ENVIRONMENTAL IMPACT STATEMENT
and
TREE CONSERVATION REPORT

PROPOSED RESIDENTIAL DEVELOPMENT

5970 FERNBANK ROAD, STITTSVILLE SOUTH AREA 6
CITY of OTTAWA

A report prepared for:

Davidson Co-Tenancy

by *Muncaster Environmental Planning Inc.*

Revised February, 2016

Bernie Muncaster, Principal, February 25th, 2016

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1.0 INTRODUCTION and SITE CONTEXT

As a result of the OMB appeal to the 2009 Official Plan, the lands within the Stittsville South – Area 6 expansion area were added to the Urban Area to accommodate projected growth to 2031. This report assesses a subdivision application which covers approximately 41.67 hectares west of Shea Road in the east portion of the Area 6 lands (Map 1). The previous Urban Area boundary and associated existing urban residential areas of Stittsville (West Wind Farms) are to the west of the north portion of the site, with lands to the north, north of Fernbank Road, also recently added to the Urban Area. The City's current Urban Area boundary defines the south and east borders of the site, with a proposed stormwater management facility in the rural lands just south of the urban area boundary. A tributary to the Faulkner Drain is along the west edge of the site. The site is located in part of Lot 25, Concession 9 of the Geographic Township of Goulbourn, City of Ottawa. The municipal address is 5970 Fernbank Road with Fernbank Road and Shea Road being the road frontages for the property (Tartan, 2015). For the purposes of this report Shea Road is considered to be in a north-south orientation.

The site is dominated by agricultural fields separated by deciduous hedgerows (Map 1). Thickets and meadows on former agricultural land are common in the central portion of the site, under and adjacent to a dual steel tower hydro corridor. The east portion of the site, east of the hydro corridor, is generally forested, with a small plantation area and forest in the southwest corner (Map 1). The site is now designated *Developing Community (Expansion Area)* on Schedule B of the City`s Official Plan. Lands to the south and east are designated *General Rural Area* and *Agricultural Resource Area*, respectively. Aquatic features within the study area are limited to the Faulkner Drain tributary and a roadside ditch along the west side of Shea Road. A former pond in the northeast portion of the site, dug for agricultural purposes, has been filled in. The Jock River Reach 2 & Mud Creek Subwatershed Study identified scrub land and deciduous forests in the east portion of the site (MMM, 2005). No rare vegetation, forests greater than 100 years old, forest interior habitat, provincially significant wetlands, other wetlands or Areas of Natural and Scientific Interest were noted within or adjacent to the site. The forests between the hydro corridor and Shea Road south of the site are part of the City's Natural Heritage System Overlay, as shown on Map 1 and Schedule L3 of the Official Plan.

The closest provincially significant wetland is part of the Upper Poole Creek complex just over two kilometres to the west of the site. A portion of lands to the north of the site, north of Fernbank Road, are part of the Fernbank East Natural Area, noted as Natural Area No. 307 in the former Region of Ottawa-Carleton's Natural Environment System Strategy (Keddy, 1997). This 60 hectare Natural Area was rated low overall. None of the eight evaluation criteria were scored with a moderate or high significance. The Natural Environment Systems Strategy also identified the Stanley Corners East Natural Area (# 309) approximately 500 meters to the southwest of the site. Most of this Natural Area has been removed as a result of the urban residential developments or clearing that occurred sometime in the last decade to the west of the site. The 103 hectare Natural Area was rated low overall, with five of the eight evaluation criteria scoring below average. The rare vegetation community/landform representation, vegetation community/landform diversity and hydrological features criteria scored average. A pond

referenced in the Natural Area summary no longer exists. No regionally or provincially rare species, special wildlife concentrations or large scale linkages were reported by Keddy (1997) for either Natural Area. The extent of site fragmentation was considered high, with a moderate impact of human disturbance and non-native species.

The lands to the north of the site, north of Fernbank Road, were also identified as part of the West of Shea Road Urban Natural Area. As the area was not part of the City's Urban Area when the Urban Natural Area Environmental Evaluation Study was completed, this Urban Natural Area was surveyed in 2006 as part of the Fernbank Community Design Plan. The 35.8 ha Urban Natural Area was rated high overall, with a high or above moderate rating assigned the size and shape, habitat maturity and representative flora criteria. Four other criteria; regeneration, disturbance, natural communities and wildlife habitat, were assigned a moderate rating, with the remaining two evaluation criteria, connectivity and significant flora and fauna, rated less than moderate (Muncaster, 2007). All of the West of Shea Road Urban Natural Area is considered to have an edge effect influence. A high native flora Co-efficient of Conservation rating was assigned. Informal pathways are throughout the central and south portions of the Urban Natural Area, with ATV activity apparently common in the south portion. The impact of non-native flora, including buckthorn, European highbush cranberry, purple loosestrife and reed canary grass, was considered moderate to severe (Muncaster, 2007). The summary report by Muncaster (2007) describes the Urban Natural Area as a relatively undisturbed mature fresh-moist forest in the north portion (designated a Natural Environment Area). However the moisture regime has likely been impacted by adjacent residential and institutional development. Young, disturbed forests and meadow habitat are described for the south portion of the Urban Natural Area, representing the closest portion of the natural area to this site. An urban residential subdivision is proposed for lands representing the West of Shea Road Urban Natural Area are south of the Natural Environment Area lands.

1.1 Scoping the Environmental Impact Statement

This EIS was prepared in accordance with Section 4.7.8 of the City of Ottawa Official Plan (2010) following the EIS Guidelines and the Guidelines for City of Ottawa Tree Conservation Report, found at http://ottawa.ca/en/city_hall/planningprojectsreports/planning/dev_review_process/guide/environmental_impact/ and http://ottawa.ca/en/env_water/tlg/trees/preservation/guidelines/index.html,with guidance from the Natural Heritage Reference Manual (OMNR, 2010). This report includes the components of an Environmental Impact Statement as identified in Section 4.7.8.2 a) through h) of the City of Ottawa Official Plan (City of Ottawa, 2010). The field surveys and this report were completed by Bernie Muncaster, who has a Master's of Science in Biology and over twenty-six years of experience in completing natural environment assessments. The purpose of the Tree Conservation Report component is to determine any tree stands that should be retained and protected. It is proposed to remove any woody vegetation later in 2015 outside of the breeding bird season.

The major objective of this EIS is to determine whether the proposed change in land use will negatively affect any significant features and functions of the adjacent environmental areas and on-site lands, and if so can the impacts on the significant natural features and functions be mitigated. Mitigation measures to reduce the potential for impacts on these features and functions are presented in Section 6 of this report.

The following items were identified for particular attention in the EIS, recognizing that many of the issues are interrelated:

- what are the features and functions of the woody vegetation and other habitats in areas proposed for development, including the stormwater management facility?;
- can the most important features and functions be retained or mitigated for?;
- what are the anticipated direct and indirect potential impacts to the adjacent elements shown on the Natural Heritage System Overlay?; and,
- is there any aquatic habitat potential on or adjacent to the site?

2.0 METHODOLOGY

Background documents referenced during production of this EIS included the Natural Environment Existing Conditions Report for the Stittsville South Urban Expansion Area (Muncaster, 2013), the Urban Natural Area Environmental Evaluation Study (Muncaster and Brunton, 2005), the 2005 Jock River Reach 2 Subwatershed Study, Existing Conditions Report (Marshall Macklin Monaghan and WESA, 2002) and the Natural Environment System Strategy (Keddy, 1997). Following the approach in Section 4.7.8 of the City of Ottawa Official Plan (2010), this EIS identifies the natural environment features within and adjacent to the site. The role the site plays in supporting the functions and features of the adjacent natural areas are described and an important focus is on managing the interface or transition zone between urban developments and natural features in an urban context. Applicable features for this site are protection of woodland edges and management of access.

Other natural heritage information was collected and summarized through correspondence with Kemptville District Ministry of Natural Resources and Forestry and the City of Ottawa for several sites in the Stittsville area, and a review of the Natural Heritage Information Centre and MNRF Make-a-Map and Ontario Breeding Bird Atlas databases.

Colour aerial photography (1976 - 2013) was used to assess the natural environment features in the general vicinity of the site. Field observations were conducted on March 28th and April 2nd, 2009, September 13th and November 10th, 2011, June 26th, 2012, June 21st and July 2nd, 2013, both on and adjacent to the site. Wildlife and vegetation observations were made during all field surveys. Ecological units were defined based on species present, the wetness index of the species, dominant species, drainage observations, health, age, topography and soil conditions. Records of wildlife were made through direct sightings and observations of tracks and scat. Other aspects of the surveys included photographs of site representative features and observations on the level of disturbance from human activities and other disturbances such as non-native flora.

