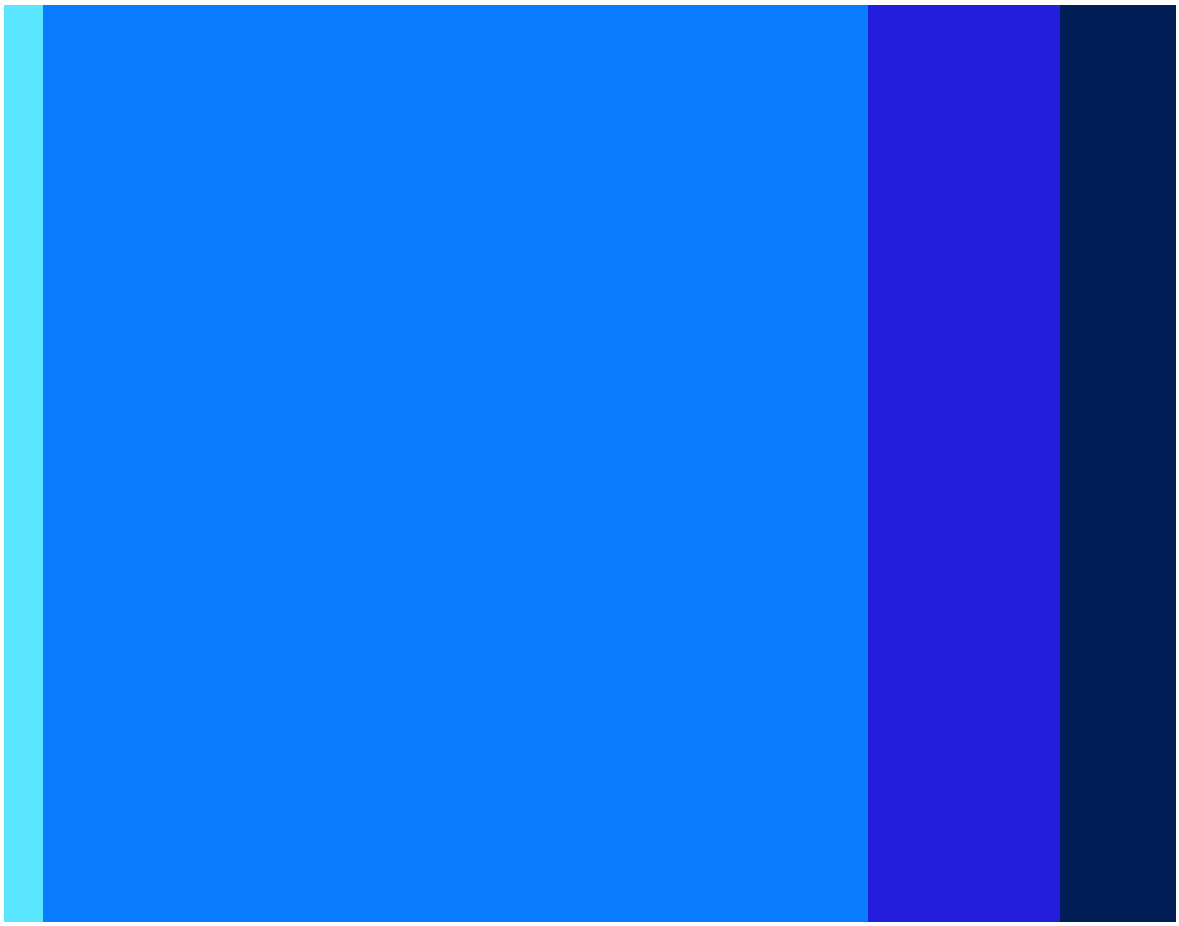
Appendix A
Natural Heritage Report

Halton Region Biosolids Composting Facility MCEA Study
Natural Heritage Report

Document No.: NHR
Revision No.: Final

Regional Municipality of Halton

Halton Biosolids Composting Facility MCEA Study
September 18, 2024



Halton Region Biosolids Composting Facility MCEA Study Natural Heritage Report

Client Name: Regional Municipality of Halton
Project Name: Halton Biosolids Composting Facility MCEA Study
Document No.: CE841500-NHR
Project No.: CE841500
Revision No.: Final
Project Manager: Tom Mahood
Date: September 18, 2024
Prepared By: Helen Chen, Rahima Khan

Document History and Status

Revision	Date	Description	Author	Reviewed	Approved
0	7/10/2024	Draft 1	H. Chen R. Khan	J. Kroetsch D. Ross J. Philpott	Tom Mahood
1	7/15/2024	Draft 2	H. Chen J. Philpott	J. Kroetsch D. Ross J. Philpott	Tom Mahood
2	9/18/2024	Final	H. Chen	J. Kroetsch J. Philpott	Tom Mahood

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Acronyms and Abbreviations

°C	degree(s) Celsius
ANSI	Area of Natural and Scientific Interest
BF	Beaufort Wind Scale
BMP	Biosolids Master Plan
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
COSSARO	Committee on the Status of Species at Risk in Ontario
CUM1	Mineral Cultural Meadow Ecosite
CUM1-1	Dry-Moist Old Field Meadow Type
DFO	Department of Fisheries and Oceans Canada
ELC	Ecological Land Classification
ECA	Environmental Compliance Approval
ESA	*Endangered Species Act*
FOD9	Fresh-Moist Oak-Maple-Hickory Deciduous Forest Ecosite
FOD2-2	Dry-Fresh Oak-Hickory Deciduous Forest Type
GHG	Greenhouse Gas
ha	hectare(s)
HADD	harmful Alteration, destruction, and displacement
HWMS	Halton Waste Management Site
km^2	Square Kilometre
LIO	Land Information Ontario
m	metre(s)
MAM2-2	Mineral Meadow Marsh Type
MBCA	Migratory Birds Convention Act
MECP	Ministry of the Environment, Conservation and Parks
MNRF	Ministry of Natural Resources and Forestry
NHIC	Natural Heritage Information Centre
OBBA	Ontario Breeding Bird Atlas
O. Reg.	Ontario Regulation
PSW	Provincially Significant Wetland
SAR	Species at Risk
SARA	*Species at Risk Act*
SARO	Species at Risk in Ontario
SCC	Species of Special Concern
SWH	Significant Wildlife Habitat
WWTP	Wastewater Treatment Plant

Report Limitations

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1 Introduction

The Regional Municipality of Halton (Halton Region) owns and operates six wastewater treatment plants (WWTPs) that treat wastewater and safely return the treated water back to the environment. The solids by-product of the wastewater treatment process, known as "biosolids", is rich in organic matter and nutrients. Biosolids from the Region's WWTPs have been made available, where appropriate, to the agricultural community as soil amendments for crop production for over 40 years.

As recently as 2000, Halton Region had access to sufficient agricultural land to manage all biosolids locally. Over time, population growth and changing demographics in the region have resulted in both an increase in biosolids production and a decrease in local available farmland. Currently, the biosolids program exports approximately 75 percent of biosolids outside the region to either agricultural producers, reclamation facilities or, if these options are not available, to an approved landfill.

The Biosolids Master Plan (BMP), completed by the Region in 2012, recommended investigation of biosolids composting to enhance the Region's land application program. Biosolids composting is a provincially regulated process by which biosolids are mixed with other organic materials to produce a compost product. Biosolids-sourced compost qualifies for a wider range of land application opportunities (compared to biosolids) and would allow the Region to enhance its current land application program and reduce hauling distances to manage the material.

In 2020, the Halton Region Biosolids Composting Feasibility Study (Jacobs, 2020) was completed (referred to as the Feasibility Study herein). The Feasibility Study recommended a Halton Region-owned composting facility to process biosolids into compost, diversify outlets for the composted material, and reduce greenhouse gas (GHG) emissions associated with biosolids haulage. The recommendations for the proposed facility included a biosolids composting process, compost storage infrastructure, odour control system, parking areas, and office space.

Halton Region initiated a Municipal Class Environmental Assessment (Class EA) study to identify the preferred site location for the construction of the biosolids composting facility recommended in the Feasibility Study. The Class EA will incorporate the recommended composting technology from the Feasibility Study to help facilitate selection of the preferred site location. The study is being conducted in accordance with the planning and design process for municipal projects outlined in the Municipal Engineers Association's Municipal Class EA process for Schedule B municipal infrastructure projects (MEA, October 2000, as amended in 2007, 2011, 2015, and 2023).

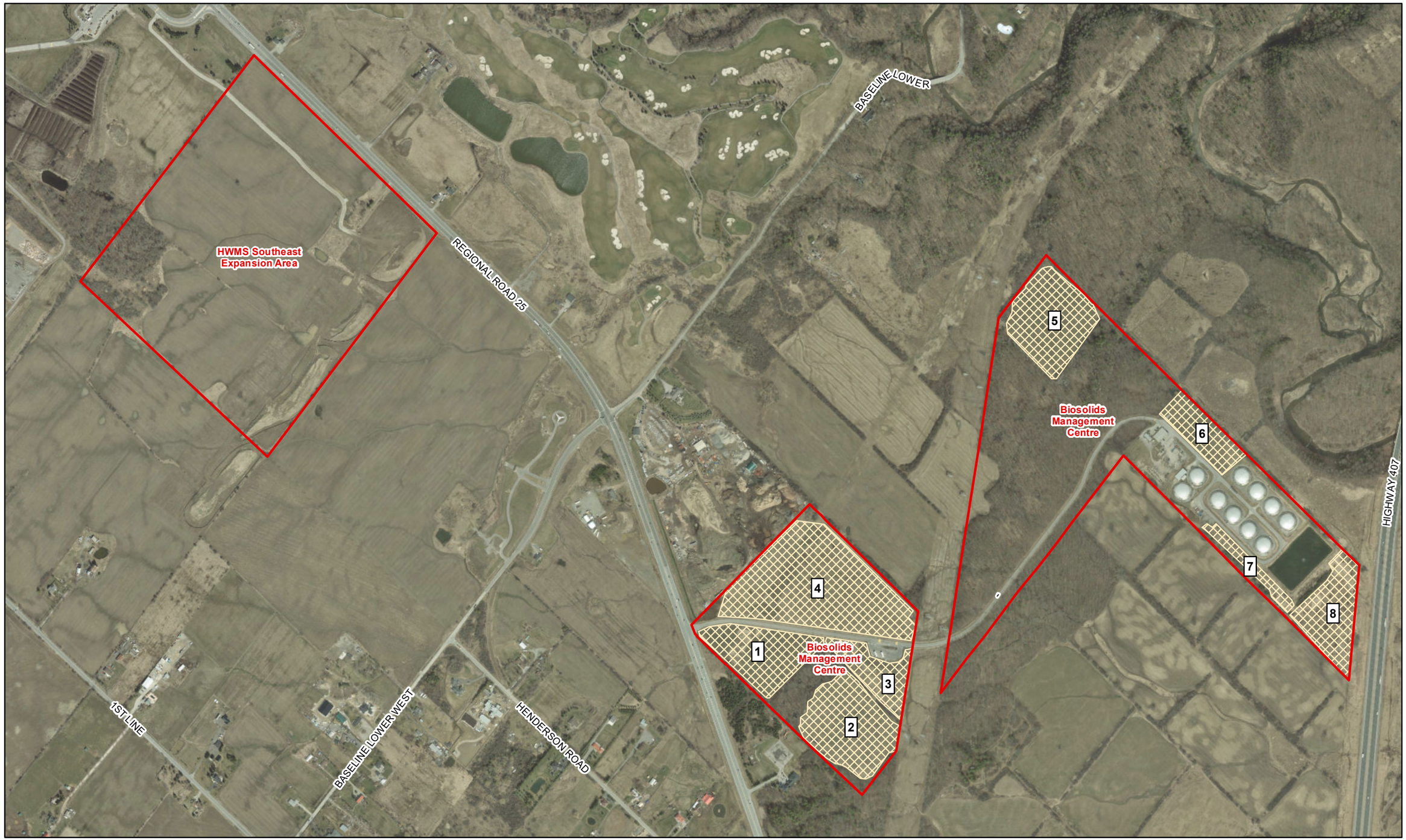
For this Schedule B Class EA, Phase 1 and Phase 2 of the Municipal Class EA process will be completed and documented in a series of reports, as follows:

- Phase 1 – Status of existing biosolids management program, future needs, description of regional land uses and constraints related to locating a biosolids composting facility in the region, development of a Problem and/or Opportunity Statement.
  - Technical Memorandum No. 1 (TM-1): Background Study
  - Problem and/or Opportunity Statement
- Phase 2 – Identification and evaluation of alternative sites considering the benefits and impacts to the existing community, technical, legal/jurisdictional, natural and economic environments, as well as input from project stakeholders, to identify a preferred site.
  - Long List of Alternative Sites and Evaluation Framework
  - Development of Information and Detailed Evaluation of Alternative Sites
  - Technical Review and Study Reports (to provide information to support the detailed evaluation of alternative sites)

To support the completion of Phase 2 (Identification and evaluation of alternative sites, including the detailed evaluation of the alternative sites), this Natural Heritage Report was prepared to provide details regarding the natural features present at each alternative site, using available desktop information and the

results of site field surveys. The details presented in this report support the alternatives evaluation and ultimately, selection of a preferred location for the proposed facility.

In the earlier stages of Phase 2, a long list of site alternatives within Halton Region was identified and screened to a short-list of feasible land parcels that could be considered alone or in combination with other parcels for the proposed biosolids composting facility. Figure 1 presents the overall area assessed for detailed evaluation. Short-listed sites are located within the Biosolids Management Centre (BMC) area and the Halton Waste Management Site (HWMS) Southeast Expansion Area. It also presents the available parcels at the BMC. All BMC parcels, with the exception of Parcel 3, which was screened out during the long-list evaluation exercise, were short-listed and carried forward for detailed evaluation.



N

0 50 100 150 200

Metres

Agricultural or Fallow Areas

Study Area

Notes:
1. Aerial Source: Maxar, 2021.

Figure 1
Project Location
Halton Biosolids Composting Facility
Natural Heritage Report
Regional Municipality of Halton
Halton, Ontario

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\\DC1VS01\GISPROJ\H\HALTONREGION\BIOSOLIDSCOMPOSTINGFACILITY\MAPS\REPORT\NATURALHERITAGEREPORT\PROJECTLOCATION.MXD VM048279 9/12/2023 9:08:34 AM

2 Desktop Review

The proposed Biosolids Composting Facility will include areas for biosolids composting, bulking agent storage, odour control, office space and a stormwater management pond. The total footprint required is approximately 4-5 ha. Separate parcels can be combined to provide the footprint required, with different facility components located on different parcels (i.e., composting on one parcel and storage on another).

As part of the Class EA Phase 2 screening process, site reviews were conducted to identify which parcels could accommodate the various features of the proposed biosolids composting facility. BMC Parcels 1 to 8 (with the exception of Parcel 3) were short-listed and carried forward for detailed evaluation.

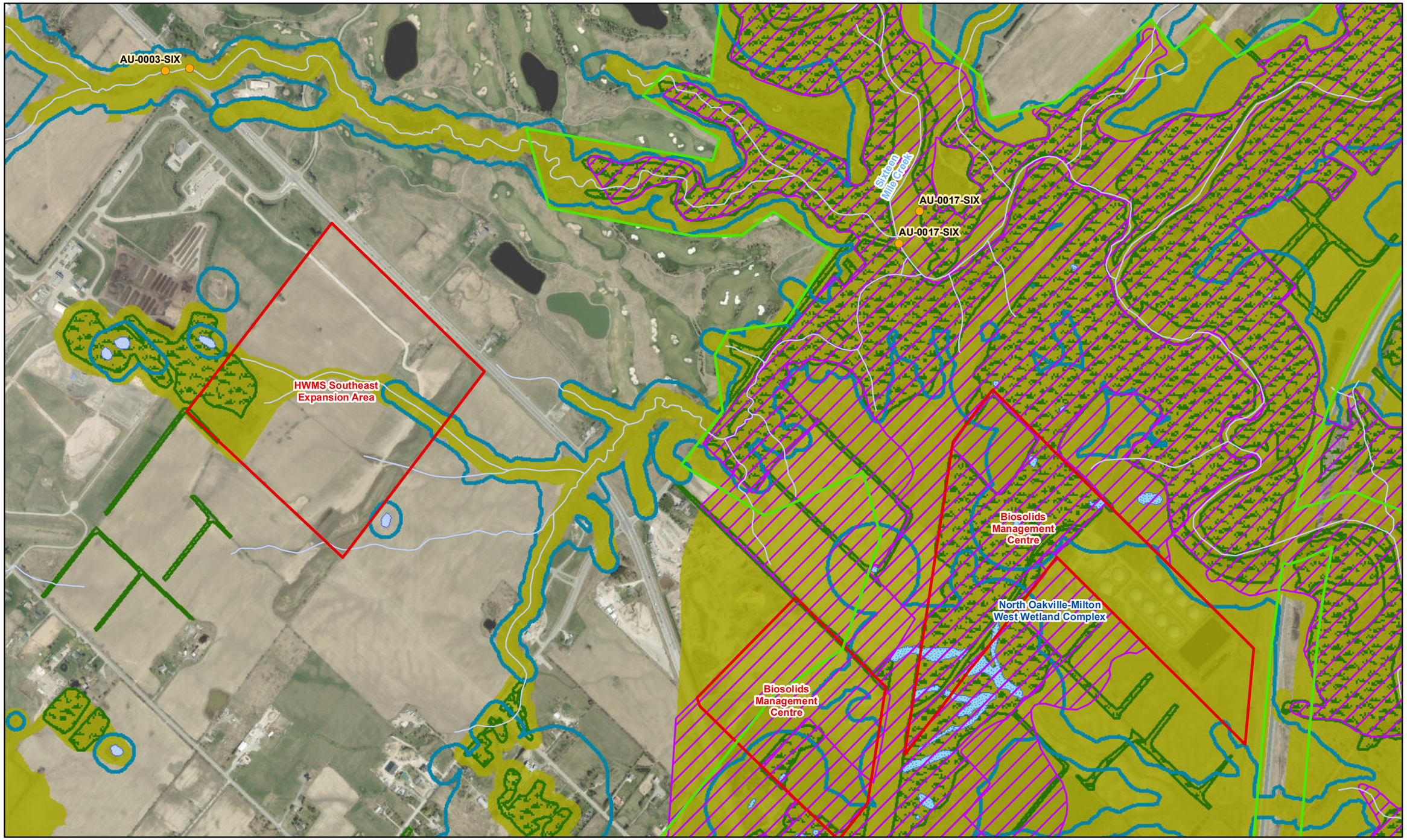
A background natural heritage review was completed for the short-listed BMC parcels. A review was also completed for the HWMS Southeast Expansion Area, as it was identified as a feasible site for a compost storage facility. Storage requirements will be determined through a subsequent study and this review was completed to assist the Region with future decision-making.

As part of the review, available online natural heritage background data were accessed on January 18, 2023. Agencies were also consulted (Appendix A) to obtain natural heritage information for the short-listed parcels and the HWMS Southeast Expansion Area, including 120 metres (m) of lands adjacent to the parcels. In accordance with the Provincial Policy Statement (2020) and the Natural Heritage Reference Manual (Ontario. 2010), 120 m is a standard distance from the natural heritage feature(s) for evaluation of potential negative impacts on features.

