

**7640 KALAR ROAD & LOT 186  
RESIDENTIAL CONDOMINIUMS  
NIAGARA FALLS  
ENVIRONMENTAL IMPACT STUDY  
M5V INC.**

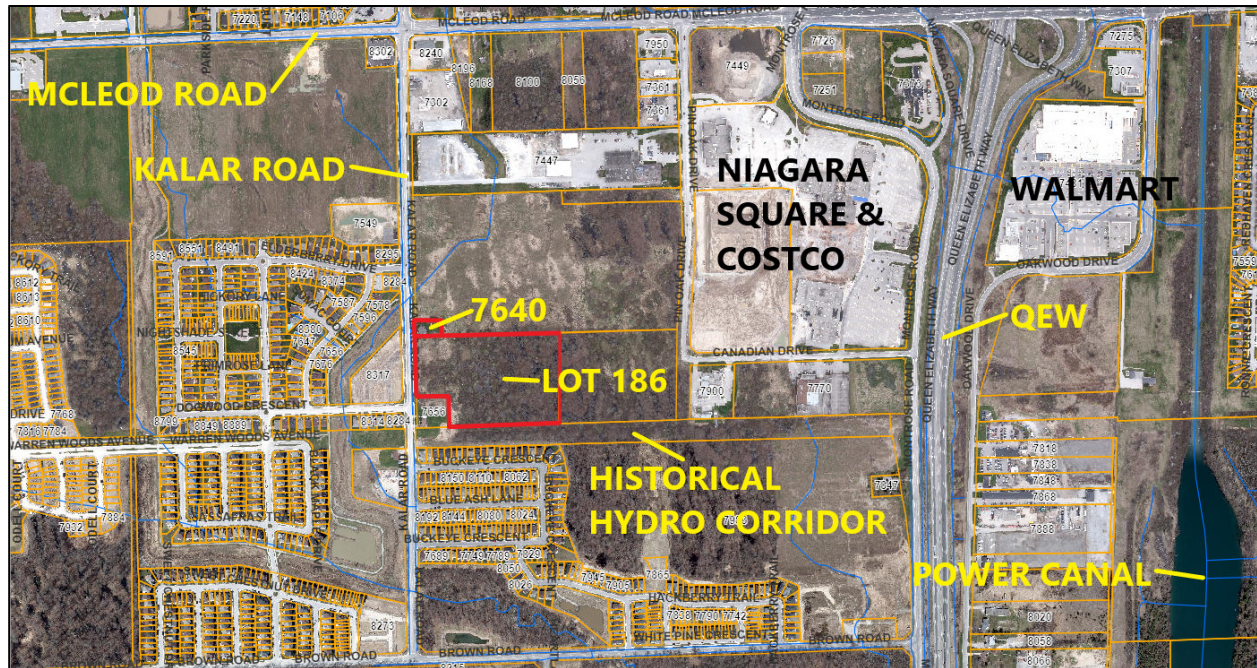


**MAY 2022  
MYLER ECOLOGICAL CONSULTING**



## INTRODUCTION

Myler Ecological Consulting (Myler) was retained by M5V Inc. (M5V) to prepare an Environmental Impact Study (EIS) for the proposed 99-unit residential condominium development fronting on Kalar Road, on a portion of lands comprised of 7640 Kalar Road and the adjoining Kalar Road Lot 186 (total extent of subject lands outlined in red on **Plate 1**, below), hereinafter referred to as the “site”.



**Plate 1:** The site (red outline), comprised of 7640 Kalar Road and Kalar Road Lot 186, on an excerpt of 2020 aerial imagery showing its proximity to the QEW / McLeod Road interchange, commercial plazas, existing and historical power generation and distribution infrastructure, developing residential neighbourhood, and natural features.

The requirement for an EIS is triggered by the occurrence of designated natural features on portions of the site and on portions of adjacent lands. The function of this EIS is to confirm the extent of natural features and to identify policy-compliant measures for the proposed development to avoid, to protect, and to mitigate impacts on those features and their ecological function.

## DESIGNATED NATURAL FEATURES

The site and adjoining lands are set within the existing City of Niagara urban limit, near the busy QEW and McLeod Road interchange.

The neighbourhood has long-established commercial and retail development at and near the interchange, including the Niagara Square / Costco plaza on the west side of the QEW, the Smart Centres / Walmart plaza on the east side of the QEW, as well as smaller commercial, restaurant and retail establishments. Public/institutional presence within the neighbourhood currently includes offices of Family and Children’s Services Niagara, offices and works yard of the Niagara Peninsula Energy utility, and the WEGO facility of the City of Niagara Falls Transportation Department.

A developing residential neighbourhood is filling in the urban area southwest of the highway interchange, peripheral to the commercial and institutional development, in an area bounded by McLeod Road to the north, Brown Road to the south, and Garner Road to the west. Additional, undeveloped, urban area extends westward from this developing neighbourhood from Garner Road to Thorold Townline Road.

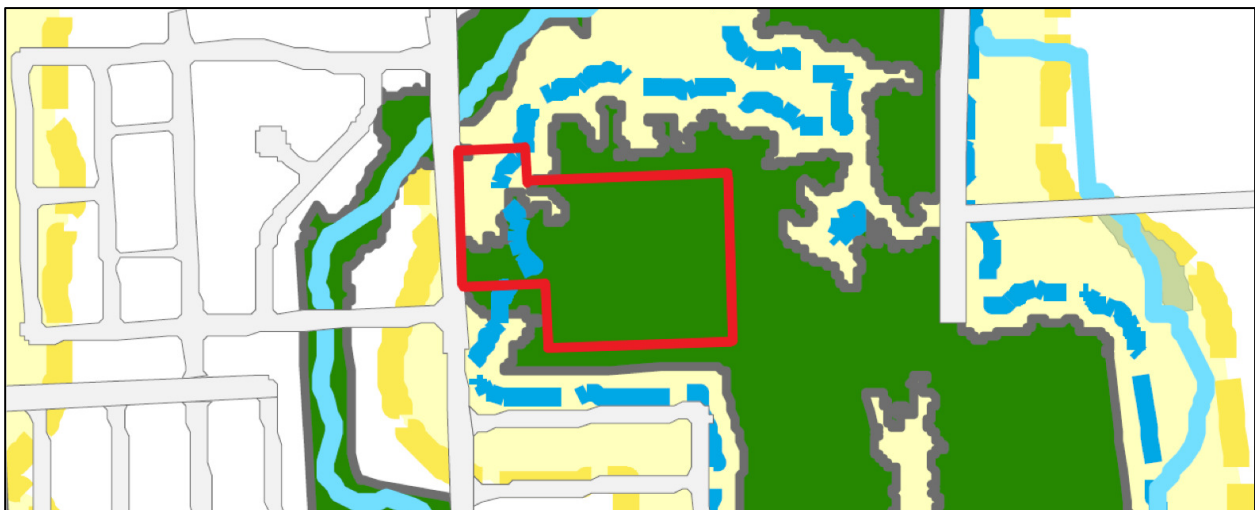
The site fronts on Kalar Road, which is an arterial road within the neighbourhood. The surrounding residential neighbourhood is currently dominated by single detached homes, with townhomes recently constructed and under construction directly across Kalar Road from the site. The proposed development at the site complements that adjacent townhome development.

Lands directly abutting the site include to the south a neighbouring residence at 7656 Kalar Road and a segment of historical hydroelectric corridor, vacant lands to the north in which development is imminent, and woodland and wetland to the east,. Designated natural features occur on a portion of the site and on portions of those adjoining properties. The occurrence and extent of designated natural features was determined through review of the City of Niagara Falls Official Plan (OP), Niagara Region Official Plan (ROP), Niagara Peninsula Conservation Authority (NPCA) regulation mapping and provincial Natural Heritage Information Centre (NHIC) mapping.

### City of Niagara Falls Official Plan

The Niagara Falls OP Schedule A-1 Natural Heritage Features and Adjacent Lands (excerpt on **Plate 2**, below) shows Environmental Protection Area (EPA) on portions of the site and surrounding lands.

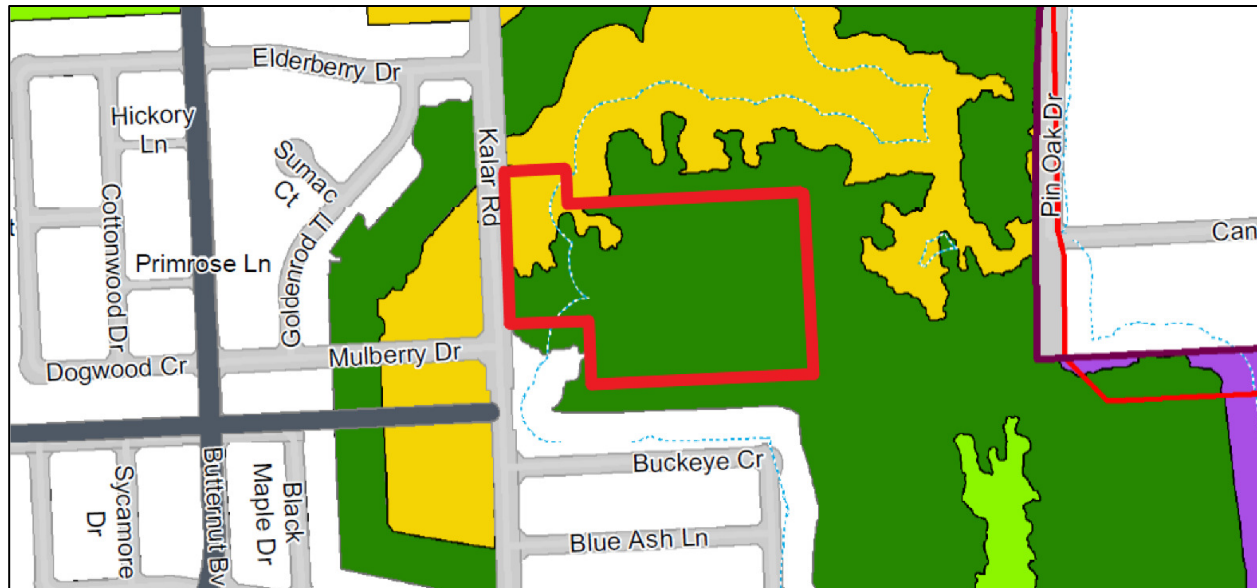
Also shown is a conceptual wetland limit that is described by a note on the schedule as “*illustrated as 30 metres*” and further that the “*actual extent of this buffer may increase or decrease as a result of detailed studies through this Plan*”.



**Plate 2:** Excerpt of Niagara Falls OP Schedule A-1 Natural Heritage Features and Adjacent Lands with the approximate outline of the site (red outline) showing portions of Environmental Protection Area (dark green), conceptual wetland buffer (blue dashed line set at 30m from wetland limit with a note on the schedule indicating that the buffer may increase or decrease based on detailed studies), and adjacent lands (light yellow outlined with dashed yellow line) which trigger the need for EIS.

The Niagara Falls OP Schedule A-3 Garner South Secondary Plan (excerpt on **Plate 3**, below) shows the Medium Density Residential on portions of the site and surrounding lands, including in the area across Kalar Road from the site in which residential townhomes were recently constructed.

Schedule A-3 shows the extent of EPA designated lands and the conceptual wetland buffer similar to Schedule A-1.



**Plate 3:** Excerpt of Niagara Falls OP Schedule A-3 Garner South Secondary Plan with the approximate outline of the site (red outline) showing portions of Environmental Protection Area (dark green), conceptual provincially significant wetland buffer (dashed line set at 30m from wetland limit), and “Residential Medium” (yellow) designated medium density residential lands.

Neither Schedule explains or specifies the composition of the westward extension of EPA to Kalar Road, beyond the conceptual wetland buffer and therefore outside of the wetland area contained within the buffer.

No environmental corridors or ecological linkages are depicted at or adjacent to the site on OP schedules.

### Niagara Region Official Plan

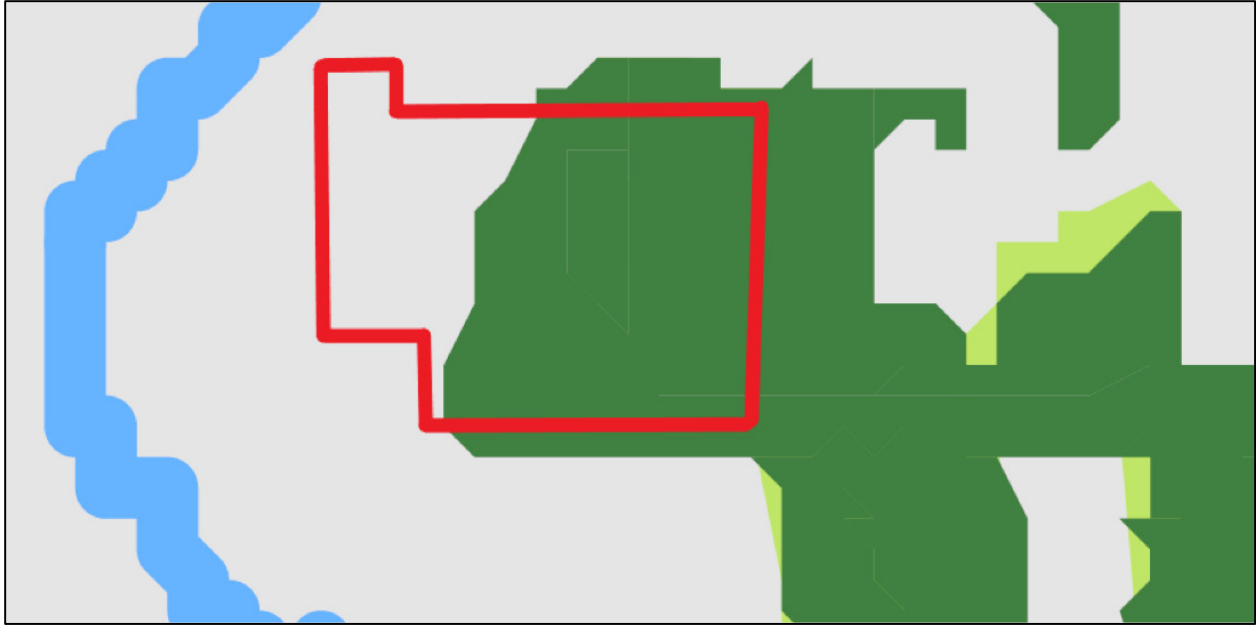
The Niagara ROP Schedule C Core Natural Heritage (excerpt on **Plate 4**, below) shows the extent of regionally designated EPA lands within portions of the site and surrounding lands.

Notably, the ROP Schedule C mapping of EPA lands does not include an extension of EPA lands westward to Kalar Road at the site.

Also notable is the depiction on Schedule C of some areas of Environmental Conservation Area (ECA) designated lands east of the site (light green shading on **Plate 4**, below), and that no ECA lands are mapped on the site.

The Niagara ROP Schedule C depicts the site’s western limit, fronting on Kalar Road, as completely free of natural heritage (EPA and ECA) features and constraints.





**Plate 4:** Excerpt of Niagara ROP Schedule C Core Natural Heritage with the approximate outline of the site (red outline) showing portions of Environmental Protection Area (dark green) on and adjacent to the site.

No environmental corridors or ecological linkages are depicted at or adjacent to the site on ROP schedules.

### **NPCA and NHIC Mapping**

Online NPCA Watershed Explorer mapping (excerpt on **Plate 5**, below) shows the extent of “Regulation Wetlands” (opaque light blue shading) on a background of 2020 aerial imagery.

