NATURAL HERITAGE CONSTRAINTS ANALYSIS
MARZ HOMES SMILTHVILLE PROPERTY

Prepared for:

Marz Homes

Prepared by:

Colville Consulting Inc.

C19036
October 2020

COLVILLE CONSULTING INC.

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1.0 INTRODUCTION

Colville Consulting Inc. was retained by Marz Homes to prepare a natural heritage characterization for the property located north of the intersection of Regional Road 20 and South Grimsby Road 5, in the Township of West Lincoln. This report is intended to summarize the results of field inventories conducted on and adjacent to the Subject Property and characterize natural heritage features on the property. This report is intended to identify any natural heritage features that would be considered Environmental Protection Area (EPA), Environmental Conservation Area (ECA), migration corridor or Fish Habitat within the Niagara Region Policy Plan or the Township of West Lincoln Official Plan, as well as delineate the extent of any potential natural heritage constraints.

1.1 Subject Lands

The Subject Property is approximately 10.45ha (25.6 acres) in size and located north of the intersection of Regional Road 20 and South Grimsby Road 5, in the Township of West Lincoln (see Figure 1). The property consists of gently rolling topography, with the majority of the lands generally sloped from north to south. Water from the property generally drains south towards a culvert under Regional Road 20, however the northwest corner of the property appears to drain to the west. The majority of the Subject Property consists of actively cultivated agricultural lands (planted in soybeans in 2020), along with a cultural meadow on the northwest portion of the property. The Subject Property has not been assigned a municipal address.

Based on our review of background information, no portion of the property has been designated as EPA, ECA, migration corridor or Fish Habitat. A small ephemeral watercourse is located within the agricultural portion of the property, conveying water across the property to a culvert under Regional Road 20. This watercourse appears to be directed to the storm sewer system to the south of the Subject Lands, and ultimately discharges to Twenty Mile Creek. The extents of mapped natural heritage features on the property are illustrated in Figure 2.

1.2 Scope of Project

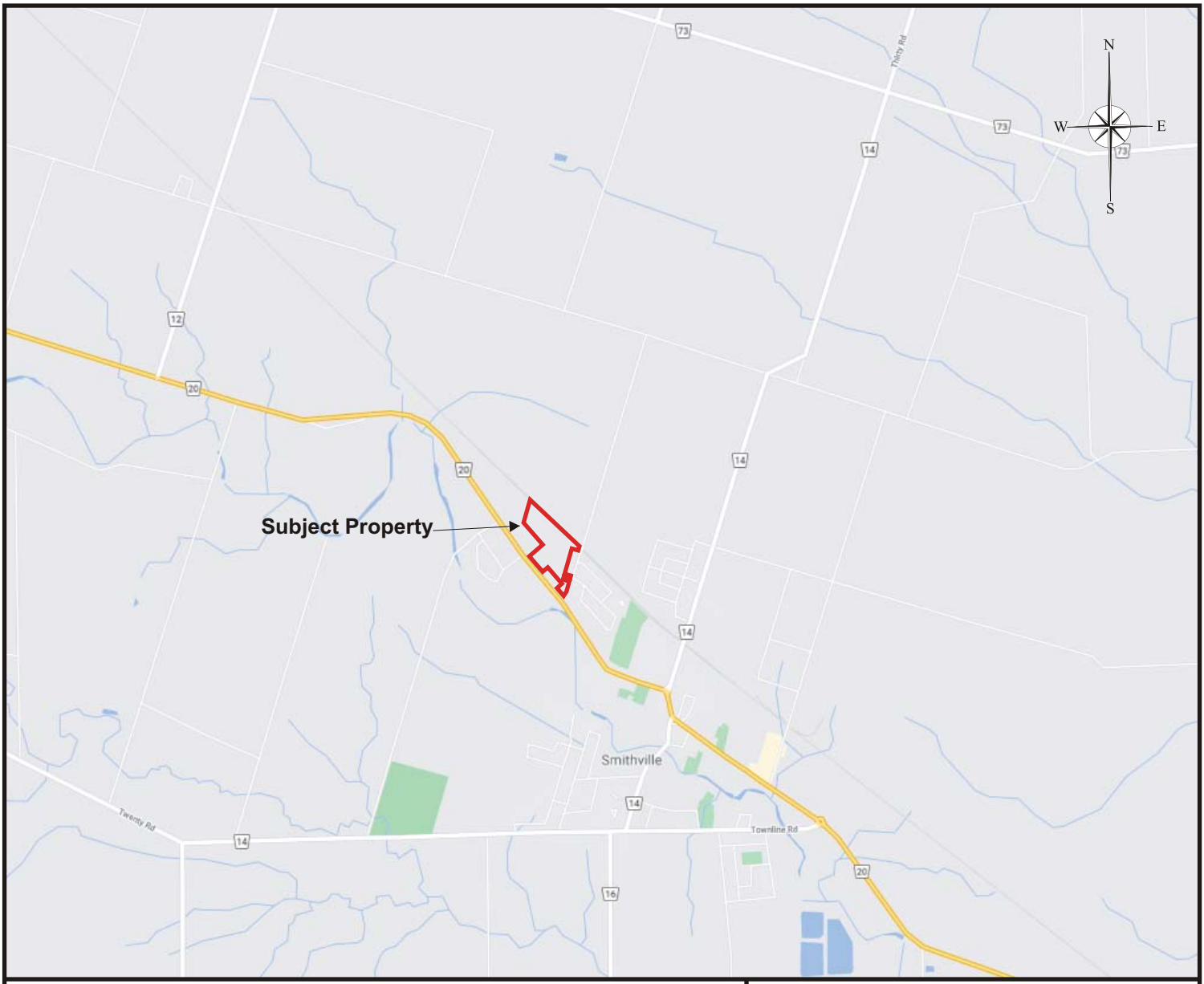
The intent of this project is to delineate any potential natural heritage features on and adjacent to the property, in order to establish the extent of natural heritage constraints.

2.0 STUDY APPROACH

2.1 Background Review

Prior to the commencement of primary field inventories, a review of background material available for the Subject Lands and surrounding area was conducted. Some of the background information reviewed included:

- Niagara Region Core Natural Heritage Map (ROM 2008);
- Ontario Ministry of Natural Resources and Forestry Species at Risk List for the Township of West Lincoln (MNRF 2018);
- Background data available from the NPCA and Ministry of Natural Resources and Forestry (MNRF); and
- Niagara Natural Areas Inventory (NPCA 2010).