NHIC (2015) and Muncaster and Brunton (2005) were used for the current status of flora and fauna.

3.0 EXISTING CONDITIONS

3.1 Geologic and Hydrologic Conditions

The site is generally flat with a gentle slope to the east and south. The subsurface conditions consist of a topsoil layer underlain by surficial deposits of silty sand and sand at the majority of the test pits, with clayey silt, silt and glacial till at a few scattered test pits (Houle Chevrier, 2014). Inferred bedrock was encountered in all of the test pits completed by Houle Chevrier (2014) with a maximum overburden of approximately 4.3 metres. Published geologic mapping indicates that the bedrock in the area of this site consists of interbedded limestone and dolomite of the Gull River formation. Rock was commonly observed at the surface in the northwest portion of the site.

Groundwater was observed on October 2nd, 2012 by Houle Chevrier (2014) at between 0.5 and 2.7 metres below ground surface in selected test pits. No grade raise restrictions were identified by Houle Chevrier (2014).

Potential aquatic habitat in the study area has been severely altered as a result of the urbanization of lands to the north. The outlet channel constructed in the early 2000s along the west edge of the site is tributary to the Faulkner Drain. As part of this work the channel was re-aligned, with portions in the new urban residential subdivision to the north conveyed via a 1950mm ϕ storm sewer and outlet via a concrete headwall structure to a grassed swale (Robinson, 2003). The realigned channel was dug in a straight alignment to the south along an existing fence line to meet the existing Drain, which commences at the Hydro easement to the southwest of the site. Further south the Drain turns east ninety degrees and flows on the north side of Flewellyn Road to Shea Road. With 3:1 side slopes the channel cross-section is over twelve metres wide from top-of-slope to top-of-slope. The typical trapezoid shape of the constructed channel, straight alignment, grass swale and minimal canopy cover greatly impact the aquatic habitat attributes of the channel.

As part of the Fernbank Community Design Plan, a roadside ditch that leads to the Faulkner Drain was sampled on the west side of Shea Road between Fernbank and Flewellyn Roads on May 9th, 2007. Several culverts are in the roadside ditch with no obvious perched culverts. A small pool downstream of one of the culverts contained water depths up to 15cm. In many areas the channel was poorly defined among reed canary grass and muck dominates the substrate. No fish were observed or netted at three sampling sites. Minimal water, even on May 9th, 2007, reduced the extent of fish sampling in many areas.

As shown in the 2013 aerial photography used as the base in Map 1, a dug pond in the northeast portion of the site has been filled in. No flowing water was observed in 2012 in dug ditches leading to or from the former pond area. According to the former landowner the pond was filled in as the lands were no longer used for pasture. Historical aerial photography indicates this pond was dug between 1976 and 1991.

3.2 Terrestrial Features

3.2.1 Vegetation Communities and Wildlife

The site is dominated by agricultural fields, with deciduous hedgerows between many of the fields (Photos 9 and 10). Thickets and forests have developed on former agricultural land in the east portion of the site (Map 1). 1976 aerial photography shows the majority of the site in agriculture with intermittent tree cover west of Shea Road. More recently the mixed and deciduous forests have developed in this area, with cultural woodlands noted where the tree cover is less than sixty percent.

White Cedar – Poplar Mixed Forest

Dense white cedar clusters are present in portions of the mixed forest, with the largest cedars up to 28cm diameter at breast height (dbh). Most of the cedars are in the range of 15cm dbh. Other areas of the young forest have a very open canopy, with scattered trembling aspen, white elm, white ash, balsam poplar, white pine, crack willow, bur oak, sugar maple and red maple trees and are scrubby in nature (Photo 1). Apple is very common along the west edges of the mixed forest. The largest trees are likely from remnant hedgerows and include white ash and crack willow up to 40cm and 48cm dbh, respectively. The largest maples observed were 32cm dbh. Many of the deciduous trees appeared to be in poorer condition due to bark damage, broken trunks and/or wild grape growth. Fungus was common on many of the aspens.

The non-native and invasive glossy buckthorn is very common and dense in the understorey. The dense shrub cover generally prohibits development of regenerating tree stems, with some cedar shoots observed in the north portion of the young forest. Tartarian honeysuckle, common buckthorn, red raspberry and red-osier dogwood are also present. Ground flora in the mixed forest included sensitive fern, lady fern, tall goldenrod, Canada goldenrod, calico aster, tall white aster, panicled aster, heart-leaved aster, wild grape, thicket creeper, white snakeroot, wild cucumber, common strawberry, white bedstraw, field horsetail, heal-all, common helleborine, poison ivy, purple loosestrife and joe-pye-weed.

A mixed forest is also south of the urban area boundary in the proposed stormwater management facility. The north portion of the area was in agricultural use in 1976. Trembling aspen, white cedar and balsam poplar are dominant in the mixed forest, with green ash and white elm common (Photo 3). Manitoba maple and apple are also present. The largest trees are trembling aspen and balsam poplar are up to 26cm dbh. Glossy and common buckthorn are well represented in much of the understorey, with highbush cranberry, red-osier dogwood, black currant and tartarian honeysuckle are also present. Sensitive fern, white snakeroot, common strawberry, helleborine,

Canada goldenrod, yellow violet, wild grape, field horsetail, thicket creeper, enchanter's nightshade, tall buttercup, daisy fleabane, white bedstraw and poison ivy are typical ground flora.

White Cedar Coniferous Forest

Where the forest tree cover is greater than 75 percent coniferous, the forest is referred to as a coniferous forest on Map 1 (Photo 2). The dense white cedars were up to 24cm dbh, with most stems less than 15cm dbh. Scattered trembling aspen are among the cedars. Wind throw is extensive in this community.

The on-site forests that have been identified are generally disturbed because of grazing in many areas, the small size resulting in dominant edge effects throughout, extensive distribution of non-native vegetation, many trees in poor condition, an open canopy and historical logging. The forests would not be considered significant due to these disturbances, their young age and lack of diversity and interior forest habitat or other notable wildlife habitat features. None of the on-site forests are greater than 70 metres in width.

Construction of an access road and associated communications tower has created a break in the vegetation cover of approximately 15 metres in width along the south boundary of the site. Wind throw of the cedars is common along the access road. The lands to the south of the access road to the communications tower are also a mixed forest, with the trees generally older, in the range of 60 years. A deciduous forest is dominant further to the south.

Hedgerows

Deciduous hedgerows are between many of the agricultural fields (Photo 4). Apple is dominant in some of these hedgerows, with Manitoba maple and white elm dominant in others. Basswood, sugar maple, white cedar and crack willow are also present. The largest trees are typically in the range of 30cm dbh, with a few larger examples up to 48cm and 74cm dbh for white elm and Manitoba maple (Photo 5), respectively. Many of these larger trees are in poor condition with trunk decay and broken major limbs, while many of the white elm had very limited leaf-out. Common buckthorn, red raspberry, prickly ash, common juniper and hawthorn shrubs are common among the hedgerow trees. Scattered white cedars up to 22cm dbh are along the north edge of the site, south of Fernbank Road.

Coniferous Plantation

A small area of planted red and white pines up to 26cm dbh is in the southwest portion of the site (Photo 6). Historical photography indicates the trees were planted between 1991 and 1999.

Cultural Woodlands

Cultural woodlands are identified on Map 1 where the tree cover is greater than thicket habitats but less than 60 percent (Photo 7). The largest trees are white elm up to 32cm dbh, with smaller

white cedar, bur oak, green ash, sugar maple and white birch. White cedar distribution is much less in the cultural woodland.

Wild grape growth is often common on the trees and shrubs in the cultural woodlands. Glossy buckthorn is dominant in many areas of the cultural woodlands, with tartarian honeysuckle also present. Reed canary grass, timothy, orchard grass, wild grape, thicket creeper, purple loosestrife, joe-pye-weed, Canada goldenrod, small white aster and bittersweet nightshade are typical ground flora.

Cultural Meadow and Thicket

Canada thistle is dominant in areas with blue grass, brome grass, timothy, common yarrow, wild carrot, Canada goldenrod, tall goldenrod, rough goldenrod, heart-leaved aster, New England aster, tall white aster, purple loosestrife, blueweed, poison ivy, common strawberry, common burdock, common mullein, butter-and-eggs, red clover, rough-fruited cinquefoil, chicory, common mugwort, black-eyed susan and bird's-foot trefoil representative of the ground flora in the meadow habitat. Scattered shrubs species included common juniper, red-osier dogwood, red raspberry, staghorn sumac and hawthorn. Manitoba maple is dominant around the old barn in the northwest corner of the site.