The following information sources were reviewed:

- Ministry of Natural Resources and Forestry (MNRF) Lands Information Ontario (LIO) data sets (MNRF 2023a) and Make a Natural Heritage Map (MNRF 2023b)
- Natural Heritage Information Centre (NHIC) data (MNRF 2023c; 2023)
- Greenbelt Plan (2017)
- Regional Natural Heritage System from the Regional Official Plan (Halton 2022)
- Ontario Breeding Bird Atlas (OBBA) data (Bird Studies Canada 2021)
- Consultation with the Ministry of Environment, Conservation and Parks (MECP) (Appendix A)
- Department of Fisheries and Oceans Canada (DFO) online aquatic species at risk (SAR) and critical habitat mapping tool (DFO 2023)
- iNaturalist (iNaturalist 2023)
- Niagara Escarpment Plan (2017). Office Consolidation (2021)
- Conservation Halton (CH) (2017). Guidelines for Ecological Studies
- Policies and Guidelines for the Administration of Ontario Regulation 162/06 and Land Use Planning, April 27, 2006 (last amended, November 26, 2020)

Appendix B provides the results of the NHIC and OBBA queries. Figure 2 shows the natural heritage boundaries from Land Information Ontario.



N

0 100 200 300 400

Metres

ARA Survey Point
Watercourse
Wetland
Evaluated
Other
Wooded Area
Conservation Halton Regulation Area
ANSI
Greenbelt Natural Heritage System
Regional Natural Heritage System
Study Area

Notes:
1. Aerial Source: Maxar, 2021.
2. Natural Features Source - Land Information Ontario (LIO) and Halton Region Conservation Authority (TRCA).

Figure 2
Natural Features
Halton Biosolids Composting Facility
Natural Heritage Report
Regional Municipality of Halton
Halton, Ontario

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\\DC1VS01\GISPROJ\H\HALTONREGION\BIOSOLIDSCOMPOSTINGFACILITY\MAPS\REPORT\NATURALHERITAGEREPORT\NATURALFEATURES.MXD VM048279 9/10/2024 1:24:59 PM

2.1 Natural Environment Features

Natural environment features within the Natural Heritage Boundaries (shown in Figure 2) were investigated by referencing available mapping from Conservation Halton, NHIC, and DFO. Features reviewed included the following:

- Areas of Natural and Scientific Interest (ANSIs)
- Environmentally Significant Areas
- Provincially Significant Wetlands (PSWs)
- Regional Natural Heritage System
- Greenbelt Natural Heritage System
- Woodlands and Valleylands
- Vegetation and Vegetative Communities
- Wildlife
- Significant Wildlife Habitat (SWH)
- Aquatic Habitat and Fisheries
- Species At Risk (SAR) and SAR Critical Habitat

2.1.1 Area of Natural and Scientific Interest

According to LIO (MNRF 2023b), the Trafalgar Moraine Earth Science ANSI extends into BMC Parcels 1,2, 4 and 5. The moraine marks the headwater of several local watercourses and is considered an ANSI but not an Environmentally Significant Area because it is not an important groundwater resource (Town of Oakville, 2002).

2.1.2 Environmentally Significant Areas

Based on the results of the background review, no Environmentally Significant Areas (ESAs) were identified within the short-listed BMC parcels or the HWMS Southeast Expansion Area.

2.1.3 Regional Natural Heritage System

The Regional Official Plan is adopted by Halton Region to provide guidance on how developments in the Region should occur in order to meet future needs while also maintaining a healthy landscape. This document also lays out definitions and determinations of key natural features such as wetlands and woodlands. It also identifies the Natural Heritage System, which consists of natural areas to be enhanced and protected to ensure ecological function. A review of the Regional Official Plan (Halton 2022) mapping found that Regional Natural Heritage System occurs within all parcels.

2.1.4 Greenbelt Natural Heritage System

The Greenbelt Plan (Government of Ontario 2017) is a provincial strategy and guideline for the protection and preservation of the agricultural lands, water resources, and natural areas located in Ontario's Greater Golden Horseshoe region. Through the process of identifying pertinent areas where urbanization should not occur, permanent protection is afforded to these regions to ensure that ecological and hydrological functions for the Greater Golden Horseshoe area are maintained. A review of the Greenbelt Plan found that the Greenbelt occurs through all parcels and as such, future work in the area has to adhere to the restrictions specified in the Greenbelt Plan.

2.1.5 Wetlands

Wetlands, as defined by the PPS (2020), are identified in LIO and MNRF mapping (MNRF 2023b).

The Regional Official Plan (Halton 2022) defines a significant wetland as:

- For lands within the Niagara Escarpment Plan Area, Provincially Significant Wetlands and wetlands as defined in the Niagara Escarpment Plan that make an important ecological contribution to the Regional Natural Heritage System
- For lands within the Greenbelt Plan Area but outside the Niagara Escarpment Area, Provincially Significant Wetlands and wetlands as defined in the Greenbelt Plan
- For lands within the Regional Natural Heritage System but outside the Greenbelt Plan Area, Provincially Significant Wetlands and wetlands that make an important ecological contribution to the Regional Natural Heritage System
- Outside the Regional Natural Heritage System, Provincially Significant Wetland.

Based on those definitions and a review of the Regional Official Plan mapping, wetlands identified within the Study Area include portions of the North Oakville-Milton West Provincially Significant Wetland that are present between Parcels 1 and 2, and adjacent to and south of Parcel 5.

2.1.6 Woodlands and Valleylands

Woodlands, as defined by the PPS (2020), are identified in NHIC's *Make a Natural Heritage Map* (MNRF 2023b). These woodlands occur between BMC Parcels 1 and 2, between Parcels 5 and 6 and at the northwest corner of HWMS Southeast Expansion Area.

The Regional Official Plan (Halton 2022) defines a significant woodland as a woodland 0.5 ha or larger, and meeting one or more of the following criteria:

- Contains forest patches over 99 years old,
- The patch size is 2 ha or larger if located in the Urban area, or 4 ha or larger if located outside the Urban Area but below the Escarpment Brow, or 10 ha or larger if it is located outside the Urban Area but above the Escarpment Brow,
- Has an interior core area of 4 ha or larger, measured 100 m from the edge, or
- is wholly or partially within 50 m of a major creek or certain headwater creek or within 150m of the escarpment brow

Based on those definitions and a review of the Regional Official Plan mapping, no woodlands larger than 0.5ha occur in any of the parcels, therefore there is no significant woodland present.

The Regional Official Plan (Halton 2022) mentions significant valleylands as key features in the Regional Natural Heritage System to be protected, and that treescapes should be promoted in these areas to increase quality fish habitat, reduce flooding as well as soil erosion, and increase slope stability.

There are no valleylands within the parcels according to LIO, MNRF and Regional Official Plan mapping.

3 Vegetation and Vegetative Communities

Vegetation and vegetative community surveys are used to classify sites based on Ontario standards of uniform classification for better description, management, and conservation of natural resources (Lee et al. 1998). The background review of the vegetation and vegetative communities present within the parcels included air photographic interpretation, which was also used to scope and plan a site reconnaissance survey to obtain additional information on terrestrial resources and natural features. The survey conducted is included in Section 4 highlighting key features. ELC field surveys were completed within the Study Area, which encompasses the BMC parcels, the HWMS Southeast Expansion Area and a 30 m buffer zone around those areas.

3.1 Wildlife

The BMC parcels and HWMS Southeast Expansion Area (previously shown in Figure 1) are generally comprised of open and disturbed fields and industrial areas; however, these features can still provide habitat for wildlife, particularly avifauna (birds). Background data were obtained for wildlife from a review of the OBBA, which provides information on avifauna occurrences in a 10 square kilometre (km^2) area. The 2nd Atlas of the OBBA includes data collected from 2001 to 2005 (Bird Studies Canada, 2021). The region, including BMC parcels, HWMS Southeast Expansion Area and adjacent lands. occur within OBBA Square Summary 17NJ91 Region #10 Halton-Peel-Dufferin. iNaturalist online was also accessed to determine species observed in the area by citizen scientists.

The potential presence of wildlife species within the parcels was identified through the background review. Field surveys for wildlife (i.e., avifauna) were performed on May 11, 2023, and July 7, 2023, to document site-specific presence as listed in Section 4. The background information was used to determine the potential scope of field work required in each parcel.

3.2 Significant Wildlife Habitat

The *Significant Wildlife Habitat Technical Guide* (MNRF 2000) was reviewed to determine whether SWH is present within the BMC parcels and HWMS Southeast Expansion Area. According to the Guide, SWH is divided into four main categories:

1) Seasonal Concentration Areas include the following:

   At certain times of the year, some species of wildlife are highly concentrated within relatively small areas. In spring and autumn, migratory species of birds and butterflies concentrate in critical stopover areas where they can rest and feed. Other examples of such habitat include winter deer yards, bird breeding colonies, and hibernation sites for bats or snakes (MNRF 2000).

2) Rare Vegetation Communities or Specialized Habitat for Wildlife include the following:

   Areas that contain a provincially rare vegetation, community areas that contain a vegetation, community that is rare within the planning area. Specialized habitats include areas that support wildlife species that have highly specific habitat requirements, areas with exceptionally high species diversity, or community diversity areas that provide habitat that greatly enhances a species' survival (MNRF 2000).

3) Habitat for Species of Conservation Concern (Does not include rare species that are defined by SAR legislation and global or provincial ranks provided by the NHIC).

4) Animal Movement Corridors include the following:

Animal movement corridors are elongated, naturally vegetated parts of the landscape used by animals to move from one habitat to another. They exist at different scales and frequently link or border natural areas. Animal movement corridors encompass a wide variety of landscape features including riparian zones and shorelines, wetland buffers, stream and river valleys, woodlands, and anthropogenic features such as hydro and pipeline corridors, abandoned road and rail allowances, and fencerows and windbreaks (MNRF 2000).

NHIC data (MNRF 2023c) did not identify any SWH within the BMC parcels and HWMS Southeast Expansion Area or the 120 m adjacent land areas.

Additionally, the Regional Official Plan (Halton 2022) states the importance of linkages between natural areas to facilitate movement of animals and plants. These linkages keep forest and grassland patches connected in the midst of anthropogenically disturbed regions and should be identified and preserved.

3.3 Aquatic Habitat and Fisheries

According to LIO mapping, Sixteen Mile Creek, which eventually flows into Lake Ontario, is located north of BMC Parcels 4 and 5 and tributaries of the Creek may potentially be present in the HWMS Southeast Expansion Area (Figure 2). The presence or absence of the Creek was investigated in the field survey highlighted in Section 4. Background screening of the NHIC database indicates that Sixteen Mile Creek is classified as critical habitat as defined in the ESA for Silver Shiner (*Notropis photogenis*); a SAR. Silver Shiner prefers warm water and slower flowing watercourses. No other SAR fish species were identified in the background screening.

Table 2-1 lists the fish species identified according to LIO's Aquatic Resource Area Survey Points: AU-0017-SIX (Figure 1) within Sixteen Mile Creek. Survey points were located north of the parcels (MNRF, 2022b).

Table 2-1. Fisheries Data for Sixteen Mile Creek Proximal to the BMC Parcels and HWMS Southeast Expansion Area

Species [a]	Preferred Habitat [b]
Silver Shiner (*Notropis photogenis)*	Clay to boulder bottomed of clear, medium to large stream; preferred water temperature range 17-24°C.
Bluegill (*Lepomis macrochirus*)	Vegetated small lakes, ponds, shallow weedy bays of larger lakes and pools of creeks and small to large rivers; preferred water temperature range 24-30°C
Brook Stickleback (*Culaea inconstans*)	Small, boggy headwater streams, shallow lake margins, ponds, and clear pools and backwaters of creeks and small rivers; usually associated with aquatic vegetation; occasionally brackish water; preferred water temperature 21.3°C
Common Shiner (*Luxilus cornutus*)	Pools near riffles in clear, cool creeks and small to medium rivers, and nearshore in clear-water lakes; preferred water temperature 21.9°C.
Fathead Minnow (*Pimephales promelas*)	Still waters of ponds, lakes, creeks and small rivers with muddy substrate; preferred water temperature range 21-29°C
Hornyhead Chub (*Nocomis biguttatus*)	Pools and runs of clear, slow-flowing, gravelly small- to medium-sized streams, often tributary to larger rivers; preferred cool temperature 16-26°C.
Johnny Darter (*Etheostoma nigrum*)	Sandy, silty, gravelly, sometimes rocky, pools of creeks and small to medium rivers, and sandy shores of lakes; reported to a depth of 42 m in the Great Lakes; preferred water temperature 22.8°C.
Longnose Dace (*Rhinichthys cataractae*)	Cobble, boulder or gravel riffles of clean, cool, swiftly-flowing creeks and small to medium rivers, and rocky shores of lakes; preferred water temperature range 13-21°C.

Species [a]	Preferred Habitat [b]
Rainbow Darter (*Etheostoma caeruleum*)	Fast-flowing gravel and cobble riffles of clear creeks and small to medium rivers; preferred water temperature 19.8°C.
Pumpkinseed (*Lepomis gibbosus*)	Warm, shallows of lakes and ponds, quiet, pools of creeks and small rivers, with aquatic vegetation and organic debris; preferred water temperature range 22-30°C.
Rock Bass (*Ambloplites rupestris*)	Rocky or vegetated shallows of lakes and pools of creeks and small to medium rivers; reported to depths of 21 m; preferred water temperature range 21-26°C.
Smallmouth Bass (*Micropterus dolomieu*)	Clear, gravel-bottomed runs and flowing pools of small to large rivers and shallow (5-7 m), rocky and sandy areas of lakes; preferred water temperature range 20-27°C.
Spotfin Shiner (*Cyprinella spiloptera*)	Sand and gravel runs and pools of creeks and small to medium rivers with moderate gradient; occasionally lake shallows; preferred water temperature 29.5°C.
Creek Chub (*Semotilus atromaculatus*)	Pools of clear creeks and small rivers, over sand, gravel and cobble substrates; rare in lakes and large rivers; preferred water temperature 20.8°C.
White Sucker (*Catostomus commersonii*)	Pools and riffles of creeks and rivers, warm shallow lakes and embayment's of larger lakes usually at depths of 6-9 m; preferred water temperature range 17-24°C.

[a] Fish species as identified in LIO's Aquatic Resource Area Survey Points (MNRF, 2023a) proximal to site.

[b] Ontario Freshwater Fishes Life History Database (Eakins 2020).

3.4 Species at Risk Screening

SAR within Ontario are primarily protected under the *Endangered Species Act* (ESA). Species are ranked as follows:

- Endangered – species facing imminent extirpation or extinction.
- Threatened – species likely to become endangered if limiting factors are not reversed.
- Extirpated – species no longer existing in the wild at this location but may occur elsewhere.
- Special Concern – species may become threatened or endangered due to identified threats.

SAR listed under the ESA are under the jurisdiction of the MECP and aquatic SAR (e.g., fish and mussels) are protected federally, as administered by DFO under the *Species at Risk Act* (SARA). Up-to-date SAR lists are provided by the Committee on the Status of Species at Risk in Ontario (COSSARO), (Government of Ontario 2023c), SAR in Ontario (SARO), (Government of Ontario 2023c), and the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), (Government of Canada 2023b). Special Concern species are not protected under these Acts; however, habitat for these species is typically afforded protection under SWH criteria, as discussed in Section 2.1.9.

The NHIC provides current and historical data on SAR and natural features occurrences within Ontario. The data platform provides information within 1 km^2 areas. The *Aquatic Species at Risk Map* (DFO 2023) provides data on occurrences of critical habitat and the distribution of aquatic SAR.

SAR data within the vicinity of the parcels, HWMS Southeast Expansion Area and 120 m adjacent land areas is presented in Table 2-2, based on the NHIC database (MNRF 2023c), OBBA (square 17NJ91, Region #10 Halton-Peel-Dufferin), DFO SAR Aquatic Mapping (DFO 2023), and iNaturalist (iNaturalist 2023).

The SAR screening results were sent to the MECP SAR Branch per the ESA on January 18, 2023, and followed up on January 19 and March 29, 2023.

Table 2-2. Potential Species at Risk Within or Proximal to the BMC Parcels and HWMS Southeast Expansion Area

Species	Common Name	Scientific Name	S Rank	SARO	COSEWIC	SARA
Birds	Northern Bobwhite	*Colinus virginianus*	S1?B	END	END	END
	Least Bittern	*Ixobrychus exilis*	S5B	Not at risk	Not at risk	Not at risk
	Black Tern	*Chlidonias niger*	S3B, S4M	SC	Not at risk	Not at risk
	Short-eared Owl	*Asio flammeus*	S4?B, S2S3N	SC	SC	SC
	Common Nighthawk	*Chordeiles minor*	S4B	SC	SC	THR
	Whip-poor-will	*Antrostomus vociferus*	S4B	THR	THR	THR
	Chimney Swift	*Chaetura pelagica*	S3B	THR	THR	THR
	Red-headed Woodpecker	*Melanerpes erythrocephalus*	S3	END	END	THR
	Eastern Wood-Pewee	*Contopus virens*	S4B	SC	SC	SC
	Bank Swallow	*Riparia riparia*	S4	THR	THR	THR
	Barn Swallow	*Hirundo rustica*	S4B	THR	THR	THR
	Wood Thrush	*Hylocichla mustelina*	S4B	SC	THR	THR
	Canada Warbler	*Cardellina canadensis*	S5B	SC	SC	THR
	Golden-winged Warbler	*Vermivora chrysoptera*	S3B	SC	THR	THR
	Louisiana Waterthrush	*Parkesia motacilla*	S2B	THR	THR	THR
	Grasshopper Sparrow	*Ammodramus savannarum*	S4B	THR	SC	Not at risk
	Henslow's Sparrow	*Centronyx henslowii*	S1B	END	END	END
	Bobolink	*Dolichonyx oryzivorus*	S4B	THR	THR	THR
	Eastern Meadowlark	*Sturnella magna*	S4B, S3N	THR	THR	THR
	Black Tern	*Chlidonias niger*	S3B, S4M	SC	Not at risk	Not at risk
	Short-eared Owl	*Asio flammeus*	S4B, S2S3N	SC	SC	SC
	Common Nighthawk	*Chordeiles minor*	S4B	SC	SC	THR
Reptiles and Amphibians	Snapping Turtle	*Chelydra serpentina*	S4	SC	SC	SC
	Eastern Milksnake	*Lampropeltis triangulum*	S4	Not at risk	SC	SC
	Midland Painted Turtle	*Chrysemys picta marginata*	S4	Not at risk	SC	Not at risk
Aquatic	Silver Shiner	*Notropis photogenis*	S2S3	THR	THR	THR
Vegetation	Butternut	*Juglans cinerea*	S2?	END	END	END

[a] NHIC Subnational rank (MNRF 2023b)
[b] SARO (Government of Ontario 2023)
[c] (COSEWIC 2023b)
[d] SARA (Government of Canada 2023)
? = more data required
B = status qualifier; breeding
END = endangered
H = status qualifier; possibly extirpated
M = status qualifier; migrant species
N = status qualifier; nonbreeding
S#S# = range given due to uncertainty
S1 = critically imperilled (often 5 or fewer occurrences)
S2 = imperilled (often 20 or fewer occurrences)
S3 = vulnerable (restricted range with relatively few populations – often 80 or fewer)
S4 = uncommon but not rare; some cause for long-term concern due to declines or other factors
S5 = secure species, common, widespread, and abundant
SC = special concern
THR = threatened

4 Field Assessment

This section presents existing conditions within the short-listed BMC Parcels and HWMS Southeast Expansion Area as observed during site surveys on May 11 and July 7, 2023.