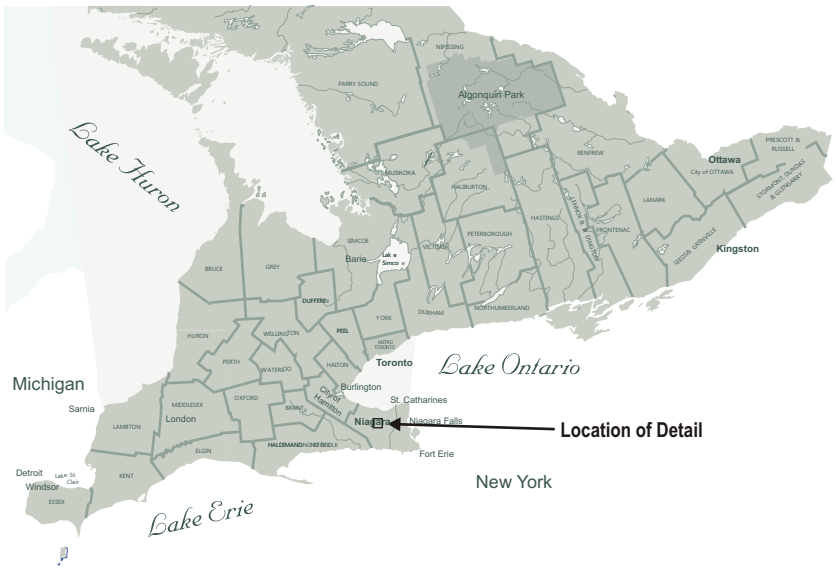


Figure 1
Location of Subject Property

Natural Heritage Characterization Report
Smithville Property

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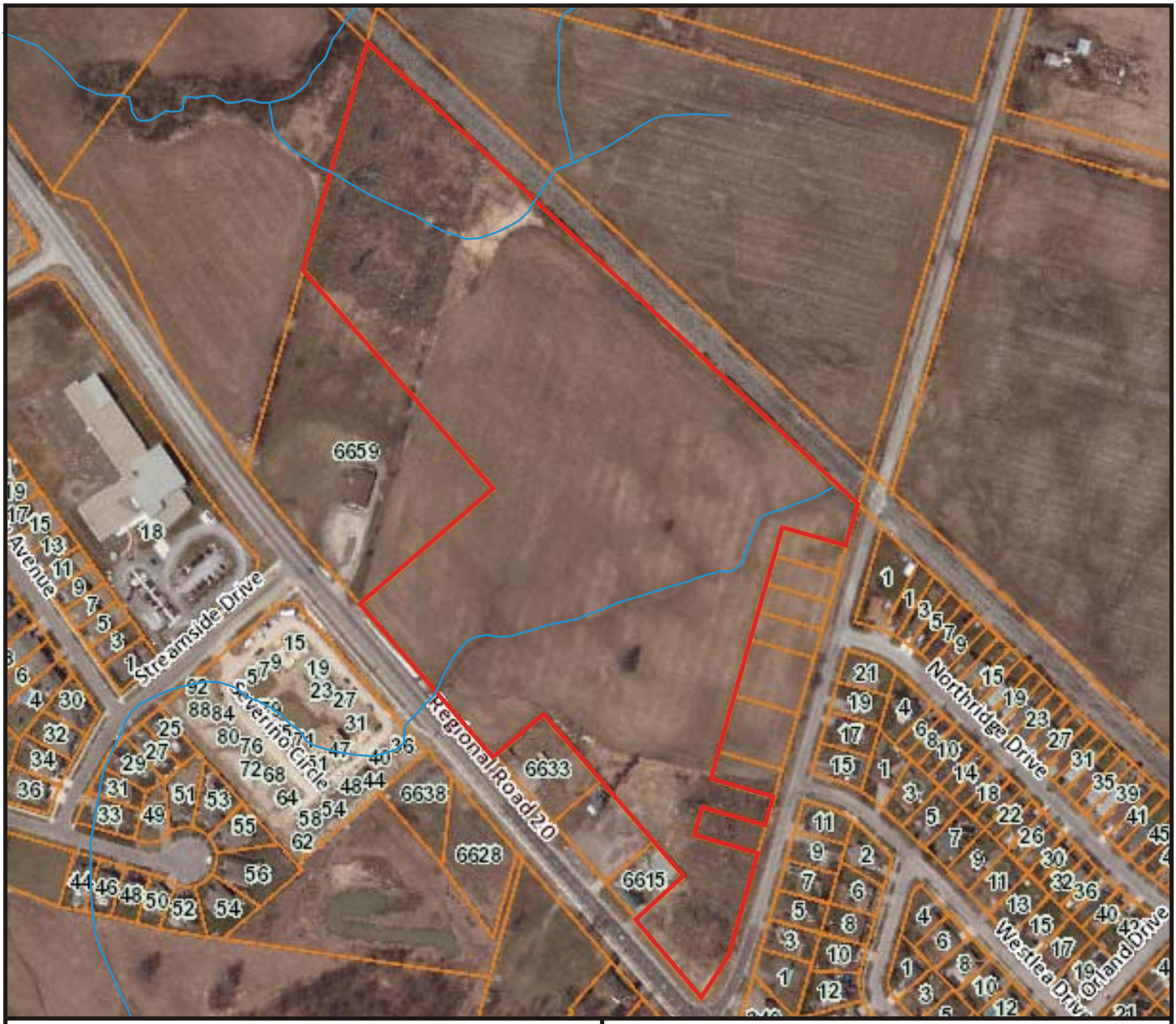

Legend

Subject Lands

Watercourses (NPCA Mapping)

Notes: Watercourse illustrated above are as identified in NPCA mapping. These watercourses are not designated as Fish Habitat in Schedule C of the Niagara Region Policy Plan.

FIGURE 2

Mapped Extent of Natural Heritage Designations and Features on the Subject Lands

Natural Heritage Characterization
Smithville Property

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2.2 Field Inventories and Methodology

In order to identify potential natural heritage constraints on and adjacent to the property, the following inventories and assessments were completed:

1) Summer and fall botanical inventories of the property and adjacent lands;
2) Assessment and description vegetation communities on the properties using the Ecological Land Classification System for Southern Ontario;
3) Breeding bird surveys on and adjacent to property;
4) An assessment of potential bat maternity colony habitat on the property using methods outlined by MNRF;
5) Assessment of potential amphibian breeding habitat;
6) Characterization of the watercourse on the property; and
7) Document incidental wildlife observations during site visits, including any species of insects that may be considered locally rare of species at risk.

The methods employed for each of the above components are provided in the appropriate sections below.

3.0 STUDY FINDINGS

3.1 Botanical Inventories and Vegetation Mapping

Botanical inventories were undertaken on July 3 and September 27, 2020. Vegetation communities (ELC units – following Lee et al. 1998) were mapped and described, and a vascular plant checklist was compiled. Species status was assessed for Ontario (Oldham and Brinker 2009) and the Niagara Region (Oldham 2010). Vegetation communities are described below and illustrated on Figure 3. A vascular plant checklist is provided in Appendix A. Photos of the property are provided in Appendix B and ELC cards are provided in Appendix C.

3.1.1 Botanical Inventories

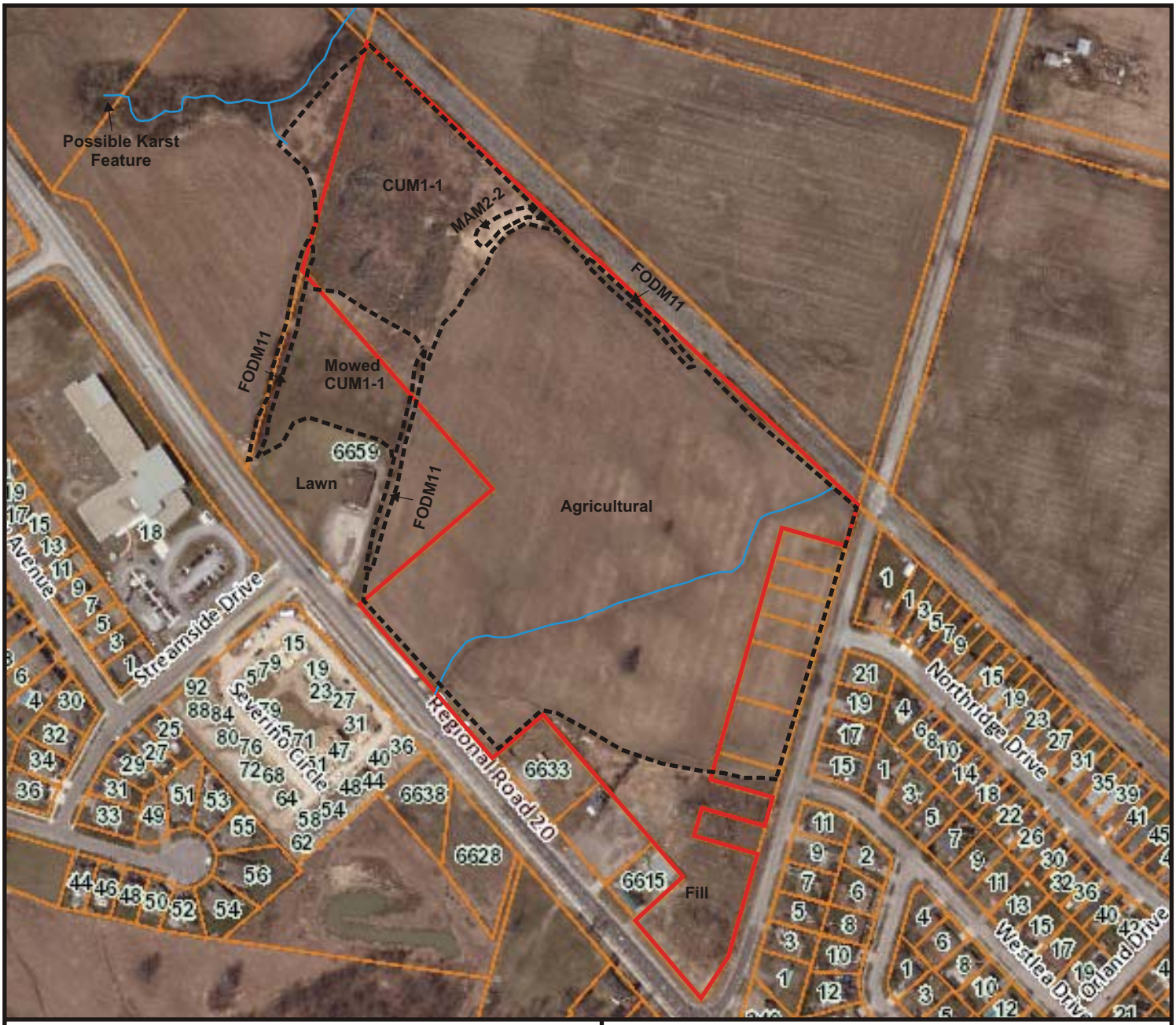
A total of 60 plant species were documented on and adjacent to the property during botanical inventories. None of the species observed are considered at risk provincially, or considered locally rare or uncommon.

3.1.2 Vegetation Communities

Vegetation over the majority of the property consists of soybean field, along with a portion of cultural meadow. Located north of the soybean field and west of the cultural meadow are three small deciduous hedgerows. Further description of the naturalized vegetation communities are provided below. The SE corner off the property is not currently in agricultural production and has been filled and graded.

Dry - Moist Old Field Meadow Type (CUM1-1)

Located in the northwest portion of the property is a community described as Dry - Moist Old Field Meadow Type (CUM1-1). Timothy Grass, Smooth Brome and Kentucky Bluegrass dominate the ground layer, along with an abundance of Tall Goldenrod, Hairy Aster and New England Aster. Growing below these taller grasses and forbs is a lower layer of Bird's-foot Trefoil, Common Strawberry and Path Rush. Drier areas of the meadow also contained an abundance of Grey-stemmed Goldenrod and Common Strawberry, while the isolated wetter areas contained Grass-leaved Goldenrod and patches of Reed Canary Grass. A small inclusion of Reed-canary Grass Mineral Meadow Marsh Type (MAM2-2)



Legend

	Subject Lands
	Refined Extent of Watercourses
CUM1-1	Dry - Moist Old Field Meadow Type
FODM11	Naturalized Deciduous Hedgerow Ecosite
MAM2-2	Reed-canary Grass Mineral Meadow Marsh Type

FIGURE 3

Extent of Vegetation Communities on the Subject Lands

Natural Heritage Characterization
Smithville Property

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was also delineated in this community. Scattered low-lying Grey Dogwood shrubs and trailing vines of grapes occur throughout the meadow area.

