Environmental Impact Assessment

TULIP ESTATES
12697 Loyalist Boulevard, Picton. ON
Hilden Homes

ECOLOGICAL SERVICES

July 25, 2019

Ecological Services
3803 Sydenham Road
Elginburg, Ontario K0H 1M0
Phone: (613) 376-6916
E-mail: mail@ecologicalservices.ca

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Mr. Eric DenOuden
Hilden Homes
393 Sidney Street
Belleville, Ontario K8P 3Z9
Via Email: **eric@hildenhomes.com**

RE: Environmental Impact Assessment (EIA) for Tulip Estates, 12697 Loyalist Parkway, Picton, Ontario.

Dear Mr. Denouden,

Please find attached the results of our natural heritage assessment for the proposed residential development located at 12697 Loyalist Boulevard, Picton, Ontario. Perhaps because this area is slated for development as identified within the Secondary Plans, Tim Trustham of Quinte Conservation recommended a scoped EIA. However, after discussion with Josh Berry and Mark Touw of IBI Group, it was determined that a more thorough EIA would be helpful in providing reassurance to decision makers in the County that environmental policies and conditions were thoroughly considered.

We identify that this property has a long-term history of disturbance such that the vacant and recently cleared historical farmland of the development area has limited natural heritage values, and it is our opinion that the proposed development will be consistent with the Provincial Policy Statement and in conformity to the Prince Edward County Official Plan (OP). However, we recommend site clearing restrictions for the field areas (late April to early September) and any treed areas (mid-April to mid-August) of the property.

There is a small portion of Environmental Protection Area (EPA) identified within the OP that appears to intrude into the southern edge of the subject property. However, it is our opinion that the OP mapping is not an accurate reflection of the woodland and that this woodland was not intended to be identified as EPA, as a result of the Secondary Plan work that we were involved with. However, we do note that you have planned for a proposed park for this area.

Respectfully submitted,

Rob Snetsinger

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1. Summary

This environmental impact assessment was completed at the request of Mark Touw (senior planner with IBI Group), acting on behalf of Hilden Homes, who are proposing to develop the property known municipally as 12697 Loyalist Parkway, Picton, ON located within the Picton urban area as identified within the Official Plan. The proposed residential Draft Plan of Subdivision is shown on Figure 1. The proposed Draft Plan of Subdivision is comprised of 23 blocks, providing for residential blocks (mix of single detached, semi-detached, street townhouse), park blocks and stormwater management.

The lands to the west and most of the south are developed, the lands to the east are red cedar woodland and are slated for development as part of the urban core, and the lands to the west are mostly red cedar woodlands. By concentrating development in the urban core, it is hoped that this will relieve pressure on the more sensitive natural heritage areas of the County. As well, by concentrating development within a planned community this potentially will reduce the larger carbon footprint associated with strip development.

The subject property was previously assessed by Ecological Services in 2010 on behalf of John Uliana of IBI Group to support the preparation of Prince Edward County Secondary Plans. To assess the property for the Hilden Homes development, we conducted visits in 2018 and 2019. In 2010, more than half of the site was covered in young red cedar trees, with the remainder being abandoned agricultural meadow. We considered the bulk of the site in 2010 as having a low ecological potential, due to its agricultural history and the prevalence of the red cedar trees. These trees were migrating to the property and we speculate that if there was no intervention that over time, the majority of the property would be covered with red cedar. Prior to our first site visit in 2018, the property was cleared of the young red cedar trees and was starting to be covered by perennial forbs and grasses. In 2018 we noted the appearance of the very invasive dog strangling vine into the cleared area and recognized that it had the potential to cover the entire property. By 2019 it was found throughout the property, and in the adjacent woodlands. We see this plant as a significant threat to the ecological integrity of natural areas in Prince Edward County.

From correspondence and conversations with Tim Trustham of Quinte Conservation, a scoped EIS was suggested. A scoped EIS normally involves a background review for potential significant natural heritage features and functions. However due to the scale of the proposed development we recommended that the more extensive EIA provided would be beneficial to decision makers.

There is no significant wetland, woodland, ANSI, SAR habitat, fish habitat, and valleyland on the subject property. There is some marginal significance for wildlife habitat in the form of Monarch Butterfly use, but we feel its quality is too limited to afford protection. Nevertheless, we recommend that no clearing take place in the field during the active season (late April to early September). There are Wood Thrush using the adjacent woodlands, and although there no Wood Thrush in the small bit of woodland within the development area, it is recommended that no tree removal take place during the bird breeding season (mid-April to mid-August).

There is significant woodland on the adjacent lands, as based on its large size. There will be no threat to the size significant threshold of this woodland from the proposed development.

A small portion (~ 0.2s ha) of woodland is located within an Environmental Protection Area. We question the validity of the designation and further discussion is provided accordingly. Nevertheless, parkland is intended for this area.

In conclusion, the development will take place in an area with limited ecological value and prescribed for urban development. This development will be consistent with the intent of the Provincial Policy Statement.

Figure 1. Proposed Draft Plan of Subdivision overlain an aerial by provided by Hilden Homes.

2. Site History

The development property has a long history of disturbance, with minimal opportunities to develop valuable natural heritage features.

The approximate 200 years of farming on this property is likely similar for other parts of the County, including hay and dairy to support the 26 cheese factories in the county (Belden 1878). The historical map in Belden (1878) also shows the development property to be covered by three farm lots owned by Hepburn, Laird, and Owens. When we first visited the site in 2012, there was still some remnant farm grasslands, but we also noted a number of old orchard trees (mostly pear) were present, and they may have been planted to take advantage of the burgeoning fruit industry starting in the late 1800's.

It is not known when farm operations ceased, but in Google Earth images, no farming is evident in 2005 and red cedars can be seen expanding into the property from the north, east, and south. During our 2012 site visit, it could be seen that red cedar were continuing their expansion into the property, and we speculated that over time, it would be mostly covered by this invasive tree. This red cedar succession is common in abandoned farmland throughout Prince Edward County.

3. Policy and Methodology

Ecological Services was retained to conduct the necessary field work and report preparation for this assessment. Ecological Services has been in operation in eastern Ontario since 1985. Our core personnel combine education and experience to give us a strong focus on land use planning and management as they relate to natural heritage features and functions. Our experience includes environmental impact assessments, management plans, wetland evaluations, and municipal land use planning. We have research experience in aquatic ecology and chemistry, forest fragmentation, avian ecology, reptile ecology, and fisheries ecology.

Impact assessments determine whether an activity is going to have a negative impact on a significant natural heritage feature. All field work for this project was completed under the guidance of the 2014 PPS, as well as the 2018 Draft Official Plan of Prince Edward County.

Relevant Excerpts from the 2014 PPS.

2.1.4 Development and site alteration shall not be permitted in:
a) significant wetlands in Ecoregions 5E, 6E and 7E1; and
b) significant coastal wetlands.

2.1.5 Development and site alteration shall not be permitted in:
b) significant woodlands in Ecoregions 6E;
c) significant valleylands in Ecoregions 6E;
d) significant wildlife habitat;
e) significant areas of natural and scientific interest;
… unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.

2.1.6 Development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements.

2.1.7 Development and site alteration shall not be permitted in habitat of endangered species and threatened species, except in accordance with provincial and federal requirements.

2.1.8 Development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 2.1.4, 2.1.5, and 2.1.6 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.

Prince Edward County Official Plan

Section 8.1 of the County Official Plan lists the intent of the plan, and includes

i) Protect natural features and their associated ecological functions for the long term;

ii) Recognize linkages between and among natural heritage features, surface water features and ground water features; and

iii) Maintain, restore or, where possible, improve the diversity and connectivity of the County's natural features and the long-term ecological functions and biodiversity of the Natural Heritage System.