In addition to glossy buckthorn, common juniper, slender willow, apple, red-osier dogwood, Bebb's willow and hawthorn shrubs are in the cultural thickets (Map 1, Photo 8). Regenerating white cedar, white elm and white spruce stems are up to 18cm dbh. Ground flora in the thicket habitats included heart-leaved aster, New England aster, panicled aster, tall goldenrod, narrow-leaved goldenrod, Canada goldenrod, wild carrot, blue grass, timothy, tufted vetch, joe-pye-weed, wild grape, reed canary grass, red clover, daisy fleabane, blueweed and heal-all.

Wildlife

Wildlife observed on and adjacent to the site (including the stormwater management area to the south) included a migrating northern shrike (March 28th), turkey vulture, black-capped chickadee, killdeer, Canada geese, wild turkey with chicks, American crow, blue jay, white-throated sparrow, song sparrow, red-winged blackbird, brown-headed cowbird, European starling, yellow warbler, common yellowthroat with immature, Baltimore oriole, veery, American goldfinch, American robin, alder flycatcher, red squirrel, meadow vole, woodchuck and white-tailed deer. The forest is too narrow to provide any forest interior habitat or to be used by area sensitive wildlife. Road noise and edge effects are throughout.

Due to the abundance of disturbed activities in the immediate area including urban and rural residential developments and agricultural activity there is a very limited potential for linkage functions in and adjacent to the study area. No linkages were identified by Keddy (1997) for the Natural Areas in the general area.

Photo 1 – Mixed forest in the east portion of the site, west of Shea Road

Photo 2 – Typical young cedar coniferous forest in the southeast portion of the site, west of Shea Road

Photo 3 – Cedar - poplar mixed forest in the area of the proposed stormwater management facility

Photo 4 – Typical deciduous hedgerow in the central portion of the site west of the hydro corridor. View looking northeast

Photo 5 - Mature Manitoba maple in the north portion of the site south of Fernbank Road. View looking east

Photo 6 – Small area of planted red pines in southwest portion of the site, east of the Faulkner Drain tributary

Photo 7 - Cultural woodland along the east edge of the site, west of Shea Road

Photo 8 - Cultural thicket habitat in the east portion of the study area. View looking northeast towards hydro lines

Photo 9 – Cultivated field in the southwest portion of the site.
View looking west to a deciduous hedgerow along the west edge of the site

Photo 10 - Cultivated field in northeast portion of the site.
View looking west from east edge of the site west of Shea Road

3.3 Species at Risk and other Species of Interest

With the exception of butternut, designated as an endangered Species at Risk, all of the flora and fauna species observed are considered *very common in Ontario, demonstrably secure* (NHIC, 2015). The Ontario Ministry of the Natural Resources and Forestry's Make a Map: Natural Heritage Areas website was reviewed on February 20th, 2015 (www.giscoeapp.lrc.gov.on.ca/web/MNR/NHLUPS/NaturalHeritage/Viewer/Viewer.html). This site allows for a search of Threatened and Endangered species covered by the 2008 *Endangered Species Act*, as well as other species of interest. A search was conducted on the 1 km squares including the site and adjacent areas (18VR21-90 and 91 and 18VR31-00 and 01). No Species at Risks were identified for the 1 km squares with one provincially rare species, ram's-head lady's-slipper. The breeding birds listed in the Ontario Breeding Bird Atlas for the 10 km squares 18VR21 and 18VR31 identified whip-poor-will, barn swallow, bank swallow, eastern meadowlark and bobolink as threatened Species at Risk in the overall 10 km square including the site.

In addition to the above species, correspondence from the Ministry of Natural Resources and Forestry Kemptville District Office for sites in the general area identified butternut, Blanding`s turtle, snapping turtle, loggerhead shrike, milksnake and eastern ribbonsnake as potential Species at Risk and Species of Special Concern. The potential Species at Risk in the City of Ottawa were reviewed, with an emphasis on the endangered and threatened species historically reported in the overall City, including butternut, American ginseng, eastern prairie fringed-orchid, wood turtle, spiny softshell, Blanding's turtle, musk turtle, Henslow's sparrow, loggerhead shrike, bobolink, eastern meadowlark, barn swallow, bank swallow, eastern whip-poor-will, bald eagle, golden eagle, least bittern, little brown myotis, northern long-eared bat, olive hickorynut, eastern cougar, common gray fox, lake sturgeon, cerulean warbler and American eel.

Habitat for the above species includes hayfields and other larger grasslands for bobolink and eastern meadowlark and potential open nesting structures such as barns and sheds for use by barn swallow. Bobolink and eastern meadowlark were not observed during surveys completed in June and July, 2012 and the cultivated fields on the site do not represent potential nesting habitat. No barn swallow activity was observed in the vicinity of the barn and other structures in the northwest portion of the site (Photo 11). Milksnake is relatively common in portions of eastern Ontario but is not often seen. It is found in open woodlands, clearings and around farmhouses where it hunts its major prey item, mice. Loggerhead shrike utilizes grazed pastures with short grass and scattered shrubs, especially hawthorn. No loggerhead shrike nests have been reported in the City of Ottawa since 2002. They were not observed during the 2012 surveys. The ram's-head lady's-slipper orchid is found in mature coniferous forests or coniferous fens and swamps, habitat not present on or adjacent to the site. The lack of existing wetland habitat in and adjacent to the site precludes potential habitat for Blanding's turtle, eastern ribbonsnake or snapping turtle. Eastern whip-poor-will utilize rock or sand barrens with scattered trees, savannahs, old burns or other disturbed sites in a state of early to mid-forest succession, or open conifer plantations. The understorey of the on-site forests is too thick to support whip-poor-will habitat and the forest remnants are much smaller than forests where whip-poor-will have been observed.

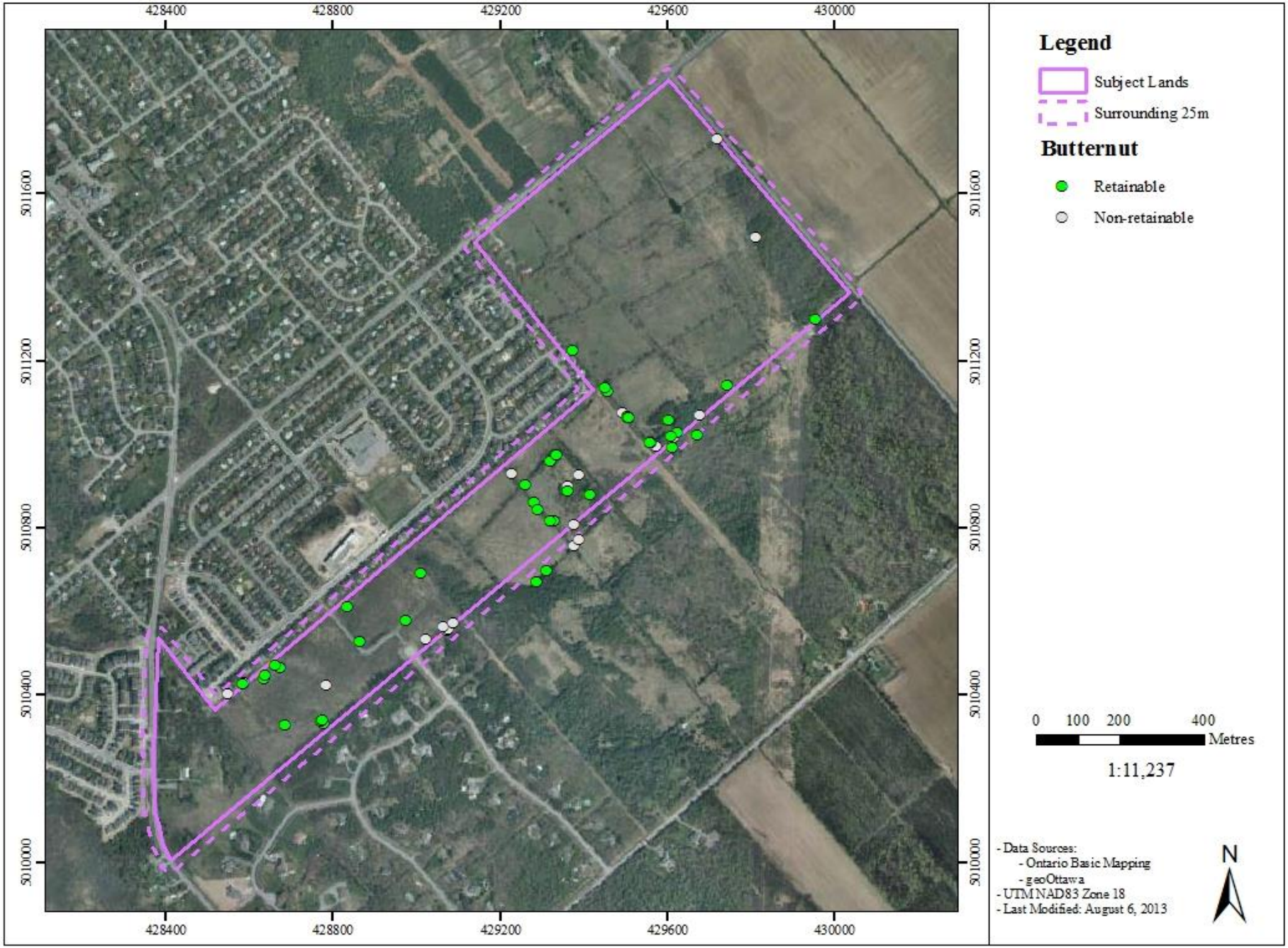
We have not recorded this species in such proximity to an urban environment. If eastern whip-poor-will is present in the general area it will be found in association with larger forests than the narrow remnant present on the site.