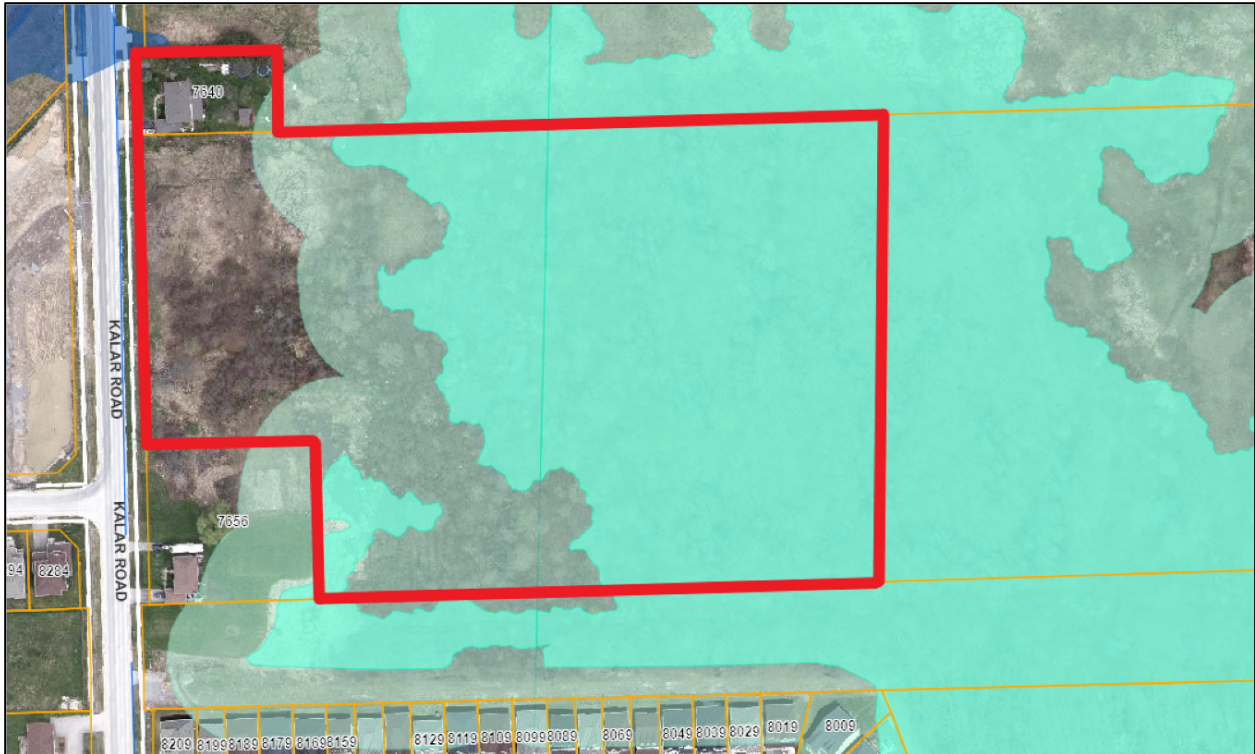
“Wetland Allowance” (transparent light blue shading) is applied as a 30m offset from the Regulation Wetlands boundary.

The NPCA wetland allowance represents and matches NPCA’s mapped “Regulation Lands” respecting the wetland area. It also matches the conceptual 30m wetland buffer shown on Niagara Falls OP schedules.

The extent of Regulated Floodplain natural hazard is shown as dark blue shading on NPCA Watershed Explorer mapping. Except for a small sliver of floodplain mapped within the northwest corner of the site’s 7640 Kalar Road parcel, the site is free of Regulated Floodplain natural hazard constraints.

Review of NPCA Watershed Explorer mapping confirmed a lack of mapped Top of Slope and Top of Slope Allowance natural hazard constraints, which is not surprising given the flat topography at the site and on surrounding lands.

The NPCA Watershed Explorer mapping shows the site’s entire frontage on Kalar Road as unconstrained by NPCA Regulation Lands.



**Plate 5:** Excerpt of NPCA Watershed Explorer online mapping showing Regulation Wetlands (opaque light blue), Wetland Allowance (transparent light blue) and Regulated Floodplain (dark blue) in relation to the site (red outline).

Online NHIC natural heritage mapping (excerpt on **Plate 6**, below) shows the extent of mapped provincially significant wetland (PSW) (blue shading) at and near the site that is part of the Warren Creek PSW Complex. A small area of woodland (green) is also depicted extending westward from the PSW, but NHIC woodland mapping is neither accurate nor precise.



**Plate 6:** Excerpt of NHIC online natural heritage mapping showing the mapped extent of PSW (blue) and an extension of woodland (green) towards Kalar Road.



### Historical Air Photos

Review of historical air photos helps to explain the current pattern of cultural and natural features at and near the site.

On the 1934 and 1954 air photos (excerpts on **Plate 7** and **Plate 8**, below) much of the site, including the entire frontage on Kalar Road, was cleared a cleared active farm field. A treed area in the western part of the site was not being used to grow crops. In the 1934 air photo the treed area is sparse and, like many such areas, was probably used as rough pasture for cattle and horses. By 1954, the treed area appeared more dense. The historical hydroelectric transmission corridor is evident on the site's southern border.



**Plate 7:** Excerpt of the 1934 air photo showing most of the site (red outline) as an active crop field and a smaller area of sparsely treed area within the east end of the site.



**Plate 8:** Excerpt of the 1954 air photo showing a land use pattern similar to that in 1934, but with a noticeably more densely treed area within the east end of the site.

## **PRE-CONSULTATION AND SCOPING**

The desktop review of designated natural heritage features and aerial imagery, followed by reconnaissance of the site, first on 15 June 2020 and during a second visit on 05 October 2020, revealed that a portion of the site fronting on Kalar Road consists of residential and post-agricultural cultural vegetation that is neither wetland nor woodland. The area fronting Kalar Road was previously farmed and has been subjected to additional historical disturbance including excavation of a small dugout pond in the north end of the site and alteration of grades in south end of the site to create an earthen berm and adjacent low area.

Site observations and a topographical survey confirmed that the front portion of the site drains westward, away from the PSW, to an existing catch basin at Kalar Road. Grades on the site are generally flat, but a low divide is evident within the site's Kalar Road frontage such that the eastern portion of the open culturally vegetated area would drain eastward towards the PSW and woodland.

The previously disturbed part of the site fronting Kalar Road has direct access to road, water, and sewer services, such that residential development could be completed while avoiding and buffering the adjacent designated PSW and significant woodland natural heritage features. Given the occurrence of PSW, much of which is also significant woodland, on portions of the site and surrounding properties, it was understood early in the review and reconnaissance of the site that a substantial area would not be developable and would need to be preserved outside of and buffered from the developed area. But the western part of the site adjacent to Kalar Road is a substantial opportunity for residential development.

Pre-Consultation was held on 17 December 2020, during which the need for an EIS was formally identified. Myler subsequently completed and submitted the Region's EIS Scope / Terms of Reference (ToR) checklist for the Region's review. Region staff requested that, in addition to the scope items that Myler had proposed, the EIS should also include surveys to investigate the potential presence of salamanders, snakes and turtles in consideration of the Region's impression that "*the majority of the subject lands consist of forested wetlands*". Myler revised the Scoping/ToR checklist to include investigation of the potential presence of salamanders, snakes and turtles. However, it must be noted that the EIS approach is focused on the portion of the site that is *outside* of the forested wetland and therefore outside of the potential wetland habitat of salamanders, snakes and turtles.

This EIS provides the results of the studies identified on the Scoping / ToR checklist (appended).

## **FIELD SURVEYS**

Biological field surveys to address the ToR were conducted in the spring, summer and fall of 2021 by Myler and by Chris Zoladeski of Ecosystem Research Management. The studies included observations within the entire site, with a focus on determining the extent of developable area outside of PSW and woodland constraints and screening for potential constraints of Species at Risk (SAR) and Significant Wildlife Habitat (SWH) within the lands outside of the PSW and woodland.



## Ecological Land Classification

The botanical components of field surveys were conducted by Chris Zoladeski of Ecosystem Research and Management and consisted of spring, summer, and fall vascular plant inventories, and the application of the Ecological Land Classification (ELC) system. The purpose of these surveys was to document natural and anthropogenic vegetation features on the Subject Lands and to determine their provincial and regional significance.

Vegetation communities were first identified on aerial imagery and then verified in the field. Vegetation community types were confirmed, sampled and revised, if necessary, using the sampling protocol of the ELC for Southern Ontario (Lee et al. 1998). ELC was completed to the finest level of resolution (Vegetation Type), where feasible. Species names generally follow nomenclature from the Flora Ontario – Integrated Botanical Information System (FOIBIS; Newmaster and Ragupathy 2012).

The provincial status of all plant species and vegetation communities is based on NHIC (2013). Identification of potentially sensitive native plant species is based on their assigned coefficient of conservatism (CC) value, as determined by Oldham et al. (1995). This CC value, ranging from 0 (low) to 10 (high), is based on a species tolerance of disturbance and fidelity to a specific natural habitat. Species with a CC value of 9 or 10 generally exhibit a high degree of fidelity to a narrow range of habitat parameters.

The Subject Lands consist of a mixture of community types ranging from primarily cultural in the western portion along Kalar Road, to natural in the central and eastern portions. The cultural communities are represented by old field meadow and dogwood thicket, both heavily disturbed, while natural communities are represented as willow thicket swamp and Pin Oak swamp.

ELC mapping of the Subject Lands is shown on the appended ELC figure. A detailed list and description of ELC units is provided in Table 1, below. One provincially rare (NHIC 2013) vegetation community (Pin Oak Mineral Deciduous Swamp, SWD1-3) was identified on the Subject Lands; however, this vegetation community type is common throughout southern Niagara Peninsula.

**Table 1: Ecological Land Classification (ELC) Community Descriptions**

ELC TYPE	COMMUNITY DESCRIPTION	S-RANK / G-RANK (NHIC, 2013)
CULTURAL		
Cultural Meadow		
CUM1-1 Moist Old Field Meadow	<ul style="list-style-type: none"> <li>A regenerating community of numerous native plants and exotics, growing in various ratios and combinations.</li> <li>The main species are Tall Goldenrod (<i>Solidago altissima</i>), Redtop (<i>Agrostis gigantea</i>), Wild Carrot (<i>Daucus carota</i>), Kentucky Bluegrass (<i>Poa pratensis</i>), New England Aster (<i>Symphyotrichum novae-angliae</i>), Teasel (<i>Dipsacus fullonum</i>), Indian Hemp (<i>Apocynum cannabinum</i>), Yarrow</li> </ul>	NA

ELC TYPE	COMMUNITY DESCRIPTION	S-RANK / G-RANK (NHIC, 2013)
	<p>(<i>Achillea millefolium</i>), Tufted Vetch (<i>Vicia cracca</i>), Flat-topped Goldenrod (<i>Euthamia graminifolia</i>), and many others.</p> <ul style="list-style-type: none"> <li>Scattered to well-developed shrub cover of mostly Grey Dogwood (<i>Cornus foemina</i>) and a few single trees.</li> </ul>	
Cultural Thicket		
CUT1-4 Grey Dogwood Cultural Thicket	<ul style="list-style-type: none"> <li>Closely associated with CUM1-1 and grading into it.</li> <li>The dominant species are Grey Dogwood, Narrow-leaved Meadow-sweet (<i>Spiraea alba</i>) – in moister locations, Hawthorn (<i>Crataegus</i> sp.), Riverbank Grape (<i>Vitis riparia</i>) and Tartarian Honeysuckle (<i>Lonicera tatarica</i>).</li> <li>The herb layer is well developed and composed of most of the species associated with unit CUM1-1.</li> <li>Scattered to dense presence of young trees, e.g., White Elm (<i>Ulmus americana</i>), Pin Oak (<i>Quercus palustris</i>) and Silver Maple (<i>Acer saccharinum</i>).</li> </ul>	NA
SWAMP		
Deciduous Swamp		
SWD1-3 Pin Oak Mineral Deciduous Swamp	<ul style="list-style-type: none"> <li>Mature community, subjected to extensive flooding in the spring.</li> <li>Main and secondary canopy is dominated by Pin Oak; associate species are Shagbark Hickory (<i>Carya ovata</i>), Red Oak (<i>Quercus rubra</i>), Swamp White Oak (<i>Q. bicolor</i>), Silver Maple and Red Maple (<i>Acer rubrum</i>).</li> <li>Shrub layer is mostly composed of Green Ash (<i>Fraxinus pennsylvanica</i>) saplings and stump resprouts, as the mature trees have died of Emerald Ash Borer infestation.</li> <li>Herb layer is diverse and includes such species as Virginia Knotweed (<i>Persicaria virginiana</i>), Fowl Meadow Grass (<i>Glyceria striata</i>), Fringed Sedge (<i>Carex crinita</i>), Bladder Sedge (<i>C. intumescens</i>), Hop Sedge (<i>C. lupulina</i>), White Cut Grass (<i>Leersia virginica</i>), Sensitive Fern (<i>Onoclea sensibilis</i>), and several others.</li> </ul>	S2S3
Thicket Swamp		
SWT2-2 Willow Mineral Thicket Swamp	<ul style="list-style-type: none"> <li>Tall shrub thicket at edge of the treed swamp.</li> <li>Patchy, uneven community structure and species composition, especially in the herb layer.</li> <li>Occasional presence of single trees or tree groups, for example Cottonwood (<i>Populus deltoides</i>) and Silver Maple.</li> <li>Bebb's Willow (<i>Salix bebbiana</i>) and Narrow-leaved Meadow-sweet (<i>Spiraea alba</i>) are the principal shrub species.</li> <li>Main herbs include Reed-canary Grass (<i>Phalaris arundinacea</i>), Fowl Meadow Grass, Indian Hemp, Devil's Beggarticks (<i>Bidens frondosa</i>), Fringed Sedge, Water Smartweed (<i>Polygonum amphibium</i>), Rough-leaved Goldenrod (<i>Solidago rugosa</i>) and several others.</li> </ul>	S5



ELC TYPE	COMMUNITY DESCRIPTION	S-RANK / G-RANK (NHIC, 2013)
MARSH		
Shallow Marsh		
MAM2-2 Reed-canary Grass Mineral Meadow Marsh	<ul style="list-style-type: none"> <li>Essentially a dense monoculture of Reed-canary Grass.</li> <li>Secondary species are Tall Goldenrod and Arrow-leaved Tearthumb (<i>persicaria sagittata</i>).</li> </ul>	S5
Shallow Marsh		
MAS2-1 Cattail Mineral Shallow Marsh	<ul style="list-style-type: none"> <li>Present only within a small dug pond, this tall community is dominated by Glaucous Cattail (<i>Typha x glauca</i>), with Reed-canary Grass in the outer edge.</li> </ul>	S5

A selection of photographs depicting the various vegetation communities is provided on several pages beginning overleaf, on page 11.

Investigation and mapping of vegetation communities at the site confirmed that the limit of wetland on the site is approximately consistent with the mapped limit of PSW per Land Information Ontario (LIO) mapping. Minor differences in the mapped wetland boundary included a “point” at the site’s northern boundary that was found not to be wetland. A submission will be made to the Ministry of Natural Resources and Forestry (MNRF) to seek formal revision of the PSW boundary on Provincial mapping.

Delineation of the extent of woodland on site, significant woodland in this case, was confirmed during woodland dripline staking with Niagara Region staff on 15 November 2021. During the staking exercise, it was confirmed with and acknowledged by Region staff that the significant woodland limit is contained within the PSW limit such that the significant woodland would be both avoided by and adequately buffered from residential development of the site.



**Plate 9:** November 2021 view across the site from Kalar Road shows the cultural meadow and cultural thicket in foreground and middle background, and willow thicket swamp and pin oak deciduous swamp in the far background.



**Plate 10:** Cultural meadow, cultural thicket, and a small clump of trees on the site, facing west towards Kalar Road and developing neighbourhood.





**Plate 11:** A large vernal pool as viewed in June 2020 within the pin oak deciduous swamp, far back from Kalar Road.



**Plate 12:** Dry vernal pool in the deciduous swamp as observed in September 2021.





**Plate 13:** The sole, centimetres-deep remnant of standing water amongst all of the deciduous swamp's vernal pools as observed in September 2021.



**Plate 14:** A fat-tailed, healthy-looking, Blue-spotted Salamander found under a cover item at the edge of a dry vernal pool in September 2021.





**Plate 15:** A view across cultural meadow to the edge of willow thicket swamp.



**Plate 16:** A view across the previously disturbed area now occupied by reed canary grass meadow marsh, with the southerly neighbour visible in the left background and new neighbourhood development across Kalar Road in the background.





**Plate 17:** A view towards Kalar Road across the small polygon of cattail marsh (dark green in centre) within an abandoned rectangular dug pond on the site. Note cultural meadow in foreground and surrounding the abandoned pond's cattails.

### Botanical Inventory

Botanical inventories completed on the site by Chris Zoladeski identified a total of 141 species of vascular plants. Of that number, 87 (or 62%) are native and 54 (or 38%) are exotic. A full species list is included in the appended Plant Species List.

The majority of the native species (93%) are ranked S5 (secure in Ontario). Six species (7%) are ranked S4 (apparently secure in Ontario; NHIC, 2013). No provincially rare or endangered species (S1-S3; NHIC, 2013) were observed.

Nine regionally rare or uncommon plants were observed, as per the Niagara Region rankings (Oldham 2010):

- Daisy Fleabane (*Erigeron strigosus*) – occasional in the old field meadow;
- Red-osier Dogwood (*Cornus sericea*) – occasional in the willow thicket swamp;
- Water Smartweed (*Polygonum amphibium*) – occasional in water pools within the willow thicket swamp;



- Swamp Buttercup (*Ranunculus hispidus* var. *caricetorum*) – rare in water pools within the willow thicket swamp;
- Meadow Willow (*Salix petiolaris*) – occasional in the willow thicket swamp;
- Eastern Black Nightshade (*Solanum ptychanthum*) – occasional and weedy around the old residence;
- Crested Sedge (*Carex cristatella*) – occasional in moister spots within the old field meadow;
- Swan’s Sedge (*Carex swanii*) – occasional in moister spots within the old field meadow;
- Yellow Nut-grass (*Cyperus esculentus*) – occasional in edges of the old field meadow.