Appendix A of the Picton Urban Centre Secondary Plan outlines a Terms of Reference for Environmental Impact Studies. The scale of the work shall be determined in pre-consultation with the Conservation Authority (undertaken with Tim Trustham of Quinte Conversation) and shall:

a) Prepared by a qualified professional (please see Section 2).
b) Describe the development proposal (please see Section 1).
c) Be consistent with the PPS (please see Section 1).
d) Provide appropriate maps (please see Figure 2).
e) Identify natural features (please see Section 4).
f) Provide a field inventory (please see Appendix A)
g) Identify suitable habitat of SAR (please see Section 5.2).
h) Describe survey methods (please see Section 2).
i) Provide background knowledge (please see Section 1 and 2).
j) Review the ecological functions of the natural heritage features (please see Sections 4 and 5).
k) Discuss the significance of any natural heritage features (please see Sections 4 and 5).
l) Predict positive and negative impacts of the proposed development (please see Sections 4 and 5).
m) Predict the cumulative residual effects of the proposal (please see Sections 4 and 5).
n) Evaluate the significance of positive and negative impacts (please see Sections 4 and 5).
o) Itemize and recommend measures that can be taken to avoid negative impacts (please see Sections 1 and 5).
p) Recommend areas where disturbance must be avoided (please Sections 4 and 5).
q) Explore opportunities for enhancement of the natural heritage system (please see Sections 1 and 5).
r) Discuss the merits of alternative options (developed prior to presentation of the EIS).
s) Outline mitigation measures (please see Section 5).
t) Conclude whether the development is consistent with the intent of the Provincial Policy Statement (please see Section 1).

In Schedule A-2: In Land Use Designations of the 2018 draft Official Plan the development site is designated as an urban center, as shown by yellow highlighting in adjacent image. The development area outlined in red. The blue meandering line in the adjacent image represents a watercourse, which we could find no evidence of on site. The dark green area to the south (see green circle) is labeled as Environmental Protection Area.

In the current OP (Draft 2018), EP zones refer to wetlands and ANSI's, which is not the case with this area.

The components of the Prince Edward County Natural Heritage System include wetlands, ANSIs, woodlands, watercourses, shorelines, water supply/groundwater, steep slopes, and wildlife habitat. However, as part of a Secondary Plan Boundary Area, none of these are identified with Schedule "B": Natural Features and Areas.

The direction of the field work for this development was largely based on a conversation with Tim Trustham (Quinte Conservation), who voiced specific issues (primarily SAR) that should be considered. With that in mind, Henry Penyk, Land Use Planning Assistant of the Ministry of Natural Resources and Forestry, provided information on possible significant natural heritage issues that might be associated with the development property.

As a matter of course, natural features, significant wildlife habitat (as described in OMNR 2012b), and species of conservation were considered during the site investigation. This involves documenting the natural features (including wildlife habitat), and plant and wildlife species with a focus on specific habitat indicators. Habitat communities are described following the methodology outlined in the ELC for Southern Ontario (Lee *et al*. 1998) and if applicable, the *Ontario Wetland Evaluation System Southern Manual* (OMNR 2002).

Potential candidate significant natural features were assessed following the criteria outlined in the Natural Heritage Reference Manual (OMNR 2010), Significant Wildlife Habitat Ecoregion Criteria Schedules (OMNR 2015) and Significant Wildlife Habitat Technical Guide (OMNR 2000). Information on potential rarities was provided by the NHIC Element Occurrence web page, Henson and Brodribb (2005), ebirds, and local knowledge of the study area.

Breeding bird surveys were based on methods described in the Ontario Breeding Bird Atlas Guide for Participants (Cadman and Kopysh 2001) and the Canadian Wildlife Service Forest Bird Monitoring Program. The presence of reptiles was assessed by examining areas of appropriate habitat such as the brush piles left throughout the site. Other wildlife species of interest were noted as encountered from direct observation, or from other signs of their presence (tracks, scat, den sites, etc.).

Vascular plants were used to characterize ELC community types. If specimens could not be identified in the field they would be assessed later using appropriate references (e.g., Gleason and Cronquist 1991; Queen`s University Fowler Herbarium records).

MNRF protocols for targeted surveys were applied when necessary. For example:

Bobolink and Eastern Meadowlark: OMNR (2011) Bobolink Survey Methodology.

Barn and Bank Swallows: Standard avifaunal surveys, with focus on prospective nest sites.

Whip-poor-will: OMNR (2012) Whip-poor-will Survey Methodology.

Ecological Services personnel who worked on this project:		
Name	**Primary Expertise**	**Secondary Task**
Rob Snetsinger M.Sc.	Wetlands, overall ecology	Ecological assessment
Chris Grooms B.Sc.	Avifauna	Ecological assessment
Megan Snetsinger M.Sc.	Herps	Ecological assessment
Dale Kristensen M.Sc.	Botany and Alvars	Ecological assessment
Note: Mary Alice Snetsinger M.Sc. and Rob Snetsinger studied this site in 2010 in order to support the Prince Edward County Secondary Plans – Existing Conditions Analysis produced by IBI Group and Prince Edward County.		

Site visit summary information				
Date of Survey	**Starting Time**	**Conditions**	**Primary Surveyor**	**Focus of Visit**
May 18, 2018	630	15 C, partly overcast	Chris Grooms	Avifauna, herps, SAR
May 28, 2018	2200	23 C, full moon	Megan Snetsinger	Night SAR
June 2, 2018	800	19 C, partly overcast	Rob Snetsinger	Avifauna, reptiles, SAR
June 3, 2018	655	17 C, partly overcast	Chris Grooms	Avifauna, herps, SAR
June 8, 2018	900	22 C, partly overcast	Rob Snetsinger Megan Snetsinger	Avifauna, reptiles, ELC, SAR
June 26, 2018	030	14 C, nearly full moon	Rob Snetsinger	Night SAR
Aug, 3 2018	1000	26 C, clear	Rob Snetsinger Megan Snetsinger	BHA, avifauna, SAR
July 15, 2019	700	27 C, clear	Rob Snetsinger	Ecological update, SAR

4. Ecological Land Classification (ELC)

Ecological land classification determination was based on Lee et al. (1998). ELC mapping is provided in Figure 2, and explanations of the mapped ELC terms are provided further on.