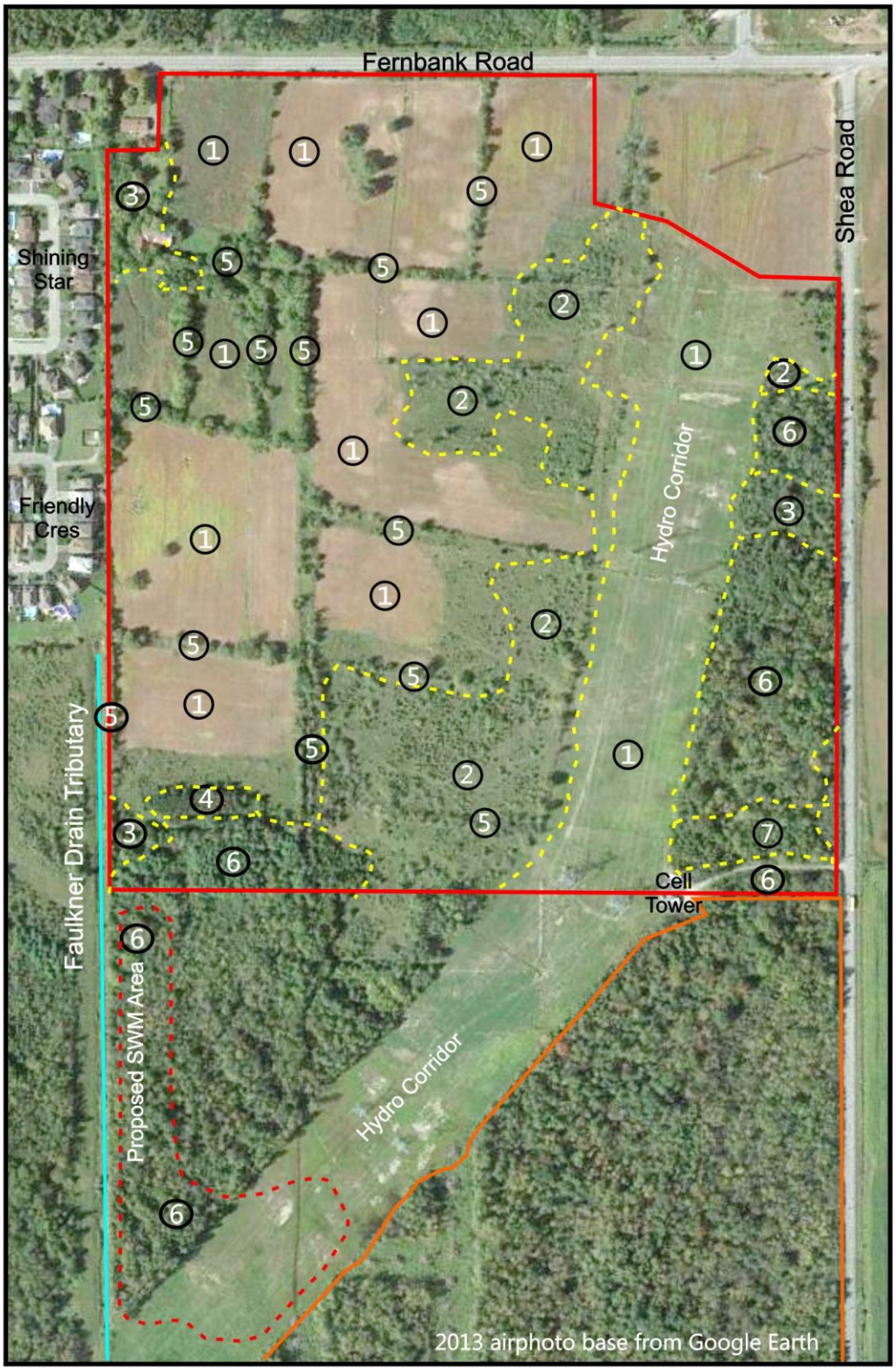
The only habitat considered present for the potential species of special interest is butternut. Detailed surveys for butternut were undertaken on July 17th and 30th, 2013. Butternut health assessments were completed for 21 butternuts on and adjacent to the site (Figure 1, note that Figure 1 also includes butternuts assessed in the Area 6 lands to the west of this site). Fourteen (67 percent) of the butternuts were assessed as healthy or 'retainable'. Of the 14 healthy butternuts, all but one was less than 10cm dbh and nine were 3cm dbh or less. The one healthy butternut (30cm dbh) is not considered Category 3, archiveable tree, as it was not within 40 metres of a non-retainable butternut. This larger healthy butternut is along the west edge of the site and pending detailed engineering analysis of grading and other servicing constraints may not be removed although it may be harmed as a result of the development.

The general location proposed stormwater management area south of the southwest portion of the site was searched for butternuts by Shaun St. Pierre on July 9th, 2015 with fourteen butternuts assessed. Ten of the fourteen butternuts were assessed as healthy Category 2 butternuts. No Category 3 butternuts were identified, with the healthy Category 2 butternuts ranging between 1 and 3cm dbh. The larger butternuts, ranging between 9 and 37cm dbh were all assessed as unhealthy Category 1 butternuts. It is anticipated that five of the healthy young butternut stems will be killed or harmed as part of the stormwater management pond construction.

Photo 11 – No barn swallow activity was observed in this barn in the northwest portion of the site, south of Fernbank Road

FIGURE 1 – BUTTERNUT LOCATIONS (includes all Area 6 lands)





Legend

- Vegetation Communities
- Urban Site Area
- Candidate Natural Heritage System (Schedule L3)

Approx. Scale 1:5,400

0 50 100 150 200 METRES

May 23, 2015

FILE: 12-31

Map 1

NATURAL ENVIRONMENT FEATURES

AREA 6
DAVIDSON SUBDIVISION

Prepared for:

Davidson Co-Tenancy

Prepared by:

Muncaster Environmental Planning Inc.