None of the regionally rare species are considered rare in Ontario.

### **Amphibians and Reptiles**

The occurrence of amphibians (i.e., frogs and salamanders) and reptiles (i.e., snakes and turtles) at the site was investigated by Myler by means of a frog breeding survey, visual searches for salamanders and snakes, and screening of habitat suitability for snakes and turtles.

Frog breeding surveys, by which frog breeding activity is assessed through auditory observations of calling frogs, identified the frog species breeding at the site, the locations of breeding activity, and the intensity of activity. Per the Marsh Monitoring Protocol, frog breeding surveys comprised three site evening site visits spread out over the spring breeding period to investigate the potential occurrence of various frog species that are early, mid or late season breeders. Site visits were conducted in early spring (24 March 2021), mid-spring (18 May 2021) and late spring (12 June 2021) on evenings when temperatures were above Marsh Monitoring Protocol minimums and when calling frogs were heard to be very active in Niagara Region, which is indicative of favourable weather for breeding activity.

Calling frogs at the site were heard almost exclusively within the PSW’s woodland vernal pools. Four species: Spring Peeper, Western Chorus Frog, American Toad and Gray Treefrog were heard calling within the PSW’s vernal pools at chorus and near-chorus intensities. In the western part of the site fronting Kalar Road, only a couple Spring Peeper were heard calling during the 24 March 2021 survey, in the southern portion of the site’s frontage where grades had been historically disturbed, leaving an earthen berm and an adjacent low area. No frog calls were heard in the western part of the site during subsequent survey visits in May and June. No frog calls were heard in the cattail-choked artificial dugout pond in the northern part of the site. As a result, amphibian breeding activity was determined to be associated with the eastern part of the site, within the PSW’s vernal pools.

Myler’s investigation of potential amphibian and reptile habitat and presence/absence included observations on the following dates:

- 15 June 2020
- 05 October 2020
- 17 March 2021
- 24 March 2021

- 02 April 2021
- 18 May 2021
- 27 May 2021
- 12 June 2021
- 20 June 2021
- 10 July 2021
- 14 September 2021
- 13 November 2021

Woodland vernal pools in the PSW were observed to be extensive and included additional similar off-site pools in the contiguous woodland/PSW on the neighbouring property east of the site. However, the pools were discovered to be quite shallow and were almost entirely dried up by the 14 September 2021 site visit, except for a tiny remnant puddle only centimeters deep in only one of the larger pools.

As the pools are shallow, ephemeral, and distant from other waterbodies or watercourses, they are not suitable habitat for turtles. Not surprisingly, no turtles were observed on the site during any of Myler's site visits.

Similarly, the pools are not suitable for some frog species such as Leopard Frog, Green Frog and Bullfrog that breed later in spring and require permanent water bodies for maturation and transformation of their tadpoles and for overwintering of adults and, in the case of Green Frog and Bullfrog, tadpoles as well.

The impermanently wetted conditions of the PSW's vernal pools are of course suitable for the several frog species that were heard calling during the breeding season. Each of those species has fast-developing tadpoles and the adults do not hibernate under water.

The pools are also suitable for mole salamanders, that require them for breeding and the growth and transformation of their fast-developing aquatic larvae, but that hibernate underground rather than under water. Myler found four specimens of the Blue-Spotted Salamander, a common and widespread salamander species, beneath cover at the edge of two of the PSW's vernal pools.

Visual searches otherwise found no additional amphibians and reptiles at surface or beneath cover items. Blue-Spotted Salamander was found only within the mature woods of the PSW, which is typical habitat of the species. No snakes of any species were observed, despite numerous site visits during the active season of Ontario species and despite hand searches for snakes beneath existing cover items.

As a result, amphibian occurrence and suitable habitat on the site is concentrated within the woodland portion of the PSW.

No reptiles, including turtles and snakes, were found on the site. The site does not contain suitable habitat for turtles.

## **Breeding Birds**

A breeding bird survey was conducted by Myler using Ontario Breeding Bird Atlas methods during the sunny and warm mornings of 20 June 2020 and 10 July 2020, focused on the area of the site fronting on Kalar Road, outside of the PSW and along the PSW boundary.

A total of 15 bird species were identified at the site (see appended Bird Species List). All except the “uncommon summer resident” Willow Flycatcher, which was heard calling only during the second survey, are listed by the NAI as common or very common in Niagara. Eastern Wood Pewee, provincially listed as Special Concern but classified as “common summer resident” in the NAI, was heard and observed only during the first survey.

None of the observed bird species is listed as threatened or endangered in Ontario. The single observation of the single Special Concern species could be indicative of SWH within the adjacent woodland portion of the PSW, but that single incidental occurrence does not confer SWH status on the cultural thicket and meadow areas fronting on Kalar Road.

## **SPECIES AT RISK SCREENING**

Desktop review of NHIC Element Occurrences (EOs) at and near the site did not reveal the occurrence of species with suitable habitat on the site. EOs included aquatic species Grass Pickerel (Special Concern) and two Endangered mussels, for which there is no watercourse habitat on the site. An EO of Deerberry, a Threatened shrub that occurs in dry woodland habitat, is not applicable as the site lacks such habitat. Deerberry was not observed as part of the botanical inventory. The remaining two EOs, the extirpated Timber Rattlesnake and the long-absent Northern Bobwhite, are certainly not present.

No SAR plant species (trees, shrubs or herbaceous plants) were observed at the site.

Candidate maternal roost habitat of Endangered bats may occur within the woodland, which is contained and protected within the PSW, but no candidate maternal roost trees were identified outside of the woodland.

Salamander breeding habitat and the occurrence of salamanders was confirmed within the PSW’s suitable woodland habitat. However, the site is outside of the range of SAR salamanders and the species observed was the Blue-Spotted Salamander, a common and widespread species.

Turtle habitat is completely lacking at the site, so the potential occurrence of SAR turtles is screened off.

Snakes were not observed at the site despite numerous site visits and active searches conducted in 2021. Additionally, extant snake SAR occurrences are not known in the vicinity of the site.

Accordingly, SAR, including threatened and endangered species, were not found to be present on the site.

## **SIGNIFICANT WILDLIFE HABITAT SCREENING**

Ecoregion 7E Criteria Schedules define the various types of SWH within the ecological region of southern Ontario within which the site is located.

EIS studies identified rare vegetation community SWH as the Pin Oak Swamp that comprises the



woodland portion of the PSW. Pin Oak Swamp, despite the SWH designation, is very common in Niagara. This occurrence of Pin Oak Swamp at and near the site is protected from development by the PSW designation.

The amphibian surveys confirmed that Woodland Amphibian Breeding Habitat SWH occurs within the mature woodland vernal pools of the PSW. This SWH is protected by its location within the PSW limits.

Candidate maternal roost habitat of non-SAR bats may occur within the woodland, which is contained and protected within the PSW, but no candidate maternal roost trees were identified outside of the woodland.

However, no SWH was identified outside of the wetland within the cultural thicket and meadow portions of the site fronting on Kalar Road.

## **CONSTRAINTS AND OPPORTUNITIES**

Studies of vegetation and wildlife at the site confirmed the limit of wetland on the site is approximately consistent with the LIO PSW mapping, with minor differences proposed to be addressed through a requested revision to Provincial mapping. Woodland dripline staking, confirmed on-site with Niagara Region staff on 15 November 2021, confirmed that the limit of woodland on the site, significant woodland in this case, is contained within the PSW's mapped limit. Amphibian woodland breeding SWH and candidate habitat of SAR bats is likewise associated with and contained within the mature woodland portion of the PSW.

The site is free of natural hazards, except for a tiny sliver of regulated floodplain within the northwest corner of the site.

Accordingly, the natural environment development constraints are limited to the natural heritage features contained within the mapped limits of the PSW.

Development opportunities reside within the western portion of the site, west of the PSW, that fronts on Kalar Road and within which it was determined that no designated natural features occur.

To prevent intrusion within the PSW (and other natural heritage features) and to protect the PSW from potential impacts of development, a portion of the existing cultural meadow and cultural thicket is recommended to be retained contiguous with the PSW boundary to provide a buffer of 15 metres width. This buffer width is similar to and greater than the setback between the mapped PSW limit and the recently constructed residential subdivisions south of the PSW. The existing vegetation of the cultural meadow and cultural thicket will provide an immediately functional and robust buffer.

## **PROPOSED DEVELOPMENT**

The proposed residential condominium development is depicted on the conceptual Site Plan (appended) and on the Preliminary Grading and Erosion Control Plan and the Site Servicing Plan (also appended). The Site Plan shows a total of 99 condominium units in 11 blocks, with a central drive aisle, dual access to Kalar Road, and peripheral visitor parking and waste stations. The Site Plan includes a naturally

vegetated 15 metre buffer to ensure avoidance and protection of the PSW and woodland. The buffer's cultural thicket and cultural meadow vegetation will be retained, largely untouched except for minor grading (discussed below), to provide an immediately functional and robust buffer.

The development will be connected to existing municipal water, sanitary sewer, and storm sewer services. The condominium blocks are designed as slab-on-grade structures, without basements and therefore without the need of deep foundation drains or sump pumps.

An existing large catch basin at the site currently accepts and conveys the drainage from the western approximate half of the proposed development footprint into the Kalar Road storm sewer. Drainage of a northwest portion of the site is direct to the Kalar Road drainage ditch which in that area conveys flow northward to a small tributary watercourse. The eastern approximate half of the proposed development footprint currently drains across meadow and shrub thicket towards the PSW.

Stormwater management on the finished site is described in the S. Llewellyn Associates April 2022 Functional Servicing Report (FSR) as consisting of:

- Quantity control designed to the required 5-year pre-development discharge rate to the Kalar Road storm sewer, accomplished by means of underground temporary storage tanks and orifice control.
- Quality control to deliver the required Level 2 Normal control of 70% Total Suspended Solids (TSS) removal and 80% average annual treatment of runoff discharging to the Kalar Road storm sewer, accomplished by means of oil-grit separators.
- Uncontrolled drainage from a portion of townhouse roof leaders and from landscaped areas to the adjacent PSW buffer and towards the PSW.
- Water balance will be in favour of the PSW, with a projected approximate average 9% increase in runoff from the developed area across the buffer towards the wetland.

Accordingly, the development plan meets the objective of maintaining the existing water balance at the site in consideration of the adjacent wetland and its reliance on surface runoff.

The FSR also describes the temporary sediment and erosion controls to be implemented during construction as comprising the following:

- Silt fence installed on the boundary of the development.
- Silt sacks fitted within catchbasins.
- Stabilization of exposed/disturbed soils through prompt hydroseeding or sodding.
- Inspection, maintenance, and reporting to the City of Niagara Falls of the above measures during construction.

Site grading requirements are modest, in keeping with the relatively flat grades on the site, adjacent lands and along Kalar Road. Minor filling is required within the development to facilitate drainage and

stormwater management. Grading is confined almost entirely within the development footprint, with only tiny and isolated stable slope “fillets” or areas of grading extending slightly into the 15m PSW buffer. Otherwise, most of the grading limit is set back and separated from the edge of the buffer. Review of the Preliminary Grading and Erosion Control Plan shows that the maximum extent of grading into the buffer at any point is only about 2 metres and only along short segments of the development limit. Such grading is proposed in preference to installation of retaining walls, which will eventually require disruptive maintenance, and is proposed to be planted to match and enhance the vegetation in the existing buffer as a permanent part of the PSW buffer. Permanent fencing and marker posts are proposed to mark the limit of development and prevent intrusion within all portions of the buffer, including minor fillets of stable slope grading.

## **IMPACT ASSESSMENT**

With PSW in the eastern part of the site, and proposed development at the site’s western Kalar Road frontage completely separated from the PSW by a naturally vegetated 15 metre buffer, the potential for impacts on natural heritage features and their ecological functions is limited to indirect effects pathways.

Indirect impacts relating to site drainage will be mitigated through maintenance of the pre-existing drainage condition in which surface runoff from approximately half of the proposed development footprint is conveyed eastward towards the PSW. The PSW’s hydrology is entirely surficial, depending on annual precipitation, run-off and snowmelt, as a result of the site and neighbourhood’s underlying clayey soils. Additionally, the PSW does not contain any watercourse that could convey water from elsewhere and contribute to its hydrology. The wetland’s hydrology was revealed partly through observations of the woodland vernal pools in the PSW. The shallow pools in depressions in the PSW’s woodland were discovered to be quite shallow and were almost entirely dried up by the 14 September 2021 site visit, except for a tiny remnant puddle only centimeters deep in one of the larger pools. The ephemeral seasonal occurrence of water in the pools is a consequence of topography and underlying clayey soils. The pools are filled annually by snowmelt and spring rains, but gradually dry up in drier summer weather. Owing to the clayey soils there is no groundwater connection, and the pools are neither maintained by nor contribute to groundwater. Geotechnical investigation of the site complemented observations of the vernal pools and of surficial soil conditions relevant to site drainage, ground water and the adjacent PSW. Seven boreholes advanced at the site by Soil-Mat Engineers and Consultants Limited found a topsoil layer ranging from 15-25 centimeters thickness underlain by metres of “silty clay / clayey silt”. Two of the boreholes that were advanced to almost 4 metres below ground surface and three of the boreholes that were advanced to more than 5 metres below ground surface did not encounter ground water and were recorded as “open and ‘dry’ upon completion”. Ground water was encountered in only the two boreholes that were advanced to almost 7 metres below ground surface. Soil-Mat established monitoring wells in those boreholes and reported ground water level in May and June for the one well as 2.74 and 2.57 metres below ground surface respectively, and in the other well as 5.92 and 5.93 metres below ground surface respectively. Accordingly, the hydrology of the PSW is entirely dependent on surface runoff of precipitation and seasonal pooling on impervious soils. The ground water located metres below in the clay, well below and beyond the root zone of wetland vegetation, is not linked to the surficial or “perched” wetland. Accordingly, the maintenance of surface water run-off towards the PSW will protect and preserve its hydrology. As such, the SWM measures that will direct clean runoff from roof leaders



and landscaped areas of the development eastward into the PSW buffer and towards the PSW, at an average increased amount of about 9% under conditions for all events ranging from the 2-year to the 100-year storm, will favour maintenance of the PSW's water balance.

Indirect impacts of lighting on the adjacent PSW and woodland will be mitigated primarily by a specification of downward-facing external light fixtures on condominium buildings, in condominium parking areas and along the internal condominium roadways. The setback afforded by the 15 metre buffer will also mitigate the potential for minor light intrusion.

Potential indirect impacts of site preparation will be mitigated by the placement, monitoring and maintenance of a temporary construction fence and silt barrier along the development side of the buffer. In that way, there will be no intrusion of construction equipment, soils, materials or sediment-laden runoff into the buffer and adjacent PSW.

Tree protection, specified in the Tree Inventory and Preservation Plan prepared by Jackson Arboriculture, will be incorporated into the temporary construction fencing as tree protection fencing where required.

Potential direct impacts on nesting birds will be avoided through appropriate seasonal timing of vegetation removal within the development footprint during the September to late March period and outside of the bird nesting season that extends from late March to late August.

Long term protection against potential impacts of intrusion into the PSW and its buffer will be provided by the maintenance of segments of fencing and of marker posts at the limits of development. These physical barriers and markers will delineate the edge of the buffer and permanently distinguish it from the developed and manicured common element portions of the condominium to guide and contain landscaping maintenance outside of the natural features and the buffer. Additionally, it is recommended that protective zoning be applied to the PSW and its buffer.

Accordingly, potential indirect and direct impacts of the proposed development can be prevented and mitigated through provision of the 15 metre buffer and implementation of specific physical and seasonal timing measures during site preparation and construction, and in design of lighting and fencing.

## **POLICY COMPLIANCE**

Policy compliance is concerned with the PSW and significant woodland natural heritage features, portions of which occur on and adjacent to the site. Residential development is prohibited within PSW and is generally prohibited within significant woodland. The proposed development limit is entirely outside of the PSW and the significant woodland, so policy compliance is reduced to a question of the provision of an adequate setback or buffer.

### **City of Niagara Falls OP Policies**

City of Niagara Falls OP policies relevant to the PSW's EPA designation are contained in Part 2 Land Use Policies, Section 11.2 EPA and ECA of the OP. Those policies are repeated in Part 5 Secondary Plans, Section 1 Garner South Secondary Plan.

**Policy 11.2.2** specifies that an EIS must be prepared and submitted in support of development on lands adjacent to EPA and ECA designations. This EIS fulfils that policy requirement.

**Policy 11.2.3** specifies that the “limits of EPA and ECA designations and their adjacent lands may be expanded or reduced” through new environmental mapping and studies by MNRF, NPCA or qualified environmental consultants. It identifies that “minor reductions or minor expansions to the limits of EPA or its adjacent lands on Schedule A may be made without amendment to this Plan”. The study and confirmation of the extent of EPA lands on the site constitutes a minor reduction to the extent of EPA depicted on Schedule A and therefore does not require an OP amendment.

