]	ESA Status[2]	COSEWIC Status[3]	SARA Schedule 1 Status[4]	Site
Birds	American Crow	*Corvus brachyrhynchos*	S5B	N/A	N/A	N/A	6
	Brown Creeper	*Certhia americana*	S5B	N/A	N/A	N/A	5
	Canada Goose	*Branta canadensis*	S5	N/A	N/A	N/A	3
	Killdeer	*Charadrius vociferus*	S5B,S5N	N/A	N/A	N/A	6
	Mourning Dove	*Zenaida macroura*	S5	N/A	N/A	N/A	6
	Northern Mockingbird	*Mimus polyglottos*	S4	N/A	N/A	N/A	5
	Red-winged Blackbird	*Agelaius phoeniceus*	S4	N/A	N/A	N/A	1,5
	Rock Dove	*Columba livia*	SNA	N/A	N/A	N/A	5
Insects	Monarch	*Danaus plexippus*	S2N, S4B	SC	END	SC	5
Mammals	Coyote	*Canis latrans*	S5	N/A	N/A	N/A	5
	Muskrat	*Ondatra zibethicus*	S5	N/A	N/A	N/A	5

Notes: 1, 2, 3, 4 – refer to definitions under Table 3-4 http://explorer.natureserve.org/nsranks.htm.

3.2.3 Aquatic Habitat

Site 1 – Highway 50 Carpool Lot

An intermittent to permanent drainage channel was located east of the existing Highway 50 carpool lot originating from an outlet structure from the carpool lot stormwater system. The channel flowed northward for approximately 80 m along a cattail filled channel and then eastward through a box culvert crossing Highway 50. The crossing provided an open connection to a tributary of Robinson Creek downstream (east) of Highway 50 that would allow fish passage into the channel and thus the channel at Site 1 should be considered fish habitat. Fish community data from open secondary source databases (NDMNRF, 2021b) identified the Robinson Creek tributary as having a warm water thermal regime supporting a diverse community of small-bodied fish species (**Table 3-7**). Incidental observations of fish were not recorded at the time of assessment due to the high flow and high turbidity conditions following a rainfall event that limited visibility. The channel morphology consisted of a long run transitioning to a pool upstream of the Highway 50 culvert inlet. Instream cover was high (~90%) provided by the dense stand of emergent cattails within the channel. Substrate within the drainage channel consisted predominantly of detritus from the abundant aquatic vegetation, with lesser amounts of silt and cobble in the form of rip rap armouring the channel at the outfall from carpool lot stormwater system. The surrounding riparian habitat consisted of cultural

meadow and sparse deciduous shrubs and trees along the adjacent roadways and carpool lot that did not provide canopy cover to the drainage channel. Additional flow inputs to the channel from the northwest across Mayfield Road and from the roadside drainage ditches parallel to Mayfield Road and Highway 50 were observed, but these features had poorly defined channels that likely only provide flow ephemerally following rainfall events and do not support fish habitat.

Table 3-7: Site 1 – Fish Community Data (Tributary to Robinson Creek)

Common Name	Scientific Name	S-Rank[1]	ESA Status[2]	COSEWIC Status[3]	SARA Schedule 1 Status[4]	Source
American Brook Lamprey	*Lethenteron appendix*	S3	NAR	NAR	NAR	LIO
Blackchin Shiner	*Notropis heterodon*	S4	NAR	NAR	NAR	LIO
Blacknose Dace	*Rhinichthys atratulus*	S5	NAR	NAR	NAR	LIO
Blackside Darter	*Percina maculata*	S4	NAR	NAR	NAR	LIO
Bluntnose Minnow	*Pimephales notatus*	S5	NAR	NAR	NAR	LIO
Brassy Minnow	*Hybognathus hankinsoni*	S5	NAR	NAR	NAR	LIO
Brook Stickleback	*Culaea inconstans*	S5	NAR	NAR	NAR	LIO
Brown Bullhead	*Ameiurus nebulosus*	S5	NAR	NAR	NAR	LIO
Common Shiner	*Luxilus cornutus*	S5	NAR	NAR	NAR	LIO
Creek Chub	*Semotilus atromaculatus*	S5	NAR	NAR	NAR	LIO
Emerald Shiner	*Notropis atherinoides*	S5	NAR	NAR	NAR	LIO
Fantail Darter	*Etheostoma flabellare*	S4	NAR	NAR	NAR	LIO
Fathead Minnow	*Pimephales promelas*	S5	NAR	NAR	NAR	LIO
Finescale Dace	*Chrosomus neogaeus*	S5	NAR	NAR	NAR	LIO
Green Sunfish	*Lepomis cyanellus*	S4	NAR	NAR	NAR	LIO
Hornyhead Chub	*Nocomis biguttatus*	S4	NAR	NAR	NAR	LIO
Johnny Darter	*Etheostoma nigrum*	S5	NAR	NAR	NAR	LIO
Johnny Darter x Tessellated Darter	*Etheostoma* sp.	S5/S4	NAR	NAR	NAR	LIO
Largemouth Bass	*Micropterus salmoides*	S5	NAR	NAR	NAR	LIO
Longnose Dace	*Rhinichthys cataractae*	S5	NAR	NAR	NAR	LIO
Mottled Sculpin	*Cottus bairdii*	S5	NAR	NAR	NAR	LIO
Northern Hog Sucker	*Hypentelium nigricans*	S4	NAR	NAR	NAR	LIO
Pumpkinseed	*Lepomis gibbosus*	S5	NAR	NAR	NAR	LIO
Rainbow Darter	*Etheostoma caeruleum*	S4	NAR	NAR	NAR	LIO
River Chub	*Nocomis micropogon*	S4	NAR	NAR	NAR	LIO
Rock Bass	*Ambloplites rupestris*	S5	NAR	NAR	NAR	LIO
Sand Shiner	*Notropis stramineus*	S4	NAR	NAR	NAR	LIO
Smallmouth Bass	*Micropterus dolomieu*	S5	NAR	NAR	NAR	LIO
Spottail Shiner	*Notropis hudsonius*	S4	NAR	NAR	NAR	LIO
Stonecat	*Noturus flavus*	S4	NAR	NAR	NAR	LIO
Threespine Stickleback	*Gasterosteus aculeatus*	S4	NAR	NAR	NAR	LIO
White Sucker	*Catostomus commersonii*	S5	NAR	NAR	NAR	LIO

Notes: 1, 2, 3, 4 – refer to definitions under Table 3-4.

Site 3 – West Brampton Reservoir and Pumping Station

A small, intermittent unnamed tributary to the Credit River was present crossing the access laneway to the West Brampton Reservoir and Pumping Station site through a concrete culvert. The unnamed tributary upstream (north) of the laneway was poorly defined on the adjacent farm property and most of the flow was contributed by outflow from the stormwater facility/constructed wetland on the site. The approximately 20 m of open channel from the stormwater facility outlet to the laneway culvert was densely filled with cattails and several young willow trees. Downstream (south) of the laneway the cattails gave way to a dense stand of non-native common reed in the channel before it flowed through mature willow trees and off the site. The channel morphology was ill-defined due

to the dense instream vegetation – nearly 100% instream cover – and the substrate was comprised of detritus over silt/muck. The surrounding riparian habitat consisted of a narrow border of herbaceous meadow vegetation and woody willow species with the mowed lawn bordering the laneway beyond. The unnamed tributary ultimately flowed to the Churchville-Norval Wetland Complex PSW approximately 1 km further downstream before reaching the confluence with the Credit River. Data from open secondary source databases (NDMNRF, 2021a; 2021b) identified the unnamed tributary as having a warm water thermal regime and had past records of a provincially ranked SAR (Redside Dace), but DFO (2021) aquatic SAR mapping did not identify the species – which is also federally listed – as currently present within the watercourse. No fish community records were available for the reach within the Site 3 Study Area. No fish were observed at the time of assessment. The unnamed tributary originates within the surrounding fields of the Study Area, collecting surficial runoff and directing it downstream. It is unlikely that this feature supports permanent fish habitat, but when water is present within the feature, fish could migrate upstream from the Credit River and seasonally be found in the feature.

The stormwater facility/constructed wetland on the West Brampton Reservoir and Pumping Station site received inflow from another drainage channel inletting from the northwest of the feature. The drainage channel originated from seepage on the western side of the reservoir which it partially encircled to north before flowing into the stormwater facility/constructed wetland. The adjacent land north of the drainage channel consisted of dry fallow meadow surrounded by high berms. The channel itself was poorly defined and filled with dense cattails and small outcrops of common reed and willow species along its length. The flow regime was ephemeral, with minimal flow despite the recent rainfall event, and unlikely to support direct fish habitat.

Site 5 – Johnston Sports Park

Access to Johnston Sports Park was not granted at the time of assessment, so the assessment of natural environment existing conditions is based upon background sources only. Fish community data from open secondary source databases identified Lindsay Creek as having a warm water thermal regime and supporting a small assemblage of common fish species (NDMNRF, 2021b) (**Table 3-8**). No aquatic SAR were present in Lindsay Creek (DFO, 2021; NDMNRF, 2021a); however, Redside Dace were identified as present in Lindsay Creek further downstream south of King Street (Highway 9) and thus, regulatory agencies may consider the reach of Lindsay Creek within the site as contributing habitat due to it providing flow and allochthonous inputs to the regulated habitat downstream.

Table 3-8: Site 5 – Fish Community Data (Lindsay Creek)

Common Name	Scientific Name	S-Rank[1]	ESA Status[2]	COSEWIC Status[3]	SARA Schedule 1 Status[4]	Source
Blackchin Shiner	*Notropis heterodon*	S4	NAR	NAR	NAR	LIO
Blacknose Dace	*Rhinichthys atratulus*	S5	NAR	NAR	NAR	LIO
Bluntnose Minnow	*Pimephales notatus*	S5	NAR	NAR	NAR	LIO
Creek Chub	*Semotilus atromaculatus*	S5	NAR	NAR	NAR	LIO
Fathead Minnow	*Pimephales promelas*	S5	NAR	NAR	NAR	LIO
White Sucker	*Catostomus commersonii*	S5	NAR	NAR	NAR	LIO

Notes: 1, 2, 3, 4 – refer to definitions under Table 3-4.

Site 6 – Tullamore Reservoir and Pumping Station

The primary feature identified within the Tullamore Reservoir and Pumping Station property boundary is Salt Creek, a permanent watercourse with a warm water thermal regime that provides habitat for Redside Dace, a provincially and federally listed SAR (DFO 2021; NDMNRF 2021a). Fish community data for Salt Creek is provided in **Table 3-9.** The main channel of Salt Creek was identified flowing southward along the western boundary of the site outside of a fence running the length of the property and thus was not accessed to assess aquatic habitat existing

conditions. The stormwater management facility on the site outlet through rip rap and dense common reed and then through the fence westward toward Salt Creek. No defined channel connecting the outlet to Salt Creek was observed that would allow fish passage into the facility and onto the site from Salt Creek.

The proposed snow storage area is located on the eastern portion of the site opposite Salt Creek and adjacent to Innis Lake Road. A poorly defined, vegetated swale crossed this portion of the site and connected to the roadside ditch at Innis Lake Road. This vegetated swale had intermittent outcrops of cattail along its length but exhibited mainly ephemeral overland flow through terrestrial grasses and as such did not provide fish habitat. The Region parking lot off Innis Lake Road also had a Low Impact Development (LID) system for receiving stormwater runoff from the parking lot and conveyed it via a cattail-lined vegetated swale along the southern boundary of the site westward to a drop grate inlet to the stormwater management facility. This LID system was separate and disconnected from the vegetated swale and roadside drainage ditches parallel to Innis Lake Road and did not provide fish habitat. Since the LID system provided flow to stormwater management facility however, the potential existed for salt-laden runoff from the adjacent proposed snow storage area to enter the facility and ultimately flow to the regulated fish habitat in Salt Creek exists. Apart from Salt Creek, no other fish habitat was present on or adjacent to the site.

Table 3-9: Site 6 – Fish Community Data (Salt Creek)

Common Name	Scientific Name	S-Rank[1]	ESA Status[2]	COSEWIC Status[3]	SARA Schedule 1 Status[4]	Source
Blackchin Shiner	*Notropis heterodon*	S4	NAR	NAR	NAR	LIO
Blacknose Dace	*Rhinichthys atratulus*	S5	NAR	NAR	NAR	LIO
Blacknose Shiner	*Notropis heterolepis*		NAR	NAR	NAR	LIO
Bluntnose Minnow	*Pimephales notatus*	S5	NAR	NAR	NAR	LIO
Brook Stickleback	*Culaea inconstans*	S5	NAR	NAR	NAR	LIO
Common Shiner	*Luxilus cornutus*	S5	NAR	NAR	NAR	LIO
Creek Chub	*Semotilus atromaculatus*	S5	NAR	NAR	NAR	LIO
Fathead Minnow	*Pimephales promelas*	S5	NAR	NAR	NAR	LIO
Johnny Darter	*Etheostoma nigrum*	S5	NAR	NAR	NAR	LIO
Johnny Darter x Tessellated Darter	*Etheostoma* sp.	S5/S4	NAR	NAR	NAR	LIO
Northern Pearl Dace	*Margariscus nachtriebi*	S5	NAR	NAR	NAR	LIO
Rainbow Darter	*Etheostoma caeruleum*	S4	NAR	NAR	NAR	LIO
Redside Dace	*Clinostomus elongatus*	S1	END	END	END	LIO
Rock Bass	*Ambloplites rupestris*	S5	NAR	NAR	NAR	LIO
White Sucker	*Catostomus commersonii*	S5	NAR	NAR	NAR	LIO

Notes: 1, 2, 3, 4 – refer to definitions under Table 3-4.

Site 9 – Alloa Reservoir and Pumping Station

The Alloa Reservoir and Pumping Station site did not have any watercourses that provide fish habitat within the property boundary; however, Alloa Municipal Drain was present immediately north of the site flowing west to east along – but entirely outside of – the northern property boundary. Alloa Municipal Drain was classified by DFO in 2019 as a Type D municipal drain, which identified the watercourse as permanent with fall spawning or a combination of spring and fall spawning species present (Mandrak and Bouvier 2014; OMAFRA 2021). Fish community data from open secondary source databases identified Alloa Municipal Drain as having a warm water thermal regime and supporting a diverse community of small-bodied fish and Salmonid (trout) species (NDMNRF, 2021b) (**Table 3-10**). A large stormwater management facility was present north and west of the reservoir on the site. The facility was a dry, infiltration-style facility that featured an overflow spillway between two large berms north of the reservoir that ended in a rock check dam that diffused the overland flow northward across a fallow agricultural field toward Alloa Municipal Drain. No defined channel that would allow fish passage from Alloa Municipal Drain to the facility was present on the site. In addition to the spillway, a narrow, defined channel was

present within the facility that conveyed flow within the facility southward along the west side of the site to an outlet to the LID system present on the site. The LID system collected flow from the stormwater management facility and the parking lot on the site and conveyed it via a cattail-filled drainage channel westward across the access laneway and then southward parallel to the access laneway to a receiving culvert crossing Mayfield Road before entering a buried drain south of Mayfield Road.

Table 3-10: Site 9 - Fish Community Data (Alloa Municipal Drain)

Common Name	Scientific Name	S-Rank[1]	ESA Status[2]	COSEWIC Status[3]	SARA Schedule 1 Status[4]	Source
American Brook Lamprey	*Lethenteron appendix*	S3	NAR	NAR	NAR	LIO
Blackchin Shiner	*Notropis heterodon*	S4	NAR	NAR	NAR	LIO
Blacknose Dace	*Rhinichthys atratulus*	S5	NAR	NAR	NAR	LIO
Blacknose Shiner	*Notropis heterolepis*	S5	NAR	NAR	NAR	LIO
Bluntnose Minnow	*Pimephales notatus*	S5	NAR	NAR	NAR	LIO
Brassy Minnow	*Hybognathus hankinsoni*	S5	NAR	NAR	NAR	LIO
Brook Stickleback	*Culaea inconstans*	S5	NAR	NAR	NAR	LIO
Brown Bullhead	*Ameiurus nebulosus*	S5	NAR	NAR	NAR	LIO
Brown Trout	*Salmo trutta*	SNA	NAR	NAR	NAR	LIO
Common Shiner	*Luxilus cornutus*	S5	NAR	NAR	NAR	LIO
Creek Chub	*Semotilus atromaculatus*	S5	NAR	NAR	NAR	LIO
Fantail Darter	*Etheostoma flabellare*	S4	NAR	NAR	NAR	LIO
Fathead Minnow	*Pimephales promelas*	S5	NAR	NAR	NAR	LIO
Golden Shiner	*Notemigonus crysoleucas*	S5	NAR	NAR	NAR	LIO
Johnny Darter	*Etheostoma nigrum*	S5	NAR	NAR	NAR	LIO
Johnny Darter x Tessellated Darter	*Etheostoma* sp.	S5/S4	NAR	NAR	NAR	LIO
Longnose Dace	*Rhinichthys cataractae*	S5	NAR	NAR	NAR	LIO
Longnose Sucker	*Catostomus catostomus*	S5	NAR	NAR	NAR	LIO
Mottled Sculpin	*Cottus bairdii*	S5	NAR	NAR	NAR	LIO
Northern Hog Sucker	*Hypentelium nigricans*	S4	NAR	NAR	NAR	LIO
Northern Pearl Dace	*Margariscus nachtriebi*	S5	NAR	NAR	NAR	LIO
Northern Redbelly Dace	*Chrosomus eos*	S5	NAR	NAR	NAR	LIO
Pumpkinseed	*Lepomis gibbosus*	S5	NAR	NAR	NAR	LIO
Rainbow Darter	*Etheostoma caeruleum*	S4	NAR	NAR	NAR	LIO
Rainbow Trout	*Oncorhynchus mykiss*	SNA	NAR	NAR	NAR	LIO
River Chub	*Nocomis micropogon*	S4	NAR	NAR	NAR	LIO
Rock Bass	*Ambloplites rupestris*	S5	NAR	NAR	NAR	LIO
Stonecat	*Noturus flavus*	S4	NAR	NAR	NAR	LIO
White Sucker	*Catostomus commersonii*	S5	NAR	NAR	NAR	LIO

Notes: 1, 2, 3, 4 – refer to definitions under Table 3-4.

3.3 Significant Wildlife Habitat Assessment

The SWH Assessment for each Potential Snow Storage Area at each site is presented in **Table 3-11**. A detailed SOCC Habitat Assessment is provided in **Appendix D.**

Table 3-11: Significant Wildlife Habitat Assessment Summary for each Potential Snow Storage Area

Site	Seasonal Concentration Areas	Rare Vegetation Communities or Specialized Habitats for Wildlife	Habitats for SOCC	Animal Movement Corridors
1	■ None.	■ None.	■ Candidate Habitat for: – Monarch	■ None.
3	■ None. Potential Snow Storage Area is located outside of Candidate Bat Maternity Colonies (FOD2-3) located along the southern border the site property.	■ None.	■ Candidate Habitat for: – Monarch	■ Candidate Amphibian Movement Corridors. Amphibians may travel between breeding habitats located outside of the Potential Snow Storage Area
5	■ None. Potential Snow Storage Area is located within a sports field and parking lot.	■ None.	■ None.	■ None
6	■ None Potential Snow Storage Area is located within a manicured lawn.	■ None.	■ None.	■ None.
9	■ None. Potential Snow Storage Area is location within a manicured lawn with trees.	■ None.	■ None	■ None.

3.4 Species at Risk Habitat Assessment

The SAR Habitat Assessment and screening exercise for each Potential Snow Storage Area is presented in **Appendix D**. Two SAR were confirmed within the Study Area of Site 5. The planted Kentucky coffee-tree (*Gymnocladus dioicus*) was found within the meadow community. Kentucky coffee-tree is listed as threatened under the ESA but does not receive protection in the Region of Peel. Regardless, no impacts to this species are anticipated as the individual was planted more than 20 m away from the proposed snow storage area. Additionally, Redside Dace was identified in Salt Creek on Site 6. If Site 6 is chosen, a meander belt analysis should be conducted to confirm the boundaries of Redside Dace habitat on the property as regulated under the ESA.

The majority of the proposed snow storage areas did not contain suitable SAR habitat as they consisted of communities that were anthropogenically influenced such as agricultural fields, manicured lawns and fragmented communities. Site 3 was the only site identified to contain potentially suitable SAR habitat within the proposed snow storage area. Potential SAR habitat for bobolink and eastern meadowlark were found to occur within the proposed snow storage area at Site 3. Redside dace habitat at Sites 5 and 6 was not within the proposed snow storage area boundaries, however potential impacts exist as Redside Dace habitat was identified downstream of the proposed snow storage area boundaries. **Table 3-12** below provides a summary of SAR with medium probability of occurring within each Study Area. The remaining SAR listed from **Table 3-4** were identified to have low probability of occurrence within the Study Areas.

Table 3-12: Summary of Species at Risk with Medium Probability of Occurring in Each Potential Snow Storage Area

Site 1	Site 3	Site 5	Site 6	Site 9
■ None. The Potential Snow Storage Area is located within a cultural meadow (CUM1-1) surrounded by agricultural fields and urban developments and is unlikely to support SAR species.	■ Bobolink; and ■ Eastern meadowlark. The Potential Snow Storage Area is located within a cultural meadow (CUM1-1) which is adjacent to a large pasture field. It may support breeding habitat for grassland SAR birds.	■ Redside Dace The Potential Snow Storage Area is located within a parking lot and sports field and is unlikely to support terrestrial SAR species. Habitat for Redside Dace is mapped approximately 2 km downstream of the site within Lindsay Creek. While it has not been identified within the property, it is possible that MECP could consider the reach located within the property as “contributing habitat” under the ESA.	■ Redside dace The Potential Snow Storage Area is located within a manicured lawn that is at least 120 m away from more sensitive features in the southern half of the site property. Habitat for Redside Dace is located within the property boundaries. A meander belt assessment will be required to confirm the full extent of the habitat as regulated under the ESA (i.e., meander belt plus 30 m) to confirm whether regulated habitat is located within or adjacent to the storage area. Salt management will be essential for this site to prevent salt ladened runoff from entering Salt Creek.	■ None The Potential Snow Storage Area is located within a manicured lawn.

4. Assessment of Alternatives and Potential Impacts

All of the alternative sites are proposed to be within properties owned by the Region of Peel, and generally consist of anthropogenic landscapes (i.e., manicured lawns) and fragmented communities that are disturbed, as evidenced by a large proportion of invasive plant species and non-native plant species.

Potential constraints associated with the natural environment have been identified for each Study Area based on the existing conditions described in **Section 3**; these are summarized in **Table 4-2**. The following considerations were taken into account when determining potential constraints:

- Potential effects from existing infrastructure (i.e., fragmentation, edge effects, noise and disturbance of road or train traffic);
- Level of potential effect on terrestrial and aquatic natural heritage features (i.e., low, medium or high impact);
- Level of potential effect on SAR and their habitats (i.e., low medium or high impact); and
- Potential for permits/authorizations requirements under the ESA, SARA, *Fisheries Act* and other regulations.

The following ranking system has been employed to denote the level of anticipated potential constraints for each alternative with respect to the natural environment:

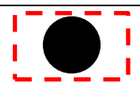
Table 4-1: Ranking System

	Low Impact	Low to Moderate Impact	Moderate Impact	Moderate to High Impact	High Impact	Overall Most Preferred
Legend						

Note: Low Impact is considered preferred compared to moderate or high impact.

Based on **Table 4-2**, the preferred potential Snow Storage Area is Site 9, followed by Site 1 as these represent the lowest anticipated impacts to the natural environment.

Table 4-2: Assessment of Natural Environment Constraints for Each Potential Snow Storage Area

Natural Heritage Features	Site 1 – Highway No. 50 Car Pool Lot	Site 3 – West Brampton Reservoir and Pumping Station	Site 5 – Johnston Sports Park	Site 6 – Tullamore Reservoir	Site 9 – Alloa Reservoir and Pumping Station
					
Designated Natural Areas	■ None	■ None but within 120 m of Huttonville Creek & Area Wetland Complex PSW. ■ None but within 40 m of Region of Peel's Core Area Woodlands and more than 500 m of Region of Peel's NAC Woodlands.	■ None but within 500 m of Region of Peel Core Area and NAC Woodland.	■ None but within 200 m of Region of Peel NAC woodland.	■ None but within 330 m of Region of Peel Core Area Woodland.
Policy Areas	■ None	■ None but within 40 m of City of Brampton NHS.	■ None within Proposed Snow Storage Area. ■ Within 120 m of Greenbelt Plan (2017) Protected Area – Protected Countryside. Within 120 m of Greenbelt Plan (2017) Protected Area – Natural Heritage System (NHS).	■ None	■ None
Vegetation	■ 0.321 ha of CUM1-1	■ 1.04 ha of CUM1-1 and manicured lawn	■ 0.689 ha of sports field and parking lot.	■ 0.49 ha of manicured lawn	■ 0.44 ha of manicured lawn
Aquatic Habitat	■ One (1) permanent watercourse outside but within approximately 50 m of the Potential Snow Storage Area, on the other side of an access road ■ Direct fish habitat	■ One (1) intermittent watercourse inside property boundary and within 20 m of the Potential Snow Storage Area May provide seasonal fish habitat	■ One (1) permanent watercourse inside property boundary but more than 250 m away from the Potential Snow Storage Area ■ Direct fish habitat	■ One (1) permanent watercourse inside property boundary and more than 250 m away from the Potential Snow Storage Area ■ Direct fish habitat	■ One (1) permanent watercourse outside property boundary and more than 300 m away from the Potential Snow Storage Area ■ Direct fish habitat
General Wildlife, including Significant Wildlife Habitat	■ Candidate habitat for Monarch	■ Candidate habitat for Monarch ■ One (1) Animal Movement Corridors – Amphibians may travel through the Potential Snow Storage Area	■ None	■ None	■ None
Species at Risk	■ None	■ Potential habitat for: – Bobolink – Eastern meadowlark	■ Redside Dace	■ Redside Dace	■ None
Assessment of Impacts	 Low potential effect given that the cultural meadow is disturbed but a few trees will be removed, and there are no sensitive features adjacent to this site that will be affected by increased water inputs from snow melt.	 Moderate impact potential given the meadow has potential to support SOCC and SAR species. The proposed storage area is adjacent to a PSW that may be impacted from increased water inputs from snow melt.	 Moderate impact given the proposed snow storage area consists of sports field and parking lot and there is low potential for SAR habitat and habitat of SWH. Potential for contributing Redside Dace habitat to be identified by MECP within Lindsay Creek as occupied reaches are confirmed approximately 2 km downstream. This habitat may be impacted from melt water entering the watercourse.	 Moderate impact given the proposed snow storage area consist of manicured lawn and there is low potential for SAR habitat of SWH. There are core woodlands and NACs in the vicinity that may be impacted from increased water inputs from snow melt. Salt Creek was identified as providing habitat for Redside Dace. This habitat may be impacted from melt water entering the watercourse.	 Low potential effect and preferred given the proposed snow storage area consist of manicured lawn, with no trees, and there is low potential for SAR habitat of SWH. There are core woodlands and PNACs in the vicinity but are unlikely to be impacted from increased water inputs from snow melt as these are more than 250 m away.

5. Recommended Mitigation Measures

Site 9 has been identified as the preferred alternative, followed by Site 1; however, the potential effects and mitigation measures described herein are general in nature as to apply to all alternatives. Detailed impact assessment and the provision of detailed recommendations for mitigation and compensation will be provided at the detailed design stage of the proposed works.