4.1 Field Investigation Methodology

Jacobs staff used the results of the background review (described in Section 2), coupled with interpretation of aerial photographs and available agency data, to scope and plan a site reconnaissance survey to obtain additional information about terrestrial resources and natural features.

Table 4-1 provides the dates, weather conditions, and types of surveys conducted. Findings are presented in the following sections.

Table 4-1. Field Survey Information

Survey Dates	Weather Conditions	Survey Types	Personnel	Site Location
May 11, 2023	Sunny, 22°C, gentle breeze, Beaufort Scale (BF) 1	▪ Wildlife survey ▪ ELC vegetation survey ▪ SAR assessment ▪ Aquatic Assessment	William Barbour	BMC Parcels 1,4,5,6, 7 and 8
July 7, 2023	Sunny. 19°C; gentle breeze, Beaufort Scale (BF) 2	▪ Wildlife survey ▪ ELC vegetation survey ▪ SAR assessment ▪ Aquatic Assessment	Mackensie Dodd, Rahima Khan	BMC Parcels 1,2, 4, and HWMS Southeast Expansion Area

°C = degree(s) Celsius

BF = Beaufort Scale

4.2 Areas of Natural and Scientific Interest, Provincially Significant Wetlands, Woodlands and Valleylands

According to LIO (MNRF 2023b), the Trafalgar Moraine Earth Science ANSI extends into BMC Parcels 1, 2, 4 and 5, and marks the headwater of numerous local watercourses. Based on interpretation of aerial photographs combined with field observations, the ANSI mapped areas within the BMC parcels is comprised of disturbed meadow and agricultural areas. Watercourses were not observed in these parcels.

Based on the PPS (2020) and Halton Region (2022) definitions of a PSW and a review of the Regional Official Plan mapping, wetlands identified within the Study Area include portions of the North Oakville-Milton West Provincially Significant Wetland Complex that are present between Parcels 1 and 2. Field surveys within Parcels 1 and 2 did not, however, identify any wetland elements or communities belonging to the PSW.

Woodlands were present between Parcels 1 and 2, between Parcels 5 and 6 and at the northwestern corner of HWMS Southeast Expansion Area. Woodlands were assessed using ELC guidelines (Lee et al 1998) as described in Section 4.3 and as defined in the Regional Official Plan (Halton 2022).

Based on this, woodlands were identified between some of the parcels (such as between Parcels 5 and 6) but are not present within any of the parcels themselves. These woodland patches between parcels can serve as linkages to facilitate plant and animal movement, and to connect larger natural areas together.

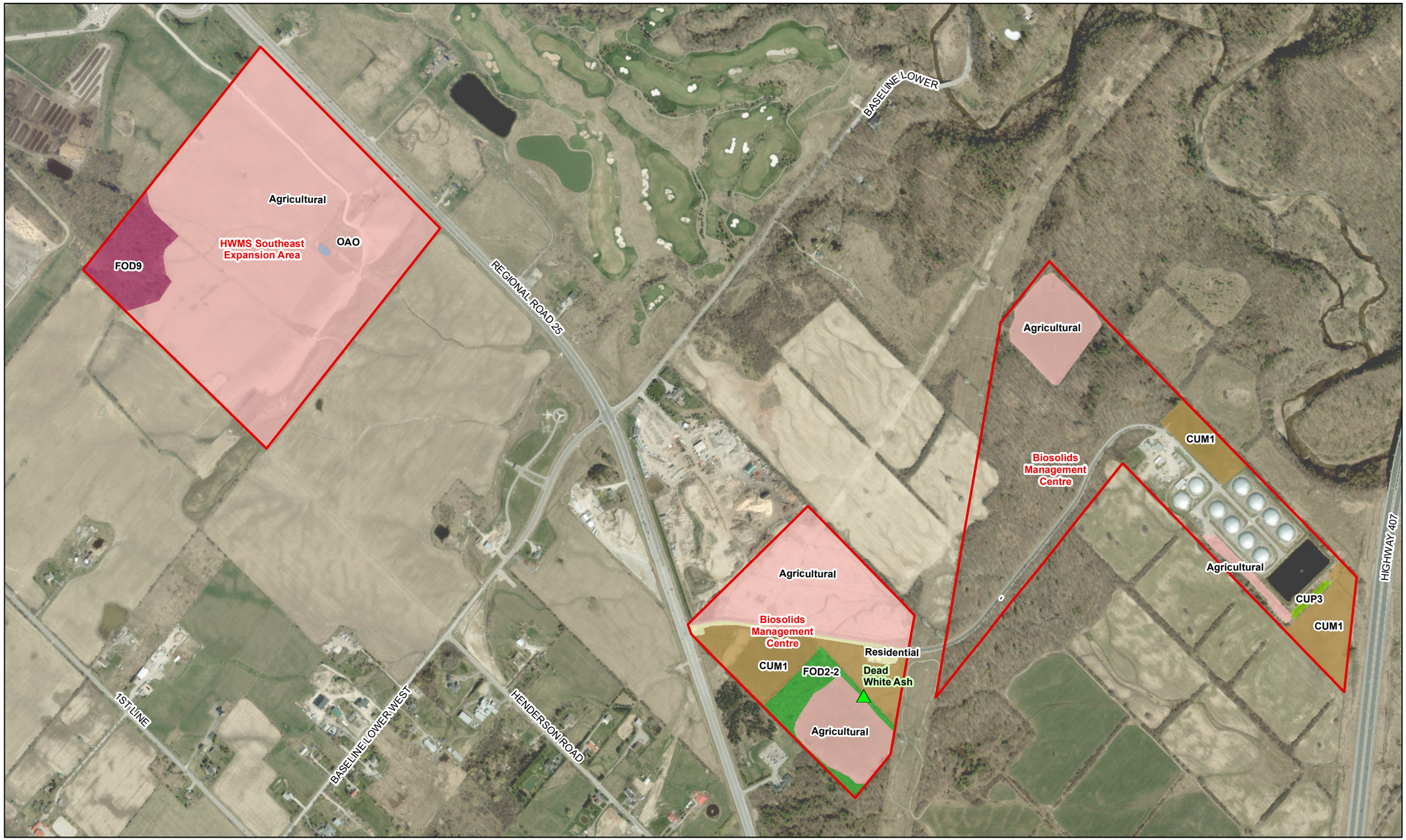
Valleylands were not observed to be on site at any of the parcels or surrounding areas.

4.3 Vegetation and Vegetative Communities

The vegetative communities within the BMC parcels, the HWMS Southeast Expansion Area and 30 m adjacent lands were initially assessed using interpretation of aerial photographs as per standard practice (Government of Ontario, 2010), as well as a review of the Regional Official Plan (Halton 2022) and MNRF mapping (MNRF2023a, b).

Data were analyzed to define the extent of ecological boundaries and overall ecosystem function to develop ecological community mapping. The data were also used to plan and carry out ELC surveys following the *Ecological Land Classification for Southern Ontario (*Lee et al. 1998) system.

Only three vegetation communities were identified within the parcels and HWMS Southeast Expansion Area. Figure 3 identifies the ecosites, **Appendix C** provides a full floral list, and **Appendix D** provides representative photographs of individual communities.



N

0 50 100 150 200

Metres

Potential Bat Snag

Study Area

Ecological Land Classification (ELC)

- Agricultural
- CUM1, Mineral Cultural Meadow Ecosite
- CUM1-1, Dry-Moist Old Field Meadow Type
- CUP3, Coniferious Plantations
- FOD2-2, Dry-Fresh Oak-Hickory Deciduous Forest Type
- FOD9, Fresh-Moist Oak-Maple-Hickory Deciduous Forest Ecosite
- MAM2, Mineral Mineral Meadow Marsh Type
- OAO, Open Aquatic
- Residential

Notes:
1. Aerial Source: Maxar, 2021.

Figure 3
Ecological Land Classification (ELC)
Halton Biosolids Composting Facility
Natural Heritage Report
Regional Municipality of Halton
Halton, Ontario

Jacobs

\\DC1VS01\GISPROJ\H\HALTONREGION\BIOSOLIDSCOMPOSTINGFACILITY\MAPS\REPORT\NATURALHERITAGEREPORT\ELC_REV2.MXD SBEGG1 7/10/2024 8:12:12 AM

4.3.1 FOD9: Fresh-Moist Oak-Maple-Hickory Deciduous Forest Ecosite

An FOD9 vegetation community was identified in the northwest corner of HWMS Southeast Expansion Area. The ground has flat topography and this community is surrounded by agricultural areas. The forest area is small with disturbed vegetation and no dominant species in the canopy. The following subsections present species that were identified within the FOD9 community.

4.3.1.1 Canopy

The canopy was found to include the following species:

- White Ash *(Fraxinus americana)*
- Bur Oak *(Quercus macrocarpa)*
- Shagbark Hickory *(Carya ovata)*
- White Elm *(Ulmus americana)*
- Sugar Maple *(Acer saccharum)*
- Basswood *(Tilia americana)*
- Trembling aspen (Populus tremuloides)
- Northern Red Oak *(Quercus rubra)*

4.3.1.2 Subcanopy

The following species were observed in the subcanopy:

- European buckthorn (Rhamnus cathartica)
- White Ash
- White Elm
- Bur Oak
- Grey Dogwood (Cornus racemose)
- Morrow's honeysuckle (Lonicera morrowii)
- Silver Maple (Acer saccharinum)

4.3.1.3 Ground Cover

The ground cover was found to include the following species:

- Kentucky bluegrass (Poa pratensis)
- Virginia creeper (Parthenocissus quinquefolia)
- Common dandelion (Taraxacum officinale)
- Tufted vetch (Vicia cracca)
- Spotted jewelweed (Impatiens capensis)
- Riverbank grape (Vitis riparia)
- Wild carrot (Daucus carota)
- Oxeye daisy (Leucanthemum vulgare)
- Jack-in-the-pulpit (Arisaema triphyllum)
- Canada goldenrod (Solidago canadensis)
- Smooth bedstraw (*Galium mollugo*)
- Common ragweed (Ambrosia artemisiifolia)
- Spotted Geranium (Geranium maculatum)
- Spinulose Wood Fern (Dryopteris carthusiana)
- Small Forget-me-not (Myosotis laxa)
- White Wood-sorrel (Oxalis montana)
- Broad-leaved Enchanter's Nightshade (Circaea canadensis)
- LeConte's Violet (Viola affinis)
- Garlic mustard (Alliaria petiolate)
- Ground-ivy (Glechoma hederacea)

4.3.2 CUM1: Mineral Cultural Meadow Ecosite

A CUM1 ecological community was identified within BMC Parcel 1, BMC Parcel 6, and BMC Parcel 8. The community had flat topography and no canopy vegetation was present. The area was highly impacted due to anthropogenic disturbances. The following subsections present species that were identified within the CUM1 community.

4.3.2.1 Subcanopy

The subcanopy was found to include the following species:

- European buckthorn
- Grey Dogwood
- Rose sp (Rosa sp)

4.3.2.2 Groundcover

The groundcover was found to include the following species:

- Kentucky bluegrass
- Canada goldenrod
- Canada thistle (Cirsium arvense)
- Tufted vetch
- Large bird's-foot trefoil (Lotus uliginosus)
- Wild Chicory (Cichorium intybus)
- Wild carrot
- Smooth brome (Bromus inermis)
- Common dandelion (Taraxacum officinale)
- Common plantain (Plantago major)
- Riverbank grape
- Common Lamb's-quarters (Chenopodium album)
- Curled Dock (*Rumex crispus*)
- Common Teasel (Dipsacus fullonum)
- Common milkweed (Asclepias syriaca)
- Annual Fleabane (Erigeron annuus)
- Bladder Campion (Silene vulgaris)
- Virginia creeper
- Common Viper's Bugloss (Echium vulgare)
- Field Sow-thistle (Sonchus arvensis)
- Alfalfa (Medicago sativa)
- White clover (Trifolium repens)
- Western Poison Ivy (Toxicodendron radicans var. rydbergii)
- Broad-leaved Peppergrass (Lepidium latifolium)
- Field Pennycress (*Thlaspi arvense*)

4.3.3 FOD2-2: Dry-Fresh Oak-Hickory Deciduous Forest Type

The FOD2-2 ecological community is located between BMC Parcels 1 and 2. The forest area is small and separated from CUM1 by the presence of agricultural areas and was highly disturbed by anthropogenic activities. The topography of the forested community is flat ground with no access for pedestrians. The canopy of the community is co-dominated by White Oak (*Quercus alba*) and Shagbark Hickory, and the groundcover is dominated by Kentucky bluegrass.

The following subsections present species that were identified within the FOD2-2 community.

4.3.3.1 Canopy

The canopy was found to include the following species:

- White Oak
- Northern Red Oak
- Shagbark Hickory
- Bur Oak
- Manitoba Maple (Acer negundo)
- Paper Birch (Betula papyrifera)

4.3.3.2 Subcanopy

The subcanopy was found to include the following species:

- European buckthorn
- White Ash
- Grey Dogwood
- Bur Oak
- Downy Arrowwood (Viburnum rafinesqueanum)
- Morrow's honeysuckle (*Lonicera morrowii*)

4.3.3.3 Groundcover

The groundcover was found to include the following species:

- Kentucky bluegrass
- Tufted vetch
- Alfalfa (Medicago sativa)

- Oxeye daisy
- Common Milkweed
- Wild Carrot
- Curled Dock
- Western-poison ivy
- Common Timothy (Phleum pratense)
- Riverbank grape
- Philadelphia fleabane (Erigeron philadelphicus)
- Common plantain
- Common dandelion
- Field pennycress
- Canada goldenrod
- Common ragweed (Ambrosia artemisiifolia)
- Wood avens (Geum urbanum)
- Common St. John's-wort (Hy*pericum perforatum*)

4.3.4 CUP3: Coniferous Plantation

The CUP3 coniferous plantation was located in the BMC Parcel 8. The community was surrounded by the CUM1 community with industrial infrastructure to its northwest. The CUP3 community consisted of planted coniferous trees in a line covering about 0.17 ha of the CUM1 area. Species were determined and identified using imagery and available photos subjecting the species list to be estimated. The canopy and subcanopy was dominated by White Spruce (*Picea glauca*), with Kentucky Bluegrass dominating the groundcover.

The following subsections present species observed in the CUP3 community.

4.3.4.1 Canopy

The canopy was assumed to include the following species:

- White Spruce
- Norway Spruce (*Picea abies*)

4.3.4.2 Subcanopy

The subcanopy was assumed to include the following species:

- White Spruce
- Norway Spruce
- Morrow's Honeysuckle
- European Buckthorn

4.3.4.3 Groundcover

The groundcover was assumed to include the following species:

- Kentucky bluegrass
- Canada goldenrod
- Canada thistle
- Tufted vetch
- Large bird's-foot trefoil
- Wild Chicory
- Wild carrot
- Smooth brome
- Common dandelion
- Common plantain

4.4 Wildlife

This section provides details about wildlife present within the short-listed BMC parcels and HWMS Southeast Expansion Area based on field investigation results.

4.4.1 Wildlife Surveys

Incidental wildlife (birds, amphibians, reptiles, and mammals) surveys were carried out using protocols adopted from MNRF's *1998 Wildlife Monitoring Programs and Inventory Techniques for Ontario* (MNRF, 1998). Three wildlife species (included in Appendix C) were identified by direct observation (sight and sound), tracks, scat, or droppings (or a combination thereof). An assessment of ecological communities against SWH was completed per the *Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E* (MNRF 2015). SWH is further discussed in Section 4.5. The wildlife observed and expected in the area are typical for urban and industrial lands. All field surveyed areas had high populations of American Dog Tick (*Dermacentor variabilis*). No SAR were observed. Targeted surveys for potential SAR included avifauna are recommended at the detailed design stage for the preferred parcel(s).

4.4.2 Bat Habitat Assessment

A bat habitat assessment was performed within the short-listed BMC parcels and HWMS Southeast Expansion Area that included analysis of existing ELC and habitat data, interpretation of aerial photographs, and field observations. Maple, oak, birch, and other snag trees, typically greater than 10 centimetres diameter at breast height, provide roosting opportunities for bats, including SAR species, especially when water features are nearby (MNRF 2017a). Snag trees are defined as trees exhibiting exfoliating bark, cavities and crevices, cracks, holes, decay, or they are dead so that bats can opportunistically enter for roosting. No bat snag trees were observed within the BMC parcels or the expansion area. One potential bat snag tree was identified within the 120 m adjacent lands east of Parcel 2.

4.5 Significant Wildlife Habitat

The BMC parcels and HWMS Southeast Expansion Area include many anthropogenically disturbed areas (such as CUM1 and industrial), with poor-quality forested areas including many dead white ash trees. The surveys identified no SAR species; however, some areas may support wildlife including SCC species.

SWH is divided into four main categories, as described in Section 2.1.7 of the *Significant Wildlife Habitat Technical Guide* (MNRF, 2000). The following subsections assess potential SWH habitat within the parcels and HWMS Southeast Expansion Area.

4.6 Seasonal Concentration Areas

No Seasonal Concentration Areas were observed in the parcels and HWMS Southeast Expansion Area.

4.6.1 Rare Vegetation Communities or Specialized Habitat for Wildlife

Based on the results of the ELC inventory, rare vegetation communities do not occur.

4.6.1.1 Habitat for Species of Conservation Concern

No SAR were observed but monarchs were identified during the field surveys. Monarchs were observed in Parcel one, any removal of the milkweed can potentially impact the habitat for the species.

4.6.2 Animal Movement Corridors

Naturalized animal movement corridors were not observed within the BMC parcels, the HWMS Southeast Expansion Area. Naturalized animal movement corridors were observed in the adjacent lands however, within FOD9 but outside of BMC Parcels 5 and 6 and Southeast Expansion Area.

Forested patches between parcels have the potential to provide linkages between natural features and facilitate the movement of plants and animals. Further consideration of linkages and corridors is discussed in Section 5.

4.7 Aquatic Habitat Assessment

A site reconnaissance survey for aquatic habitat was performed within the HWMS Southeast Expansion Area areas of Sixteen Mile Creek and its tributaries. No aquatic habitat was observed; only a small, isolated pond in a field depression within an agricultural community was observed, which is referred to as open aquatic. The pond was surrounded by cattail vegetation and no water was observed flowing into or out of the pond.

4.8 Species At Risk

No SAR species or SAR Critical Habitat were identified during the field investigation.

5 Impact Assessment, Mitigation, and Monitoring

The purpose of this report is to identify potential direct or indirect effects of the proposed biosolids composting on natural features and resources within the BMC parcels, HWMS Southeast Expansion Area, and 120 m adjacent land areas. Direct effects, as defined and used in this assessment, are typically associated with the physical removal or alteration of features and resources that could occur during construction (i.e., tree and vegetation removal). Indirect effects include changes or effects that relate to hydrological, noise and disturbance associated impacts occurring because of the activities being completed as part of the construction scope. While not physically altering or removing habitat, indirect effects can result in disturbance of or degradation to natural features and function. Indirect effects on natural features and resources could result, for example, from the erosion and movement of soil from the BMC parcels and HWMS Southeast Expansion Area into nearby forests and watercourses or the accidental introduction of invasive species.