**Policy 11.2.6** specifies that new lots shall not extend into EPA or its buffer area “as identified and approved through an Environmental Impact Study”. As a Plan of Condominium, the proposed development does not include creation of new lots.

**Policy 11.2.7** specifies that SWM facilities shall not be constructed within EPA lands but may be permitted in adjacent lands “only where it has been demonstrated that there will be no impact on any natural heritage feature or the function of the natural heritage system”. All SWM measures proposed as part of the development are located outside of the EPA-designated PSW and its buffer.

**Policy 11.2.13** specifies the features that comprise the EPA designation, confirming that the extent of EPA lands at the site are contained within the mapped extent of the PSW.

**Policy 11.2.14** specifies that development within the EPA designation is limited to “forest, fish and wildlife management”, “conservation and flood or erosion projects” and “small scale, passive recreational uses”. The proposed residential development does not include development within the EPA designated features that were confirmed to occur at the site.

**Policy 11.2.16** specifies PSW and NPCA wetland buffer requirement and clarifies that the “30m buffer is illustrated on Schedule A-1 for reference purposes” but that the “precise extent of the vegetated buffer will be determined through an approved EIS and may be reduced or expanded”. The policy further specifies that development is not permitted within the buffer. The proposed residential development is recommended by this EIS to include a 15m buffer comprised of existing cultural thicket and cultural meadow vegetation and does not include elements of the development within the buffer.

The EPA policies within the Garner South Secondary Plan are essentially identical to those of Part 2, except that the Part 2 wetland buffer policy contains additional explanation of the conceptual or “reference purposes” character of the 30m buffer shown on Schedule A-1 that is not reproduced in the corresponding, more briefly written Secondary Plan policy.

## **Niagara Region ROP**

Niagara Region policies relevant to the natural heritage features at the site are contained in ROP Chapter 7 Natural Environment, 7.B The Core Natural Heritage System.

**Policy 7.B.1.3** specifies the features that comprise the EPA designation, confirming that the extent of EPA lands at the site are contained within the mapped extent of the PSW.

**Policy 7.B.1.4** identifies that significant woodland is designated ECA, however the significant woodland

(and all woodland) at the site is contained within the PSW's EPA designated lands.

**Policy 7.B.1.7** specifies that the boundaries of Core Natural Areas shown on ROP Schedule C “may be defined more precisely” through studies, including EIS, and that minor boundary adjustments “will be permitted without Amendment to this Plan”. This EIS found the extent of EPA lands at the site to be similar to that depicted on ROP Schedule C, and similar to provincial PSW mapping with only minor differences. Accordingly, consideration of a boundary adjustment relative to Schedule C is not required or would be at most a very minor adjustment that could be permitted without Amendment.

**Policy 7.B.1.10** specifies that development within the EPA designation is limited to “forest, fish and wildlife management”, “conservation and flood or erosion projects” and “small scale, passive recreational uses”. The proposed residential development does not include development within the EPA designated features that were confirmed to occur at the site.

**Policy 7.B.1.11** specifies that “Development and site alteration may be permitted without an amendment to this Plan...On adjacent lands to Environmental Protection and Environmental Conservation Areas...If it has been demonstrated that, over the long term, there will be no significant negative impact on the Core Natural Heritage System component or adjacent lands and the proposed development or site alteration is not prohibited by other Policies in this Plan”. The proposed residential development is proposed to be constructed entirely outside of the EPA lands at the site. There are no ECA lands at the site. The development includes a recommended 15m vegetated buffer to be established in adjacent lands between the development limit and the EPA/PSW limit and further specifies mitigation measures that will ensure that there will be no significant negative impact.

**Policy 7.B.1.18** specifies that new lots “shall not extend into either the area to be retained in a natural state as part of the Core Natural Heritage System or the buffer zone identified through an Environmental Impact Study”. As a Plan of Condominium, the proposed residential development does not include the creation of new lots and the limit of development within the existing lot is located outside of the EPA limits and outside of the 15 metre buffer recommended by this EIS.

**Policy 7.B.1.19** specifies the requirement for a Tree Saving Plan for development within the Core Natural Heritage System and adjacent lands. The Tree Inventory and Preservation Plan prepared by Jackson Arboriculture and cited in this EIS fulfils the requirement for tree protection at the site.

### **NPCA Policies**

NPCA policies relevant to the site and the proposed residential development are found in Section 8.2.3 Development in Areas of Interference in the NPCA Policy Document: Policies for the Administration of Ontario Regulation 155/06 and The Planning Act (May 21, 2020 Consolidation).

**Policy 8.2.3.1** Development within 30 metres of a Wetland specifies that “Unless otherwise stated in this Document, no development and site alteration shall be permitted within 30 metres (98 feet) of a wetland.”

**Policy 8.2.3.5** Proposed New Development within 30 metres of a Wetland describes in part “c” the site-specific factors to be considered for a reduction of buffer width as follows:

- I. The nature of the proposed development/site alteration;** The proposed residential

- development is situated on existing road frontage and connected to existing municipal services, is contained entirely within previously disturbed cultural lands, does not include substantial change to the existing flat topography, and will employ recommended avoidance and mitigation measures, such that it poses a very low risk of impact to the adjacent wetland.
- II. The proximity to the wetland;** The proposed development and its recommended buffer is situated next to the least sensitive shrub thicket portion of the wetland and far from the more sensitive mature hardwood swamp portion of the wetland that contains mature trees and vernal pool amphibian breeding habitat.
- III. Adjacent land use;** Adjacent land use is developing and recently constructed residential neighbourhood, for which reduced wetland buffers were recently approved.
- IV. The condition of the 30 metre Regulated area;** The 30 metre regulated area is of flat topography and is variously covered by cultural meadow, cultural thicket, and disturbed areas such as an earthen berm and the remnant of a shallow artificial dugout pond. The topography, and required grading for development, does not pose a risk to the adjacent wetland. The cultural vegetation provides a ready and existing stabilized and functional buffer zone, which this EIS has recommended to be established at 15 metres width. The disturbed areas of berm and dugout are not positive elements of the regulated area and will be removed by the development.
- V. The extent of existing natural buffer;** Existing natural buffer occurs as cultural meadow and cultural thicket outside of the wetland. This EIS recommends that a 15 metre width of that existing natural buffer will be sufficient to protect the wetland when combined with other recommended mitigation measures.
- VI. Restoration of buffer functions;** As the existing buffer area is currently vegetated and functional, and no grading or alteration is required within it, restoration of buffer functions is not required, except perhaps for localized removal/management of small numbers of invasive species (see VIII, below).
- VII. Presence of existing roads;** There are no existing roads adjacent to the wetland or the area of interference. The only road, that being Kalar Road, marks the site's western frontage and presents an opportunity for valued intensification of municipally serviced residential development within urban limits.
- VIII. Removal of invasive species;** Invasive species do occur but are not particularly dominant or prevalent within the area of interference. Local occurrence of specimens or stands of invasive species such as Buckthorn and Honeysuckle shrubs within the recommended buffer could be identified and removed in favour of desirable native species.
- IX. Presence of sensitive ecological features; and** Sensitive ecological features are associated with the mature hardwood swamp core of the wetland, that is separated from the proposed development limit by a band of less sensitive shrub thicket and Reed Canary Grass marsh wetland and by the recommended 15 metre buffer of upland cultural vegetation.
- X. Other ecological or hydrological function considerations specific to the site; and** As noted above, the wetland's sensitive ecological functions were found to be associated within



its core of mature hardwood swamp that is located far from the proposed development limits. As the wetland is perched on impervious clayey soils, without groundwater connection or dependence, and on flat topography, maintenance of the wetland's surficial run-off hydrology is straightforward and has been included in the development's stormwater management plan.

#### **XI. Other items as required.**

#### **Provincial Policy Statement 2020**

The Provincial Policy Statement (2020) includes policies for development within and adjacent to natural heritage features. Relevant policies are cited and discussed below.

**Policy 2.1.4** prohibits development in significant wetlands in southern Ontario south of the Canadian Shield (i.e., Ecoregions 5E, 6E and 7E). The proposed development is located entirely outside of and buffered from the PSW.

**Policy 2.1.5** prohibits development within significant woodlands and significant wildlife habitat, among other features. The proposed development is located entirely outside of significant woodland and SWH, which were determined to be confined to the mature hardwood swamp core of the PSW at the site.

**Policy 2.1.7** prohibits development within habitat of endangered and threatened species except in accordance with provincial and federal requirements. The proposed development is located entirely outside of the potential occurrence of habitat of endangered and threatened species within the PSW at the site. No habitat of endangered and threatened species was discovered outside of the PSW on the culturally vegetated parts of the site within which development and establishment of a protective buffer are proposed.

**Policy 2.1.8** prohibits development on adjacent lands “unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions”. This EIS documents the evaluation of ecological function of the adjacent lands and demonstrates through impact assessment and recommended avoidance and mitigation measures that the natural features of PSW, significant woodland, potential SAR habitat and SWH and their functions will not be negatively impacted.

#### **CONCLUSION AND RECOMMENDATIONS**

As the portion of the site that is proposed for development is outside of identified wetland and woodland natural heritage features and their buffers, and contains neither SAR nor SWH, approval of the proposed residential condominium development is recommended.

Recommended mitigation measures include avoidance timing and physical measures during site preparation and construction, as follows:

- Provision of a 15m buffer from the PSW boundary comprised of mostly pre-existing natural vegetation and, in limited areas of minor grading, restoration/enhancement plantings, that will

provide avoidance and protection for both the PSW and the significant woodland that is contained within the PSW.

- Implement erosion and sedimentation control measures as specified in the FSR, to isolate the area within the development limits from the adjacent PSW and its buffer.
- Implement tree protection measures for trees to be retained/protected adjacent to the site (see Jackson Arboriculture Tree Inventory and Protection Plan under separate cover).
- Time vegetation removal within the development limits during September – late March, outside of bird nesting season (defined on Canadian Wildlife Service nesting calendar for Zone C1 as late March to late August) to maintain Migratory Birds Convention Act compliance and simultaneously avoid potential incidental occurrence of roosting non-SAR bats.
- Implement SWM measures as specified in the FSR that favour PSW water balance through direction of clean runoff eastward from the developed area that is on average about 9% greater than existing conditions.

Implementation of these mitigation measures is intended to maintain compliance with applicable policies to avoid impacts on the adjacent wetland, to protect adjacent trees and to avoid incidental take of migratory birds during their breeding/nesting season.

# Region EIS Checklist / ToR





**Natural Heritage features identified or likely to exist:**

*Environmental Protection Area (EPA)*

	Feature	Located <b>On</b> and/or <b>Adjacent</b> Subject Property	Details
<input checked="" type="checkbox"/>	Provincially Significant Wetland (PSW)	<input type="checkbox"/> On <input type="checkbox"/> Adjacent <input checked="" type="checkbox"/> Both	Name: Warren Creek PSW
<input type="checkbox"/>	Provincially Significant Life Science Area of Natural and Scientific Interest (ANSI)	<input type="checkbox"/> On <input type="checkbox"/> Adjacent <input type="checkbox"/> Both	Name:
<input type="checkbox"/>	Significant Habitat of Threatened or Endangered Species	<input type="checkbox"/> On <input type="checkbox"/> Adjacent <input type="checkbox"/> Both	Species:
<input type="checkbox"/>	Key Natural Heritage features within the Greenbelt Natural Heritage System	<input type="checkbox"/> On <input type="checkbox"/> Adjacent <input type="checkbox"/> Both	Feature:

*Environmental Conservation Area (ECA)*

	Feature	Located <b>On</b> and/or <b>Adjacent</b> Subject Property	Details
<input checked="" type="checkbox"/>	Significant Woodlands	<input type="checkbox"/> On <input type="checkbox"/> Adjacent <input checked="" type="checkbox"/> Both	Criteria: <input type="checkbox"/> Significant Wildlife Habitat <input type="checkbox"/> ANSI <input type="checkbox"/> Other <input type="checkbox"/> Environmentally Sensitive Area <input type="checkbox"/> Interior Habitat <input type="checkbox"/> Old Growth <input type="checkbox"/> Rare Species <input checked="" type="checkbox"/> Size: <input type="checkbox"/> Water <input checked="" type="checkbox"/> Wetland
<input checked="" type="checkbox"/>	Significant Wildlife Habitat	<input type="checkbox"/> On <input type="checkbox"/> Adjacent <input checked="" type="checkbox"/> Both	Details: potential in PSW/woodland
<input checked="" type="checkbox"/>	Significant Habitat of Species of Concern	<input type="checkbox"/> On <input type="checkbox"/> Adjacent <input checked="" type="checkbox"/> Both	Species: potential in PSW/woodland
<input type="checkbox"/>	Significant Valleylands	<input type="checkbox"/> On <input type="checkbox"/> Adjacent <input type="checkbox"/> Both	Details:
<input type="checkbox"/>	Other Evaluated Wetland ( <i>Non-Provincially Significant</i> )	<input type="checkbox"/> On <input type="checkbox"/> Adjacent <input type="checkbox"/> Both	Name:

<input type="checkbox"/>	Regionally Significant Life Science ANSI	<input type="checkbox"/> On <input type="checkbox"/> Adjacent <input type="checkbox"/> Both	Name:
<input type="checkbox"/>	Publicly Owned Conservation Lands	<input type="checkbox"/> On <input type="checkbox"/> Adjacent <input type="checkbox"/> Both	Details:
<input type="checkbox"/>	<input type="checkbox"/> Savannah <input type="checkbox"/> Tallgrass Prairie <input type="checkbox"/> Alvar <input type="checkbox"/> Dune	<input type="checkbox"/> On <input type="checkbox"/> Adjacent <input type="checkbox"/> Both	Details:
<input type="checkbox"/>	Regional Local Amendment	<input type="checkbox"/> On <input type="checkbox"/> Adjacent <input type="checkbox"/> Both	Details:

**Fish Habitat**

	Feature	Located <b>On</b> and/or <b>Adjacent</b> Subject Property	Details
<input type="checkbox"/>	Fish Habitat <input type="checkbox"/> Reach (Watercourse) <input type="checkbox"/> Area (Pond/Lake)	<input type="checkbox"/> On <input type="checkbox"/> Adjacent <input type="checkbox"/> Both	Fish Habitat Classification: (identified by MNRF) <input type="checkbox"/> 1: Critical <input type="checkbox"/> 2: Important <input type="checkbox"/> 3: Marginal Details:

**Candidate Significant Wildlife Habitat (Study must determine presence/absence)**

Seasonal Concentration Areas of Animals:

<input type="checkbox"/> Waterfowl Stopover and Staging Areas (Terrestrial and Aquatic)	<input type="checkbox"/> Colonially Nesting Bird Breeding Habitat (Bank and Cliff/ Tree/ Shrub/ Ground)	<input type="checkbox"/> Reptile Hibernacula
<input type="checkbox"/> Shorebird Migratory Stopover Area	<input type="checkbox"/> Turtle Wintering Area	<input type="checkbox"/> Deer Winter Congregation Area
<input type="checkbox"/> Raptor Wintering Area	<input type="checkbox"/> Bat Hibernacula	<input type="checkbox"/> Deer Yarding Area
<input type="checkbox"/> Landbird Migratory Stopover Area	<input checked="" type="checkbox"/> Bat Maternity Colonies	
<input type="checkbox"/> Migratory Butterfly Stopover Area	<input type="checkbox"/> Bat Migratory Stopover Area	

Rare Vegetation Communities:

<input type="checkbox"/> Cliff and Talus Slope	<input type="checkbox"/> Old Growth Forest	<input type="checkbox"/> Other
<input type="checkbox"/> Sand Barren	<input type="checkbox"/> Savannah	
<input type="checkbox"/> Alvar	<input type="checkbox"/> Tallgrass Prairie	

Specialized Habitat for Wildlife:

<input type="checkbox"/> Waterfowl Nesting Area	<input type="checkbox"/> Woodland Raptor Nesting Habitat	<input type="checkbox"/> Seeps and Springs
<input type="checkbox"/> Bald Eagle and Osprey Nesting, Foraging, Perching Habitat	<input type="checkbox"/> Turtle Nesting Areas	<input checked="" type="checkbox"/> Amphibian Breeding Habitat – Woodland and Wetland

Habitat for Species of Conservation Concern (Not including Endangered or Threatened Species)

<input type="checkbox"/> Marsh Bird Breeding Habitat	<input type="checkbox"/> Shrub/Early Successional Bird Breeding Habitat	<input checked="" type="checkbox"/> Special Concern and Rare Wildlife Species
<input type="checkbox"/> Open Country Bird Breeding Habitat	<input type="checkbox"/> Terrestrial Crayfish	<input type="checkbox"/>

Animal Movement Corridors

<input type="checkbox"/> Amphibian Movement Corridors	<input type="checkbox"/> Bat Migratory Stopover Area	<input type="checkbox"/> Deer Movement Corridors
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Has the property been identified as a Groundwater Protection Area (HVA)?