Vegetation Communities

1. Cultural meadow
2. Cultural thicket
3. Cultural woodland
4. Coniferous plantations
5. Deciduous hedgerow
6. Dry-fresh white cedar-poplar mixed forest
7. Fresh-moist white cedar coniferous forest

4.0 DEVELOPMENT PROPOSAL

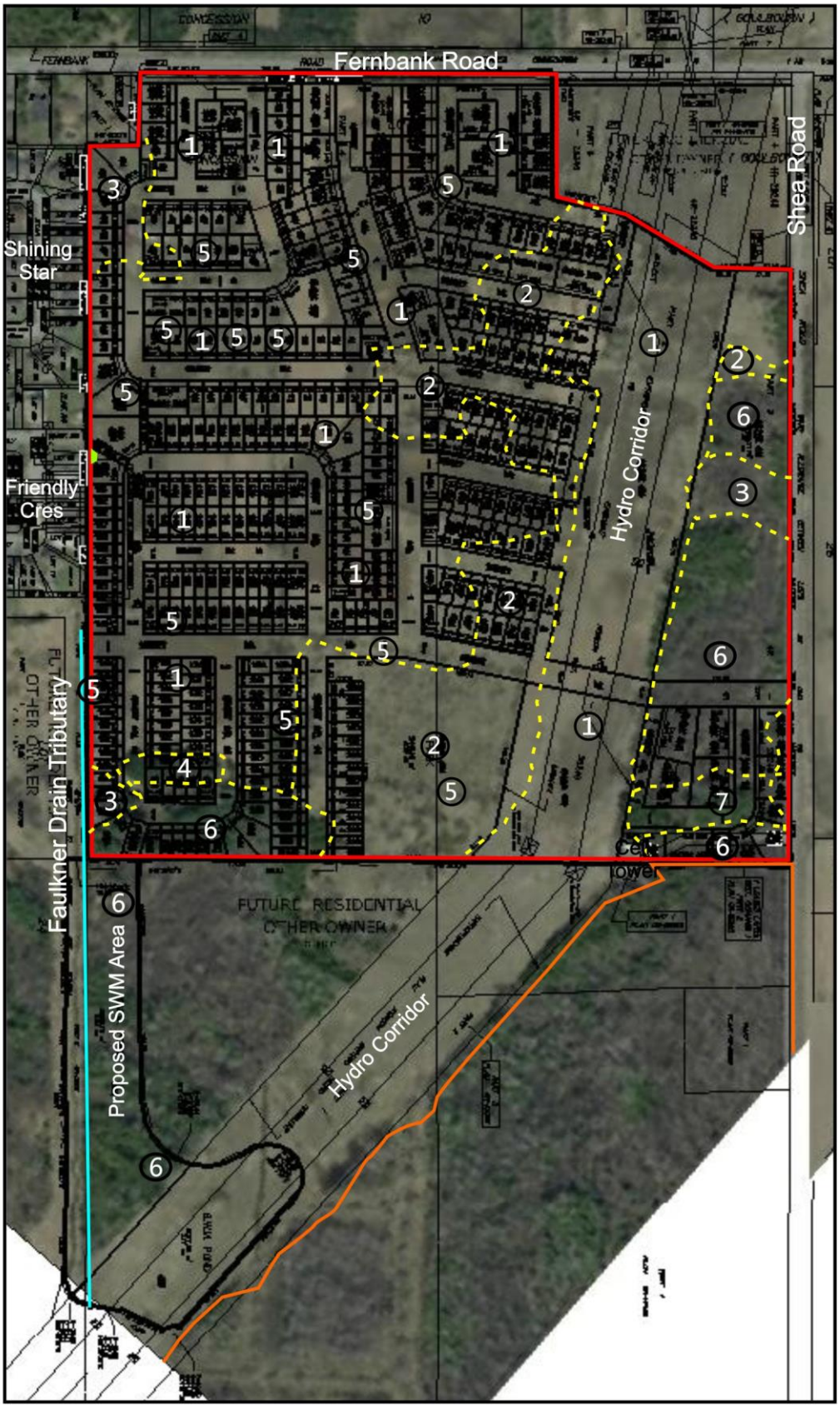
The site is designated *Developing Community (Expansion Area)* on Schedule B of the City of Ottawa Official Plan. The proposed development is a residential subdivision, which includes 329 single residential units (45 percent of the units), 108 semi-detached units (15 percent of the units), 122 townhouse units (17 percent of the units) and approximately 172 high density units (24 percent of the units) for a total of 731 units (Tartan, 2015). Lot depths are typically thirty (30.0) metres throughout the subject site. Lot widths for the single detached units will range from 10.36 metres to 13.75 metres; lot widths for the traditional semis are 7.5 metres per unit or 15.00 metres per lot while the bungalow semis are 8.6 metres per unit or 17.20 meters per lot; lot widths for the townhouses range from 6.1 metres per unit and up to 8.25 meters per unit for the townhouse bungalows. Groupings of townhouses range from 4 to 6 units per block (Tartan, 2015). A commercial area at the northeast corner of the property is not part of this Application.

As outlined in Tartan (2015) the single family homes are generally in the southwest and south-central section of the site while the bungalow product (singles, semis and towns) is located in the northwest section of the site. The townhouse and semi-detached units are generally located between the hydro corridor and east of Street 1 as well as along Street 1 and the southeast section of the site. The higher density product will be located east of the hydro corridor and west of Shea Road in Block 411. Single family units and bungalow products are located adjacent to the existing West Wind Farms residential development.

The Plan of Subdivision also includes a 2.14 hectare community park in the south-central portion of the site, west of the hydro corridor. At the detailed design stage potential tree retention in the park will be investigated, although the majority of the parkland is within regenerating thicket habitat with some deciduous hedgerows. Final tree retention in the park will be subject to the design and amenity requirements of the park.

Access to the site will be via a north-south road connecting to Fernbank Road to the north and a new west-east road to the south. The new east-west road will connect to Shea Road to the east and the new urban residential development to the west of this site. The hydro corridor will generally be left in its current condition with single loaded local roads along the west edge of the corridor.

Full municipal services will be utilized. As described in Section 6.2, a stormwater management pond is proposed immediately to the south of the southwest portion of the site. The stormwater facility will provide stormwater quality and quantity control for the new subdivision. The proposed water plan indicates the site will be serviced by the construction of 200 and 250mm watermains throughout the site and connecting to existing watermains on Fernbank Road via a 400 mm watermain extension and Friendly Crescent via a 250 mm watermain extending west from the site (IBI, 2015; Tartan, 2015). The proposed wastewater plan indicates the site will be serviced by local sewers throughout the site, a proposed pump station located at the southwest corner of the site and forcemain connections to the Liard Street pump station (IBI, 2015).



Legend

- Vegetation Communities
- Urban Site Area
- Candidate Natural Heritage System (Schedule L3)

Vegetation Communities

1. Cultural meadow
2. Cultural thicket
3. Cultural woodland
4. Coniferous plantations
5. Deciduous hedgerow
6. Dry-fresh white cedar-poplar mixed forest
7. Fresh-moist white cedar coniferous forest

Potential tree retention to be investigated at detailed design

Approx. Scale 1:6,000

0 50 100 150 200 METRES

January 25, 2016

FILE: 12-31

Map 2

PROPOSED CONSERVED VEGETATION

AREA 6 DAVIDSON SUBDIVISION

Prepared for:

Davidson Co-Tenancy

Prepared by:

Muncaster Environmental Planning Inc.

5.0 SUMMARY of SIGNIFICANT FEATURES and POTENTIAL IMPACTS

The study area is dominated by existing and former agricultural activity and relatively low sensitivity features occupy the site. No wetland habitat is on or adjacent to the site. The deciduous hedgerows are dominated by Manitoba maple and white elm and many of the larger trees are in poor condition.

Significant Woodlands

The forests have regenerated on former agricultural land and are highly disturbed by past pasture and logging, fragmentation and non-native vegetation, including extensive buckthorn in many areas. No forest interior habitat is present as the maximum forest width is approximately 140 metres. Regenerating stems are generally lacking. The on-site forests and the forests to the south of the site were not included as part of the Fernbank East Natural Area, although the forests west of Shea Road south of the site are part of the City's candidate Natural Heritage System as shown on the Schedule L3 overlay of the Official Plan and Map 1. The stormwater management facility is not proposed for these forests and mitigation measures are provided in the next section to protect the remaining features of the Natural Heritage System to the south of the site.

The on-site forests would not be considered significant woodlands on their own using the methodology of OMNR (2010) due to not meeting the woodland size criteria (forest is less than 20 hectares), no forest interior habitat, a lack of significant natural features within 30 metres of the forest, a lack of linkages, a lack of sensitive waterbodies, a lack of forest diversity, a lack of uncommon characteristics such as rare vegetation communities and a higher density of larger tree structure, and a lack of economic and social functions.

The contiguous forest to the south does contain interior habitat and field surveys were not completed on the lands not owned by the applicant or Mr. Davidson. Thus the forests to the south may meet the criteria of OMNR (2010) for significant woodlands. However, as outlined in Section 6.1 below the site development is not anticipated to impact the forest to the south as no major grade changes or excavations are recommended within four metres of the south property line of Blocks 402 - 406. This setback will protect the critical root zones of the adjacent trees as the largest of these trees are in the range of 30cm – 34cm dbh. In addition much of the north edge of the forest to the south is scrubby in nature and wind throw was extensive (Photo 12). The cell tower access lane has been in place for approximately 15 years, providing pre-stressing for the forest edge to the south. If the forest to the south represents a significant woodland it will continue to represent a significant woodland following the proposed site development.