Vegetation Removal

1. Minimize vegetation removal to the extent possible.
2. Construction vehicle access should be limited to existing roadways and construction paths, where feasible.
3. Construction fencing and / or silt fencing, where appropriate, will be installed and maintained to clearly define the construction footprint, prevent accidental damage or intrusion to adjacent vegetation or ELC communities (manicured lawns and agricultural fields are not considered to be ELC communities) and prevent entry of sediment into the watercourse or wetland.
4. Temporarily disturbed areas will be re-vegetated using non-invasive, preferably native plantings and / or seed mix appropriate to the site conditions and adjacent vegetation communities. Seed mixes should contain flowering herbaceous plants to support foraging habitat to pollinators, as well as Common Milkweed for Monarchs, wherever feasible.
5. Removal of ash trees, or portions of ash trees, will be carried out in compliance with the Canada Food and Inspection Agency Directive 'D-03-08: Phytosanitary Requirements to Prevent the Introduction into and Spread within Canada of the emerald ash borer, *Agrilus planipennis (Fairmaire)*. To comply with this Directive, all Ash trees requiring removal, including any wood, bark or chips, will be restricted from being transported outside of the emerald ash borer regulated areas of Canada.
6. A tree inventory and an Arborist Report may be required. The tree protection measures described in the Arborist Plan will be adhered to.

Wildlife and Wildlife Habitat, including Species at Risk

7. Vegetation removal (i.e., ground cover, shrub and trees) will occur outside of the breeding bird season of April 1 to August 31 of any year to avoid contravention of the MBCA. If this is not possible, a nest survey will be undertaken prior to required activities in simple habitat (i.e., mowed lawns). Nest searches by an experienced searcher are required and will be completed by a qualified Biologist no more than 48 hours prior to vegetation removal. If an active nest of a migratory bird is found outside of this nesting period it still must be avoided until young birds have fledged.
8. All stockpiled materials of soil, overburden or similar materials are to be maintained at a 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).
9. Construction personnel will be trained in ways to prevent a wildlife encounter from occurring, including the following:
    i. No personnel shall approach, feed or harass wildlife;
    ii. Food waste will be properly stored and disposed of; and
    iii. Vehicles will yield to wildlife.
10. 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 to define the appropriate buffer required from wildlife or to move the wildlife to a nearby suitable habitat outside of the construction site if necessary.

Sediment and Erosion Control Fencing

Mitigation measures must be used for erosion and sediment control to prevent sediment from entering neighbouring properties and natural areas during construction when within 30 m of a watercourse, waterbody or wetland. The primary principles associated with sedimentation and erosion protection measures are to:

11. Minimize the duration of soil exposure,
12. Retain existing vegetation, where feasible,
13. Encourage re-vegetation,
14. Divert runoff away from exposed soils,
15. Keep runoff velocities low, and
16. Trap sediment as close to the source as possible.

Details of the type and placement of sediment and erosion control to be used will be outlined in a *Erosion and Sediment Control Plan* to be drafted prior to construction.

Construction Vehicle Re-fuelling Stations

17. Re-fuelling stations should be located at least 30 m away from wetlands, watercourses or waterbodies.
18. Re-fuelling stations should be located within a centralized location on-site.
19. Re-fuelling stations should be constructed in a manner to prevent soil and/or surface and groundwater contamination from any leaks or spills.
20. An emergency response kit should be made available at each re-fuelling station in case of a spill.
21. All on-site crew members operating construction vehicles should be appropriately trained in handling a potential spill and have WHMIS Training.

All chemical transfer/maintenance should be conducted within the refuelling station areas.

Soil and Water Contamination

22. 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.
23. All machinery, construction equipment and vehicles arriving on site should be in clean condition (i.e., free of fluid leaks, soils containing seeds of plant material from invasive species) and be inspected and washed in accordance with the Clean Equipment Protocol for Industry (Halloran et al., 2013) prior to arriving and leaving the construction site in order to prevent the spread of invasive species between locations.
24. If removing stands of common reed (Phragmites australis) for construction, ensure to follow the best management practices for appropriate removal methods and disposal in accordance with the Invasive Phragmites – Best Management Practices (MNR, 2011).

Monitoring during Construction

25. Onsite inspection will be undertaken to confirm the implementation of the mitigation measures and identify corrective actions if required. Corrective actions may include additional site maintenance and alteration of activities to minimize impacts.
26. All erosion and sediment control measures should be inspected weekly, after every rainfall and significant snow melt event, and daily during periods of extended rain or snow melt.

27. All damaged erosion and sediment control measures will be repaired and/or replaced within 48 hours of the inspection.

Snow Melt during Operations

28. Follow the Guidelines on Snow Disposal and De-icing Operations in Ontario (MECP, 2011).
29. Locate Snow Storage facility away from environmentally sensitive areas to reduce impacts from melting the contaminated snow.
30. Direct disposal of snow or melt water runoff to watercourses should be eliminated wherever possible, but where not possible the use of mechanical melters in conjunction with a settling chamber or other treatment systems is recommended.
31. Treat the melt water in compliance with water quality regulations to protect the surface and groundwater resources. Where Redside Dace habitat has been identified within the property or downstream, melt water must meet the water quality requirements listed in the *Guidance for Development Activities in Redside Dace Protected Habitat* (MNRF, 2016) document.
32. Locate as close as possible to serviced areas to minimize operational costs and green-house gas emissions from moving the snow.

Changes to Hydrology

33. A more detailed impact assessment and mitigation measures will be provided during the Detailed Design stage of the Project. If a site within CVC's jurisdiction is carried forward to Detailed Design, recommendations will include measures to maintain hydrological/conveyance function of adjacent HDF's. Measures may include bioswales and potentially further channeling runoff into an existing SWMF.

6. Anticipated Permits and Approvals

Table 6-1 summarizes permits and approvals anticipated for the proposed Study Areas 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 6-1: 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 in-water work is proposed where habitat for Redside Dace has been identified, provided indirect impacts (i.e., water quality from melt water runoff) can be mitigated, it is unlikely a SARA permit will be required; however, consultation with DFO may still be required. ■ 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)	Environment and Climate Change Canada (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*	Fisheries and Oceans Canada (DFO)	■ No in-water work is proposed, provided indirect impacts (i.e., water quality from melt water runoff) can be properly mitigated, it is unlikely approvals under the *Fisheries Act* will be required; however, consultation with DFO may still be required.
Provincial	*Endangered Species Act, 2007* (ESA)	Ontario Ministry of the Environment, Conservation and Parks (MECP)	■ Most of the Potential Snow Storage Areas have low probability of supporting SAR given that they are limited to mowed lawns, crop fields or disturbed meadows. ■ Potential Snow Storage Area 3 is located near suitable Bobolink and Eastern Meadowlark habitat, if confirmed through SAR presence/absence surveys that these species are on site, then authorization under the ESA may be required for removal of their confirmed habitat. ■ Regulated habitat for Redside Dace is located within the boundaries of Site 6. A meander belt analysis should be undertaken to confirm the limits of the regulated habitat and approvals from MECP may be required. ■ Consultation with MECP may be required to confirm if there is Redside Dace regulated habitat within Site 5, if it's the preferred snow storage area. ■ There are no ESA permits anticipated to be required for Potential Snow Storage Areas 1 and 9.
Provincial	*Fish and Wildlife Conservation Act, 1997*	Ministry of Northern Development, Mines, Natural Resources and Forestry (MNRF)	■ Permit may be required at Site 5 should the destruction of the muskrat lodge be necessary in the stormwater pond; however, this is deemed as unlikely as the lodge is located outside of the Potential Snow Storage Area for Site 5.
Provincial	*Planning Act, 1990* and Provincial Policy Statement (PPS; 2020)	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 Act, 1990	TRCA	■ Permit not required – No Proposed Snow Storage Areas within regulated area.

Level of Government	Legislation	Governing Authority	Applicability to the Project
Provincial	Conservation Act, 1990	MNRF	■ Permit not required – No Proposed Snow Storage Areas within regulated area.
Municipal	Town of Caledon Official Plan, consolidated 2024	Town of Caledon	■ Permit not required – No Proposed Snow Storage Areas within policy area.
Municipal	City of Brampton Official Plan, consolidated 2020	City of Brampton	■ Permit not required – No Proposed Snow Storage Areas within policy area.
Municipal	Regional Official Plan, consolidated 2022	Region of Peel	■ Permit not required – No Proposed Snow Storage Areas within policy area.

7. Additional Studies

The following additional field studies may be required during Detailed Design for the preferred alternative:

- Update SAR habitat screening as protection statuses of species under the ESA may change over time.
- Potential SAR presence/absence surveys following MECP approved protocols and guidelines that may be required during Detailed Design, which are subject to change based on the updated SAR habitat screening and design-related impacts to suitable SAR, include but are not limited to the following:
  - Bobolink and Eastern Meadowlark Surveys for Site 3 if selected as the preferred solution.
- A tree inventory to document required removals based on the construction footprint and for use in consideration of replacement plantings, if any.
- Meander belt analysis should be completed for Salt Creek on Site 6 to confirm the boundaries of regulated Redside Dace habitat if selected as the preferred solution.

8. References

Bat Conservation International (BCI) 2021:
Species Profiles and Range Maps. Available online at: http://www.batcon.org/resources/media-education/species

Bird Studies Canada (BSC), Environment Canada's Canadian Wildlife Service, Ontario Nature, Ontario Field Ornithologists and Ontario Ministry of Natural Resources, 2006:
Ontario Breeding Bird Atlas Website. Available online at: http://www.birdsontario.org/atlas/index.jsp.

City of Brampton, 2020:
City of Brampton Official Plan. Accessed February 2022.

Conservation Act, 1990:
Conservation Authorities Act, R.S.O. 1990, c. C.27. Accessed June 2024. Available online at: https://www.ontario.ca/laws/statute/90c27

Crins, W.J., P.A. Gray, P.W.C. Uhlig and M. Wester, 2009:
The Ecosystems of Ontario, Part 1: Ecozones and Ecoregions. Available online at: https://www.ontario.ca/document/ecosystems-ontario-part-1-ecozones-and-ecoregions

Dobbyn, J.S., 1994:
Atlas of the Mammals of Ontario. Ontario: Federation of Ontario Naturalists.

eBird, 2021:
An online database of bird distribution and abundance. eBird, Cornell Laboratory of Ornithology, Ithaca, New York. Accessed September 2021. Available online at http://www.ebird.org

Endangered Species Act, 2007:
Available online at: https://www.ontario.ca/laws/statute/07e06

Environment and Climate Change Canada – Canadian Wildlife Service (ECCC-CWS), 2009:
Forest Bird Monitoring Program Survey Instructions and Codes. May 2009 Edition.

Fisheries and Wildlife Conservation Act, 1997:
Fish and Wildlife Conservation Act, 1997, S.O. 1997, c. 41. Available online at: https://www.ontario.ca/laws/statute/97f41

Fisheries and Oceans Canada (DFO), 2021:
Aquatic species at risk map. Accessed September 2021. Available online at https://www.dfo-mpo.gc.ca/species-especes/sara-lep/map-carte/index-eng.html.

Fisheries Act R.Sc., 1985:
Fisheries Act R.S., c. F-14, s.1. Available online at: https://laws-lois.justice.gc.ca/PDF/F-14.pdf

iNaturalist, 2021:
Accessed September 2021. Available online at: https://www.inaturalist.org

Lee, H.T., W.D. Bakowsky, J. Riley, J. Bowles, M. Puddister, P. Uhlig and S. McMurrary, 1998:
Ecological Land Classification for Southern Ontario: First Approximation and its Application. Ontario

Ministry of Natural Resources, Southcentral Science Section, Science Development and Transfer Branch. SCSS Field Guide FG-02.

Mandrak, N.E. and L.D. Bouvier, 2014:
Standardized data collection methods in support of a classification protocol for the designation of watercourses as municipal drains. DFO Can. Sci. Advis. Sec. Res. Doc. 2013/077. v + 27 p.

Migratory Birds Convention Act, 1994
Migratory Birds Convention Act. Accessed February 2021. Available online at: https://laws-lois.justice.gc.ca/eng/acts/m-7.01/page-1.html

Ministry of Natural Resources and Forestry (MNRF), 2000:
Ministry of Natural Resources, Significant Wildlife Habitat Technical Guide. 151p.

Ministry of Natural Resources and Forestry (MNRF), 2010:
Ministry of Natural Resources, Natural Heritage Reference Manual for Policy 2.3 of the Ontario Provincial Policy Statement. 245 pp.

Ministry of Natural Resources and Forestry (MNRF), 2014:
Ministry of Natural Resources and Forestry, Ontario Wetland Evaluation System, Southern Manual, 3rd Edition, Version 3.2. Queen's Printer for Ontario. 296 pp.

Ministry of Natural Resources and Forestry (MNRFa), 2015:
Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E. Queen's Printer for Ontario. 39 pp.

Ministry of Natural Resources and Forestry (MNRFb), 2015:
Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E. Queen's Printer for Ontario. 39 pp.

Ministry of Natural Resources and Forestry (MNRF), 2016:
Ministry of Natural Resources, Guidance for Development Activities in Redside Dace Protected Habitat. Version 1.2 Ontario Ministry of Natural Resources and Forestry, Peterborough, Ontario. iv+32 pp.

Ministry of Natural Resources and Forestry (MNRF), 2018:
Natural Heritage Information Request Guide. Regional Operations Division. December 2018.

Ontario Ministry of Municipal Affairs and Housing (MMAH), 2005:
Greenbelt Act. Accessed February 2021.

Ontario Ministry of Municipal Affairs and Housing (MMAH), 2014:
Greenbelt Plan. Accessed February 2021.

Ontario Ministry of Municipal Affairs and Housing (MMAH), 2014:
Provincial Policy Statement. Queen's Printer for Ontario.

Ontario Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNRF), 2021a:
Make-a-Map: Natural Heritage Areas Application. Available online at: https://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US .

Ontario Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNRF), 2021b:
Land Information Ontario. Available online at: https://www.ontario.ca/page/land-information-ontario.

Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA). 2021:
AgMaps. Accessed September 2021.

Ontario Nature, 2019:
Ontario Reptile and Amphibian Atlas. Available online at:
https://www.ontarionature.org/protect/species/herpetofaunal_atlas.php.

Region of Peel, 2022:
Regional Official Plan. Accessed February 2022.

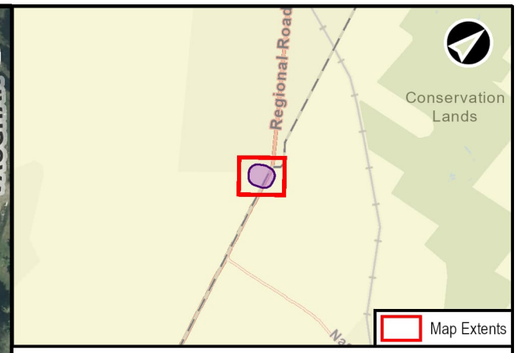
Species at Risk Act, 2002:
Available online at: https://laws.justice.gc.ca/PDF/S-15.3.pdf

Toronto Entomologists Association (TEA), 2021:
Ontario Butterfly Atlas. Available online at: http://www.ontarioinsects.org/atlas_online.htm

Town of Caledon, 2024:
Caledon Official Plan. Accessed June 2024.

Appendix A

Figures



Legend

- Study Area (120 m)
- Potential Snow Storage Area
- Potential Snow Storage Property Boundary
- Municipal Boundary
- District, County, or Regional Road
- Toronto Region Conservation Authority Regulated Area (2020)

Thermal Assessment of Watercourses

- Warmwater
- Unknown Thermal Regime

Aerial imagery provided by: Peel Region2020, Province of Ontario, York Region, Esri Canada, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, NRCan, Parks Canada

Snow Storage Site Analysis and Conceptual Design Project 13-4007

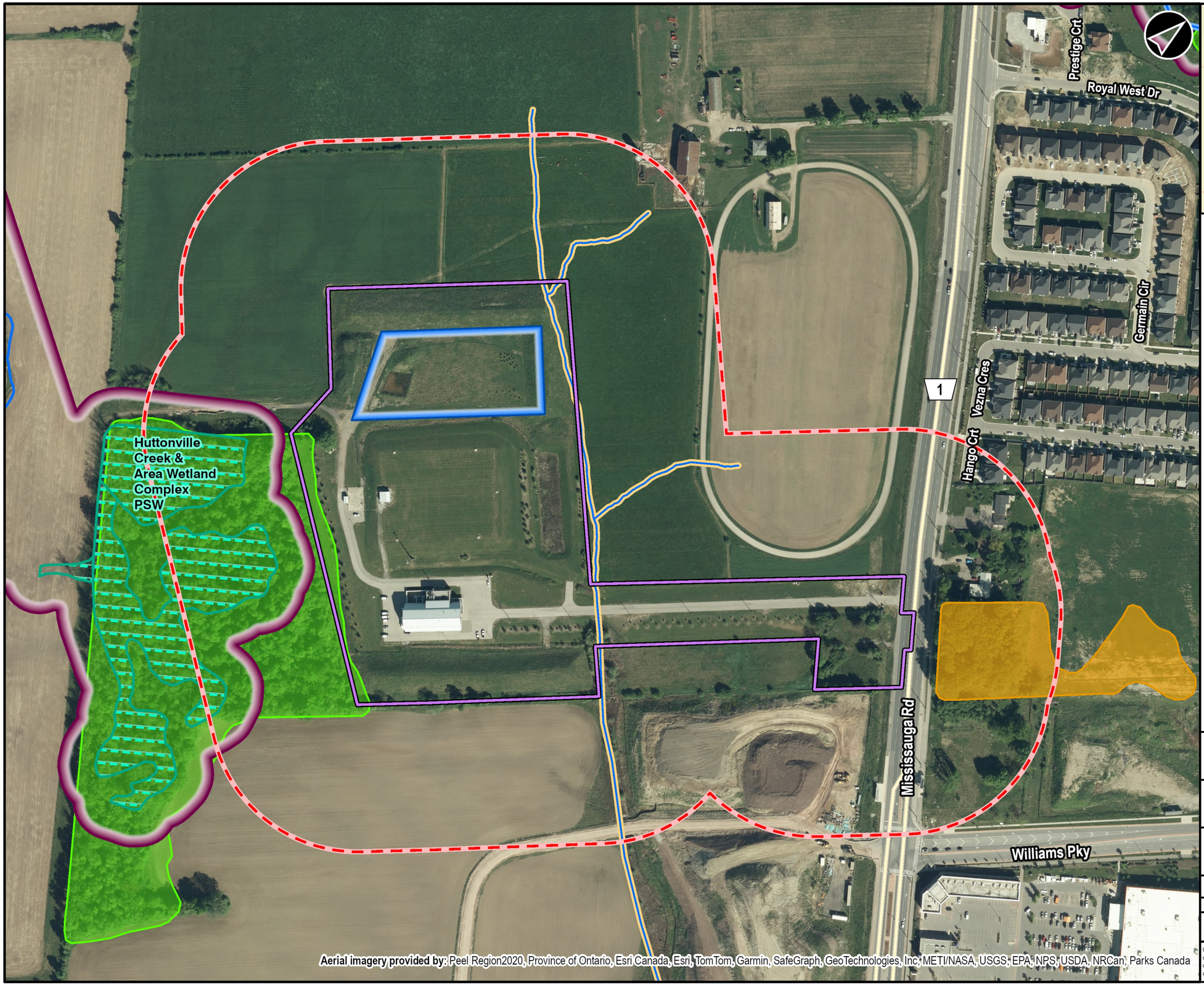
Natural Heritage Features - Site: 1
Highway No. 50 Car Pool Lot

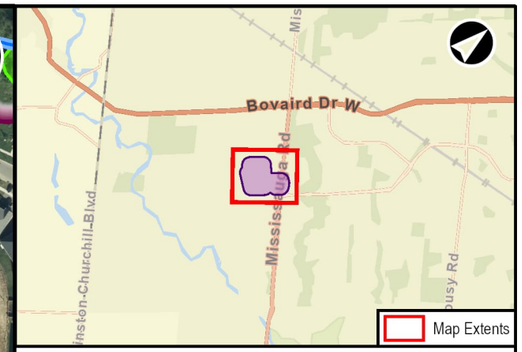
0 20 40 80 120 M

NAD 1983 UTM Zone 17N

Jan, 2024	1:2,000	**Data Sources:** AECOM, MMAH, MECP, Region of Peel, TRCA, CVCA
P:60646784	Rev:00	
AECOM		**Figure 1-1**

Project Location: C:\Users\wong14\OneDrive - AECOM\Documents\AECOM GIS Projects\GIS Projects\60646784 Peel Snow Storage Facility\Data\PRJ-60646784-PeelSnow.aprx **Layout:** ECO - Natural Heritage
Date Saved: 2024-01-10 3:35 PM **User:** Wong14





Legend

- Study Area (120 m)
- Potential Snow Storage Area
- Potential Snow Storage Property Boundary
- District, County, or Regional Road
- Credit Valley Conservation Authority Regulated Limits (2019)

Thermal Assessment of Watercourses

- Coldwater
- Warmwater
- Unknown Thermal Regime

Wetlands by Significance

- Provincially Significant Wetland (PSW)

Region of Peel Woodlands (2019)

- Core Woodlands
- Natural Areas and Corridors (NAC)

Snow Storage Site Analysis and Conceptual Design Project 13-4007

Natural Heritage Features - Site: 3
West Brampton Reservoir and Pumping Station

0 20 40 80 120 160 200 M

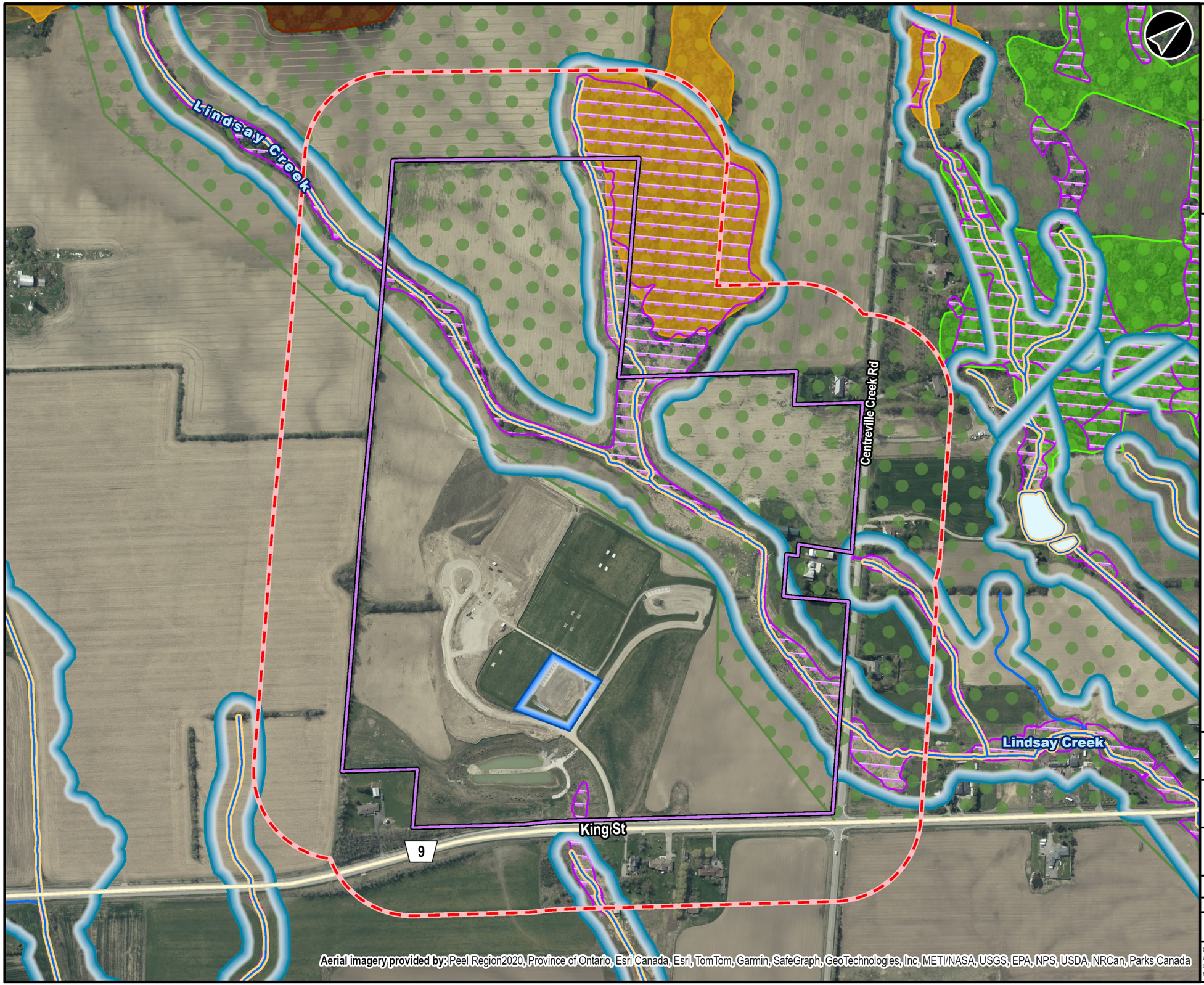
NAD 1983 UTM Zone 17N

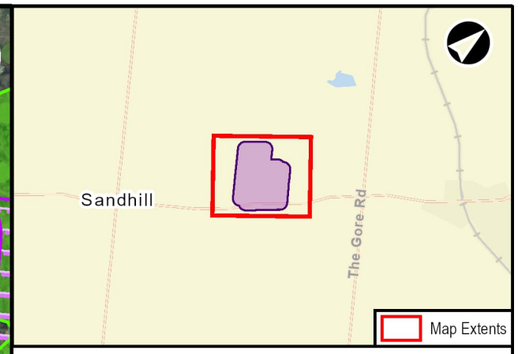
Jan, 2024	1:3,000	**Data Sources:** AECOM, MMAH, MECP, Region of Peel, TRCA, CVCA
P:60646784	Rev:00	

AECOM

Figure 1-2

Project Location: C:\Users\wong414\OneDrive - AECOM\Documents\AECOM GIS Projects\GIS Projects\60646784 Peel Snow Storage Facility\Data\PRJ-60646784-PeelSnow.aprx Layout: ECO - Natural Heritage
Date Saved: 2024-01-11 10:40 AM User: Wong414





Legend

- Study Area (120 m)
- Potential Snow Storage Area
- Potential Snow Storage Property Boundary
- District, County, or Regional Road
- Toronto Region Conservation Authority Regulated Area (2020)

Thermal Assessment of Watercourses

- Warmwater
- Unknown Thermal Regime

Wetlands by Significance

- Not evaluated per OWES

Region of Peel Woodlands (2019)

- Core Woodlands
- Natural Areas and Corridors (NAC)
- Potential Natural Areas and Corridors (PNACs)