- Yes
- No

Details: \_\_\_\_\_

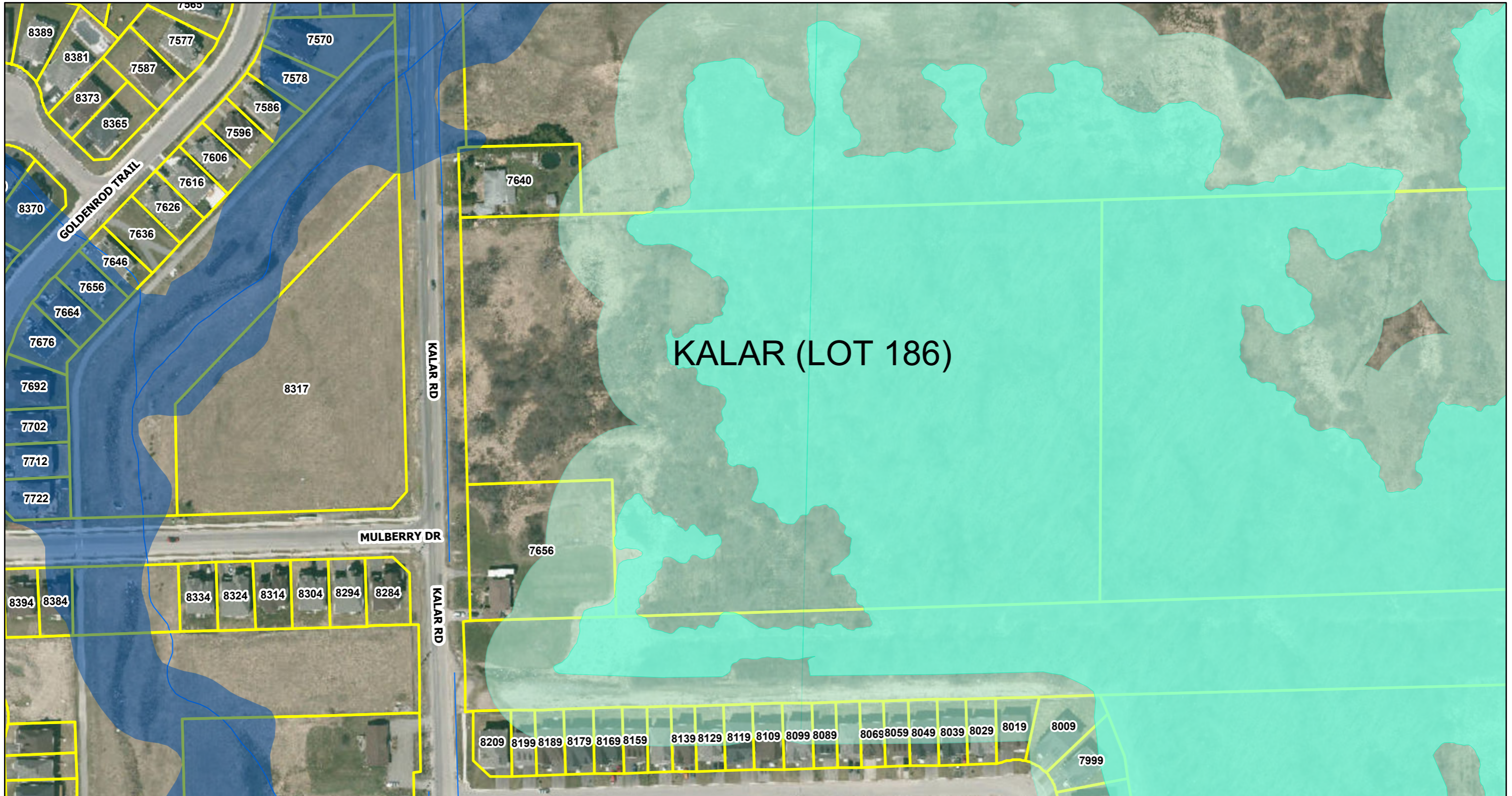
**Additional Comments/Details:**



**Aerial Map:** attached



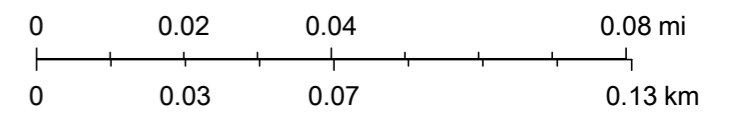
# Kalar (Lot 186)



3/20/2021, 2:40:43 PM

- NPCA Member Municipalities
- Regulated
- Regulation Wetlands
- Wetland Allowance
- Assessment Parcels
- Watercourses 2K 2002
- Niagara2018Imagery
- Red: Band\_1
- Green: Band\_2
- Blue: Band\_3

1:2,257



Brian Lee, City of Niagara Falls, City of Welland, Niagara Region, Regional Municipality of Niagara, Province of Ontario, Ontario MNR, Esri Canada, Esri, HERE, Garmin, INCREMENT P, USGS, EPA, USDA, AAFC, NRCan



## Required Field Surveys

(Any relevant information gathered from existing studies conducted within the last 5 years should be discussed to determine whether they are suitable to replace some of the requirements below)

	Field Surveys	General Timing Window	Protocol	Notes
<input checked="" type="checkbox"/>	Ecological Land Classification (ELC) mapping, including soils	Spring to Fall (i.e., generally May to October)	Ecological Land Classification for Southern Ontario (Lee et al., 1998)	Undertake ecological land classification down to eco-element (vegetation type).
<input checked="" type="checkbox"/>	Botanical Inventory (floral species list)	<input type="checkbox"/> Single Season	Systematic searches	Must be completed for each ELC community, with particular attention to presence/absence and habitat for rare (local and S1-S3) species and SAR.
<input type="checkbox"/> Two Season (Spring/Summer and Fall)				
<input checked="" type="checkbox"/> Three Season (Spring/Summer/Fall)				
<input type="checkbox"/> Other				
<input checked="" type="checkbox"/>	Breeding Birds	<ul style="list-style-type: none"> <li>Between May 24<sup>th</sup> and July 10<sup>th</sup>;</li> <li>Two surveys spaced 10 days apart;</li> <li>Anytime between dawn and 5 hours after dawn.</li> </ul>	Ontario Breeding Bird Atlas – Guide for Participants (2001)	<ul style="list-style-type: none"> <li>Counts should <i>not</i> be done if it is raining, there is thick fog, or if winds are greater than 19km/hr;</li> <li>If unseasonably warm or cold conditions are encountered in the spring, survey dates may need to be adjusted.</li> </ul>



☑	Amphibians: Frogs and Toads	<p>Three rounds of surveys between the following dates at least 15 days apart:</p> <ul style="list-style-type: none"> <li>➤ April 15<sup>th</sup> – April 30<sup>th</sup> (when night-time air temp exceeds 5°C)</li> <li>➤ May 15<sup>th</sup> – May 30<sup>th</sup> (when night-time air temp exceeds 10°C)</li> <li>➤ June 15<sup>th</sup> – June 30<sup>th</sup> (when night-time air temp exceeds 17°C)</li> </ul>	Marsh Monitoring Program Participant’s Handbook for Surveying Amphibians (Environment Canada, 2008)	<ul style="list-style-type: none"> <li>• Dates provided as a guideline, as air temperature and lack of wind are the most important variables;</li> <li>• If unseasonably warm or cold conditions are encountered in the spring, survey dates may need to be adjusted;</li> <li>• Favourable conditions consist of nights that are damp, foggy or have light rain falling. Persistent or heavy rainfall and nights with strong winds are to be avoided;</li> <li>• Surveys can begin half hour after sunset and end before midnight;</li> <li>• Each station is surveyed for three minutes;</li> <li>• Additional amphibian breeding habitat surveys may be required based on the results of the calling surveys.</li> </ul>
☑	Bats	Spring, Fall or Winter (i.e., both leaf-off and leaf-on periods)	Criteria from the <i>Significant Wildlife Technical Guide (MNRF 2000)</i> in conjunction with methods outlined by MNRF Guelph District ( <i>Recommended Approach for Surveying Buildings and Survey method for SAR Bats within Treed Habitats – Please contact MECP for protocols and field data sheets</i> )	<ul style="list-style-type: none"> <li>• Surveys to identify potentially suitable habitat should be completed prior to June;</li> <li>• If suitable maternity roost habitat is identified, separate acoustic surveys in the month of June may be recommended by MECP;</li> <li>• Please contact the MECP for protocols, field data sheets, and guidance.</li> </ul>

<input type="checkbox"/>	Deer	Variable depending on survey effort	<ul style="list-style-type: none"> <li>• Some information pertaining to the habitat specification of winter deer yards is available in the <i>Forest Management Guidelines for the Provisions of White-tailed Deer Habitat</i>;</li> <li>• More information pertaining to protocols that can be used to monitor deer populations is available in the <i>Wildlife Monitoring Programs and Inventory Techniques for Ontario</i>.</li> </ul>	<ul style="list-style-type: none"> <li>• Correspondence with the MNRF is required in order to confirm survey protocols and details on the evaluation of winter deer yards;</li> <li>• To confirm the presence of deer migration corridors, transects can be completed in order to evaluate the use of habitat in relation to a study area.</li> </ul>
<input type="checkbox"/>	Meander Belt Study	Variable	Meander Belt Width Delineation Protocol (Toronto and Region Conservation Authority, Revised 2004)	
<input type="checkbox"/>	Migratory Bird Survey	Spring Surveys (March to May) and Fall Surveys (August to October)	Bird and Bird Habitats: Guidelines for Wind Power Projects (MNRF, 2011)	

<input type="checkbox"/>	Fisheries Assessment	<input type="checkbox"/> Headwater Drainage Features Assessment	Evaluation, Classification and Management of Headwater Drainage Features Guidelines (CVC & TRCA, 2013)	<ul style="list-style-type: none"> <li>• Habitat assessments follow the methods outlines in the OSAP Protocol;</li> <li>• Aquatic habitat characterization should identify potential baseflow sources, barriers to fish migration and general habitat quality;</li> <li>• Physical stream measurements should be identified (width, height, length);</li> <li>• Identify any evidence of upwelling or groundwater concentration (may require a late fall/early winter site visit);</li> <li>• Fisheries inventories should be completed in the spring to ensure any fish usage of intermittent or ephemeral systems is identified. Inventories of permanent features may occur throughout the spring and summer. Habitat assessments and detailed habitat mapping should be completed during snow/ice free conditions;</li> <li>• Surveys should be completed within spring and fall, as these seasons capture the most diverse community assemblages.</li> </ul>
		<input type="checkbox"/> Habitat Characterization	Ontario Stream Assessment Protocol – <i>Version 10.0</i> (Ontario, 2017); Environmental Guide for Fish and Fish Habitat (MTO, 2009)	
		<input type="checkbox"/> Fisheries Assessment	Ontario Stream Assessment Protocol – <i>Version 10.0</i> (Ontario, 2017)	
<input type="checkbox"/>	Raptor Nests	Between March 23 <sup>rd</sup> and April 23 <sup>rd</sup> , prior to “leaf out”	Forest Raptors & Their Nests in Central Ontario: A guide to Stick Nests & Their Users (Ontario, 1998)	<ul style="list-style-type: none"> <li>• Surveys should consist of a thorough investigation of potentially suitable habitat searching for active or inactive stick nests and evidence of raptor activity.</li> </ul>
<input checked="" type="checkbox"/>	Species at Risk Screening	Variable	<input type="checkbox"/> DFO <input type="checkbox"/> MECP	<ul style="list-style-type: none"> <li>• Contact applicable agencies for survey requirements. All agency correspondence must be included in the EIS.</li> </ul>



<input type="checkbox"/>	Marsh Birds	<ul style="list-style-type: none"> <li>• Between May 20<sup>th</sup> and July 5<sup>th</sup>;</li> <li>• Two surveys spaced 10 days apart;</li> <li>• Morning or Evening, must remain consistent for both visits;</li> <li>• Morning surveys can begin 30 min before sunrise and end no later than 10 am; Evening surveys can begin no earlier than 4 hours before sunset and must be completed by dark.</li> </ul>	Marsh Monitoring Participant's Handbook for Surveying Marsh Birds (Environment Canada, 2008)	<ul style="list-style-type: none"> <li>• Each station is surveyed for 15 minutes;</li> <li>• Surveys should be undertaken in weather that is favourable for surveying birds: <i>good visibility, warm temperatures (at least 16°C), no precipitation and little or no wind.</i></li> </ul>
<input checked="" type="checkbox"/>	Water Balance	Variable	Wetland Water Balance Monitoring Protocol (Toronto and Region Conservation Authority, 2016)	Type text here
<input type="checkbox"/>	Wetland Evaluation	Variable	Ontario Wetland Evaluation System - Southern Manual (Ontario, 2013)	Any proposed refinements to Provincially Significant Wetland boundaries require approval from the MNRF. Please include all correspondence as an appendix in the EIS.
<input type="checkbox"/>	Wildlife Movement Survey (e.g. Road Mortality)	Variable	Environmental Guide for Mitigating Road Impacts to Wildlife (MTO, 2017)	

<input checked="" type="checkbox"/>	Salamanders	Early Spring – between late-March to mid-April, immediately following snow melt and/or the first spring rains	Wildlife Monitoring Programs and Inventory Techniques for Ontario	<p>Surveys can consist of one or more of the following three techniques:</p> <ul style="list-style-type: none"> <li>• Visual Surveys completed in the evenings during the period specified. A visual inspection of the habitat, including carefully overturning and replacing potential cover can be included as part of this survey. Egg mass surveys can also be completed during daylight hours;</li> <li>• Fine mesh dipnets can be used to catch amphibians. Capture occurs by sweeping or churning the water. <i>Correspondence with the MNRF/MECP prior to survey commencement recommended as permits may be required;</i></li> <li>• Pitfall or funnel traps, often in association with drift fences, are the most common way of trapping terrestrial amphibians. Traps should be checked daily, before noon to minimize mortality. <i>Correspondence with the MNRF/MECP prior to survey commencement recommended as permits may be required.</i></li> </ul>
<input type="checkbox"/>	Tree Saving Plan	Variable	Section 1.36 of the Niagara Region’s Tree and Forest Conservation By-law (By-law No. 30-2008)	<ul style="list-style-type: none"> <li>• All requirements listed in the identified protocol must be included for a Tree Saving Plan to be deemed complete.</li> </ul>

☒	Snakes	<ul style="list-style-type: none"> <li>• Spring, Summer and Fall;</li> <li>• most likely to be observed under cover objects in the morning after cool evenings when they seek out their area and try and maintain their body temperatures.</li> </ul>	<ul style="list-style-type: none"> <li>• Survey Protocol for Ontario's Species at Risk Snakes (MNRF, 2016) and/or Milksnake Protocol (MNRF, 2013) is recommended for species that are not at risk;</li> <li>• Wildlife Monitoring Programs and Inventory Techniques for Ontario.</li> </ul>	<ul style="list-style-type: none"> <li>• Visual surveys should be completed by overturning all objects that provide cover (i.e., large branches, logs, rocks, etc.). Objects should be returned, to the extent possible, to their original positions;</li> <li>• Roadside surveys can also be used;</li> <li>• Artificial cover boards can be installed recognizing that it takes time for the boards to be used as habitat;</li> <li>• Contact the MECP for protocols related to SAR snakes.</li> </ul>
☒	Turtles	<ul style="list-style-type: none"> <li>• Early Spring</li> <li>• Between 8 am and 5 pm on sunny days when the air temperature is at least 10 °C;</li> <li>• Between 8 am and 5 pm on partially cloudy or overcast days when air temperatures are greater than 15 °C, and greater than water temperatures</li> </ul>	<ul style="list-style-type: none"> <li>• Wildlife Monitoring Programs and Inventory Techniques for Ontario (MNRF, 1997)</li> <li>• Occurrence Survey Protocol for Blanding's Turtle in Ontario (MNRF, 2013)</li> </ul>	<ul style="list-style-type: none"> <li>• Visual surveys of ponds or wetlands;</li> <li>• Searching for basking turtles is the most effective method of confirming presence of turtles within suitable habitat;</li> <li>• In open water wetlands, surveys can be completed from the shoreline using binoculars to scan the perimeter of the shoreline and potential basking sites;</li> <li>• Basking surveys should be surveyed from the sunlit side as this is the side that turtles are most likely to be located;</li> <li>• In wetlands that lack large pools of open water, surveys should consist of using evenly spaced transects or aerial surveys to cover all areas of the wetland; and</li> <li>• Surveying roads with sandy and gravelly shoulders near wetlands during the late May to early July nesting season may also be undertaken.</li> </ul>

## What must be included in an EIS?

The EIS should focus on the significant natural heritage features and/or hydrological features and functions for which the area was designated, and any additional natural heritage or hydrological features identified on site. It should identify, describe and delineate these features and their ecological and hydrological functions in order to avoid impacts to them. However, it should also address the site's setting in the broader landscape and its role in, and linkages to, broader natural heritage and hydrologic systems. It should assess any unavoidable impacts of the proposed development, indicating the magnitude and implications of those impacts, recommend mitigation measures to reduce negative impacts, identify opportunities for restoration or enhancement of natural heritage features which may also help offset negative impacts, recommend further study, monitoring, and provide recommendations on proceeding with the proposed development, including conditions to be attached to any approvals.