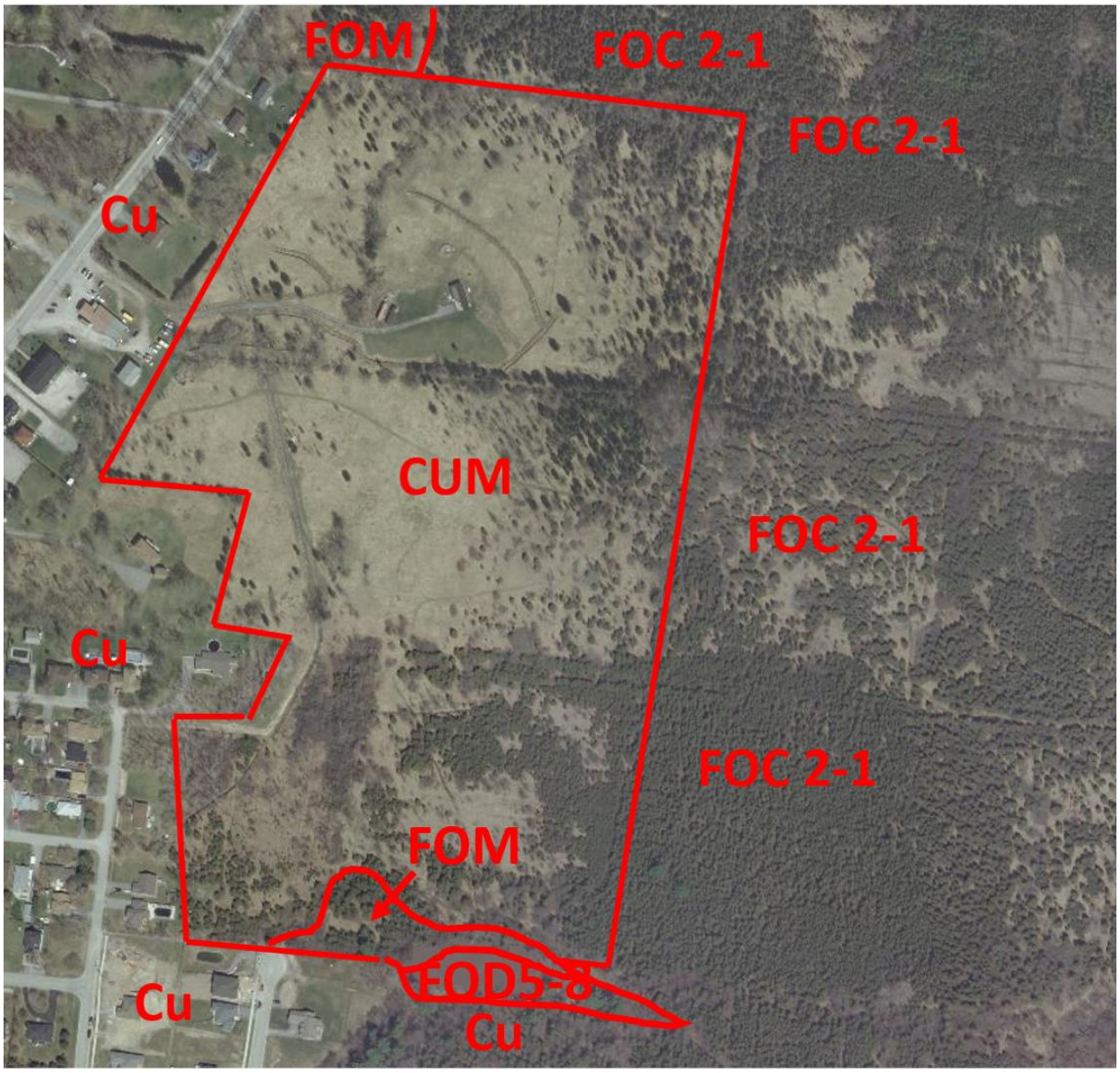


Figure 2. ELC designations for the proposed Hilden Homes property and adjacent lands. The DRAPE 2008 image from the Prince Edward County Public GIS Viewer was used as the base image as it was felt it gave a better representation of the current vegetation features, than more recent satellite images.

ELC Sites

Cultural (Cu): A cultural site is one that is more strongly influenced by cultural activities. Examples of a cultural site could be those associated with a residential lot.

Cultural Meadow (CUM). Cultural meadow must have less than 25% tree cover and have resulted from or are maintained by cultural or anthropogenic disturbances. The designated cultural meadow for the Hilden Homes property has a history of farm use and is currently dominated by perennial forbs (e.g., clover species, common St. John's wort, and goldenrods) and grasses (e.g., smooth brome, Timothy, and orchard grass). Of the 100 species noted in the cultural meadow, 45 were non-native. If left undeveloped, one very aggressive species in particular may come to dominate the entire field over time. This is the dog-strangling vine, which has come to dominate (and ecologically impair) other sites in the County such as at Point Petrie.

Wildlife use of this cultural meadow is relatively low. Species more commonly observed include blue jays, European starling, American crow, American robin, and song sparrows. Some sporadic deer tracks were also observed.Mixed Forest (FOM). Mixed woodlands must have at least 25% tree cover of both deciduous and coniferous species. There is one FOM within the Hilden Homes lands, and one on the adjacent lands to the northwest. The ELC manual further breaks the FOM category into sub-sections, but none of these applied to the FOM that was observed in association with the Hilden Homes site. We often find this lack of specificity in woodlands near urban areas.

As expected, the most common coniferous species observed was red cedar. Pear trees were also commonly seen, likely a remnant of a past orchard. Other deciduous trees observed included Manitoba maple, sugar maple, black walnut, elm, ironwood, shagbark hickory, and black cherry. The understory contained a mix of native shrubs (e.g., prickly ash, grape, Virginia creeper) and non-native invasive shrubs (e.g., Tartarian honeysuckle and European buckthorn). The ground cover was a mix of non-native (e.g., garlic mustard, dog strangling vine, dame's rocket, garden escapes) and native species (e.g., poison ivy, gooseberry, Canada mayflower).

The FOM within the Hilden Homes property contained one butternut tree (END) and some drainage channels (e.g., image to the right) that flow into the adjacent fields following the downward sloping topography. One of the channels is connected to a larger water route coming from the east, the other appears to originate from the side of the hill further south. During all site visits only one of the drainage channels contained water. We do not consider these drainage channels to be watercourses as they do not connect to a downstream aquatic system, but simply end at the woodland/field edge.

Dry-Fresh Red Cedar Coniferous Forest Type (FOC2-1). This woodland is located on the adjacent lands to the east and north of the proposed development site. It is currently dominated by dense growths of red cedar. However, this appears to be in the process of being supplanted by European buckthorn, a non-native invasive shrub species that can develop into a woodland. Like red cedar woodlands, European buckthorn woodlands are considered to have a lower ecological potential than other woodlands in the region. Common ground cover plants in the red cedar woodlands were the the garden escape lily-of-the valley (image to the right), the aggressive non-native invasive dog strangling vine (image lower left), poison ivy, and *Carex eburnea*. This latter plant, also known as ivory sedge, is a common sedge found in association with red cedar woodlands. Other ground cover species commonly observed include the non-native dame's rocket, zig-zag goldenrod, Canada mayflower, and Virginia creeper. Other tree species observed in this woodland include Manitoba maple, sugar maple, basswood, pear, elm, ironwood, white and green ash, red oak, and black cherry.

Dry-Fresh Sugar Maple – White Ash Deciduous Forest Type (FOD5-8): A 0.22 ha section of this woodland is on the southern edge of the development lands. It is connected to a larger FOD5-8 patch further to the south on the adjacent lands, which is designated as Environmental Protection in the OP. As the name implies, the top canopy is dominated by Sugar Maple with lesser amounts of White Ash, with an age 40-80 year age range. A shrub layer is largely absent, and the ground cover is relatively sparse. It contained tree seedlings, and species such as May Apple, Trillium Cohosh, and Trout Lily. Isolated areas of disturbance were present including trails, garbage, lack of normal vertical stand development and non-native species. Positive value indictors include a low percentage of invasive non-native species, its presence on a slope, and association with a water course.

5. Assessment of Natural Features

5.0 Environmental Protection Area (EPA)

The green area circled in the adjacent image is shown as EPA in the Draft 2018 OP, and the development lands are outlined in red. However, the green area is identified as Public Open Space in the 2014 Picton Urban Centre Secondary Plan, which we feel is a more appropriate designation for these lands, especially as some of the green area has recently been developed. The adjacent mapping is also not an accurate reflection of the FOD5-8 woodlands that we identified (see Ecological Services 2010) in support of the secondary plan analysis. The FOD5-8 woodland was noted as being the most valuable woodland type in the Secondary Plan area, in contrast to the more extensive and invasive Red Cedar woodlands. However, from a regional perspective, the FOD5-8 woodland type has no significance, as it is a very common and typically develops over abandoned farmland.