This impact assessment is based on the information gathered from the background data review, existing site conditions, the results of the field surveys, and the evaluation of natural features and resources.

Based on the findings, recommendations were developed to avoid or minimize direct and indirect impacts to natural features and resources using mitigation measures and monitoring. Table 5-1 identifies, describes, and evaluates the mitigation measures and monitoring that are recommended to be employed to address potential impacts to natural features and resources within the BMC parcels, HWMS Southeast Expansion Area and in the adjacent lands.

Table 5-1. Natural Features, SAR, Potential Impacts, Proposed Mitigation Measures, and Environmental Monitoring

Site Location	Environmental Component	Potential Impacts	Mitigation Measures	Monitoring
BMC Parcel 1	Vegetation communities – Vegetation removal	▪ Removal of vegetation communities may result in loss of habitat. ▪ Damage to adjacent vegetation or ELC communities may occur during construction.	▪ Limit vegetation removal to only what is required for construction. ▪ Disturbed areas will be restored and revegetated using non-invasive, native plantings and seed mix, suitable to the site conditions and surrounding lands after construction is complete. ▪ Topsoil should be stockpiled separately and used for restoration to facilitate natural regeneration of native species. Any stockpiled material exposed for longer than 30 days needs to be temporarily seeded or covered to mitigate erosion. ▪ Install and maintain construction fencing and silt fencing wherever it can prevent or reduce damage to adjacent ELC communities. ▪ Revegetate any temporarily disturbed areas using non-invasive, native plantings and seed mix, suitable to the site conditions and surrounding ELC after construction is complete. ▪ Conduct vegetation removals with consideration for potential impacts to sensitive species (e.g., SAR) and features (e.g., SWH) and appropriate timing windows. ▪ Tree removals and compensation will need to adhere to Halton Region tree by-law, policies and guidance. ▪ Trees not identified for removal will need to be protected from injury following Halton Region and other relevant guidance, including the establishment of tree protection zones. Access routes should be adjusted to minimize impacts to trees. Additionally, root zone compaction protection measures such as wooden matting or mulch can be used to protect tree roots. Pruning, including root pruning, can also be used to retain trees near construction areas. ▪ Tree removals must also adhere to the federal Migratory Birds Convention Act, which recommends that trees and vegetation removal should be planned outside the nesting period from April 1 to August 31 (ECCC, 2020). ▪ Prepare a tree preservation plan to ensure protection of adjacent trees during construction. Demark protection area with high-visibility exclusion fencing. ▪ Contractors should adhere to the Clean Equipment Protocol for Industry (Halloran et al. 2013).	▪ Onsite inspection to confirm implementation of the mitigation measures. Corrective actions, if required, may include additional site maintenance or altering site activities to reduce impact. ▪ Monitoring will be completed as frequently as required by permits and regulatory approvals. ▪ Equipment and machinery on site should be monitored to prevent the spread of invasive species. ▪ Any tree trimming or pruning required will be completed by a certified arborist.
	Wildlife and wildlife habitat – including SAR and SAR Critical Habitat	▪ Disturbance, displacement, or mortality of wildlife, including SAR or damage or destruction of wildlife habitat including SAR critical habitat may occur. (No SAR, or SAR critical habitat areas were observed during field survey.)	▪ Onsite personnel should be provided with information (e.g., factsheets and training) that addresses the existence of potential wildlife including SAR and habitat areas including SAR critical habitat on site, the identification of the SAR species and habitat, and the procedures to follow if an individual is encountered or injured. ▪ Mitigation measures to reduce adverse impacts of project activities on wildlife, including SAR and habitat areas including SAR critical habitat are advised to comply with the ESA. ▪ If SAR were encountered, construction activities in the area should cease immediately, and a qualified Biologist should be contacted. The SAR must be allowed to leave the area on its own accord. Construction activities should not proceed until the SAR was safely away from the area. If the SAR does not leave the area on its own in a timely manner, a qualified Biologist with training in proper handling of SAR may be permitted to relocate the SAR safely away from the construction area. ▪ Any SAR individual that is encountered in the parcel must be reported to the MECP (SAROntario@ontario.ca) within 48 hours of the observation. ▪ Before construction, investigation of the parcel for wildlife, including SAR or habitat areas including SAR critical habitat area that may have established following the completion of previous surveys may be undertaken by a qualified Biologist, as appropriate. ▪ Wildlife exclusion fencing can be installed as needed around the construction area to protect wildlife and mitigate the ingress of wildlife onto the site as recommended by a qualified biologist. ▪ Wildlife and SAR surveys are required at the detailed design stage should the proposed works occur within or abut natural features.	▪ Onsite inspection to confirm implementation of the mitigation measures. Corrective actions, if required, may include additional site maintenance or altering site activities to reduce impact. ▪ Species-specific monitoring activities developed in accordance with the registration and permitting requirements under the ESA. ▪ Monitoring activities to reduce adverse impacts of project activities on wildlife, including SAR and habitat areas including SAR critical habitat will comply with the ESA.
	Natural Heritage Features – Regional Natural Heritage System and Greenbelt Natural Heritage System	▪ Disturbance or destruction of areas within the natural Heritage System during construction.	▪ The Regional Official Plan identifies the Regional Natural Heritage System. These areas of important natural features must be protected in accordance with the restrictions laid out in the Plan and enhanced wherever possible. ▪ The Greenbelt Plan identifies the Greenbelt Natural Heritage System. Development and urbanization in these areas is highly restricted to ensure ecological and hydrological functions through is maintained. Development within the BMC parcels, HWMS Southeast Expansion Area and adjacent lands must be completed in accordance with the Greenbelt Plan (2017) and its policies.	▪ Ensure the restrictions and guidelines as laid out in the Regional Official Plan and the Greenbelt Plan are understood early in the design phase. During construction these restrictions and guidelines must be implemented and followed.

Site Location	Environmental Component	Potential Impacts	Mitigation Measures	Monitoring
BMC Parcel 1	Natural Heritage Features – Wetlands, woodlands, and valleylands	▪ Wetlands and valleylands were not identified and will not be impacted. ▪ Woodlands occur between Parcels 1 and 2 but are not present within Parcel 1	▪ Connectivity between natural features through vegetation corridors or patches should be maintained and enhanced if and where possible to ensure plants and animals can move between different features. ▪ Staging and access area size will be minimized and should be planned to be located primarily within existing, open, and disturbed areas. ▪ Vegetation removal should be avoided whenever possible, and if feasible, vegetation removal and grading activities should be scheduled to avoid times of high runoff volumes (spring and fall) to prevent erosion and sedimentation. ▪ Multibarrier measures (i.e. silt fencing) should be erected directly adjacent to proposed construction areas if slopes are steep to prevent erosion, and runoff conveyance structures (i.e. tile drains and hillside erosion blankets) could also be installed if required. ▪ All work to be contained within the Project Area. At no time shall work extend into the Adjacent Lands.	▪ Ensure the design and construction follows the relevant sections of the Provincial Policy Statement, the Regional Official Plan, and the Greenbelt Plan ▪ A qualified construction site inspector shall perform pre-construction and construction monitoring. ▪ Weekly monitoring shall be conducted by a site inspector during construction to confirm that disturbances outside of the Study Area are not occurring. If disturbances are observed, activities shall be altered, and affected areas shall be restored as soon as possible.
BMC Parcel 2	Vegetation communities – Vegetation removal	▪ Removal of vegetation communities may result in loss of habitat. ▪ Damage to adjacent vegetation or ELC communities may occur during construction.	▪ Limit vegetation removal to only what is required for construction. ▪ Disturbed areas will be restored and revegetated using non-invasive, native plantings and seed mix, suitable to the site conditions and surrounding lands after construction is complete. ▪ Topsoil should be stockpiled separately and used for restoration to facilitate natural regeneration of native species. Any stockpiled material exposed for longer than 30 days needs to be temporarily seeded or covered to mitigate erosion. ▪ Install and maintain construction fencing and silt fencing wherever it can prevent or reduce damage to adjacent ELC communities. ▪ Revegetate any temporarily disturbed areas using non-invasive, native plantings and seed mix, suitable to the site conditions and surrounding ELC after construction is complete. ▪ Conduct vegetation removals with consideration for potential impacts to sensitive species (e.g., SAR) and features (e.g., SWH) and appropriate timing windows. ▪ Tree removals and compensation will need to adhere to Halton Region tree by-law, policies and guidance. ▪ Trees not identified for removal will need to be protected from injury following Halton Region and other relevant guidance including the establishment of tree protection zones. Access routes should be adjusted to minimize impacts to trees. Additionally, root zone compaction protection measures such as wooden matting or mulch can be used to protect tree roots. Pruning, including root pruning, can also be used to retain trees near construction areas. ▪ Tree removals must also adhere to the federal Migratory Birds Convention Act, which recommends that trees and vegetation removal should be planned outside the nesting period from April 1 to August 31 (ECCC, 2020). ▪ Prepare a tree preservation plan to ensure protection of adjacent trees during construction. Demark protection area with high-visibility exclusion fencing. ▪ Contractors should adhere to the Clean Equipment Protocol for Industry (Halloran et al. 2013).	▪ Onsite inspection to confirm implementation of mitigation measures. Corrective actions, if required, may include additional site maintenance or altering site activities to reduce impact. ▪ Monitoring will be completed as frequently as required by permits and regulatory approvals. ▪ Equipment and machinery on site should be monitored to prevent the spread of invasive species. ▪ Any tree trimming or pruning required will be completed by a certified arborist.
	Vegetation communities – Tree removal strategy	▪ Ash tree removals, transportation, and handling has potential to facilitate the spread of emerald ash borer (*Agrilus planipennis*).	▪ Removal of ash trees, or portions of ash trees, should 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 (2021), as amended from time to time. To comply with this Directive, ash trees requiring removal, including wood, bark, or chips, will be restricted from being transported outside of the emerald ash borer regulated areas of Canada. ▪ Confirm precautions are being taken to reduce the risk of the spread of invasive species by cleaning equipment before moving between sites. ▪ A certified arborist should be onsite during tree removals and management. ▪ Trees are important habitat for migratory birds. Therefore, it is prohibited to remove trees during April 1 to August 31.	▪ Onsite inspection to confirm implementation of the mitigation measures. Corrective actions, if required, may include additional site maintenance or altering site activities to reduce impact.
	Wildlife and wildlife habitat – Migratory breeding birds and nests	▪ Disturbance or destruction of migratory bird nests may occur during operational vegetation maintenance activities.	▪ All works must comply with the MBCA and ESA, including timing windows for the nesting period (April 1 to August 31). ▪ Construction may occur outside of the nesting period where feasible. However, if operations or vegetation maintenance activities must occur during the general nesting period, a breeding bird and nest survey will be undertaken before required activities. Nest searches are required and should be completed by a qualified Biologist no more than 48 hours before vegetation removal. ▪ If a nest of a migratory bird is found outside this nesting period (including a ground nest), it still receives protection. Implement appropriate buffers based on type of nests observed per the MBCA.	▪ During construction periods when bird habitat disturbance or destruction may occur, regular monitoring by a qualified biologist to confirm that activities do not encroach into nesting areas or disturb active nesting sites.
	Wildlife and wildlife habitat – SAR – Bat Snag Tree	▪ One potential bat snag tree was observed in parcel 2. ▪ No impacts are currently expected to the bat snag tree	▪ If, during detailed design, impact to this bat snag tree is expected, then more fieldwork can be carried out to determine if it is a potential SAR bat snag tree. If confirmed, the MECP would have to be notified before work can continue.	▪ Ensure the potential bat snag tree located west of BMC Parcel 2 within 120 m of natural environmental boundary, is not impacted during detailed design.

Site Location	Environmental Component	Potential Impacts	Mitigation Measures	Monitoring
BMC Parcel 2	Wildlife and wildlife habitat – including SAR and SAR Critical Habitat	▪ Disturbance, displacement, or mortality of wildlife, including SAR or damage or destruction of wildlife habitat including SAR critical habitat may occur. ▪ (No SAR, or SAR critical habitat areas were observed during field survey.)	▪ Onsite personnel should be provided with information (e.g., factsheets and training) that addresses the existence of potential wildlife including SAR and habitat areas including SAR critical habitat on site, the identification of the SAR species and habitat, and the procedures to follow if an individual is encountered or injured. ▪ Mitigation measures to reduce adverse impacts of project activities on wildlife, including SAR and habitat areas including SAR critical habitat are advised to comply with the ESA. ▪ If SAR were encountered, construction activities in the area should cease immediately, and a qualified Biologist should be contacted. The SAR must be allowed to leave the area on its own accord. Construction activities should not proceed until the SAR was safely away from the area. If the SAR does not leave the area on its own in a timely manner, a qualified Biologist with training in proper handling of SAR may be permitted to relocate the SAR safely away from the construction area. ▪ Any SAR individual that is encountered in the parcel must be reported to the MECP (SAROntario@ontario.ca) within 48 hours of the observation. ▪ Before construction, investigation of the parcel for wildlife, including SAR or habitat areas including SAR critical habitat area that may have established following the completion of previous surveys may be undertaken by a qualified Biologist, as appropriate. ▪ Wildlife and SAR surveys are required at the detailed design stage should the proposed works occur within or abut natural features.	▪ Onsite inspection to confirm implementation of the mitigation measures. Corrective actions, if required, may include additional site maintenance or altering site activities to reduce impact. ▪ Species-specific monitoring activities developed in accordance with the registration and permitting requirements under the ESA. ▪ Monitoring activities to reduce adverse impacts of project activities on wildlife, including SAR and habitat areas including SAR critical habitat will comply with the ESA.
	Natural Heritage Features – Regional Natural Heritage System and Greenbelt Natural Heritage System	▪ Disturbance or destruction of areas within the natural Heritage System during construction.	▪ The Regional Official Plan identifies the Regional Natural Heritage System. These areas of important natural features must be protected in accordance with the restrictions laid out in the Plan and enhanced wherever possible. ▪ The Greenbelt Plan identifies the Greenbelt Natural Heritage System. Development and urbanization in these areas is highly restricted to ensure ecological and hydrological functions through is maintained. Development within the BMC parcels, HWMS Southeast Expansion Area and adjacent lands must be completed in accordance with the Greenbelt Plan (2017) and its policies.	▪ Ensure the restrictions and guidelines as laid out in the Regional Official Plan and the Greenbelt Plan are understood early in the design phase. During construction these restrictions and guidelines must be implemented and followed.
	Natural Heritage Features – Wetlands, woodlands, and valleylands	▪ Wetlands and valleylands were not identified and will not be impacted. ▪ Woodlands occur between Parcels 1 and 2 but are not present within Parcel 2	▪ Connectivity between natural features through vegetation corridors or patches should be maintained and enhanced if and where possible to ensure plants and animals can move between different features. ▪ Staging and access area size will be minimized and should be planned to be located primarily within existing, open, and disturbed areas. ▪ Vegetation removal should be avoided whenever possible, and if feasible, vegetation removal and grading activities should be scheduled to avoid times of high runoff volumes (spring and fall) to prevent erosion and sedimentation. ▪ Multibarrier measures (i.e. silt fencing) should be erected directly adjacent to proposed construction areas if slopes are steep to prevent erosion, and runoff conveyance structures (i.e. tile drains and hillside erosion blankets) could also be installed if required. ▪ All work to be contained within the Project Area. At no time shall work extend into the Adjacent Lands.	▪ Ensure the design and construction follows the relevant sections of the Provincial Policy Statement, the Regional Official Plan, and the Greenbelt Plan ▪ A qualified site inspector shall perform pre-construction and construction monitoring. ▪ Weekly monitoring shall be conducted by a construction site inspector during construction to confirm disturbances outside of the Study Area are not occurring. If disturbances are observed, activities shall be altered, and affected areas shall be restored as soon as possible.

Site Location	Environmental Component	Potential Impacts	Mitigation Measures	Monitoring
BMC Parcel 4	Vegetation communities – Vegetation removal	▪ Removal of vegetation communities may result in loss of habitat. ▪ Damage to adjacent vegetation or ELC communities may occur during construction.	▪ Limit vegetation removal to only what is required for construction. ▪ Disturbed areas will be restored and revegetated using non-invasive, native plantings and seed mix, suitable to the site conditions and surrounding lands after construction is complete. ▪ Topsoil should be stockpiled separately and used for restoration to facilitate natural regeneration of native species. Any stockpiled material exposed for longer than 30 days needs to be temporarily seeded or covered to mitigate erosion. ▪ Install and maintain construction fencing and silt fencing wherever it can prevent or reduce damage to adjacent ELC communities. ▪ Revegetate any temporarily disturbed areas using non-invasive, native plantings and seed mix, suitable to the site conditions and surrounding ELC after construction is complete. ▪ Conduct vegetation removals with consideration for potential impacts to sensitive species (e.g., SAR) and features (e.g., SWH) and appropriate timing windows. ▪ Tree removals and compensation will need to adhere to Halton Region tree by-law, policies and guidance. ▪ Trees not identified for removal will need to be protected from injury following Halton Region and other relevant guidance including the establishment of tree protection zones. Access routes should be adjusted to minimize impacts to trees. Additionally, root zone compaction protection measures such as wooden matting or mulch can be used to protect tree roots. Pruning, including root pruning, can also be used to retain trees near construction areas. ▪ Tree removals must also adhere to the federal Migratory Birds Convention Act, which recommends that trees and vegetation removal should be planned outside the nesting period from April 1 to August 31 (ECCC, 2020). ▪ Prepare a tree preservation plan to ensure protection of adjacent trees during construction. Demark protection area with high-visibility exclusion fencing. ▪ Contractors should adhere to the Clean Equipment Protocol for Industry (Halloran et al. 2013).	▪ Onsite inspection to confirm implementation of the mitigation measures. Corrective actions, if required, may include additional site maintenance or altering site activities to reduce impact. ▪ Monitoring will be completed as frequently as required by permits and regulatory approvals. ▪ Equipment and machinery on site should be monitored to prevent the spread of invasive species. ▪ Any tree trimming or pruning required will be completed by a certified arborist.
	Wildlife and wildlife habitat – Migratory breeding birds and nests	▪ Disturbance or destruction of migratory bird nests may occur during operational vegetation maintenance activities.	▪ All works should comply with the MBCA and ESA, including timing windows for the nesting period (April 1 to August 31). ▪ Operations may occur outside of the nesting period where feasible. However, if operations or vegetation maintenance activities must occur during the general nesting period, a breeding bird and nest survey will be undertaken before required activities. Nest searches are required and should be completed by a qualified Biologist no more than 48 hours before vegetation removal. ▪ If a nest of a migratory bird was found outside this nesting period (including a ground nest), it still receives protection. Implement appropriate buffers based on type of nests observed per the MBCA.	▪ During construction periods when bird habitat disturbance of destruction may occur, regular monitoring by a qualified biologist to confirm that activities do not encroach into nesting areas or disturb active nesting sites.
	Wildlife and wildlife habitat – including SAR and SAR Critical Habitat	▪ Disturbance, displacement, or mortality of wildlife, including SAR or damage or destruction of wildlife habitat including SAR critical habitat may occur. ▪ (No SAR, or SAR critical habitat areas were observed during field survey.)	▪ Onsite personnel should be provided with information (e.g., factsheets and training) that addresses the existence of potential wildlife including SAR and habitat areas including SAR critical habitat on site, the identification of the SAR species and habitat, and the procedures to follow if an individual is encountered or injured. ▪ Mitigation measures to reduce adverse impacts of project activities on wildlife, including SAR and habitat areas including SAR critical habitat are advised to comply with the ESA. ▪ If SAR were encountered, construction activities in the area should cease immediately, and a qualified Biologist should be contacted. The SAR must be allowed to leave the area on its own accord. Construction activities should not proceed until the SAR was safely away from the area. If the SAR does not leave the area on its own in a timely manner, a qualified Biologist with training in proper handling of SAR may be permitted to relocate the SAR safely away from the construction area. ▪ Any SAR individual that is encountered in the parcel must be reported to the MECP (SAROntario@ontario.ca) within 48 hours of the observation. ▪ Before construction, investigation of the parcel for wildlife, including SAR or habitat areas including SAR critical habitat area that may have established following the completion of previous surveys may be undertaken by a qualified Biologist, as appropriate. ▪ Wildlife and SAR surveys are required at the detailed design stage should the proposed works occur within or abut natural features.	▪ Onsite inspection to confirm implementation of the mitigation measures. Corrective actions, if required, may include additional site maintenance or altering site activities to reduce impact. ▪ Species-specific monitoring activities developed in accordance with the registration and permitting requirements under the ESA. ▪ Monitoring activities to reduce adverse impacts of project activities on wildlife, including SAR and habitat areas including SAR critical habitat will comply with the ESA.
	Natural Heritage Features – Regional Natural Heritage System and Greenbelt Natural Heritage System	▪ Disturbance or destruction of areas within the natural Heritage System during construction.	▪ The Regional Official Plan identifies the Regional Natural Heritage System. These areas of important natural features must be protected in accordance with the restrictions laid out in the Plan and enhanced wherever possible. ▪ The Greenbelt Plan identifies the Greenbelt Natural Heritage System. Development and urbanization in these areas is highly restricted to ensure ecological and hydrological functions through is maintained. Development within the BMC parcels, HWMS Southeast Expansion Area and adjacent lands must be completed in accordance with the Greenbelt Plan (2017) and its policies.	▪ Ensure the restrictions and guidelines as laid out in the Regional Official Plan and the Greenbelt Plan are understood early in the design phase. During construction these restrictions and guidelines must be implemented and followed.