The key components of an EIS include:

- A biophysical and/or hydrologic inventory and analysis, including a description and analysis of the aquatic and terrestrial settings, as well as hydrological conditions such as surface and groundwater features and functions;
- A description of the ecological and hydrological functions served and required by the natural heritage features and/or hydrologic features;
- A description of the linkages between and among natural features and areas, surface water features and ground water features both on the site and in the surrounding area;
- A description of the proposed undertaking;
- Identification of constraints and opportunities;
- Mapping;
- Identification and analysis of potential direct, indirect and cumulative impacts from the proposed activities on the ecological and/or hydrological functions identified;
- The development of appropriate development modifications, recommendations, mitigation measures and enhancement opportunities;
- An assessment of the significance of the cumulative net environmental impacts expected over the long term after these measures have been implemented;
- The recommendation and description of monitoring needs and programs; and
- Recommendations regarding possible residual impacts, including recommendations for proceeding with the development as proposed or modified.

## Steps involved in the environmental impact study process:

Step 1: Determining EIS Requirements

1.1 Initial Screening to Determine if an EIS is Required, or if EIS Requirement can be Waived

1.2 Pre-consultation and Scoping (This EIS Scoping Checklist satisfies this step)

Step 2: Terms of Reference (Next Step!)

Step 3: Constraints Analysis

Step 4: Ecological Impact Assessment

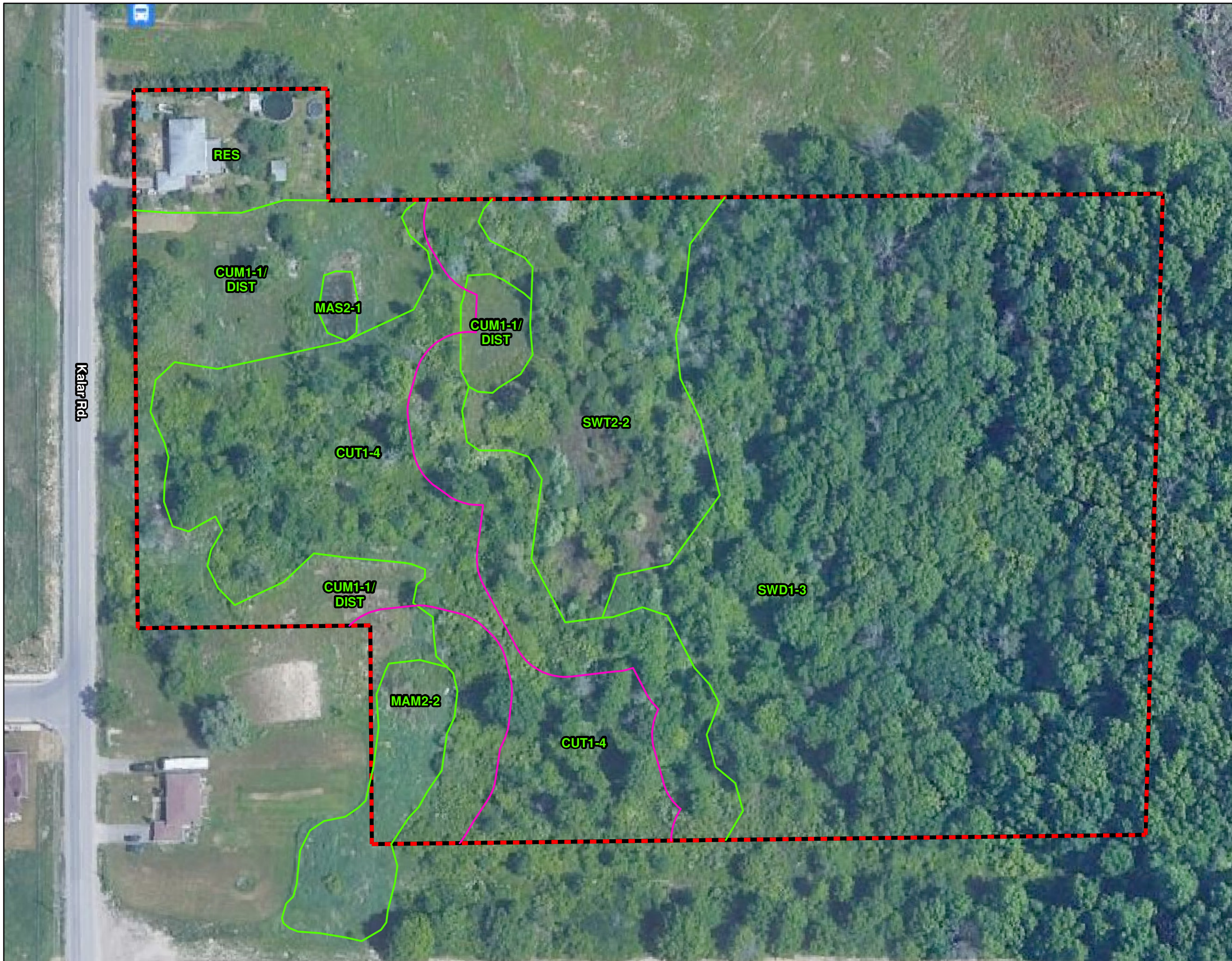
Step 5: Recommendations and Conclusion

Please refer to the Niagara Region's Environmental Impact Study Guidelines for a detailed description of each step.



# ELC Vegetation Community Mapping





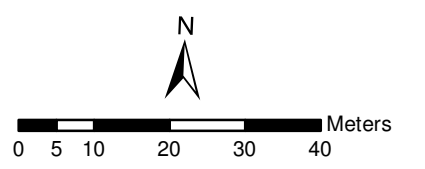
**LEGEND**

- Property Boundary
- Vegetation Community Boundary
- 15 m Wetland Setback

**Ecological Land Classification**

- SWD1-3** Pin Oak Mineral Deciduous Swamp
- SWT2-2** Willow Mineral Thicket Swamp
- MAM2-2** Reed-canary Grass Mineral Meadow Marsh
- MAS2-1** Cattail Mineral Shallow Marsh
- CUM1-1** Moist Old Field Meadow
- CUT1-4** Grey Dogwood Cultural Thicket
- DIST** Disturbed
- RES** Residential

Kalar Rd.



**Myler Ecological Consulting**  
 7 Olive Crescent  
 Stoney Creek ON  
 L8G 2T2

**Lot 186 Kalar Road**  
 Niagara Falls, ON

Vegetation Community Mapping

Project No: P273	<b>1</b>
Date: February 2022	
Scale: 1 : 1,000	



# Botanical Inventory: Plant Species List

Vascular Plants

Latin Name	Latin Synonym	Common Name	Coefficient of Conservation	Wetness Index	Weediness Index	Provincial Status S-Rank	OMNR Status	COSEWIC Status	Global Status G-Rank	Local Status Source	Local Status Niagara 2010	Authority
<b>Dryopteridaceae</b>			<b>Wood Fern Family</b>									
<i>Dryopteris carthusiana</i>	<i>Dryopteris spinulosa</i>	Spinulose Wood Fern	5	-2		S5			G5		C	(Vill.) H.P. Fuchs
<i>Onoclea sensibilis</i>		Sensitive Fern	4	-3		S5			G5		C	L.
<b>Pinaceae</b>			<b>Pine Family</b>									
<i>Picea abies</i>		Norway Spruce		5	-1	SNA			G5		IC	(L.) Karsten
<b>Aceraceae</b>			<b>Maple Family</b>									
<i>Acer rubrum</i>		Red Maple	4	0		S5			G5		C	L.
<i>Acer saccharinum</i>		Silver Maple	5	-3		S5			G5		C	L.
<i>Acer saccharum ssp. saccharum</i>		Sugar Maple	4	3		S5			G5T5		C	Marshall
<b>Anacardiaceae</b>			<b>Sumac or Cashew Family</b>									
<i>Rhus typhina</i>		Staghorn Sumac	1	5		S5			G5		C	L.
<i>Toxicodendron rydbergii</i>	<i>Rhus rydbergii</i>	Rydberg's Poison Ivy	0	0		S5			G5T		C	Small ex Rydb.
<b>Apiaceae</b>			<b>Carrot or Parsley Family</b>									
<i>Cicuta maculata</i>		Spotted Water-hemlock	6	-5		S5			G5		C	L.
<i>Daucus carota</i>		Wild Carrot		5	-2	SNA			GNR		IC	L.
<i>Sium suave</i>		Hemlock Water-parsnip	4	-5		S5			G5		C	Walter
<b>Apocynaceae</b>			<b>Dogbane Family</b>									
<i>Apocynum cannabinum var. cannabinum</i>		Indian Hemp		1		S5			G5		C	L.
<b>Aquifoliaceae</b>			<b>Holly Family</b>									
<i>Ilex verticillata</i>		Winterberry	5	-4		S5			G5		C	(L.) A. Gray
<b>Asclepiadaceae</b>			<b>Milkweed Family</b>									
<i>Asclepias incarnata</i>		Swamp Milkweed	6	-5		S5			G5		C	L.
<b>Asteraceae</b>			<b>Composite or Aster Family</b>									
<i>Achillea millefolium</i>		Yarrow		3	-1	S5			G5		C	L.
<i>Ambrosia artemisiifolia</i>		Annual Ragweed	0	3		S5			G5		C	L.
<i>Arctium minus</i>		Common Burdock		5	-2	SNA			GNR		IC	(Hill) Bernh.
<i>Bidens frondosa</i>		Devil's Beggaticks	3	-3		S5			G5		C	L.
<i>Cichorium intybus</i>		Chicory		5	-1	SNA			GNR		IC	L.
<i>Cirsium arvense</i>		Canada Thistle		3	-1	SNA			GNR		IC	(L.) Scop.
<i>Cirsium vulgare</i>		Bull Thistle		4	-1	SNA			GNR		IC	(Savi) Ten.
<i>Erigeron annuus</i>		Annual Fleabane				S5			G5		C	(L.) Pers.
<i>Erigeron strigosus</i>		Daisy Fleabane	0	1		S5			G5		R	Muhlenb. ex Willd.
<i>Euthamia graminifolia</i>	<i>Solidago graminifolia</i>	Grass-leaved Goldenrod	2	-2		S5			G5		C	(L.) Nutt.
<i>Inula helenium</i>		Elecampane Flower		5	-2	SNA			GNR		IC	L.
<i>Lactuca serriola</i>		Prickly Lettuce		0	-1	SNA			GNR		IC	L.
<i>Lapsana communis</i>		Common Nipplewort		5	-2	SNA			GNR		IC	L.
<i>Leucanthemum vulgare</i>	<i>Chrysanthemum leucant</i>	Oxeye Daisy		5	-1	SNA			GNR		IC	L.
<i>Onopordum acanthium</i>		Scotch Cotton Thistle				SNA			GNR		IH	L.



Vascular Plants

Latin Name	Latin Synonym	Common Name	Coefficient of Conservation	Wetness Index	Weediness Index	Provincial Status S-Rank	OMNR Status	COSEWIC Status	Global Status G-Rank	Local Status Source	Local Status Niagara 2010	Authority
<i>Solidago altissima</i>		Tall Goldenrod	1	3		S5			G5		C	L.
<i>Solidago juncea</i>		Early Goldenrod	3	5		S5			G5		C	Aiton
<i>Solidago rugosa</i>		Rough-leaf Goldenrod	4	-1		S5			G5		C	Aiton
<i>Sonchus arvensis</i> ssp. <i>arvensis</i>		Field Sow-thistle				SNA			GNRTNR		IC	L.
<i>Symphotrichum lanceolatum</i> ssp. <i>lanceolatum</i>	<i>Aster lanceolatus</i> ssp. <i>la</i>	Tall White Aster	3	-3		S5			G5T5		C	Willd.
<i>Symphotrichum lateriflorum</i>	<i>Aster lateriflorus</i>	Starved Aster	3	-2		S5			G5		C	(L.) Britton
<i>Symphotrichum novae-angliae</i>	<i>Aster novae-angliae</i>	New England Aster	2	-3		S5			G5		C	L.
<i>Symphotrichum pilosum</i> var. <i>pilosum</i>	<i>Aster pilosus</i> var. <i>pilosus</i>	Old Field Aster	4	2		S5			G5T5		C	Willd.
<i>Symphotrichum puniceum</i> var. <i>puniceum</i>	<i>Aster puniceus</i> var. <i>puniceus</i>	Swamp Aster				S5			G5T5		C	L.
<i>Taraxacum officinale</i>		Common Dandelion		3	-2	SNA			G5		IC	G. Weber
<b>Balsaminaceae</b>												
<b>Touch-me-not Family</b>												
<i>Impatiens capensis</i>		Spotted Jewelweed	4	-3		S5			G5		C	Meerb.
<b>Betulaceae</b>												
<b>Birch Family</b>												
<i>Carpinus caroliniana</i>		Blue-beech	6	0		S5			G5		C	Walter
<b>Brassicaceae</b>												
<b>Mustard Family</b>												
<i>Alliaria petiolata</i>	<i>Alliaria officinalis</i>	Garlic Mustard		0	-3	SNA			GNR		IC	(M. Bieb.) Cavara & Grande
<i>Barbarea vulgaris</i>		Yellow Rocket		0	-1	SNA			GNR		IC	R. Br.
<i>Capsella bursa-pastoris</i>		Common Shepherd's Purse		1	-1	SNA			GNR		IC	(L.) Medik.
<b>Cannabaceae</b>												
<b>Hemp Family</b>												
<i>Cannabis sativa</i>		Marijuana		0	-1	SNA			GNR		IR	L.
<b>Caprifoliaceae</b>												
<b>Honeysuckle Family</b>												
<i>Lonicera tatarica</i>		Tartarian Honeysuckle		3	-3	SNA			GNR		IC	L.
<i>Sambucus canadensis</i>		Common Elderberry	5	-2		S5			G5T5		C	L.
<i>Triosteum aurantiacum</i>		Orange-fruit Horse-gentian	7	5		S5			G5		U	E.P. Bicknell
<i>Viburnum lentago</i>		Nannyberry	4	-1		S5			G5		C	L.
<b>Caryophyllaceae</b>												
<b>Pink Family</b>												
<i>Dianthus armeria</i>		Deptford-pink		5	-1	SNA			GNR		IC	L.
<b>Chenopodiaceae</b>												
<b>Goosefoot Family</b>												
<i>Chenopodium album</i> var. <i>album</i>		White Goosefoot		1	-1	SNA			G5TNR		IC	L.
<b>Cornaceae</b>												
<b>Dogwood Family</b>												
<i>Cornus amomum</i>		Silky Dogwood	5	-4		S5			G5		C	Miller
<i>Cornus foemina</i>		Grey Dogwood	2	-2		S5			GNR		C	Miller
<i>Cornus sericea</i>	<i>Cornus stolonifera</i>	Red-osier Dogwood	2	-3		S5			G5		U	Michx.
<b>Dipsacaceae</b>												
<b>Teasel Family</b>												
<i>Dipsacus fullonum</i>	<i>Dipsacus sylvestris</i>	Fuller's Teasel		5	-1	SNA			GNR		IC	L.
<b>Elaeagnaceae</b>												
<b>Oleaster Family</b>												
<i>Elaeagnus angustifolia</i>		Russian Olive		4	-1	SNA			GNR		IR	L.