Naturalized Deciduous Hedgerow Ecosite (FODM11)

Three treed hedgerows were delineated on and adjacent to the property. These hedgerows are typically formed by widely spaced and mature Swamp White Oak trees or White Elm. The western-most hedgerow also supports a White Oak and Shagbark Hickory tree. The shrub layer, below the hedgerow of trees, is dominated by a dense cover of Grey Dogwood thicket and non-native Honeysuckle shrubs. The ground layer supports an abundance of cool season agricultural grasses such as Smooth Brome, Timothy and Kentucky Blue Grass and forbs of Tall Goldenrod, Panicled Aster and New England Aster.

3.2 Wildlife and Wildlife Habitat

3.2.1 Breeding Bird Survey

Breeding bird surveys were conducted on May 27 and June 17, 2020 and intended to inventory breeding birds on and adjacent to the Subject Property. Surveys were completed under suitable weather conditions with little to no wind or precipitation and temperatures above 5^{o}C. All birds seen or heard calling were recorded and location documented.

A total of 25 species of birds were observed or heard on or above the subject property and 2 additional species on adjacent lands. According to Ontario conservation status ranks (S-rank) designations, with the exception of 1 non-native species (SNA), all other recorded species are considered to be "secure" (S5 - common, widespread and abundant) or "apparently secure" (S4 - uncommon but not rare) in the province of Ontario. The recorded species are also considered to be very common to common permanent or summer residents in the Niagara Region with the exception of the uncommon summer resident Brown Thrasher and Great Blue Heron (Niagara Natural Areas Inventory, 2010).

The Barn Swallows observed flying and calling over the Subject Property on the first site visit are listed as Threatened in Ontario and Federally. No potential nest structures are located on the property, however it is possible this species is nesting on structures associated with the residential and agricultural uses in the vicinity of the property.

3.2.2 Assessment of Potential Bat Roosting Habitat

During the summer, the Little Brown Myotis, Northern Myotis, Eastern Small-footed Myotis and Tri-coloured Bats are found in a variety of forested habitats, as well as abandoned buildings, barns and attics. In forested habitats, cavities in trees, loose bark, foliage and other cover objects are used for roosting. These species forage in a variety of habitats where flying insects and spiders are present, often in association with wetlands, ponds and streams. Overwintering typically occurs in caves.

An assessment of potential bat roosting habitat was conducted on April 21,, 2020 using methods described in MNRF (2017). The site visit was intended to inventory any potential roosting habitat on the property. From our observations, no cavity trees were located on the property and no dead standing trees are present. As such, the Subject Property does not appear to provide any significant roosting opportunities for bats.

Table 1: Results of breeding bird surveys on and adjacent to the Subject Property.

Species	S Rank	Niagara Status*	Subject Property Thicket	Subject Property Agricultural Field	Adjacent Lands	Highest Breeding Evidence**	Breeding Code***
American Crow	S5B	C R			X	PO	H
American Goldfinch	S5B	C R	X			PO	S
American Robin	S5B	VC R	X	X	X	CO	FY
Baltimore Oriole	S4B	C R	X			PO	S
Barn Swallow	S4B	VC R	X			OBS	X
Blue Jay	S5	VC P	X			PO	H
Brown-headed Cowbird	S4B	VC R	X			PO	S
Brown Thrasher	S4B	U R			X	PO	S
Cedar Waxwing	S5B	C R	X			PO	H
Chipping Sparrow	S5B	C R	X		X	PO	S
Common Grackle	S5B	VC R	X	X	X	PO	S
Double-crested Cormorant	S5B	VC R	X			OBS	X
Eastern Kingbird	S4B	C R	X			PO	S
European Starling	SNA	VC P	X		X	CO	FY
Gray Catbird	S4B	C R	X			PO	S
Great Blue Heron	S4	U R	X			OBS	X
Horned Lark	S5B	C R		X	X	PO	S
Killdeer	S5B,S5N	C R		X	X	CO	DD
Mallard	S5	C R		X		PR	P
Mourning Dove	S5	VC R		X		PO	S
Northern Cardinal	S5	C P	X			PO	H
Red-winged Blackbird	S4	VC R	X	X	X	PR	A
Ring-billed Gull	S5B,S4N	VC R	X			OBS	X
Song Sparrow	S5B	VC R	X			CO	CF
Spotted Sandpiper	S5	C R		X		PO	H

* VC – very common; C – common; U – uncommon; UR – Uncommon to rare; O – Occasional; P – permanent resident; R – summer resident; S - Straggler (Niagara Natural Areas Inventory, 2010).

** OBS – observed, no evidence of breeding; PO – possible breeding; PR – probable breeding; CO - confirmed breeding

*** X – observed in its breeding season, no evidence of breeding, H – species observed in its breeding season in suitable nesting habitat, S – singing male present in its breeding season in suitable nesting habitat, P – pair observed in their breeding season in suitable nesting habitat, A – agitated behavior or anxiety calls of an adult, N – Nest building or excavation of nest hole, T – permanent territory presumed through registration of territorial song or presence of adult bird in breeding habitat on at least 2 days, one week or more apart at the same place, DD- distraction display or feigning injury, AE – Adults leaving or entering nest site in circumstances indicating occupied nest, FS – adult carrying fecal sac, FY – recently fledged young, CF – adult carrying food for young, NE – nest containing eggs, NY – nest with young.

3.2.3 Wildlife Observations

Incidental wildlife observations, including signs, were recorded on April 21, May 27, June 17, July 3 and September 27, 2020. Observations indicate that the Subject Property is providing habitat for Eastern Cottontail, Coyote, Meadow Vole, Virginia Opossum, Raccoon, Cabbage White Butterfly, Bumble Bee and Dragonfly.

An assessment of potential amphibian breeding habitat on the property was conducted April 21, 2020. Based on observations, no habitat suitable for amphibian breeding was present on the property. As a result, amphibian vocalization surveys were not completed as part of this project.

3.3 Watercourse Assessment

NPCA mapping indicates that two tributaries to Twenty Mile Creek are located on the property (see Figure 2). For the purposes of this assessment the watercourses will be referred to as the east and west watercourses.

The east watercourse originates at the railway line north of the property and likely conveys water ephemerally across the property to the culvert under Regional Road 20. From our assessment, this watercourse is located in a shallow draw on the property and has a poorly defined channel. Substrates within and adjacent to the watercourse consist of the native silty-clay soils. This watercourse is currently part of the agricultural use, with soybeans growing within and adjacent to this area.

Water from the east watercourse is conveyed to the culvert under Regional Road 20. From this location it is not known if this water is directed to the stormwater pond north of the Regional Road 20, or directed to Twenty Mile Creek.

The west watercourse is illustrated in mapping to originate north of the railway line and convey water to a larger watercourse to the west. During our assessment of the property, no channel was evident in this location. It appears that surface water from the northwest portion of the Subject Property drains west, however any drainage is very defuse in this area. Our observations indicate that there are no culverts under the railway at this location, with drainage from the north side of the rail line feeding into the railway ditching and flowing west away from the Subject Property.

Although water from the northwest portion of the property does drain to the watercourse west of the property, this watercourse appears to terminate in a deep depressional area that is likely associated with a karst feature.

4.0 ASSESSMENT OF SIGNIFICANT NATURAL HERITAGE FEATURES

4.1 Species at Risk Habitat

4.1.1 Significant Habitat of Endangered and Threatened Species

No Endangered species were observed during botanical and wildlife inventories on or adjacent to the property. Barn Swallows was observed flying and calling above the Subject Property during the first breeding bird survey. No suitable nest structures are located on the property, and therefore it is our assessment that the Subject Property is not providing significant habitat for this species.

Our review of Natural Heritage Information Center (NHIC) data indicates that Endangered and Threatened species known to occur in the vicinity of the property are limited to Cucumber Tree (Endangered). Suitable habitat for this species is not present on the property, and this species was not observed during botanical inventories.

A SAR screening was also conducted using data available from the MNRF (see Appendix D). Based on this screening, suitable or typical habitat for Endangered and Threatened species is not present on the Subject Property. It is therefore our conclusion that the Subject Property is not providing significant habitat for Endangered and Threatened species.

4.1.2 Species of Conservation Concern

Species of Conservation Concern previously documented in the vicinity of the property are limited to Perfoliate Bellwort (S1S2). This species was not observed on the property during inventories, and our assessment indicates that habitat for this species is not present on or adjacent to the property.

Based on the assessments completed, it is our conclusion that the Subject Property is not providing habitat for Species of Conservation Concern.

4.2 Significant Wildlife Habitat

4.2.1 Seasonal Concentration Areas of Animals

The Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E identifies 14 types of seasonal concentrations of animals that may be considered significant wildlife habitat. These include, but are not limited to:

- Waterfowl Stopover and Staging Areas (Aquatic and Terrestrial);
- Shorebird Migratory Stopover Area;
- Raptor Wintering Area;
- Bat Hibernacula;
- Bat Maternity Colonies;
- Turtle Wintering Areas;
- Reptile Hibernaculum;
- Colonially -Nesting Bird Breeding Habitat (Bank and Cliff);
- Colonially -Nesting Bird Breeding Habitat (Tree/Shrubs);
- Colonially -Nesting Bird Breeding Habitat (Ground);
- Migratory Butterfly Stopover Areas;
- Landbird Migratory Stopover Areas; and
- Deer Winter Congregation Areas.

Seasonal concentration areas are typically designated as significant wildlife habitat if an area supports a species at risk or a large population may be lost if the habitat is destroyed.

Habitat present on an adjacent to the property is not known to support seasonal concentrations of animals and none of these functions were observed or documented during our inventories. An assessment of SWH is provided in Appendix E.