A more accurate mapping of the FOD5-8 is provided in the adjacent image (base image is 2005 google image). The yellow triangle (0.22 ha) is the portion within the development lands. It has a similar woodland canopy cover as the woodlands to the south (red area). The green line area is a mixed woodland, dominated by red cedar, but also contains a diffuse mix of pear tree, Manitoba maple, black walnut, elm, and ironwood. The understory is difficult to navigate as it is dominated by invasive species such as European buckthorn, garlic mustard, and dog strangling vine. Prickly ash is also common.

There is a distinct change in woodland form at the fence line. The green and yellow areas in the above image are north of the development fence line. South of the fence line (red area in the image above) is the FOD5-8 woodland (e.g., adjacent image) for which the EPA was presumably identified in the 2018 Draft OP. In comparison to the adjacent woodland on the development property, this woodland is pleasant to walk through, has far fewer non-native and invasive species, and has more natural heritage value features.

The blue arrows in the above left image represent the approximate route of a woodland water course, that ends in the adjacent field. It is questionable if this is a watercourse for the purposes of Ontario Regulation 319/09 as it ends in the adjacent field, through dispersed overland flow. Normally a defined watercourse for the purposes of the regulation has to have a defined end point, such as Picton Bay.

Although the FOD5-8 woodland has some natural heritage value features, we question its designation as EPA in the Draft OP. It is too small and narrow to be significant woodland; it has limited potential as significant wildlife habitat; the associated watercourse is not technically a watercourse; it does not have riparian features; it abuts existing development and will eventually be surrounded by development. Nevertheless, the current development plans are to set aside the yellow portion as parkland.

5.1 Watercourses/Riparian Habitat

These are not recognized PPS or OP natural heritage features per se. but are discussed here to help inform the development process. Some mapping (e.g., NHIC) suggests that there is a drainage channel running through the **middle** of the property (east to west). We did not encounter such a drainage feature and suggest that the mapping is in error that actually represents a fence line.

On some older aerial images there is ditching (see blue lines to the left of the adjacent image), which may have been put in place to prevent basement flooding of an original dwelling, and to help drain the farm fields, and we would expect a natural flow of water from east to west (right to left in adjacent image) as it follows the natural topography of the land. However, we could find no evidence of this ditching in 2018 and 2019. This lack may explain the presence of wetland plants (although this is not wetland), in the southwest of the property (lower left in the adjacent image).

There are two seasonal drainage routes along the northern and southern fence lines (top and bottom blue lines in adjacent image) that are still active in the spring. We didn't determine the origin points off property further east, but both end in the development fields, and neither has the riparian habitat that would normally be found in a more permanent water system.

An image of the southern fence line drainage channel is provided to the lower left, and the northern fence line drainage channel is provided lower right. We do not consider either as significant natural heritage features.

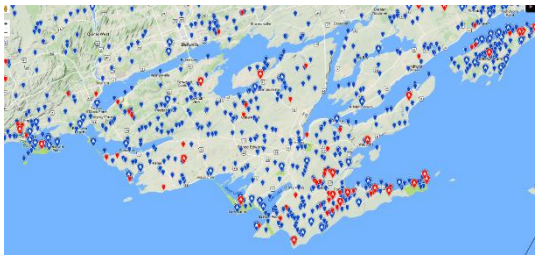
5.2 Threatened or Endangered Species

The following Species at Risk were considered during the field work, as based on our past work in, and knowledge of the County, government lists, and information provided by Henry Penyk (Land Use Planning Assistant of the Ministry of Natural Resources and Forestry).

Butternut (Endangered): One butternut tree was found within the development property, within the approximate mixed woodland near the southern boundary of the property. It was infected with the Butternut canker, and therefore a Butternut Health Assessment (BHA) was undertaken (see adjacent table). The BHA was submitted to the OMNRF in 2018, and because it was determined to be a Category 1 tree, it could be removed as of September 2018 without penalty.

A second butternut tree was found on the adjacent woodlands to the south. As this was on private property, a BHA was not undertaken, but this tree was clearly a Category 1 as it was more heavily cankered than the aforementioned Category 1 butternut, and the crown was down to about 30% foliage cover.

Eastern Meadowlark (Threatened):
Eastern Meadowlarks were added to the Ontario Species at Risk list in 2012. We typically observe them in field habits, especially if there are intermittent shrubs present, which they use for perching. Speculation for their decline in numbers in the province is based on a number of possible factors such as once-cleared fields turning back into woodland habitat, current agricultural practices that are not favorable to the Meadowlark life cycle, and housing development. Unlike other parts of the province, numbers in Eastern Ontario, including Prince Edward County (see blue dot sightings in above image), are relatively good, perhaps due to the presence of many abandoned farm fields.



The fields within the Hilden Homes property have favorable Meadowlark attributes, so we were particularly focused on them during the field visits. We undertook six daytime birding visits and observed Eastern Meadowlarks on one of those visits, calling from perches within the grass meadow, underneath the hydro line. These birds are easy to observe, and are also very vocal, so we would expect to observe them on all visits if they were present. That they were only observed once in 2018, which suggests they were not nesting on site. It appears that the two meadowlarks observed were young males, trying out prospective territories, and not finding conditions favorable, moved on.

The nearest Meadowlark sightings in 2019 are by Patrick Deacon and Daniel Riley (eBird) from the Macauley Mountain area, and by Kyle Blaney (eBird) near Chuckery Hill Road. Both sites are more than 120 m away from the development property.

Bobolink (Threatened): Bobolink share similar habitat as Eastern Meadowlark but have a greater preference for more expansive grasslands, with less shrub intrusions. Consequently, the development lands have limited potential as Bobolink habitat. No Bobolink were observed during the site visits, and there are no recent reports in eBird for Boblink within kilometers of the development site.

Chimney Swift (Threatened): No Chimney Swifts were observed on site, nor did we see appropriate nesting sites (ie., chimneys) within 120 m. Twelve Chimney Swifts were reported by Cecile and Morris Yarrow (eBird) in 2019 in the Town of Picton (more than 120 m away) and these birds inhabit some

chimneys on Main St. in Picton (see Bird Studies Canada in eBird), which is more than 120 m from the proposed development.

Juniper Sedge (Endangered): This *Carex* is found in this region in association with alvars. We did encounter a few isolated alvar representative species such *fragrant sumac* and *Eleocharis compressa*. We also observed sporadic alvar plants in 2010. However, there is clearly no alvar present on or adjacent to the development property.

Eastern Whip-poor-will (Threatened): Most of the observations for this bird in the County occur along the south shore in association with open habitat that includes associated woodland. One Whip-poor-will was reported by Richard Littauer (eBird) in 2019 for the Macauley Mountain area more than 120 m away from the proposed development. The habitat preference for Whip-poor-will is presented in the Environment Canada (2015) Whip-poor-will recovery strategy.

> *Nesting habitats include most types of forest at early stages of succession (or edges of forests with a dense tree cover but showing a similar structure at the ground level), rock or sand barrens with scattered trees, savannahs, old burns, as well as sparse conifer plantations (Wilson 1985; Bushman and Therres 1988; Cink, 2002; Mills2007; Wilson and Watts2008; Tozer et al.2014). All these habitats exhibit characteristics such as well-drained soils, moderate tree cover (Godfrey 1986; Roy and Bombardier1996; 26 to 83 % in Garlapow 2007) and moderate to sparse shrub and herbaceous cover (Eastman 1991; Garlapow 2007).*

These features are not well represented on the Hilden Homes property; however, we undertook two Whip-poor-will focused surveys and no Whip-poor-wills were detected during the site visits.