Oak Ridges Moraine Conservation Plan Designations

- Countryside Area

Greenbelt Plan by Designation

- Protected Countryside

Snow Storage Site Analysis and Conceptual Design Project 13-4007

Natural Heritage Features - Site: 5 Johnston Sports Park

0 20 40 80 120 160 200 240 280 320 360 M

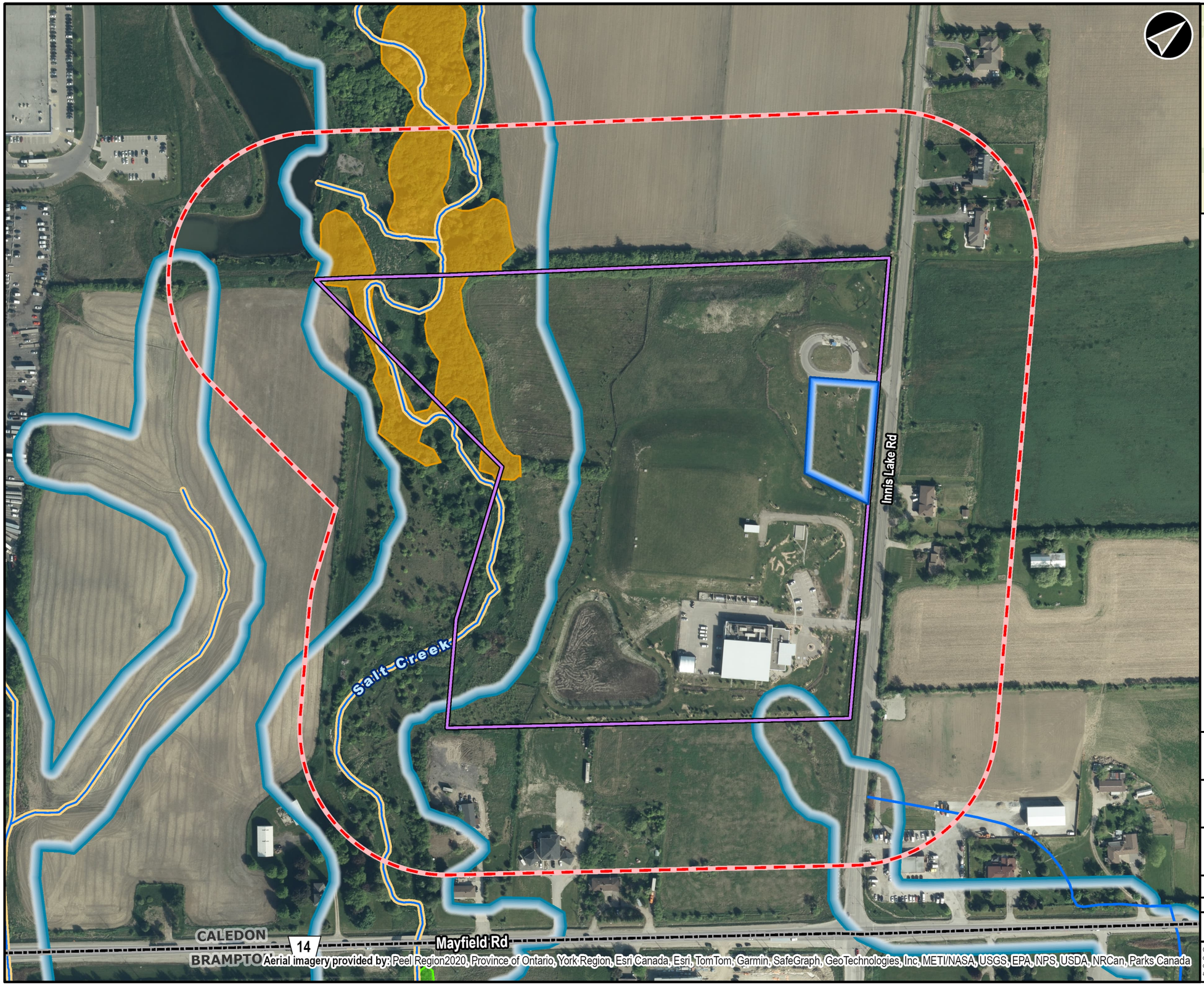
NAD 1983 UTM Zone 17N

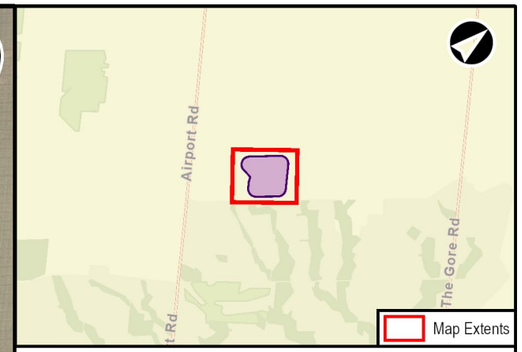
Jan, 2024	1:5,000	**Data Sources:** AECOM, MMAH, MECP, Region of Peel, TRCA, CVCA
P:60646784	Rev:00	

AECOM

Figure 1-3

Project Location: C:\Users\wong014\OneDrive - AECOM\Documents\AECOM GIS Projects\GIS Projects\60646784 Peel Snow Storage Facility\Data\PRJ-60646784-PeelSnow.aprx Layout: ECO - Natural Heritage
Date Saved: 2024-01-11 10:40 AM User: Wong014





Legend

- Study Area (120 m)
- Potential Snow Storage Area
- Potential Snow Storage Property Boundary
- Municipal Boundary
- District, County, or Regional Road
- Toronto Region Conservation Authority Regulated Area (2020)

Region of Peel Woodlands (2019)

- Core Woodlands
- Natural Areas and Corridors (NAC)

Thermal Assessment of Watercourses

- Warmwater
- Unknown Thermal Regime

Snow Storage Site Analysis and Conceptual Design Project 13-4007

Natural Heritage Features - Site: 6
Tullamore Reservoir and Pumping Station

0 20 40 80 120 160 200 M

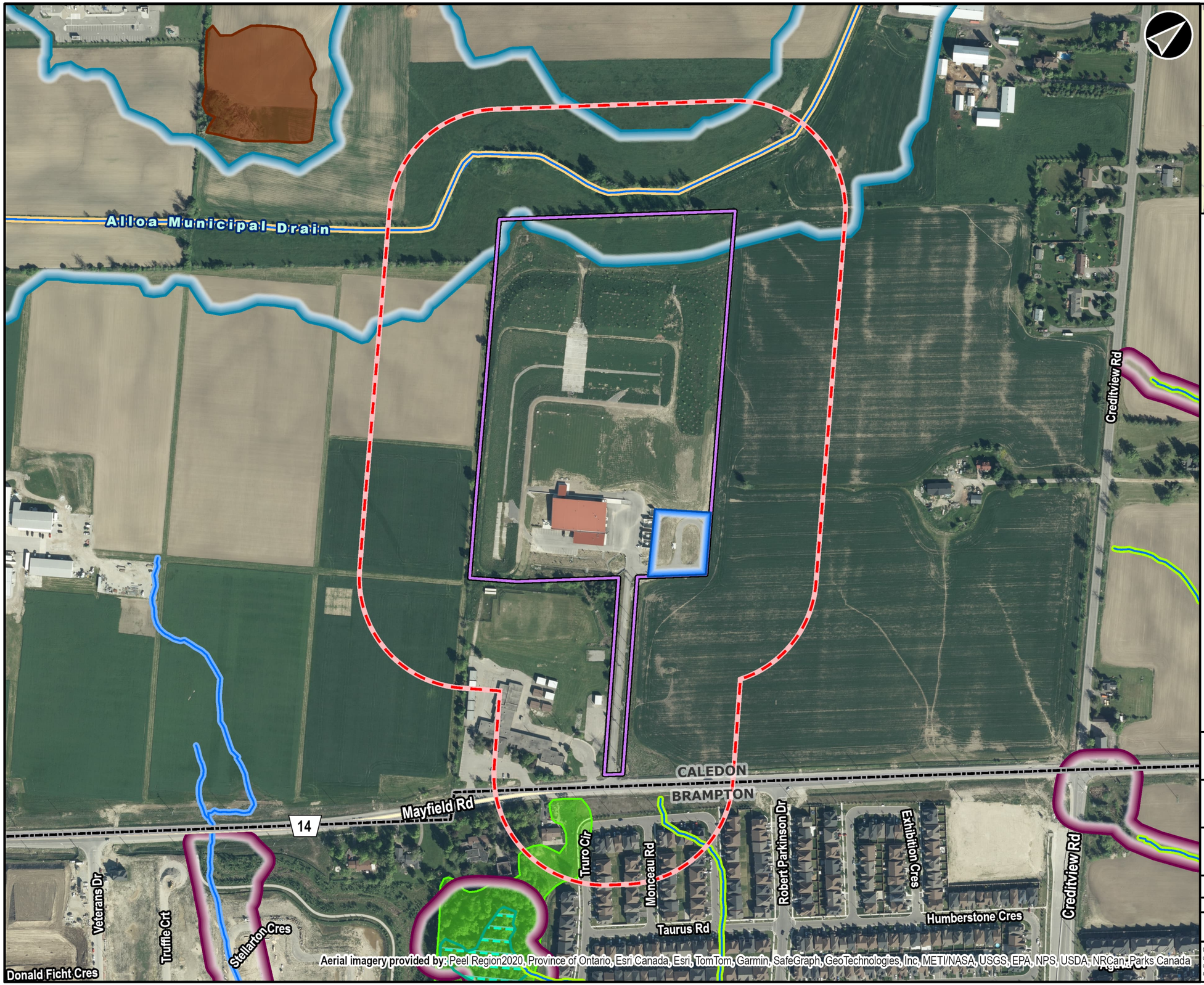
NAD 1983 UTM Zone 17N

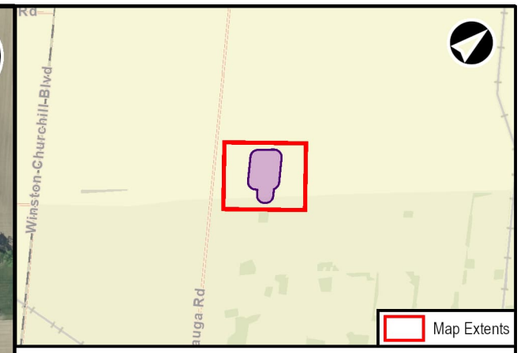
Jan, 2024	1:3,000	**Data Sources:** AECOM, MMAH, MECP, Region of Peel, TRCA, CVCA
P:60646784	Rev:00	

AECOM

Figure 1-4

Project Location: C:\Users\wong114\OneDrive - AECOM\Documents\AECOM GIS Projects\GIS Projects\60646784 Peel Snow Storage Facility\Data\PRJ-60646784-PeelSnow.aprx Layout: ECO - Natural Heritage
Date Saved: 2024-01-10 8:35 PM User: Wong114





Legend

- Study Area (120 m)
- Potential Snow Storage Area
- Potential Snow Storage Property Boundary
- Municipal Boundary
- District, County, or Regional Road
- Toronto Region Conservation Authority Regulated Area (2020)
- Credit Valley Conservation Authority Regulated Limits (2019)

Region of Peel Woodlands (2019)

- Core Woodlands
- Potential Natural Areas and Corridors (PNACs)

Thermal Assessment of Watercourses

- Coldwater
- Coolwater
- Warmwater
- Unknown Thermal Regime

Snow Storage Site Analysis and Conceptual Design Project 13-4007

Natural Heritage Features - Site: 9
Alloa Reservoir and Pumping Station

0 20 40 80 120 160 200 240 280 M

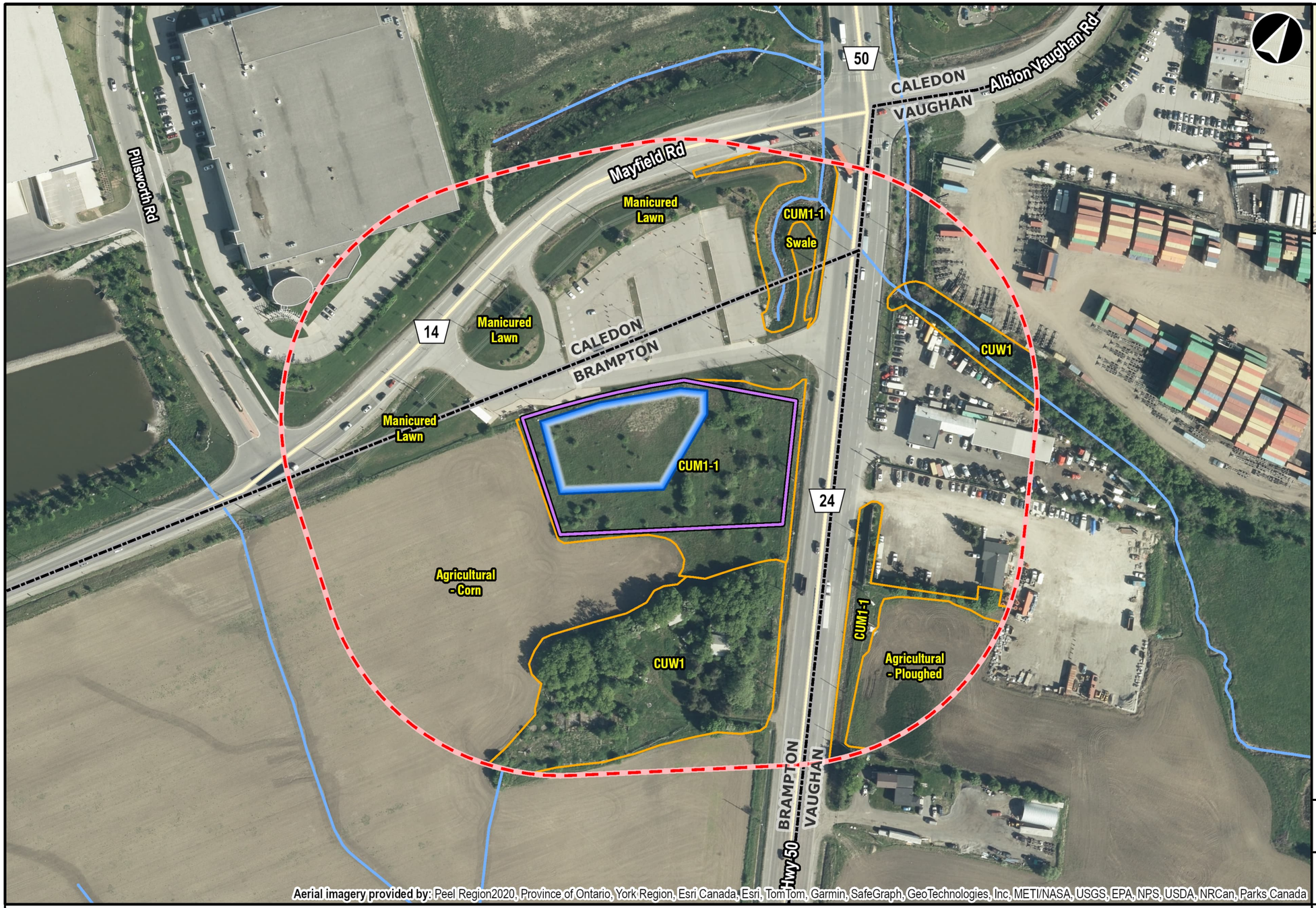
NAD 1983 UTM Zone 17N

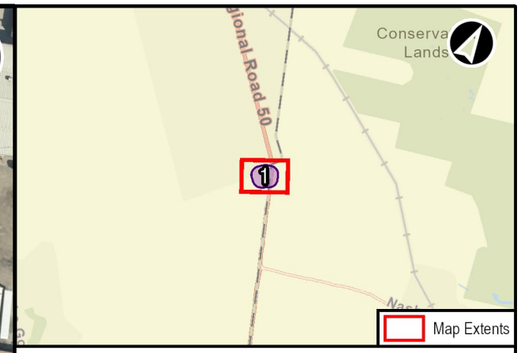
Jan, 2024	1:4,000	Data Sources: AECOM, MMAH, MECP, Region of Peel, TRCA, CVCA
P:60646784	Rev:00	

AECOM

Figure 1-5

Project Location: C:\Users\wong14\OneDrive - AECOM\Documents\AECOM GIS Projects\GIS Projects\60646784 Peel Snow Storage Facility\Data\PRJ-60646784-PeelSnow.aprx Layout: ECO - Natural Heritage
Date Saved: 2024-01-10 3:53 PM User: Wong14





Legend

- Study Area (120 m)
- Potential Snow Storage Area
- Potential Snow Storage Property Boundary
- Municipal Boundary
- District, County, or Regional Road
- Watercourse
- Vegetation Communities

ELC Code Description

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

CUW1: Mineral Cultural Woodland Type

Snow Storage Site Analysis and Conceptual Design Project 13-4007

Vegetation Communities - Site:1
Highway No. 50 Car Pool Lot

0 20 40 80 120 M

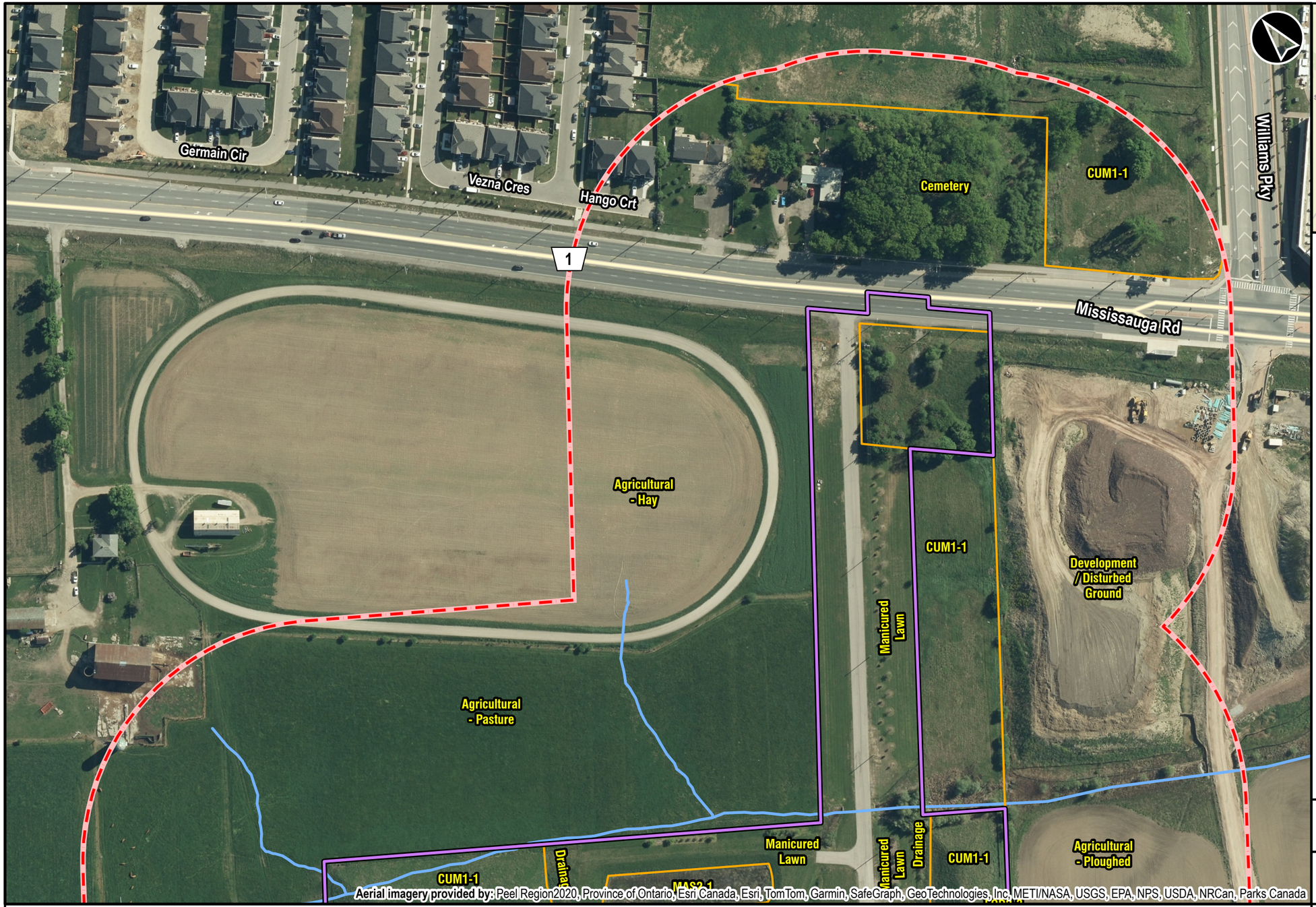
NAD 1983 UTM Zone 17N

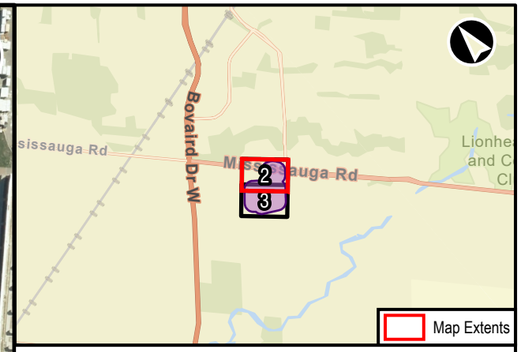
Jan, 2024	1:2,000	**Data Sources:** AECOM, MMAH, MECP, Region of Peel
P:60646784	Rev:00	

AECOM

Figure 1-01

Project Location: C:\Users\wong14\OneDrive - AECOM\Documents\AECOM GIS Projects\GIS Projects\60646784 Peel Snow Storage Facility\Data\PRJ-60646784-PeelSnow.aprx Layout: ECO - Vegetation Communities Date Saved: 2024-01-10 12:33:28 User: Wong14





Legend

- Study Area (120 m)
- Potential Snow Storage Property Boundary
- Vegetation Communities
- District, County, or Regional Road
- Watercourse

ELC Code Description

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

MAS2-1: Cattail Mineral Shallow Marsh Type

FOD2-3: Dry Fresh Oak - Hickory Deciduous Forest Type

Snow Storage Site Analysis and Conceptual Design Project 13-4007

Vegetation Communities - Site:3
West Brampton Reservoir and Pumping Station

0 20 40 80 120 M

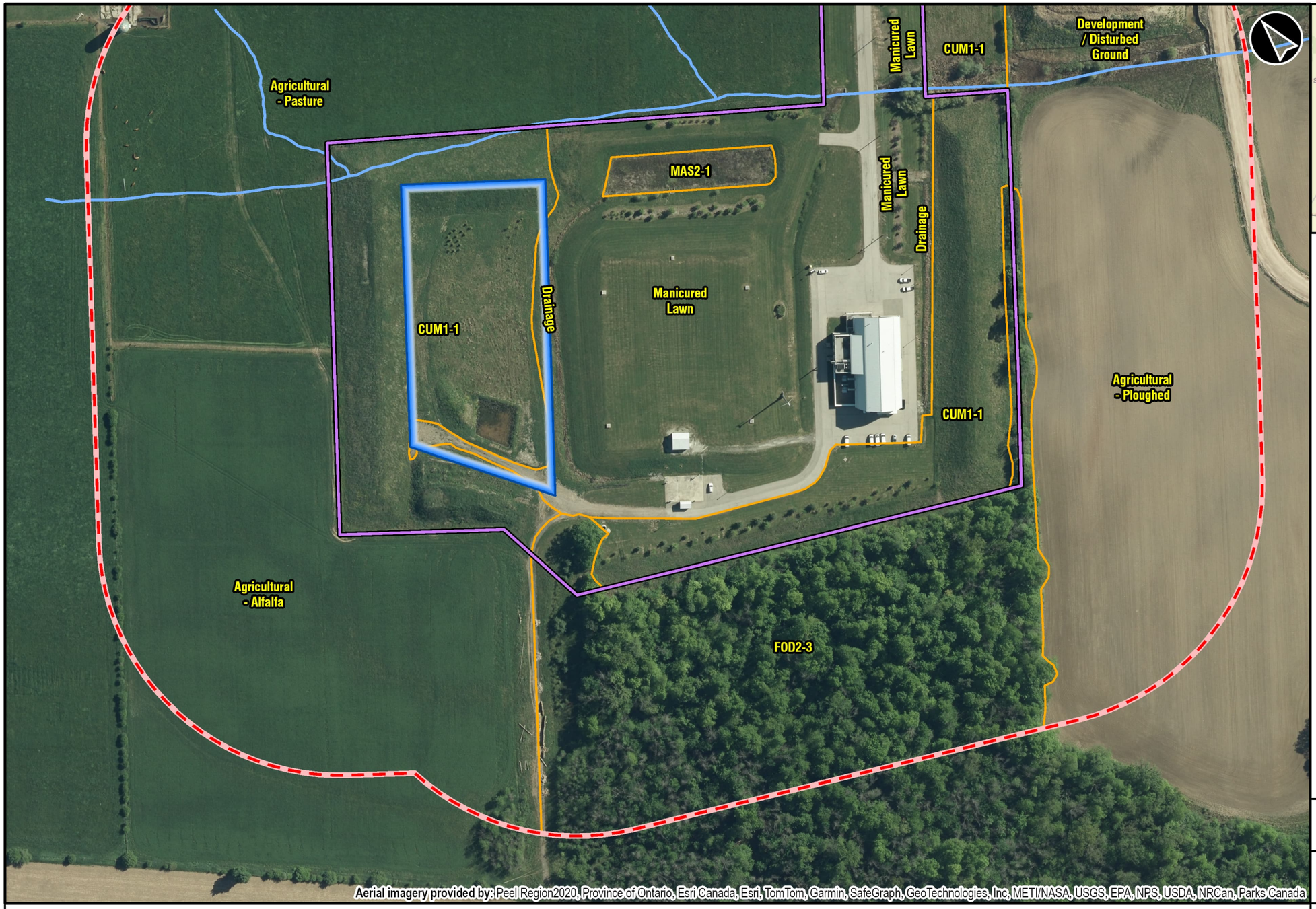
NAD 1983 UTM Zone 17N

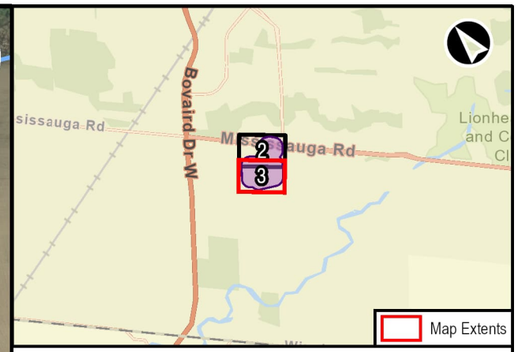
Jan, 2024	1:2,000	**Data Sources:** AECOM, MMAH, MECP, Region of Peel
P:60646784	Rev:00	

AECOM

Figure 1-02

Project Location: C:\Users\wong314\OneDrive - AECOM\Documents\AECOM GIS Projects\GIS Projects\60646784 Peel Snow Storage Facility Data\PRJ-60646784-PeelSnow.aprx Layout: ECO - Vegetation Communities
Date Saved: 2024-03-14 4:14 PM User: Wong314





Legend

- Study Area (120 m)
- Potential Snow Storage Area
- Potential Snow Storage Property Boundary
- Watercourse
- Vegetation Communities