4.2.2 Rare Vegetation Communities

Rare vegetation communities often contain rare species, which depend on such habitats for their survival and cannot readily move to or find alternative habitats. Those areas that qualify as rare habitats are assigned an SRank of S1, S2 or S3 by the Natural Heritage Information Center.

The Significant Wildlife Habitat Criteria Schedules for Ecoregion 7E identifies 7 specialized habitats that may be considered significant wildlife habitat. They are:

- Cliffs and Talus Slopes;
- Sand Barren;
- Alvar;
- Old Growth Forest;
- Savannah;
- Tallgrass Prairie; and
- Other Rare Vegetation Communities.

No rare vegetation communities are present on or adjacent to the Subject Property.

4.2.3 Specialized Habitats of Wildlife considered SWH

Some wildlife species require large areas of suitable habitat for their long-term survival and many wildlife species require substantial areas of suitable habitat for successful breeding. Their populations are at risk of decline when habitat becomes fragmented or reduced in size

Specialized habitats for wildlife include:

- Waterfowl Nesting Area;
- Bald Eagle and Osprey Nesting, Foraging and Perching Habitat;
- Woodland Raptor Nesting Habitat;
- Turtle Nesting Areas;
- Seeps and Springs;
- Amphibian Breeding Habitat (Woodland);
- Amphibian Breeding Habitat (Wetlands); and
- Woodland Area-Sensitive Bird Breeding Habitat.

No specialized habitats for wildlife are present on the property.

4.2.4 Habitats of Species of Conservation Concern considered SWH

Habitats of Species of Conservation Concern include wildlife species that are listed as Special Concern or rare, that are declining, or are featured species. Habitats of Species of Conservation Concern do not include habitats of Endangered or Threatened species as identified by the Endangered Species Act. The following habitats are considered candidate SWH:

- Marsh Breeding Bird Habitat;
- Open Country Bird Breeding Habitat;
- Shrub/Early Successional Bird Breeding Habitat;
- Terrestrial Crayfish; and
- Special Concern and Rare Wildlife Species.

The Subject Property is not providing habitat for Species of Conservation Concern.

4.2.5 Migration Corridors

The SWHTG defines animal movement corridors as elongated, naturally vegetated parts of the landscape used by animals to move from one habitat to another. To qualify as significant wildlife habitat, these corridors should be a critical link between habitats that are regularly used by wildlife.

From our review of background mapping, no portion of the property forms part of a contiguous migration corridor.

4.3 Provincially Significant Wetlands

No wetland features were identified on the Subject property and no provincially significant wetlands (PSW) are located on or adjacent to the property. The nearest evaluated wetland is the Lower Twenty Mile Creek Wetland Complex, which is located south of the property in association with Twenty Mile Creek.

4.4 Areas of Natural and Scientific Interest

No Areas of Natural and Scientific Interest (ANSI) are located on or adjacent to the property.

4.5 Significant Woodlands

Our assessment indicates that no woodlands are located on or adjacent to the property.

4.6 Watercourses and Fish Habitat

As described above, two small watercourses have been included in NPCA mapping. It is our assessment that no channel is evident in the location of the west watercourse, and therefore this feature is not considered to be a watercourse or Fish Habitat.

The east watercourse is located within a shallow draw in a soybean field. Aside from the general topography of the area, no identifiable channel was present in this area. No evidence of flow was present, although it is likely that this drainage feature does convey surface water ephemerally, and therefore for the purpose of this description and assessment, it will be referred to as a watercourse.

As part of our survey of this property, we completed an assessment of the watercourse using the Evaluation, Classification and Management of Headwater Drainage Features Guidelines (TRCA 2014). Using the data and observations from the evaluation of this watercourse, Hydrology, Riparian Habitat, Fish and Fish Habitat and Terrestrial Habitat conditions were classified. The classification of each condition is provided below.

Please note that the watercourse on and adjacent to the property was not of sufficient size or drainage area to apply OSAP S4.M10.

Hydrology Classification

Based on our assessment, the watercourse on the Subject Property likely conveys ephemeral flow. No standing water was present during our observations in April, and the small drainage area and lack of channel definition suggests a limited flow volume and duration.

Because this watercourse channel is poorly defined, has no groundwater seepage or wetland functions, is cultivated and has a substrate that consists of the native silty-clay soil, this watercourse is classified as providing limited hydrology functions.

Riparian Habitat

As described above and illustrated in the site photos, the watercourse on this property is currently cultivated, and therefore is classified as having limited riparian habitat functions.

Fish and Fish Habitat

Water conveyed by this watercourse is directed to the culvert under Regional Road 20, however since it does not emerge south of the road, it is not known where water outlets. It is probable that water conveyed be this watercourse is either directed to the stormwater pond south of the road, or directed to a secondary outlet. In either case, water will eventually discharge to Twenty Mile Creek.

Since this watercourse ultimately conveys flow to the main channel of Twenty Mile Creek, this watercourse is likely providing a minor contributing function to Fish Habitat in the watershed.

Terrestrial Habitat

Due to the nature of the watercourse and the lack of natural vegetation in the riparian area, this watercourse was determined to have no terrestrial habitat present, and therefore is considered to have limited function.

Management Recommendations

Based on our assessment, the watercourse on and adjacent to this property is providing limited functions, and therefore no management is required per TRCA (2014).

5.0 ENVIRONMENTAL POLICY

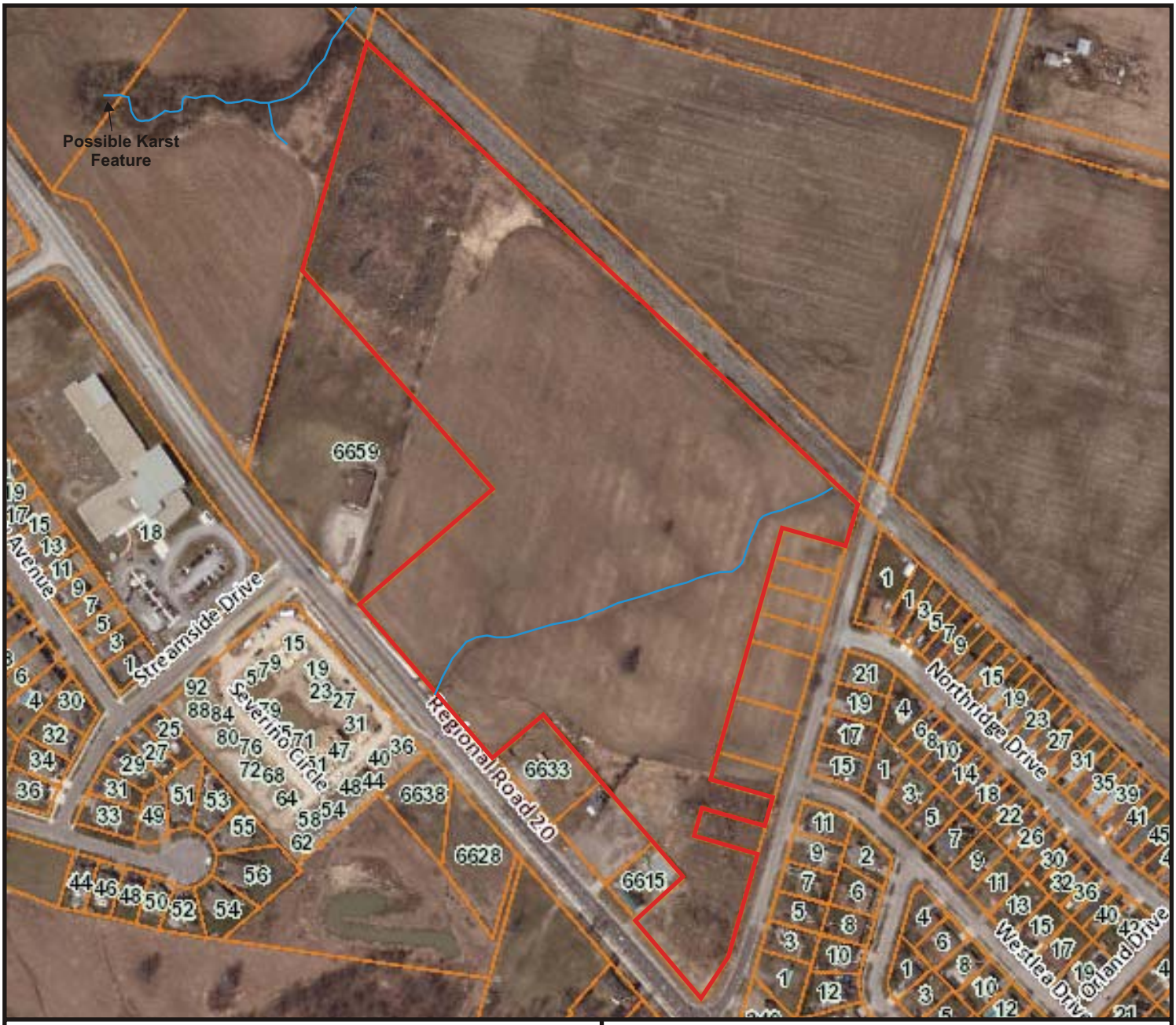
The primary intent of this assessment is to identify and potential natural heritage constraints that may occur on or adjacent to the property. As illustrated in Figure 2, no portion of the property has been designated as Environmental Protection Area or Environmental Conservation Area in the Niagara Region Core Natural Heritage Map, however a small ephemeral watercourse occurs on the east and central portion of the property. The following is an assessment of potential Natural Heritage Constraints on the property in the context of various land use policies.