Barn Swallow (Threatened): No Barn Swallows were observed during the field work. Barn Swallows will be found in proximity to nesting structures, such as barns, bridges, abandoned houses, or boathouses. To our knowledge, there are no such structures within 120 m of the proposed development.

Bank Swallow (Threatened): No Bank Swallows were observed or expected during the field work as there is no appropriate nesting habitat on the site, or within 120 m of the proposed development.

Loggerhead Shrike (Endangered): No Loggerhead Shrikes were observed or expected during the field work due to a lack of appropriate open shrubland habitat and because they are not known to nest within Prince Edward County. Most eBird sightings are along the south shoreline areas of the County during the spring migration, but most nest sites in Eastern Ontario occur west of Camden East, and north of the Hwy. 401.

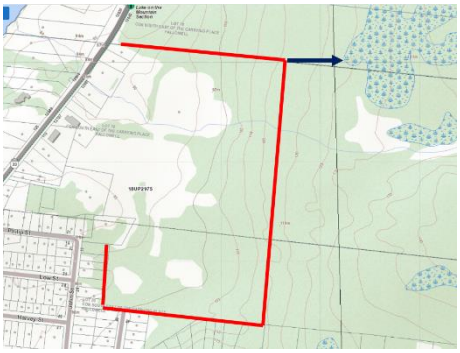
Four-leaved Milkweed (Endangered): No Four-leaved Milkweed was observed on site or expected during the field work due to a lack of appropriate habitat. This plant is normally found in association with treed alvar, which is not present on, or within 120 m of the development site.

American Ginseng (Endangered): No American Ginseng were observed or expected on or within 120 m of the proposed development area due to the inappropriate nature of the habitat. We have encountered American Ginseng many times in rich sugar maple deciduous woodlands, usually on a south facing slope, in association with either butternuts or maidenhair fern. None of these features is present on or within 120 m of the proposed development lands.

Blanding's Turtle (Threatened): There is no Blanding's Turtle appropriate aquatic habitat within 120 m of the proposed development area, and no Blanding's Turtles were observed on site.

Gray Ratsnake (Threatened): No Gray Ratsnake were found or were expected on or near the proposed development lands. In Eastern Ontario, this species is confined to areas within the Canadian Shield north of Kingston and there are no references, past or otherwise, for this species in the Ontario Herp Atlas for Prince Edward County. This is also the contention of Christie (1997) who suggested that the few historical anecdotal references in Prince Edward County were likely Northern Water Snakes.

5.3 Wetland



There is no provincially significant wetland on, or within 120 m of, the proposed development site. There is a patch of wetland shown on MNRF's NHIC maps. It is located about 80 m from the northeast corner of the development as highlighted by the black arrow in the adjacent image. We investigated this area on July 16, 2019 and determined that there is no wetland here. Instead there is red cedar woodland, as well as an upland white cedar monoculture. There is also an approximate 0.07 ha. clearing in the red cedar woodland that from aerial image may look like wetland. On the ground we determined that it does experience poor drainage and does contain a few wetland plants (e.g., *Salix petiolaris*), but the dominant plant representation here is clearly non-wetland, and therefore it is not wetland.

5.4 Area of Natural and Scientific Interest

There is no ANSI on, or within 120 m of, the proposed development site.

5.5 Valleylands

There are no valleyland on, or within 120 m of, the proposed development site.

5.6 Woodlands

In OMNR (2010) woodland significance can be determined from the following criteria:

1. Size: Henson and Brodribb (2005) determined that woodland cover in the region to be between 30 and 60% and therefore it requires a woodland of at least 50 ha to be significant. The woodland areas to the north and east represent a woodland area, with many gaps and fragments, but has an area of approximately 200 to 250 ha. A more precise size cannot be provided without more detailed study, but it is clearly above the 50 ha. threshold and therefore significant for size.

   We do not see the development of the adjacent lands to the woodland as a threat to this size significance, as there will be no direct intrusion into the woodlands, and red cedar woodlands are not sensitive to nearby development. There will be a potential loss of approximately 0.4 hectares of woodland within the southern edge of the development lands, but the woodland will still be well above the significant threshold of 50 ha. This small patch of woodland is within the EP zone and is currently intended as parkland.

2. Woodland Interior: This woodland would need to have 20 ha of interior habitat to be considered significant for woodland interior. Due to the many gaps, and the lack of height, the red cedar woodlands can attain, it does not meet the threshold for interior habitat.

3. Proximity: Significance is attained if the woodland is supporting an adjacent significant natural feature such as fish habitat, which is not the case here.

4. Linkage: Significance is attained if the woodland links two other significant features, which is not the case here.

5. Water Protection: Significance is attained if the woodland is located within a sensitive or threatened watershed, which is not the case here.

6. Woodland Diversity: Significance is attained if the woodland has a high number of species that are in decline in the region, or a high degree of native diversity, which is not the case here. These woodlands are seen as invasive and can result in a significant reduction of biodiversity (see Horncastle et al. 2004, Norris et al. 2001, and Briggs et al., 2002). The low bio-diversity of these woodlands, and their invasive expansion into the development area was noted in our work on behalf of the Secondary Plan (see Ecological Services 2010).

7. Uncommon Characteristics: Significance is attained if the woodland if it contains unique species, or species with high Coefficient of Conservatism, which is not the case here.

5.7 Wildlife Habitat

The Significant Wildlife Habitat (SWH) Criteria for Site Region 6E (MNR 2012) describes in detail the habitat and wildlife requirements and thresholds. Each wildlife habitat type was considered during the site investigation.

Seasonal Concentration Areas:

Waterfowl Stopover and Staging Areas (terrestrial): Only applies to flooded fields (not present).
Waterfowl Stopover and Staging Areas (aquatic): Only applies to open water wetlands (not present).

Shorebird Migratory Stopover Area*:* Only applies to shorelines (not present).

Raptor Wintering Area*:* Applies to mature woodland/field combinations that provide the necessary foraging habitat for overwintering raptors. The development site does not have sufficient appropriate woodland types for raptor winter use, and the open area would not produce the necessary rodent populations to support overwintering raptors. Significance requires the presence of one or more Short-eared Owl or Bald Eagle, or at least 10 individuals of either Rough-legged Hawk, Northern Harrier, American Kestrel, and Snowy Owl. A single Bald Eagle was reported by Dave Shannon (eBird) from the March of 2012 for the lands to the north of the development area, and was likely a flyby. A good example of a significant Raptor Wintering Area is Owl Woods on Amherst Island, and the undeveloped lands north of Chuckery Hill Road (>120 m away) may be a significant Raptor Wintering area as based on eBird records.

***Bat Hibernacula**:* Not Present
Bat Maternity Colonies: Requires large older woodlands with at least 10 snags/hectare (not present).
Bat Migratory Stopover Area: Criteria still being developed by the OMNRF.

***Turtle Wintering Areas**:* Requires aquatic habitat (not present).
Reptile hibernaculum: Hibernation features are lacking (e.g., fractured slopes, caves, old foundations, karst).

Colonially -Nesting Bird Breeding Habitat (Bank and Cliff): Bank and cliff habitat not present.
Colonially -Nesting Bird Breeding Habitat (Trees/Shrubs): Requires swamp habitat (not present).
Colonially -Nesting Bird Breeding Habitat (Ground): Requires coastal habitat (not present).