ELC Code Description

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

MAS2-1: Cattail Mineral Shallow Marsh Type

FOD2-3: Dry Fresh Oak - Hickory Deciduous Forest Type

Snow Storage Site Analysis and Conceptual Design Project 13-4007

Vegetation Communities - Site:3
West Brampton Reservoir and Pumping Station

0 20 40 80 120 M

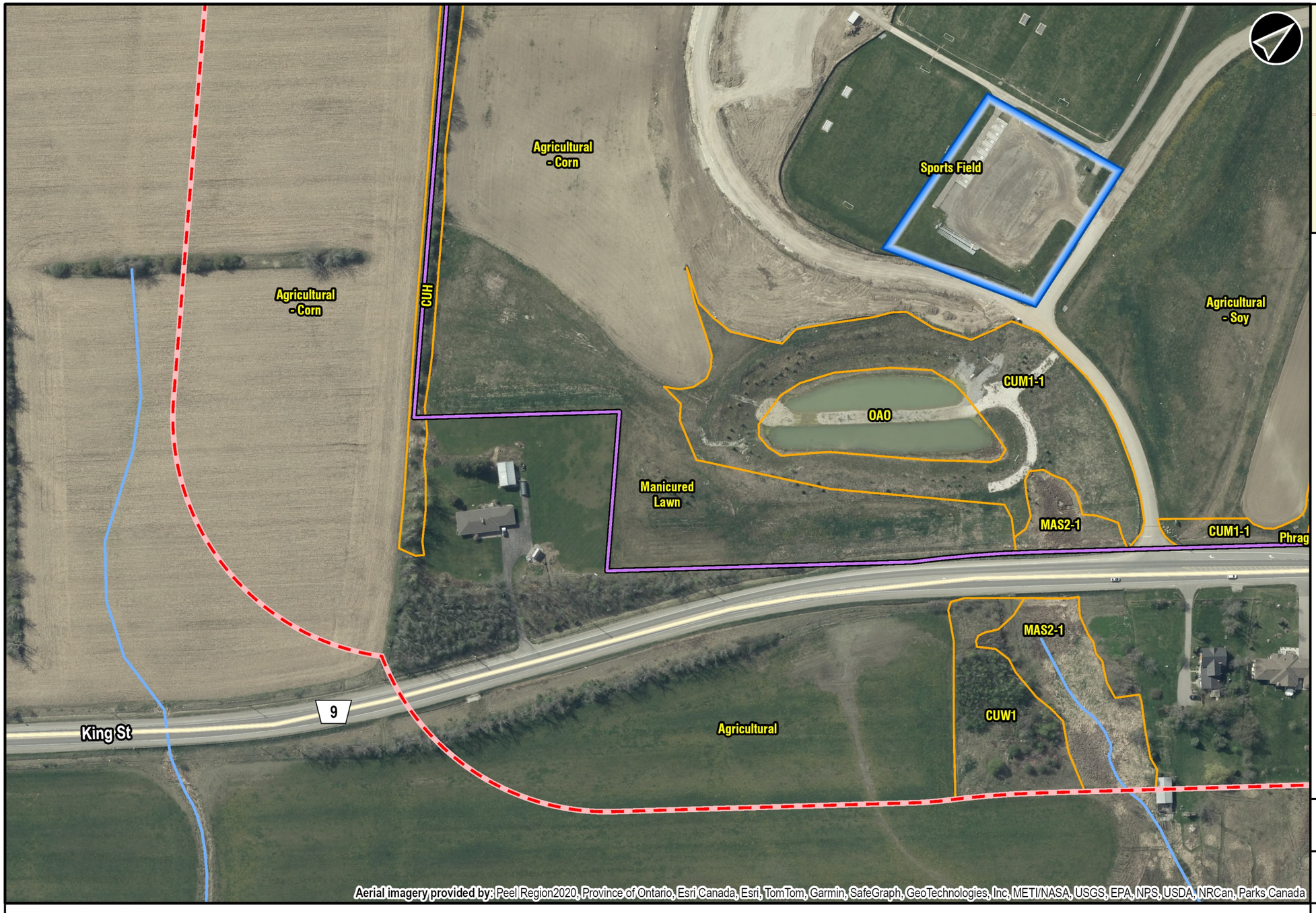
NAD 1983 UTM Zone 17N

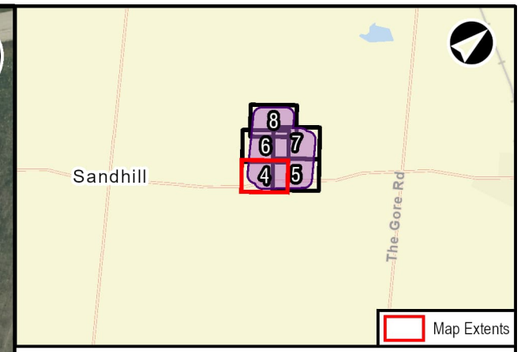
Jan, 2024	1:2,000	Data Sources: AECOM, MMAH, MECP, Region of Peel
P:60646784	Rev:00	

AECOM

Figure 1-03

Project Location: C:\Users\wong1\HOme\Drive - AECOM\Documents\AECOM GIS Projects\GIS Projects\60646784 Peel Snow Storage Facility\Data\PRJ-60646784-PeelSnow.aprx Layout: ECO - Vegetation Communities
Date Saved: 2024-10-14 11:41 PM User: Wong14





Legend

- Study Area (120 m)
- Potential Snow Storage Area
- Potential Snow Storage Property Boundary
- District, County, or Regional Road
- Watercourse
- Vegetation Communities

ELC Code Description

CUH: Cultural Hedgerow

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

CUW1: Mineral Cultural Woodland Type

MAS2-1: Cattail Mineral Shallow Marsh Type

OAO: Open Aquatic

Snow Storage Site Analysis and Conceptual Design Project 13-4007

Vegetation Communities - Site:5 Johnston Sports Park

0 20 40 80 120 M

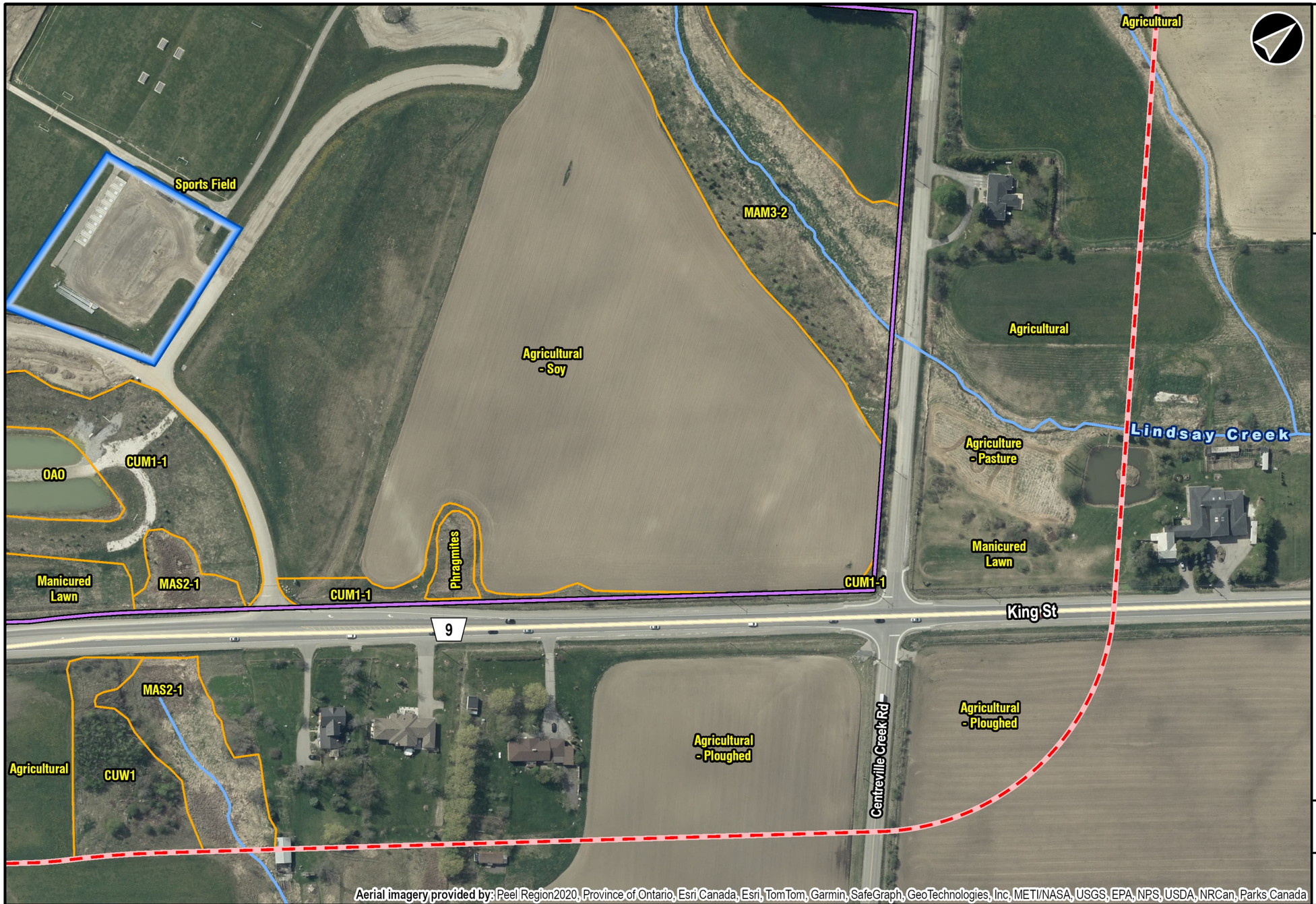
NAD 1983 UTM Zone 17N

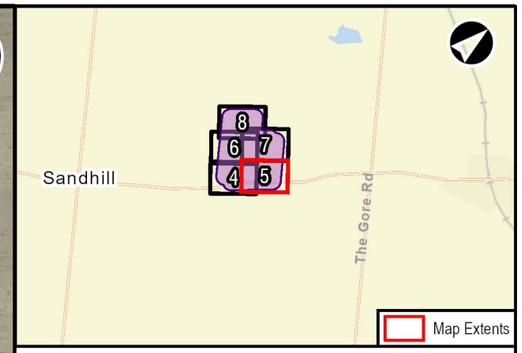
Jan, 2024	1:2,000	Data Sources: AECOM, MMAH, MECP, Region of Peel
P:60646784	Rev:00	

AECOM

Figure 1-04

Project Location: C:\Users\wong14\OneDrive - AECOM\Documents\AECOM GIS Projects\GIS Projects\60646784 Peel Snow Storage Facility\Data\PRJ-60646784-PeelSnow.aprx Layout: ECO - Vegetation Communities
Date Saved: 2024-01-10 4:14 PM User: Wong14





Legend

- Study Area (120 m)
- Potential Snow Storage Area
- Potential Snow Storage Property Boundary
- District, County, or Regional Road
- Watercourse
- Vegetation Communities

ELC Code Description

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

CUW1: Mineral Cultural Woodland Type

MAM3-2: Reed-canary Grass Graminoid Organic Meadow Marsh Type

MAS2-1: Cattail Mineral Shallow Marsh Type

OAO: Open Aquatic

Snow Storage Site Analysis and Conceptual Design Project 13-4007

Vegetation Communities - Site:5 Johnston Sports Park

0 20 40 80 120 M

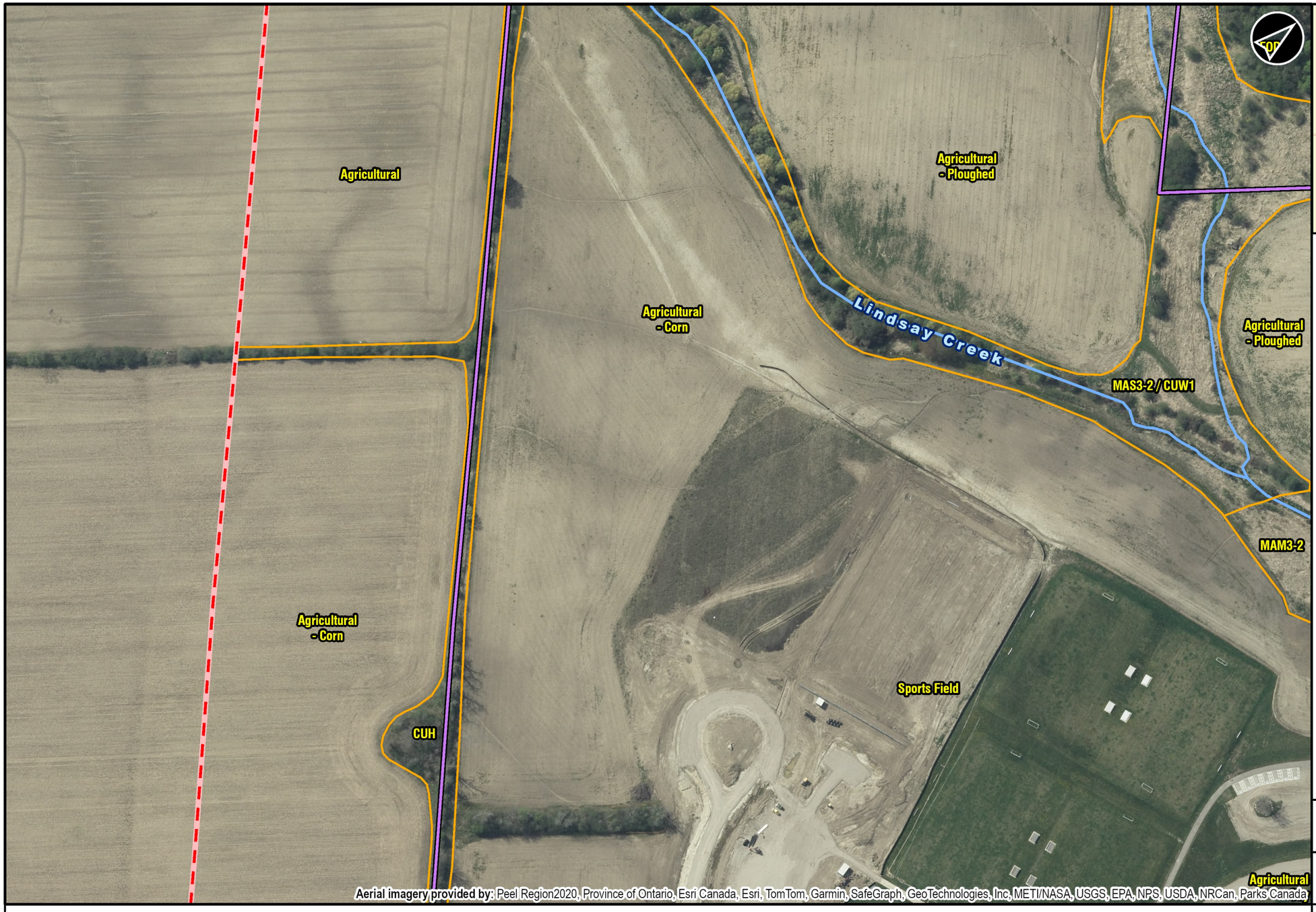
NAD 1983 UTM Zone 17N

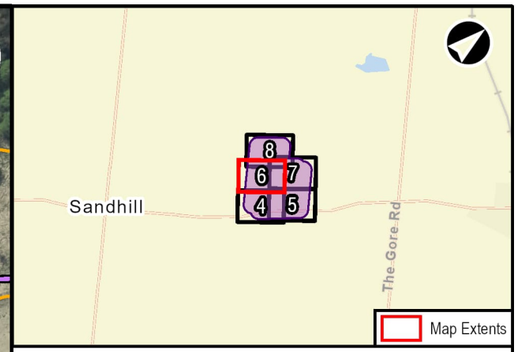
Jan, 2024	1:2,000	Data Sources: AECOM, MMAH, MECP, Region of Peel
P:60646784	Rev:00	

AECOM

Figure 1-05

Project Location: C:\Users\wong14\OneDrive - AECOM\Documents\AECOM GIS Projects\GIS Projects\60646784 Peel Snow Storage Facility\Data\PRJ-60646784-PeelSnow.aprx Layout: ECO - Vegetation Communities
Date Saved: 2024/01/10 14:18 User: Wong14





Legend

- Study Area (120 m)
- Potential Snow Storage Property Boundary
- Watercourse
- Vegetation Communities

ELC Code Description

CUH: Cultural Hedgerow

FOD: Deciduous Forest

MAM3-2: Reed-canary Grass Graminoid Organic Meadow Marsh Type

MAS3-2 / CUW1: Bulrush Organic Shallow Marsh Type/ Mineral Cultural Woodland

Snow Storage Site Analysis and Conceptual Design Project 13-4007

Vegetation Communities - Site:5
Johnston Sports Park

0 20 40 80 120 M

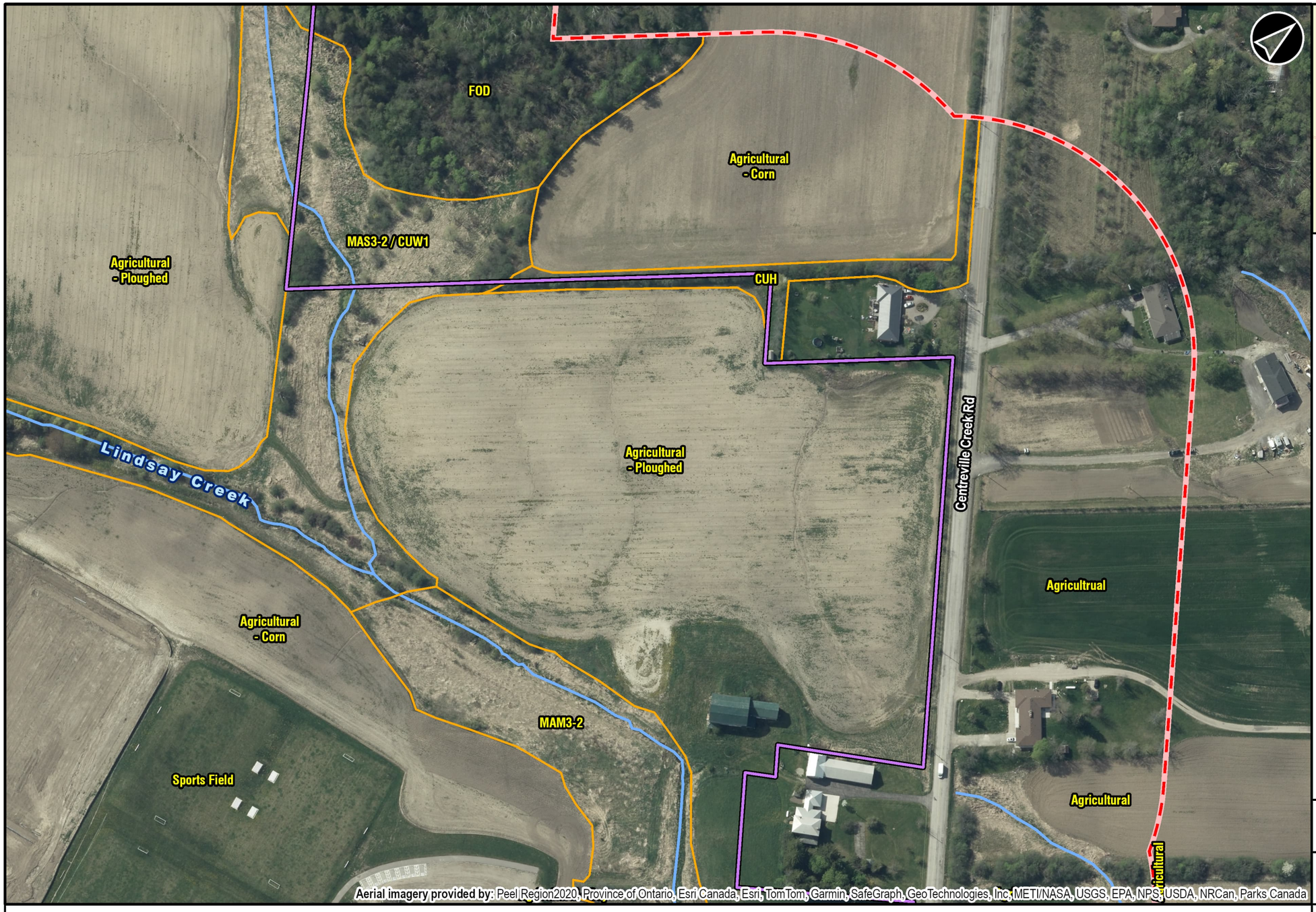
NAD 1983 UTM Zone 17N

Jan, 2024	1:2,000	**Data Sources:** AECOM, MMAH, MECP, Region of Peel
P:60646784	Rev:00	

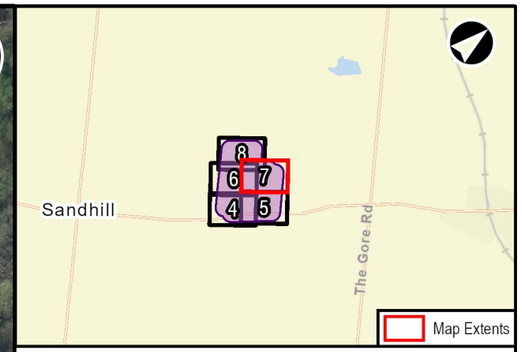
AECOM

Figure 1-06

Project Location: C:\Users\wong214\OneDrive - AECOM\Documents\AECOM GIS Projects\GIS Projects\60646784 Peel Snow Storage Facility\Data\PRJ-60646784-PeelSnow.aprx Layout: ECO - Vegetation Communities
Date Saved: 2024-01-14 1:41 PM User: Wong214



Aerial imagery provided by: Peel Region2020, Province of Ontario, Esri Canada, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, NRCan, Parks Canada



Legend

- Study Area (120 m)
- Potential Snow Storage Property Boundary
- Watercourse
- Vegetation Communities

ELC Code Description

CUH: Cultural Hedgerow

FOD: Deciduous Forest

MAM3-2: Reed-canary Grass Graminoid Organic Meadow Marsh Type

MAS3-2 / CUW1: Bulrush Organic Shallow Marsh Type/ Mineral Cultural Woodland

Snow Storage Site Analysis and Conceptual Design Project 13-4007

Vegetation Communities - Site:5 Johnston Sports Park

0 20 40 80 120 M

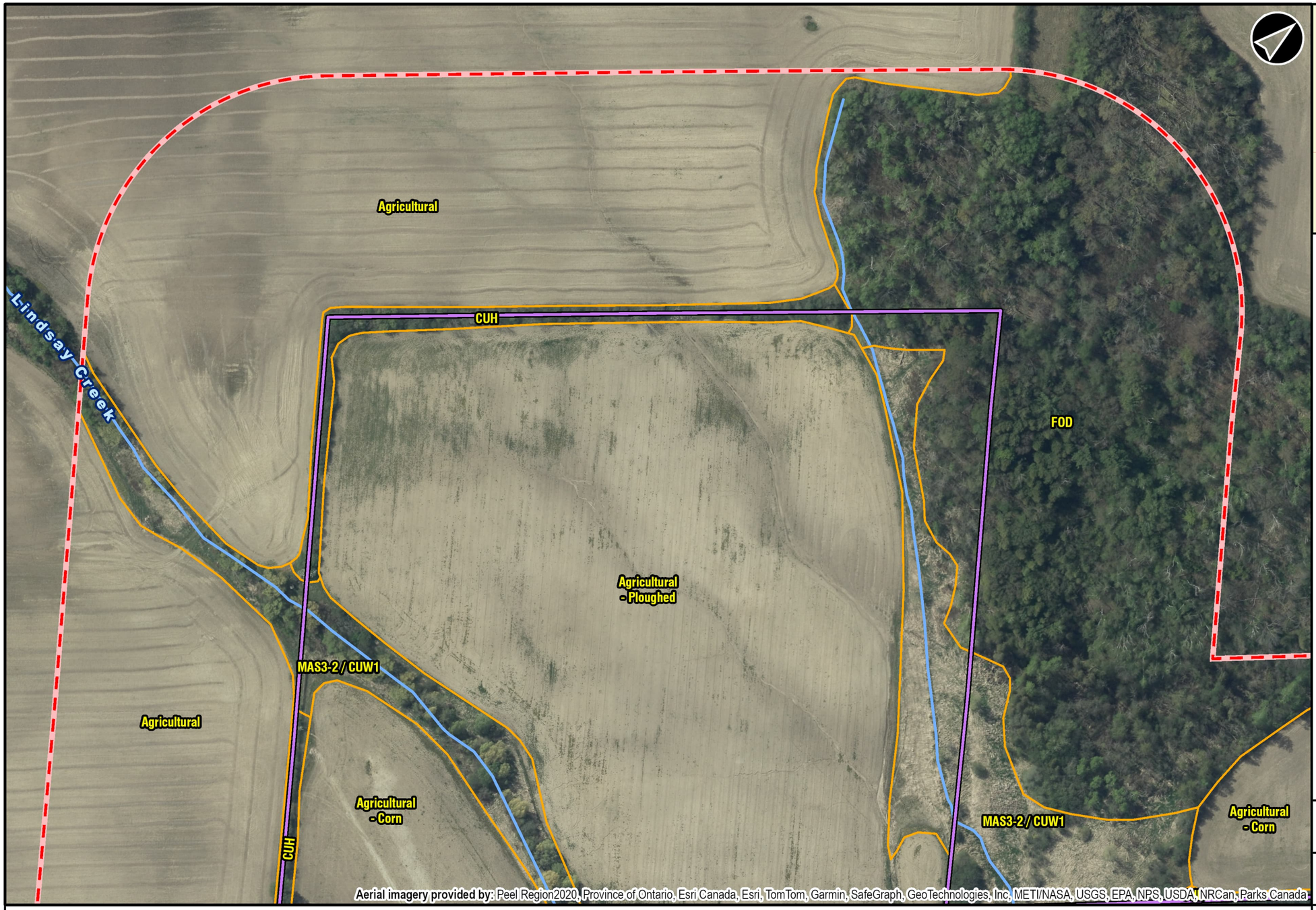
NAD 1983 UTM Zone 17N

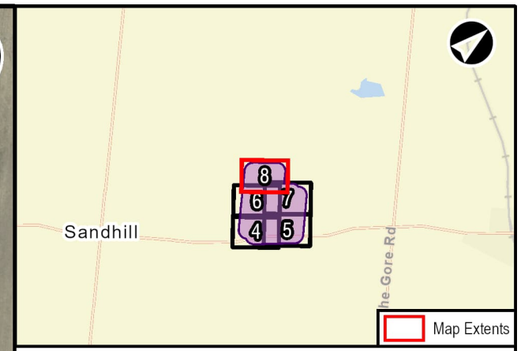
Jan, 2024	1:2,000	Data Sources: AECOM, MMAH, MECP, Region of Peel
P:60646784	Rev:00	

AECOM

Figure 1-07

Project Location: C:\Users\wong14\OneDrive - AECOM\Documents\AECOM GIS Projects\GIS Projects\60646784 Peel Snow Storage Facility\Data\PRJ-60646784-PeelSnow.aprx Layout: ECO - Vegetation Communities
Date Saved: 2024-01-10 4:14 PM User: Wong14





Legend

- Study Area (120 m)
- Potential Snow Storage Property Boundary
- Watercourse
- Vegetation Communities