Significant Wildlife Habitat

The potential for significant wildlife habitat was assessed using the guidance in OMNR (2010) and OMNR (2015). No flora, fauna or ecological conditions identified in the background review or field surveys that would trigger a Significant Wildlife Habitat designation with respect to the ELC communities present were observed on the site. For example the cultural habitats do not support waterfowl stopover or staging areas, colonial nesting bird breeding habitat or other examples of seasonal concentration areas. No specific features such as amphibian breeding areas or roost or wintering areas for raptors were observed during the field surveys in and adjacent to the site. No rare vegetation communities as noted in OMNR (2015) or rare or specialized habitat including seeps or springs are on the site. No Species of Special Concern or other species of conservation concern were observed. No birds generally requiring minimum forested areas for successful breeding were observed.

The site does not appear to represent any significant linkage function. Direct aquatic habitat in the study area and to the south downstream is limited to the highly disturbed Faulkner Drain tributary, which also performs an on-line stormwater management function. The channel is immediately to the west of the site.

6.0 MITIGATION MEASURES AND RECOMMENDATIONS

This section outlines recommendations to minimize potential impacts to the natural environment features within and adjacent to the site.

This section also provides a Tree Conservation Report and further addresses the Design with Nature concepts. The Design with Nature concept encourages ways to maintain and use the natural features of the site.

6.1 Tree Conservation Report

The field surveys and this report were completed by Bernie Muncaster, who has a Master's of Science in Biology and over twenty-seven years of experience in completing natural environment assessments. The purpose of this component is to establish which vegetation can be retained based on the building constraints on the site. The site is owned by the Davidson Co-Tenancy (613-238-2040). The woody vegetation not identified in this report for retention is proposed for removal in 2015, after the breeding bird season.

It is recognized that retention of trees in an urban development is often difficult due to the servicing and associated grading requirements. The extent of any tree retention in Blocks 399 – 402 and 411 along the east edge of the site, west of Shea Road will be determined at the site plan stage and will depend on the grading requirements and other servicing constraints. Similarly tree retention may be possible along the west edge of the site adjacent to the Faulkner Drain tributary. Trees within the park (Block 412 on the Draft Plan of Subdivision) will preserved at this time, including the deciduous hedgerow in the middle portion of the park. Final tree retention in the parks will be subject to the design and amenity requirements of the parks.

IBI (2015) noted that grade raises will be in the order of one to 1.5 metres due to the stormwater hydraulic grade line produced by a relatively high outlet channel. In combination with relatively shallow lots, the grade raises and associated urban servicing constraints of the site make potential tree retention on the site very difficult. Map shows tree retention in the park in the south-central portion of the site as well as a healthy butternut in the vicinity of Block 353 along the west edge of the site. Other trees along the site perimeters are generally dominated by ash, poplar Manitoba maple and cedar stems.

To protect the trees along the north edge of the lands to the south of the southeast corner of the site, including the forest that forms part of the Schedule L3 Natural Heritage System Overlay, no major grade changes or excavations are recommended within four metres of the south property line of Blocks 402 - 406. This setback will protect the critical root zones of the adjacent trees as the largest of these trees are in the range of 30cm – 34cm dbh. Much of the north edge of the forest to the south is scrubby in nature and wind throw was extensive (Photo 12). The cell tower access lane has been in place for approximately 15 years, providing pre-stressing for the forest edge to the south.

Photo 12 – Typical condition of the north edge of the forest adjacent to the south edge of the site west of Shea Road. View looking east from cell tower access lane

As shown on Map 2 the stormwater management pond will be constructed to south of the southwest portion of the site. This area is a combination of mixed forest, cultural thicket and hydro corridor. To minimize tree removal the area in the hydro corridor between towers will be

maximized. Tree retention along the edges of the stormwater management block is not possible due to a significant amount of excavation and grading that will take place during construction and the need to tie in the elevation for the stormwater management facility grading.

Nineteen butternuts, assessed as healthy in 2013 and 2015 during the leaf-out period, are proposed for removal or work may occur within 25 metres that could potentially harm the trees. However 11 of these healthy butternuts are clustered in the southwest corner of the site and will be removed or harmed for installation of servicing associated with the residential development to the west. The remaining healthy butternuts are 1cm or 2cm, with a single 30cm dbh. Given the location of these trees along the west and south edges of the site a couple the trees may be retained. For example the 30cm butternut is at the west edge of the boundary in Block 353 along the west edge of the site. If the healthy butternuts are to be retained, a compensation planting plan still needs to be filed with the Ministry of Natural Resources and Forestry for the harm of the butternuts. Compensation will be designed to provide an overall benefit for the species through plantings of pure butternut seedlings or other activity as agreed upon with the Ministry. The plantings will be placed in a suitable off-site area as determined in consultation with the Ministry. Until the plan is finalized no site disturbances are permitted within 25 metres of all butternuts assessed as healthy. If site disturbances are proposed prior to receiving the butternut permit within the general area of healthy butternuts, protective fencing must be installed at a 25 metre radius from the butternuts.

All trees to be retained, including along the south edge of the site, are to be protected with sturdy fencing installed before site alterations. The fencing is to be at least 1.2 metres in height. No grading or activities that may cause soil compaction such as heavy machinery traffic and stockpiling of material are permitted on the non-work side of the fencing. Signs, notices or posters are not to be attached to any tree. No machinery maintenance or refuelling, storage of construction materials or stockpiling of earth is to occur within five metres of the critical root zone of the trees and woodlot portion to be retained at this time. The existing grade is not to be raised or lowered within the fencing and any digging within the fencing is to be done by tunneling or boring. The root system, trunk or branches of the trees to be retained are to be protected and not damaged. If any roots of the trees to be retained are exposed during site alterations, the roots shall be immediately reburied with soil or covered with filter cloth, burlap or woodchips and kept moist until the roots can be buried permanently. A covering of plastic should be used to retain moisture during an extended period when watering may not be possible. Any roots that must be cut are to be cut cleanly to facilitate healing and as far from the tree as possible. Exhaust fumes from all equipment during construction will not be directed towards the canopy of the potentially retained trees. All of the supports and bracing for the protective fencing should be placed outside of the protected area and should be installed in such a way as to minimize root damage.

To protect breeding birds, no tree or shrub removal is to occur between April 15th and August 15th, unless a breeding bird survey conducted within five days of the woody vegetation removal identifies no active nests in the trees or shrubs.

It is proposed to remove the woody vegetation later in 2015 after the breeding bird season. A Planning Forester in Planning and Growth Management of the City of Ottawa is to be contacted after the protective fencing is installed and at least two (2) working days prior to any tree removal so that Staff can verify the fencing has been properly constructed.

The tree retention can be enhanced through pruning of branches on trees to be retained to improve their condition and anticipated longevity.

As part of the landscape plan for the site planting a mix of native species such as sugar maple, red maple, tamarack, white spruce, white cedar, red oak, bur oak, bitternut hickory and basswood is recommended. It is important that native trees from a local seed stock be used whenever possible. There are no specific planting sensitivities for the site.

6.2 Stormwater Mitigation and Other Servicing

IBI (2015) has prepared a Conceptual Site Servicing Study in support of the proposed development. The report includes an assessment of the collection and treatment of stormwater runoff, including stormwater mitigation in the form of Best Management Practices. IBI (2015) concluded that an end-of-pipe stormwater management facility to south of the southwest portion of the site will satisfy water quality and quantity control and provide some erosion control with extended detention. The stormwater management facility will include a sediment forebay and will outlet into a tributary channel of the Faulkner Drain. As required for facilities ultimately discharging to the Jock River, the facility has been designed to provide an enhanced level of water quality treatment including 80 percent total suspended sediment removal, and has been sized to provide storage to control the post development drainage up to and including the 100 year event to the minimum of pre-development levels or capacity restraints along the Faulkner Drain at Flewellyn Road (IBI, 2015). The existing outlet of the West Wind Subdivision will continue to flow into the tributary channel of the Faulkner Drain.

IBI (2015) has designed a dual drainage system which accommodates both minor and major stormwater runoff. A series of minor storm sewers will handle the runoff from frequent storm events while during less frequent storm events the balance of runoff in excess of the minor flow is accommodated by a system of rear yard swales and street segments, called the major system. In addition to the minor runoff, some of the major storm flow from the site will be conveyed to the stormwater management pond via the hydro corridor (IBI, 2015).

Roof leaders will be discharged to grassed and natural areas to promote infiltration and reduce surface runoff. In addition relatively flat grading and rear yard swales will direct runoff to the catchbasins. With respect to the adjacent forests to the south west of Shea Road the rear yard drainage of the residential units in Blocks 402 – 406 will be directed to storm sewers via swales. Due to the pre-development level ground in this area it is not anticipated that there is a significant current contribution to the forest to the south. The loss of any rear yard drainage from this area is not anticipated to significantly alter the moisture regime of the north edge of the forest to the south relative to current conditions.