Site Location	Environmental Component	Potential Impacts	Mitigation Measures	Monitoring
BMC Parcel 4	Natural Heritage Features – Wetlands, woodlands, and valleylands	▪ Wetlands and valleylands were not identified and will not be impacted. ▪ Woodlands are not present within the parcel.	▪ Connectivity between natural features through vegetation corridors or patches should be maintained and enhanced if and where possible to ensure plants and animals can move between different features. ▪ Staging and access area size will be minimized and should be planned to be located primarily within existing, open, and disturbed areas. ▪ Vegetation removal should be avoided whenever possible, and if feasible, vegetation removal and grading activities should be scheduled to avoid times of high runoff volumes (spring and fall) to prevent erosion and sedimentation. ▪ Multibarrier measures (i.e. silt fencing) should be erected directly adjacent to proposed construction areas if slopes are steep to prevent erosion, and runoff conveyance structures (i.e. tile drains and hillside erosion blankets) could also be installed if required. ▪ All work to be contained within the Project Area. At no time shall work extend into the Adjacent Lands.	▪ Ensure the design and construction follows the relevant sections of the Provincial Policy Statement, the Regional Official Plan, and the Greenbelt Plan ▪ A qualified site inspector shall perform pre-construction and construction monitoring. ▪ Weekly monitoring shall be conducted by a site inspector during construction to confirm disturbances outside of the Study Area are not occurring. If disturbances are observed, activities shall be altered, and affected areas shall be restored as soon as possible.
BMC Parcel 5	Vegetation communities – Vegetation removal	▪ Removal of vegetation communities may result in loss of habitat. ▪ Damage to adjacent vegetation or ELC communities may occur during construction.	▪ Limit vegetation removal to only what is required for construction. ▪ Disturbed areas will be restored and revegetated using non-invasive, native plantings and seed mix, suitable to the site conditions and surrounding lands after construction is complete. ▪ Topsoil should be stockpiled separately and used for restoration to facilitate natural regeneration of native species. Any stockpiled material exposed for longer than 30 days needs to be temporarily seeded or covered to mitigate erosion. ▪ Install and maintain construction fencing and silt fencing wherever it can prevent or reduce damage to adjacent ELC communities. ▪ Revegetate any temporarily disturbed areas using non-invasive, native plantings and seed mix, suitable to the site conditions and surrounding ELC after construction is complete. ▪ Conduct vegetation removals with consideration for potential impacts to sensitive species (e.g., SAR) and features (e.g., SWH) and appropriate timing windows. ▪ Tree removals and compensation will need to adhere to Halton Region tree by-law, policies and guidance. ▪ Trees not identified for removal will need to be protected from injury following Halton Region and other relevant guidance including the establishment of tree protection zones. Access routes should be adjusted to minimize impacts to trees. Additionally, root zone compaction protection measures such as wooden matting or mulch can be used to protect tree roots. Pruning, including root pruning, can also be used to retain trees near construction areas. ▪ Tree removals must also adhere to the federal Migratory Birds Convention Act, which recommends that trees and vegetation removal should be planned outside the nesting period from April 1 to August 31 (ECCC, 2020). ▪ Prepare a tree preservation plan to ensure protection of adjacent trees during construction. Demark protection area with high-visibility exclusion fencing. ▪ Contractors should adhere to the Clean Equipment Protocol for Industry (Halloran et al. 2013).	▪ Onsite inspection to confirm implementation of the mitigation measures. Corrective actions, if required, may include additional site maintenance or altering site activities to reduce impact. ▪ Monitoring will be completed as frequently as required by permits and regulatory approvals. ▪ Equipment and machinery on site should be monitored to prevent the spread of invasive species. ▪ Any tree trimming or pruning required will be completed by a certified arborist.
	Vegetation communities – Tree removal strategy	▪ Ash tree removals, transportation, and handling has potential to facilitate the spread of emerald ash borer (*Agrilus planipennis*).	▪ Removal of ash trees, or portions of ash trees, should 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 (2021), as amended from time to time. To comply with this Directive, ash trees requiring removal, including wood, bark, or chips, will be restricted from being transported outside of the emerald ash borer regulated areas of Canada. ▪ Confirm precautions are being taken to reduce the risk of the spread of invasive species by cleaning equipment before moving between sites. ▪ A certified arborist should be onsite during tree removals and management. ▪ Trees are important habitat for migratory birds. Therefore, it is prohibited to remove trees during April 1 to August 31.	▪ Onsite inspection to confirm implementation of the mitigation measures. Corrective actions, if required, may include additional site maintenance or altering site activities to reduce impact.
	Wildlife and wildlife habitat – Migratory breeding birds and nests	▪ Disturbance or destruction of migratory bird nests may occur during operational vegetation maintenance activities.	▪ All works should comply with the MBCA and ESA, including timing windows for the nesting period (April 1 to August 31). ▪ Operations may occur outside of the nesting period where feasible. However, if operations or vegetation maintenance activities must occur during the general nesting period, a breeding bird and nest survey will be undertaken before required activities. Nest searches are required and will be completed by a qualified Biologist no more than 48 hours before vegetation removal. ▪ If a nest of a migratory bird is found outside this nesting period (including a ground nest), it may still receive protection. Implement appropriate buffers based on type of nests observed per the MBCA.	▪ During construction periods when bird habitat disturbance of destruction may occur, regular monitoring by a qualified biologist to confirm that activities do not encroach into nesting areas or disturb active nesting sites.

Site Location	Environmental Component	Potential Impacts	Mitigation Measures	Monitoring
BMC Parcel 5	Wildlife and wildlife habitat – including SAR and SAR Critical Habitat	▪ Disturbance, displacement, or mortality of wildlife, including SAR or damage or destruction of wildlife habitat including SAR critical habitat may occur. ▪ (No SAR, or SAR critical habitat areas were observed during field survey.)	▪ Onsite personnel should be provided with information (e.g., factsheets and training) that addresses the existence of potential wildlife including SAR and habitat areas including SAR critical habitat on site, the identification of the SAR species and habitat, and the procedures to follow if an individual is encountered or injured. ▪ Mitigation measures to reduce adverse impacts of project activities on wildlife, including SAR and habitat areas including SAR critical habitat are advised to comply with the ESA. ▪ If SAR were encountered, construction activities in the area should cease immediately, and a qualified Biologist should be contacted. The SAR must be allowed to leave the area on its own accord. Construction activities should not proceed until the SAR was safely away from the area. If the SAR does not leave the area on its own in a timely manner, a qualified Biologist with training in proper handling of SAR may be permitted to relocate the SAR safely away from the construction area. ▪ Any SAR individual that is encountered in the parcel must be reported to the MECP (SAROntario@ontario.ca) within 48 hours of the observation. ▪ Before construction, investigation of the parcel for wildlife, including SAR or habitat areas including SAR critical habitat area that may have established following the completion of previous surveys may be undertaken by a qualified Biologist, as appropriate. ▪ Wildlife and SAR surveys are required at the detailed design stage should the proposed works occur within or abut natural features.	▪ Onsite inspection to confirm implementation of the mitigation measures. Corrective actions, if required, may include additional site maintenance or altering site activities to reduce impact. ▪ Species-specific monitoring activities will be developed in accordance with the registration and permitting requirements under the ESA. ▪ Monitoring activities to reduce adverse impacts of project activities on wildlife, including SAR and habitat areas including SAR critical habitat will comply with the ESA.
	Wildlife and wildlife habitat – Wildlife corridor	▪ The area may serve as a movement corridor for smaller mammals and construction may impact the movement of these species.	▪ The area should be reassessed during detailed design for signs of natural corridors created by animals and potential habitats. ▪ To avoid encounter with animals and disruption of operations, the work should be performed during hibernation season or during the season they have reduced activity (Nov to April).	▪ During construction, identification by a qualified biologist of any habitats and any potential areas that are being actively used by animals as hibernating ground.
	Natural Heritage Features – Regional Natural Heritage System and Greenbelt Natural Heritage System	▪ Disturbance or destruction of areas within the natural Heritage System during construction.	▪ The Regional Official Plan identifies the Regional Natural Heritage System. These areas of important natural features must be protected in accordance with the restrictions laid out in the Plan and enhanced wherever possible. ▪ The Greenbelt Plan identifies the Greenbelt Natural Heritage System. Development and urbanization in these areas is highly restricted to ensure ecological and hydrological functions through is maintained. Development within the BMC parcels, HWMS Southeast Expansion Area and adjacent lands must be completed in accordance with the Greenbelt Plan (2017) and its policies.	▪ Ensure the restrictions and guidelines as laid out in the Regional Official Plan and the Greenbelt Plan are understood early in the design phase. During construction these restrictions and guidelines must be implemented and followed.
	Natural Heritage Features – Wetlands, woodlands, and valleylands	▪ Wetlands and valleylands were not identified and will not be impacted. ▪ Woodlands occur on all sides but are not present within Parcel.	▪ Connectivity between natural features through vegetation corridors or patches should be maintained and enhanced if and where possible to ensure plants and animals can move between different features. ▪ Staging and access area size will be minimized and should be planned to be located primarily within existing, open, and disturbed areas. ▪ Vegetation removal should be avoided whenever possible, and if feasible, vegetation removal and grading activities should be scheduled to avoid times of high runoff volumes (spring and fall) to prevent erosion and sedimentation. ▪ Multibarrier measures (i.e. silt fencing) should be erected directly adjacent to proposed construction areas if slopes are steep to prevent erosion, and runoff conveyance structures (i.e. tile drains and hillside erosion blankets) could also be installed if required. ▪ All work to be contained within the Project Area. At no time shall work extend into the Adjacent Lands.	▪ Ensure the design and construction follows the relevant sections of the Provincial Policy Statement, the Regional Official Plan, and the Greenbelt Plan ▪ A qualified site inspector shall perform pre-construction and construction monitoring. ▪ Weekly monitoring shall be conducted by a construction site inspector during construction to confirm disturbances outside of the Study Area are not occurring. If disturbances are observed, activities shall be altered, and affected areas shall be restored as soon as possible.

Site Location	Environmental Component	Potential Impacts	Mitigation Measures	Monitoring
BMC Parcel 6	Vegetation communities – Vegetation removal	▪ Removal of vegetation communities may result in loss of habitat. Damage to adjacent vegetation or ELC communities may occur during construction.	▪ Limit vegetation removal to only what is required for construction. ▪ Disturbed areas will be restored and revegetated using non-invasive, native plantings and seed mix, suitable to the site conditions and surrounding lands after construction is complete. ▪ Topsoil should be stockpiled separately and used for restoration to facilitate natural regeneration of native species. Any stockpiled material exposed for longer than 30 days needs to be temporarily seeded or covered to mitigate erosion. ▪ Install and maintain construction fencing and silt fencing wherever it can prevent or reduce damage to adjacent ELC communities. ▪ Revegetate any temporarily disturbed areas using non-invasive, native plantings and seed mix, suitable to the site conditions and surrounding ELC after construction is complete. ▪ Conduct vegetation removals with consideration for potential impacts to sensitive species (e.g., SAR) and features (e.g., SWH) and appropriate timing windows. ▪ Tree removals and compensation will need to adhere to Halton Region tree by-law, policies and guidance. ▪ Trees not identified for removal will need to be protected from injury following Halton Region and other relevant guidance including the establishment of tree protection zones. Access routes should be adjusted to minimize impacts to trees. Additionally, root zone compaction protection measures such as wooden matting or mulch can be used to protect tree roots. Pruning, including root pruning, can also be used to retain trees near construction areas. ▪ Tree removals must also adhere to the federal Migratory Birds Convention Act, which recommends that trees and vegetation removal should be planned outside the nesting period from April 1 to August 31 (ECCC, 2020). ▪ Prepare a tree preservation plan to ensure protection of adjacent trees during construction. Demark protection area with high-visibility exclusion fencing. ▪ Contractors should adhere to the Clean Equipment Protocol for Industry (Halloran et al. 2013).	▪ Onsite inspection to confirm implementation of the mitigation measures. Corrective actions, if required, may include additional site maintenance or altering site activities to reduce impact. ▪ Monitoring will be completed as frequently as required by permits and regulatory approvals. ▪ Equipment and machinery on site should be monitored to prevent the spread of invasive species. ▪ Any tree trimming or pruning required will be completed by a certified arborist.
	Wildlife and wildlife habitat – Migratory breeding birds and nests	▪ Disturbance or destruction of migratory bird nests may occur during operational vegetation maintenance activities.	▪ All works should comply with the MBCA and ESA, including timing windows for the nesting period (April 1 to August 31). ▪ Operations may occur outside of the nesting period where feasible. However, if operations or vegetation maintenance activities must occur during the general nesting period, a breeding bird and nest survey will be undertaken before required activities. Nest searches are required and will be completed by a qualified Biologist no more than 48 hours before vegetation removal. ▪ If a nest of a migratory bird is found outside this nesting period (including a ground nest), it may still receive protection. Implement appropriate buffers based on type of nests observed per the MBCA.	▪ During construction periods when bird habitat disturbance of destruction may occur, regular monitoring by a qualified biologist to confirm that activities do not encroach into nesting areas or disturb active nesting sites.
	Wildlife and wildlife habitat – Wildlife corridor	▪ The area may serve as a movement corridor for smaller mammals and construction may impact the movement of these species.	▪ The area should be investigated for signs of natural corridors created by animals. ▪ Potential habitats if found should be reported and operations should be stopped in such situation. ▪ To avoid encounter with animals and disruption of operations, the work should be performed during hibernation season or during the season they have reduced activity (Nov to April).	▪ During construction, identification by a qualified biologist of any habitats and any potential areas that are being actively used by animals as hibernating ground.
	Wildlife and wildlife habitat – including SAR and SAR Critical Habitat	▪ Disturbance, displacement, or mortality of wildlife, including SAR or damage or destruction of wildlife habitat including SAR critical habitat may occur. (No SAR, or SAR critical habitat areas were observed during field survey.)	▪ Onsite personnel should be provided with information (e.g., factsheets and training) that addresses the existence of potential wildlife including SAR and habitat areas including SAR critical habitat on site, the identification of the SAR species and habitat, and the procedures to follow if an individual is encountered or injured. ▪ Mitigation measures to reduce adverse impacts of project activities on wildlife, including SAR and habitat areas including SAR critical habitat are advised to comply with the ESA. ▪ If SAR were encountered, construction activities in the area should cease immediately, and a qualified Biologist should be contacted. The SAR must be allowed to leave the area on its own accord. Construction activities should not proceed until the SAR was safely away from the area. If the SAR does not leave the area on its own in a timely manner, a qualified Biologist with training in proper handling of SAR may be permitted to relocate the SAR safely away from the construction area. ▪ Any SAR individual that is encountered in the parcel must be reported to the MECP (SAROntario@ontario.ca) within 48 hours of the observation. ▪ Before construction, investigation of the parcel for wildlife, including SAR or habitat areas including SAR critical habitat area that may have established following the completion of previous surveys may be undertaken by a qualified Biologist, as appropriate. ▪ Wildlife and SAR surveys are required at the detailed design stage should the proposed works occur within or abut natural features.	▪ Onsite inspection to confirm implementation of the mitigation measures. Corrective actions, if required, may include additional site maintenance or altering site activities to reduce impact. ▪ Species-specific monitoring activities developed in accordance with the registration and permitting requirements under the ESA. ▪ Monitoring activities to reduce adverse impacts of project activities on wildlife, including SAR and habitat areas including SAR critical habitat will comply with the ESA.