***Butterfly migratory route/stopover areas**:* A butterfly stopover area needs to be a minimum of 10 ha in size with a combination of field and forest habitat present and will be located within 5 km of Lake Ontario. The field component does not meet the size threshold, and the site is more than 5 km from Lake Ontario.

***Landbird migratory stopover areas**:* After crossing Lake Ontario, landbirds seek out stopover woodlands to rest up and feed before continuing on with their migration. To qualify, woodlots need to be >10 ha. in size and within 5 km of the Lake Ontario. The adjacent woodlands are large enough, although red cedar woodlands would be unfavorable in this regard. However, the site is more than 5 km from Lake Ontario and therefore does not qualify as SWH.

Deer yarding areas: Deer occasionally pass through this area, but not in sufficient numbers to qualify as SWH.
***Deer Winter Congregation areas**:* Not Present

***Rare Vegetation Communities*:** Not Present

Specialized Habitats for Wildlife

***Waterfowl nesting area**:* No aquatic habitat to support waterfowl nesting.

Bald Eagle and Osprey Nesting, Foraging and Perching Habitat: Appropriate habitat features are not present.

***Woodland Raptor Nesting Habitat**:* Requires a 30 hectare woodland with at least 10 hectares of interior core habitat. The surrounding Red Cedar woodlands have too many gaps to provide for sufficient core habitat, plus these woodlands are generally not favored by woodland raptors as they do not provide sufficient strength to support a nest structure. The nearby Macauley Mountain area does provide enough interior core habitat, and there are a number of eBird records showing appropriate woodland species. Accordingly, the Macauley Mountain south of Union St. (>120 m away) is likely the nearest significant Woodland Raptor Nesting Habitat.

***Turtle Nesting Areas**:* Too far removed from any appropriate turtle habitat to support nesting.

***Seeps and Springs**:* Not present.

***Amphibian breeding habitat* (woodland):** No ephemeral ponds present of the required 500m^2 to support woodland amphibian breeding.

***Amphibian breeding habitat* (wetland):** No wetland habitat present.

Habitat for Species of Conservation Concern

Marsh bird breeding habitat: Marsh habitat not present.

Woodland area –sensitive bird breeding habitat: All mature (>60 years old) natural forest (non-plantation) stands 30 ha or greater in size and with at least 10 ha interior habitat assuming 100 m buffer at edge of forest are to be considered for this criterion. The adjacent woodlands east and north of the development area are punctuated with many gaps (negating core interior habitat), and the woodlands are less than 60 years old, so the threshold criteria are not met. It also requires the presence of certain indicator species (e.g., Black-throated Green Warbler, Ovenbird, Winter Wren), which were not present.

The nearby Macauley Mountain area south of Union Street (>120 m away), does meet the size and species criteria for significant Woodland area-sensitive bird breeding habitat, as based on eBird records.

Open country bird breeding habitat: Requires grassland habitat 30 ha or larger in size, that is not being actively used for farming. There is no grassland habitat of this size within the proposed development area.

Shrub/early successional bird breeding habitat: Shrub habitat not present.

Terrestrial Crayfish: Not present.

Rare Species: Refers to provincially rare (S1 to S3 and SC, but not Threatened or Endangered) plant and animal species. The following information sources were considered.
1. MNRF's NHIC grid 18UP2975, and Henry Penyk (MNRF Peterborough)
2. Picton Ecodistrict 6E-15, Henson and Brodribb (2005),
3. Ecological Services field work,
4. Other sources (e.g., anecdotal reports, eBird, etc.).

Species	Preferred Habitat	Is Suitable Habitat Present within 120 m	Source	Sighted during field work
Birds				
Cerulean Warbler (SC)	Mature deciduous woodlands	No	2	No
Wood Thrush (SC)	Mature deciduous woodlands	Yes	1,4	Yes
Eastern Wood-peewee (SC)	Mature deciduous woodlands	Yes	1,4	No
Canada Warbler (SC)	Lowland Forest	No	1	No
Short-eared Owl (SC)	Grasslands	Yes	1	No
Reptiles				
Snapping Turtle (SC)	Wetlands	No	1	No
Map Turtle (SC)	Wetlands	No	1	No
Musk Turtle (SC)	Wetlands	No	1	No
Plants				
Dwarf Hackberry S2	Deciduous woodlands	No	2	No
Insects				
Monarch (SC)	Field habitat containing milkweed	Present	3	Yes

Discussion (Wood Thrush): From between 2 and 5 Wood Thrush were heard calling in the 2018 season, and the 2019 site visit, in the woodlands to the north and east of the development site at distances of 30m to beyond 120m. This bird was listed as a Special Concern species in Ontario in 2014. As a Special Concern species, it is not protected under the Endangered Species Act, but it is given consideration under the PPS for potential Significant Wildlife Habitat.

Agricultural practices and changes in wintering habitat outside of Canada are thought to be one of the main factors in declining numbers. We have observed them nesting in a wide range of habitats in Eastern Ontario from relative pristine isolated woodlands to urban areas, and suitable habitat is not lacking in the region as woodlands where we once noted them calling are no longer being used. This suggests that habitat loss in the region is not an issue. There will be no intrusion into the woodlands where Wood Thrush were heard calling, and adjacent development is not seen as an impact as these birds are tolerant of nearby human activity. For example, we have observed them nesting in urban situations, and there are many sightings posted in eBird for urban areas, such as in Kingston, Belleville, and Toronto

Recommendation: Although no Wood Thrush were observed in the small remaining bit of woodland along the southern edge of the development lands, we still recommend that tree clearing to take place outside of the bird-breeding season for these birds (and any other migrant) as they are protected under the *Migratory Birds Convention Act* and any tree clearing should take place outside of the breeding season (late April to mid-August) in order to prevent the possible loss of active nests.

> Recommendation 1: That no tree clearing be permitted between April 15 to August 15 of each year.

Discussion (Monarch): During the field work, a few Monarch butterfly were periodically observed in association with the fields backing onto the houses along Bridge St. We also observed a small patch of milkweed plants. As a result, the fields could be considered potential wildlife habitat. However, given the number of milkweed observed, and the single Monarch suggests that this is not a critical, or important site. Nevertheless, we recommend some effort in Monarch conservation is warranted.

Recommendation: We recommend delaying any land clearing or grass cutting in the fields until after September, to allow for the final emergence of potential Monarchs.

> Recommendation 2: That no tree clearing, and grass cutting be permitted between May 1 to September 30 of each year.

Animal Movement Corridors

Amphibian movement corridors*:* Not present.

Deer movement corridors*:* Deer movement corridors are associated with significant deer wintering habitat (MNR 2012). There are no habitat features on or within the proposed development property that support significant deer winter use and therefore there is no significant deer movement corridor.

5.8 Fish Habitat

There is no fish habitat on, or within 120 m of, the proposed development site. The two drainage ditches on the north and south fence lines do not contain fish habitat. They are also ephemeral, have no standing water, and are not connected to a downstream water body.