Vascular Plants

Latin Name	Latin Synonym	Common Name	Coefficient of Conservation	Wetness Index	Weediness Index	Provincial Status S-Rank	OMNR Status	COSEWIC Status	Global Status G-Rank	Local Status Source	Local Status Niagara	Authority
<b>Fabaceae</b>		<b>Pea Family</b>										
<i>Lotus corniculatus</i>		Bird's-foot Trefoil		1	-2	SNA			GNR		IC	L.
<i>Lotus pedunculatus</i>	<i>Lotus uliginosus</i>	Trefoil				SNA			GNR			Schkuhr
<i>Medicago lupulina</i>		Black Medic		1	-1	SNA			GNR		IC	L.
<i>Mellilotus albus</i>		White Sweetclover		3	-3	SNA			G5		IC	Medik.
<i>Mellilotus officinalis</i>		Yellow Sweetclover		3	-1	SNA			GNR		IC	(L.) Pall.
<i>Robinia pseudoacacia</i>		Black Locust		4	-3	SNA			G5		IC	L.
<i>Trifolium hybridum</i>		Alsike Clover		1	-1	SNA			GNR		IC	L.
<i>Vicia cracca</i>		Tufted Vetch		5	-1	SNA			GNR		IC	L.
<b>Fagaceae</b>		<b>Beech Family</b>										
<i>Quercus bicolor</i>		Swamp White Oak	8	-4		S4			G5		C	Willd.
<i>Quercus palustris</i>		Pin Oak	9	-3		S4			G5		C	Muenchh.
<i>Quercus rubra</i>		Northern Red Oak	6	3		S5			G5			L.
<b>Guttiferae</b>		<b>St. John's-wort Family</b>										
<i>Hypericum perforatum</i>		Common St. John's-wort		5	-3	SNA			GNR		IC	L.
<b>Juglandaceae</b>		<b>Walnut Family</b>										
<i>Carya ovata</i>		Shagbark Hickory	6	3		S5			G5		C	(Miller) K. Koch
<b>Lamiaceae</b>		<b>Mint Family</b>										
<i>Glechoma hederacea</i>		Ground Ivy		5	-2	SNA			GNR		IC	L.
<i>Lycopus americanus</i>		American Bugleweed	4	-5		S5			G5		C	Muhlenb. ex Bartram
<i>Nepeta cataria</i>		Catnip		1	-2	SNA			GNR		IC	L.
<i>Prunella vulgaris</i> ssp. <i>vulgaris</i>		Self-heal		0	-1	SNA			G5TU			L.
<b>Lythraceae</b>		<b>Loosestrife Family</b>										
<i>Lythrum salicaria</i>		Purple Loosestrife		-5	-3	SNA			G5		IC	L.
<b>Malvaceae</b>		<b>Mallow Family</b>										
<i>Malva alcea</i>		Vervian Cheeseweed		5	-1	SNA			GNR			L.
<b>Oleaceae</b>		<b>Olive Family</b>										
<i>Fraxinus pennsylvanica</i>		Red Ash	3	-3		S5			G5		C	Marshall
<i>Ligustrum vulgare</i>		European Privet		1	-2	SNA			GNR		IC	L.
<b>Onagraceae</b>		<b>Evening-primrose Family</b>										
<i>Circaea lutetiana</i>		Enchanter's Nightshade	3	3		S5			G5		C	L.
<b>Oxalidaceae</b>		<b>Wood Sorrel Family</b>										
<i>Oxalis stricta</i>		Upright Yellow Wood-sorrel	0	3		S5			G5		C	L.
<b>Plantaginaceae</b>		<b>Plantain Family</b>										
<i>Plantago lanceolata</i>		English Plantain		0	-1	SNA			G5		IC	L.
<i>Plantago major</i>		Common Plantain		-1	-1	S5			G5		IC	L.

Vascular Plants

Latin Name	Latin Synonym	Common Name	Coefficient of Conservatism	Wetness Index	Weediness Index	Provincial Status S-Rank	OMNR Status	COSEWIC Status	Global Status G-Rank	Local Status Source	Local Status Niagara 2010	Authority
<b>Polygonaceae</b>			<b>Smartweed Family</b>									
<i>Persicaria maculosa</i>	<i>Polygonum persicaria</i>	Lady's-thumb		-3	-1	SNA			G3G5		IC	L.
<i>Persicaria pennsylvanica</i>	<i>Polygonum pennsylvanicu</i>	Pennsylvania Smartweed	3	-4		S5			G5		C	L.
<i>Persicaria sagittata</i>	<i>Polygonum sagittatum</i>	Arrow-leaved Tearthumb	5	-5		S4			G5		C	L.
<i>Persicaria virginiana</i>	<i>Polygonum virginianum</i>	Virginia Knotweed	6	0		S4			G5		C	L.
<i>Polygonum amphibium</i>	<i>Persicaria amphibia</i>	Water Smartweed	5	-5		S5			G5		U	L.
<i>Rumex crispus</i>		Curly Dock		-1	-2	SNA			GNR		IC	L.
<i>Ranunculus hispidus</i> var. <i>caricetorum</i>	<i>Ranunculus septentrionalis</i>	Swamp Buttercup	5	-5		S5			G5T5		U	Michx.
<i>Ranunculus recurvatus</i>		Hooked Buttercup	4	-3		S5			G5		C	Poir.
<b>Rhamnaceae</b>			<b>Buckthorn Family</b>									
<i>Rhamnus cathartica</i>		Common Buckthorn		3	-3	SNA			GNR		IC	L.
<b>Rosaceae</b>			<b>Rose Family</b>									
<i>Agrimonia gryposepala</i>		Tall Hairy Groovebur	2	2		S5			G5		C	Wallr.
<i>Crataegus species</i>		Hawthorn species										
<i>Fragaria virginiana</i>		Virginia Strawberry	2	1		S5			G5		C	Miller
<i>Geum canadense</i>		White Avens	3	0		S5			G5		C	Jacq.
<i>Potentilla norvegica</i> ssp. <i>norvegica</i>		Norwegian Cinquefoil				S5			G5		IC	L.
<i>Potentilla recta</i>		Sulphur Cinquefoil		5	-2	SNA			GNR		IC	L.
<i>Prunus avium</i>		Sweet Cherry		5	-2	SNA			GNR		IC	(L.) L.
<i>Rosa multiflora</i>		Multiflora Rose		3	-3	SNA			GNR		IC	Thunb. ex Murray
<i>Rubus allegheniensis</i>		Alleghany Blackberry	2	2		S5			G5		C	Porter
<i>Rubus idaeus</i> ssp. <i>strigosus</i>	<i>Rubus idaeus</i> ssp. <i>mela</i>	Red Raspberry	0	-2		S5			G5T5		C	L.
<i>Spiraea alba</i>		Narrow-leaved Meadow-sweet	3	-4		S5			G5		C	Du Roi
<b>Rubiaceae</b>			<b>Madder Family</b>									
<i>Galium aparine</i>		Catchweed Bedstraw	4	3		S5			G5		C	L.
<i>Galium palustre</i>		Marsh Bedstraw	5	-5		S5			G5		C	L.
<b>Salicaceae</b>			<b>Willow Family</b>									
<i>Populus deltoides</i> ssp. <i>deltoides</i>		Eastern Cottonwood	4	-1		S5			G5T5		C	Bartram ex Marshall
<i>Salix bebbiana</i>		Bebb's Willow	4	-4		S5			G5		C	Sarg.
<i>Salix petiolaris</i>		Meadow Willow	3	-4		S5			G5		U	Sm.
<i>Salix x rubens</i>		Reddish Willow		-4	-3	SNA			GNA			Schrank
<b>Scrophulariaceae</b>			<b>Figwort Family</b>									
<i>Verbascum thapsus</i>		Common Mullein		5	-2	SNA			GNR		IC	L.
<b>Solanaceae</b>			<b>Nightshade Family</b>									
<i>Solanum ptychanthum</i>		Eastern Black Nightshade	3	5		S5			G5		U	Dunal ex DC.
<b>Ulmaceae</b>			<b>Elm Family</b>									
<i>Ulmus americana</i>		White Elm	3	-2		S5			G5?		C	L.
<b>Verbenaceae</b>			<b>Vervain Family</b>									

Vascular Plants

Latin Name	Latin Synonym	Common Name	Coefficient of Conservatism	Wetness Index	Weediness Index	Provincial Status S-Rank	OMNR Status	COSEWIC Status	Global Status G-Rank	Local Status Source	Local Status Niagara 2010	Authority
<i>Verbena hastata</i>		Blue Vervain	4	-4		S5			G5		C	L.
<i>Verbena urticifolia</i>		White Vervain	4	-1		S5			G5		C	L.
<b>Vitaceae</b>												
<b>Grape Family</b>												
<i>Parthenocissus inserta</i>		Inserted Virginia-creeper	3	3		S5			G5		C	(A. Kern.) Fritsch
<i>Vitis riparia</i>		Riverbank Grape	0	-2		S5			G5		C	Michx.
<b>Alismataceae</b>												
<b>Water-plantain Family</b>												
<i>Alisma triviale</i>	<i>Alisma plantago-aquatica</i>	Northern Water-plantain	3	-5		S5			G5		DD	Pursh
<b>Cyperaceae</b>												
<b>Sedge Family</b>												
<i>Carex bebbii</i>		Bebb's Sedge	3	-5		S5			G5		C	(L.H. Bailey) Olney ex Fern.
<i>Carex crinita</i>		Fringed Sedge	6	-4		S5			G5		C	Lam.
<i>Carex cristatella</i>		Crested Sedge	3	-4		S5			G5		U	Britton
<i>Carex intumescens</i>		Bladder Sedge	6	-4		S5			G5		C	Rudge
<i>Carex lupulina</i>		Hop Sedge	6	-5		S5			G5		C	Muhlenb. ex Willd.
<i>Carex spicata</i>		Spiked Sedge		5	-1	SNA			GNR		IC	Hudson
<i>Carex swanii</i>		Swan's Sedge	7	3		S4			G5		U	(Fern.) Mack.
<i>Carex tenera</i>		Straw Sedge	4	-1		S5			G5		C	Dewey
<i>Carex vulpinoidea</i>		Fox Sedge	3	-5		S5			G5		C	Michx.
<i>Cyperus esculentus</i>		Yellow Nut-grass	1	-3		S5			G5		U	L.
<i>Scirpus atrovirens</i>		Dark-green Bulrush	3	-5		S5			G5?		C	Willd.
<b>Juncaceae</b>												
<b>Rush Family</b>												
<i>Juncus dudleyi</i>		Dudley's Rush	1	0		S5			G5		C	Wiegelb
<i>Juncus tenuis</i>		Path Rush	0	0		S5			G5		C	Willd.
<b>Lemnaceae</b>												
<b>Duckweed Family</b>												
<i>Lemna minor</i>		Lesser Duckweed	2	-5		S5			G5		C	L.
<b>Poaceae</b>												
<b>Grass Family</b>												
<i>Agrostis gigantea</i>		Redtop		0	-2	SNA			G4G5		IC	Roth
<i>Agrostis stolonifera</i>		Redtop			-3	S5			G5		C	L.
<i>Alopecurus pratensis</i>		Meadow Foxtail			-3	-1	SNA		GNR		IR	L.
<i>Dactylis glomerata</i>		Orchard Grass			3	-1	SNA		GNR		IC	L.
<i>Glyceria striata</i>		Fowl Meadow Grass	3	-5		S5			G5		C	(Lam.) A. Hitchc.
<i>Leersia virginica</i>		White Cut Grass	6	-3		S4			G5		C	Willd.
<i>Lolium perenne</i>		English Rye Grass			3	-1	SNA		GNR		IU	L.
<i>Phalaris arundinacea</i>		Reed Canary Grass	0	-4		S5			G5		C	L.
<i>Phleum pratense</i>		Timothy			3	-1	SNA		GNR		IC	L.
<i>Phragmites australis ssp. australis</i>		European Reed				SNR			GNR			(Cav.) Trin. ex Steud.
<i>Poa palustris</i>		Fowl Meadow Grass	5	-4		S5			G5		C	L.
<i>Poa pratensis ssp. pratensis</i>		Kentucky Bluegrass	0	1		S5			G5T5		IC	L.
<b>Typhaceae</b>												
<b>Cattail Family</b>												
<i>Typha x glauca</i>		Glaucous Cattail	3	-5		SNA			GNA		hyb	Godron



**Vascular Plants**

Latin Name	Latin Synonym	Common Name	Coefficient of Conservatism	Wetness Index	Weediness Index	Provincial Status S-Rank	OMNR Status	COSEWIC Status	Global Status G-Rank	Local Status Source	Local Status Niagara 2010	Authority
STATISTICS												
Species Richness												
Total Number of Species:		141										
Native Species:		87	62%									
Exotic Species		54	38%									
S1-S3 Species		0	0%									
S4 Species		6	7%									
S5 Species		81	93%									
Floristic Quality Indices												
Mean Co-efficient of Conservatism (CC)		3.5										
CC 0 - 3 lowest sensitivity		40	50%									
CC 4 - 6 moderate sensitivity		36	45%									
CC 7 - 8 high sensitivity		3	4%									
CC 9 - 10 highest sensitivity		1	1%									
Floristic Quality Index (FQI)		32										
Weedy and Invasive Species												
Mean Weediness Index		-1.6										
-1 low potential invasiveness		28	55%									
-2 moderate potential invasiveness		14	27%									
-3 high potential invasiveness		9	18%									
Wetland Species												
Mean Wetness Index		-0.1										
upland		21	16%									
facultative upland		27	20%									
facultative		32	24%									
facultative wetland		37	28%									
obligate wetland		16	12%									

# Breeding Bird Survey: Bird Species List

Breeding Bird Survey - MSV Kalar Site

Common Name	Scientific Name	20-Jun-21	10-Jul-21	Niagara Status (NAI, 2010)	OBBA Breeding Evidence Codes (see below)	Summary Breeding Evidence	Notes
Mourning Dove	Zenaida macroura	X	X	very common resident	T	probable	calling/song
Eastern Wood Pewee	Contopus virens	X		common resident	S	possible	song, ranging about
Willow Flycatcher			X	uncommon resident	S	possible	one call/song, then moved on
Eastern Phoebe	Sayornis phoebe		X	common resident	X	observed	
American Robin	Turdus migratorius	X	X	very common resident	NE	confirmed	nest with eggs
Gray Catbird	Dumetella carolinensis	X	X	common resident	P,T	probable	pair observed both dates
American Goldfinch	Carduelis tristis	X	X	common resident	T	probable	
Chipping Sparrow	Spizella passerina		X	common resident	A	probable	alarm calls
Song Sparrow	Melospiza melodia	X	X	very common resident	T	probable	
Red-winged Blackbird	Agelaius phoeniceus	X	X	very common resident	T	probable	
Brown-headed Cowbird	Molothrus ater	X	X	very common resident	P	probable	male and female observed, song
Common Grackle	Quiscalus quiscula	X	X	very common resident	T	probable	
Common Yellowthroat	Geothlypis trichas	X	X	common resident	P,T	probable	pair observed
Yellow Warbler	Dendroica petechia	X	X	common resident	T,D	probable	territorial males interacting
Northern Cardinal	Cardinalis cardinalis		X	common permanent resident	S	possible	

**OBSERVED**

X Species observed in its breeding season (no breeding evidence).

**POSSIBLE**

H Species observed in its breeding season in suitable nesting habitat.

S Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season.

**PROBABLE**

P Pair observed in suitable nesting habitat in nesting season.

T Permanent territory presumed through registration of territorial behaviour (song, etc.) on at least two days, a week or more apart, at the same place.

D Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation.

V Visiting probable nest site

A Agitated behaviour or anxiety calls of an adult.

B Brood Patch on adult female or cloacal protuberance on adult male.

N Nest-building or excavation of nest hole.

**CONFIRMED**

DD Distraction display or injury feigning.

NU Used nest or egg shells found (occupied or laid within the period of the survey).

FY Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight.

AE Adult leaving or entering nest sites in circumstances indicating occupied nest.

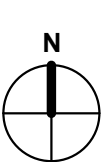
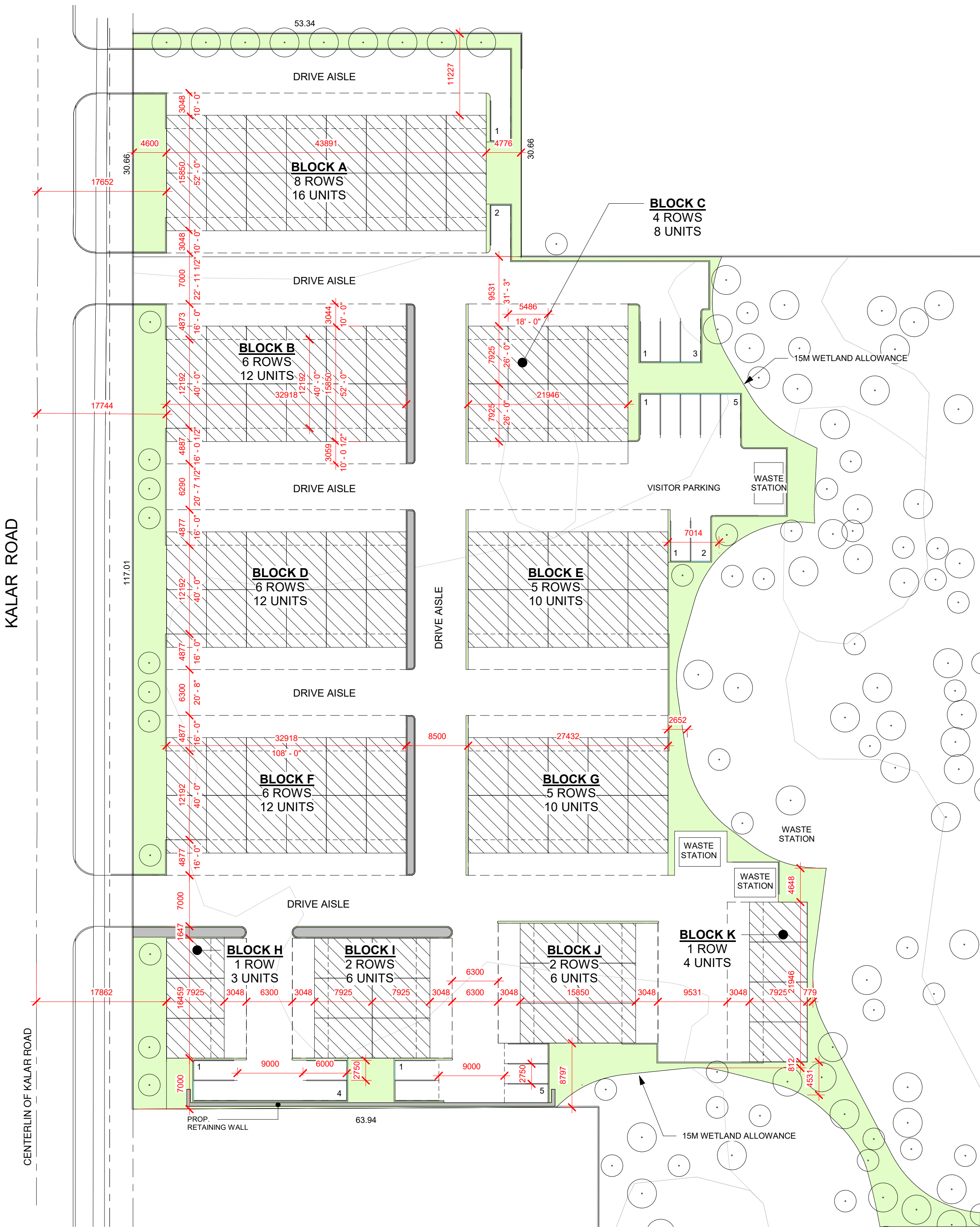
FS Adult carrying fecal sac.