5.1 Niagara Region Official Plan

Regional Policy Plan Amendment 187 was approved by the Ontario Municipal Board on April 16, 2008, and is an update to Section 7 (Environmental Policy) of the Regional Niagara Policy Plan (2007). This amendment generally conforms to Section 2.1 of the PPS.

Among other important environmental considerations, the policies address the Region's natural vegetation and wildlife, water resources, landforms, geology and soils, and core natural heritage features such as woodlands, wetlands and Fish Habitat. Those natural areas considered to be of provincial importance, as identified in the PPS, are identified in the Region's Core Natural Heritage System. The following components are identified in the Region's Core Natural Heritage System:

a) Core Natural Areas which are classified as Environmental Protection Areas (EPA) and Environmental Conservation Areas (ECA);
b) Potential Natural Heritage Corridors connecting the Core Natural Areas; Greenbelt Natural Heritage and Water Resources System; and
c) Fish Habitat (this includes key hydrologic features).



Legend

- Subject Lands
- Refine Extent of Watercourses

Notes: Watercourse on the property likely meets the Conservation Authorities Act definition of watercourse, but is not considered to be fish habitat.
No features consistent with EPA, ECA or migration corridor present on the property.
No natural heritage constraints are located on the property.

FIGURE 4

Extent of Natural Heritage Designations and Features on the Subject Lands

Natural Heritage Characterization
Smithville Property

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The Niagara Region Official Plan states that Environmental Protection Areas (EPA) include: provincially significant wetlands; provincially significant Life Science ANSIs; and significant habitat of endangered and threatened species. Within the Greenbelt Natural Heritage System, Environmental Protection Areas also include wetlands, significant valleylands, significant woodlands, significant wildlife habitat, habitat of species of concern, publicly owned conservation lands, savannahs and tallgrass prairies, and alvars.

Environmental Conservation Areas (ECA) include: significant woodlands; significant wildlife habitat; significant habitat of species of concern; regionally significant Life Science ANSIs; other evaluated wetlands; significant valleylands; savannahs and tallgrass prairies; alvars; and publicly owned conservation lands.

Policy 7.B.1.7 of the Niagara Region Official Plan states that the boundaries of Core Natural Areas, Potential Natural Heritage Corridors and Fish Habitat are shown on the Core Natural Heritage Map (Regional Municipality of Niagara 2015). Boundaries may be defined more precisely through Watershed or Environmental Planning Studies, Environmental Impact Studies, or other studies prepared to the satisfaction of the Region and may be mapped in more detail in local official plans and zoning by-laws.

The Niagara Region Core Natural Heritage Map indicates that no portion of the Subject Property is considered to be EPA, ECA, migration corridor or Fish Habitat. Our assessment verifies that no features consistent with an EPA, ECA, migration corridor or Fish Habitat are present on the Subject Property.

Although a minor watercourse is identified on the Subject Property, this watercourse is not considered to be providing direct Fish Habitat, and is simply conveying flow to the stormwater management system downstream of the property. Although water from this property will eventually enter Twenty Mile Creek, the minor flow contribution to Twenty Mile Creek does not warrant considering this watercourse Fish Habitat or a constraint to development.

5.2 Township of West Lincoln Official Plan

The Township of West Lincoln Official Plan has been drafted to complement the Regional Policy Plan, with Section 10.7 containing policies specific to the management of the Core Natural Heritage System. The Core Natural Heritage System contains environmental features and functions of special importance to the character of the Township and to its ecological health and integrity. The Core Natural Areas within the System are significant in the context of the surrounding landscape because of their size, location, outstanding quality or ecological functions. They contribute to the health of the broader landscape, protecting water resources, providing wildlife habitat, reducing air pollution and combating climate change. Some contain features of provincial or even national significance, such as threatened or endangered species.

Section 10.7.2 states that the Core Natural Heritage System consists of:

i. Core Natural Areas, classified as either Environmental Protection Areas or Environmental Conservation Areas;
ii. Potential Natural Heritage Corridors connecting the Core Natural Areas;
iii. The Greenbelt Natural Heritage and Water Resources Systems; and
iv. Fish Habitat.

The System is shown on Schedule 'C-1', which provides the framework for natural heritage planning and development review in the Township. The Fish Habitat shown on the Schedule 'C-4' is part of the Water Resources System, but other key hydrological features have not been identified and mapped. These features will be identified through updated NPCA mapping and can be included in this plan by future amendment.

Section 10.7.2c states that Environmental Protection Areas include provincially and regionally significant wetlands; provincially and regionally significant Life Science Areas of Natural and Scientific Interest (ANSIs); and significant habitat of threatened and endangered species.

Section 10.7.2d states that Environmental Conservation Areas include significant woodlands; significant wildlife habitat; significant habitat of species of concern; regionally significant Life Science ANSIs; other evaluated wetlands; significant valleylands; savannahs and tallgrass prairies; and alvars; and publicly owned conservation lands.

Section 10.7.2g states that the boundaries of Core Natural Areas, Potential Natural Heritage Corridors and Fish Habitat are shown on Schedules 'C-1' to 'C-4'. They may be defined more precisely through Watershed or Environmental Planning Studies, Environmental Impact Studies, or other studies prepared to the satisfaction of the Township and may be mapped in more detail in secondary plans and zoning by-laws. A significant modification, such as a change in the classification of a Core Natural Area, or a significant change in the spatial extent or boundaries of a feature, requires an amendment to this Plan unless otherwise provided for in this Plan. Only minor boundary adjustments to Environmental Protection Areas will be permitted without Amendment to this Plan.

Similar to the Niagara Region Core Natural Heritage Map, it is understood that no portion of the Subject Property is considered to be EPA, ECA, migration corridor or Fish Habitat in Schedules C1-C4. Our assessment verifies that no features consistent with an EPA, ECA, migration corridor or Fish Habitat are present on the Subject Property. Although a small watercourse is located on the property, the minor flow contribution to Twenty Mile Creek does not warrant considering this watercourse Fish Habitat or a constraint to development.

5.3 Niagara Peninsula Conservation Authority

The Niagara Peninsula Conservation Authority (NPCA) is responsible for the administration of Ontario Regulation 155/06, which provides the NPCA jurisdiction to regulate development activities within and adjacent to flood and erosion hazards, valleys, watercourses and wetlands. Based on our review of background mapping and observations, NPCA regulated lands on the property are limited to the east watercourse feature, since this feature appears to meet the statutory definition of a watercourse.

Our assessment if this watercourse using the Headwater Drainage Features Assessment Guideline (TRCA 2014) indicates that no management of this watercourse is required. Despite this, it is recommended that post development stormwater from this property be adequately treated prior to discharge to Twenty Mile Creek, to minimize impacts on the receiving watercourse and maintain existing flow contributions.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Colville Consulting Inc. was retained by Marz Homes to complete a Natural Heritage Characterization of the property and determine the extent of potential natural heritage constraints. Background mapping available for the property indicates that no portion the property has been designated as EPA, ECA, migration corridor or Fish Habitat in the Niagara Region Policy Plan, however NPCA mapping illustrates that two small watercourses are present on the property. Our assessment confirms that no features consistent with an EPA, ECA or migration corridor are present on the property.

Our assessment indicates that a small watercourse is located on the east side of the property, however due to it's small size and low function, this drainage feature is not considered to be a constraint to development.

Since this watercourse eventually contributes flow to Twenty Mile Creek, it is recommended that adequate stormwater treatments be incorporated into the final design to ensure future development on this property does not further impair water quality in Twenty Mile Creek.

Respectfully submitted by:

Ian Barrett, M.Sc.
Colville Consulting Inc.

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Appendix A

List of botanical species

Plant List for the Marz Homes Smithville Property, NW of Reg. Road 20 and South Grimsby Road 5, Smithville, ON. Conducted on July 3 and Sept. 27, 2020.

ScientificName	CommonNames	Coef. Cons.	Coeff. Wet.	GRank	COSEWIC	COSSARO	SRank	Lrank	Notes
Achillea millefolium ssp. lanulosa	Woolly Yarrow	0	3	G5			S5		
Amaranthus sp	Pigweed Species								
Ambrosia artemisiifolia	Common Ragweed	0	3	G5			S5		
Ambrosia trifida	Giant Ragweed	0	-1	G5			S5		
Apocynum sp	Dogbane Species								
Aster lanceolatus ssp. lanceolatus	Panicled Aster	3	-3	G5			S5		
Aster novae-angliae	New England Aster	2	-3	G5			S5		
Aster pilosus var. pilosus	Hairy Aster	4	2	G5			S5		
Bidens frondosa	Devil's Beggar-ticks	3	-3	G5			S5		
Bromus inermis ssp. inermis	Smooth Brome	0	5	G4G5			SE5		
Carex granularis	Meadow Sedge	3	-4	G5			S5		
Carex spp	Sedge Species								
Carya ovata	Shagbark Hickory	6	3	G5			S5		
Chenopodium album var. album	Lamb's Quarters	0	1	G5			SE5		
Cichorium intybus	Chicory	0	5	G?			SE5		
Cirsium vulgare	Bull Thistle	0	4	G5			SE5		
Conyza canadensis	Horseweed	0	1	G5			S5		
Cornus amomum ssp. obliqua	Silky Dogwood	5	-4	G5			S5		
Cornus foemina ssp. racemosa	Grey Dogwood	2	-2	G5			S5		
Crataegus punctata	Dotted Hawthorn	4	5	G5			S5		
Daucus carota	Wild Carrot	0	5	G?			SE5		
Dipsacus fullonum ssp. sylvestris	Common Teasel	0	5	G?			SE5		
Euthamia graminifolia	Grass-leaved Goldenrod	2	-2	G5			S5		
Festuca rubra	Red Fescue		1	G5			S5		
Fragaria virginiana ssp. virginiana	Common Strawberry	2	1	G5			S5		
Fraxinus pennsylvanica	Red Ash	3	-3	G5			S5		
Juncus effusus ssp. solutus	Soft Rush	4	-5	G5			S5		
Juncus tenuis	Path Rush	0	0	G5			S5		
Lactuca sp	Lettuce Species								
Lonicera morrowii	Morrow's Honeysuckle	0	5	G?			SE3		
Lotus corniculatus	Bird's-foot Trefoil	0	1	G?					
Melilotus alba	White Sweet-clover	0	3	G5			SE5		
Phalaris arundinacea	Reed Canary Grass	0	-4	G5			S5		
Phleum pratense	Timothy	0	3	G?			SE5		
Phragmites australis	Common Reed	0	-4	G5			S5		
Plantago lanceolata	Ribgrass	0	0	G5			SE5		
Plantago sp	Plantain Species								
Poa pratensis ssp. pratensis	Kentucky Blue Grass	0	1	G?			S5		
Polygonum persicaria	Lady's Thumb	0	-3	G?			SE5		
Prunella vulgaris ssp. lanceolata	Heal-all	5	5	G5			S5		
Prunus sp	Cherry Species								
Pyrus communis	Common Pear	0	5	G5			SE4		
Quercus alba	White Oak	6	3	G5			S5		
Quercus bicolor	Swamp White Oak	8	-4	G5			S4		