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7. Appendix – Species Lists

AVIFAUNA				
May 18 2018			**June 8 2018**	
Development Site	**Count**		**Development Site**	
Wild Turkey (Meleagris gallopavo)	6		Killdeer (Charadrius vociferus)	3
Red-tailed Hawk (Buteo jamaicensis)	2		Mourning Dove (Zenaida macroura)	4
Killdeer (Charadrius vociferus)	5		Northern Flicker (Colaptes auratus)	1
American Robin (Turdus migratorius)	7		Eastern Kingbird (Tyrannus tyrannus)	1
Gray Catbird (Dumetella carolinensis)	2		Warbling Vireo (Vireo gilvus)	1
European Starling (Sturnus vulgaris)	2		Blue Jay (Cyanocitta cristata)	5
Common Yellowthroat (Geothlypis trichas)	2		American Crow (Corvus brachyrhynchos)	5
Yellow Warbler (Setophaga petechia)	1		Black-capped Chickadee (Poecile atricapillus)	1
Song Sparrow (Melospiza melodia)	19		House Wren (Troglodytes aedon)	3
Indigo Bunting (Passerina cyanea)	1		American Robin (Turdus migratorius)	2
Red-winged Blackbird (Agelaius phoeniceus)	2		Song Sparrow (Melospiza melodia)	1
Brown-headed Cowbird (Molothrus ater)	1		Red-winged Blackbird (Agelaius phoeniceus)	2
Common Grackle (Quiscalus quiscula)	8		Common Grackle (Quiscalus quiscula)	3
American Goldfinch (Spinus tristis)	4		**Adjacent woodland or flyover**	
Adjacent woodland or flyover			Great Crested Flycatcher (Myiarchus crinitus)	1
Common Loon (Gavia immer)	1		Common Raven (Corvus corax)	4
Great Blue Heron (Ardea herodias)	1		Wood Thrush (Hylocichla mustelina)	2
Turkey Vulture (Cathartes aura)	3		Northern Cardinal (Cardinalis cardinalis)	3
Broad-winged Hawk (Buteo platypterus)	1		Rose-breasted Grosbeak (Pheucticus ludovicianus	3
Ring-billed Gull (Larus delawarensis)	1		Baltimore Oriole (Icterus galbula)	4
Mourning Dove (Zenaida macroura)	3			
Great Crested Flycatcher (Myiarchus crinitus)	1		**July 15 2019**	
Blue Jay (Cyanocitta cristata)	19		**Development Site**	
American Crow (Corvus brachyrhynchos)	5		Mourning Dove (Zenaida macroura)	2
Wood Thrush (Hylocichla mustelina)	5		Northern Flicker (Colaptes auratus)	1
Northern Cardinal (Cardinalis cardinalis)	1		Eastern Kingbird (Tyrannus tyrannus)	1
Rose-breasted Grosbeak (Pheucticus ludovicianus)	12		Blue Jay (Cyanocitta cristata)	2
Baltimore Oriole (Icterus galbula)	6		American Crow (Corvus brachyrhynchos)	2
			Black-capped Chickadee (Poecile atricapillus)	2
June 3 2018			House Wren (Troglodytes aedon)	4
Development Site			American Robin (Turdus migratorius)	3
Wild Turkey (Meleagris gallopavo)	1		Song Sparrow (Melospiza melodia)	3
Killdeer (Charadrius vociferus)	3		Red-winged Blackbird (Agelaius phoeniceus)	4
Mourning Dove (Zenaida macroura)	4		Northern Cardinal (Cardinalis cardinalis)	2
Northern Flicker (Colaptes auratus)	1		Eastern Kingbird (Tyrannus tyrannus)	1
Eastern Kingbird (Tyrannus tyrannus)	1		**Adjacent woodland or flyover**	
Warbling Vireo (Vireo gilvus)	1		Great Crested Flycatcher (Myiarchus crinitus)	1
Blue Jay (Cyanocitta cristata)	1		Wood Thrush (Hylocichla mustelina)	2
American Crow (Corvus brachyrhynchos)	16		Northern Cardinal (Cardinalis cardinalis)	3
Black-capped Chickadee (Poecile atricapillus)	4		Rose-breasted Grosbeak (Pheucticus ludovicianus	3
House Wren (Troglodytes aedon)	8		Baltimore Oriole (Icterus galbula)	4
American Robin (Turdus migratorius)	3		Rose-breasted Grosbeak (Pheucticus ludovicianus	5
European Starling (Sturnus vulgaris)	21		American Robin (Turdus migratorius)	5
Common Yellowthroat (Geothlypis trichas)	8		House Wren (Troglodytes aedon)	1
Chipping Sparrow (Spizella passerina)	4		Baltimore Oriole (Icterus galbula)	2
Song Sparrow (Melospiza melodia)	1		woodpecker sp. (Picidae sp.)	1
Eastern Meadowlark (Sturnella magna)	2		Common Yellowthroat (Geothlypis trichas)	1
Red-winged Blackbird (Agelaius phoeniceus)	8			
Common Grackle (Quiscalus quiscula)	4			
Adjacent woodland or flyover			**MAMMALS/HERPS**	
Black-billed Cuckoo (Coccyzus erythropthalmus)	1		White tailed deer tracks	
woodpecker sp. (Picidae sp.)	1		Grey squirrel (residential lot to the west)	
Great Crested Flycatcher (Myiarchus crinitus)	1		No Herps observed	
Warbling Vireo (Vireo gilvus)	1			
Common Raven (Corvus corax)	4			
House Wren (Troglodytes aedon)	1			
Wood Thrush (Hylocichla mustelina)	3			
Eastern Towhee (Pipilo erythrophthalmus)	1			
Northern Cardinal (Cardinalis cardinalis)	9			
Rose-breasted Grosbeak (Pheucticus ludovicianus)	3			
Baltimore Oriole (Icterus galbula)	8			