ELC Code Description

CUH: Cultural Hedgerow

FOD: Deciduous Forest

MAS3-2 / CUW1: Bulrush Organic Shallow Marsh Type/ Mineral Cultural Woodland

Snow Storage Site Analysis and Conceptual Design Project 13-4007

Vegetation Communities - Site:5 Johnston Sports Park

0 20 40 80 120 M

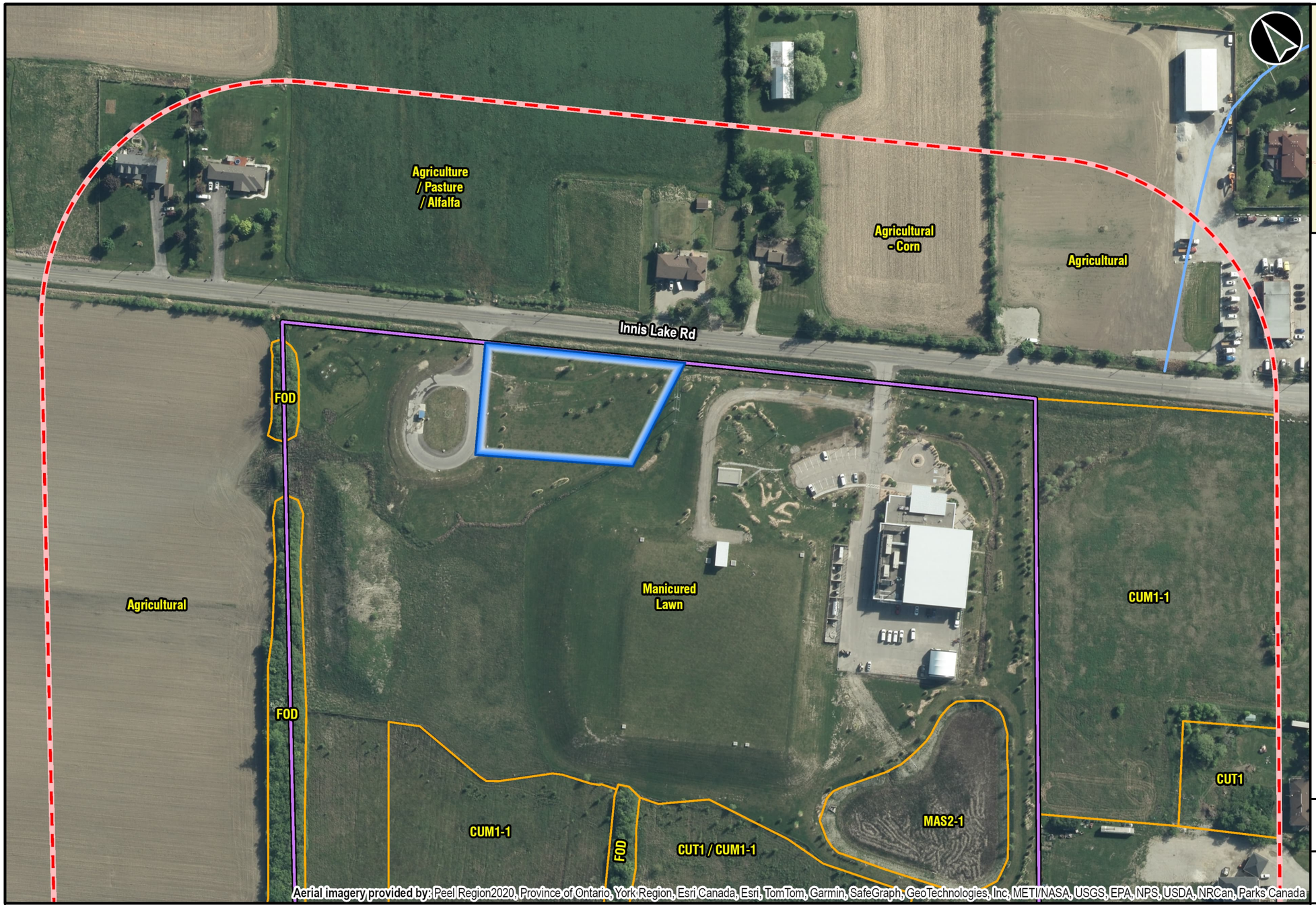
NAD 1983 UTM Zone 17N

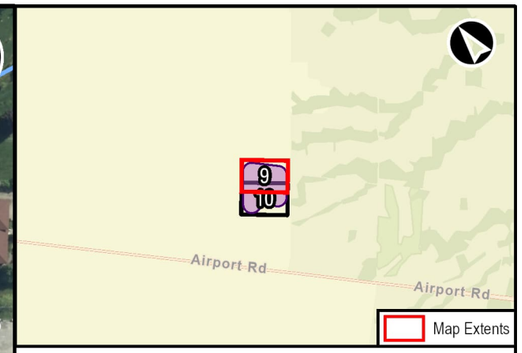
Jan, 2024	1:2,000	Data Sources: AECOM, MMAH, MECP, Region of Peel
P:60646784	Rev:00	

AECOM

Figure 1-08

Project Location: C:\Users\wong14\OneDrive - AECOM\Documents\AECOM GIS Projects\GIS Projects\60646784 Peel Snow Storage Facility\Data\PRJ-60646784-PeelSnow.aprx Layout: ECO - Vegetation Communities
Date Saved: 2024/01/14 11:41 PM User: Wong14





Legend

- Study Area (120 m)
- Potential Snow Storage Area
- Potential Snow Storage Property Boundary
- Watercourse
- Vegetation Communities

ELC Code Description

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

CUT1: Mineral Cultural Thicket

CUT1 / CUM1-1: Mineral Cultural Thicket / Mineral Cultural Dry-Moist Old Field Meadow Complex

FOD: Deciduous Forest

MAS2-1: Cattail Mineral Shallow Marsh Type

Snow Storage Site Analysis and Conceptual Design Project 13-4007

Vegetation Communities - Site:6
Tullamore Reservoir and Pumping Station

0 20 40 80 120 M

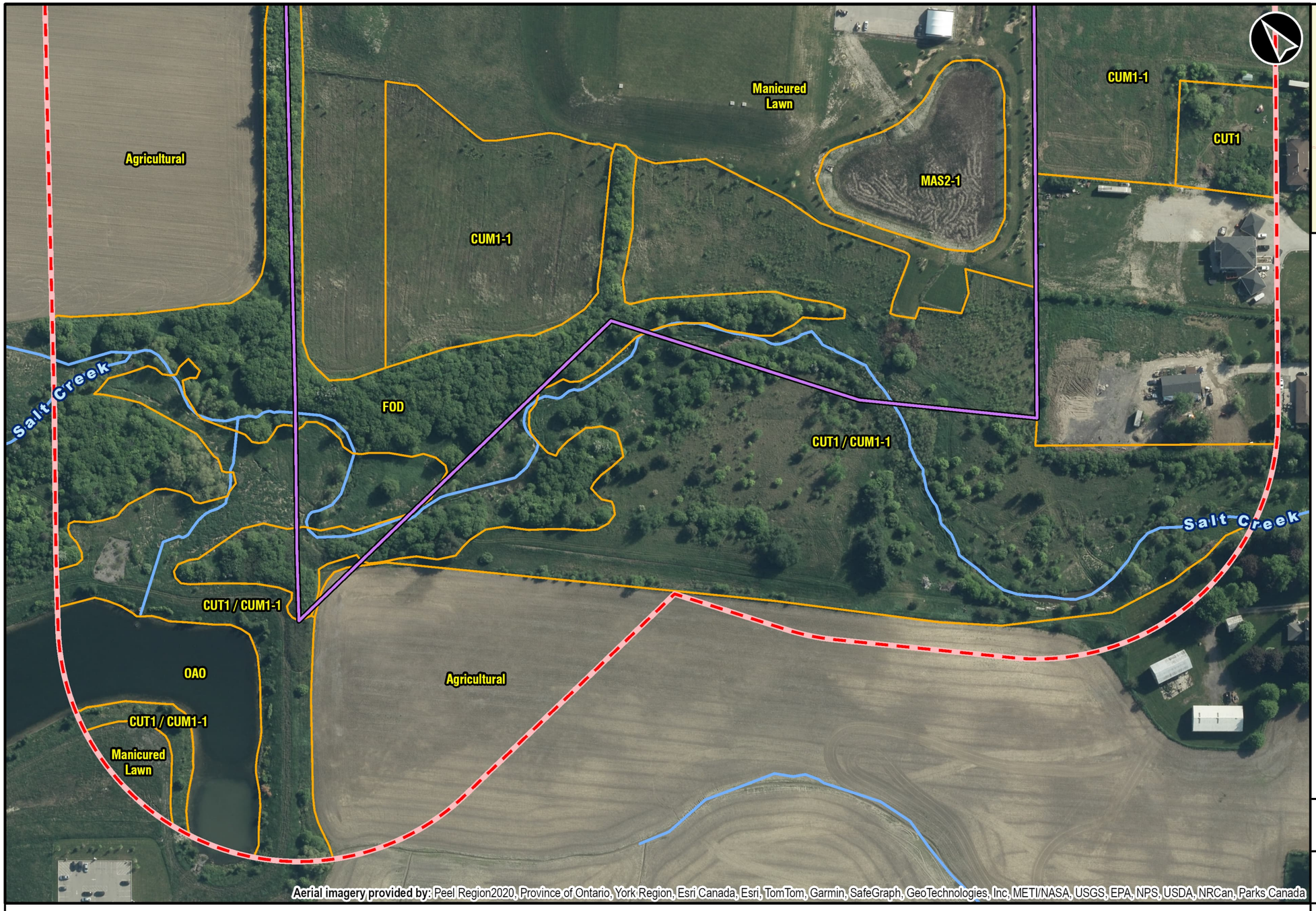
NAD 1983 UTM Zone 17N

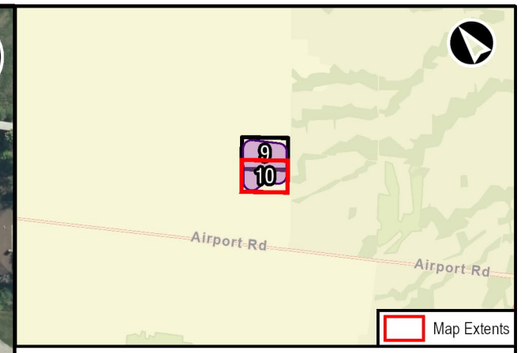
Jan, 2024	1:2,000	**Data Sources:** AECOM, MMAH, MECP, Region of Peel
P:60646784	Rev:00	

AECOM

Figure 1-09

Project Location: C:\Users\wong114\OneDrive - AECOM\Documents\AECOM GIS Projects\GIS Projects\60646784 Peel Snow Storage Facility\Data\PRJ-60646784-PeelSnow.aprx Layout: ECO - Vegetation Communities
Date Saved: 2024-01-14 11:41:41 User: Hongli.H





Legend

- Study Area (120 m)
- Potential Snow Storage Property Boundary
- Watercourse
- Vegetation Communities

ELC Code Description

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

CUT1: Mineral Cultural Thicket

CUT1 / CUM1-1: Mineral Cultural Thicket / Mineral Cultural Dry-Moist Old FIeld Meadow Complex

FOD: Deciduous Forest

MAS2-1: Cattail Mineral Shallow Marsh Type

OAO: Open Aquatic

Snow Storage Site Analysis and Conceptual Design Project 13-4007

Vegetation Communities - Site:6 Tullamore Reservoir and Pumping Station

0 20 40 80 120 M

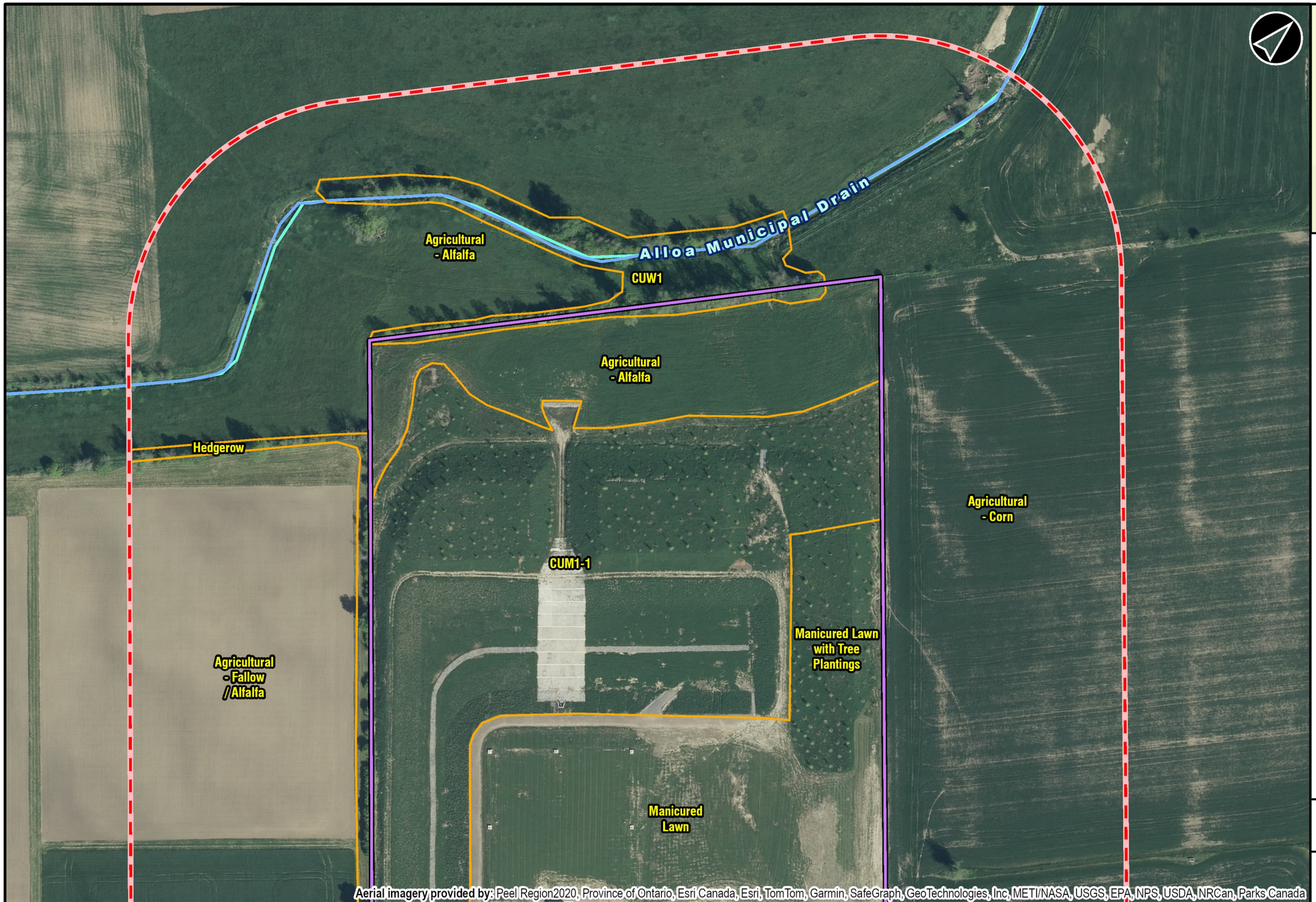
NAD 1983 UTM Zone 17N

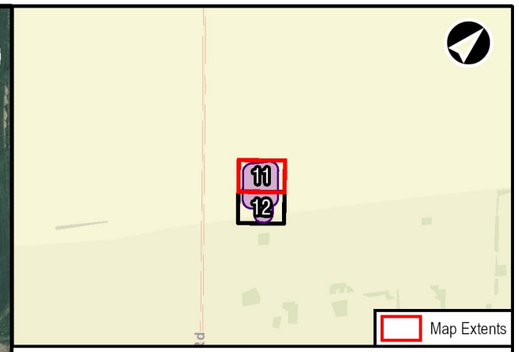
Jan, 2024	1:2,000	Data Sources: AECOM, MMAH, MECP, Region of Peel
P:60646784	Rev:00	

AECOM

Figure 1-10

Project Location: C:\Users\wong14\OneDrive - AECOM\Documents\AECOM GIS Projects\GIS Projects\60646784 Peel Snow Storage Facility\Data\PRJ-60646784-PeelSnow.aprx Layout: ECO - Vegetation Communities
Date Saved: 2024/01/14 11:41 PM User: Wong14





Legend

- Study Area (120 m)
- Potential Snow Storage Property Boundary
- Watercourse
- Constructed Drain
- Vegetation Communities

ELC Code Description

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

CUW1: Mineral Cultural Woodland Type

Snow Storage Site Analysis and Conceptual Design Project 13-4007

Vegetation Communities - Site:9
Alloa Reservoir and Pumping Station

0 20 40 80 120 M

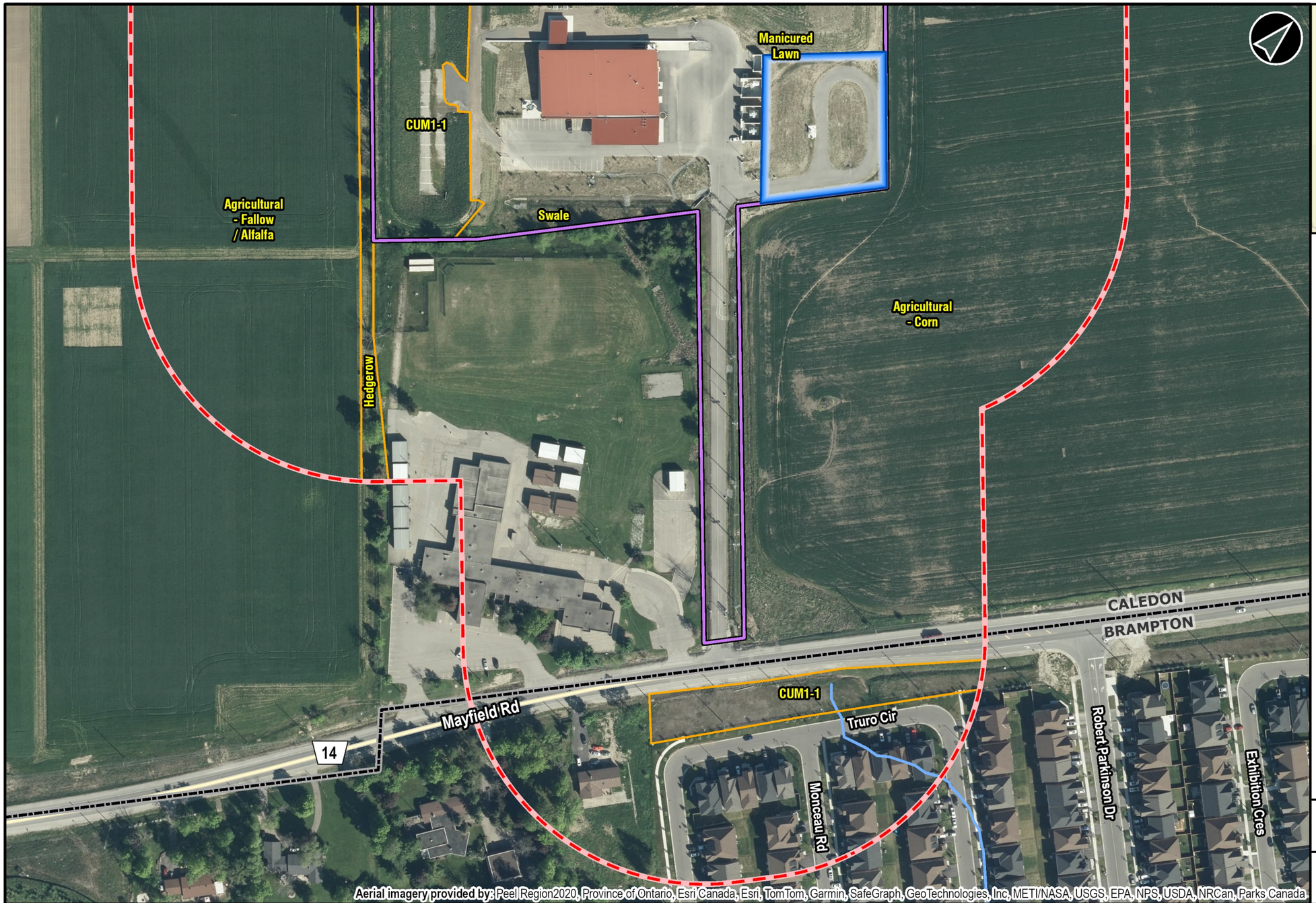
NAD 1983 UTM Zone 17N

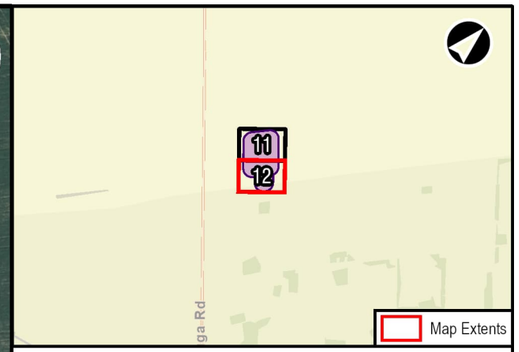
Jan, 2024	1:2,000	**Data Sources:** AECOM, MMAH, MECP, Region of Peel
P:60646784	Rev:00	

AECOM

Figure 1-11

Project Location: C:\Users\wong14\OneDrive - AECOM\Documents\AECOM GIS Projects\GIS Projects\60646784 Peel Snow Storage Facility\Data\PRJ-60646784-PeelSnow.aprx Layout: ECO - Vegetation Communities
Date Saved: 2024/01/16 14:16 User: Wong14





Legend

- Study Area (120 m)
- Potential Snow Storage Area
- Potential Snow Storage Property Boundary
- Municipal Boundary
- District, County, or Regional Road
- Watercourse
- Vegetation Communities

ELC Code Description

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

Snow Storage Site Analysis and Conceptual Design Project 13-4007

Vegetation Communities - Site:9
Alloa Reservoir and Pumping Station

0 20 40 80 120 M

NAD 1983 UTM Zone 17N

Jan, 2024	1:2,000	Data Sources: AECOM, MMAH, MECP, Region of Peel
P:60646784	Rev:00	

AECOM

Figure 1-12

Project Location: C:\Users\wong114\OneDrive - AECOM\Documents\AECOM GIS Projects\GIS Projects\60646784 Peel Snow Storage Facility\Data\PRJ-60646784-PeelSnow.aprx Layout: ECO - Vegetation Communities
Date Saved: 2024-01-12 2:37 PM User: Wong114

Appendix B

Photographic Log

AECOM

Photographic Log

Client Name:	Report Name	Project No.
Region of Peel	Natural Environment Report Snow Storage Sites Analysis and Conceptual Design	60646784

Photo No.	Date
1	9/23/2021

Direction Photo Taken: South

Description

Site 1

The Potential Snow Storage Area consisted of Mineral Cultural Meadow (CUM1-1). Surrounding area is comprised of streetscapes.

Photo No.	Date
2	9/23/2021

Direction Photo Taken: Southwest

Description

Site 1

The Potential Snow Storage Area consisted of Mineral Cultural Meadow (CUM1-1). Surrounding area is comprised of streetscapes.

Photographic Log

Client Name:	Report Name	Project No.
Region of Peel	Natural Environment Report Snow Storage Sites Analysis and Conceptual Design	60646784

Photo No.	Date
3	9/23/2021

Direction Photo Taken

West

Description

Site 3

The Potential Snow Storage Area consisted of Mineral Cultural Meadow (CUM1-1). Surrounding area is comprised of agricultural fields and manicured lawns.

Photo No.	Date
4	9/23/2021

Direction Photo Taken

South

Description

Site 3

The Dry-Fresh Oak-Hickory Deciduous Forest Type (FOD2-3) and Provincially Significant Wetland within the forest was south of the Potential Snow Storage Area.

Photographic Log

Client Name:	Report Name	Project No.
Region of Peel	Natural Environment Report Snow Storage Sites Analysis and Conceptual Design	60646784

Photo No.	Date
5	10/15/2021

Direction Photo Taken

South

Description

Site 5

Agricultural soy field and manicured lawn adjacent to the proposed snow storage area.

Photo No.	Date
6	9/15/2021

Direction Photo Taken

South

Description

Site 5

The Potential Snow Storage Area has potential to drain towards the creek, which was adjacent the agricultural soy field.

Photographic Log

Client Name:	Report Name	Project No.
Region of Peel	Natural Environment Report Snow Storage Sites Analysis and Conceptual Design	60646784

Photo No.	Date
7	9/23/2021

Direction Photo Taken

North

Description

Site 6

The Potential Snow Storage Area consisted of manicured lawn with planted trees.

Photo No.	Date
8	9/23/2021

Direction Photo Taken

Northeast

Description

Site 6

A vegetated swale was adjacent to the Potential Snow Storage Area

AECOM

Photographic Log

Client Name:	Report Name	Project No.
Region of Peel	Natural Environment Report Snow Storage Sites Analysis and Conceptual Design	60646784

Photo No.	Date
9	9/23/2021

Direction Photo Taken

North

Description

Site 9

The Potential Snow Storage Area consists of mowed lawn.

Photo No.	Date
10	9/23/2021

Direction Photo Taken

North

Description

Site 9

The Potential Snow Storage Area consists of mowed lawn.