ScientificName	CommonNames	Coef. Cons.	Coeff. Wet.	GRank	COSEWIC	COSSARO	SRank	Lrank	Notes
Rhamnus cathartica	Common Buckthorn	0	3	G?			SE5		
Rhus typhina	Staghorn Sumac	1	5	G5			S5		
Rumex crispus	Curly Dock	0	-1	G?			SE5		
Scirpus cyperinus	Wool Grass	4	-5	G5			S5		
Setaria sp	Foxtail Species								
Solidago altissima var. altissima	Tall Goldenrod	1	3	G?			S5		
Solidago juncea	Early Goldenrod	3	5	G5			S5		
Solidago nemoralis ssp. nemoralis	Gray Goldenrod	2	5	G5			S5		
Spiraea alba	Narrow-leaved Meadowsweet	3	-4	G5			S5		
Typha angustifolia	Narrow-leaved Cattail	3	-5	G5			S5		
Ulmus americana	White Elm	3	-2	G5?			S5		
Verbena hastata	Blue Vervain	4	-4	G5			S5		
Viburnum lentago	Nannyberry	4	-1	G5			S5		
Vicia sp	Vetch Species								
Vitis cf. labrusca	Fox Grape	3	3	G5			S1		Escaped or planted remnant from vineyard
Vitis riparia	Riverbank Grape	0	-2	G5			S5		

Legend

CoeCons. - Coefficient of Conservatism. Scores for each species range from 0 (low conservatism) to 10 (high conservatism).
A conservatism value of 0 indicates species is widespread. A value of 8, 9 or 10 indicates that a species is a habitat specialist.
CoeWet. - Coefficient of Wetness
5 - Almost always occur in upland areas
4, 3, 2 - Usually occur in upland areas
1, 0, -1 - Found equally in upland and wetland areas
-2, -3, -4 Usually occur in wetlands
-5 Almost always occur in wetlands

Grank - Global Rank G1 — Critically Imperiled, G2 — Imperiled, G3 — Vulnerable, G4 — Apparently Secure, G5 — Secure
COSEWIC - Committee on the Status of Endangered Wildlife in Canada
COSSARO - Committee on the Status of Species at Risk in Ontario

Srank - Subnational Rank
S1 — Critically Imperiled - Critically imperiled in the province because of extreme rarity, (often 5 or fewer occurrences)
S2 — Imperiled - Imperiled in the province because of rarity due to very restricted range, very few populations (often 20 or fewer)
S3 — Vulnerable - Vulnerable in the province due to a restricted range, relatively few populations (often 80 or fewer)
S4 — Apparently Secure - Uncommon but not rare
S5 — Secure - Common, widespread, and abundant in the province
SE — Exotic

Lrank - Local Rank

Appendix B

Site Photos

Photo 1. Example of vegetation conditions in the CUM1-1 community on the property.

Photo 2. Example of vegetation conditions in the CUM1-1 community on the property.

Photo 3. Example of vegetation conditions in the MAM2-2 inclusion on the property.

Photo 4. Example of vegetation conditions in the north FODM11 community on the property.

Photo 5. Example of vegetation conditions in the agricultural portion of the property.


Photo 6. Example of site conditions in the location of the east watercourse. Photo from northeast corner of the property facing south.

Photo 7. Example of site conditions in the east watercourse. Photo from culvert at Regional Road 20, facing north.

Photo 8. Example of site conditions in mapped location of the west watercourse. Photo facing west towards property line.

Appendix C

ELC Cards

2004 Implementation

Polygon Survey Summary

utm Z	17	Polygon	**Marz Meadow**	Date		Obs#	1
utm N	1	Study Site	Marz Homes Property, Smithville	Start			
utm E	1	Surveyors	A. Garofalo	End			

Polygon Description

	Terrestrial
	Surficial Deposits
	Mineral Soil
	Tableland
	Cultural
	Open
	Graminoid
	Meadow

Soil Analysis

Depth to	cm
Mottles	999
Gley	999
Organic	1
Bedrock	999
Water table	999

Texture	
Moisture Regime	
Composition	
Drainage	
Slope Position	
Pore Pattern	
Slope Positions	

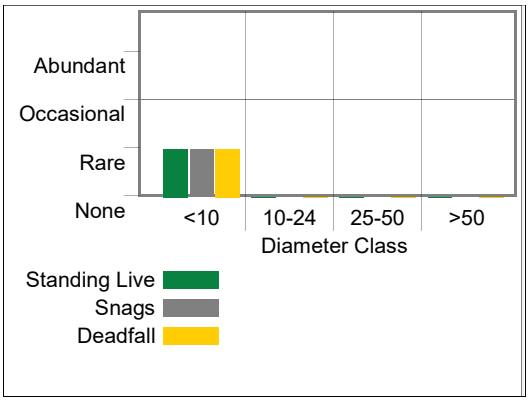
Floristic Summary

Tree	5	Introduced	15
Shrub	10	Native	45
Herb	30	in FQI	45
Graminoid	7	FQI	13.86
Fern		Avg CC	2.07
Rush	2	Mean WS	-0.36
Sedge	3	-ve WS	20
Vine	1	+ve WS	17
Woody Vine	2	Total Weed	
Liverwort*		Avg Weed	
Lichen*			
Moss*			
Total	60		

Community Classification

Community Class	ME	Meadow
Community Series	MEG	Graminoid Meadow
EcoSite	MEGM4	Fresh - Moist Graminoid Meadow Ecosite
Vegetation Type	MEGM4-1	Open Graminoid Meadow Type

Community Maturity	Global Rank		Elemental Occurrence	#	
Pioneer	Provincial Rank			Range	
				Abundance	



Size Class Analysis

#	Type	Diameter Class <10	10-24	25-50	>50
1	Standing Live	R	N	N	N
2	Snags	R	N	N	N
3	Deadfall	R	N	N	N

Stand Descriptions

Layer	Height	Cover	Species' relative dominance
1			
2			
3	0.5 < ht <= 1	25< cvr <=60%	PHLPRAT > POAPRPR > BROININ > SOLALAL
4	ht <= 0.2	cvr >=60%	LOTCORN >> FRAVIVI > JUNTENU

Stand Composition

No Data

Inclusions

Vegetation Type		Ranks Glb	Prov	#	E.O. Rng	Abdnc
MAM2-2	Reed-canary Grass Mineral Meadow Marsh Type					

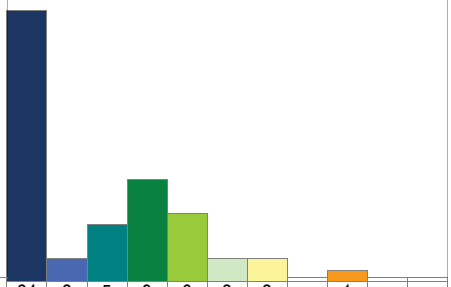
Complexes

2004 Implementation

Polygon Survey Summary

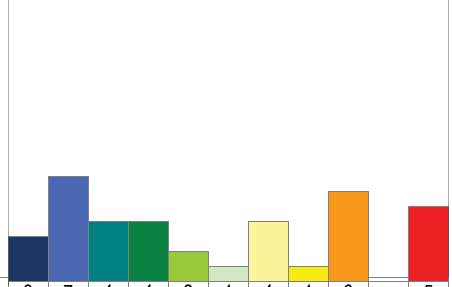
utm Z	17	**Polygon**	**Marz Meadow**	**Date**		**Obs#**	**1**
utm N	1	**Study Site**	Marz Homes Property, Smithville	**Start**			
utm E	1	**Surveyors**	A. Garofalo	**End**			

Species Counts for Coefficiency of Conservatism



#	24	2	5	9	6	2	2		1		
CC	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**

Species Counts for Coefficiency of Wetness



#	3	7	4	4	2	1	4	1	6		5
CW	**-5**	**-4**	**-3**	**-2**	**-1**	**0**	**1**	**2**	**3**	**4**	**5**

2004 Implementation

Polygon Survey Summary

utm Z	17	**Polygon**	**Marz Meadow**	**Date**		**Obs#**	1
utm N	1	**Study Site**	Marz Homes Property, Smithville	**Start**			
utm E	1	**Surveyors**	A. Garofalo	**End**			