As part of the urban development to the west of the site, the existing tributary channel of the Faulkner Drain immediately to the west of this site is proposed to be piped for the roadway crossing to connect to this site. However, the remainder of the Faulkner Drain tributary south of the future roadway crossing will remain and is to be maintained as an outlet for the proposed stormwater facility and overflow of the sanitary pump station. The ditch elevations may be modified to meet urban engineering requirements.

6.3 Erosion and Sediment Controls and Monitoring

An erosion and sediment control plan will be prepared as part of the detailed design package. During construction, existing stream and conveyance systems can be exposed to significant sediment loadings. The following mitigative construction techniques, included in IBI (2015) will be deployed to reduce as much as possible sediment loadings during construction:

- Groundwater will be pumped into a proper filter mechanism such as a sediment trap or filter bag prior to release to the environment until the local storm sewers and stormwater management pond are constructed. Following their construction, dewatering will be routed to the nearest storm sewer;
- Bulkhead barriers will be installed over the lower half of the outletting sewers to reduce sediment loadings during construction. The barriers will captured sediment laden flows;
- Stockpiles of cleared materials as well as equipment fuelling and maintenance areas will be located away from swales and other conveyance routes;
- Seepage barriers such as silt fencing, straw bale check dams and other sediment and erosion control measures will be installed in any temporary drainage ditches and around disturbed areas during construction and stockpiles of fine material. These control measures must be properly maintained to maximize their function during construction; and,
- Filter cloths will remain on open surface structures such as manholes and catchbasins until these structures are commissioned and put into use, streets are asphalted and curbed, and the surrounding landscape is stabilized.

A qualified inspector will conduct frequent visits during construction to ensure that the contractor is constructing the project in accordance with the design drawings and mitigation measures are being implemented and maintained as specified. Bulkhead barriers, filter cloths on open surface structures and silt fencing may require removal of sediment and repairs. The inspector must ensure that construction vehicles and chemicals, fuels and other potentially hazardous materials remain in designated areas.

After build-out of each Phase, applicable sewers will be inspected and cleaned. All sediment and construction fencing should be removed following construction, providing there is no exposed soil or other potential sources of sedimentation.

All sodding, seeding and tree and shrub planting are to be conducted correctly and as soon as weather and construction activity permits. The success of all landscape plantings will be assessed for a year through visual inspections following planting. Any plantings that are dead or dying will be replaced.

7.0 AGENCY CONTACTS

Date	Name	Agency	Subjects
October 28th, 2014	City of Ottawa staff	City of Ottawa	Pre-consultation meeting

8.0 SUMMARY

The site is in the east portion of Urban Expansion Area 6, which was recently added to the City of Ottawa's Urban Area. The site is dominated by cultivated fields, deciduous hedgerows between many of the field, thickets and meadows on former agricultural and young forests in the east portion of the site. The north edge of a portion of the City's Natural Heritage System Overlay is immediately to the south of the east portion of the site.

All the community/landform types and flora and fauna species observed on the site are considered common on a local and regional basis, except for butternut, an endangered Species at Risk. Pure butternut seedlings will be planted off-site, or other suitable measures, to provide a benefit to the overall species as compensation for removal or development activity within 25 metres of the butternuts assessed as healthy. No rare communities, wetlands, steep slopes or older forests were observed on or adjacent to the site or are reported in the existing reports including the Jock River Reach 2 Subwatershed Study.

If grading and other servicing constraints permit tree retention will occur along the east and west edges of the site. Tree retention will also occur for now in the neighbourhood park, with the extent of ultimate tree retention in the park to be a function of the park design. Unfortunately elsewhere the required grade raises are between one and 1.5 metres which will preclude tree retention. Native trees of local origin need to be planted where possible to help offset the loss of these local treed areas.

This EIS identifies other mitigation measures for the woody vegetation and associated wildlife habitat to be retained and protected, with an emphasis on the adjacent natural heritage area to the south. The EIS concludes that the construction and presence of the urban residential development will not have a significant impact on the adjacent natural heritage area provided the proposed mitigation measures are properly implemented. The following is a numbered summary of the main mitigation measures:

1. Retain on-site vegetation where grading and other servicing constraints permit;
2. Protect the adjacent forests identified on the Natural Heritage System Overlay to the south of the site with a four metre setback of no major grade raises or excavations and installation of sturdy fencing prior to site alterations. Detailed engineering analysis may determine that grading is required to the property line for proper urban servicing. If this is the case tree planting will be recommended to replace the forest edge trees whose critical root zone may be harmed by grading to the north of the trees;
3. Woody vegetation that must be removed is to be cut outside of the breeding bird period of April 15th to August 15th unless a breeding bird survey identifies no nesting activity within five days of the proposed vegetation removal;
4. Compensate for the removal or harm of any butternuts assessed as healthy with plantings of pure butternut seedlings or other compensation to obtain an overall benefit for the species;
5. The contractor is to be aware of other potential Species at Risk in the vicinity of the study corridor including barn swallow, bobolink and eastern meadowlark. Appendix 1 of City of Ottawa (2015) describes these species. Appendix 1 should be modified for this construction project to include the contact information of the project biologist, as applicable. Any Species at Risk sightings are to be immediately reported to the project manager and the Ministry of the Natural Resources and Forestry and activities modified to avoid impacts until further direction by the Ministry;
6. As recommended in City of Ottawa (2015) prior to beginning work each day, check for wildlife by conducting a thorough visual inspection of the work space and immediate surroundings. See Section 2.5 of the City's Protocol for Wildlife Protection during Construction (City of Ottawa, 2015) for additional recommendations on construction site management. Any turtles and snakes in the work areas are to be relocated to the rural lands to the south. Animals should be moved only far enough to ensure their immediate safety. See Appendix 1 and the links in Section 4 of City of Ottawa (2015) for suggestions on how to effectively relocate turtles and snakes;
7. Proper sediment and erosion control, as outlined in Sections 6.2 and 6.3 is important for general environmental protection. These measures must be monitored and properly implemented;
8. A stormwater management pond to the south of the southwest corner of the site will protect the water quality and quantity entering the downstream watercourses during operation of the residential development;
9. Plantings of native trees and shrubs of local origin to help offset the loss of existing local treed areas; and,
10. The Ministry of Natural Resources and Forestry recommends searches of the site during appropriate weather conditions and seasons prior to any site alterations for potential turtles and snakes. This is especially important during spring emergence when snakes may be concentrated in specialized areas such as logs, stumps, rock outcrops and ledges. It is the responsibility of the applicant to ensure this mitigation measure is implemented.

9.0 REFERENCES

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APPENDIX A

WILDLIFE and FLORA SPECIES LISTS

WILDLIFE SPECIES LIST – 5970 FERNBANK ROAD, STITTSVILLE SOUTH

COMMON NAME	SCIENTIFIC NAME	SRANK	GRANK	Provincial Status (SARO)	Federal Status (SARA)	AREA
BIRDS						
Turkey Vulture	Cathartes aura	S5B	G5			
Canada Goose	Branta canadensis	S5	G5			
Wild Turkey	Meleagris gallopava	S5	G5			
Killdeer	Charadrius vociferus	S5B, S5N	G5			
Ring-billed Gull	Larus delawarensis	S5B, S4N	G5			
Mourning Dove	Zenaida macroura	S5	G5			
Northern Flicker	Colaptes auratus	S4B	G5			
Alder Flycatcher	Empidonax alnorum	S5B	G5			
Great Crested Flycatcher	Myiarchus crinitus	S4B	G5			
Northern Shrike	Lanius excubitor	S3	G5			
Blue Jay	Cyanocitta cristata	S5	G5			
American Crow	Corvus brachyrhynchos	S5B	G5			
Black-capped Chickadee	Poecile atricapilla	S5	G5			
Veery	Catharus fuscescens	S4B	G5			10
American Robin	Turdus migratorius	S5B	G5			
Brown Thrasher	Toxostoma rufum	S5B	G5			
European Starling	Sturnus vulgaris	SNA	G5			
Yellow Warbler	Dendroica petechia	S5B	G5			
Common Yellowthroat	Geothlypis trichas	S5B	G5			
Chipping Sparrow	Spizella passerina	S5B	G5			
Song Sparrow	Melospiza melodia	S5B	G5			
White-throated Sparrow	Zonotrichia albicollis	S5B	G5			20
Northern Cardinal	Cardinalis cardinalis	S5	G5			
Red-winged Blackbird	Agelaius phoeniceus	S4	G5			
Common Grackle	Quiscalus quiscula	S5B	G5			
Brown-headed Cowbird	Molothrus ater	S4B	G5			
Baltimore Oriole	Icterus galbula	S4B	G5			
American Goldfinch	Carduelis tristis	S5B	G5			
House Sparrow	Passer domesticus	SNA	G5			
MAMMALS						
Woodchuck	Marmota monax	S5	G5			
Red Squirrel	Tamiasciurus hudsonicus	S5	G5			
Meadow Vole	Microtus pennsylvanicus	S5	G5			
White-tailed Deer	Odocoileus virginianus	S5	G5			