PLANT LIST					
Development Field			Adjacent Woodland		
Latin	Common Name	S-Rank	Latin	Common Name	S-Rank
Acer negundo	Manitoba maple	S5	Acer negundo	Box Elder	S5
Achillea millefolium	Yarrow	S5	Acer saccharum var. saccha	Sugar Maple	S5
Actaea rubra	Red Baneberry	S5	Ageratina altissima	White Snakeroot	SNA
Alisma triviale	Northern Water-plantain	S5	Agrimonia gryposepala	Tall Hairy Groovebur	S5
Alliaria petiolata	Garlic Mustard	SNA	Alliaria petiolata	Garlic Mustard	SNA
Arctium minus	Lesser Burdock	SNA	Apocynum androsaemifolium	Spreading Dogbane	S5
Asclepias incarnata	Swamp Milkweed	S5	Arctium minus	Lesser Burdock	SNA
Asclepias syriaca	Kansas Milkweed	S5	Asclepias incarnata	Swamp Milkweed	S5
Barbarea vulgaris	Yellow Rocket	SNA	Asclepias syriaca	Kansas Milkweed	S5
Bromus inermis	Awnless Brome	SNA	Berberis thunbergii	Japanese Barberry	SNA
Calamagrostis canadensis	Canada Blue-joint	S5	Bromus inermis	Awnless Brome	SNA
Carex bebbii	Bebb's Sedge	S5	Carex bebbii	Bebb's Sedge	S5
Carex granularis	Meadow Sedge	S5	Carex eburnea	Ebony Sedge	S5
Carex platyphylla	Broad-leaved Sedge	S5	Carex gracillima	Graceful Sedge	S5
Carex vulpinoidea	Fox Sedge	S5	Carex granularis	Meadow Sedge	S5
Cichorium intybus	Chicory	SNA	Carex pensylvanica	Pennsylvania Sedge	S5
Cirsium arvense	Canada Thistle	SNA	Carex rosea	Rosy Sedge	S5
Cirsium vulgare	Bull Thistle	SNA	Carex vulpinoidea	Fox Sedge	S5
Convallaria majalis	European Lily-of-the-valley	SNA	Carya cordiformis	Bitter-nut Hickory	S5
Convolvulus arvensis	Field Bindweed	SNA	Carya ovata	Shag-bark Hickory	S5
Cornus amomum	Silky Dogwood	S5	Circaea canadensis	Broad-leaved Enchanter's N	S5
Cornus sericea	Red-osier Dogwood	S5	Clintonia borealis	Blue Bead-lily	S5
Crepis tectorum	Narrow-leaf Hawksbeard	SNA	Convallaria majalis	European Lily-of-the-valley	SNA
Cynanchum rossicum	European Swallow-wort	SNA	Cynanchum rossicum	European Swallow-wort	SNA
Dactylis glomerata	Orchard Grass	SNA	Fraxinus americana	White Ash	S4?
Daucus carota	Wild Carrot	SNA	Fraxinus pennsylvanica	Green Ash	S5
Dianthus armeria	Deptford-pink	SNA	Glyceria striata	Fowl Manna-grass	S5
Dichanthelium linearifolium	Slim-leaf Witchgrass	S4S5	Juglans cinerea	Butternut	S3?
Doellingeria umbellata var. ur	Flat-top White Aster	S5	Juglans nigra	Black Walnut	S4
Echinocystis lobata	Wild Mock-cucumber	S5	Juniperus communis	Ground Juniper	S5
Eleocharis compressa	Flat-stemmed Spike-rush	S4	Juniperus virginiana	Eastern Red Cedar	S5
Epipactis helleborine	Eastern Helleborine	SNA	Parthenocissus inserta	Virginia Creeper	S5
Equisetum arvense	Field Horsetail	S5	Phleum pratense	Meadow Timothy	SNA
Erigeron philadelphicus	Philadelphia Fleabane	S5	Plantago major	Nipple-seed Plantain	S5
Euthamia graminifolia	Flat-top Fragrant-golden-rod	S5	Poa compressa	Canada Bluegrass	SNA
Eutrochium maculatum var. r	Spotted Joe-pye Weed	S5	Poa palustris	Fowl Bluegrass	S5
Festuca rubra ssp. rubra	Red Fescue	SNA	Poa pratensis ssp. pratensis	Kentucky Bluegrass	S5
Fraxinus americana	White Ash	S4?	Prunella vulgaris ssp. vulgaris	Self-heal	SNA
Fraxinus pennsylvanica	Green Ash	S5	Prunus serotina	Wild Black Cherry	S5
Galium triflorum	Sweet-scent Bedstraw	S5	Pyrus communis	Common Pear	SNA
Glechoma hederacea	Ground Ivy	SNA	Quercus alba	White Oak	S5
Hesperis matronalis	Dame's Rocket	SNA	Quercus rubra	Northern Red Oak	S5
Hypericum punctatum	Common St. John's-wort	S5	Ranunculus acris	Tall Butter-cup	SNA
Juglans nigra	Black Walnut	S4	Ranunculus fascicularis	Early Buttercup	S4
Juncus dudleyi	Dudley's Rush	S5	Rhamnus cathartica	Buckthorn	SNA
Juniperus communis	Ground Juniper	S5	Rhus aromatica	Fragrant Sumac	S5
Juniperus virginiana	Eastern Red Cedar	S5	Rhus typhina	Staghorn Sumac	S5
Leucanthemum vulgare	Oxeye Daisy	SNA	Ribes cynosbati	Prickly Gooseberry	S5
Linaria vulgaris	Butter-and-eggs	SNA	Rubus idaeus ssp. strigosus	Wild Red Raspberry	S5
Lonicera tatarica	Tartarian Honeysuckle	SNA	Rumex acetosella	Sheep Sorrel	SNA
Lotus corniculatus	Birds-foot Trefoil	SNA	Rumex crispus	Curly Dock	SNA
Lycopus americanus	American Bugleweed	S5	Salix discolor	Pussy Willow	S5
Maianthemum stellatum	Starflower False Solomon's-s	S5	Salix petiolaris	Meadow Willow	S5
Medicago lupulina	Black Medic	SNA	Sambucus racemosa	Red Elderberry	S5
Medicago sativa	Alfalfa	SNA	Solanum dulcamara	Climbing Nightshade	SNA
Melilotus albus	White Sweet Clover	SNA	Solidago canadensis var. can	Canada Goldenrod	S5
Melilotus altissimus	Tall Yellow Sweetclover	SNA	Solidago flexicaulis	Broad-leaved Goldenrod	S5
Nepeta cataria	Catnip	SNA	Solidago juncea	Early Goldenrod	S5
Onoclea sensibilis	Sensitive Fern	S5	Sorbus americana	American Mountain-ash	S5
Oxalis montana	Common Wood-sorrell	S5	Symphyotrichum novae-angli	New England Aster	S5
Parthenocissus inserta	Virginia Creeper	S5	Taraxacum officinale	Brown-seed Dandelion	SNA
Pastinaca sativa	Wild Parsnip	SNA	Thuja occidentalis	Eastern White Cedar	S5
Petasites frigidus var. palmat	Western Sweet Coltsfoot	S5	Tilia americana	American Basswood	S5
Phalaris arundinacea	Reed Canary Grass	S5	Toxicodendron radicans	Climbing Poison Ivy	S5
Phleum pratense	Meadow Timothy	SNA	Tragopogon pratensis	Meadow Goat's-beard	SNA
Plantago major	Nipple-seed Plantain	S5	Trifolium hybridum	Alsike Clover	SNA
Poa compressa	Canada Bluegrass	SNA	Trifolium pratense	Red Clover	SNA
Poa palustris	Fowl Bluegrass	S5	Ulmus americana	American Elm	S5
Poa pratensis ssp. pratensis	Kentucky Bluegrass	S5	Urtica dioica ssp. dioica	Nettle	SNA
Populus deltoides ssp. deltoid	Eastern Cottonwood	SU	Vitis riparia	Riverbank Grape	S5
Populus tremuloides	Trembling Aspen	S5	Zanthoxylum americanum	Northern Prickley Ash	S5
Potentilla recta	Sulphur Cinquefoil	SNA			
Prunella vulgaris ssp. vulgaris	Self-heal	SNA			
Pyrus communis	Common Pear	SNA			
Ranunculus acris	Tall Butter-cup	SNA			
Rhus typhina	Staghorn Sumac	S5			
Ribes cynosbati	Prickly Gooseberry	S5			
Rubus idaeus ssp. strigosus	Wild Red Raspberry	S5			
Rubus occidentalis	Black Raspberry	S5			
Rumex acetosella	Sheep Sorrel	SNA			
Rumex crispus	Curly Dock	SNA			
Satureja hortensis	Summer Savory	SNA			
Scirpus atrovirens	Dark-green Bulrush	S5			
Solanum dulcamara	Climbing Nightshade	SNA			
Solidago canadensis var. can	Canada Goldenrod	S5			
Solidago juncea	Early Goldenrod	S5			
Symphyotrichum novae-angli	New England Aster	S5			
Taraxacum officinale	Brown-seed Dandelion	SNA			
Toxicodendron radicans	Climbing Poison Ivy	S5			
Tragopogon pratensis	Meadow Goat's-beard	SNA			
Trifolium hybridum	Alsike Clover	SNA			
Trifolium pratense	Red Clover	SNA			
Ulmus americana	American Elm	S5			
Urtica dioica ssp. dioica	Nettle	SNA			
Verbascum thapsus	Great Mullein	SNA			
Verbena hastata	Blue Vervain	S5			
Viburnum lentago	Nannyberry	S5			
Vicia cracca	Tufted Vetch	SNA			
Vitis riparia	Riverbank Grape	S5			
Zanthoxylum americanum	Northern Prickley Ash	S5			