Plant Species List

Tree

- Carya ovata (Shagbark Hickory)
- Fraxinus pennsylvanica (Red Ash)
- Quercus alba (White Oak)
- Quercus bicolor (Swamp White Oak)
- Ulmus americana (White Elm)

Shrub

- Cornus amomum ssp. obliqua (Silky Dogwood)
- Cornus foemina ssp. racemosa (Grey Dogwood)
- Crataegus punctata (Dotted Hawthorn)
- Lonicera morrowii (Morrow's Honeysuckle)
- Prunus sp (Cherry Species)
- Pyrus communis (Common Pear)
- Rhamnus cathartica (Common Buckthorn)
- Rhus typhina (Staghorn Sumac)
- Spiraea alba (Narrow-leaved Meadowsweet)
- Viburnum lentago (Nannyberry)

Herb

- Achillea millefolium ssp. lanulosa (Woolly Yarrow)
- Amaranthus sp (Pigweed Species)
- Ambrosia artemisiifolia (Common Ragweed)
- Ambrosia trifida (Giant Ragweed)
- Apocynum sp (Dogbane Species)
- Aster lanceolatus ssp. lanceolatus (Panicled Aster)
- Aster novae-angliae (New England Aster)
- Aster pilosus var. pilosus (Hairy Aster)
- Bidens frondosa (Devil's Beggar-ticks)
- Chenopodium album var. album (Lamb's Quarters)
- Cichorium intybus (Chicory)
- Cirsium vulgare (Bull Thistle)
- Conyza canadensis (Horseweed)
- Daucus carota (Wild Carrot)
- Dipsacus fullonum ssp. sylvestris (Common Teasel)
- Euthamia graminifolia (Grass-leaved Goldenrod)
- Fragaria virginiana ssp. virginiana (Common Strawberry)
- Lactuca sp (Lettuce Species)
- Lotus corniculatus (Bird's-foot Trefoil)
- Melilotus alba (White Sweet-clover)
- Plantago lanceolata (Ribgrass)
- Plantago sp (Plantain Species)
- Polygonum persicaria (Lady's Thumb)
- Prunella vulgaris ssp. lanceolata (Heal-all)
- Rumex crispus (Curly Dock)
- Solidago altissima var. altissima (Tall Goldenrod)
- Solidago juncea (Early Goldenrod)
- Solidago nemoralis ssp. nemoralis (Gray Goldenrod)
- Typha angustifolia (Narrow-leaved Cattail)
- Verbena hastata (Blue Vervain)

Graminoid

- Bromus inermis ssp. inermis (Smooth Brome)
- Festuca rubra (Red Fescue)
- Phalaris arundinacea (Reed Canary Grass)
- Phleum pratense (Timothy)
- Phragmites australis (Common Reed)
- Poa pratensis ssp. pratensis (Kentucky Blue Grass)
- Setaria sp (Foxtail Species)

Rush

- Juncus effusus ssp. solutus (Soft Rush)
- Juncus tenuis (Path Rush)

Sedge

- Carex granularis (Meadow Sedge)
- Carex sp (Sedge Species)
- Scirpus cyperinus (Wool Grass)

Vine

- Vicia sp (Vetch Species)

Woody Vine

- Vitis labrusca (Fox Grape)
- Vitis riparia (Riverbank Grape)

Appendix D

Species at Risk Screening

West Lincoln

Species At Risk Designations	
ENDANGERED	
THREATENED	
SPECIAL CONCERN	
EXTIRPATED	

AMPHIBIANS		ESA Protection	Key Habitats Used By Species	Subject Property

BIRDS		ESA Protection	Key Habitats Used By Species	Subject Property
Bank Swallow (*Riparia riparia*)	**Known to Occur**	*Species and General Habitat Protection*	prefers farmland; lake/river shorelines; wooded clearings; urban populated areas; rocky cliffs; and wetlands. They nest inside or outside buildings; under bridges and in road culverts; on rock faces and in caves etc.	Suitable nesting habitat not present on property. Not detected during breeding bird surveys.
Barn Owl (*Tyto alba*)	**Known to Occur**	*Species Protection and **Habitat Regulation***	generally prefer low-elevation, open country; often associated with agricultural lands, especially pasture. Nests are located in buildings, hollow trees and cavities in cliffs.	Suitable nesting habitat not present on property. Not detected during breeding bird surveys.
Barn Swallow (*Hirundo rustica*)	**Suspected to Occur**	*Species and General Habitat Protection*	prefers farmland; lake/river shorelines; wooded clearings; urban populated areas; rocky cliffs; and wetlands. They nest inside or outside buildings; under bridges and in road culverts; on rock faces and in caves etc.	Barn Swallows observed foraging over property. Suitable nesting habitat not present on property. Propoerty not providing significant habitat for this species.
Bobolink (*Dolichonyx oryzivorus*)	**Known to Occur**	*Species and General Habitat Protection*	generally prefers open grasslands and hay fields. In migration and in winter uses freshwater marshes and grasslands	Suitable nesting habitat not present on property. Not detected during breeding bird surveys.
Cerulean Warbler (*Setophaga cerulea*; formerly *Dendoica cerulea*)	**Suspected to Occur**	*Species and General Habitat Protection*	generally found in mature deciduous forests with an open understorey; also nests in older, second-growth deciduous forests.	Suitable nesting habitat not present on property. Not detected during breeding bird surveys.
Chimney Swift (*Chaetura pelagica*)	**Known to Occur**	*Species and General Habitat Protection*	historically found in deciduous and coniferous, usually wet forest types, all with a welldeveloped, dense shrub layer; now most are found in urban areas in large uncapped chimneys	Suitable nesting habitat not present on property. Not detected during breeding bird surveys.
Common Nighthawk (*Chordeiles minor*)	**Suspected to Occur**	*N/A*	generally prefer open, vegetation-free habitats, including dunes, beaches, recently harvested forests, burnt-over areas, logged areas, rocky outcrops, rocky barrens, grasslands, pastures, peat bogs, marshes, lakeshores, and river banks. This species also inhabits mixed and coniferous forests. Can also be found in urban areas (nest on flat roof-tops)	Suitable nesting habitat not present on property. Not detected during breeding bird surveys.
Eastern Meadowlark (*Sturnella Magna*)	**Known to Occur**	*Species and General Habitat Protection*	generally prefers grassy pastures, meadows and hay fields. Nests are always on the ground and usually hidden in or under grass clumps.	Suitable nesting habitat not present on property. Not detected during breeding bird surveys.
Eastern Whip-poor-will *(Caprimlugus vociferus)*	**Known to Occur**	*Species and General Habitat Protection*	generally prefer semi-open deciduous forests or patchy forests with clearings; areas with little ground cover are also preferred; In winter they occupy primarily mixed woods near open areas.	Suitable nesting habitat not present on property. Not detected during breeding bird surveys.
Eastern Wood-Pewee (*Contopus virens*)	**Known to Occur**	*N/A*	Associated with deciduous and mixed forests. Within mature and intermediate age stands it prefers areas with little understory vegetation as well as forest clearings and edges.	Suitable nesting habitat not present on property. Not detected during breeding bird surveys.
Golden-winged Warbler (Vermivora chrysoptera)	**Known to Occur**	*N/A*	generally prefer areas of early successional vegetation, found primarily on field edges, hydro or utility right-of-ways, or recently logged areas.	Suitable nesting habitat not present on property. Not detected during breeding bird surveys.
Least Bittern *(Ixobrychus exilis)*	**Known to Occur**	*Species and General Habitat Protection*	generally located near pools of open water in relatively large marshes and swamps that are dominated by cattail and other robust emergent plants	Suitable nesting habitat not present on property. Not detected during breeding bird surveys.
Louisiana Waterthrush *(Seiurus motacilla)*	**Known to Occur**	*N/A*	generally inhabits mature forests along steeply sloped ravines adjacent to running water. It prefers clear, cold streams and densely wooded swamps	Suitable nesting habitat not present on property. Not detected during breeding bird surveys.
Red-Headed Woodpecker *(Melanerpes erythrocephalus)*	**Known to Occur**	*N/A*	generally prefer open oak and beech forests, grasslands, forest edges, orchards, pastures, riparian forests, roadsides, urban parks, golf courses, cemeteries, as well as along beaver ponds and brooks	Suitable nesting habitat not present on property. Not detected during breeding bird surveys.
Short-eared Owl *(Asio flammeus)*	**Suspected to Occur**	*N/A*	generally prefers a wide variety of open habitats, including grasslands, peat bogs, marshes, sand-sage concentrations, old pastures and agricultural fields	Suitable nesting habitat not present on property. Not detected during breeding bird surveys.
Wood Thrush (*Hylocichla mustelina*)	**Known to Occur**	*N/A*	Nests mainly in second-growth and mature deciduous and mixed forests, with saplings and well-developed understory layers. Prefers large forest mosaics, but may also nest in small forest fragments.	Suitable nesting habitat not present on property. Not detected during breeding bird surveys.
Yellow-breasted Chat *(Icteria virens)*	**Known to Occur**	*Species and General Habitat Protection*	generally prefer dense thickets around wood edges, riparian areas, and in overgrown clearings	Suitable nesting habitat not present on property. Not detected during breeding bird surveys.

FISH			Key Habitats Used By Species	Subject Property
Grass Pickerel *(Esox americanus vermiculatus)*	**Known to Occur**	*N/A*	generally occur in wetlands with warm, shallow water and an abundance of aquatic plants; occur in the St. Lawrence River, Lake Ontario, Lake Erie, and Lake Huron	Potential habitat not present on property.