Appendix C

Plant List

Appendix C. Site 1 Plant List

BOTANICAL NAME		COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL RANK	LOCAL STATUS TRCA	INVASIVE SPECIES ONTARIO	CUM1-1
Reference									
DICOTYLEDONS		**DICOTS**							X
Apiaceae		**Carrot or Parsley Family**							X
Daucus	*carota*	Wild Carrot		5	-2	SNA	L+		X
Apocynaceae		**Dogbane Family**							X
Asclepias	*syriaca*	Common Milkweed	0	5		S5	L5		X
Asteraceae		**Composite or Aster Family**							X
Arctium	*minus*	Common Burdock		3	-2	SE5	L+		X
Symphyotrichum	*ericoides*	Heath Aster	4	3		S5			X
Symphyotrichum	*lateriflorum*	Calico Aster	3	0		S5			X
Symphyotrichum	*novae-angliae*	New England Aster	2	-3		S5			X
Leucanthemum	*vulgare*	Ox-eye Daisy		5	-1	SE5			X
Cichorium	*intybus*	Chicory		5	-1	SE5			X
Cirsium	*arvense*	Canada Thistle		3	-1	SE5		1	X
Solidago	*altissima*	Tall Goldenrod	1	3		S5			X
Solidago	*nemoralis*	Gray Goldenrod				S5			X
Taraxacum	*officinale*	Common Dandelion		3	-2	SE5			X
Tussilago	*farfara*	Coltsfoot		3	-2	SE5			X
Elaeagnaceae		**Oleaster Family**							X
Elaeagnus	*angustifolia*	Russian Olive		4	-1	SE3		3	X
Fabaceae		**Pea Family**							X
Securigera	*varia*	Crown-vetch		5	-2	SE5		1	X
Lotus	*corniculatus*	Bird's-foot Trefoil		1	-2	SE5		2	X
Rhamnaceae		**Buckthorn Family**							X
Rhamnus	*cathartica*	Common Buckthorn		3	-3	SE5		1	X
Solanaceae		**Nightshade Family**							X
Solanum	*dulcamara*	Bittersweet Nightshade		0	-2	SE5		3	X
Vitaceae		**Grape Family**							X
Vitis	*riparia*	Riverbank Grape	0	-2		S5			X
MONOCOTYLEDONS		**MONOCOTS**							X
Asparagaceae		**Asparagus Family**							X
Asparagus	*officinalis*	Garden Asparagus		3	-1	SE5			X
Poaceae		**Grass Family**							X
Phalaris	*arundinacea*	Reed Canary Grass	0	-4		S5			X
Phragmites	*australis*	Common Reed	0	-4		S4?		1	X
Phragmites	*australis ssp. americanus*	American Reed				S4?			X
Poa	*pratensis ssp. alpigena*	Kentucky Blue Grass				S4S5			X

FLORISTIC SUMMARY & ASSESSMENT			
Species Diversity			
Total Species:		**21**	
Native Species:		**8**	38.10%
Exotic Species		**13**	61.90%
Total Taxa in Region (List Region, Source)		10000	
% Regional Taxa Recorded		0.21%	
Regionally Significant Species		0	
S1-S3 Species		0	
S4 Species		0	
S5 Species		8	
Co-efficient of Conservatism and Floral Quality Index			
Co-efficient of Conservatism (CC) (average)		**1.25**	
CC 0 to 3	*lowest sensitivity*	7	87.50%
CC 4 to 6	*moderate sensitivity*	1	12.50%
CC 7 to 8	*high sensitivity*	0	0.00%
CC 9 to 10	*highest sensitivity*	0	0.00%
Floral Quality Index (FQI)		**3.54**	
Presence of Weedy & Invasive Species			
mean weediness		**-1.69**	
weediness = -1	*low potential invasiveness*	5	38.46%
weediness = -2	*moderate potential invasiveness*	7	53.85%
weediness = -3	*high potential invasiveness*	1	7.69%
Presence of Wetland Species			
average wetness value		**1.95**	
upland		5	23.81%
facultative upland		9	42.86%
facultative		3	14.29%
facultative wetland		4	19.05%
obligate wetland		0	0.00%

Appendix C. Site 3 Plant List

BOTANICAL NAME		COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL RANK	LOCAL STATUS TRCA	CUM1-1	MAS2-1	FOD2
Reference										
DICOTYLEDONS		**DICOTS**						X	X	X
Asteraceae		**Composite or Aster Family**						X		
Arctium	*minus*	Common Burdock		3	-2	SE5	L+	X		
Symphyotrichum	*ericoides*	Heath Aster	4	3		S5		X		
Hieracium	*aurantiacum*	Orange Hawkweed		5	-2	SE5		X		
Dipsacaceae		**Teasel Family**						X		
Dipsacus	*fullonum*	Fuller's Teasel		5	-1	SE5		X		
Fagaceae		**Beech Family**								X
Fagus	*grandifolia*	American Beech	6	3		S4				X
Quercus	*rubra*	Red Oak	6	3		S5				X
Juglandaceae		**Walnut Family**								X
Carya	*ovata*	Shagbark Hickory	6	3		S5				X
Malvaceae		**Mallow Family**								X
Tilia	*americana*	American Basswood	4	3		S5				X
Oleaceae		**Olive Family**								X
Fraxinus	*pennsylvanica*	Green Ash	3	-3		S4				X
Rhamnaceae		**Buckthorn Family**								X
Rhamnus	*cathartica*	Common Buckthorn		3	-3	SE5				X
Salicaceae		**Willow Family**						X	X	
Salix	*sp.*	Willow species						X	X	
Salix	*amygdaloides*	Peach-leaved Willow	6	-3		S5			X	
Salix	*discolor*	Pussy Willow	3	-3		S5		X	X	
Sapindaceae		**Soapberry Family**								X
Acer	*rubrum*	Red Maple	4	0		S5				X
Acer	*saccharum*	Sugar Maple	4	3		S5				X
MONOCOTYLEDONS		**MONOCOTS**						X	X	X
Typhaceae		**Cattail Family**						X		
Typha	*angustifolia*	Narrow-leaved Cattail	3	-5		SE5		X		

FLORISTIC SUMMARY & ASSESSMENT			
Species Diversity			
Total Species:		**15**	
Native Species:		**11**	73.33%
Exotic Species		**4**	26.67%
Total Taxa in Region (List Region, Source)		10000	
% Regional Taxa Recorded		0.15%	
Regionally Significant Species		0	
S1-S3 Species		0	
S4 Species		2	
S5 Species		8	
Co-efficient of Conservatism and Floral Quality Index			
Co-efficient of Conservatism (CC) (average)		**4.45**	
CC 0 to 3	*lowest sensitivity*	3	27.27%
CC 4 to 6	*moderate sensitivity*	8	72.73%
CC 7 to 8	*high sensitivity*	0	0.00%
CC 9 to 10	*highest sensitivity*	0	0.00%
Floral Quality Index (FQI)		**14.77**	
Presence of Weedy & Invasive Species			
mean weediness		**-2.00**	
weediness = -1	*low potential invasiveness*	1	25.00%
weediness = -2	*moderate potential invasiveness*	2	50.00%
weediness = -3	*high potential invasiveness*	1	25.00%
Presence of Wetland Species			
average wetness value		**1.33**	
upland		2	13.33%
facultative upland		8	53.33%
facultative		1	6.67%
facultative wetland		3	20.00%
obligate wetland		1	6.67%

Appendix C. Site 5 Plant List

BOTANICAL NAME		COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL RANK	LOCAL STATUS TRCA	CUM1	MAM3-2	MAS2-1
Reference								X		
GYMNOSPERMS		**CONIFERS**						X		
Cupressaceae		**Cedar Family**						X		
Thuja	*occidentalis*	Eastern White Cedar	4	-3		S5	L5	X		
Pinaceae		**Pine Family**						X		
Larix	*laricina*	Tamarack	7	-3		S5	L3	X		
Picea	*rubens*	Red Spruce	7	3		S3		X		
Pinus	*strobus*	Eastern White Pine	4	3		S5	L4	X		
DICOTYLEDONS		**DICOTS**						X	X	
Adoxaceae		**Moschatel Family**								
Sambucus	*canadensis*	American Black Elderberry	5	-3		S5	L5			
Viburnum	*lentago*	Nannyberry	4	0		S5	L5		X	
Apiaceae		**Carrot or Parsley Family**						X		
Daucus	*carota*	Wild Carrot		5	-2	SNA	L+	X		
Apocynaceae		**Dogbane Family**							X	
Asclepias	*syriaca*	Common Milkweed	0	5		S5	L5		X	
Asteraceae		**Composite or Aster Family**						X	X	
Arctium	*minus*	Common Burdock		3	-2	SE5	L+		X	
Symphyotrichum	*ericoides*	Heath Aster	4	3		S5		X		
Symphyotrichum	*novae-angliae*	New England Aster	2	-3		S5		X		
Centaurea	*stoebe*	Spotted Knapweed				SE5			X	
Leucanthemum	*vulgare*	Ox-eye Daisy		5	-1	SE5		X		
Cichorium	*intybus*	Chicory		5	-1	SE5		X		
Cirsium	*arvense*	Canada Thistle		3	-1	SE5		X		
Solidago	*altissima*	Tall Goldenrod	1	3		S5		X		
Solidago	*canadensis var. hargeri*	Canada Goldenrod				S4?		X		
Taraxacum	*officinale*	Common Dandelion		3	-2	SE5		X		
Betulaceae		**Birch Family**							X	
Alnus	*incana*	Speckled Alder				S5			X	
Betula	*papyrifera*	Paper Birch	2	2		S5			X	
Cornaceae		**Dogwood Family**							X	
Cornus	*alternifolia*	Alternate-leaved Dogwood	6	5		S5		X		
Cornus	*amomum*	Silky Dogwood	5	-4		S5			X	
Cornus	*sericea*	Red-osier Dogwood	2	-3		S5		X	X	
Fabaceae		**Pea Family**						X		
Securigera	*varia*	Crown-vetch		5	-2	SE5		X		
Gymnocladus	*dioicus*	Kentucky Coffee-tree	6	5		S2		X		
Medicago	*lupulina*	Black Medick		1	-1	SE5		X		
Medicago	*sativa ssp. sativa*	Alfalfa		5	-1	SE5		X		
Melilotus	*albus*	White Sweet-clover		3	-3	SE5		X		
Vicia	*cracca*	Cow Vetch		5	-1	SE5		X		
Fagaceae		**Beech Family**						X		
Quercus	*alba*	White Oak	6	3		S5		X		
Ranunculaceae		**Buttercup Family**							X	
Caltha	*natans*	Floating Marsh-marigold				S2			X	
Rhamnaceae		**Buckthorn Family**							X	
Rhamnus	*cathartica*	Common Buckthorn		3	-3	SE5			X	
Salicaceae		**Willow Family**						X		
Salix	*discolor*	Pussy Willow	3	-3		S5		X		
Sapindaceae		**Soapberry Family**						X	X	
Acer	*rubrum*	Red Maple	4	0		S5			X	
Acer	*saccharum*	Sugar Maple	4	3		S5		X		
Acer X	*freemanii*	Freeman's Maple	6	-5		SNA			X	
MONOCOTYLEDONS		**MONOCOTS**						X	X	
Scirpus	*atrovirens*	Green Bulrush	3	-5		S5		X		X
Poaceae		**Grass Family**						X	X	X
Phalaris	*arundinacea*	Reed Canary Grass	0	-4		S5		X	X	X
Phragmites	*australis*	Common Reed	0	-4		S4?		X		
Typhaceae		**Cattail Family**						X		X
Typha	*angustifolia*	Narrow-leaved Cattail	3	-5		SE5		X	X	X

FLORISTIC SUMMARY & ASSESSMENT			
Species Diversity			
Total Species:		**36**	
Native Species:		**24**	66.67%
Exotic Species		**12**	33.33%
Total Taxa in Region (List Region, Source)		10000	
% Regional Taxa Recorded		0.36%	
Regionally Significant Species		0	
S1-S3 Species		3	
S4 Species		0	
S5 Species		20	
Co-efficient of Conservatism and Floral Quality Index			
Co-efficient of Conservatism (CC) (average)		**3.67**	
CC 0 to 3	*lowest sensitivity*	10	41.67%
CC 4 to 6	*moderate sensitivity*	12	50.00%
CC 7 to 8	*high sensitivity*	2	8.33%
CC 9 to 10	*highest sensitivity*	0	0.00%
Floral Quality Index (FQI)		**17.96**	
Presence of Weedy & Invasive Species			
mean weediness		**-1.67**	
weediness = -1	*low potential invasiveness*	6	50.00%
weediness = -2	*moderate potential invasiveness*	4	33.33%
weediness = -3	*high potential invasiveness*	2	16.67%
Presence of Wetland Species			
average wetness value		**1.00**	
upland		9	25.00%
facultative upland		12	33.33%
facultative		3	8.33%
facultative wetland		9	25.00%
obligate wetland		3	8.33%

Appendix C. Site 6 Plant List

BOTANICAL NAME		COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL RANK	LOCAL STATUS TRCA	INVASIVE SPECIES ONTARIO	CUM1-1	CUT1/ CUM1-1
Reference										
GYMNOSPERMS		**CONIFERS**								
Pinaceae		**Pine Family**								x
Larix	*laricina*	Tamarack	7	-3		S5	L3			r
DICOTYLEDONS		**DICOTS**							x	x
Apiaceae		**Carrot or Parsley Family**							x	
Daucus	*carota*	Wild Carrot		5	-2	SNA	L+		x	
Apocynaceae		**Dogbane Family**							x	
Asclepias	*syriaca*	Common Milkweed	0	5		S5	L5		x	
Vincetoxicum	*rossicum*	Dog-strangling Vine		5	-3	SNA	L+	1	x	
Asteraceae		**Composite or Aster Family**							x	
Arctium	*minus*	Common Burdock		3	-2	SE5	L+		o	
Symphyotrichum	*ericoides*	Heath Aster	4	3		S5			a	
Symphyotrichum	*novae-angliae*	New England Aster	2	-3		S5			o	
Centaurea	*jacea*	Brown Knapweed		5	-1	SE5			x	
Centaurea	*stoebe*	Spotted Knapweed				SE5		3	o	
Rudbeckia	*hirta*	Black-eyed Susan	0	3		S5			x	
Solidago	*altissima*	Tall Goldenrod	1	3		S5			a	
Tussilago	*farfara*	Coltsfoot		3	-2	SE5			x	
Betulaceae		**Birch Family**								x
Alnus	*incana ssp. rugosa*	Speckled Alder	6	-5		S5		4		o
Cornaceae		**Dogwood Family**							x	x
Cornus	*racemosa*	Gray Dogwood	2	-2		S5			x	o
Cornus	*sericea*	Red-osier Dogwood	2	-3		S5			x	o
Dipsacaceae		**Teasel Family**							x	
Dipsacus	*fullonum*	Fuller's Teasel		5	-1	SE5		3	x	
Fabaceae		**Pea Family**							x	
Lotus	*corniculatus*	Bird's-foot Trefoil		1	-2	SE5		2	x	
Medicago	*lupulina*	Black Medick		1	-1	SE5		4	x	
Vicia	*cracca*	Cow Vetch		5	-1	SE5		2	x	
Hypericaceae		**St. John's-wort Family**							s	
Hypericum	*perforatum*	Common St. John's-wort		5	-3	SE5		4	x	
Lamiaceae		**Mint Family**							x	
Monarda	*fistulosa*	Wild Bergamot				S5			x	
Lythraceae		**Loosestrife Family**							x	
Lythrum	*salicaria*	Purple Loosestrife		-5	-3	SE5		1	x	
Oleaceae		**Olive Family**							x	x
Fraxinus	*pennsylvanica*	Green Ash	3	-3		S4			x	x
Rhamnaceae		**Buckthorn Family**							x	x
Rhamnus	*cathartica*	Common Buckthorn		3	-3	SE5		1	x	x
Salicaceae		**Willow Family**							x	x
Populus	*tremuloides*	Trembling Aspen	2	0		S5			x	o
Salix	*discolor*	Pussy Willow	3	-3		S5			x	a
Salix	*fragilis*	Crack Willow		-1	-3	SE		3	x	r
Scrophulariaceae		**Figwort Family**							x	
Verbascum	*thapsus*	Common Mullein		5	-2	SE5			x	
MONOCOTYLEDONS		**MONOCOTS**							x	x
Poaceae		**Grass Family**							x	
Phleum	*pratense*	Timothy		3	-1	SE5			x	
Phragmites	*australis*	Common Reed	0	-4		S4?		1	x	
Poa	*pratensis ssp. pratensis*	Kentucky Blue Grass	0	1		SE5		2	x	
Typhaceae		**Cattail Family**							x	
Typha	*angustifolia*	Narrow-leaved Cattail	3	-5		SE5			x	

FLORISTIC SUMMARY & ASSESSMENT			
Species Diversity			
Total Species:		**30**	
Native Species:		**15**	50.00%
Exotic Species		**15**	50.00%
Total Taxa in Region (List Region, Source)		10000	
% Regional Taxa Recorded		0.30%	
Regionally Significant Species		enter manually	
S1-S3 Species		0	
S4 Species		1	
S5 Species		12	
Co-efficient of Conservatism and Floral Quality Index			
Co-efficient of Conservatism (CC) (average)		**2.33**	
CC 0 to 3	*lowest sensitivity*	12	80.00%
CC 4 to 6	*moderate sensitivity*	2	13.33%
CC 7 to 8	*high sensitivity*	1	6.67%
CC 9 to 10	*highest sensitivity*	0	0.00%
Floral Quality Index (FQI)		**9.04**	
Presence of Weedy & Invasive Species			
mean weediness		**-2.00**	
weediness = -1	*low potential invasiveness*	5	33.33%
weediness = -2	*moderate potential invasiveness*	5	33.33%
weediness = -3	*high potential invasiveness*	5	33.33%
Presence of Wetland Species			
average wetness value		**0.90**	
upland		8	26.67%
facultative upland		7	23.33%
facultative		5	16.67%
facultative wetland		7	23.33%
obligate wetland		3	10.00%

Appendix C. Site 7 Plant List

BOTANICAL NAME		COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL RANK	LOCAL STATUS TRCA	INVASIVE SPECIES ONTARIO	CUM1-1	CUW1	MAS2-1
Reference									x		
DICOTYLEDONS		**DICOTS**							x		
Amaranthaceae		**Amaranth Family**							x		
Chenopodium	*album*	Lamb's Quarters		3		SNA	L+		x		
Anacardiaceae		**Sumac or Cashew Family**							x	x	
Rhus	*typhina*	Staghorn Sumac	1	3		S5	L5		x	x	
Apocynaceae		**Dogbane Family**							x		
Asclepias	*syriaca*	Common Milkweed	0	5		S5	L5		x		
Asteraceae		**Composite or Aster Family**							x		
Symphyotrichum	*ericoides*	Heath Aster	4	3		S5			x		
Symphyotrichum	*novae-angliae*	New England Aster	2	-3		S5			x		
Cirsium	*arvense*	Canada Thistle		3	-1	SE5		1	x		
Cirsium	*vulgare*	Bull Thistle		3	-1	SE5			x		
Solidago	*altissima*	Tall Goldenrod	1	3		S5			x	x	
Brassicaceae		**Mustard Family**							x		
Alliaria	*petiolata*	Garlic Mustard		0	-3	SE5		1	x		
Cornaceae		**Dogwood Family**							x		
Cornus	*racemosa*	Gray Dogwood	2	-2		S5			x		
Dipsacaceae		**Teasel Family**							x		
Dipsacus	*fullonum*	Fuller's Teasel		5	-1	SE5		3	x		
Elaeagnaceae		**Oleaster Family**							x	x	
Elaeagnus	*angustifolia*	Russian Olive		4	-1	SE3		3	x	x	
Fabaceae		**Pea Family**							x	x	
Robinia	*pseudoacacia*	Black Locust		4	-3	SE5		2	x	x	
Lythraceae		**Loosestrife Family**							x		
Lythrum	*salicaria*	Purple Loosestrife		-5	-3	SE5		1	x		
Oleaceae		**Olive Family**								x	
Fraxinus	*pennsylvanica*	Green Ash	3	-3		S4				x	
Plantaginaceae		**Plantain Family**							x		
Linaria	*vulgaris*	Butter-and-eggs		5	-1	SE5		4	x		
Rhamnaceae		**Buckthorn Family**							x		
Rhamnus	*alnifolia*	Alder-leaved Buckthorn	7	-5		S5					
Rhamnus	*cathartica*	Common Buckthorn		3	-3	SE5		1	x	x	
Rosaceae		**Rose Family**							x		
Rosa	*multiflora*	Multiflora Rose		3	-3	SE5		1	x		
Solanum	*dulcamara*	Bittersweet Nightshade		0	-2	SE5		3	x		
Vitaceae		**Grape Family**							x		
Parthenocissus	*quinquefolia*	Virginia Creeper	6	1		S4?			x		
MONOCOTYLEDONS		**MONOCOTS**							x		x
Poaceae		**Grass Family**							x	x	
Phalaris	*arundinacea*	Reed Canary Grass	0	-4		S5			x	x	
Phragmites	*australis*	Common Reed	0	-4		S4?		1	x		
Poa	*pratensis ssp. alpigena*	Kentucky Blue Grass				S4S5			x	x	
Typhaceae		**Cattail Family**									x
Typha	*angustifolia*	Narrow-leaved Cattail	3	-5		SE5					x

FLORISTIC SUMMARY & ASSESSMENT				
Species Diversity				
Total Species:		**23**		
Native Species:		**12**	52.17%	
Exotic Species		**11**	47.83%	
Total Taxa in Region (List Region, Source)		10000		
% Regional Taxa Recorded		0.23%		
Regionally Significant Species		enter manually		
S1-S3 Species		0		
S4 Species		1		
S5 Species		8		
Co-efficient of Conservatism and Floral Quality Index				
Co-efficient of Conservatism (CC) (average)		**2.42**		
CC 0 to 3	*lowest sensitivity*	9	75.00%	
CC 4 to 6	*moderate sensitivity*	2	16.67%	
CC 7 to 8	*high sensitivity*	1	8.33%	
CC 9 to 10	*highest sensitivity*	0	0.00%	

Floral Quality Index (FQI)		**8.37**		
Presence of Weedy & Invasive Species				
mean weediness		**-2.00**		
weediness = -1	*low potential invasiveness*	5	45.45%	
weediness = -2	*moderate potential invasiveness*	1	9.09%	
weediness = -3	*high potential invasiveness*	5	45.45%	
Presence of Wetland Species				
average wetness value		**0.71**		
upland		3	13.04%	
facultative upland		10	43.48%	
facultative		3	13.04%	
facultative wetland		5	21.74%	
obligate wetland		3	13.04%	

Appendix C. Site 9 Plant List

BOTANICAL NAME		COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL RANK	LOCAL STATUS TRCA	INVASIVE SPECIES ONTARIO	CUM1-1	CUW1-1
Reference										
DICOTYLEDONS		**DICOTS**							x	x
Apiaceae		**Carrot or Parsley Family**							x	
Daucus	*carota*	Wild Carrot		5	-2	SNA	L+		x	
Apocynaceae		**Dogbane Family**							x	
Vincetoxicum	*rossicum*	Dog-strangling Vine		5	-3	SNA	L+	1	x	
Asteraceae		**Composite or Aster Family**							x	
Symphyotrichum	*ericoides*	Heath Aster	4	3		S5			x	
Symphyotrichum	*novae-angliae*	New England Aster	2	-3		S5			x	
Centaurea	*jacea*	Brown Knapweed		5	-1	SE5			x	
Cichorium	*intybus*	Chicory		5	-1	SE5			x	
Rudbeckia	*hirta*	Black-eyed Susan	0	3		S5			x	
Solidago	*altissima*	Tall Goldenrod	1	3		S5			x	
Solidago	*canadensis var. canadensis*	Canada Goldenrod	1	3		S5			x	
Taraxacum	*officinale*	Common Dandelion		3	-2	SE5			x	
Fabaceae		**Pea Family**							x	
Medicago	*lupulina*	Black Medick		1	-1	SE5		4	x	
Medicago	*sativa ssp. sativa*	Alfalfa		5	-1	SE5		4	x	
Trifolium	*pratense*	Red Clover		2	-2	SE5		4	x	
Trifolium	*repens*	White Clover		2	-1	SE5		4	x	
Monarda	*fistulosa*	Wild Bergamot				S5			x	
Oleaceae		**Olive Family**								x
Fraxinus	*pennsylvanica*	Green Ash	3	-3		S4				x
Oxalidaceae		**Wood Sorrel Family**							x	
Oxalis	*dillenii*	Slender Yellow Wood-sorrel	0	3		S5?			x	
Plantaginaceae		**Plantain Family**							x	
Linaria	*vulgaris*	Butter-and-eggs		5	-1	SE5		4	x	
Rosaceae		**Rose Family**								x
Crataegus	*sp.*	Hawthorn species	4	5						x
MONOCOTYLEDONS		**MONOCOTS**							x	x
Poaceae		**Grass Family**							x	x
Poa	*pratensis ssp. alpigena*	Kentucky Blue Grass				S4S5			x	

FLORISTIC SUMMARY & ASSESSMENT			
Species Diversity			
Total Species:		**18**	
Native Species:		**8**	44.44%
Exotic Species		**10**	55.56%
Total Taxa in Region (List Region, Source)		10000	
% Regional Taxa Recorded		0.18%	
Regionally Significant Species		enter manually	
S1-S3 Species		0	
S4 Species		1	
S5 Species		6	
Co-efficient of Conservatism and Floral Quality Index			
Co-efficient of Conservatism (CC) (average)		**1.88**	
CC 0 to 3	*lowest sensitivity*	6	75.00%
CC 4 to 6	*moderate sensitivity*	2	25.00%
CC 7 to 8	*high sensitivity*	0	0.00%
CC 9 to 10	*highest sensitivity*	0	0.00%
Floral Quality Index (FQI)		**5.30**	
Presence of Weedy & Invasive Species			
mean weediness		**-1.50**	
weediness = -1	*low potential invasiveness*	6	60.00%
weediness = -2	*moderate potential invasiveness*	3	30.00%
weediness = -3	*high potential invasiveness*	1	10.00%
Presence of Wetland Species			
average wetness value		**2.89**	
upland		7	38.89%
facultative upland		8	44.44%
facultative		1	5.56%
facultative wetland		2	11.11%
obligate wetland		0	0.00%

Appendix D

SAR/SOCC Screening

Appendix D. Species at Risk and Species of Conservation Concern Habitat Screening

SAR/ SOCC	Taxonomy	Species	ESA Status	SARA Status	COSEWIC Status	Preferred Habitat[1, 2]	Associated ELC Communities	Source Identifying Species Record	Occurrence Probability of SAR/SOCC within Potential Snow Storage Areas				
									Site 1	Site 3	Site 5	Site 6	Site 9
SAR	Amphibians	Jefferson Salamander *Ambystoma jeffersonianum*	END	END Schedule 1	END	Adults live in moist, loose soil, under logs or in leaf litter. Your best chance of spotting a Jefferson Salamander is in early spring when they travel to woodland ponds to breed. They lay their eggs in clumps attached to underwater vegetation. By midsummer, the larvae lose their gills and leave the pond and head into the surrounding forest. Once in the forest, Jefferson Salamanders spend much of their time underground in rodent burrows, and under rocks and stumps. They feed primarily on insects and worms. Adult Jefferson Salamanders, throughout their range, are found within deciduous or mixed upland forests containing, or adjacent to, suitable breeding ponds. Breeding ponds are normally ephemeral, or vernal, woodland pools that dry in late summer. Terrestrial habitat is in mature woodlands that have small mammal burrows or rock fissures that enable adults to over-winter underground below the frost line.	**FOD** where permanent or temporary ponds or pools are present.	ORAA	No record within Study Area	No record within Study Area	No record within Study Area	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.
SAR	Birds	Acadian Flycatcher *Empidonax virescens*	END	END Schedule 1	END	It is typically found in mature, shady forests with ravines, or in forested swamps with lots of maple and beech trees. The nest is placed near the tip of a lower limb on a tree, and is loosely woven, with strands of plant material hanging down. In Canada, the Acadian Flycatcher nests only in southwestern Ontario, mostly in large forests and forested ravines near the shore of Lake Erie. The Acadian Flycatcher requires large areas of mature undisturbed forest. Most individuals occur in forests more than 40 hectares in size. The species is also considered to be a forest interior species, meaning that it avoids forest edges and build their nests in areas that are more than 100 meters from the forest edge. The bird lives in the understory of woods with a closed canopy. It is often found in well-wooded swamps and ravines. Acadian Flycatchers also occupy dry woods but they usually prefer to hang their nests over water. Prior to the 1800's, the Carolinian area of Ontario would have had abundant suitable habitat for this species. Currently, very little of the forest remains and the remnants are highly fragmented. Throughout the Carolinian Forest region of Ontario, most of the remaining forest patches are very small (less than three hectares) and only an extremely small percentage of them is large enough to meet the species' requirements.	**SWD, FOD** communities that are mature, have a closed canopy, and are of sufficient size.	eBird, OBBA	**Low** No suitable habitat within proposed snow storage area.	No record within Study Area	No record within Study Area	**Low** No suitable habitat within proposed snow storage area.	No record within Study Area
SAR	Birds	Bank Swallow *Riparia riparia*	THR	THR Schedule 1	THR	Bank Swallows nest in burrows in natural and human-made settings where there are vertical faces in silt and sand deposits. Many nests are on banks of rivers and lakes, but they are also found in active sand and gravel pits or former ones where the banks remain suitable. The birds breed in colonies ranging from several to a few thousand pairs. The Bank Swallow breeds in a wide variety of natural and artificial sites with vertical banks, including riverbanks, lake and ocean bluffs, aggregate pits, road cuts, and stock piles of soil. Sand-silt substrates are preferred for excavating nest burrows. Breeding sites tend to be somewhat ephemeral due to the dynamic nature of bank erosion. Breeding sites are often situated near open terrestrial habitat used for aerial foraging (e.g., grasslands, meadows, pastures, and agricultural cropland). Large wetlands are used as communal nocturnal roost sites during post-breeding, migration, and wintering periods.		eBird, OBBA	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.
SAR	Birds	Barn Swallow *Hirundo rustica*	THR	THR Schedule 1	THR	Barn Swallows often live in close association with humans, building their cup-shaped mud nests almost exclusively on human-made structures such as open barns, under bridges, and in culverts. The species is attracted to open structures that include ledges where they can build their nests, which are often re-used from year to year. They prefer unpainted, rough-cut wood, since the mud does not adhere as well to smooth surfaces. Before European colonization, Barn Swallows nested mostly in caves, holes, crevices, and ledges in cliff faces. Following European settlement, they shifted largely to nesting in and on artificial structures, including barns and other outbuildings, garages, houses, bridges, and road culverts. Barn Swallows prefer various types of open habitats for foraging, including grassy fields, pastures, various kinds of agricultural crops, lake and river shorelines, cleared rights-of-way, cottage areas and farmyards, islands, wetlands, and subarctic tundra.	**TPO, CUM1, MAM, MAS, OAO, SAS1, SAM1, SAF1**; containing or adjacent structures that are suitable for nesting.	eBird, OBBA	**Low** No suitable structures within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.