Site Location	Environmental Component	Potential Impacts	Mitigation Measures	Monitoring
BMC Parcel 6	Natural Heritage Features – Regional Natural Heritage System and Greenbelt Natural Heritage System	▪ Disturbance or destruction of areas within the natural Heritage System during construction.	▪ The Regional Official Plan identifies the Regional Natural Heritage System. These areas of important natural features must be protected in accordance with the restrictions laid out in the Plan and enhanced wherever possible. ▪ The Greenbelt Plan identifies the Greenbelt Natural Heritage System. Development and urbanization in these areas is highly restricted to ensure ecological and hydrological functions through is maintained. Development within the BMC parcels, HWMS Southeast Expansion Area and adjacent lands must be completed in accordance with the Greenbelt Plan (2017) and its policies.	▪ Ensure the restrictions and guidelines as laid out in the Regional Official Plan and the Greenbelt Plan are understood early in the design phase. During construction these restrictions and guidelines must be implemented and followed.
	Natural Heritage Features – Wetlands, woodlands, and valleylands	▪ Wetlands and valleylands were not identified and will not be impacted. ▪ Woodlands occur on the northeast side but are not present within Parcel.	▪ Connectivity between natural features through vegetation corridors or patches should be maintained and enhanced if and where possible to ensure plants and animals can move between different features. ▪ Staging and access area size will be minimized and should be planned to be located primarily within existing, open, and disturbed areas. ▪ Vegetation removal should be avoided whenever possible, and if feasible, vegetation removal and grading activities should be scheduled to avoid times of high runoff volumes (spring and fall) to prevent erosion and sedimentation. ▪ Multibarrier measures (i.e. silt fencing) should be erected directly adjacent to proposed construction areas if slopes are steep to prevent erosion, and runoff conveyance structures (i.e. tile drains and hillside erosion blankets) could also be installed if required. ▪ All work to be contained within the Project Area. At no time shall work extend into the Adjacent Lands.	▪ Ensure the design and construction follows the relevant sections of the Provincial Policy Statement, the Regional Official Plan, and the Greenbelt Plan ▪ A qualified site inspector shall perform pre-construction and construction monitoring. ▪ Weekly monitoring shall be conducted by a construction site inspector during construction to confirm disturbances outside of the Study Area are not occurring. If disturbances are observed, activities shall be altered, and affected areas shall be restored as soon as possible.
BMC Parcel 7	Vegetation communities – Vegetation removal	▪ Removal of vegetation communities may result in loss of habitat. ▪ Damage to adjacent vegetation or ELC communities may occur during construction.	▪ Limit vegetation removal to only what is required for construction. ▪ Disturbed areas will be restored and revegetated using non-invasive, native plantings and seed mix, suitable to the site conditions and surrounding lands after construction is complete. ▪ Topsoil should be stockpiled separately and used for restoration to facilitate natural regeneration of native species. Any stockpiled material exposed for longer than 30 days needs to be temporarily seeded or covered to mitigate erosion. ▪ Install and maintain construction fencing and silt fencing wherever it can prevent or reduce damage to adjacent ELC communities. ▪ Revegetate any temporarily disturbed areas using non-invasive, native plantings and seed mix, suitable to the site conditions and surrounding ELC after construction is complete. ▪ Conduct vegetation removals with consideration for potential impacts to sensitive species (e.g., SAR) and features (e.g., SWH) and appropriate timing windows. ▪ Tree removals and compensation will need to adhere to Halton Region tree by-law, policies and guidance. ▪ Trees not identified for removal will need to be protected from injury following Halton Region and other relevant guidance including the establishment of tree protection zones. Access routes should be adjusted to minimize impacts to trees. Additionally, root zone compaction protection measures such as wooden matting or mulch can be used to protect tree roots. Pruning, including root pruning, can also be used to retain trees near construction areas. ▪ Tree removals must also adhere to the federal Migratory Birds Convention Act, which recommends that trees and vegetation removal should be planned outside the nesting period from April 1 to August 31 (ECCC, 2020). ▪ Prepare a tree preservation plan to ensure protection of adjacent trees during construction. Demark protection area with high-visibility exclusion fencing. ▪ Contractors should adhere to the Clean Equipment Protocol for Industry (Halloran et al. 2013).	▪ Onsite inspection to confirm implementation of mitigation measures. Corrective actions, if required, may include additional site maintenance or altering site activities to reduce impact. ▪ Monitoring will be completed as frequently as required by permits and regulatory approvals. ▪ Equipment and machinery on site should be monitored to prevent the spread of invasive species. ▪ Any tree trimming or pruning required will be completed by a certified arborist.
	Vegetation communities – Tree removal strategy	▪ Ash tree removals, transportation, and handling has potential to facilitate the spread of emerald ash borer (*Agrilus planipennis*).	▪ Removal of ash trees, or portions of ash trees, should 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 (2021), as amended from time to time. To comply with this Directive, ash trees requiring removal, including wood, bark, or chips, will be restricted from being transported outside of the emerald ash borer regulated areas of Canada. ▪ Confirm precautions are being taken to reduce the risk of the spread of invasive species by cleaning equipment before moving between sites. ▪ A certified arborist should be onsite during tree removals and management. ▪ Trees are important habitat for migratory birds. Therefore, it is prohibited to remove trees during April 1 to August 31.	▪ Onsite inspection to confirm implementation of the mitigation measures. Corrective actions, if required, may include additional site maintenance or altering site activities to reduce impact.

Site Location	Environmental Component	Potential Impacts	Mitigation Measures	Monitoring
BMC Parcel 7	Wildlife and wildlife habitat – including SAR and SAR Critical Habitat	▪ Disturbance, displacement, or mortality of wildlife, including SAR or damage or destruction of wildlife habitat including SAR critical habitat may occur. ▪ (No SAR, or SAR critical habitat areas were observed during field survey.)	▪ Onsite personnel should be provided with information (e.g., factsheets and training) that addresses the existence of potential wildlife including SAR and habitat areas including SAR critical habitat on site, the identification of the SAR species and habitat, and the procedures to follow if an individual is encountered or injured. ▪ Mitigation measures to reduce adverse impacts of project activities on wildlife, including SAR and habitat areas including SAR critical habitat are advised to comply with the ESA. ▪ If SAR were encountered, construction activities in the area should cease immediately, and a qualified Biologist should be contacted. The SAR must be allowed to leave the area on its own accord. Construction activities should not proceed until the SAR was safely away from the area. If the SAR does not leave the area on its own in a timely manner, a qualified Biologist with training in proper handling of SAR may be permitted to relocate the SAR safely away from the construction area. ▪ Any SAR individual that is encountered in the parcel must be reported to the MECP (SAROntario@ontario.ca) within 48 hours of the observation. ▪ Before construction, investigation of the parcel for wildlife, including SAR or habitat areas including SAR critical habitat area that may have established following the completion of previous surveys may be undertaken by a qualified Biologist, as appropriate. ▪ Wildlife and SAR surveys are required at the detailed design stage should the proposed works occur within or abut natural features.	▪ Onsite inspection to confirm implementation of the mitigation measures. Corrective actions, if required, may include additional site maintenance or altering site activities to reduce impact. ▪ Species-specific monitoring activities developed in accordance with the registration and permitting requirements under the ESA. ▪ Monitoring activities to reduce adverse impacts of project activities on wildlife, including SAR and habitat areas including SAR critical habitat will comply with the ESA.
	Natural Heritage Features – Regional Natural Heritage System and Greenbelt Natural Heritage System	▪ Disturbance or destruction of areas within the natural Heritage System during construction.	▪ The Regional Official Plan identifies the Regional Natural Heritage System. These areas of important natural features must be protected in accordance with the restrictions laid out in the Plan and enhanced wherever possible. ▪ The Greenbelt Plan identifies the Greenbelt Natural Heritage System. Development and urbanization in these areas is highly restricted to ensure ecological and hydrological functions through is maintained. Development within the BMC parcels, HWMS Southeast Expansion Area and adjacent lands must be completed in accordance with the Greenbelt Plan (2017) and its policies.	▪ Ensure the restrictions and guidelines as laid out in the Regional Official Plan and the Greenbelt Plan are understood early in the design phase. During construction these restrictions and guidelines must be implemented and followed.
	Natural Heritage Features – Wetlands, woodlands, and valleylands	▪ Wetlands and valleylands were not identified and will not be impacted. ▪ Woodlands do not occur within or adjacent to this parcel.	▪ Connectivity between natural features through vegetation corridors or patches should be maintained and enhanced if and where possible to ensure plants and animals can move between different features. ▪ Staging and access area size will be minimized and should be planned to be located primarily within existing, open, and disturbed areas. ▪ Vegetation removal should be avoided whenever possible, and if feasible, vegetation removal and grading activities should be scheduled to avoid times of high runoff volumes (spring and fall) to prevent erosion and sedimentation. ▪ Multibarrier measures (i.e. silt fencing) should be erected directly adjacent to proposed construction areas if slopes are steep to prevent erosion, and runoff conveyance structures (i.e. tile drains and hillside erosion blankets) could also be installed if required. ▪ All work to be contained within the Project Area. At no time shall work extend into the Adjacent Lands.	▪ Ensure the design and construction follows the relevant sections of the Provincial Policy Statement, the Regional Official Plan, and the Greenbelt Plan ▪ A qualified site inspector shall perform pre-construction and construction monitoring. ▪ Weekly monitoring shall be conducted by a construction site inspector during construction to confirm disturbances outside of the Study Area are not occurring. If disturbances are observed, activities shall be altered, and affected areas shall be restored as soon as possible.

Site Location	Environmental Component	Potential Impacts	Mitigation Measures	Monitoring
BMC Parcel 8	Vegetation communities – Vegetation removal	▪ Removal of vegetation communities may result in loss of habitat. ▪ Damage to adjacent vegetation or ELC communities may occur during construction.	▪ Limit vegetation removal to only what is required for construction. ▪ Disturbed areas will be restored and revegetated using non-invasive, native plantings and seed mix, suitable to the site conditions and surrounding lands after construction is complete. ▪ Topsoil should be stockpiled separately and used for restoration to facilitate natural regeneration of native species. Any stockpiled material exposed for longer than 30 days needs to be temporarily seeded or covered to mitigate erosion. ▪ Install and maintain construction fencing and silt fencing wherever it can prevent or reduce damage to adjacent ELC communities. ▪ Revegetate any temporarily disturbed areas using non-invasive, native plantings and seed mix, suitable to the site conditions and surrounding ELC after construction is complete. ▪ Conduct vegetation removals with consideration for potential impacts to sensitive species (e.g., SAR) and features (e.g., SWH) and appropriate timing windows. ▪ Tree removals and compensation will need to adhere to Halton Region tree by-law, policies and guidance. ▪ Trees not identified for removal will need to be protected from injury following Halton Region and other relevant guidance including the establishment of tree protection zones. Access routes should be adjusted to minimize impacts to trees. Additionally, root zone compaction protection measures such as wooden matting or mulch can be used to protect tree roots. Pruning, including root pruning, can also be used to retain trees near construction areas. ▪ Tree removals must also adhere to the federal Migratory Birds Convention Act, which recommends that trees and vegetation removal should be planned outside the nesting period from April 1 to August 31 (ECCC, 2020). ▪ Prepare a tree preservation plan to ensure protection of adjacent trees during construction. Demark protection area with high-visibility exclusion fencing. ▪ Contractors should adhere to the Clean Equipment Protocol for Industry (Halloran et al. 2013).	▪ Onsite inspection to confirm implementation of the mitigation measures. Corrective actions, if required, may include additional site maintenance or altering site activities to reduce impact. ▪ Monitoring will be completed as frequently as required by permits and regulatory approvals. ▪ Equipment and machinery on site should be monitored to prevent the spread of invasive species. ▪ Any tree trimming or pruning required will be completed by a certified arborist.
	Vegetation communities – Tree removal	▪ Removal of trees may result in loss of habitat. ▪ Damage to adjacent vegetation or ELC communities may occur during construction.	▪ A certified arborist should be onsite during tree removals and management. ▪ Trees are important habitat for migratory birds. Therefore, it is prohibited to remove trees during April 1 to August 31.	▪ Onsite inspection to confirm implementation of the mitigation measures. Corrective actions, if required, may include additional site maintenance or altering site activities to reduce impact.
	Wildlife and wildlife habitat – Migratory breeding birds and nests	▪ Disturbance or destruction of migratory bird nests may occur during operational vegetation maintenance activities.	▪ All works should comply with the MBCA and ESA, including timing windows for the nesting period (April 1 to August 31). ▪ Operations will occur outside of the nesting period where feasible. However, if operations or vegetation maintenance activities must occur during the general nesting period, a breeding bird and nest survey should be undertaken before required activities. Nest searches are required and should be completed by a qualified Biologist no more than 48 hours before vegetation removal. ▪ If a nest of a migratory bird is found outside this nesting period (including a ground nest), it may still receive protection. Implement appropriate buffers based on type of nests observed per the MBCA.	▪ During construction, identification by a qualified biologist of any habitats and any potential areas that are being actively used by animals as hibernating ground.
	Wildlife and wildlife habitat – including SAR and SAR Critical Habitat	▪ Disturbance, displacement, or mortality of wildlife, including SAR or damage or destruction of wildlife habitat including SAR critical habitat may occur. ▪ (No SAR, or SAR critical habitat areas were observed during field survey.)	▪ Onsite personnel should be provided with information (e.g., factsheets and training) that addresses the existence of potential wildlife including SAR and habitat areas including SAR critical habitat on site, the identification of the SAR species and habitat, and the procedures to follow if an individual is encountered or injured. ▪ Mitigation measures to reduce adverse impacts of project activities on wildlife, including SAR and habitat areas including SAR critical habitat are advised to comply with the ESA. ▪ If SAR were encountered, construction activities in the area should cease immediately, and a qualified Biologist should be contacted. The SAR must be allowed to leave the area on its own accord. Construction activities should not proceed until the SAR was safely away from the area. If the SAR does not leave the area on its own in a timely manner, a qualified Biologist with training in proper handling of SAR may be permitted to relocate the SAR safely away from the construction area. ▪ Any SAR individual that is encountered in the parcel must be reported to the MECP (SAROntario@ontario.ca) within 48 hours of the observation. ▪ Before construction, investigation of the parcel for wildlife, including SAR or habitat areas including SAR critical habitat area that may have established following the completion of previous surveys may be undertaken by a qualified Biologist, as appropriate. ▪ Wildlife and SAR surveys are required at the detailed design stage should the proposed works occur within or abut natural features.	▪ Onsite inspection to confirm implementation of the mitigation measures. Corrective actions, if required, may include additional site maintenance or altering site activities to reduce impact. ▪ Species-specific monitoring activities will be developed in accordance with the registration and permitting requirements under the ESA. ▪ Monitoring activities to reduce adverse impacts of project activities on wildlife, including SAR and habitat areas including SAR critical habitat will comply with the ESA.

Site Location	Environmental Component	Potential Impacts	Mitigation Measures	Monitoring
BMC Parcel 8	Natural Heritage Features – Regional Natural Heritage System and Greenbelt Natural Heritage System	▪ Disturbance or destruction of areas within the natural Heritage System during construction.	▪ The Regional Official Plan identifies the Regional Natural Heritage System. These areas of important natural features must be protected in accordance with the restrictions laid out in the Plan and enhanced wherever possible. ▪ The Greenbelt Plan identifies the Greenbelt Natural Heritage System. Development and urbanization in these areas is highly restricted to ensure ecological and hydrological functions through is maintained. Development within the BMC parcels, HWMS Southeast Expansion Area and adjacent lands must be completed in accordance with the Greenbelt Plan (2017) and its policies.	▪ Ensure the restrictions and guidelines as laid out in the Regional Official Plan and the Greenbelt Plan are understood early in the design phase. During construction these restrictions and guidelines must be implemented and followed.
	Natural Heritage Features – Wetlands, woodlands, and valleylands	▪ Wetlands and valleylands were not identified and will not be impacted. ▪ Woodlands do not occur adjacent to or within parcel.	▪ Connectivity between natural features through vegetation corridors or patches should be maintained and enhanced if and where possible to ensure plants and animals can move between different features. ▪ Staging and access area size will be minimized and should be planned to be located primarily within existing, open, and disturbed areas. ▪ Vegetation removal should be avoided whenever possible, and if feasible, vegetation removal and grading activities should be scheduled to avoid times of high runoff volumes (spring and fall) to prevent erosion and sedimentation. ▪ Multibarrier measures (i.e. silt fencing) should be erected directly adjacent to proposed construction areas if slopes are steep to prevent erosion, and runoff conveyance structures (i.e. tile drains and hillside erosion blankets) could also be installed if required. ▪ All work to be contained within the Project Area. At no time shall work extend into the Adjacent Lands.	▪ Ensure the design and construction follows the relevant sections of the Provincial Policy Statement, the Regional Official Plan, and the Greenbelt Plan ▪ A qualified site inspector shall perform pre-construction and construction monitoring. ▪ Weekly monitoring shall be conducted by a construction site inspector during construction to confirm disturbances outside of the Study Area are not occurring. If disturbances are observed, activities shall be altered, and affected areas shall be restored as soon as possible.
HWMS Southeast Expansion Area	Vegetation communities – Vegetation removal	▪ Removal of vegetation communities may result in loss of habitat. Damage to adjacent vegetation or ELC communities may occur during construction.	▪ Limit vegetation removal to only what is required for construction. ▪ Disturbed areas will be restored and revegetated using non-invasive, native plantings and seed mix, suitable to the site conditions and surrounding lands after construction is complete. ▪ Topsoil should be stockpiled separately and used for restoration to facilitate natural regeneration of native species. Any stockpiled material exposed for longer than 30 days needs to be temporarily seeded or covered to mitigate erosion. ▪ Install and maintain construction fencing and silt fencing wherever it can prevent or reduce damage to adjacent ELC communities. ▪ Revegetate any temporarily disturbed areas using non-invasive, native plantings and seed mix, suitable to the site conditions and surrounding ELC after construction is complete. ▪ Conduct vegetation removals with consideration for potential impacts to sensitive species (e.g., SAR) and features (e.g., SWH) and appropriate timing windows. ▪ Tree removals and compensation will need to adhere to Halton Region tree by-law, policies and guidance. ▪ Trees not identified for removal will need to be protected from injury following Halton Region and other relevant guidance including the establishment of tree protection zones. Access routes should be adjusted to minimize impacts to trees. Additionally, root zone compaction protection measures such as wooden matting or mulch can be used to protect tree roots. Pruning, including root pruning, can also be used to retain trees near construction areas. ▪ Tree removals must also adhere to the federal Migratory Birds Convention Act, which recommends that trees and vegetation removal should be planned outside the nesting period from April 1 to August 31 (ECCC, 2020). ▪ Prepare a tree preservation plan to ensure protection of adjacent trees during construction. Demark protection area with high-visibility exclusion fencing. ▪ Contractors should adhere to the Clean Equipment Protocol for Industry (Halloran et al. 2013).	▪ Onsite inspection to confirm implementation of the mitigation measures. Corrective actions, if required, may include additional site maintenance or altering site activities to reduce impact. ▪ Monitoring will be completed as frequently as required by permits and regulatory approvals. ▪ Equipment and machinery on site should be monitored to prevent the spread of invasive species. ▪ Any tree trimming or pruning required will be completed by a certified arborist.
	Vegetation communities – Tree removal strategy	▪ Ash tree removals, transportation, and handling has potential to facilitate the spread of emerald ash borer (*Agrilus planipennis*).	▪ Removal of ash trees, or portions of ash trees, should 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 (2021), as amended from time to time. To comply with this Directive, ash trees requiring removal, including wood, bark, or chips, will be restricted from being transported outside of the emerald ash borer regulated areas of Canada. ▪ Confirm precautions are being taken to reduce the risk of the spread of invasive species by cleaning equipment before moving between sites. ▪ Trees are important habitat for migratory birds therefore it is prohibited to remove trees during April 1 to August 31.	▪ Onsite inspection to confirm implementation of the mitigation measures. Corrective actions, if required, may include additional site maintenance or altering site activities to reduce impact.