INSECTS		ESA Protection	Key Habitats Used By Species	Subject Property

Monarch Butterfly *(Danaus plexippus)*	**Known to Occur**	*N/A*	exist primarily wherever milkweed and wildflowers exist; abandoned farmland, along roadsides, and other open spaces	Species not observed on property. Several species of wildflowers present in meadow, but no Milkweed stems observed.
Rusty-patched Bumble Bee (*Bombus affinis*)	**Formerly Occurred and May Still Occur**	*Species and General Habitat Protection June 27, 2014*	generally inhabits a range of diverse habitats including mixed farmland, sand dunes, marshes, urban and wooded areas. It usually nests underground in abandoned rodent burrows	Suitable habitat not present on Subject Property.
West Virginia White (*Pieris virginiensis*)	**Known to Occur**	*N/A*	generally prefer moist, deciduous woodlands. The larvae feed only on the leaves of the two-leaved toothwort (Cardamine diphylla), which is a small, spring-blooming plant of the forest floor.	Suitable habitat not present on Subject Property.

MAMMALS		ESA Protection	**Key Habitats Used By Species**	**Subject Property**
Eastern small-footed Myotis (*Myotis leibii*)	**Known to Occur**	*Species and General Habitat Protection*	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius Maternal Roosts: primarily under loose rocks on exposed rock outcrops, crevices and cliffs, and occasionally in buildings, under bridges and highway overpasses and under tree bark.	Potential maternal roost habitat not present witihin or adjacent to proposed work area.
Little Brown Myotis (*Myotis lucifugus*)	**Known to Occur**	*Species and General Habitat Protection*	Overwintering habitat: Caves and mines that remain above 0 Maternal Roosts: Often associated with buildings (attics, barns etc.). Occasionally found in trees (25-44 cm dbh).	Potential maternal roost habitat not present witihin or adjacent to proposed work area.
Northern Myotis (*Myotis septentrionalis*)	**Known to Occur**	*Species and General Habitat Protection*	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius Maternal Roosts: Often asssociated with cavities of large diameter trees (25-44 cm dbh). Occasionally found in structures (attics, barns etc.)	Potential maternal roost habitat not present witihin or adjacent to proposed work area.
Tri-colored Bat (*Perimyotis subflavus*)	**Known to Occur**	*Species and General Habitat Protection*	Overwintering habitat: Caves and mines that remain above 0 degrees Celsius Maternal Roosts: Can be in trees or dead clusters of leaves or arboreal lichens on trees. May also use barns or similar structures.	Potential maternal roost habitat not present witihin or adjacent to proposed work area.

MOLLUSCS		ESA Protection	**Key Habitats Used By Species**	**Subject Property**

MOSSES		ESA Protection	**Key Habitats Used By Species**	**Subject Property**

PLANTS		ESA Protection	**Key Habitats Used By Species**	**Subject Property**
American Chestnut *(Castanea dentata)*	**Known to Occur**	*Species and General Habitat Protection*	found in deciduous forest communities; this tree prefers arid forests with acid and sandy soils.	Typical habitat not present on property. Not detected during botanical inventories.
Broad Beech Fern *(Phegopteris hexagonoptera)*	**Known to Occur**	*N/A*	generally inhabits shady areas of beech and maple forests where the soil is moist or wet	Typical habitat not present on property. Not detected during botanical inventories.
Butternut *(Juglans cinerea)*	**Known to Occur**	*Species and General Habitat Protection*	generally grows in rich, moist, and well-drained soils often found along streams. It may also be found on well-drained gravel sites, especially those made up of limestone. It is also found, though seldomly, on dry, rocky and sterile soils. In Ontario, the Butternut generally grows alone or in small groups in deciduous forests as well as in hedgerows	Typical habitat not present on property. Not detected during botanical inventories.
Cucumber Tree *(Magnolia acuminata)*	**Known to Occur**	*Species and General Habitat Protection*	generally grows in rich, well-drained soils in deciduous forest habitats	Typical habitat not present on property. Not detected during botanical inventories.
Eastern Flowering Dogwood *(Cornus florida)*	**Known to Occur**	*Species Protection and* ***Habitat Regulation***	generally grows in deciduous and mixed forests, in the drier areas of its habitat, although it is occasionally found in slightly moist environments; Also grows around edges and hedgerows	Typical habitat not present on property. Not detected during botanical inventories.
Green Dragon (*Arisaema dracontium*)	**Known to Occur**	*N/A*	generally grows in damp deciduous forests and along streams.	Typical habitat not present on property. Not detected during botanical inventories.
Virginia Mallow (*Sida hermaphrodita*)	**Known to Occur**	*Species and General Habitat Protection*	Generally grows on streambanks and bottomlands, as well as disturbed places like roadsides and railroad grades that are in proximity to stream corridors	Typical habitat not present on property. Not detected during botanical inventories.
White Wood Aster *(Eurybia divaricata)*	**Known to Occur**	*Species and General Habitat Protection*	generally grows in open, dry, deciduous forests. It has been suggested that it may benefit from some disturbance, as it often grows along trails.	Typical habitat not present on property. Not detected during botanical inventories.

REPTILES		ESA Protection	**Key Habitats Used By Species**	**Subject Property**
Eastern Ribbonsnake *(Thamnophis sauritus)*	**Suspected to Occur**	*N/A*	generally occur along the edges of shallow ponds, streams, marshes, swamps, or bogs bordered by dense vegetation that provides cover. Abundant exposure to sunlight is also required, and adjacent upland areas may be used for nesting.	Suitable habitat not present on property
Gray Ratsnake (*Pantherophis spiloides*)	**Suspected to Occur**	*Species Protection and* ***Habitat Regulation***	generally associated with deciduous forests, with a preference for a mosaic of forest and open habitats, such as fields and rocky outcrops	Suitable habitat not present on property
Snapping Turtle *(Chelydra serpentina)*	**Known to Occur**	*N/A*	generally inhabit shallow waters where they can hide under the soft mud and leaf litter. Nesting sites usually occur on gravely or sandy areas along streams. Snapping Turtles often take advantage of man-made structures for nest sites, including roads (especially gravel shoulders), dams and aggregate pits.	Suitable habitat not present on property

Appendix E

Significant Wildlife Habitat Summary Table

Assessment of Significant Wildlife Habitat on the Marz Homes Smithville Property.

Significant Wildlife Habitat (SWH) Type	Known or Candidate SWH present/absent	Rationale
SEASONAL CONCENTRATION AREAS OF ANIMALS		
Waterfowl Stopover and Staging Areas	Absent	Suitable habitat not present on property
Shorebird Migratory Stopover Area	Absent	Suitable habitat not present on property
Raptor Wintering Area	Absent	Suitable habitat not present on property
Bat Hibernacula	Absent	Suitable habitat not present on property
Bat Maternity Colonies	Absent	Typical habitat not present on property
Turtle Wintering Areas	Absent	Suitable habitat not present on property
Reptile Hibernaculum	Absent	Suitable habitat not present on property
Colonially -Nesting Bird Breeding Habitat (Bank and Cliff)	Absent	Suitable habitat not present on property
Colonially -Nesting Bird Breeding Habitat (Tree/Shrubs)	Absent	Suitable habitat not present on property
Colonially -Nesting Bird Breeding Habitat (Ground)	Absent	Suitable habitat not present on property
Migratory Butterfly Stopover Areas	Absent	Suitable habitat not present on property
Landbird Migratory Stopover Areas	Absent	Suitable habitat not present on property
Deer Winter Congregation Areas	Absent	Suitable habitat not present on property
RARE VEGETATION COMMUNITIES		
Cliffs and Talus Slopes	Absent	Habitat type not present on property
Sand Barren	Absent	Habitat type not present on property
Alvar	Absent	Habitat type not present on property
Old Growth Forest	Absent	Habitat type not present on property
Savannah	Absent	Habitat type not present on property
Tallgrass Prairie	Absent	Habitat type not present on property
Other Rare Vegetation Communities	Absent	No rare vegetation communities present on property
SPECIALIZED HABITATS OF WILDLIFE CONSIDERED SWH		

Waterfowl Nesting Area	Absent	Suitable habitat not present on property
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	Absent	Suitable habitat not present on property
Woodland Raptor Nesting Habitat	Absent	Suitable habitat not present on property
Turtle Nesting Areas	Absent	Suitable habitat not present on property
Seeps and Springs	Absent	Suitable habitat not present on property
Amphibian Breeding Habitat (Woodland)	Absent	Suitable habitat not present on property
Amphibian Breeding Habitat (Wetlands)	Absent	Suitable habitat not present on property
Woodland Area-Sensitive Bird Breeding Habitat	Absent	Suitable habitat not present on property
HABITATS OF SPECIES OF CONSERVATION CONCERN CONSIDERED SWH		
Marsh Breeding Bird Habitat	Absent	Suitable habitat not present on property
Open Country Bird Breeding Habitat	Absent	Suitable habitat not present on property
Shrub/Early Successional Bird Breeding Habitat	Absent	Bird species on property not reflective of early successional breeding habitat
Terrestrial Crayfish	Absent	Suitable habitat not present on property
Special Concern and Rare Wildlife Species	Absent	Suitable habitat not present on property
ANIMAL MOVEMENT CORRIDORS		
Amphibian Movement Corridors	Absent	Suitable habitat not present on property
Bat Migratory Stopover Area	Absent	Suitable habitat not present on property

Please note the above SWH criteria are based on guidance provided by the Significant Wildlife Habitat Criteria Schedules For Ecoregion 7E and modified to be specific for the Subject Property.