CF Adult carrying food for young.

NE Nest containing eggs.

NY Nest with young seen or heard.

# Conceptual Site Plan



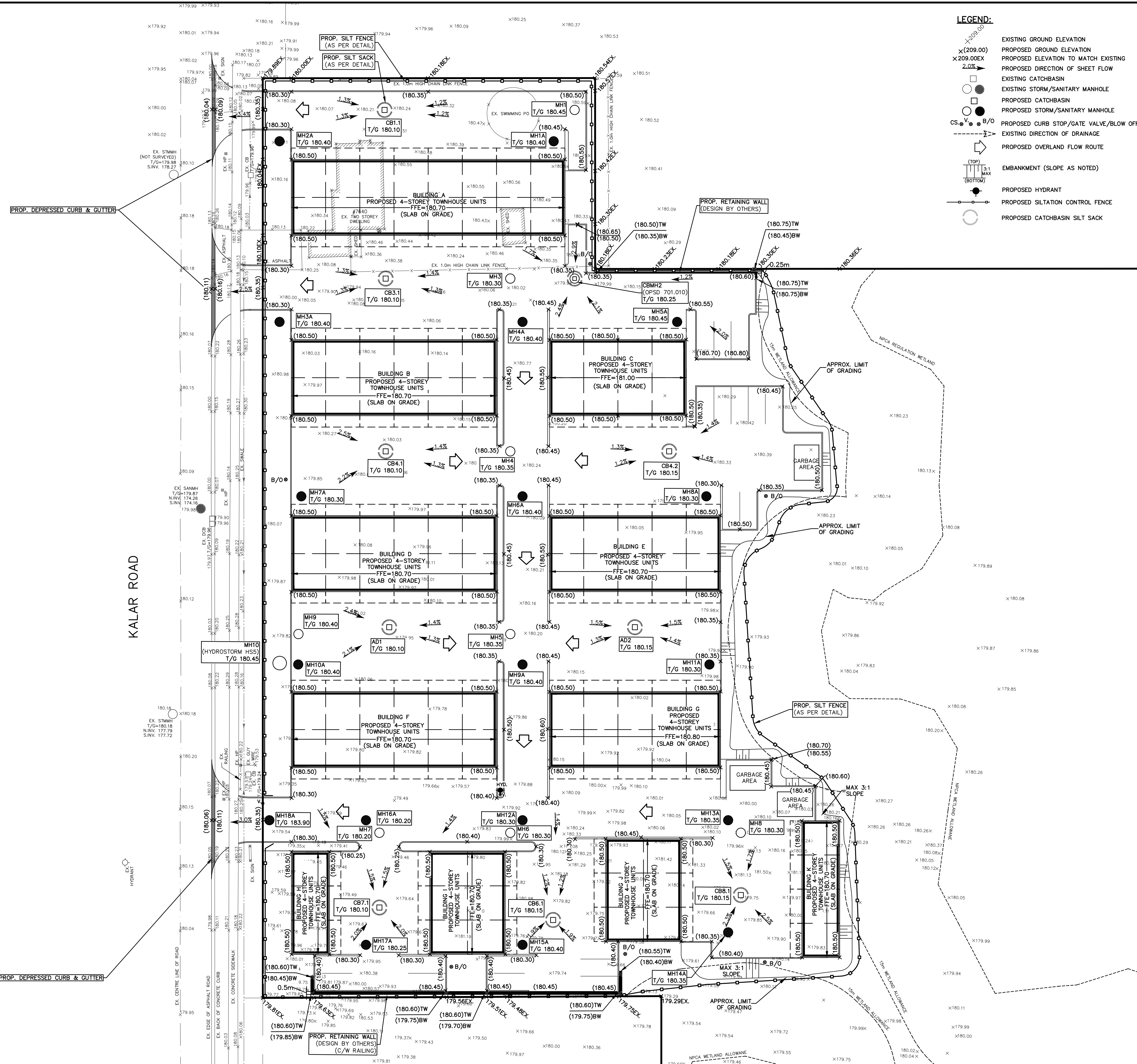
① Site  
1: 400

**CONCEPTUAL SITE STATISTICS**

LOT AREA (TOTAL) (BLOCK A) 49,128 SQ.M. (4.9128 HECTARES)  
 LOT AREA (BUILDABLE AREA) 8,004 SQ. M. (0.8004 HECTARES)  
 LOT AREA (TOTAL)(BLOCK B) 1,633 SQ.M. (0.1633 HECTARES)  
 TOTAL LOT COVERAGE 44.6% (4,304 SQ. M.)  
 LANDSCAPING 18.4% (1,782 SQ. M.)  
 BUILDING HEIGHT 12.5m  
 PROPOSED DENSITY 102 UNITS/HECTARE  
 PROPOSED PARKING 21 SPACES (VISITOR)  
 PROPOSED UNITS 99 DWELLINGS

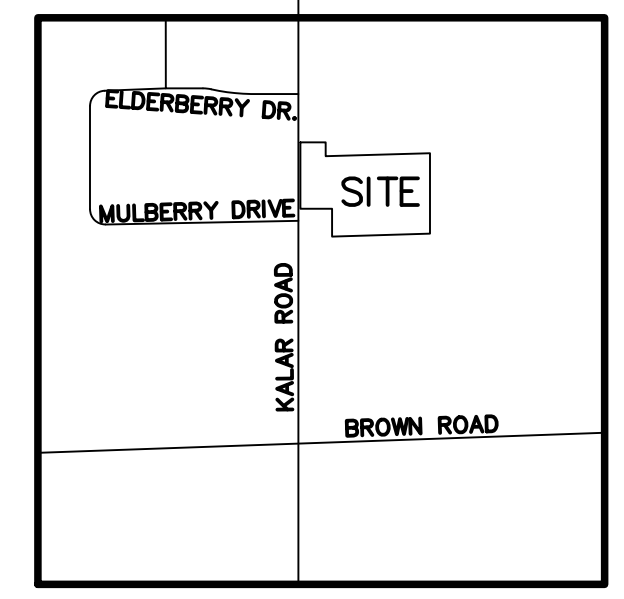
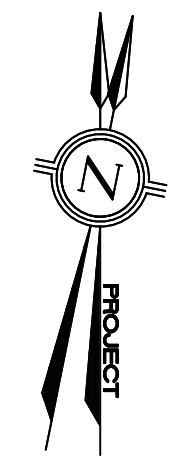


# Grading & Servicing Plans



**LEGEND:**

- (209.00) EXISTING GROUND ELEVATION
- (209.00EX) PROPOSED ELEVATION TO MATCH EXISTING
- PROPOSED DIRECTION OF SHEET FLOW
- EXISTING CATCHBASIN
- EXISTING STORM/SANITARY MANHOLE
- PROPOSED CATCHBASIN
- PROPOSED STORM/SANITARY MANHOLE
- CS ○ B/O PROPOSED CURB STOP/GATE VALVE/BLOW OFF
- EXISTING DIRECTION OF DRAINAGE
- PROPOSED OVERLAND FLOW ROUTE
- ▽ (TOP) 1:1 (BOTTOM) MAX EMBANKMENT (SLOPE AS NOTED)
- PROPOSED HYDRANT
- PROPOSED SILTATION CONTROL FENCE
- PROPOSED CATCHBASIN SILT SACK



**BENCH MARK NOTE:**  
BENCHMARK NO. 748521

LARGE CONCRETE CULVERT UNDER QEW, 0.8 KM WEST OF CONCRETE AND STEEL BRIDGE CARRYING QEW OVER WELAND RIVER IN THE CITY OF NIAGARA FALLS AND 0.4 KM WEST OF CHIPPAWA CREEK RD (NIAGARA REGIONAL RD 63). TABLE IS SET VERTICALLY IN TOP OF CULVERT, 52 CM EAST OF WEST WALL, 49 CM NORTH OF SOUTH END AND 16.4 M SOUTH OF CENTERLINE OF EASTBOUND LANE OF QEW.

ELEVATION=176.012m CGVD-1928:1978

01	APR/22	YM	REVISED SITE PLAN
NO.	DATE	BY	REVISIONS

- NOTES TO CONTRACTOR:**
- CONTRACTORS AND SUBCONTRACTORS SHALL NOT SCALE FROM THIS DRAWING.
  - ANY INCONSISTENCIES AND OMISSIONS FOUND ON THE DRAWINGS MUST BE REPORTED TO THE ENGINEER FOR CLARIFICATION BEFORE COMMENCING THE WORK.
  - PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS AND ELEVATIONS AND REPORT ALL FINDINGS TO THE ENGINEER. ONCE CONSTRUCTION HAS COMMENCED, THE CONTRACTOR ACCEPTS RESPONSIBILITY FOR ALL DIMENSIONS, ELEVATIONS, AND SITE CONDITIONS.
  - THE POSITIONS OF POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVER-GROUND UTILITIES AND STRUCTURES ARE NOT NECESSARILY SHOWN ON THE DRAWINGS. WHERE SHOWN ON THE DRAWING, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM THEMSELVES OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.
  - ALL DRAWINGS REMAIN THE PROPERTY OF THE ENGINEER AND SHALL NOT BE REPRODUCED, REVISED, OR REVISED WITHOUT THE WRITTEN CONSENT OF S. LLEWELLYN AND ASSOCIATES LIMITED.

DESIGN	YM	CHK'D	SN	DATE
DRAWN	YM	CHK'D	SN	Apr. 28, 22

SCALE 1:300

**APPROVALS**

STAMP
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S. LLEWELLYN & ASSOCIATES LIMITED  
CONSULTING ENGINEERS

Tel. (905) 631-6978  
Website: www.sla.on.ca  
email: info@sla.on.ca

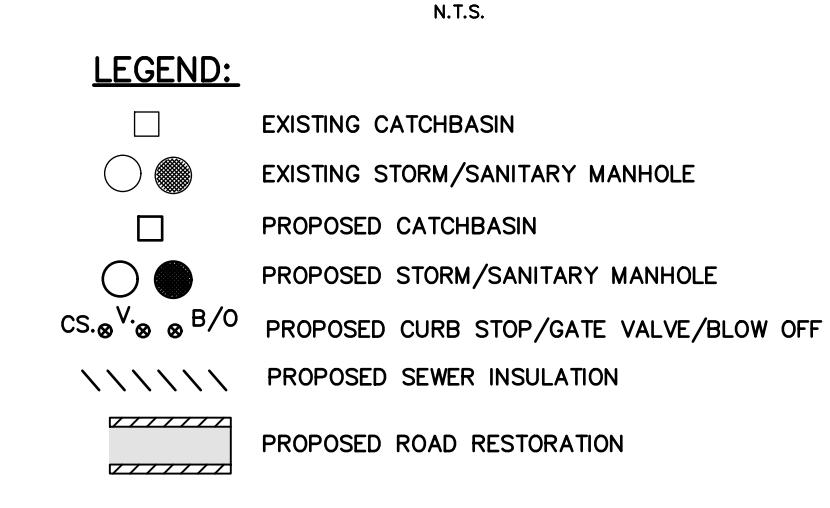
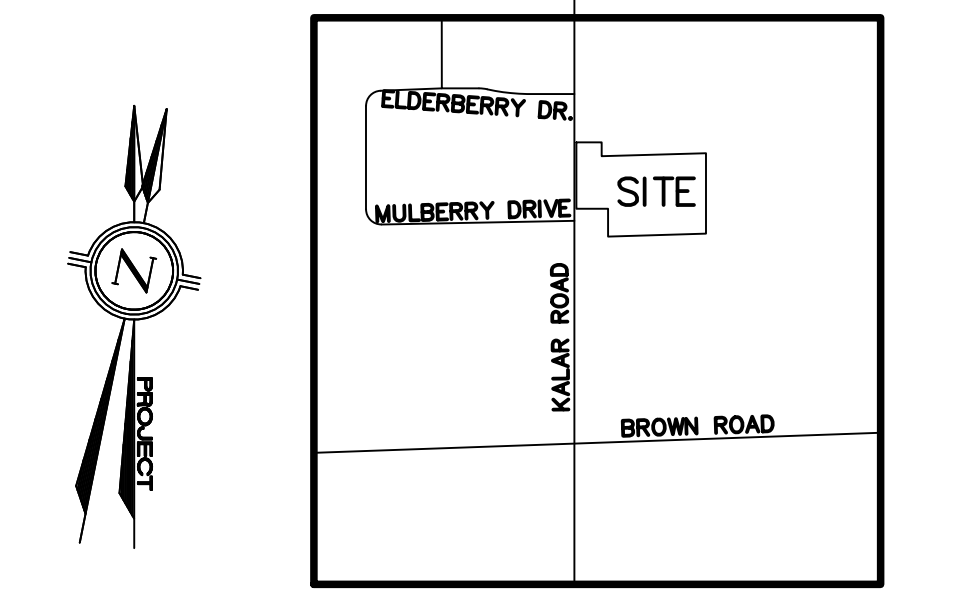
3228 South Service Road, Suite #105 East Wing, Burlington, Ont., L7N 3H8

CLIENT  
**M5V INC.**  
501 QUEEN STREET WEST,  
TORONTO, ON M5V 2B4

PROJECT NAME  
**KALAR ROAD, LOT 186  
NIAGARA FALLS, ON**

TITLE  
**PRELIMINARY GRADING AND  
EROSION CONTROL PLAN**

PROJECT No.	DRAWING No.
21045	C101



BENCHMARK NOTE: LARGE CONCRETE CULVERT UNDER QEW, 0.8 KM WEST OF CONCRETE AND STEEL BRIDGE CARRYING QEW OVER WELAND RIVER IN THE CITY OF NIAGARA FALLS... ELEVATION=176.012m CGVD-1928:1978

Table with columns: NO., DATE, BY, REVISIONS. Row 1: 01, APR/22, YM, REVISED SITE PLAN.

NOTES TO CONTRACTOR: 1. CONTRACTORS AND SUBCONTRACTORS SHALL NOT SCALE FROM THIS DRAWING. 2. ANY INCONSISTENCIES AND OMISSIONS FOUND ON THE DRAWINGS MUST BE REPORTED TO THE ENGINEER FOR CLARIFICATION BEFORE COMMENCING THE WORK.

Table with columns: DESIGN, YR, CHK'D, SN, DATE. Row 1: DRAWN, YM, CHK'D, SN, Apr. 28, 22.



APPROVALS

Table with columns: CLIENT, PROJECT NAME, TITLE. Client: M5V INC., 501 QUEEN STREET WEST, TORONTO, ON M5V 2B4. Title: PRELIMINARY SITE SERVICING PLAN.

Logo for S. LLEWELLYN & ASSOCIATES LIMITED CONSULTING ENGINEERS. Contact info: Tel. (905) 631-6978, Website: www.slo.on.ca, email: info@slo.on.ca. Address: 3228 South Service Road, Suite #105 East Wing, Burlington, Ont., L7N 3H8.

CLIENT: M5V INC. 501 QUEEN STREET WEST, TORONTO, ON M5V 2B4

PROJECT NAME: KALAR ROAD, LOT 186 NIAGARA FALLS, ON

TITLE: PRELIMINARY SITE SERVICING PLAN

PROJECT No. 21045 DRAWING No. C102