Site Location	Environmental Component	Potential Impacts	Mitigation Measures	Monitoring
HWMS Southeast Expansion Area	Wildlife and wildlife habitat – Migratory breeding birds and nests	▪ Disturbance or destruction of migratory bird nests may occur during operational vegetation maintenance activities.	▪ All works must comply with the MBCA and ESA, including timing windows for the nesting period (April 1 to August 31). ▪ Operations should occur outside of the nesting period where feasible. However, if operations or vegetation maintenance activities must occur during the general nesting period, a breeding bird and nest survey should be undertaken before required activities. Nest searches are required and should be completed by a qualified Biologist no more than 48 hours before vegetation removal. ▪ If a nest of a migratory bird was found outside this nesting period (including a ground nest), it may still receive protection. Implement appropriate buffers based on type of nests observed per the MBCA.	▪ During construction, identification by a qualified biologist of any habitats and any potential areas that are being actively used by animals as hibernating ground.
	Wildlife and wildlife habitat – Wildlife corridor	▪ The area may serve as a movement corridor for smaller mammals and construction may impact the movement of these species.	▪ The area should be investigated for signs of natural corridors created by animals. ▪ Potential habitats if found should be reported and operations should be stopped in such situation. ▪ To avoid encounter with animals and disruption of operations, the work should be performed during hibernation season or during the season they have reduced activity (Nov to April).	▪ During construction, identification by a qualified biologist of any habitats and any potential areas that are being actively used by animals as hibernating ground.
	Wildlife and wildlife habitat – including SAR and SAR Critical Habitat	▪ Disturbance, displacement, or mortality of wildlife, including SAR or damage or destruction of wildlife habitat including SAR critical habitat may occur. ▪ (No SAR, or SAR critical habitat areas were observed during field survey.)	▪ Onsite personnel should be provided with information (e.g., factsheets and training) that addresses the existence of potential wildlife including SAR and habitat areas including SAR critical habitat on site, the identification of the SAR species and habitat, and the procedures to follow if an individual is encountered or injured. ▪ Mitigation measures to reduce adverse impacts of project activities on wildlife, including SAR and habitat areas including SAR critical habitat are advised to comply with the ESA. ▪ If SAR were encountered, construction activities in the area should cease immediately, and a qualified Biologist should be contacted. The SAR must be allowed to leave the area on its own accord. Construction activities should not proceed until the SAR was safely away from the area. If the SAR does not leave the area on its own in a timely manner, a qualified Biologist with training in proper handling of SAR may be permitted to relocate the SAR safely away from the construction area. ▪ Any SAR individual that is encountered in the parcel must be reported to the MECP (SAROntario@ontario.ca) within 48 hours of the observation. ▪ Before construction, investigation of the parcel for wildlife, including SAR or habitat areas including SAR critical habitat area that may have established following the completion of previous surveys may be undertaken by a qualified Biologist, as appropriate. ▪ Wildlife and SAR surveys are required at the detailed design stage should the proposed works occur within or abut natural features.	▪ Onsite inspection to confirm implementation of the mitigation measures. Corrective actions, if required, may include additional site maintenance or altering site activities to reduce impact. ▪ Species-specific monitoring activities developed in accordance with the registration and permitting requirements under the ESA. ▪ Monitoring activities to reduce adverse impacts of project activities on wildlife, including SAR and habitat areas including SAR critical habitat will comply with the ESA.
	Natural Heritage Features – Regional Natural Heritage System and Greenbelt Natural Heritage System	▪ Disturbance or destruction of areas within the natural Heritage System during construction.	▪ The Regional Official Plan identifies the Regional Natural Heritage System. These areas of important natural features must be protected in accordance with the restrictions laid out in the Plan and enhanced wherever possible. ▪ The Greenbelt Plan identifies the Greenbelt Natural Heritage System. Development and urbanization in these areas is highly restricted to ensure ecological and hydrological functions through is maintained. Development within the BMC parcels, HWMS Southeast Expansion Area and adjacent lands must be completed in accordance with the Greenbelt Plan (2017) and its policies.	▪ Ensure the restrictions and guidelines as laid out in the Regional Official Plan and the Greenbelt Plan are understood early in the design phase. During construction these restrictions and guidelines must be implemented and followed.
	Natural Heritage Features – Wetlands, woodlands, and valleylands	▪ Wetlands and valleylands were not identified and will not be impacted. ▪ Woodlands occur to the northwest and extending partially into parcel.	▪ Connectivity between natural features through vegetation corridors or patches should be maintained and enhanced if and where possible to ensure plants and animals can move between different features. ▪ Staging and access area size will be minimized and should be planned to be located primarily within existing, open, and disturbed areas. ▪ Vegetation removal should be avoided whenever possible, and if feasible, vegetation removal and grading activities should be scheduled to avoid times of high runoff volumes (spring and fall) to prevent erosion and sedimentation. ▪ Multibarrier measures (i.e. silt fencing) should be erected directly adjacent to proposed construction areas if slopes are steep to prevent erosion, and runoff conveyance structures (i.e. tile drains and hillside erosion blankets) could also be installed if required. ▪ All work to be contained within the Project Area. At no time shall work extend into the Adjacent Lands.	▪ Ensure the design and construction follows the relevant sections of the Provincial Policy Statement, the Regional Official Plan, and the Greenbelt Plan ▪ A qualified site inspector shall perform pre-construction and construction monitoring. ▪ Weekly monitoring shall be conducted by a construction site inspector during construction to confirm disturbances outside of the Study Area are not occurring. If disturbances are observed, activities shall be altered, and affected areas shall be restored as soon as possible.

MBCA = Migratory Birds Convention Act

6 Federal, Provincial, and Municipal Permitting and Policy Considerations

This section provides information regarding federal and provincial permitting considerations.

6.1 Federal

6.1.1 Fisheries Act and Species at Risk Act

DFO prohibits activities that would result in harm to fish species and their habitat through the *Fisheries Act* and the *Species at Risk Act*. Death of fish and the harmful alteration, destruction, and displacement (HADD) of their habitat is not permitted without regulatory approval. As no work is currently expected in or within 30 m of watercourses, permitting under the *Fisheries Act* is not currently required. Permitting under SARA is also not required.

6.1.2 Migratory Birds Convention Act, 1994

In accordance with the MBCA, potential mitigation measures for the project are included in the Impact Assessment, Mitigation, and Monitoring table (Table 5-1) and includes that tree removals are prohibited from April 1 to August 31 to avoid impacts to breeding birds.

6.2 Provincial

6.2.1 Conservation Halton

The parcels and overlaps with the Conservation Halton-Regulated Area for all the parcels, except HWMS Southeast Expansion Area. Therefore, a permit under *O. Reg 162/06* will be required before starting construction if works will occur within these areas.

6.2.2 *Endangered Species Act*

The MECP administers the ESA and will be consulted if SAR are observed during construction. As no SAR were observed, permitting under the ESA is not required.

6.2.3 Greenbelt Plan and Special Policy Areas

The Greenbelt Plan (Government of Ontario 2017) is a provincial guideline for the protection of lands within its special policy areas. The parcels are included in Greenbelt Plan protected areas (Figure 1). The Greenbelt Plan provides protection to farmland, forest, wetland, rivers, and lakes. The project construction may require approvals and permits based on the vegetation removal performed in later stages of the expansion. Development within the BMC parcels, HWMS Southeast Expansion Area and adjacent lands must be completed in accordance with the Greenbelt Plan (2017) and its policies. BMC Parcels 1, 2, 4, 5 and 6 and the HWMS Southeast Expansion Area are located within the Parkway Belt West Plan area. The Parkway Belt West Plan was created to increase housing accessibility in Ontario. The goal of this Plan is to increase areas for public usage, as well as increase the availability of facilities and recreational space (Ontario 2022). Since, the goal of the project entails expansion of facilities, construction of any recommended biosolids management facilities within BMC Parcels 1, 2, 4, 5 and 6 only require normal permits and approvals.

The Greenbelt Plan also lays out General Infrastructure Policies for lands that occur within the protected countryside. New infrastructure within these areas have to support agriculture, recreation and tourism, or serve the significant growth and economic development that is expected in southern Ontario. Additionally, construction and expansions of infrastructure should minimize the Greenbelt and Natural Heritage System and Water Resource System, as well as key crop and prime agricultural areas, whenever possible (Government of Ontario 2017). Additionally, infrastructure and services in the area shall be planned with sewage and water services in mind. A review of the Greenbelt Plan found that the Greenbelt occurs through all parcels, and as such these guidelines and restrictions must be adhered to.

The parcels and HWMS Southeast Expansion Area are not located within the Niagara Escarpment Plan area and therefore do not require any related permits.

6.3 Regional Official Plan

The Regional Official Plan (Halton 2022) provides guidance on future developments in Halton to ensure natural heritage systems are protected and that expansions within the region are sustainable. It identifies key natural heritage systems and natural features such as wetlands and woodlands and lays out restrictions for development in these areas. As the Regional Official Plan's Natural Heritage System occurs within all parcels, these restrictions must be considered.

7 Summary and Conclusions

The purpose of this Natural Heritage Characterization Report is to provide ecological information on existing conditions and to identify and describe the natural features present in the BMC Parcels, HWMS Southeast Expansion Area and adjacent lands within 120 m of these areas being considered for the proposed biosolids composting facility. Based on the findings, mitigations measures that will avoid or reduce the impacts anticipated through construction were recommended. This information was referenced in completing comparative evaluation of the alternative site sites for the proposed facility.

The Impact Assessment, Mitigation, and Monitoring table in Section 5 describes potential effects on vegetation communities, wildlife and wildlife habitat, and on the Natural Heritage System and Features along with recommended mitigations and monitoring in each respective parcel. Some impacts are expected to be avoided through the implementation of the described mitigation measures and monitoring. For impacts that are not avoidable (such as vegetation removal), it is expected that the magnitude of impacts will be temporary and/or reduced through implementation of mitigation measures, monitoring, and tree compensation planting resulting in only short-term and reversible impacts. Tree compensation planting will need to adhere to Halton Region tree by-law, policies and guidance. During the Detailed Design stage, the potential for project effects/impacts will need to be refined and a more thorough mitigation measures and monitoring plan developed.

Additional surveys in the future are recommended prior to construction, including a bat acoustic survey if the bat snag trees are to be considered for removal, and a breeding bird survey before the removal of vegetation. Table 6-1 summarizes key findings for each potential site.

Table 6-1. Summary of parcels Natural Environment Features

Site Alternatives	Remarks
BMC Parcel 1	The location may require further assessment as monarch was observed. The northern region of the parcel had no access to woodland; therefore, that region presents a higher potential for construction. The southern region is connected to forest and disturbance to the forested area or performing tree removal may be required. In case of tree removal an inspection is required. This parcel occurs fully within the Regional Natural Heritage System and partially in the Greenbelt Natural Heritage System. As the area is predominantly anthropogenically disturbed meadows, natural feature presence is low and could potentially have less Greenbelt and Natural Heritage System implications.
BMC Parcel 2	The location is agricultural land with no significant vegetation; however, there is woodland within 120 m of the parcel. A bat snag tree is also within 120 m of the eastern region of the parcel. If the facility is constructed within the central region of the parcel, disturbance to the woodland or the bat snag is not anticipated. However, if the woodland is damaged, then a bat acoustic study and a vegetation inspection may be required. It is recommended that the internal road network connecting the parcel be created through the northeastern region of the parcel to limit any potential impacts. The northeastern region is barren land with no significant vegetation. This Parcel occurs fully within the Regional Natural Heritage System and in the Greenbelt Natural Heritage System. As the area is predominantly a small anthropogenically disturbed agricultural field, natural feature presence is low and could potentially have less Greenbelt and Natural Heritage System implications.
BMC Parcel 4	The location is agricultural land with some trees on canopy level. Vegetation and wildlife inspection for migratory birds may be required to identify if mitigation is required to prevent habitat damage. The canopy level is only in the northern region, and therefore, tree removal inspection will not be required if the works are not in this region. The parcel has no connection to woodland, therefore, minimal damage to natural environment by construction is anticipated. This parcel occurs fully within the Regional Natural Heritage System and partially in the Greenbelt Natural Heritage System. As the area is predominantly a small anthropogenically disturbed agricultural field, natural feature presence is low and could potentially have less Greenbelt and Natural Heritage System implications.

Site Alternatives	Remarks
BMC Parcel 5	The parcel is in agricultural land. It is surrounded by woodland and a LIO identified wetland exists within 120 m; therefore, vegetation habitat inspection should be performed. The proposed work can be constructed and biologist inspection may not be required if construction is performed out of the nesting season for birds. The wetland observation in the adjacent land should be confirmed through field investigation if the proposed work will affect drainage. An inspection will be required before any construction because the parcel is surrounded by woodland that may be used by animals as a corridor. The parcel has a high potential to be a wildlife habitat area or to be used by species temporarily (i.e., corridor), therefore construction has the potential to cause larger impacts to natural environment features compared to other parcels. Inspection of natural features is recommended prior to commencement of construction activities. Due to the sensitivity of existing features in this parcel and policy permissions, Parcel 5 would be highly restrictive and should be avoided for future construction. This Parcel occurs fully within the Regional Natural Heritage System and in the Greenbelt Natural Heritage System. As the area is surrounded by wooded lands, Greenbelt and Natural Heritage System implications could be more profound.
BMC Parcel 6	The parcel was previously a biosolids lagoon and currently has no significant vegetation. However, there is woodland in the north. The parcel may be a key regional mammal corridor and provide a natural environment linkage for the movement of plants and animals. Therefore, inspection of corridors, vegetation and habitats for nesting bird is recommended for the adjacent land. The parcel is mostly industrial in the southern region with biosolid tanks and a parking lot with office in the western region. Because of the access to the industrial region, the area is very disturbed, therefore construction in the southern or western region will not impact to natural vegetation. This parcel occurs fully within the Regional Natural Heritage System and in the Greenbelt Natural Heritage System. This area is adjacent to industrial zones on two sides and therefore natural feature presence is low and could potentially have less Greenbelt and Natural Heritage System implications.
BMC Parcel 7	The parcel is in the industrial region and mainly agricultural with trees adjacent to the parcel boundary. The area has low natural significance, and the site can be used with little environmental disturbance anticipated. A tree inspection may be required if trees need to be removed. This parcel occurs fully within the Regional Natural Heritage System and in the Greenbelt Natural Heritage System. This area is adjacent to industrial zones on three sides and therefore natural feature presence is low and could potentially have less Greenbelt and Natural Heritage System implications.
BMC Parcel 8	The parcel contains some trees with no significant natural features areas within 120 m. Vegetation and bird habitat inspection is recommended before construction. Tree inspection is required if tree removal is necessary. This parcel occurs fully within the Regional Natural Heritage System and in the Greenbelt Natural Heritage System. This area is adjacent to industrial zones as well as a highway; therefore natural feature presence is low and could potentially have less Greenbelt and Natural Heritage System implications.
HWMS Southeast Expansion Area	The area includes woodland in the western corner and access to water. If woodland removal occurs, it will require inspection of trees and vegetation for wildlife habitat. The woodland and neighbouring region may serve as a corridor of wildlife; therefore, a larger portion of the area may not be suitable for construction. An inspection by a qualified biologist of this area during Detailed Design is recommended to identify if the region provides a wildlife corridor and natural environment linkage. Small portions of this area occur within the Regional Natural Heritage System and none within the Greenbelt Natural Heritage System. As the area is predominantly an anthropogenically disturbed agricultural field with a small section of forest in and adjacent to the area, natural feature presence is medium to low and could potentially have less Natural Heritage System implications.

8 Signature

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Appendix A
Agency Consultation Record

Chen, Helen

From: Chen, Helen
Sent: Wednesday, March 29, 2023 11:17 AM
To: Species at Risk (MECP)
Cc: Henderson, Emma; Schmidt, Anelisa; Biasi, Jasmine
Subject: RE: Halton Region Biosolids Facility
Attachments: LandParcels_Halton.PNG

Good morning,

Following up on the email below regarding the Halton Region project: Halton Region has recently included two additional Region-owned land-parcels as part of the long-list evaluation of siting alternatives for the proposed biosolids composting facility. Both parcels are located in the vicinity of the Halton Waste Management Site and relatively close to the Biosolids Management Centre.

A figure with the new areas is attached, and SAR desktop screening has been updated with the new area. One additional SAR species has been added to the table below (highlighted) due to the new area. Could you please let us know if there are any additional SAR to add?

Common Name	Scientific Name	S Rank	SARO	COSEWIC	SARA
Northern Bobwhite	*Colinus virginianus*	S1?B	END	END	END
Least Bittern	*Ixobrychus exilis*	S5B	-	-	-
Black Tern	*Chlidonias niger*	S3B, S4M	SC	-	-
Short-eared Owl	*Asio flammeus*	S4?B, S2S3N	SC	SC	SC
Common Nighthawk	*Chordeiles minor*	S4B	SC	SC	THR
Whip-poor-will	*Antrostomus vociferus*	S4B	THR	THR	THR
Chimney Swift	*Chaetura pelagica*	S3B	THR	THR	THR
Red-headed Woodpecker	*Melanerpes erythrocephalus*	S3	END	END	THR
Eastern Wood-Pewee	*Contopus virens*	S4B	SC	SC	SC
Bank Swallow	*Riparia riparia*	S4	THR	THR	THR
Barn Swallow	*Hirundo rustica*	S4B	THR	THR	THR
Wood Thrush	*Hylocichla mustelina*	S4B	SC	THR	THR
Canada Warbler	*Cardellina canadensis*	S5B	SC	SC	THR
Golden-winged Warbler	*Vermivora chrysoptera*	S3B	SC	THR	THR
Louisiana Waterthrush	*Parkesia motacilla*	S2B	THR	THR	THR
Grasshopper Sparrow	*Ammodramus savannarum*	S4B	THR	SC	-
Henslow's Sparrow	*Centronyx henslowii*	S1B	END	END	END
Bobolink	*Dolichonyx oryzivorus*	S4B	THR	THR	THR
Eastern Meadowlark	*Sturnella magna*	S4B, S3N	THR	THR	THR
Snapping Turtle	*Chelydra serpentina*	S4	SC	SC	SC

Eastern Milksnake	*Lampropeltis triangulum*	S4	-	SC	SC
Midland Painted Turtle	*Chrysemys picta marginata*	S4	-	SC	-
Butternut	*Juglans cinerea*	S2?	END	END	END
Silver Shiner	*Notropis photogenis*	S2S3	THR	THR	THR
Unisexual Ambystoma (Jefferson Salamander dependent population)	*Ambystoma hybrid pop. 1*	S2	END	END	END

Thank you,

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From: Chen, Helen
Sent: Thursday, January 19, 2023 3:44 PM
To: Species at Risk (MECP) <SAROntario@ontario.ca>
Cc: Henderson, Emma <emma.henderson@jacobs.com>; Schmidt, Anelisa <Anelisa.Schmidt@jacobs.com>; Fawcett, Anna <Anna.Fawcett@jacobs.com>
Subject: RE: Halton Region Biosolids Facility

Good afternoon,

A correction to the email below, with the figure correctly cropped, as the old one was missing a study area section (red square to the northwest).

Thank you very much, and sorry for the confusion.

Helen Chen, M.Sc, MES
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Upcoming PTO: Jan 23 – 31 inclusive

From: Chen, Helen
Sent: Wednesday, January 18, 2023 8:45 PM
To: Species at Risk (MECP) <SAROntario@ontario.ca>
Cc: Henderson, Emma <emma.henderson@jacobs.com>; Schmidt, Anelisa <Anelisa.Schmidt@jacobs.com>; Fawcett, Anna <Anna.Fawcett@jacobs.com>
Subject: Halton Region Biosolids Facility

Good afternoon,

Halton Region initiated a Municipal Class Environmental Assessment Study to identify the preferred site location for a biosolids composting facility. The area within the municipal boundaries of Halton Region is being considered for locating the proposed biosolids composting facility. Halton Region owns and operates six wastewater treatment plants and a Biosolids Management Centre all located in the region.