Appendix D. Species at Risk and Species of Conservation Concern Habitat Screening

SAR/ SOCC	Taxonomy	Species	ESA Status	SARA Status	COSEWIC Status	Preferred Habitat[1, 2]	Associated ELC Communities	Source Identifying Species Record	Occurrence Probability of SAR/SOCC within Potential Snow Storage Areas				
									Site 1	Site 3	Site 5	Site 6	Site 9
SAR	Birds	Bobolink *Dolichonyx oryzivorus*	THR	THR Schedule 1	THR	Historically, Bobolinks lived in North American tallgrass prairie and other open meadows. With the clearing of native prairies, Bobolinks moved to living in hayfields. Bobolinks often build their small nests on the ground in dense grasses. Both parents usually tend to their young, sometimes with a third Bobolink helping. Most of this prairie was converted to agricultural land over a century ago, and at the same time the forests of eastern North America were cleared to hayfields and meadows that provided habitat for the birds. Since the conversion of the prairie to cropland and the clearing of the eastern forests, the Bobolink has nested in forage crops (e.g., hayfields and pastures dominated by a variety of species, such as clover, Timothy, Kentucky Bluegrass, and broadleaved plants). The Bobolink also occurs in various grassland habitats including wet prairie, graminoid peatlands, and abandoned fields dominated by tall grasses, remnants of uncultivated virgin prairie (tall-grass prairie), no-till cropland, small-grain fields, restored surface mining sites, and irrigated fields in arid regions. It is generally not abundant in short-grass prairie, Alfalfa fields, or in row crop monocultures (e.g., corn, soybean, wheat), although its use of Alfalfa may vary with region.	**TPO, TPS, CUM1** and **MAM2**.	eBird, NHIC, OBBA	**Low** Meadow is not suitable as it does not meet size requirements.	**Medium** Meadow may provide suitable habitat.	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.
SAR	Birds	Chimney Swift *Chaetura pelagica*	THR	THR Schedule 1	THR	Before European settlement, Chimney Swifts mainly nested on cave walls and in hollow trees or tree cavities in old growth forests. However, due to the land clearing associated with colonization, hollow trees became increasingly rare, which led Chimney Swifts to move into house chimneys. Today, they are more likely to be found in and around urban settlements where they nest and roost (rest or sleep) in chimneys and other manmade structures. It is likely that a small portion of the population continues to use hollow trees. They also tend to stay close to water as this is where the flying insects they eat congregate. The Chimney Swift spends the major part of the day in flight feeding on insects. In the northern part of the breeding range, the Chimney Swift favours sites where the ambient temperature is relatively stable.	**TPO, CUM1, MAM, MAS, OAO, SAS1, SAM1, SAF1** containing or adjacent structures with suitable nesting habitat (i.e. chimneys).	eBird, OBBA	**Low** No structures with suitable chimneys present within Study Area.	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.
SAR	Birds	Eastern Meadowlark *Sturnella magna*	THR	THR Schedule 1	THR	Eastern Meadowlarks breed primarily in moderately tall grasslands, such as pastures and hayfields, but are also found in alfalfa fields, weedy borders of croplands, roadsides, orchards, airports, shrubby overgrown fields, or other open areas. Small trees, shrubs, or fence posts are used as elevated song perches. Eastern Meadowlarks prefer grassland habitats, including native prairies and savannahs, as well as non-native pastures, hayfields, weedy meadows, herbaceous fencerows, and airfields.	**TPO, TPS, CUM1, CUS**, and **MAM2** with elevated song perches.	eBird, NHIC, OBBA	**Low** Meadow is not suitable as it does not meet size requirements.	**Medium** Meadow may provide suitable habitat.	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.
SAR	Birds	Eastern Whip-poor-will *Antrostomus vociferus*	THR	THR Schedule 1	THR	The Eastern Whip-poor-will is usually found in areas with a mix of open and forested areas, such as savannahs, open woodlands, or openings in more mature deciduous, coniferous, and mixed forests. It forages in these open areas and uses forested areas for roosting (resting and sleeping) and nesting. It lays its eggs directly on the forest floor, where its colouring means it will easily remain undetected by visual predators. Whip-poor-will breeding habitat is not dependent upon species composition, but rather on forest structure, although common tree associations in both summer and winter are pine and oak. The species shuns both wide-open spaces and dense forest. It prefers to nest in semi-open forests or patchy forests with clearings, such as barrens or forests that are regenerating following major disturbances. Other necessary breeding habitat elements are thought to involve ground-level vegetation and woodland size. Individuals will often feed in nearby shrubby pastures or wetlands with perches. Areas with decreased light levels where forest canopies are closed are generally not occupied, perhaps because of reduced forage success for this aerial-feeding insectivore.	**TPS, TPW, CUW, FOD, FOC** and **FOM** where open areas are present.	eBird, OBBA	No record within Study Area	**Low** No suitable habitat within proposed snow storage area.	No record within Study Area	No record within Study Area	**Low** No suitable habitat within proposed snow storage area.

Appendix D. Species at Risk and Species of Conservation Concern Habitat Screening

SAR/ SOCC	Taxonomy	Species	ESA Status	SARA Status	COSEWIC Status	Preferred Habitat[1, 2]	Associated ELC Communities	Source Identifying Species Record	Occurrence Probability of SAR/SOCC within Potential Snow Storage Areas				
									Site 1	Site 3	Site 5	Site 6	Site 9
SAR	Birds	Henslow's Sparrow *Centronyx henslowii*	END	END Schedule 1	END	In Ontario, the Henslow's Sparrow lives in open fields with tall grasses, flowering plants, and a few scattered shrubs. It has also been found in abandoned farm fields, pastures, and wet meadows. It tends to avoid fields that have been grazed, burned, or are crowded with trees and shrubs. It prefers extensive, dense, tall grasslands where it can more easily conceal its small ground nest. Henslow's Sparrows occupy open fields. The vegetation of these areas includes tall grasses that are interspersed with tall herbaceous plants, or shrubby species. It prefers undisturbed areas with dense living grasses and a dense thatch of dead grasses. The species may occupy hayfields, but if the hay is cut early, the nests are destroyed and the resulting losses are severe. Only areas that remain undisturbed for several years appear to be more successfully colonized. The precise amount of remaining suitable habitat in Ontario is unknown.	**TPO, CUM**, and **MAM** that are a minimum of 30 ha in size with vegetation that is over 30cm in height with a thick thatch layer and a lack of emergent woody vegetation.	NHIC	No record within Study Area	No record within Study Area	No record within Study Area	No record within Study Area	No record within Study Area
SAR	Birds	Prothonotary Warbler *Protonotaria citrea*	END	END Schedule 1	END	The Prothonotary is the only warbler in eastern North America that nests in tree cavities, where it typically lays four to six eggs on a cushion of moss, leaves, and plant fibres. In Canada, this species breeds only in deciduous swamp forests or riparian floodplain forests. The forests it occupies are typically dominated by Silver Maple, ash, and Yellow Birch. The species nests in naturally formed tree cavities or cavities excavated by other species, mainly Downy Woodpeckers and chickadees. It favours small, shallow holes situated at low heights in dead or dying trees, in which it builds a nest lined with moss. Nests are typically situated over standing or slow-moving water. Artificial nest boxes are also readily accepted and perhaps even preferred. Males often build one or more incomplete "dummy" nests. Females usually select one of these to complete, but they may also build an entirely new nest on their own. In any case, several suitable cavities appear to be required in each territory to accommodate all of these nests.	**FOD** and **SWD** with standing water.	eBird, OBBA	No record within Study Area	No record within Study Area	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.	No record within Study Area
SAR	Fish	Redside Dace *Clinostomus elongatus*	END	END Schedule 1	END	The Redside Dace is found in pools and slow-moving areas of small streams and headwaters with a gravel bottom. They are generally found in areas with overhanging grasses and shrubs, and can leap up to 10 cm out of the water to catch insects. During spawning, they can be found in shallow parts of streams, which are also popular spawning areas for other minnow species. The Redside Dace inhabits areas where the bottom is composed of rocks, gravel or sand; and where the water is clear.	**OAO, SA** stream communities with gravel substrates and overhanging grasses and shrubs.	NHIC, DFO	No record within Study Area	**Low** None observed. Channel is ephemeral to intermittent, may only have seasonal connectivity to downstream. Species no longer present according to DFO SAR Mapping.	**Medium** Contributing redside dace habitat may be present within Lindsay Creek, located downstream of the Potential Snow Storage Area.	**Medium** No suitable habitat within proposed snow storage area. Although Redside Dace habitat is not within the Potential Snow Storage Area, the stormwater management system directs flow to Salt Creek where suitable habitat is present.	No record within Study Area
SAR	Insects	Rapids Clubtail *Phanogomphus quadricolor*	END	END Schedule 1	END	The Rapids Clubtail typically inhabits medium to large streams and rivers with mostly wooded shorelines. The waters that it inhabits are typically clear and cool, with gravel and cobble riffles and projecting boulders interspersed with quiet, muddy pools. Alternating riffles and pools are probably very important for the species, since the females lay their eggs over the rapids and the eggs or newly hatched nymphs are then carried downstream to the pools. The nymphs live in these quiet, muddy pools. The adult males perch on rocks in the rapids. Shoreline rocks or vegetation may also be used, particularly where midstream boulders are absent. Males are quite territorial and make short flights over the water, repeatedly returning to the same perch. The adult females inhabit forests along the riverbanks, moving to the rapids when they are ready to mate. The decline of certain species of mayflies and other aquatic insects that are now limited to only a few short stretches of the Credit and Humber rivers is indicative of the habitat deterioration along these waterways.		iNaturalist	No record within Study Area	No record within Study Area	**Low** Stream is not suitable habitat.	No record within Study Area	No record within Study Area

Appendix D. Species at Risk and Species of Conservation Concern Habitat Screening

SAR/ SOCC	Taxonomy	Species	ESA Status	SARA Status	COSEWIC Status	Preferred Habitat[1, 2]	Associated ELC Communities	Source Identifying Species Record	Occurrence Probability of SAR/SOCC within Potential Snow Storage Areas				
									Site 1	Site 3	Site 5	Site 6	Site 9
SAR	Mammals	Little Brown Myotis (Little Brown Bat) *Myotis lucifugus*	END	END Schedule 1	END	Bats are nocturnal. During the day they roost in trees and buildings. They often select attics, abandoned buildings, and barns for summer colonies where they can raise their young. Bats can squeeze through very tiny spaces (as small as six millimetres across) and this is how they access many roosting areas. Little Brown Bats hibernate from October or November to March or April, most often in caves or abandoned mines that are humid and remain above freezing. Their specific physiological requirements limit the number of suitable sites for overwintering. In the east, large numbers (i.e., >3000 bats) of several species typically overwinter in relatively few hibernacula. In the west, there are fewer known hibernacula, and numbers appear lower per site. Females establish summer maternity colonies, often in buildings or large-diameter trees. Foraging occurs over water, along waterways, and forest edges. Large open fields or clearcuts generally are avoided. In autumn, bats return to hibernacula, which may be hundreds of kilometres from their summering areas, swarm near the entrance, mate, and then enter that hibernaculum, or travel to different hibernacula to overwinter.		BCI	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.
SAR	Mammals	Northern Myotis (Northern Long-eared Bat) *Myotis septentrionalis*	END	END Schedule 1	END	Northern Long-eared Bats are associated with boreal forests, choosing to roost under loose bark and in the cavities of trees. These bats hibernate from October or November to March or April. The Northern Long-eared Bat overwinters in cold and humid hibernacula (caves/mines). Their specific physiological requirements limit the number of suitable sites for overwintering. In the east, large numbers (i.e., >3000 bats) of several species typically overwinter in relatively few hibernacula. In the west, there are fewer known hibernacula, and numbers appear lower per site. Females establish summer maternity colonies in buildings or large-diameter trees. Foraging occurs along waterways, forest edges, and in gaps in the forest. Large open fields or clearcuts generally are avoided. In autumn, bats return to hibernacula, which may be hundreds of kilometres from their summering areas, swarm near the entrance, mate, and then enter that hibernaculum, or travel to different hibernacula to overwinter.	**FOC, FOM, FOD, SWC, SWM,** and **SWD** where suitable roosting (i.e. cavity trees and trees with loose bark) habitat is available.	BCI	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.
SOCC	Amphibians	Western Chorus Frog (Great Lakes / St. Lawrence - Canadian Shield population) *Pseudacris triseriata*	No Status	THR Schedule 1	THR	The Western Chorus Frog is primarily a lowland terrestrial species. In marshes or wooded wetland areas, it is found on the ground or in low shrubs and grass. It is a poor climber. Like all other frogs, the Western Chorus Frog requires both terrestrial and aquatic habitats in close proximity. For breeding and tadpole development, it requires seasonally dry temporary ponds devoid of predators, particularly fish. The Western Chorus Frog is very rarely found in permanent ponds. Although it uses aquatic habitat during the breeding season, the Western Chorus Frog is a poor swimmer. The species hibernates in its terrestrial habitat, under rocks, dead trees, or leaves, or in loose soil or animal burrows, even though these sites are sometimes flooded.		ORAA	**Low** No suitable habitat within proposed snow storage area.	No record within Study Area	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.
SOCC	Birds	Common Nighthawk *Chordeiles minor*	SC	THR Schedule 1	SC	Traditional Common Nighthawk habitat consists of open areas with little to no ground vegetation, such as logged or burned-over areas, forest clearings, rock barrens, peat bogs, lakeshores, and mine tailings. Although the species also nests in cultivated fields, orchards, urban parks, mine tailings, and along gravel roads and railways, they tend to occupy natural sites. The Common Nighthawk nests in a wide range of open, vegetation-free habitats, including dunes, beaches, recently harvested forests, rocky outcrops, grasslands, pastures, marshes, and river banks. This species also inhabits mixed and coniferous forests. The Common Nighthawk probably benefited from the newly-opened habitats created by the massive deforestation associated with the arrival of European settlers in eastern Canada and United States. The appearance of gravel roofs contributed to the expansion of the Common Nighthawk's habitat in North America.	**SD, BB, RB, CUM, BO, FOM, FOC** and **FOD** with openings with little vegetation.	OBBA	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.	No record within Study Area	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.
SOCC	Birds	Eastern Wood-pewee *Contopus virens*	SC	SC Schedule 1	SC	The Eastern Wood-pewee lives in the mid-canopy layer of forest clearings and edges of deciduous and mixed forests. It is most abundant in intermediate-age mature forest stands with little understory vegetation. During migration, a variety of habitats are used, including forest edges and early successional clearings.	**FOC, FOM, FOD, SWD, SWM** and **CUW**.	eBird, OBBA	**Low** No suitable habitat present within Study Area.	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat present within Study Area.

Appendix D. Species at Risk and Species of Conservation Concern Habitat Screening

SAR/ SOCC	Taxonomy	Species	ESA Status	SARA Status	COSEWIC Status	Preferred Habitat[1, 2]	Associated ELC Communities	Source Identifying Species Record	Occurrence Probability of SAR/SOCC within Potential Snow Storage Areas				
									Site 1	Site 3	Site 5	Site 6	Site 9
SOCC	Birds	Golden-winged Warbler *Vermivora chrysoptera*	SC	THR Schedule 1	THR	Golden-winged Warblers prefer to nest in areas with young shrubs surrounded by mature forest – locations that have recently been disturbed, such as field edges, hydro or utility right-of-ways, or logged areas. In their breeding areas, Golden-winged Warblers seem to be fond of regeneration zones where young shrubs grow, surrounded by mature forest, and characterized by plant succession of 10 to 30 years. The warblers frequent clusters of herbaceous plants and low bushes (where they place their nests, which are built on the ground). They favour environments where the trees are spread out, as well as the forest edge, and use this setting for perching, singing, and looking for food. Golden-winged Warblers are found in dry uplands, swamp forests, and marshes. This warbler shows a preference for beaver ponds and burned-out or intermittently cultivated areas.		eBird, OBBA	No record within Study Area	No record within Study Area	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.	No record within Study Area
SOCC	Birds	Grasshopper Sparrow *Ammodramus savannarum* Grasshopper Sparrow (pratensis subspecies; Eastern Grasshopper Sparrow) *Ammodramus savannarum pratensis*	SC	SC Schedule 1	SC	It lives in open grassland areas with well-drained, sandy soil. It will also nest in hayfields and pasture, as well as alvars, prairies, and occasionally grain crops such as barley. It prefers areas that are sparsely vegetated. Its nests are well-hidden in the field and woven from grasses in a small cup-like shape. The Grasshopper Sparrow is a short-distance migrant and leaves Ontario in the fall to migrate to the southestern United States and Central America for the winter. In Canada, the Eastern Grasshopper Sparrow typically breeds in large human-created grasslands (5 ha or greater), such as pastures and hayfields, and natural prairies, such as alvars, characterized by well-drained, often poor soil dominated by relatively low, sparse perennial herbaceous vegetation.		eBird, OBBA	No record within Study Area	No record within Study Area	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.	No record within Study Area
SOCC	Birds	Red-headed Woodpecker *Melanerpes erythrocephalus*	SC	THR Schedule 1	END	The Red-headed Woodpecker lives in open woodland and woodland edges, and is often found in parks, golf courses, and cemeteries. These areas typically have many dead trees, which the bird uses for nesting and perching. A few of these birds will stay the winter in woodlands in southern Ontario if there are adequate supplies of nuts. The Red-headed Woodpecker is found in a variety of habitats, including oak and beech forests, grasslands, forest edges, orchards, pastures, riparian forests, roadsides, beaver ponds, and burns.	**TPS, TPW, CUW, FOD1, FOD2, FOD4-1, FOD6, FOD7**, and **FOD9** that are open and have an abundance of dead trees.	eBird, OBBA	No record within Study Area	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.
SOCC	Birds	Wood Thrush *Hylocichla mustelina*	SC	THR Schedule 1	THR	The Wood Thrush lives in mature deciduous and mixed (conifer-deciduous) forests. They seek moist stands of trees with well-developed undergrowth and tall trees for singing perches. These birds prefer large forests, but will also use smaller stands of trees. They build their nests in living saplings, trees, or shrubs, usually in Sugar Maple or American Beech. In Canada, the Wood Thrush nests mainly in second-growth and mature deciduous and mixed forests, with saplings and well-developed understory layers. This species prefers large forest mosaics, but may also nest in small forest fragments.	**FOD** and **FOM** that are greater than 1 ha in size.	eBird, NHIC, OBBA	**Low** No suitable habitat present within Study Area.	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.
SOCC	Insects	Monarch *Danaus plexippus*	SC	SC Schedule 1	END	Throughout their life cycle, Monarchs use three different types of habitat. Only the caterpillars feed on milkweed plants and are confined to meadows and open areas where milkweed grows. Adult butterflies can be found in more diverse habitats where they feed on nectar from a variety of wildflowers. Milkweeds (numerous species) are the sole food plant for Monarch caterpillars. These plants grow predominantly in open and periodically disturbed habitats such as roadsides, fields, wetlands, prairies, and open forests. Milkweeds are often planted outside their native range, and sometimes wayward Monarchs are observed at these patches. Monarchs require staging areas which are used to rest, feed, and avoid inclement weather during migration. In Canada, they are found along the north shores of the Great Lakes where Monarchs roost in trees before crossing large areas of open water.	**AI, TP,** and **CUM** where milkweed plants are present.	OBA, iNaturalist	**Medium** Meadow community present contains milkweed.	**Medium** Meadow community present is forb dominated and may have milkweed.	**Low** Monarch found during field investigations in meadow marsh within the Study Area, however the Snow Storage Area is situated within a parking lot and manicured sports field.	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.

Appendix D. Species at Risk and Species of Conservation Concern Habitat Screening

SAR/ SOCC	Taxonomy	Species	ESA Status	SARA Status	COSEWIC Status	Preferred Habitat[1, 2]	Associated ELC Communities	Source Identifying Species Record	Occurrence Probability of SAR/SOCC within Potential Snow Storage Areas				
									Site 1	Site 3	Site 5	Site 6	Site 9
SOCC	Reptiles	Eastern Musk Turtle (Stinkpot) *Sternotherus odoratus*	SC	SC Schedule 1	SC	Eastern Musk Turtles are found in ponds, lakes, marshes, and rivers that are generally slow-moving and have abundant emergent vegetation and muddy bottoms that they burrow into for winter hibernation. Nesting habitat is variable, but it must be close to the water and exposed to direct sunlight. Nesting females dig shallow excavations in soil, decaying vegetation, and rotting wood or lay eggs in muskrat lodges, on the open ground, or in rock crevices. The Eastern Musk Turtle is a highly aquatic species inhabiting littoral zones of waterways such as bays, streams, canals, and swamps with slow to no current and soft bottoms. During their active season, Eastern Musk Turtles prefer shallow water.	**MAS, OAO, SAS, SAM,** and **SAF**. Nesting habitat can be any upland areas adjacent these areas that are exposed to direct sunlight.	ORAA	No record within Study Area	No record within Study Area	No record within Study Area	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.
SOCC	Reptiles	Northern Map Turtle *Graptemys geographica*	SC	SC Schedule 1	SC	The Northern Map Turtle inhabits rivers and lakeshores where it basks on emergent rocks and fallen trees throughout the spring and summer. In winter, the turtles hibernate on the bottom of deep, slow-moving sections of river. They require high-quality water that supports the female's mollusc prey. Their habitat must contain suitable basking sites, such as rocks and deadheads, with an unobstructed view from which a turtle can drop immediately into the water if startled. The Northern Map Turtle inhabits both lakes and rivers, showing a preference for slow moving currents, muddy bottoms, and abundant aquatic vegetation. These turtles need suitable basking sites (such as rocks and logs) and exposure to the sun for at least part of the day.	**OAO, SA** with emergent rocks and fallen trees suitable habitat for prey.	ORAA	No record within Study Area	No record within Study Area	No record within Study Area	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.
SOCC	Reptiles	Snapping Turtle *Chelydra serpentina*	SC	SC Schedule 1	SC	Snapping Turtles spend most of their lives in water. They prefer shallow waters so they can hide under the soft mud and leaf litter, with only their noses exposed to the surface to breathe. During the nesting season, from early to mid summer, females travel overland in search of a suitable nesting site, usually gravelly or sandy areas along streams. Snapping Turtles often take advantage of man-made structures for nest sites, including roads (especially gravel shoulders), dams, and aggregate pits. Although Snapping Turtles have been observed in shallow water in almost every kind of freshwater habitat, the preferred habitat of the species is characterized by slow-moving water with a soft mud bottom and dense aquatic vegetation. Established populations are most often located in ponds, sloughs, shallow bays or river edges, and slow streams, or areas combining several of these wetland habitats. Individual turtles will persist in urbanized water bodies, such as golf course ponds and irrigation canals, but it is unlikely that a population could become established in such habitats. The Snapping Turtle can occur in highly polluted waterways, but environmental contamination is known to reduce the already low reproductive output of this species. Basking on offshore logs and protruding rocks can be common in Snapping Turtles, depending on environmental temperature. Females generally nest on sand or gravel banks along waterways. Upon emergence from the nest in early fall, hatchling Snapping Turtles usually move to water, after which they bury themselves under leaf litter or debris. Snapping Turtles overwinter underwater, buried beneath logs, sticks or overhanging banks in small streams that flow continuously throughout the winter. They can also hibernate buried in deep mud in marshy areas or beneath floating mats of vegetation. Snapping Turtle habitat is diminishing in both quantity and quality in Canada, with losses primarily due to conversion of wetlands to agriculture and urban development.	**OAO, SA** near gravelly or sandy areas.	ORAA	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.	**Low** No suitable habitat within proposed snow storage area.

Glossary

EXP	ESA - Extripated - a species that no longer exists in the wild in Ontario but still occurs elsewhere. SARA - Extripated - a wildlife species that no longer exists in the wild in Canada, but exists elsewhere in the wild.
END	ESA - Endangered - a species facing imminent extinction or extirpation in Ontario which is a candidate for regulation under Ontario's Endangered Species Act. SARA - Endangered - a wildlife species that is facing imminent extirpation or extinction.
THR	ESA - Threatened - a species that is at risk of becoming endangered in Ontario if limiting factors are not reversed. SARA - Threatened - a wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.
SC	ESA - Special Concern (formerly Vulnerable) - a species with characteristics that make it sensitive to human activities or natural events. SARA - Special Concern - a wildlife species that may become a threatened or an endangered species because of a combination of biological characteristics and identified threats.
OMNR	Ontario Ministry of Natural Resources
ESA	Endangered Species Act
SARA	Species at Risk Act (Federal)
Schedule 1	The official list of species that are classified as extirpated, endangered, threatened, and of special concern.
Schedule 2	Species listed in Schedule 2 are species that had been designated as endangered or threatened, and have yet to be re-assessed by COSEWIC using revised criteria. Once these species have been re-assessed, they may be considered for inclusion in Schedule 1.
Schedule 3	Species listed in Schedule 3 are species that had been designated as special concern, and have yet to be re-assessed by COSEWIC using revised criteria. Once these species have been re-assessed, they may be considered for inclusion in Schedule 1.
COSEWIC	Committee on the Stauts of Endangerd Wildlife in Canada - a committee of experts that assesses and designates which wild species are in some danger of disappearing from Canada.

References

1 - Species at Risk . Ontario Ministry of Natural Resources. http://www.mnr.gov.on.ca/en/Business/Species/index.html. © Queens Printer For Ontario, 2013.

2 - Species at Risk Status Reports. Committed on the Status of Endangered Wildlife in Canada. Ottawa. http://www.sararegistry.gc.ca/search/advSearchResults_e.cfm?stype=doc&docID=18.

AECOM Canada Ltd.
105 Commerce Valley Drive West, 7th Floor
Markham, ON L3T 7W3
Canada

T: 905.886.7022
F: 905.538.8076
www.aecom.com

AECOM Canada Ltd.
1000-5090 Explorer Drive
Mississauga, ON L4W 4X6
Canada

T: 905 238 0007
www.aecom.com

To: Syeda Basira Banuri
Program Manager, Infrastructure Programming
Region of Peel

CC: Derek Gray (AECOM) Olga Hropach (AECOM)
Katie Easterling (AECOM) Bill Trenouth (AECOM)

Date: June 14, 2024
Project #: 60646748
From: Dylan Morse
Avery Tyrell

Memorandum

Subject: Natural Environment Report Addendum– 7120 Hurontario Street Snow Storage Site Analysis and Conceptual Design

1. Introduction

AECOM has been retained by the Region of Peel to complete a Natural Environment Memorandum as part of a Schedule "B" Municipal Class Environmental Assessment (MCEA) to evaluate snow storage opportunities at 7120 Hurontario Street, selected by the Region of Peel. The potential snow storage site identified will provide short and long-term snow storage solutions that are environmentally sound and politically acceptable for the Region and its area municipalities.

A Natural Environment Report (AECOM, 2024) has been completed to evaluate snow storage opportunities at five properties initially selected by the Region of Peel. The purpose of this Memo is to provide an Addendum to the Natural Environment Report (AECOM, 2024) and include one additional site in the evaluation. This Memo provides a description of the existing natural heritage features based on a desktop background review, an assessment of the significance of features and their functions, a Species at Risk (SAR) screening, a summary of constraints and opportunities, as well as recommended mitigation measures.