FLORA SPECIES LIST – 5970 FERNBANK ROAD, STITTSVILLE SOUTH

Common Name	Scientific Name	Coefficient of Conservatism	Wetness Index	Weediness Index
FERNS & ALLIES				
Wood Fern Family				
Northern Lady Fern	Athyrium filix-femina var. angustum			
Sensitive Fern	Onoclea sensibilis	4	0	
		4	-3	
Horsetail Family				
Field Horsetail	Equisetum arvense			
		0	0	
Cedar Family				
Common Juniper	Juniperus communis var. depressa			
Eastern White Cedar	Thuja occidentalis	4	3	
		4	-3	
Pine Family				
Balsam Fir	Abies balsamea			
White Spruce	Picea glauca	5	-3	
Jack Pine	Pinus banksiana	6	3	
White Pine	Pinus strobus	9	3	
Eastern Hemlock	Tsuga canadensis	4	3	
		7	3	
Maple Family				
Manitoba Maple	Acer negundo			
Norway Maple	Acer platanoides	0	-2	
Red Maple	Acer rubrum		5	-3
Sugar Maple	Acer saccharum	4	0	
		4	3	
Sumac or Cashew Family				
Poison-ivy	Rhus radicans ssp. Negundo			
Staghorn Sumac	Rhus typhina	5	-1	
		1	5	
Carrot or Parsley Family				
Wild Carrot	Daucus carota			
Wild Parsnip	Pastinaca sativa		5	-2
			5	-3
Dogbane Family				
Spreading Dogbane	Apocynum androsaemifolium ssp. androsaemifolium			
		3	5	
Milkweed Family				
Common Milkweed	Asclepias syriaca			
		0	5	
Composite or Aster Family				
Common Yarrow	Achillea millefolium ssp. millefolium			
Common Burdock	Arctium minus ssp. minus		3	-1
Common Mugwort	Artemisia vulgaris		5	-2
Heart-leaved Aster	Aster cordifolius		5	-1
Tall White Aster	Aster lanceolatus	5	5	
One-sided Aster	Aster lateriflorus var. lateriflorus	3	-3	
New England Aster	Aster novae-angliae	3	-2	
Ox-eye Daisy	Chrysanthemum leucanthemum	2	-3	
Chicory	Cichorium intybus		5	-1
Canada Thistle	Cirsium arvense		5	-1
Daisy Fleabane	Erigeron annuus		3	-1
White Snakeroot	Eupatorium rugosum	0	1	

FLORA SPECIES LIST – 5970 FERNBANK ROAD, STITTSVILLE SOUTH

Common Name	Scientific Name	Coefficient of Conservatism	Wetness Index	Weediness Index
Spotted Joe-pye-weed	Eupatorium maculatum ssp. maculatum	5	3	
Black-eyed Susan	Rudbeckia hirta	3	-5	
Tall Goldenrod	Solidago altissima var. altissima	0	3	
Canada Goldenrod	Solidago canadensis	1	3	
Common Sow-thistle	Sonchus oleraceus	1	3	
Common Dandelion	Taraxacum officinale		3	-1
Meadow Goat's-beard	Tragopogon pratensis ssp. pratensis		3	-2
			5	-1
Birch Family				
White Birch	Betula papyrifera			
			2	
Borage Family				
Viper's Bugloss	Echium vulgare			
			5	-2
Mustard Family				
Wormseed Mustard	Erysimum cheiranthoides			
			3	-1
Honeysuckle Family				
Tartarian Honeysuckle	Lonicera tatarica			
Highbush Cranberry	Viburnum trilobum		3	-3
		5	-3	
Pink Family				
Bladder Campion	Silene latifolia			
Dogwood Family				
Red-osier Dogwood	Cornus stolonifera			
		2	-3	
Gourd Family				
Wild Cucumber	Echinocystis lobata	3	-2	
Pea Family			1	-2
Bird's-foot Trefoil	Lotus corniculatus		3	-3
White Sweet-clover	Melilotus alba		2	-2
Red Clover	Trifolium pratense		2	-1
White Clover	Trifolium repens		5	-1
Cow Vetch	Vicia cracca			
Beech Family		5	1	
Bur Oak	Quercus macrocarpa			
Gooseberry or Currant Family		4	-3	
Wild Black Currant	Ribes americanum	4	5	
Prickly Gooseberry	Ribes cynosbati			
St. John's-wort Family			5	-3
Common St. John's-wort	Hypericum perforatum			
Walnut Family		6	2	
Butternut	Juglans cinerea			
Mint Family			0	-1
Selfheal	Prunella vulgaris			

FLORA SPECIES LIST – 5970 FERNBANK ROAD, STITTSVILLE SOUTH

Common Name	Scientific Name	Coefficient of Conservatism	Wetness Index	Weediness Index
Loosestrife Family			-5	-3
Purple Loosestrife	Lythrum salicaria			
Olive Family		4	3	
White Ash	Fraxinus americana	3	-3	
Green Ash	Fraxinus pennsylvanica			
Evening-primrose Family		3	3	
Canada Enchanter's Nightshade	Circaea lutetiana ssp. canadensis	0	3	
Common Evening-primrose	Oenothera biennis			
Wood Sorrel Family		0	3	
Upright Yellow Wood-sorrel	Oxalis stricta			
Plantain Family			-1	-1
Common Plantain	Plantago major			
Crowfoot or Buttercup Family				-2
Tall Buttercup	Ranunculus acris			
Buckthorn Family			3	-3
Common Buckthorn	Rhamnus cathartica		-1	-3
Glossy Buckthorn	Rhamnus frangula			
Rose Family				
Hawthorn sp.	Crataegus sp.	2	1	
Common Strawberry	Fragaria virginiana ssp. virginiana			
Apple sp.	Malus sp.		5	-2
Rough-fruited Cinquefoil	Potentilla recta	0	-2	
Wild Red Raspberry	Rubus idaeus ssp. strigosus	3	-4	
Narrow-leaved Meadowsweet	Spiraea alba			
Madder Family			5	-2
Smooth Bedstraw	Galium mollugo			
Rue Family		3	5	
Prickly-ash	Zanthoxylum americanum			
Willow Family		4	-3	
Balsam Poplar	Populus balsamifera		0	
Trembling Aspen	Populus tremuloides	4	-4	
Bebb's Willow	Salix bebbiana		-1	-3
Crack Willow	Salix fragilis	3	-4	
Slender Willow	Salix petiolaris			
Figwort Family			5	-1
Butter-and-eggs	Linaria vulgaris		5	-2
Common Mullein	Verbascum thapsus			
Potato or Nightshade Family			0	-2
Bittersweet Nightshade	Solanum dulcamara			

FLORA SPECIES LIST – 5970 FERNBANK ROAD, STITTSVILLE SOUTH

Common Name	Scientific Name	Coefficient of Conservatism	Wetness Index	Weediness Index
Linden Family		4	3	
American Basswood	Tilia americana			
Elm Family		3	-2	
American Elm	Ulmus americana			
Violet Family		5	4	
Downy Yellow Violet	Viola pubescens			
Grape Family		3	3	
Virginia Creeper	Parthenocissus inserta	0	-2	
Riverbank Grape	Vitis riparia			
Sedge Family		5	5	
Pennsylvania Sedge	Carex pensylvanica			
Orchid or Orchis Family			5	-2
Common Helleborine	Epipactis helleborine			
Grass Family	Poaceae		5	-3
Awnless Brome	Bromus inermis ssp. inermis		3	-1
Orchard Grass	Dactylis glomerata	0	-4	
Reed Canary Grass	Phalaris arundinacea		3	-1
Timothy	Phleum pratense	0	2	
Canada Blue Grass	Poa compressa	5	-4	
Fowl Meadow Grass	Poa palustris	0	1	
Kentucky Bluegrass	Poa pratensis ssp. Pratensis			