Location: [43.465072, -79.789641]

We have screened the project for SAR utilizing the NHIC, OBBA, DFO and iNaturalist below. Could you please let us know if there are any additional SAR to add?

Common Name	Scientific Name	S Rank	SARO	COSEWIC	SARA
Northern Bobwhite	*Colinus virginianus*	S1?B	END	END	END
Least Bittern	*Ixobrychus exilis*	S5B	-	-	-
Black Tern	*Chlidonias niger*	S3B, S4M	SC	-	-
Short-eared Owl	*Asio flammeus*	S4?B, S2S3N	SC	SC	SC
Common Nighthawk	*Chordeiles minor*	S4B	SC	SC	THR
Whip-poor-will	*Antrostomus vociferus*	S4B	THR	THR	THR
Chimney Swift	*Chaetura pelagica*	S3B	THR	THR	THR
Red-headed Woodpecker	*Melanerpes erythrocephalus*	S3	END	END	THR
Eastern Wood-Pewee	*Contopus virens*	S4B	SC	SC	SC
Bank Swallow	*Riparia riparia*	S4	THR	THR	THR
Barn Swallow	*Hirundo rustica*	S4B	THR	THR	THR
Wood Thrush	*Hylocichla mustelina*	S4B	SC	THR	THR
Canada Warbler	*Cardellina canadensis*	S5B	SC	SC	THR
Golden-winged Warbler	*Vermivora chrysoptera*	S3B	SC	THR	THR
Louisiana Waterthrush	*Parkesia motacilla*	S2B	THR	THR	THR
Grasshopper Sparrow	*Ammodramus savannarum*	S4B	THR	SC	-

Henslow's Sparrow	*Centronyx henslowii*	S1B	END	END	END
Bobolink	*Dolichonyx oryzivorus*	S4B	THR	THR	THR
Eastern Meadowlark	*Sturnella magna*	S4B, S3N	THR	THR	THR
Snapping Turtle	*Chelydra serpentina*	S4	SC	SC	SC
Eastern Milksnake	*Lampropeltis triangulum*	S4	-	SC	SC
Midland Painted Turtle	*Chrysemys picta marginata*	S4	-	SC	-
Butternut	*Juglans cinerea*	S2?	END	END	END
Silver Shiner	*Notropis photogenis*	S2S3	THR	THR	THR

Thank you,

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Upcoming PTO: Jan 23 – 31 inclusive

Appendix B
Ontario Breeding Bird Atlas and Natural Heritage Information Centre Results

MECP

Common Name	Scientific Name	S Rank	SARO	COSEWIC	SARA
Northern Bobwhite	*Colinus virginianus*	Sl?B	END	END	END
Least Bittern	*Ixobrychus exilis*	SSB	-	-	-
Black Tern	*Chlidonias niger*	S3B, S4M SC	-	-	
Short-eared Owl	*Asio flammeus*	S4?B, S2S3N	SC	SC	SC
Common Nighthawk	*Chordeiles minor*	S4B	SC	SC T	HR
Whip-poor-will	*Antrostomus vociferus*	S4B	THR	THR	THR
Chimney Swift	*Chaetura pelagica*	S3B	THR	THR	THR
Red-headed Woodpecker	*Melanerpes erythrocephalus*	S3	END	END	THR
Eastern Wood-Pewee	*Contopus virens*	S4B	SC	SC	SC
Bank Swallow	*Riparia riparia*	S4	THR	THR	THR
Barn Swallow	*Hirundo rustica*	S4B	THR	THR	THR
Wood Thrush	*Hylocich/a mustelina*	S4B	SC	THR	THR
Canada Warbler	*Cardellina canadensis*	SSB	SC	SC	THR
Golden-winged Warbler	*Vermivora chrysoptera*	S3B	SC	THR	THR
Louisiana Waterthrush	*Parkesia motacilla*	S2B	THR	THR	THR
Grasshopper Sparrow	*Ammodramus savannarum*	S4B	THR	SC	-
Henslow's Sparrow	*Centronyx henslowii*	SlB	END	END	END
Bobolink	*Dolichonyx oryzivorus*	S4B	THR	THR	THR
Eastern Meadowlark	*Sturnella magna*	S4B, S3N	THR	THR	THR
Snapping Turtle	*Chelydra serpentina*	S4	SC	SC	SC
Eastern Milksnake	*lampropeltis Triangulum*	S4	–	SC	SC
Midland Painted Turtle	*Chrysemys picta marginata*	S4	-	SC	-
Butternut	*Jug/ans cinerea*	S2?	END	END	END
Silver Shiner	*Notropis photogenis*	S2S3	THR	THR	THR
Unisexual Ambystoma (Jefferson Salamander dependent population)	*Ambystoma hybrid pop. 1*	S2	END	END	END

BIRDS CANADA
OISEAUX CANADA

Square Summary (17TNJ91) [change]

	#species				#hours		#pc done	
	poss	prob	conf	total	total	peak	road	offrd
Curr.	36	17	16	69	20.4	14.1	11	0
Prev.	19	13	57	89	117.7	—	31	

Region summary (#10: Halton, ON)

#squares	#sq with data	#species	#squares (pc)	
			target	compl.
38	38	180	38	25
38	38	177	0	38

Target number of point counts in this square: 25 in total: 20 road side, 5 off road (Broadleaf Forest in 4, Mixed Forest in 1). Please try to ensure that each off-road station is located such that the entire 100m radius circle is within the prescribed habitat.**Predef. completed:** [01, 23, 25, D]

SPECIES	Prev.	Code	%
Canada Goose	NY	FY	94
Mute Swan			23
Trumpeter Swan			55
Wood Duck	P		89
Blue-winged Teal ‡			18
Northern Shoveler ‡			2
Gadwall ‡			5
American Wigeon ‡			0
Mallard	FY	P	100
American Black Duck			2
Northern Pintail ‡			0
Green-winged Teal			18
Redhead †			0

Lesser Scaup ‡			0
Hooded Merganser			52
Common Merganser ‡			13
Ruddy Duck ‡			2
Wild Turkey			84
Ruffed Grouse			63
Ring-necked Pheasant ‡			0
Rock Pigeon (Feral Pigeon)	D		0
Mourning Dove	NY	AE	100
Yellow-billed Cuckoo	S		57
Black-billed Cuckoo	NB		73
Coccyzus sp. ‡	S		0
Common Nighthawk ‡			7
Eastern Whip-poor-will ‡			7
Chimney Swift §	AE		42
Ruby-throated Hummingbird	H	H	78
King Rail †			0
Virginia Rail			36
Sora	T		34
Common Gallinule ‡			15

SPECIES	**Prev.**	**Code**	**%**
American Coot ‡			2
Sandhill Crane ‡			31
Killdeer §	NE	A	100
Upland Sandpiper †	T		18
American Woodcock	FY	S	71
Wilson's Snipe ‡	H		31
Wilson's Phalarope †			0
Spotted Sandpiper	NE	FY	73
Ring-billed Gull § ‡			2
American Herring Gull ‡			0
Caspian Tern ‡			7
Black Tern † §			0
Pied-billed Grebe			34
Red-necked Grebe † §			13
Common Loon ‡			13

Double-crested Cormorant § ‡			2
American Bittern ‡			26
Least Bittern †			15
Black-crowned Night Heron † §			2
Green Heron §		H	84
Great Blue Heron §		H	65
Turkey Vulture	P	H	100
Osprey			47
Sharp-shinned Hawk ‡	NY		42
Cooper's Hawk	AE		52
American Goshawk ‡			15
Northern Harrier	H		36
Bald Eagle ‡			28
Broad-winged Hawk			65
Red-shouldered Hawk ‡			5
Red-tailed Hawk	NY	H	86
Eastern Screech-Owl	T	FY	78
Great Horned Owl	NY		52

SPECIES	**Prev.**	**Code**	**%**
Barred Owl ‡			28
Long-eared Owl ‡	A		5
Short-eared Owl †			0
Northern Saw-whet Owl ‡			0
Belted Kingfisher	FY		94
Yellow-bellied Sapsucker ‡			63
Red-headed Woodpecker †			23
Red-bellied Woodpecker	H	H	84
Downy Woodpecker	NY	H	100
Hairy Woodpecker	FY	H	100
Pileated Woodpecker	P		84
Northern Flicker	AE	P	100
American Kestrel §	AE	P	78
Merlin		H	52
Peregrine Falcon ‡			10
Eastern Wood-Pewee §	NY	S	100
Acadian Flycatcher †			0

Alder Flycatcher			81
Willow Flycatcher	T	S	76
Least Flycatcher	S		73
Eastern Phoebe	NE	S	100
Great Crested Flycatcher	CF	S	100
Eastern Kingbird	CF	NY	100
Yellow-throated Vireo			26
Blue-headed Vireo			42
Warbling Vireo	S	S	100
Red-eyed Vireo	FY	S	100
Blue Jay	NY	H	100
American Crow	NE	FY	100
Fish Crow †			5
Common Raven		FY	97
Black-capped Chickadee	NY	H	100
Tufted Titmouse ‡			0

Breeding Bird Atlas - Summary Sheet for Square 17TNJ91 (page 2 of 2)

SPECIES	Prev.	Code	%
Horned Lark §	CF	S	68
Bank Swallow §		H	63
Tree Swallow	NY	NY	100
Purple Martin ‡			13
Northern Rough-winged Swallow	AE	H	71
Barn Swallow §	AE	NY	100
Cliff Swallow §	AE	V	71
Golden-crowned Kinglet			34
White-breasted Nuthatch	CF	S	97
Red-breasted Nuthatch			92
Brown Creeper	H		68
Blue-gray Gnatcatcher	FY		28
Northern House Wren	NE	T	100
Winter Wren			78
Sedge Wren ‡			15
Marsh Wren	S		39
Carolina Wren	S	S	31
European Starling	CF	CF	100
Gray Catbird	NE	P	100
Brown Thrasher	NB	S	86
Northern Mockingbird	NY	P	23
Eastern Bluebird	H		78
Veery	S		78
Hermit Thrush ‡			23
Wood Thrush §	NY	S	81
American Robin	NY	CF	100
Cedar Waxwing	NE	H	100
House Sparrow	CF	AE	94
Evening Grosbeak ‡			0
House Finch	P	P	68
Purple Finch ‡			68
Red Crossbill ‡			7
White-winged Crossbill ‡			5

SPECIES	Prev.	Code	%

Pine Siskin ‡		H	23
American Goldfinch	NE	P	100
Grasshopper Sparrow §			52
Chipping Sparrow	FY	S	100
Clay-colored Sparrow ‡			47
Field Sparrow §	NE	S	92
Dark-eyed Junco ‡			0
White-throated Sparrow			73
Vesper Sparrow	A	T	76
Savannah Sparrow	CF	CF	100
Song Sparrow	NY	CF	100
Lincoln's Sparrow ‡			0
Swamp Sparrow	S	T	100
Eastern Towhee §	CF		78
Bobolink §	CF	M	92
Eastern Meadowlark §	S	S	94
Orchard Oriole			34
Baltimore Oriole	FY	S	100
Red-winged Blackbird	NY	CF	100
Brown-headed Cowbird	NY	P	100
Common Grackle	NY	CF	100
Ovenbird	S		86
Louisiana Waterthrush †			15
Northern Waterthrush			71
Golden-winged Warbler †			5
Blue-winged Warbler		S	55
Black-and-white Warbler	H		73
Nashville Warbler			73
Mourning Warbler	FY		81
Common Yellowthroat	A	T	100
Hooded Warbler ‡			28
American Redstart	S		92
Cerulean Warbler †			5

SPECIES	**Prev.**	**Code**	**%**
Northern Parula ‡			5
Magnolia Warbler			31

Blackburnian Warbler			39
Yellow Warbler	CF	P	100
Chestnut-sided Warbler			81
Black-throated Blue Warbler			34
Pine Warbler	S		81
Yellow-rumped Warbler			60
Prairie Warbler †			0
Black-throated Green Warbler			71
Canada Warbler §			47
Scarlet Tanager	CF	S	68
Northern Cardinal	NE	T	100
Rose-breasted Grosbeak	FY	S	100
Indigo Bunting	D	S	100
Dickcissel †		S	0

This list includes all breeding species expected in the region #10 (Halton). Underlined species are those that you should try to add to this square (17TNJ91). They have not yet been reported in this square, but have been reported in more than 50% of the squares in this region so far. "Prev." is the code for the highest breeding evidence for that species in square 17TNJ91 in the previous atlas. "Code" is the code for the highest breeding evidence for that species in square 17TNJ91 over the last 5 years. The % columns give the percentage of squares in that region where that species was reported (this gives an idea of the expected chance of finding that species in region #10). Rare/Colonial Species Report Forms should be completed for species marked: § (Species of interest), ‡ (regionally rare), † (provincially rare). An up-to-date version of this sheet is available from https://naturecounts.ca//nc//atlas/squaresummaryform.jsp?squareID=17TNJ91&lang=EN Data current as of **9/01/2025 17:24**.

Appendix C
Flora and Fauna List

Common Name	Scientific Name
Alfalfa	*Medicago sativa*
American Crow	*Corvus brachyrhynchos*
American Dog Tick	*Dermacentor variabilis*
American Goldfinch	*Spinus tristis*
Annual Fleabane	*Erigeron annuus*
Barn Swallow	*Hirundo rustica*
Basswood	*Tilia americana*
Bittersweet Nightshade	*Solanum dulcamara*
Black Medick	*Medicago lupulina*
Black-capped Chickadee	*Poecile atricapillus*
Bladder Campion	*Silene vulgaris*
Blue Jay	*Cyanocitta cristata*
Broad-leaved Enchanter's Nightshade	*Circaea canadensis*
Broad-leaved Peppergrass	*Lepidium latifolium*
Brown-headed Cowbird	*Molothrus ater*
Bur Oak	*Quercus macrocarpa*
Cabbage White	*Pieris rapae*
Canada Goldenrod	*Solidago canadensis*
Canada Thistle	*Cirsium arvense*
Cattail Sedge	*Carex typhina*
Cloudless Sulphur	*Phoebis sennae*
Common Burdock	*Arctium minus*
Common buttercup	*Ranunculus acris*
Common Dandelion	*Taraxacum officinale*
Common Lamb's-quarters	*Chenopodium album*
Common Milkweed	*Asclepias syriaca*
Common Plantain	*Plantago major*
Common Ragweed	*Ambrosia artemisiifolia*
Common St. John's-wort	*Hypericum perforatum*
Common Teasel	*Dipsacus fullonum*
Common Timothy	*Phleum pratense*
Common Viper's Bugloss	*Echium vulgare*
Common Yellowthroat	*Geothlypis trichas*
Corn Mustard	*Sinapis arvensis*
Crack Willow	*Salix euxina*
Curled Dock	*Rumex crispus*
Dame's Rocket	*Hesperis matronalis*
Downy Arrowwood	*Viburnum rafinesqueanum*
Eastern Meadowlark	*Sturnella magna*
European Buckthorn	*Rhamnus cathartica*
European Swallowwort	*Vincetoxicum rossicum*
Field bindweed	*Convolvulus arvensis*
Field Pennycress	*Thlaspi arvense*
Field Sow-thistle	*Sonchus arvensis*
Gray Catbird	*Dumetella carolinensis*
Green frog	*Lithobates clamitans*

Common Name	Scientific Name
Grey Dogwood	*Cornus racemosa*
Ground-ivy	*Glechoma hederacea*
Gypsy Moth	*Lymantria dispar*
House Sparrow	*Passer domesticus*
House Wren	*Troglodytes aedon*
Jack-in-the-pulpit	*Arisaema triphyllum*
Kentucky Bluegrass	*Poa pratensis*
Killdeer	*Charadrius vociferus*
Large Bird's-foot	*Trefoil Lotus uliginosus*
LeConte's Violet	*Viola affinis*
Manitoba Maple	*Acer negundo*
Monarch	*Danaus plexippus*
Morrow's Honeysuckle	*Lonicera morrowii*
Northern Cardinal	*Cardinalis cardinalis*
Northern Crescent	*Phyciodes cocyta*
Northern Red Oak	*Quercus rubra*
Orchard grass	*Dactylis glomerata*
Oxeye Daisy	*Leucanthemum vulgare*
Paper Birch	*Betula papyrifera*
Philadelphia Fleabane	*Erigeron philadelphicus*
Red-winged Blackbird	*Agelaius phoeniceus*
Reed Canarygrass	*Phalaris arundinacea*
Rice Cutgrass	*Leersia oryzoides*
Riverbank Grape	*Vitis riparia*
Rose sp	*Rosa sp.*
Savannah Sparrow	*Passerculus sandwichensis*
Shagbark Hickory	*Carya ovata*
Silver Maple	*Acer saccharinum*
Small Duckweed	*Lemna minor*
Small Forget-me-not	*Myosotis laxa*
Smooth Bedstraw	*Galium mollugo*
Smooth Brome	*Bromus inermis*
Song Sparrow	*Melospiza melodia*
Spinulose Wood Fern	*Dryopteris carthusiana*
Spotted Geranium	*Geranium maculatum*
Spotted Jewelweed	*Impatiens capensis*
Stinging Nettle	*Urtica dioica*
Sugar Maple	*Acer saccharum*
Swamp Milkweed	*Asclepias incarnata*
Trembling Aspen	*Populus tremuloides*
Tufted Vetch	*Vicia cracca*
Turkey Vulture	*Cathartes aura*
Virginia Creeper	*Parthenocissus quinquefolia*
Western Poison Ivy	*Toxicodendron radicans var. rydbergii*
White Ash	*Fraxinus americana*
White Clover	*Trifolium repens*

Common Name	Scientific Name
White Elm	*Ulmus americana*
White Oak	*Quercus alba*
White Spruce	*Picea glauca*
White Wood-sorrel	*Oxalis montana*
Wild Carrot	*Daucus carota*
Wild Chicory	*Cichorium intybus*
Wild parsnip	*Pastinaca sativa*
Wood Avens	*Geum urbanum*
Wood Frog	*Lithobates sylvaticus*
Wood frog	*Lithobates sylvaticus*
Yellow Warbler	*Setophaga petechia*

Appendix D
Site Photos

Biosolids Management Centre

Photo 1: Photo taken facing south of CUM1, with FOD2-2 in the background, located in the southwestern Biosolids Management Centre area polygon.

Photo 2: Photo taken facing east of FOD2-2 located in the southwestern Biosolids Management Centre area polygon.

Photo 3: Photo of a dead white ash tree that is a potential bat snag tree located in FOD2-2, within the southwestern Biosolids Management Centre area polygon.

HWMS Southeast Expansion Area

Photo 4: Photo taken facing northeast of an open aquatic area located in Agricultural land within the Southeast Expansion Area.

Photo 5: Photo taken facing west of a flooded area that cuts through Agricultural land located in the Southeast Expansion Area.

Photo 6: Photo taken facing west of the flooded area located inside Agricultural land of the Southeast Expansion Area with FOD9 in the background.