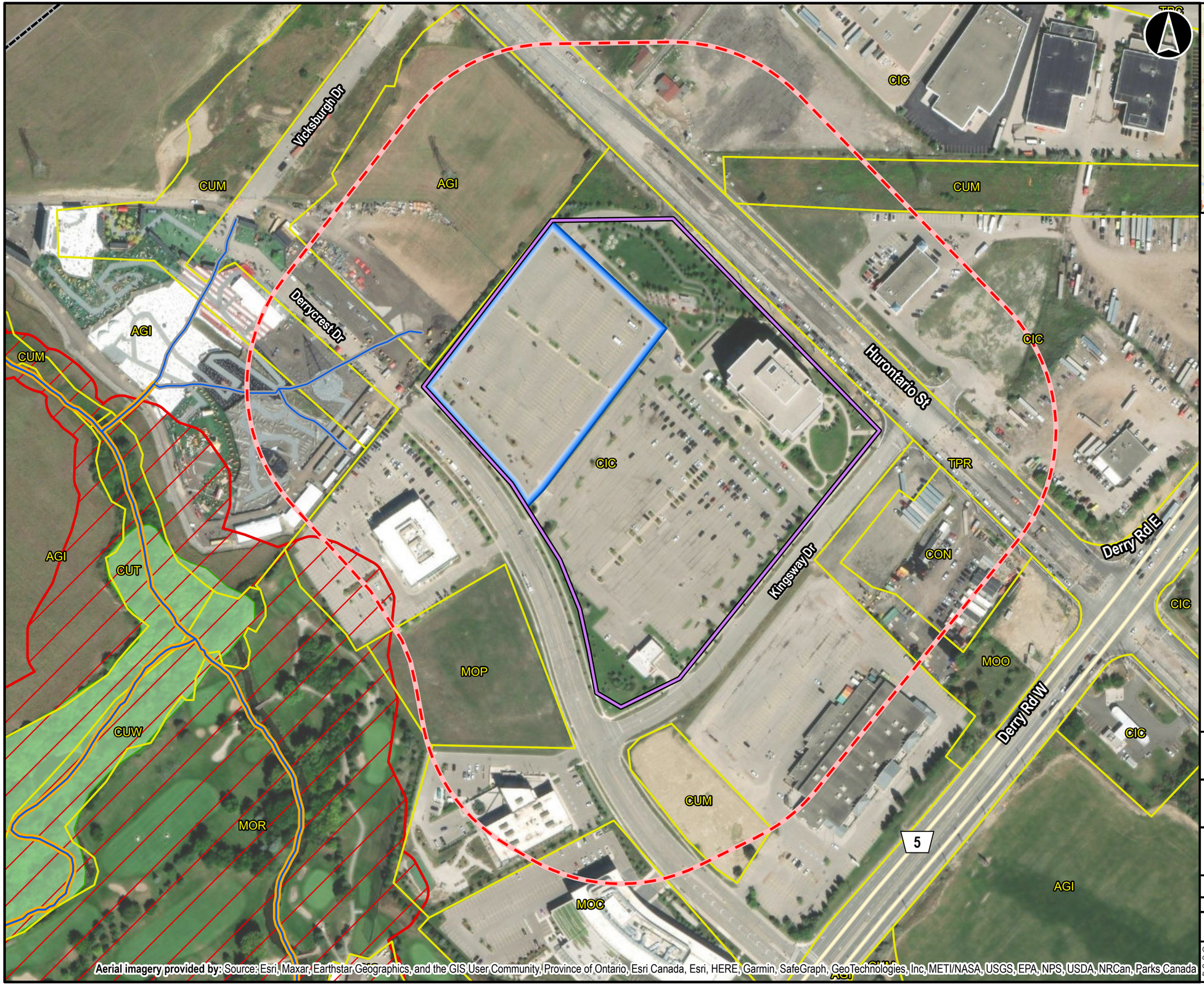
1.1 Study Area

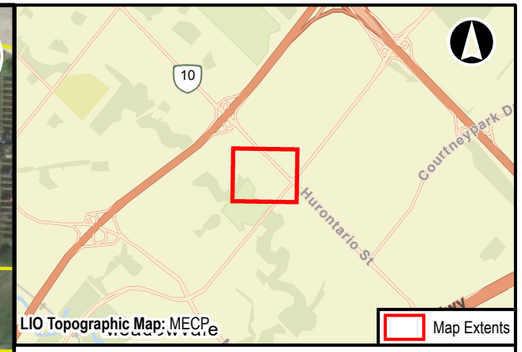
The Region of Peel has identified 7120 Hurontario Street as a possible additional location for snow storage. The property is located approximately 500 m northwest of the Derry Road and Hurontario Street intersection, in the City of Mississauga. The Study Area includes a 120 m buffer to identify natural heritage features and their adjacent lands, as defined by the Natural Heritage Reference Manual (NHRM) (MNRF, 2010). **Figure 1** below indicates the boundaries of the Study Area.

1.2 Applicable Environmental Legislation

Current legislations and policies which are relevant to terrestrial and aquatic ecosystems for this Project include:

- Fisheries Act, 1985
- Migratory Birds Convention Act, 1994 (MBCA)
- Species at Risk Act, 2002 (SARA)
- Endangered Species Act, 2007 (ESA)
- Greenbelt Act, 2005 and Greenbelt Plan, 2017
- Ontario Fish and Wildlife Conservation Act, 1997 (FWCA)
- Planning Act, 1990 and Provincial Policy Statement, 2020 (PPS)
- Regional Official Plan, consolidated 2021, Region of Peel
- Conservation Authorities Act (Ontario Regulation 160/06), 1990





Legend

- Study Area (120m)
- Potential Snow Storage Area
- Potential Snow Storage Property Boundary

Region of Peel

- Woodland

Credit Valley Conservation Authority

- Regulated Limit (2013)
- Vegetation Communities

Thermal Assessment of Watercourse

- Warmwater
- Features no longer present

General Features

- Municipal Boundary
- District, County, or Regional Road
- Watercourse (OHN)

ELC Description

- **AGI:** Intensive agriculture
- **CIC:** Commercial / industrial
- **CON:** Construction
- **CUM:** Cultural meadow
- **CUT :** Cultural thicket
- **CUW:** Cultural woodland
- **MOC:** Commercial / industrial open space
- **MOO:** Other open space
- **MOP:** Private open space
- **MOR:** Recreational open space
- **TPC:** Collector
- **TPR:** Regional road
- Features no longer present

Peel Region Snow Storage Sites - 7120 Hurontario

Natural Heritage

0 25 50 100 150 M

NAD 1983 CSRS UTM Zone 17N

Aug, 2023	1:2,500	**Data Sources:** Contains Information licensed under the Open Government License Ontario
P:60646784	Rev:00	
AECOM		**Figure 1**

Project Location: D:\Projects\60646784-SnowStorage\WORKING\Design\01_Reports\7120 HURONTARIO\60646784_SnowStorage_Historical\aprx Layout: F2-60643784-Natural Heritage
Date Saved: 10/17/2023 4:42 PM User: hamric3

For additional details regarding governing authorities and relevant information associated with the above legislation and policies, refer to **Table 1-2** of the Natural Environment Report (AECOM, 2024).

Regulation changes have occurred to the MBCA (1994) since the Natural Environment Report was finalized by AECOM in 2022 including prohibitions on the possession, destruction, and harm of migratory birds and/or their nests specifically while there is a live bird or a viable egg in it for most migratory birds. Exceptions are present for 18 species that have site fidelity and reuse their nests from year to year, which receive year-round nest protection whether there are eggs or live birds in there or not (Migratory Birds Regulations, 2022).

In addition, changes to the protection statuses of several species have occurred under the ESA since January 2022 including the up-listing of Red-headed Woodpecker (*Melanerpes erythrocephalus)* and Black Ash (*Fraxinus nigra*) to Endangered. Both species now receive individual and habitat protections under Sections 9 and 10 the ESA; however, protection for Black Ash is suspended until January 25, 2024. Most recently, Barn Swallow (*Hirundo rustica*) was downlisted from Threatened to Special Concern and no longer receives individual and habitat protections under the ESA.

2. Methods

2.1 Background Information Review

A desktop background information reviewed was completed to identify existing natural heritage features within the Study Area using the same secondary sources as described in **Section 2.1** of the Natural Environment Report (AECOM, 2024). No on-site field visits were completed as the Study Area consisted of largely highly developed areas.

2.2 Significant Wildlife Habitat Assessment

Detailed methods for determining Significant Wildlife Habitat (SWH) are described in **Section 2.3** of the Natural Environment Report (AECOM, 2024).

2.3 Species at Risk Habitat Assessment

Detailed methods for screening SAR[1] are described in **Section 2.4** of the Natural Environment Report (AECOM, 2024).

3. Existing Conditions

3.1 Background Information Review

3.1.1 Designated Natural Areas

There were no Provincially Significant Wetlands, Areas of Natural and Scientific Interest, or Environmentally Significant Areas within the Study Area based on a review of Schedule 3 of the Mississauga Official Plan (2023).

1. *For the purposes of this memorandum, a SAR is identified as a species listed as Threatened, Endangered or Extirpated under the Species at Risk in Ontario List and receives individual and habitat protections under Sections 9 and 10 of the ESA.*

3.1.2 Policy Areas

According to Schedule 10 of the Mississauga Official Plan (2023), the Study Area included the following land use designations: Office, Utility, Business Employment, and Corporate Centre.

The Study Area overlapped with the Credit Valley Conservation Authority (CVC) Regulated Area surrounding Fletcher's Creek, and is subject to the Conservation Authorities Act, 1990 (Ontario Regulation 160/06).

3.1.3 Vegetation

Vegetation communities within the 120 m buffer of the Study Area were assessed through aerial imagery from 2022 as well as CVC's Ecological Land Classification mapping downloaded from the open data portal (CVC, 2022), and can be seen in **Figure 1**. Communities within the Study Area were largely anthropogenically disturbed and consisted of Cultural Meadows (CUM), as well as agricultural, recreational, private, or open spaces, that appear to be consistently managed according to aerial interpretation and CVC data review.

No vegetation communities were present within the Proposed Snow Storage Site, as it is limited entirely to a parking lot based on aerial imagery interpretation.

3.1.4 Aquatic Habitat

Fish habitat as defined under the *Fisheries Act* was not identified within the 7120 Hurontario Street property boundary. There were no watercourses identified within the 7120 Hurontario Street property boundary; however, an unknown watercourse was identified within the Study Area, immediately north of the property boundary (**Figure 1**). Based on a review of recent aerial imagery identifying development within the agricultural field, no watercourse appeared to be present. As such, the proposed Snow Storage Area was not located on or within the regulated floodplain limits of a watercourse.

Based on a review of the Fisheries and Oceans Canada (DFO) Aquatic SAR Mapping (DFO, 2023), there were no aquatic SAR identified within the Study Area.

No in-water work is proposed, and provided indirect impacts (e.g., water quality from melt water runoff) can be properly mitigated, it is unlikely approvals under the *Fisheries Act* will be required; however, should any of the design plans change, consultation with DFO may still be required.

3.1.5 Terrestrial Species at Risk and Species of Conservation Concern

A total of 21 SAR and 30 Species of Conservation Concern (SOCC)[2] were identified as potentially present within the Study Area based on desktop background review. These species are listed in **Table 1** and **Table 2** below.

Table 1: Species at Risk Identified Through Background Review

Taxon	Common Name	Scientific Name	S-Rank[1]	COSEWIC Status[2]	SARA Status[2]	ESA Status[3]	Source	Latest Year
Amphibians	Jefferson Salamander	*Ambystoma jeffersonianum*	S2	END	END	END	ORAA	2018
Birds	Acadian Flycatcher	*Empidonax virescens*	S1B	END	END	END	OBBA	NA
Birds	Bank Swallow	*Riparia riparia*	S4B	THR	THR	THR	OBBA	NA
Birds	Bobolink	*Dolichonyx oryzivorus*	S4B	THR	THR	THR	OBBA	NA
Birds	Cerulean Warbler	*Setophaga cerulea*	S2B	END	END	THR	OBBA	NA

[2] *A SOCC is considered to be a species that is provincially rare or substantially declining with S-ranks of S1-S3; species listed as Special Concern under the ESA; and/or species identified federally as Endangered or Threatened by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) that are not protected under the ESA.*

Taxon	Common Name	Scientific Name	S-Rank[1]	COSEWIC Status[2]	SARA Status[2]	ESA Status[3]	Source	Latest Year
Birds	Chimney Swift	*Chaetura pelagica*	S3B	THR	THR	THR	OBBA	NA
Birds	Eastern Meadowlark	*Sturnella magna*	S4B,S3N	THR	THR	THR	OBBA	NA
Birds	Henslow's Sparrow	*Centronyx henslowii*	S1B	END	END	END	NHIC	NA
Birds	King Rail	*Rallus elegans*	S1B	END	END	END	OBBA	NA
Birds	Least Bittern	*Ixobrychus exilis*	S4B	THR	THR	THR	OBBA	NA
Birds	Louisiana Waterthrush	*Parkesia motacilla*	S2B	THR	THR	THR	OBBA	NA
Birds	Piping Plover	*Charadrius melodus*	S1B	END	-	END	OBBA	NA
Birds	Prothonotary Warbler	*Protonotaria citrea*	S1B	END	END	END	OBBA	NA
Birds	Red-headed Woodpecker[4]	*Melanerpes erythrocephalus*	S3	END	END	END	OBBA	NA
Birds	Short-eared Owl	*Asio flammeus*	S4?B,S2S3N	SC	SC	THR	OBBA	NA
Birds	Yellow-breasted Chat	*Icteria virens*	S1B	END	-	END	OBBA	NA
Mammals	Eastern Small-footed Myotis	*Myotis leibii*	S2S3	-	-	END	BCI	NA
Mammals	Little Brown Myotis	*Myotis lucifugus*	S3	END	END	END	BCI	NA
Mammals	Northern Myotis	*Myotis septentrionalis*	S3	END	END	END	BCI	NA
Mammals	Tricolored Bat	*Perimyotis subflavus*	S3?	END	END	END	BCI	NA

Table Legend

[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 (2023) National and Subnational Conservation Status Definitions available at Conservation Status Categories | NatureServe Explorer:*

- ***S1*** *– Critically Imperiled — At very high risk of extirpation in the jurisdiction due to very restricted range, very few populations or occurrences, very steep declines, severe threats, or other factors.*
- ***S2*** *– Imperiled — At high risk of extirpation in the jurisdiction due to restricted range, few populations or occurrences, steep declines, severe threats, or other factors.*
- ***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).*

[2]***SARA Status:*** *The Species at Risk Act (SARA) protects Species at Risk designated as Endangered, Threatened and Extirpated listed under Schedule 1, including their habitats on federal land. Schedule 1 of SARA is the official list of wildlife species at risk in Canada and includes species listed as Extirpated, Endangered, Threatened and of Special Concern. Once a species is listed on Schedule 1, they receive protection and recovery measures that are required to be developed and implemented under SARA. Species that were designated at risk by COSEWIC before SARA need to be reassessed based on the new criteria of the Act before they can be listed under Schedule 1. These species that are waiting to be listed under Schedule 1 do not receive official protection under SARA. Once the species on other schedules (2 and 3) have been reassessed, the other schedules are eliminated and the species is either listed under Schedule 1 or is not listed under the Act. The following are definitions of the SARA status rankings assigned to each species in the table above:*

- ***END (Schedule 1)*** *– Endangered under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.*
- ***THR (Schedule 1)*** *– Threatened under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.*
- ***SC (Schedule 1)*** *– Special Concern under Schedule 1 of SARA and receive management initiatives under SARA to prevent them from becoming endangered and threatened.*
- ***No Status (No Schedule)*** *– These species are evaluated and designated by COSEWIC but are not listed under Schedule 1 and therefore do not receive protection under SARA.*
- ***NAR (Not at Risk)*** *– These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.*

[3]***ESA Status:*** *The Endangered Species Act 1998 (ESA) protects species listed as Threatened and Endangered on the Species at Risk List on provincial and private land. The following are the categories of at risk:*

- ***END (Endangered)*** *– A species facing imminent extinction or extirpation in Ontario.*
- ***THR (Threatened)*** *– Any native species that, on the basis of the best available scientific evidence, is at risk of becoming endangered throughout all or a large portion of its Ontario range if the limiting factors are not reversed.*
- ***VUL (Vulnerable)*** *– A species that may become threatened or endangered due to a combination of biological characteristics and identified threats.*
- ***NAR (Not at Risk)*** *– A species that has been evaluated and found to be not at risk.*

[4]***Red-headed Woodpecker:*** *In April 2018, the species was reassessed and uplisted from Threatened to Endangered by COSEWIC.*

Table 2: Species of Conservation Concern Identified Through Background Review

Taxon	Common Name	Scientific Name	S-Rank[1]	COSEWIC Status[2]	SARA Status[2]	ESA Status[3]	Source	Latest Year
Birds	American Coot	*Fulica americana*	S3B,S4N	NAR	-	NAR	OBBA	NA
Birds	Bald Eagle	*Haliaeetus leucocephalus*	S4	NAR	-	SC	OBBA	NA
Birds	Barn Swallow[4]	*Hirundo rustica*	S4B	THR	THR	SC	OBBA	NA
Birds	Black Tern	*Chlidonias niger*	S3B,S4M	NAR	-	SC	OBBA	NA
Birds	Black-crowned Night-Heron	*Nycticorax nycticorax*	S3B,S2N,S4M	-	-	-	OBBA	NA
Birds	Blue-winged Teal	*Spatula discors*	S3B,S4M	-	-	-	OBBA	NA
Birds	Canada Warbler	*Cardellina canadensis*	S5B	SC	THR	SC	OBBA	NA
Birds	Canvasback	*Aythya valisineria*	S1B,S3N,S4M	-	-	-	OBBA	NA
Birds	Caspian Tern	*Hydroprogne caspia*	S3B,S5M	NAR	-	NAR	OBBA	NA
Birds	Common Gallinule	*Gallinula galeata*	S3B	-	-	-	OBBA	NA
Birds	Common Nighthawk	*Chordeiles minor*	S4B	SC	THR	SC	OBBA	NA
Birds	Eastern Wood-Pewee	*Contopus virens*	S4B	SC	SC	SC	OBBA	NA
Birds	Fish Crow	*Corvus ossifragus*	S1B,S3N	-	-	-	OBBA	NA
Birds	Golden-winged Warbler	*Vermivora chrysoptera*	S3B	THR	THR	SC	OBBA	NA
Birds	Grasshopper Sparrow	*Ammodramus savannarum*	S4B	SC	-	SC	NHIC, OBBA	NA
Birds	Great Black-backed Gull	*Larus marinus*	S1B,S4N	-	-	-	OBBA	NA
Birds	Great Egret	*Ardea alba*	S2B,S3M	-	-	-	OBBA	NA
Birds	Peregrine Falcon	*Falco peregrinus*	S4	NAR	-	SC	OBBA	NA
Birds	Purple Martin	*Progne subis*	S3B	-	-	-	OBBA	NA
Birds	Redhead	*Aythya americana*	S2B,S4N	-	-	-	OBBA	NA
Birds	Red-necked Grebe	*Podiceps grisegena*	S3	NAR	-	NAR	OBBA	NA
Birds	Ruddy Duck	*Oxyura jamaicensis*	S3B,S4N,S5M	-	-	-	OBBA	NA
Birds	Tufted Titmouse	*Baeolophus bicolor*	S3	-	-	-	OBBA	NA
Birds	Upland Sandpiper	*Bartramia longicauda*	S2B	-	-	-	OBBA	NA
Birds	White-eyed Vireo	*Vireo griseus*	S1B	-	-	-	OBBA	NA
Birds	Wilson's Phalarope	*Phalaropus tricolor*	S2B,S4M	-	-	-	OBBA	NA
Birds	Wood Thrush	*Hylocichla mustelina*	S4B	THR	THR	SC	OBBA	NA
Insects	Monarch	*Danaus plexippus*	S2N,S4B	END	SC	SC	OBA	2022
Reptiles	Midland Painted Turtle	*Chrysemys picta marginata*	S4	SC	SC	-	ORAA	2019
Reptiles	Snapping Turtle	*Chelydra serpentina*	S4	SC	SC	SC	ORAA	2019

See **Table 1 for Table Legend for notes 1, 2, and 3.*

*[4]**Barn Swallow:** In May 2021, COSEWIC reassessed this species as Special Concern, making it eligible for a change to its Schedule 1 status, from Threatened to Special concern.*

3.2 Significant Wildlife Habitat Assessment

Candidate SWH may be present for Monarchs within the two Cultural Meadow communities within the Study Area if patches of milkweed (*Asclepias syriaca*) are present; however, these meadows are located outside of the proposed Snow Storage Site.

3.3 Species at Risk Habitat Assessment

Potentially suitable SAR habitat may be present for Eastern Meadowlark (*Sturnella magna*) within the agricultural field north of the proposed snow storage site, as they are relatively insensitive to habitat patch size (MNRF, 2013); however, based on aerial imagery, the agricultural field appears to be regularly maintained and mowed such that it is unlikely to provide habitat for Eastern Meadowlark. It is unlikely that any of the remaining SAR identified through desktop review are present within the Study Area. There is no potential for SAR occurring within the proposed snow storage site as it is entirely limited to within a parking lot.

4. Assessment of Potential Impacts

The Study Area generally consisted of maintained anthropogenic landscapes (i.e., manicured parkland, cultural meadows) that are disturbed

Potential constraints associated with the natural environment have been identified for the Study Area based on the existing conditions described in **Section 3**; these are summarized in **Table 4**. The following considerations were taken into account when determining potential constraints:

- Potential effects from existing infrastructure (e.g., fragmentation, edge effects, noise and disturbance of road or train traffic);
- Level of potential effect on terrestrial and aquatic natural heritage features (e.g., low, medium or high impact);
- Level of potential effect on SAR and their habitats (e.g., low medium or high impact); and
- Potential for permits/authorizations requirements under the ESA, SARA, *Fisheries Act* and other regulations.

The following ranking system has been employed to denote the level of anticipated potential constraints for the Study Area with respect to the natural environment:

Table 3: Ranking System

	Low Impact	Low to Moderate Impact	Moderate Impact	Moderate to High Impact	High Impact
Legend					

Based on **Table 4**, the proposed Snow Storage Area at 7120 Hurontario Street represents the lowest anticipated impacts to the natural environment, which is an equivalent ranking to Site 1 assessed in the Natural Environment Report (AECOM, 2024).

Table 4: Assessment of Natural Environment Constraints for 7120 Hurontario Street

Natural Heritage Features	7120 Hurontario Street
Designated Natural Areas	■ None
Policy Areas	■ Proposed Snow Storage Area is located outside of the CVC Regulated Area
Vegetation	■ None. The proposed Snow Storage Site is limited to a parking lot.
Aquatic Habitat	■ Based on a review of aerial imagery, there do not appear to be any watercourses located within the proposed Snow Storage Area, Property Boundary or larger Study Area.
General Wildlife, including Significant Wildlife Habitat	■ SWH – Monarch habitat within the cultural meadows present within the Hydro Corridor to the northeast and field to the south of the proposed Snow Storage Area
Species at Risk	■ SAR with potentially suitable habitat present: – There is no potential for suitable habitat for SAR to be present within the proposed Snow Storage Area, as it is currently a parking lot and contains no natural features. – Eastern Meadowlark may have limited potential to be present within the agricultural field to the north of the Proposed Snow Storage Area
Assessment of Impacts	 ■ Least potential effect given that the Proposed Snow Storage Area is located entirely within a parking lot and cultural meadows within the 120 m buffer area are already disturbed. There are no sensitive features adjacent to this site that will be affected by increased water inputs from snow melt.

5. Recommended Mitigation Measures

The proposed Snow Storage Area at 7120 Hurontario Street has been identified as the least impactful to the Natural Environment, similar to Site 1 assessed in the Natural Environment Report (AECOM, 2024). The mitigation measures described in **Section 5** of the Natural Environment Report (AECOM, 2024) are general in nature and apply to all alternative sites and therefore can also be applied to the proposed Snow Storage Area at 7120 Hurontario Street. Detailed impact assessment and the provision of detailed recommendations for mitigation and compensation will be provided at the detailed design stage of the proposed works.

6. Anticipated Permits and Approvals

Table 5 summarizes permits and approvals anticipated for the proposed Study Area based on the summary of existing conditions captured through the desktop background review. Applicable permits and approvals should be obtained from the appropriate regulatory agencies prior to any construction.

Table 5: 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)	Environment and Climate Change Canada (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*	Fisheries and Oceans Canada (DFO)	■ No permit required - No in-water work is proposed, provided indirect impacts (e.g., water quality from melt water runoff) can be properly mitigated, it is unlikely approvals under the *Fisheries Act* will be required.
Provincial	*Endangered Species Act, 2007* (ESA)	Ontario Ministry of the Environment, Conservation and Parks (MECP)	■ The proposed Snow Storage Area has no probability of supporting SAR as it is limited to entirely a paved parking lot.
Provincial	*Planning Act, 1990* and Provincial Policy Statement (PPS; 2020)	Ontario Ministry of Municipal Affairs and Housing	■ No permit required - There are no permits to be obtained under the PPS.
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.
Provincial	Conservation Act, 1990	CVC	■ No permits required – The potential snow storage area is located outside of the CVC Regulated Area.
Municipal	City of Mississauga Official Plan, 2023	City of Mississauga	■ Permit not required.
Municipal	Regional Official Plan, consolidated 2021	Region of Peel	■ Permit not required.

7. Additional Studies

The following additional field studies may be required during Detailed Design for the proposed Snow Storage Area at 7120 Hurontario Street:

- Update SAR habitat screening as protection statuses of species under the ESA may change over time.
- A tree inventory to document required removals based on the construction footprint and for use in consideration of replacement plantings, if requested by the Region of Peel.

8. References

AECOM, 2024:
Natural Environment Report: Snow Storage Sites Analysis and Conceptual Design, Region of Peel.

Conservation Act, 1990:
Conservation Authorities Act, R.S.O. 1990, c. C.27. Accessed February 2022. Available online at: https://www.ontario.ca/laws/statute/90c27.

Credit Valley Conservation Authority [CVC], 2022:
Open Data Hub. Accessed August 2023. Available online at: https://cvc-camaps.opendata.arcgis.com/.

Endangered Species Act [ESA], 2007:
Available online at: https://www.ontario.ca/laws/statute/07e06.

Fisheries Act R.Sc., 1985:
Fisheries Act R.S., c. F-14, s.1. Available online at: https://laws-lois.justice.gc.ca/PDF/F-14.pdf

Fisheries and Oceans Canada (DFO), 2023:
Aquatic Species at Risk Map. Accessed August 2023. Available at https://www.dfo-mpo.gc.ca/species-especes/sara-lep/map-carte/index-eng.html.

Fisheries and Wildlife Conservation Act, 1997:
Fish and Wildlife Conservation Act, 1997, S.O. 1997, c. 41. Available online at: https://www.ontario.ca/laws/statute/97f41.

Migratory Birds Convention Act, 1994
Migratory Birds Convention Act. Accessed August 2023. Available online at: https://laws-lois.justice.gc.ca/eng/acts/m-7.01/page-1.html

Migratory Birds Regulations, 2022
Migratory Birds Regulations, SOR/2022-105. Available online at https://laws-lois.justice.gc.ca/eng/regulations/SOR-2022-105/index.html

Ministry of Natural Resources and Forestry (MNRF), 2010:
Ministry of Natural Resources, Natural Heritage Reference Manual for Policy 2.3 of the Ontario Provincial Policy Statement. 245 pp.

Ministry of Natural Resources and Forestry (MNRF), 2023:
GeoHub Database. Land Information Ontario. Accessed August 2023. Available at: https://geohub.lio.gov.on.ca/.

Ontario Ministry of Natural Resources and Forestry (MNRF), 2013:
Bobolink (Dolichonyx oryzivorus) & Eastern Meadowlark (Sturnella magna) in Ontario: Ontario Recovery Strategy Series. Available online at: https://files.ontario.ca/environment-and-energy/species-at-risk/mnr_sar_rs_est_mdwlrk_en.pdf.

Region of Peel, 2021:
Regional Official Plan. Accessed August 2023.

Species at Risk Act, 2002:
Available online at: https://laws.justice.gc.ca/PDF/S-15.3.pdf.